"SUSTAINABLE"

PLANNING FOR A "SUSTAINABLE" HONG KONG

25th FEBRUARY, 1998
Theatre 2, Hong Kong Convention & Exhibition Centre
Phase I, Harbour Road, Wan Chai, Hong Kong

Hong Kong Institute of Planners

&

The Centre of Urban Planning &
Environmental Management,
The University of Hong Kong

JOINTLY ORGANIZED
A CONFERENCE ON

PLANNING FOR A "SUSTAINABLE" HONG KONG

25th FEBRUARY, 1998
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sponsors

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Environmental Protection Department

SYNOPSIS

"We do not own the earth, we borrow it from our children".

Our actions today will affect the lives and livelihoods of generations to come. The concept of **"sustainability"** focuses on the well-being of both present and future generations.

As we reflect upon our past and look into the haze of future, we encounter many unknowns : what does **"sustainable"** development really mean? What are our choices?

As an international Chinese city, Hong Kong's development is tied to national and global trends. To be part of the world sustainability movement we need to learn more about sustainable development, and to be aware of where we stand, to ensure a sustainable future for Hong Kong.

What are our concerns and aspirations for the 21st century? How are we going to address and achieve them? This Conference, **"Planning For A Sustainable Hong Kong"** will explore how sustainability affects the way we live and what can be done to achieve an enduring balance between social, economic and environmental objectives.

This will challenge our creativity. We will need to investigate ways of protecting our environment and cultural heritage; of promoting economic development; of allocating resources; and of developing human resources. This will need education, commitment and well directed planning actions.

For the benefit of ourselves and future generations, this is an opportune time to reflect on how we can learn to live in harmony with our environment.

PROGRAMME (am)

0915-0930

0930-1030

1045-1215

Registration 0830-0900

WELCOMING REMARKS 0900-0915
Professor Peter HILLS
Director, The Centre of Urban Planning and Environmental Management,
The University of Hong Kong

Keynote Speech
A Sustainable Hong Kong : Nobody Must Lose
Mr. Peter WONG
Chairman, Advisory Council on the Environment

Session I : An Overview of Sustainable Development in the World and China
Moderator : Mr. Stanley YIP, HKIP

Towards A Sustainable Society : China's Practice
Professor ZHANG Shiqiu
Associate Professor, Peking University

Sustainable Development : Who's Got It Right?
Mr. Andrew McNAB
Director, Scott Wilson (Malaysia) Sdn Bhd

The Rise and Fall of Sustainable Development
Professor Peter HILLS
Director , The Centre of Urban Planning and Environmental Management,
The University of Hong Kong

TEA / COFFEE BREAK 1030 -1045

Session II : Sustainable Development in Hong Kong & Guangdong : Are We Late Comers?
Moderator : Dr. NG Mee Kam, CUPEM, HKU

Sustainable Development and Environmental Cooperation between Guangdong & Hong Kong
Ms. MA Xiao Ling
Project Manager, South China Institute of Environmental Sciences

Planning for A Sustainable HK
Mr. Bosco FUNG
Deputy Director, Planning Department

Sustainable Development : What Will Our Children Inherit From Us?
Mr. Raymond CHAN
Assistant Director (Environmental Assessment & Noise), Environmental Protection Department

HK's Sustainable Development System : Origin, Preparation & Implementation
Mr. Paul MITCHELL
Director, ERM Asia-Pacific Ltd.

LUNCH 1215-1400

1400-1545

Session III : Key Development Sectors in Hong Kong : Are They Sustainable?
Moderator : Mr. Andrew LAM, HKIP

Some Thoughts on HK's Medium-term Economic Prospects
Mr. KWOK Kwok Chuen
Chief Economist, Standard Chartered Bank

Housing in HK : How Sustainable ?
Dr. Rebecca CHIU
Associate Professor, The Centre of Urban Planning and Environmental Management, The University of Hong Kong

Hong Kong the Sustainable Metropolis for Well-being Living
Dr. Simon S.C. CHAU
Director, Produce Green Foundation

Sustainable Transport Development in HK : In Search For Our Sagacity
Dr. WANG Liang Huew
Chairman, Hong Kong Institute for Infrastructure Development

Planning for a Sustainable HK – the VTC Experience
Professor LEE Ngok, J.P.
Executive Director, Vocational Training Council

TEA / COFFEE BREAK 1545 -1600

1600-1700

Session IV : Panel Discussion Hong Kong's Way Forward to Sustainable Development
Moderator : Ms. Eunice MAK, HKIP

Ms. Anna WU
Chairperson, Consumer Council

Mrs. Mei NG
Director, Friends of the Earth

Mr. Otto POON
Senior Vice President, Hong Kong Institution of Engineers

Mr. Kenneth TO
Hon Treasurer, Hong Kong Institute of Planners

Ms. Carol LAI
Chairperson, Hong Kong Journalists Association

CLOSING NOTES 1700-1715
Mr. CHAN Pun Chung
President, Hong Kong Institute of Planners

BIOGRAPHY

Mr CHAN Pun Chung

Mr P.C. Chan, J.P., is a Deputy Director of Planning Department, Hong Kong Government. He was a Past Chairman of Planners Registration Board and is currently the President of Hong Kong Institute of Planners.

Mr Raymond CHAN

Mr Raymond Chan is the Assistant Director of Environmental Protection Department in charge of all environmental assessment and noise matters.
Mr Chan holds a Masters degree in Mechanical Engineering from the University of Wisconsin-Madison and he is a Fellow in local engineering, acoustics and EIA institutions.

Dr Rebecca CHIU

B.A. (N.S.W.), PhD. (A.N.U.), Hon FHKIH
Dr Rebecca Chiu is Associate Professor of The Centre of Urban Planning and Environmental Management, The University of Hong Kong, specializing in housing studies. She co-ordinates and teaches in the Master's Degree Course in Housing Management, and the housing components of the Master of Science (Urban Planning). Her current research interests include housing reform in China, public housing policy in Hong Kong, green housing policy and comparative housing studies.
She has also been consultant to the World Bank and planning consultancy firms. She is currently a member of the Home Ownership Committee of the Hong Kong Housing Authority.

Dr Simon S.C. CHAU

Dr Chau, veteran Green activist in Hong Kong, is the author, translator and editor of 74 books on food, health, organic farming, feminism, education, ethics, meditation, and translating. He co-founded Green Power, Produce Green Foundation, and the Vegetarian Society of Hong Kong. In addition to a weekly radio show and daily newspaper column, he presides over regular Friday evening meditation classes and Saturday Zen lunches and qigong sessions.

Mr Bosco FUNG

Mr Bosco C.K. Fung is a Deputy Director in the Planning Department of the Hong Kong SAR Government. After obtaining his MPhil degree in urban geography from the Hong Kong University and his Masters degree in town and country planning from the Sydney University, he joined the then Town Planning Office of the Hong Kong Government in 1975. Since then, he has been engaged in a wide range of planning activities, from district and new town planning, statutory planning, Town Planning Ordinance review to territorial strategic planning. Currently he heads one of the two branches of the Planning Department and is responsible for the preparation and review of territorial and sub-regional development strategies and the management of various strategic planning studies including the Study on Sustainable Development for the 21st Century which is in progress.
Mr Fung is a founding member of the Hong Kong Institute of Planners and has been closely involved in activities of the Institute over the years. He was President of the Institute from 1993 to 1995.

Prof Peter HILLS

Prof Hills is Director of the Centre of Urban Planning and Environmental Management at the University of Hong Kong. He first joined the University in 1982, shortly after the Centre was established. He has been involved in environmental research and teaching for 25 years. His principal areas of interest are enviornmental policy, environmental impact assessment, coastal zone management, and energy and the environment. Prof Hills is a member of the Advisory Council on the Environment and its EIA sub-committee, the Environmental Campaign Committee, the Energy Advisory Committee and the Town Planning Appeal Board.

Mr KWOK Kwok Chuen

Mr K.C. Kwok is the Chief Economist of Standard Chartered Bank for Northeast Asia. Based in Hong Kong, his responsibilities cover the territories of Korea, Taiwan, China, Hong Kong and Macau. Hong Kong and China feature highly in his work.

Mr Kwok's working experience covers both the public and private sectors His previous assignments include the Monetary Affairs Branch, the Econmics Services Branch and the Office of the Commissioner of Banking of the Hong Kong Government, and the Hongkong and Shanghai Banking Corporation. He joined Standard Chartered Bank in 1991.

Mr Kwok serves on a number of committees advising the Hong Kong Government. He is a member of the Hong Kong Committee for the Pacific Economic Co-operation Council, the Land and Building Advisory Committee, the Trade Advisory Borad, the Finance Committee of the Housing Authority and the Housing Society. Mr Kwok also sits on the Economic Policy Committee of the Hong Kong General Chamber of Commerce, and the Executive Committee of the Hong Kong Coalition of Services. He is also a member of the Departmental Advisory Committee of the Department of Economics and Finance of the City University of Hong Kong.

Mr Kwok got his first degree in economics and statistics from the University of Hong Kong in 1976. He aslo holds a Master degree from the Chinese University of Hong Kong in economics and another Master degree in public administration form the University of Hong Kong.

Ms Carol P.Y. LAI

Ms Coral P.Y. Lai, freelance journalist, talk-back/phone-in program presenter for RTHK Radio 2, columnist for *Hong Kong Economic Journal.* Also working on a writing project, "China Beat", a journalistic novel reflecting on journalistic experiences encountered by the author. It is sponsored by the Arts Department Council and will be published in April.

Graduated form the University of Hong Kong, with a master's degree in journalism and mass media from the University of Iowa. Have worked with *Oriental Daily News, South China Morning Post, Hong Kong Economic Journal, Eastern Express, Hong Kong Economic Times and Ming Pao Daily News.*

Specialized in political and China news. Have travelled extensively in mainland China and have covered Beijing student movement in 1987 and 1989 and ethnic conflict in Tibet in 1989. Focused more on investigative reportage in recent years.

Editor of *On-the-Record*, a press monitor periodical published by Hong Kong Journalists Association.

Editor and co-author of *People will not Forget*, a testimony of 64 Hong Kong journalists after the June 4th massacre, 1989. Honoured Best Reportage Award for the year of 1989 by Lianhe Zaopao, a leading Chinese language newspaper in Singapore.

Elected to the HKJA executive committee in 1994. Elected as vice-chairperson in 1996 and chairperson this year.

Prof LEE Ngok,J.P.

BA (Hons) (HK), Dip Ed, MA (HK), Ph D (London), Hon D Ed (Kingston)

Prof Lee Ngok, J.P., has been the Executive Director of the Vocational Training Council since June 1997. Before that, he was Pro-Vice-Chancellor (Development) of the University of Southern Queensland, Professor and Director of School of Professional & Continuing Education (formerly Extra-mural Studies), and Dean of the Faculty of Arts in the University of Hong Kong. His professional qualification is widely recognized. He is Honorary Professor of History in Zhongshan University, Tongji University, Curtin University of Technology and Jinan University; Member of Asian Studies Association of Australia (ASAA), Editorial Board for Asian Thought and Society, American International Studies Association, American Political Science Association, the International Institute for Strategic Studies, London. He was also Lecturer for 21 ASAIHL General Conference and Senior Research Fellow of the Strategic and Defence Studies Centre in Australian National University.

Ms MA Xiao Ling

Ms Ma Xiaoling is currently Senior Research Engineer and Project Manager in South China Institute for Environmental Science, NEPA, and has engaged in environmental science studies for 20 years. Based on the long research experience in environmental policy, regulation and standard in the coastal open areas of China, especially the Pearl River Delta, she initiated in 1991 the research on the environmental issues in Hong Kong, Macau and Taiwan. Recently entering into the study on topics of environmental policy and law under "one country two systems".

Mr Andrew McNab

Mr Adrew McNab BA Dip TP MRTPI MRAPI FTS is a Director of Scott Wilson (Malaysia) Sdn Bhd and has responsibility for environmental and planning studies throughout the Asia Pacific region. A geographer and town planner, Andrew has worked in Government, consultancy and teaching in the UK, Australia, the Caribbean and Asia. His experience embraces state of the environment reporting, approaches to sustainable development in citites, resource conservation and protected areas, and the environemtal impacts of tourism. He is currently involved in a feasibility study for an Aquatic Centre in Hong Kong, a major study of urban growth management in southern China, a sustainable development strategy for a coastal area of Northern Ireland and heritage tourism in Malaysia.

Mr Paul MITCHELL

Mr Paul Mitchell has a bachelors degree in geography and masters degrees in applied science and planning, the latter from the University of Pennsylvania. He is a Fellow of the Royal Australian Planning Institute. Mr Mitchell is a founding partner of ERM Mitchell McCotter Ltd, the Australian member firm of the ERM Group, and is also a director of ERM's Asia-Pacific regional company.
He has wide experience in sustainable development issues, having prepared a major report on a sustainable futute for Sydney entitled "Future City: Sydney 2050", as well as many similar plans for smaller developing areas. He is currently managing the preparation of SUSDEV21 for Hong Kong"

Mrs Mei NG

Mrs Mei NG was born in Hong Kong and graduated from the University of California, Berkeley in 1971 major in Anthropology She worked briefly for the Bristish Natural History Museum before returning to Hong Kong in 1977. She volunteered for Friends of the Earth since 1989 and was eventually promoted to Director in 1993. Mrs Ng was appointed by the Hong Kong Government to sit on the Environmental Campaign Committee in 1992 and the Country and Marine Parks Board since 1993. In the same year she took over as the chief editor of Friends of the Earth's One Earth Magazine. Being the first Chinese director of Friends of the Earth, she has helped to localize the organization and strengthen community links In the past four years she has been keen to promote environmental exchange programs between Hong Kong and China, and since then has maintained a very goods link with environmental organizations in the mainland.

Mr Otto POON

Mr Otto Poon was educated in Hong Kong Technical College and Lanchester College of Technology, England.

Otto started his engineering career as a craft apprentice with the E&M Office of the Public Works Department, Government of Hong Kong. After a brief period of service with a British engineering firm, he left for England and worked with the GEC Group of Companies where he qualified as chartered electrical and mechanical engineer. Upon his return to Hong Kong, he worked as a director of a British instrumentation company and then as General Engineering Manager of a Swire Group company.

He established Analogue Group in late 1977 which has developed into diversified engineering operations specialise in environmental, process control, elevator, electrical and mechanical engineering trading and contracting business.

Otto now serves as a member of the Solicitors' Disciplinary Tribunal Panel, Advisory Council on the Environment, Energy Advisory Committee and as the Chairman of the Energy Efficiency & Conservation Sub-committee. He is currently the Senior Vice President of the Hong Kong Institution of Engineers.

Otto was made an OBE in January 1996.

Mr Kenneth TO

BSocSc(Hons), MSc(Urb Planning), MHKIP, MRTPI, RPP

Mr Kenneth To has been on the Council of the Hong Kong Institute of Planners since 1993, and from 1995 onwards the Honorary Treasurer. At present he is also a Member of the Public Affairs Committee, and the External Affairs Committee.

As an Executive Director in Townland Consultants Limited, he is very familiar with the planning and development related issues in Hong Kong and the Mainland.

Dr WANG Liang Huew

Dr L.H. Wang is now Chairman of the Hong Kong Institute for Infrastructure Development, a multi-disciplinary professional body. He was also past Chiarman of the Chartered Institute of Transport in Hong Kong. Before joining the private sector to take part in infrastructure investment and management, he was Chairman of the Graduate Programme on Transport Studies of the University of Hong Kong.

Mr Peter H.Y. WONG

Mr Peter H.Y. Wong, J.P., was elected to represent the Accountancy Functional Constituency 1988-1995 as a member of the Legislative Council. He is currently the Senior Tax Partner for Deloitte Touche Tohmastsu, CPA. In addition to serving as President of Hong Kong Society of Accountants, 1984-85, Mr Wong has been extensively involved in various public services. He is currently the Chairman for the Open University of Hong Kong, Advisory Committee on Accountancy (HK Polytechnic University), Advisory Council on the Environment (ACE), Social Welfare Advisory Committee (SWAC), Executive Committee - Hong Kong Retirement Scheme Association, and Resource The Counselling Centre. He is the Governor & Deputy Chairman for Friends of the Earth and the President of the Hong Kong Marine Conservation Society. He is also a member of the University Court (HKU), Hong Kong Housing Authority, and Commission on Strategic Development.

Ms Anna WU

Ms Anna Hung-Yuk WU, J.P., a founder partner and the Senior Partner of Robert W.H. Wang & Co. Born in Hong Kong since 1977. Usual areas of legal practice Intellectual Property and Commercial Special interest : information technology laws.

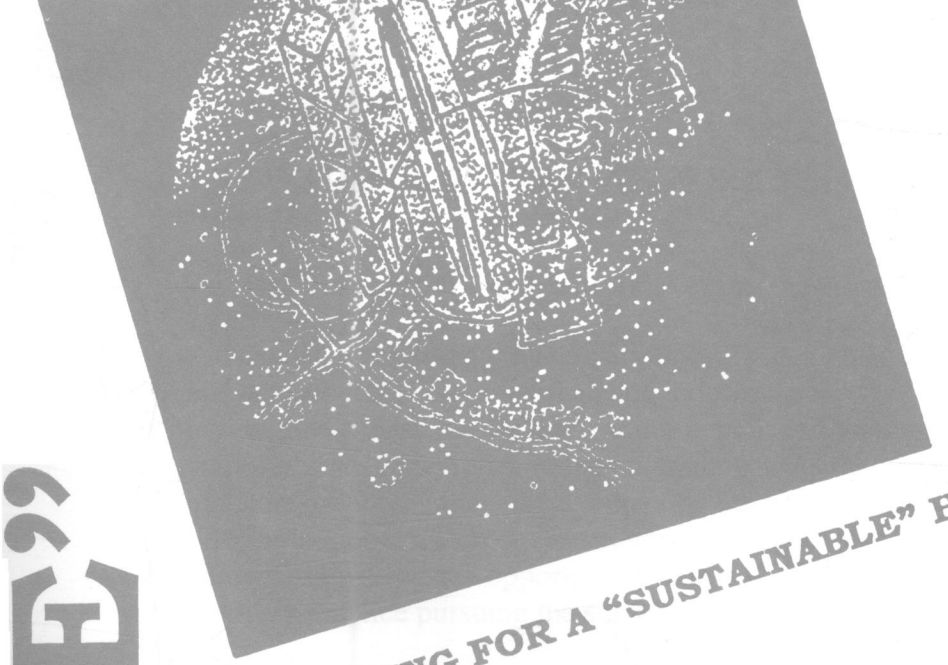
A member of the **Legislative Council** (1st January 1993-31st July 1995). Introduced the Equal Opportunities Bill, a private member's bill.

Chairman of the **Consumer Council**; Chairman of the Operations Review Committee and a member of the Advisory Committee on Corruption of the **Independent Commission Against Corruption**; Co-chairperson of the **Provisional Council on Reproductive Technology**; Director of **The Hong Kong Mortgage Corporation Limited**; a member of the **Equal Opportunities Commission**, of the **Hospital Authority**, the Committee on Unit Trusts and the Committee on Investment-Linked Assurance and Pooled Retirement Funds of the **Securities and Futures Commission**.

Members of various professional and intellectual property associations.

Prof ZHANG Shiqiu

Prof Shiqiu (Susan) Zhang currently serves as an Associate Professor of Centre for Environmental Sciences and China's Research Centre for Sustainable Development at Peking University. As an Associate Professor, she has been teaching on environmental economics since 1988, and is a resources person for the ODA (UK) and China's NEPA's training program for Pratical Economics Training for Environmental Management As a researcher, she has been conducting various research projects related to environment and development which covers from Environmental and Resources Economics, Environmental Policy, to Environmental Management at various level Based on her research activities, she published numbers of papers and co-authored a book (Introduction to Sustainable Development). She was invited as projects consultants by ADB, the World Bank, UNDP and UNEP. Now she is also the Co-chair for UNEP Economic Options Committee, UNEP Technology and Economic Assessment Panel under Montreal Protocol, and an expert member of Environmental Working Group under China Council for International Co-operation on Environmental and Development (CCICED).



PLANNING FOR A "SUSTAINABLE" HONG KONG

"SUSTAINABLE"

Towards A Sustainable Society : China's Practice

Professor ZHANG Shiqiu

DRAFT SPEECH

AT CONFERENCE 1998 - "Planning for a Sustainable Hong Kong"
BY
HONG KONG INSTITUTE OF PLANNERS
&
HKU CENTRE OF URBAN PLANNING AND ENVIRONMENTAL MANAGEMENT

"A Sustainable Hong Kong - Nobody Must Lose"
Mr. Peter Wong
Chairman, Advisory Council on the Environment

Wednesday 25th February 1998

Hong Kong brings from outside most of its food, 90% of its drinking water, all of the wood needed for building and furniture and much more. The landfills will be used up in less than 20 years and we still have not made up our minds whether we wish to discharge our sewage into the sea with a little or even less treatment. What do we mean then by sustainable development in the context of Hong Kong?

For a city state like Hong Kong, Singapore and Gibraltar, there is no way that the entity can be self-contained and sustainable within that containment. In fact, once a country has stepped away from the idiocy of total self-reliance like old socialist planning China and the tottering North Korea, there is too much international trade for any country and its economy to be self-sustaining and self-contained. As planners, you should know that it is rare that everything goes exactly according to plan. The skill is how to cater for the unexpected.

In the context of Hong Kong, sustainability must mean a style or mode of living and working that will ensure that style or mode can continue to thrive for many generations to come. It should not be a question of 'prosper thy neighbour' or 'begger thy neighbour', it is more a question of 'do unto others only what you wish to be done to yourself'.

I will talk about the software, the changes we need to make to our mindset in order to achieve a sustainable Hong Kong. There is little anyone can teach you about planning - you are the professionals. It is the approach to planning that I want you all to think about.

AIR POLLUTION

Any opinion poll today on the environment in Hong Kong would undoubtedly place our air quality as that of the highest concern. This is understandable since its consequences are easily felt and understood.

I returned to Hong Kong in late 1969 and I still remember looking out of my father's Borrett Mansions flat to see the yellow smoke coming out of the chimneys of the Hunghom electric power plant. That was the result of burning cheap high sulphur oil. That smoke was certainly not appreciated by the residents downwind but it was not until the upscaling to fit in

with the electricity demands of a growing Hong Kong that the old polluting high sulphur coal and oil fired plants were reprovisioned to Castle Peak and Lamma Island, where higher stacks and technology enabled the emissions to be cleaned of some of the real gunk and carried up high and beyond Hong Kong.

Even today, the coal fired Castle Peak plant does not have electrostatic desulphurisation. Only the fly ash is taken out. I do not have to remind you that sulphur is the cause of acid rain.

In the late 80's and early 90's, we were very concerned that the fly-ash had to be stored in huge lagoons next to the power stations and that the natural leaching action of rainwater may cause a significant amount of heavy metals to be leached or the ash will be blown by wind into the sea thereby causing harm to those critters that live there.

It was then that Green Island Cement hit upon the idea of using that fly ash as filler for its cement. Up to that time, the Cement Company had either to make that filler by crushing quarried rocks or else import it from China's offshore quarries, both of which leave behind huge scars in the landscape.

The chemists were able to formulate a process whereby the fly ash got chemically stabilised within the hardening cement, making solution into adjacent waters impossible. I understand that there is now a shortage of fly ash in Hong Kong and the Cement Company is looking in other directions for their requirements.

This solution was an all-round-win for everyone. The two electric utilities got their wish for the fly ash waste to be disposed of at a profit and not a cost, and the multi-million dollar fly ash retaining lagoons did not have to be built. The Cement Company makes the cement at a lower cost thereby lowering costs to the consumer and along the way, better profits for the company. The environmentalists were happier too, because the fly ash problem was solved in a most friendly way. Everybody won. It was the classical example of some one's waste becoming another's raw material.

Although those smokestacks are located well away from urban high density centres, they still continued to pour forth huge amounts of carbon dioxide, a principal greenhouse gas.

The recently released Greenhouse Gas Inventory showed that we in Hong Kong would be able to achieve the same level of emissions in year 2000 as the 1990 levels. However, this is a bit of a fluke because many of our heavy energy users, namely industries have moved elsewhere in search of cheaper land and plentiful labour. Also we were drawing on the Daya Bay Nuclear Plant for some of our needs. I do not deny that some enlightened concerns have improved their environmental performance because they saw the economic logic in terms of savings or competitive advantage, but many have done little or nothing. The Government was far from convincing when it postulated that 2010 emission levels would only be 15% above that of 2000. When questioned, it said that 15% was likely to be the figure being put to the Kyoto Congress for developed countries. As it turned out, that 15% was no where close to the shoddy agreement hammered out at an average of 5.2%. The United States and China distinguished themselves by their unabashed and shameless self interest. It will be later this year that we will know what Kyoto really means.

I think that a great deal more should and can be done to reduce our phenomenal emissions of carbon dioxide. I understand that the Government in the guise of the Economic Services Bureau, has been talking with the power companies about Demand Side Management and what incentives there could be so that they can make more distributable profits in return for economies initiated by them in the electricity used by their customers and also for any overall reduction in their generating capacity. This can be done in many ways, the most obvious of which is to persuade customers to switch off unnecessary lights or turn down the level of air-conditioning. The whispers that I am hearing are that the concessions by the Government are rather few and meaningless. The truth is that the Government does not have much of a stick, it needs to offer some carrots.

EDUCATION

We are all agreed that education is of primary importance. Our former campaigners thought that we could sell environmental awareness the same way we sold condoms for family planning. It was only after much complaining that the old guard was replaced by some closer to reality who are targetting our young kids to instill in them that a green way of living is the only way to go.

Call it brain-washing if you will, but it is no different than instilling road sense and family values in the young. It has to be given in small repeated doses in a setting that the young can relate to. They are not stupid because they soon realise that it is for their own good and they are just as vulnerable as the flowers and little insects that we all seek to protect. It has to become a way of life. It should be part and parcel of their ordinary curriculum and should come naturally. It should not be taught and examined as a separate subject.

That education is not only for kids. It is also for the elderly as well as for people like you and me. How often have we mindlessly discarded rubbish which had to be picked up and collected and disposed of, whereas, if we had really thought about it, that rubbish could have been the raw materials for another process. Realistically, not everything can be used in this way and recycling can be overdone with the present state of technology. This is certainly true of plastics and specially in places like Germany where laws were enacted to sort and recycle almost everything, market forces and technology have not caught up.

However, I am not advocating that we just give up on sorting because we have no market for it today. If we can sort and categorise the rubbish and place it in a landfill with the location carefully mapped, there is a fair chance that in the years to come, someone will come up with a new technology that will make mining of that landfilled rubbish an economic and environmental proposition. Again that cost money now which may or may not be recoverable within the cycle of our lifetime. The important thing is that we must think before we act.

WAR ON LAP SAP

Do not go away with the impression that we have not tried hard to educate the public about the environment. This Government has tried its very best; special kits have been

prepared with the help of the green groups and these are now used in the schools and the effect has been worthwhile. Of course, more can be done in the schools but our kids have lots of different pressures on what they should be spending their time on; English for example. But it is the grown-ups that have been neglected.

Since the last 'Lap Sap Chung' blitz, we have had a great many new immigrants and many of us have forgotten. I was quite shocked the other day to get into a taxi and found sputum on the floor. I have also seen it inside lifts of exclusive buildings. We also need constant reminders because it is so easy just to discard what you do not want any more. Our municipal services are so efficient in clearing it away that we hardly notice that we are rubbishing the place. Keep Hong Kong Clean campaigns have to be constantly and incessantly waged in Hong Kong or we will lose the war of the minds. I am glad that the two municipal councils are now targetting the new immigrants. But please do not stop there, how many times have you seen a Mercedes at the lights, the rear windows coming down a fraction and a bejewelled hand discards a soiled Kleenex? Also, do not forget the Filippino helper. In many households, it is the Filippina maid who deals with the rubbish. Apart from publicity in Putonghua, we will need it in Tagalog as well.

POLLUTERS PAY OR MY FRIEND THE TAXPAYER WILL PAY

In many ways, the Hong Kong public has been educated about the environment and realises that there is a problem. However, he has not been sufficiently educated as to what can be done about it or accept the startling and unpalatable notion that he is the very person responsible for that rubbish who can and should do something about it.

Perhaps our Government has been too paternalistic or patronising in being the provider of all these public goods. Perhaps our politicians are pushing too much onto the Government. I see a real challenge in that the Hong Kong public is becoming far too dependent on the Government to do everything and feel that as a taxpayer, he is entitled to those services and hence need never lift a finger again. It matters nought that he himself paid little or no taxes and it is the major companies and employers that contribute most of the tax revenues directly and indirectly.

In some respects, the Hong Kong public feels trapped by the morality of the polluter pays logic. They are uncomfortable because deep in their hearts, they do not want to pay unless they absolutely have to. It is making the best out of a bad argument that our major political parties have gone against the raising of sewage charges and the imposition of the diesel to petrol scheme. I hope that our politicians sleep peacefully at nights with such self-serving logic.

If our Government would wish that an increasingly democratised Hong Kong were to pay its own way and not rely on a few large taxpayers to foot the bills, there will have to be good solid programmes to instill civic responsibilities in everyone as to their rights and responsibilities in a very fluid Hong Kong. If a company wishes to change its domicile, there is no way we can stop that from happening any more than we can stop factories moving to China or one of our professionals from emigrating. Our fledgling political parties will have to assume a measure of maturity and responsibility and not just indulge in an orgy of destructive criticism without any care about the damage that may bring.

We are usually disparaging when we look at the way our rivals the Singaporeans tackle problems similar to ours. But I do commend their initiative to devolve responsibility of clearing away rubbish and hygiene onto elected town councils with a local member of Parliament as Chairman. The whole of Singapore has been divided into about 10 districts and each district has the responsibility and finances to do the job. I feel that there is merit in getting our District Boards and Geographical Constituency Legislators to take on this task. Instead of the usual orgy of destructive criticism, they can do something useful and be judged by their electorates based on their performance in keeping everything spick and span.

A HARD DAY'S NIGHT

Having said that no one must lose, we have to be realistic. Human nature being what it is, it is often impossible to arrive at a solution that can accommodate every single point of view, however unreasonable. I dare say that given time and goodwill, all reasonable views can be accommodated, but there is little prospect of accommodating unreasonable points of view. We just have to take them into our stride and trust that the majority will be right and even though disgruntled, contrarians will accept defeat with good grace.

We have some very hard decisions to make if we are to have any prospect of making our way of working, living and playing sustainable not only in our lifetimes, but in those of our children and grandchildren. Since only defense and foreign affairs are in the hands of Beijing, we Hong Kong people will only have each other to fall back on before coming to our own conclusions and we will have no colonial masters to blame. If we are to rule ourselves, we have to decide for ourselves and take responsibility for those decisions. In coming to those decisions, we need to be as open as possible and take into consideration every viewpoint, accepting some and rejecting others. Only then will Hong Kong people accept and own those decisions as their own.

First and foremost, we have to come to terms with our demographics. With the certain growth of our aged population and the legal immigration of 150 a day from China, take away the volatile emigration numbers to Canada, USA and Australia, we are observed to grow by one million every ten years. The Planning Department just postulated and based the Territorial Development Strategy on a population growth of 1 million every 10 years for the next twenty years. The question is should we allow history to repeat itself.

It is frightening enough to adjust our minds to a population of 8 million in the year 2017. But what of 11 million in 2047! I am sure we can stack them all in, but I think that we may have to breach or change the Basic Law because Hong Kong will be a very changed place if those numbers are to be accommodated. We may have the highest GDP per capital in Asia by that time, but what a rotten environment we will have to endure. What will be our quality of life?

Can we think the unthinkable and have less immigration into Hong Kong. Something has to be done and we will have to thoroughly discuss this with the decision-makers in Beijing and come to a mutually acceptable and sensible solution, one that will last for some time.

HOUSING

The 24th January 1998 edition of the Economist had an article called "Housing in the Countryside - Belt loosening" discussing the issue of where to build new homes in England by the deputy prime minister - who holds the portfolio of Secretary of State for the Environment, Transport and the Regions".

Firstly, the portfolio of this very senior minister belies the importance and linkage between the state of environment and the needs of transport. This has great relevance here in Hong Kong because so much of our environmental problems stem from the need to transport people and goods from one part of the territory to another. We have already recognised that one Secretary must juggle the priorities of planning, environment and lands. Surely, transport must be added to that portfolio. If you look at the West Kowloon reclamation, fully one half of that reclamation is sterilised for transportation needs.

Secondly, I quote from the third paragraph of that article. "So far, the housing policy of this government and its Conservative predecessor has been swayed by a projection, published in 1995 and based on 1992 figures, that the number of households in Britain will rise by 4.4 million between 1991 and 2016. On that basis, counties have been told to find space for given number of new homes. The trouble is that the projection - now rumoured to have increased to more than 5 million - is a wobbly basis for policy."

Critics "rightly point out that the figure merely projects past trends. It is not a forecast: it ignores both the impact of other government policies (such as the plan to charge students more for their education) and the impact of housing policy itself. Making more homes available may itself cause new households to be formed.

In addition, figures for new households say little about the demand for new homes: most new households will contain one person, often elderly. The best way to make room for them might be through policies that encourage the subdivision of existing houses, such as measures to protect the rights of old people who want to rent out part of their under-occupied family home."

The Territorial Development Strategy has rightly pointed out that if present trend continues, we will have one million persons more every 10 years. It is not a forecast and like England, that projection "is a wobbly basis for policy".

I wrote most of this speech and in particular the following paragraph before I was invited to join in the Commission for Strategic Development and so I will read it out as it stood:

"I would suggest that a prime task for Mr. Tung's Commission for Strategic Development is to look at the impact of the sum total of other government policies on our housing policy on which everything revolves. A critical one would be the present practice of 150 PRC residents receiving one way permits into Hong Kong, that translates 54,750 a year or 657,000 (2/3rds) of that 1 million every 10 years. This, as in many other matters, should not be decided by China alone, we must work with our counterparts on the Mainland to arrive at a mutually acceptable solution."

I fully stand by what I wrote. The Commission will be asking the consultants to challenge all the existing assumptions and also see the long term implications of the present policies to see if the results are sustainable. Only in this way can the Commission truly do its work.

One last point of interest from that article was that a recent study of the area around Reading in England "suggests that most people would much rather gaze at their own gardens or a city park, which they value three times more than the much less accessible land around towns". It then goes on to say "that is not an argument for allowing indiscriminate rural development. But it should make a labour government pause. If most people value gardens more than industrial farmland, is it right to deny them that choice?"

Of course, we cannot allow indiscriminate development of our rural areas because there is so little of it left and we must not allow a repeat of the black spot car dumps and container parks. We must have a plan and strategy so that we can house and gainfully employ our steadily increasing and affluent population with an acceptable quality of life. It is not only the deterrence of an expatriate from working in Hong Kong that should be the driving force for our Chief Executive to improve our environment, it should be the health of our population that is the main criteria.

An interesting suggestion was made to me recently that housing in the rural areas should now be "low density - high rise'. Look at our boundary to boundary rural housing - a true concrete jungle. Everything is sprawled out so everyone is dependent on private transport. Can we not stack them up in high-rises leaving lots of room for real gardens and even farms in between? If all the dwellings are concentrated into blocks, we can organise common transport to rail links etc., obviating unnecessary use of private cars and taxis. It is not a universal solution since for places close to areas of ecological interest, the impingement of civilisation like lights at night will disturb the natural habitat.

ONE COUNTRY TWO SYSTEMS (BUT ONLY ONE ENVIRONMENT)

We can no longer think of Hong Kong in isolation. We get our water and much else from Southern Guangdong. Our economy and transportation are intricately intertwined and will become increasingly more so. The present system of liaison between the two are paved with good intentions but is far from doing its job.

Take the case of complaints about development (legal or otherwise) on the northern shores of Deep Bay which threatens the very being of the Ramsar site at Mai Po. The Shenzhen and Shekou side have to recognise that Mai Po is not only an international treasure but it is also a Chinese treasure and China has as much a responsibility to protect it as Hong Kong, and developments on both sides have to pay due regards to its protection.

We need to have more frequent and closer liaison meetings of both sides and for the full details of those meetings to be disseminated to the public. Those officials have to be accountable to the public and respond to any questions that may be asked of them. I know that this is novel for the Mainland side which have been treating Environmental Impact

Assessments as State Secrets. However, developments on the Mainland side affects Hong Kong and we have a right to know how we are going to be affected.

I went up to see the Futian Nature Reserve just before Christmas. Needless to say, the hell-bent on development municipal authorities of Shenzhen and Shekou seem to care little for the environment or conservation. It required a directive from the State Council to finally mark out the boundaries of the Reserve. Some 600 hectares of fishponds and other habitats have been lost to unauthorised development and the Binghai Causeway is stark reality.

We drove onto the reclamation work for the Binghai Causeway which is quite a few kilometres long and some 200 metres wide. Even their planners had no idea what the large tracts of what was the sea between the Causeway and the foreshore were to be used for. Those who knew of any EIA being carried out or what would happen to the hydrology of Deep Bay have so far remained silent.

Someone told me that a very ingenious two faced argument was advanced to rebuff questions on the illegal Shekou reclamation. To Hong Kong and International queries, this project was Chinese and of no concern to outsiders. To the Chinese, as Britain controlled Deep Bay up to the foreshore, it was not a concern of China. I understand that the reclamation has been stopped and the perpetrators are to be prosecuted.

It is time that pertinent and even awkward questions are asked and straight answers given.

But things are changing and I think changing for the better on the Mainland. I hear that in certain cases, EIAs are now becoming available. I hope that one day soon, the China political scene is such that the leaders feel comfortable enough to allow real NGOs to be formed and the public can take officials to task for their environmental performance.

China's leaders are becoming aware of the rapid deterioration of the environment and have passed some drastic and all too necessary laws in an effort to reverse that trend. If they are to get effective action, then officials have to be genuinely accountable without the time honoured ability to cover up for self-gain or powerful interests.

In Hong Kong, we have a highly advanced consumers' society but Southern China is quickly catching up. The bulk of their population are still sparing of their usage of resources. However, their prosperity and likelihood to achieve prosperity give great scope to consume and dispose indiscriminately. Therefore, it is vital that this section of the society be educated to think and act green.

LEAD FROM THE TOP

Many of us have been continually beating the green drum but as in many things to do with human behaviour, the role model played by our leaders is all important.

It took one hundred days to get any worthwhile comment on the environment out of our Chief Executive and that was to admit the obvious that some of the best international talents have eschewed Hong Kong for more environmentally benign shores.

I fully support Mr. Tung's goal of housing for all and we should be doing everything possible to achieve 85,000 units a year, even in these economically challenging times. It must be part of our long range strategy for more and more of our people to own their homes. We have enough land to achieve it, but the problem lies in the red tape that has to be got through before that land can be turned into housing.

We must realise that in the environment, there are no magical solutions. There are many things that we can do to improve the environment and also to minimise waste. Some technically good solutions do not work because they are never put into practice. One example is the drawing of heat reflective curtails to keep out the sun and heat. If it is easier to turn up the air-conditioner, then that is the easy way out. These are the small steps that we can all take and if enough of them are taken, then we will achieve appreciable savings. However, we still need a proper lead from the top and if we all pull our weight, we should all be winners in keeping Hong Kong a decent place to work and live in for our grandchildren. We still have many places that are wondrous to visit and they are only minutes away from the city. Our enlightened developers realise that indiscriminate developments will only spoil their long term and sustainable profitable growth. We must break out of the mindset that we are only here to make sufficient money to emigrate. We must plan for there to be good jobs for the highly educated graduates of our universities. We must also plan for jobs for those who are not so well educated and give them plenty of opportunities to help themselves to better their prospects. What is recognised as becoming increasingly important is to give them a decent environment to enjoy the fruits of their labour and so that their children can grow up healthy and strong. We must plan for there be no losers - only winners. Then, we can have a Hong Kong that can count on its success as being sustainable, only then will the Commission on Strategic Development fulfill the hopes of generations of Hong Kong people.

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PLANNING FOR A "SUSTAINABLE" HONG KONG

"SUSTAINABLE"

Towards A Sustainable Society : China's Practice

Professor ZHANG Shiqiu

TOWARDS A SUSTAINABLE SOCIETY: CHINA'S PRACTICE

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China is experiencing the transition from planning economy to market economy, from rural and agricultural society to urban and industrial society. The highly growth of economy has brought the Chinese people tremendous benefit and welfare improvement, at the same time, imposes serious damages on the environment. As the world moving to the 21st century, China is facing more challenges for achieving the objective to improve the living quality, which depending on not only in the economic term, but also in the terms of social and environment. However, the opportunities do exist. This paper is giving some perspectives about China's practice pursuing the sustainable development.

1. The Major Driving Forces for Environment and Sustainable Development

Sustainable development has three key elements--economic, environmental and social (see Munasinghe, 1993). Based on the economic-social-environmental approach, the major driving forces for environment and sustainable development in China can be identified as following.

1.1 Economic Growth

China is one of the fastest growth economies in the world. China's GDP has the annual growth rate of 10.1% for 1981-1996, 9.9% for 1986-1996, and 11.6 for 1991-1996 (China's Statistics Bureau, 1997). The government also planned that China's economy will increase about 8% annually during the 9^{th}-5 year plan period (1996-2000). The highly growth of economy will have various implications for the environment and sustainable development, which will increase the living standards and provides more resources for protecting the environment in on hand, and impose huge pressures on environment and natural resources, therefore impact the basis of the sustainable development in another hand. In addition, if China can not balance the various social, economic and environmental factors as well as improving the institutions and policies, it will be a question whether China will be successful to achieve the sustainable development.

1.2 Population

Since China implemented the family planning policy in the 1970s, fertility rate has been constantly declining, from 18.25‰ in 1978 to 16.98‰ in 1996, while the natural population growth rate decreased from 12‰ of 1978 to 10.42‰ of 1996. However, given the size of the population, the net annual increase of population is still over 12 million, the total population for 1978 and 1996 was 962.59 million and 1.22 billion respectively (exclude Macao, Hong Kong and Taiwan). Furthermore, China is facing its third baby boom in the 1990s. It was estimated that the population would increase to 1.3 billion by the year 2000 and to 1.5-1.6 billion by the middle of the next century. Same as the economic growth, the population has also positive and negative impacts on the environment and sustainable development, providing more human power resources and also impose pressure on environment and natural resources by increasing demand. Therefore, whether China can be successful to deal with the issues related to population will have great implications for achieving a sustainable society.

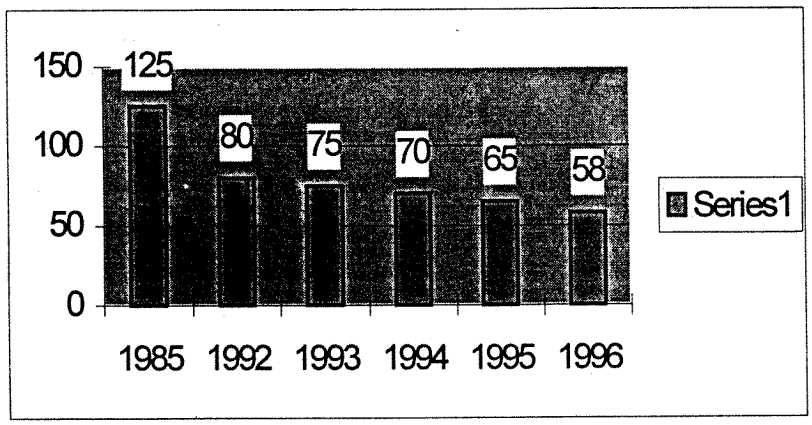
1.3 Relatively Shortage of Resources

Although China owns many important natural resources in the quantity term, the per capita share of resources is far below the world average level. Due to the increase of population, the land, forest, and mineral resources per capita will continue to decrease. At the same time, the uneven distribution of such important resources such as energy and water resources has further expended the gap between demand and supply, regionally and structurally.

1.4 Poverty

By the end of 1996, there were still 58 million of Chinese living in poverty (which was 80 million in 1992) with the annual income lower than 40$ (see figure 1). Most of the poor people are living in the rural area of central and western part of China or in the remote mountain area. How to relief them from poverty will also be critical for China's environment, especially for the eco-system.

Figure 1: Decrease of the poverty-stricken population in China (million)



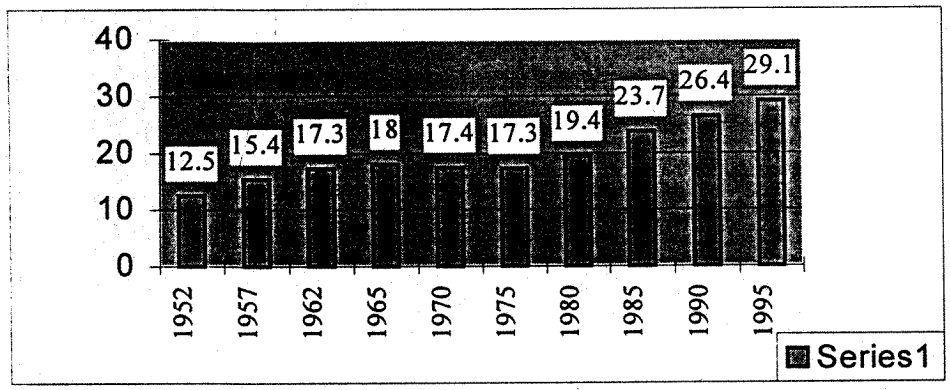
1.5 Industrialization

China is at the primary stage of industrialization, and the economic growth heavily depends on the extensive production pattern. As a result, the consumption of energy and resources is huge which led to a serious situation of environmental pollution and eco-system degradation. Energy sector, for instance, although China has made great progress for reducing energy intensity by implementing various policies of promoting structural and technology changes, China is still one of the countries having the highest energy consumption per unit production. The energy intensity of China was 4 times of that of US in 1995 (World Bank 1997a). Lacking of technology and management inputs are the essential obstacles. Thus, to change the growth and development pattern from extensive to intensive model therefore to reduce resources and energy consumption will be very important.

1.6 Urbanization

Over the past decades, China accelerated the urbanization process. In 1990, urban population was 301.9 million and was 359.5 million for 1996 (see figure 2). The urbanization ratio increases from 26.4% in 1990 to 29.4% in 1996. With the rapid growth of the industrial production and urban population, environmental pollution and insufficient infrastructure are the two major obstacles to the sustainable urban development.

Figure 2: The Urbanization Process in China (% of population in urban area)

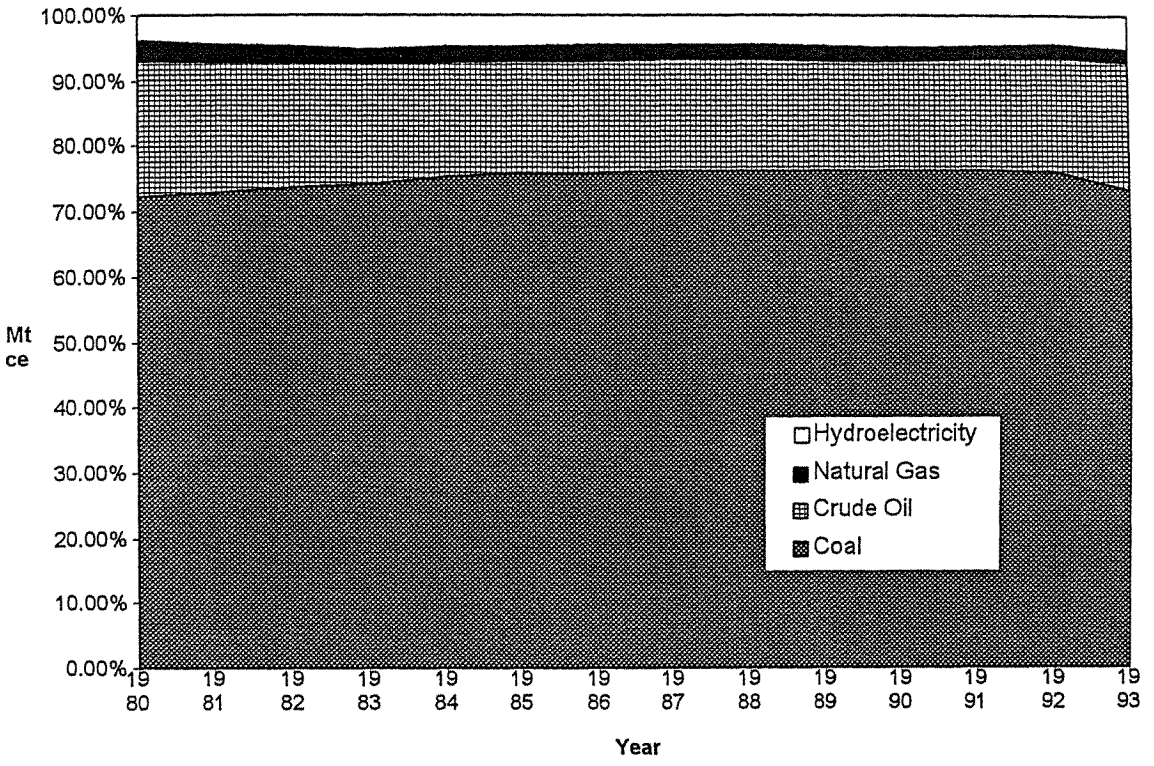


1.7 Energy Consumption

Although coal still dominates both primary and end use consumption, China's energy consumption patterns have undergone some recent changes resulting in a slight decline in its share (see Figure 3 for primary end use consumption patterns). The use of electricity, on the other hand, is rising faster than any other source of energy. Electricity generation's share of primary energy consumption has increased from 16.5 percent in 1985 to 22.3 percent in 1993. Coal is the dominant source in the fuel mix accounting for approximately 90 percent.

The energy industry faces the dual pressure of increasing demand on energy and environmental protection. The Chinese government considers the energy industry development is one of the crucial factors for sustainable development and has been/is adopting various measures to improve the energy utilization efficiency and decrease the pollution as well.

Figure 3. Primary Energy Consumption, 1980 -1993



Source: Lawrence Berkeley National Laboratory (1996).

2. The Environmental Status in China

2.1 The Status

As described above, China is facing more and more pressure on natural resources and environment. The development intensity of natural resources and pollution discharge increased dramatically. The environmental pollution in urban areas is worsening, and is spreading to the rural areas, thus the scope of the damages on eco-system is increasing and is very serious. In many areas, the environmental pollution and ecological degradation has become the important constraint for local development, and further impact on the human health as well as the social stability.

Pollution in urban areas is serious. About 78% of the water quality at the river sections running through the cities exceed the third class standards which can not meet the requirement for drinking water. Over 50% underground water in cities has been polluted to various degrees. Beijing, Shenyang, Xi'an, Shanghai and Guangzhou were listed as the top ten polluted cities among 50 big cities in the world regarding the atmosperic monitoring. Only 1% of cities can meet the first class of air quality standards. In addition, most of the big cities in China are suffering from the tail gas pollution produced by vehicles. About 700 million tons of solid waste is generated by industry and domestic annually, with the total accumulated stock of 7 billion tons. In some places the hazardous waste has become the key hidden trouble for having not been disposed appropriately.

Water pollution is still worse. Nearly half of the river sections in the seven water systems of China are polluted. The eutrophication in lakes, rivers and reservoirs is getting serious, typically at Tai Lake, Cao Lake and Dianchi Lake. In some areas water pollution accidents frequently happened, such as the Huai River, people lacks of safe drinking water and the disputes concerning water pollution increase dramatically.

Acid rain area is increasing. The area of acid rain in China accounts for one third of the total land area and is still increasing. The rain in Changsha, Ganzhou, Chongqing, Liuzhou is generally acidic, with the pH value lower than 4 and sometimes about 3.

The eco-system is degrading. Desert and sandy soil occupy 17.6% of the total land area and increase about 2400 square Km a year. About 15%--20% of animals and plants species are threatened.

Impacts on human health and other economic loss. The World Bank estimated that the economic losses caused by air and water pollution is about US$54 billion a year, which accounts for 8% of the GDP (World Bank 1997). The poisoning symptom arises for the workers and the surrounding residents in the places where mercury and arsenic are smelted by means of local methods. In some heavily polluted towns and villages, the probability of cancer is several times and even 10 times higher than the average level of the country.

2.2 The Underline Reasons

Although there are many objective factors (driving forces) influencing the degree of environmental degradation, the underline reasons can be categorized as market and policy failure. 1) the price of goods and services do not reflect the real economic costs; 2) decision makers might ignore the environmental protection and to pursue economic growth on the prices of environment and natural resources; 3) the extensive production pattern have not been changed; 4) the enforcement of existing law and regulation, policies; 5) the expenditures on environmental protection and natural resources conservation are not enough.

3. China's Practice for Achieving Sustainable Development

China's modernization is a long-term process with the consideration of population, environment, resources and food security. Comparing with other industrialized countries, China has to face the different challenge. 1) the lower average resources share at per capita basis; 2) the international markets basically has no rooms; 3) the huge size of population; 4) lower production technology level with lower capacity for natural resources development and utilization.

Therefore, China has to seek for a development mode different from that of other countries, and the main idea can be described as: 1) production system with low resources consumption; 2) living system with considerable consumption; 3) economic system with the considerable growth rate and economic benefits; 4) social system balancing the efficiency and equity issue; 5) practical technology system suitable to China's situation; 6) more opening international economic system; 7) reasonably development and utilization of resources and environmental protection.

Based on the idea of sustainable development, China adopted various actions.

3.1 Strategies and Policies Made

China issued "Ten Strategy for Environment and Development" right after the Rio Conference (UNCED) and advocated implementing the sustainable development strategy. In March 1994, the State Council released "China's Agenda 21", which is the first agenda 21 at national level in the world. It involves the general framework for the strategy, policies and action plans. Ministries concerned and some of local governments have also formulated their own action plans for implementing the sustainable development strategy accordingly, such as Environmental Protection Agency, Ministry of Forest, Benxi City at Liaoning Province, Changzhou city of Jiangsu Province, Luliang City of Yunnan Province. The "Ninth Five-Year Plan for National Economy and Social Development and Outline of Far-future Objectives in the Year 2010" released in March of 1996, defined the sustainable development as the key strategy for China's economic and social development (see table 1).

Table 1: Strategy, Scheme and Plans Related Implementing Sustainable Development

No.	Name	Approving Agency and Date	Main Contents
1	Ten Strategy for China's Environment and Development	Central Committee of the Party, State Council, Aug. 1992	A guideline for China's environment and development
2	China's Environmental Protection Strategy	NEPA, State Planning Commission, 1992	A policy document about the environmental protection
3	China's Country Program for Ozone Depleting Substances Phase Out	State Council, Jan. 1993	A detail plan for implementing Montreal Protocol
4	Action Plan for China's Environmental Protection (1991-2000)	State Council, Sep. 1992	A ten-year action plan for environmental protection at various areas
5	China's Agenda 21	State Council, Mar. 1994	White book on China's population, environment and development
6	Action Plans for China's Biodiversity Conservation	State Council, 1994	Action plans for implementing Biodiversity Conservation Convention
7	China: issues and options for GHG emission control	NEPA, State Planning Commission, 1994	List of GHG emission, mitigation cost, and policies
8	China's Agenda 21 for Environmental Protection	NEPA, 1994	Agenda 21 at ministry level
9	China's Agenda 21 for Forest	Ministry of Forest, 1995	Agenda 21 at ministry level
10	China's Agenda 21 for Marine Resources	National Ocean Bureau, 1996	Agenda 21 at ministry level
11	Ninth Five-year Plan for Environmental Protection and the far future objective	State council, Sep. 1996	Guideline document for environmental protection in the following 5 and 15 years
12	Cross-century Green Projects	State Council, Sep. 1996	Detailed action plan for implementing 9th-5 year plan
13	National Total Emission Control for Major Pollutants	State Council, Sep. 1996	National plan for reduction of pollution discharge during 9th -5 year plan period

3.2 Integrating the Sustainable Development into the "Plans"

Since the "plans" in China is quite powerful to be implemented, most of the projects listed in China's Agenda 21 has been integrated into the National 9th-5 Year Plan. President Jiang Zhemin emphasized at the 4th national environmental protection conference held in July of 1996, that "must to pay attention to the implementation of sustainable development". He also advocated in 1997 that "governments and departments concerned at various level must integrate the environmental protection objectives into annual, short and mid-term plan for economic and social development. The environmental protection measures must be considered while determining major construction projects. Studies must be conducted for environmental protection while developing region and natural resources. ..... Integrated decision making for environment and development must be in a scientific way".

3.3 Two Major Measures

During the 9th-5 year plan period, China's government is emphasizing the "3 rivers" (Huai River, Hai River and Liao River), "3 lakes" (Tai Lake, Dianchi Lake, and Cao Lake), "2 regions" (acid rain and SO2 pollution control areas), and the pollution prevention and control at key cities. By the year of 2000, Huai River, Tai Lake and Dianchi Lake should "have clear water", and the water quality of Hai River, Liao River and Cao Lake should be improved. By the end of 1997, all the industrial pollution sources should compliance the emission standards at Huai River basin.

In order to integrate the environmental protection into the "plans" and to achieve the objectives set up by 9th-5 year environmental protection plan, NEPA has issued two major policies, National Total Emission Control for Major Pollutants during 9th-5 year plan period, and Cross-Century Green Project (first phase).

National Total Emission Control for Major Pollutants. China has set up the total emission control plans for about 12 pollutants which damage environment most and the total emission amount should be at the level of that in the end of 1995. All the key regions and basins for pollution control and treatment should control the total emission amount and subject to reduction. All the enterprises are required to compliance the discharge standards.

Cross-Century Green Project (first phase). It is a very detail project plan for achieving environmental protection objectives. It requires ministries, local governments and enterprises to implement engineering projects at key regions, basins as well as aiming the major environmental problems and implementation of international conventions committed by Chinese government. It was projected that after the implementation of the first phase of Green Project, 1) for the 7 river basins, newly increment capacity for municipal centralized waste water treatment can be reached to 17.99 million tons/day, the COD will reduce 3.37 million tons a year. 2) for the 3 lakes, newly increment capacity for municipal centralized waste water treatment can be reached to 1.04 million tons/day, the COD, TN and TP will reduce 0.29 million tons, 29300 tons, and 3200 tons a year respectively. 3) for key coastal cities, newly increment capacity for municipal centralized waste water treatment can be reached to 1.04 million tons/day, the COD will reduce 0.30 million tons a year. 4) for the SO2 pollution control and acid rain control regions, and air pollution control areas at major cities, newly incremental capacity for flue gas desulfurazation can be expanded to 9.3 million KW of power plants; central heating area will reach at 240 million m2; to reduce SO2 1.8 million tons a year; harmless treatment of municipal domestic waste will reach at 16 million tons a year while recycle and reuse of industrial solid waste about 40 million tons a year. 5) 100 eco-counties and cities demonstration projects will be established with the eco-demonstration area about 15 million ha.;50 demonstration projects will be conducted for TVEs (township and village enterprises); newly incremental natural protection area is about 20 million ha.; about 33300 ha area will be reforested; about 17.3 ha of sandy land will be treated and about 73000 ha of land will be recovered.

3.4 Increasing the Environmental Investment

There are 1591 projects listed at the Cross-century Green Projects (first phase) with the total capital demand of 188.8 billion RMB. The total demand for pollution treatment

investment from 1996-2000 is about 45 billion RMB (1995 price) which is about 1.2% of the GDP.

Beijing, Shanghai has planed to invest in environmental protection about 3% of the GDP, Tianjin is about 2% and 1.5% for Jiangsu and Guangdong provinces. Shanxi and Shannxi will finance about 30 to 40 million RMB a year for environmental pollution prevention and treatment. Huai River, Jiangsu and Shanxi have established the pollution prevention fund.

3.5 Economic Policies

Market failure is a source of environmental degradation, therefore, to design and implement environmental economic policies can correct the market, policy and institutional failure in a great degree. By 1996, China has issued about 23 economic policies for environmental protection and resources conservation (see Zhang Shiqiu 1997). "Decision of the State Council on Some Issues about Environmental Protection (1996)" requires "to establish economic compensation system for recovering eco-environment and the fund raising mechanism for pollution control; to increase the pollution levy standards following the principle that the pollution charges should be higher than the treatment cost, and to guide the enterprises to implement clean production strategy and technology", and so on. China is making and implementing soon economic instruments for uses of lead added gasoline, CFCs, Halon and other chemicals. China is on the way to strengthen introduction and use of economic instruments to regulate environment and natural resources.

3.6 Strethening Regulation Enforcement

China has issued "Environmental Protection Law" and other 6 specific environmental laws, and 9 laws related to environmental protection and natural resources conservation. Over 20 of administrative regulations and over 370 environmental standards at national level and over 600 local environmental regulations have been issued by end of 1996. In March of 1997, National People's Congress has approved the revision of Criminal Law which "crime against protecting environmental resources" was newly added in the law.

The enforcement of Temporary Regulations for Water Pollution Prevention and Control at Huai River Basin has made great progress. Four provinces concerned (Henan, Anhui, Jiangsu, and Shandong) jointly took actions. By January 1 of 1998, about 1111 small paper mills with the capacity lower than 5000 tons, and 3876 enterprises defined and belonged to "15 types of small enterprises" has been closed. Among 1562 enterprises with the waste water effluent capacity of 100 tons a day, 1139 polluting enterprises has finished the pollution control facility installation and can compliance the effluent standards; 215 enterprises are installing equipment while stop production. All the measures produced great impacts, which reduce 40% of the pollution load of the river basin.

Another major action adopted by the Chinese governments is that to close "15 types of small enterprises". According to the "Decision of the State Council on Some Issues about Environmental Protection (1996)", China should stop, close 15 types of small enterprises which were heavy polluting. It was decided that 48000 those small enterprises should be close or stop production before September 30 of 1996. By the end of January of 1997, about 60275 small enterprises has been cancelled, stopped, or closed.

3.7 Public Participation

Since 1993, Environment and Resources Conservation Committee under National People's Congress, NEPA and other Ministries concerned jointly launched China's Environmental Protection Campaign. It promotes the public participation by using the media forces. The Guidelines for Environmental Training and Education Actions promoted by NEPA, State Education Commission is implemented countrywide. About 135 universities have set up the disciplinary of environmental sciences and some of the middle and primary schools have also had environmental education programs. It worthies to mention that in January 1 of 1998, the Weekly Report on Urban Air Quality in Major Cities was published, which will improve the environmental awareness of the public greatly and which will enforce the local and central government to take actions to protect the environment.

4. Conclusion Remarks

China is facing great challenges and opportunities to achieve a sustainable society. Whether the government intervenes the environmental protection and resources conservation process correctly and takes actions properly will have great implications. Although the government has taken many actions, there is still a long way to go. Furthermore, some major obstacles do existed and need more hard works.

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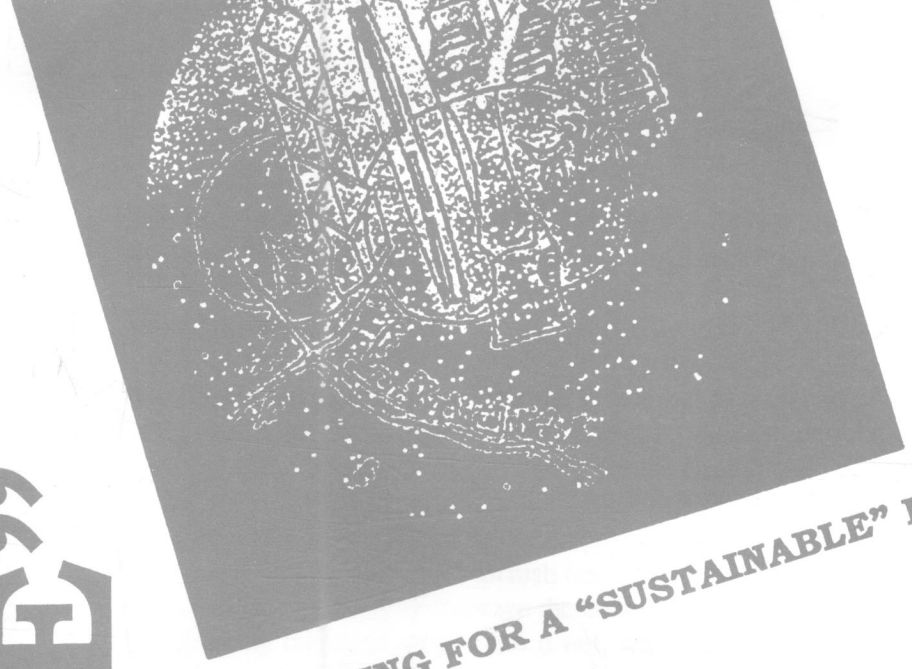

PLANNING FOR A "SUSTAINABLE" HONG KONG

"SUSTAINABLE"

Sustainable Development : Who's Got It Right?

Mr. Andrew McNAB

SUSTAINABLE DEVELOPMENT - WHO'S GOT IT RIGHT?

Andrew McNab - Director of Planning and Environment, Scott Wilson

Introduction

Sustainable development has become something of a "mantra." Everyone supports the concept of sustainable development, everyone wants to be seen to be practising sustainable development. Nearly everyone can quote the Brundtland definition that sustainable development is "development which meets the needs of the present whilst not compromising the ability of future generations to meet their needs." This was neatly, if inelegantly summarised by a British Secretary of State as "not cheating on your kids." However, in this rush to embrace the concept, are we all embracing the same concept, are we pursuing the same goal? And if not, who's got it right?

In essence, sustainable development calls upon us all to be unselfish, to have regard in all our actions for the consequences: for the environment, for our fellow men, and for generations to come. And having considered those consequences, to refrain from any action that is going to be harmful to the environment, our fellow men or future generations.

Can we realise this state of grace, this virtuous model of behaviour? Can man behave unselfishly? Does capitalism with its quest for quick profits inhibit our ability to act unselfishly? Do the great world religions encourage us to behave unselfishly, to consider the consequences of all our actions? I want to explore the answers to these questions by looking at how the noble concept of sustainable development has been interpreted and applied in different parts of the world. Then I want to return to the concept, its practical implications and the role of planners.

Sustainable Development in Australia[1]

Australia is a large, resource-rich country with, for its size, a modest population. It has achieved wealth largely through the fairly unrestricted exploitation of its natural resources. Australia quickly and enthusiastically embraced sustainable development, producing a national strategy in 1992, and thereafter annual monitoring reports. All this information is helpfully provided on the internet.

It is noteworthy that Australia has always referred to *ecologically* sustainable development, stressing the environmental aspects of sustainable development. Australia's strategy is a substantial document divided into two major parts. The first deals with key sectors, viz agriculture, fisheries, forestry, manufacturing, mining, urban planning and transport, tourism and energy. The second section deals with so-called cross-sectoral issues and mechanisms such as biological diversity, native vegetation, environmental impact assessment and pricing and taxation.

Turning to the mining sector for example one finds the following:

"The strategy seeks to ensure the existence of sound environmental practices throughout the mining industry, appropriate community returns from mineral resources, effective community consultation and improved performance in occupation and health."

This is all well and good, but perhaps rather a modest target in terms of protecting mineral resources for future generations.

More positively the strategy does contain some sensible and even, in context, radical proposals. Thus, there are proposals to improve catchment management planning to protect water and soil resources. There are also proposals to increase residential densities to reduce travel. The progress reports note that in New South Wales densities in new developments have been raised from eight to eleven dwellings per hectare.

Sustainable Development in the Pacific Islands[2]

By contrast, we may consider sustainable development in the context of the Pacific Islands. Here, rather than a large, resource rich, developed country, we have a collection of small, remote, economically dependant and ecologically fragile islands. Indeed, some of these islands, because of changes in sea level, could be the first to experience the catastrophic impacts of our failure to realise sustainable development.

In 1994 the Pacific Islands issued the Suva Declaration on *human* sustainable development. This calls for:

- improved rural and subsistence productivity
- promotion of participatory and community based development
- improved access to land
- expanded employment opportunities for rural/subsistence sectors
- reduction in spatial inequalities, particularly urban-rural disparities
- advancement of women
- expanded involvement of youth in development
- support for population policies and programmes
- support for environmental regeneration
- promotion of preventative and primary health care
- greater relevance in formal and informal educational systems
- effective governance
- greater resources for human development
- enhanced ability to monitor the human development situation

Of these 14 objectives, only one specifically refers to the environment. This, then, is a very different agenda to that in Australia, a development programme which seeks to address poverty and promote economic and social welfare. The emphasis is on development, particularly on human resource development, on poverty alleviation and social equity rather than natural resource conservation.

So it is immediately apparent that sustainable development is being interpreted very differently in different places and this is leading to very different programmes. Lest you think I have selected these two examples to make a point, let us look at one other example - the United Kingdom.

Sustainable Development in the United Kingdom[3]

The United Kingdom is a relatively small island with a large population and a highly developed, export-oriented economy. It has experienced rapid change as a consequence of economic restructuring in a relatively free market. The UK Government eager to display its environmental credentials published no less than four strategies following the Rio Summit, on Sustainable Development, Biodiversity, Climate Change and Sustainable

Forestry. Like Australia, the Sustainable Development Strategy takes largely a sectoral approach. There are elaborate lists of proposed actions, many of which are quite modest.

However, the UK Government's definition of sustainable development is interesting. It describes sustainable development as a way "of reconciling the two basic aspirations of society:

- achieving economic growth to secure rising living standards of living now and in the future
- protecting and enhancing the environment now and in the future."

The Strategy goes on to suggest that "Sustainable development does not mean turning our backs on growth, but ensuring that the price of growth does not become an intolerable burden for future generations." Whilst the first phrase must be true, the second stretches the concept somewhat. We may use resources as we will, provided that we do not place an "intolerable" burden on our successors, or to plagiarise the Secretary of State "not cheating on your children so that they'd notice."

Observations

I could and would like to extend this analysis, but time does not allow. Does it matter that sustainable development is interpreted differently in different countries? Is this political perversion of a noble concept or is it merely a sensible adaptation of the concept to local circumstances.

When the Hong Kong Government let its recent study on sustainable development many of us spent many hours debating whether Hong Kong could ever truly be sustainable? But this brings us back to definitions and to the essence of sustainability. What is the core of the concept and what must planners do to realise sustainable development? We need to be a bit more scientific than not cheating on our kids.

The essence of sustainable development

At the beginning of this talk I expanded to Brundtland definition to suggest that sustainable development requires us to have regard in all our actions for the consequences: for the environment, for our fellow men, and for generations to come. And having considered those consequences to refrain from any action that is going to be harmful to the environment, our fellow men or future generations.

So the impact on the environment must first be defined. The environment consists of resources, and there are different types of resources. There are renewable resources and there are non-renewable resources. Trees and forests are renewable resources, in essence we can cut them down or burn them, but eventually, albeit in time, they will renew themselves. Coal and oil are non-renewable resources, once used, they are gone. To realise sustainable development we must use renewable resources within their capacity to renew themselves and we must use non-renewable resources - well, sparingly!

Similarly, the impact on our fellow man must be defined. Sustainable development is also development which promotes equity - social equity. Sustainable development should contribute to alleviating poverty and should not impose undue costs upon any particular segment of society. In the jargon of sustainable development this is intra-generational equity.

There is also the issue of inter-generational equity, or "not cheating on your kids." Sustainable development is development which hands on to future generations the same stock of natural resources that we inherited and a planet that is no more polluted and no more degraded than when we were born.

This then, in my view, is the essence of sustainable development. It is a noble and exacting goal and it will not easily or rapidly be achieved. It calls for a continuing process, for the development of a new framework for decision-making, for a new set of goals.

Who's got it right?

So returning to my three examples, who's got it right? The Australian approach to sustainable development is workmanlike but perhaps lacks the big picture, a radical "root and branch" approach or much on social equity. Its policies on the use of non-renewable resources, especially mineral resources seem rather modest. The Pacific Islands approach is strong on social equity but weak on resource conservation. The UK strategy is pragmatic, again weak on the big picture, strong on the minutiae, and again a little weak on resource conservation and social equity.

So, perhaps predictably, I am not sure that anyone has yet got it right. But, to be more helpful, what are the key components of planning for sustainable development? I'd like to suggest four essentials. First, there is a need for vision. Such a vision can facilitate understanding of this complex concept and can provide the "big picture." In a pioneering study in the Scottish Borders we set out to describe a sustainable society, to identify how a sustainable town might look and feel, how different it might be.

Secondly, the process of working towards sustainable development must be inclusive. In talking about social equity, the exploitation of natural resources and the like, we must include all elements of the community. There must be dialogue and there must be debate. In Nigeria we used role-playing to encourage different interest groups to appreciate each other's views in the management and use of the tropical rain forests. The group adapted so well to their new roles that we almost provoked a riot!

Thirdly, the achievement of sustainable development must challenge accepted conventions related to development, resource use and social equity. It is not a convenient way of retitling and regrouping existing development programmes. Neither can any and all development be made sustainable by appropriate mitigating measures. Although our concepts of physical carrying capacity and the limits to growth need frequent revision to accommodate technological innovation, this is no reason to abandon these concepts. Whilst politicians and developers may wish to depict themselves as acting sustainably, it is for planners dispassionately to consider what is sustainable.

Fourthly, we need to think more, in the more affluent societies, about the quality of life and how we measure it. It has been argued that Hong Kong enjoys a per capita income similar to Switzerland but does not enjoy a comparable quality of life. Planners need to be a position to measure quality of life and to answer such questions. There will be times when realising sustainable development means saying "no" to development.

Conclusions

Town planning arose from a passionate desire to rid the new industrial cities of some of their social and environmental evils. In less passionate times it became a rational process for allocating land uses and ensuring adequate infrastructure. Sustainable development offers a new goal for planning, a way of re-invigorating our profession. As the report on European sustainable cities stated, sustainable development "must be planned for ... market forces alone cannot achieve the integration of environmental, social, cultural and economic concerns."[4] I urge you to raise your head above the parapets and "imagine" and then create a sustainable Hong Kong

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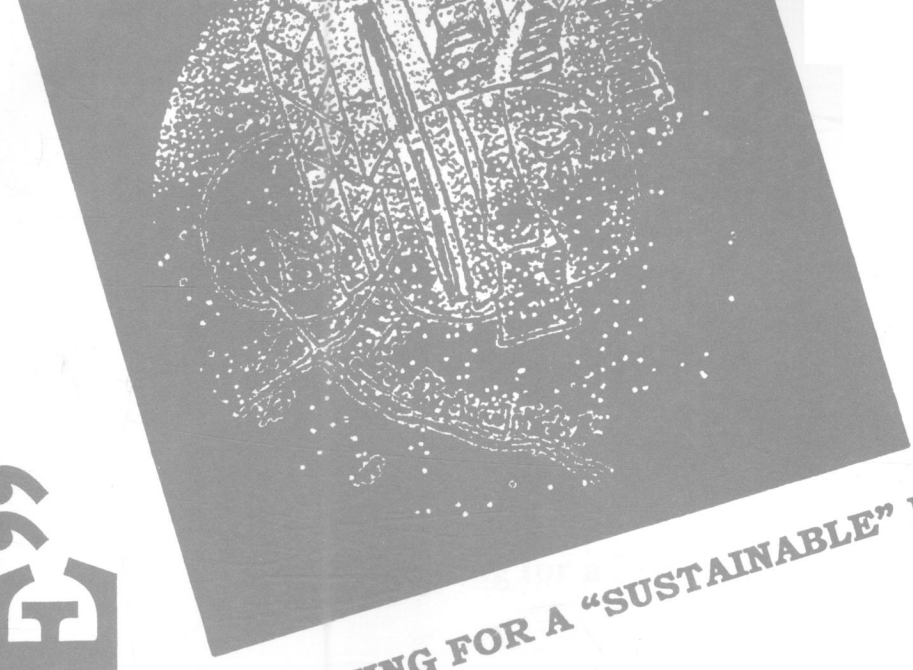

PLANNING FOR A "SUSTAINABLE" HONG KONG

"SUSTAINABLE"

The Rise and Fall of Sustainable Development

Professor Peter HILLS

Planning for a Sustainable Hong Kong

The Rise and Fall of Sustainable Development

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Introduction

> In 1798 Thomas Robert Malthus inaugurated a grand tradition of environmentalism with his best-selling pamphlet on population. Malthus argued with impeccable logic but distinctly peccable premises that since population tended to increase geometrically (1, 2, 4, 8....) and food supply to increase arithmetically (1, 2, 3, 4....) the starvation of Great Britain was inevitable and imminent. Almost everybody thought he was right. He was wrong. (The Economist, 20 December, 1997: 19)

It is perhaps appropriate to start a paper on sustainable development with a reference to Malthus, since, in terms of the development of modern environmentalism, he has left an indelible mark on the way that we think about many environmental issues. The purpose of my presentation is not, however, to debate the merits of Malthusian thought, but to raise some questions with you concerning the concept of sustainable development. I have chosen a deliberately provocative title for my talk, primarily because I feel that on too many occasions the basic principles of sustainable development are accepted in an unquestioning manner as though they represent a set of universal truths that are simply to be taken as given. Thus, when we talk of sustainable development, we assume that we all know what we are talking about. But do we?

In more practical terms, I also believe that we may already have reached the peak in terms of interest in, and commitments to, sustainable development. The Kyoto Conference on global climate change, for example, was hardly a victory for advocates of sustainable development, despite all the window dressing. The recent multi-billion dollar IMF bail out packages to Indonesia, Thailand and South Korea dwarf the funds made available through the post-Earth Summit Global Environmental Facility, and little, if anything, is being said about repositioning these economies to pursue a more sustainable development path.

In this presentation, I shall point to some concerns, which, I believe, may threaten the viability of sustainable development as the guiding paradigm for the 21st

century, namely:

- that sustainable development has been oversold as a solution to the problems of disharmonious development
- that there has been a widespread failure on the part of decision makers, planners, and international agencies to appreciate the complexities of the concept
- that there has been an excessive preoccupation with the environmental dimensions of sustainability, which has distracted attention away from other key elements of the concept, particularly those of a more radical political nature
- that there has been a marked failure to move from theory to practice in the pursuit of sustainable futures
- that the credibility of arguments for a sustainable future may have been seriously undermined by the apparent linkages between the concept and the positions adopted by those labelled as "eco-doomsters"
- that the current resurgence in arguments favouring a technocentric approach to environment-development problems may prove especially threatening to the concept and practice of sustainable development

Over the past ten years, I have given numerous lectures and talks on the topic of sustainable development. I have also written quite a number of papers which deal with various aspects of sustainability. Like a growing number of academics and professionals working in the environmental field, I have found it increasingly difficult to escape from the intellectual shackles imposed by the almost universal adoption of the concept of sustainable development as **the** paradigm within which to investigate relationships between development and the environment.

This has also fostered a growing scepticism on my part that sustainable development is indeed the answer to all our problems. It has led me to question whether many of the advocates of sustainable development actually understand the key

dimensions of the concept, and their implications. The enormous academic and professional literature in the field provides few insights into the nature of realistic, achievable policies for sustainability at the societal level. Certainly, there are many contributions that demonstrate how the environmental performance of different sectors can be enhanced in the name of greater sustainability. But many of the basic proposals are hardly new, and simply represent a recycling of broadly accepted ideas that were current in the late 1970s and 1980s. Many of these ideas originally emerged in the wake of the second major oil price shock following the revolution in Iran, this being especially so in the case of energy conservation and efficiency measures. Furthermore, much of what has been proposed interprets sustainable development in a very narrow environmental sense, and basically calls for little more than an intensification of existing efforts in environmental protection and management.

After almost twenty years since the idea first emerged in the World Conservation Strategy (1980), and with ten years of wide exposure to the concept of sustainable development (i.e., post-Brundtland Report), its elaboration at the Rio Earth Summit (1992) and at numerous follow-up conferences, and in Agenda 21, we seem to have made remarkably little progress in addressing the substance of the matter. Let me make it clear that this does not mean that I believe sustainable development is a worthless concept. However, I do subscribe to Beckerman's view that the debate about sustainability has been characterised by a failure to distinguish between technical aspects of sustainability, and a moral injunction to pursue a sustainable development path (Beckerman, 1995). Thus, while it may well be useful to apply the concept of sustainability to describe the technical characteristics and behaviour of human and natural systems, this should be distinguished from moral judgements about the desirability of framing sustainability as a constraint on the future paths that we pursue. And we should certainly question whether a future based on the principles of sustainable development is the only option open to us.

Perhaps our experiences thus far demonstrate that while certain dimensions of sustainability may have a broad appeal to decision makers and the public in many parts

of the world, other aspects do not. While there is certainly enhanced concern about the state of the global environment and many national environments, this concern is often highly focussed on a limited range of (environmental) issues, and does not extend to asking fundamental questions about the nature of development itself. Furthermore, if we were ever in any doubt about environmental relations between the industrialised nations and developing economies then the Kyoto Conference must have dispelled these. The message from Kyoto could not have been clearer. The industrialised nations, for the most part, will not give up any of the economic benefits and advantages they have grown accustomed to. Developing economies will not reshape their aspirations and expectations regarding the living standards that they wish to achieve. Industrialised nations are very unlikely to underwrite the costs of assisting developing economies to move to more sustainable development paths.

Many of the problems and issues associated with sustainability are, in my view, related to a fundamental failure to appreciate the wide-ranging nature of the concept itself. A brief summary of the main points raised in the Brundtland Report (WCED, 1987) would be a useful starting point.

Towards Sustainable Development: The Brundtland Commission View

Many of you will be familiar with the Brundtland Report. In a rare departure from the established protocol at conferences on sustainable development, I shall not even refer to the oft-quoted definition of sustainable development contained in the Report. It is, of course, but one of many.

The key points that I wish to draw your attention to concern the critical objectives (or strategic imperatives) for environment and development which, the Commission argued (p.49), followed from the concept of sustainable development, namely:

- reviving growth
- changing the quality of growth
- meeting essential needs for jobs, food, energy, water and

sanitation

- ensuring a sustainable level of population
- conserving and enhancing the resource base
- reorienting technology and managing risk
- merging environment and economics in decision making

The Commission then continues by recasting these objectives in terms of a set of requirements that must be met to pursue sustainable development (p.65), namely:

- a political system that secures effective citizen participation in decision making
- an economic system that is able to generate surpluses and technical knowledge on a self-reliant and sustained basis
- a social system that provides for solutions for the tensions arising from disharmonious development
- a production system that respects the obligation to preserve the ecological base for development
- a technological system that can search continuously for new solutions
- an international system that fosters sustainable patterns of trade and finance
- an administrative system that is flexible and has the capacity for self-correction

When expressed in these terms, it can immediately be seen that sustainable development is a concept that extends well beyond simply reducing pollution and conserving natural resources. It is, in fact, a quite radical political agenda for change, something that becomes much clearer in Agenda 21 itself (United Nations, 1993). What is interesting, however, is that political leaders around the world have, for the most part, ignored these broader implications of sustainable development (e.g., participation and empowerment), and have chosen to focus on the environmental

dimension, thereby reinforcing an interpretation of the concept that has become almost doctrinaire.

At the core of debates about sustainability has always been the issue of the relationship between economic growth and the environment. As Pearce *et al* (1989: 19) observe:

> In the 1970s it was familiar for the debate about environmental policy to be couched in terms of economic growth versus the environment. The basic idea was that one could have economic growth - measured by real per capita incomes - or one could have improved environmental quality. Any mix of the two involved a *trade-off* - more environmental quality meant less economic growth, and vice versa.

As Hayward (1994:96) comments:

> This analysis led to a polarization of views which was not entirely helpful, according to Pearce, for whilst environmental 'doomsters' overstated the negative relationship between economic growth and environmental quality, their opponents, who claimed a potential complementarity between growth and the environment, tended to understate the potential for economic change to damage the environment.....This stalemate has been overcome, economists like Pearce claim, by shifting the focus of debate on to sustainable development. This allows a more constructive and nuanced approach to the problems already broadly identified.

One important point that often seems to be overlooked is that 'development' is a value-laden term. It is about the quality of life: it is about ideas and aspirations, and also what constitutes a good society. It is about much more than simply growth. It is about progress or improvement (Hayward, 1994). Thus, it is also visionary in nature. Hence, its concern with the future, with inter- and intra-generational equity and the allocation of resources.

Carley and Christie (1992) identify three major world trends which make it even more important that we appreciate and understand the political and ideological context

of environmental management and sustainability. The first of these is the seemingly irresistible force of industrialization, which has now spread over almost the entire globe. The second is the demise of socialism in Eastern Europe and the reaffirmation, but not necessarily the vindication, of capitalism as the dominant economic system. The third is the spread of western consumerist culture. As Carley and Christie (1992, p.60) comment:

> There is no consensus on what sustainable development will look like as a 'product': whether it is reconcilable with continuing, albeit modified forms of economic growth, or whether it ultimately demands a 'steady state' economy.....Movement to a sustainable development path in industrial and industrializing countries will be a political, not just a technical process. It can be seen as a continuing process of mediation and trade offs between different goals and aspirations; it cannot be divorced from wider issues of political culture, values and social tensions.

The Viability of the Concept of Sustainable Development

We have now been exploring and evaluating the concept of sustainable development for some ten years and as we move towards the new millennium the concept continues to command considerable attention. On the one hand, its application is being promoted through the UN's Commission on Sustainable Development established after the 1992 Rio Conference on Environment and Development, and many countries have made progress towards the formulation of national sustainable development strategies to be submitted to the Commission. However, as I have also argued, many of the policies proposed in such documents appear to represent little more than a continuation or intensification of existing environmental management and pollution control measures, and many are particularly weak in the area of specifying appropriate measures of sustainability.

The concept of sustainable development has however started to receive much more rigorous scrutiny from both academics and practitioners alike. A body of opinion

is emerging which argues that the essence of sustainable development, that is, the maximization of welfare where environmental goods are but one part of the total package of goods, is no different from the long established principles of welfare economics. Furthermore, there has been a pronounced move away from the absolutist concept of sustainable development (i.e., 'strong' sustainability) to a 'weak sustainability' position, which allows for substitutability between different forms of natural capital and man-made capital provided, that on balance, welfare does not decline. However, it should be noted that some forms of natural capital (e.g., endangered habitats and species) cannot be readily substituted. Nonetheless, the point made by critics such as Beckerman (1995) is that by allowing for substitutability, the "independent" usefulness of the concept of sustainability has been effectively undermined. As he argues (1995, p.129):

> For if the choice between preserving natural capital and adding to (or preserving) man-made capital depends on which makes the greater contribution to welfare the concept of sustainable development becomes redundant. In the attempt to rid the original 'strong' concept of sustainable development of its most obvious weaknesses the baby has been thrown out with the bath water. For it appears now that what society should aim at is not 'sustainability', but the maximisation of welfare.

For Beckerman, the original concept of 'strong' sustainability was morally repugnant because the prescription was highly interventionist and authoritarian.

A growing number of critics are also perturbed by the problems surrounding the definition of sustainability measures, while others express dismay at the almost inevitable dissonance that exists between the life style changes required to achieve greater sustainability in affluent, industrialized societies, and human nature (i.e., few individuals are willing to relinquish the "benefits" of the levels of development already achieved and, similarly, few in developing countries would wish to see their own aspirations frustrated by foregoing improved living standards).

Indeed, in recent years one has observed a backlash against various forms of

environmentalism in Western societies reflected in the increasingly strident attacks mounted by those opposing what they regard as excessive environmental regulation, and by those who feel that environmental groups have often exaggerated the negative environmental impacts of various well-publicized episodes.

However, the key attack on the sustainability position is coming from technocentrism, which, according to Tate and Mulugetta (1998):

> ....begins by taking the perspective that it is human well being and not the environment per se that should be the focus of concern (an issue often fudged in the literature on sustainability and a major departure from many 'green' perspectives). There are two main technocentric positions. A narrow view emphasises consumption and conventional methods of calculating GNP (the so-called 'Cornucopian' position), whereas some technocentrics acknowledge the role that the environment might play in enhancing well-being (and therefore accept the need for such things as 'green' accounting) but deny bioethical positions and calamity theories. This 'Accommodating' philosophy would, nonetheless, place emphasis on the two central tenets of technocentrism - markets plus technology.

Technocentrism is by no means a new perspective. It is epitomised in the response of Simon and Kahn (1984) to the pessimistic and ecocentric 'Global 2000 Report to the President' (US Government, 1980). Tate and Mulugetta (1998) suggest that many of the fundamental elements of technocentrism are to be found in Simon and Kahn, namely that:

- markets plus technology are the key determinants of past and future material advancement;
- the science of environmental pessimism is flawed;
- predicting future technologies and resource needs is a highly uncertain process in a world of rapid change, particularly since choice is involved;
- why impose costs on existing generations via attempts to protect the

interests of the unborn when the latter will not only be materially better off than us but also have access to vastly greater technological resources?

- the ecocentrics' definition of 'resources' puts great emphasis on 'natural' capital (much of which is actually man-made) and plays down the role of human capital;
- the degree of substitutability between 'true' natural capital and man-made capital is under-emphasised. This substitution process underpins economic growth and is a key component in accounting for the wealth of nations.

Tate and Mulugetta further argue that recent empirical studies on the relationship between economic growth and environmental pollution call into question the notion that extra output automatically equals more pollution. Evidence from a number of studies suggests the existence of an 'inverted U' curve (Figure 1) which reflects a situation in which pollution per capita rises as an economy moves through the primary/secondary stages of development, but thereafter declines as it makes the transition to the tertiary development stage. This process is facilitated by increasing awareness of environmental problems, technological change which results in less polluting capital equipment, and social pressure for a cleaner environment. While turning points for different types of pollutants vary, and may be difficult to define in some cases, it does seem that the 'inverted U' holds for many forms of air and water pollution. It would be interesting to establish just where Hong Kong stands with respect to some of these measures.

There is much more that can be said about the technocentric position but I simply wanted to give a flavour of the kinds of arguments that are now being mustered to attack the sustainability position.

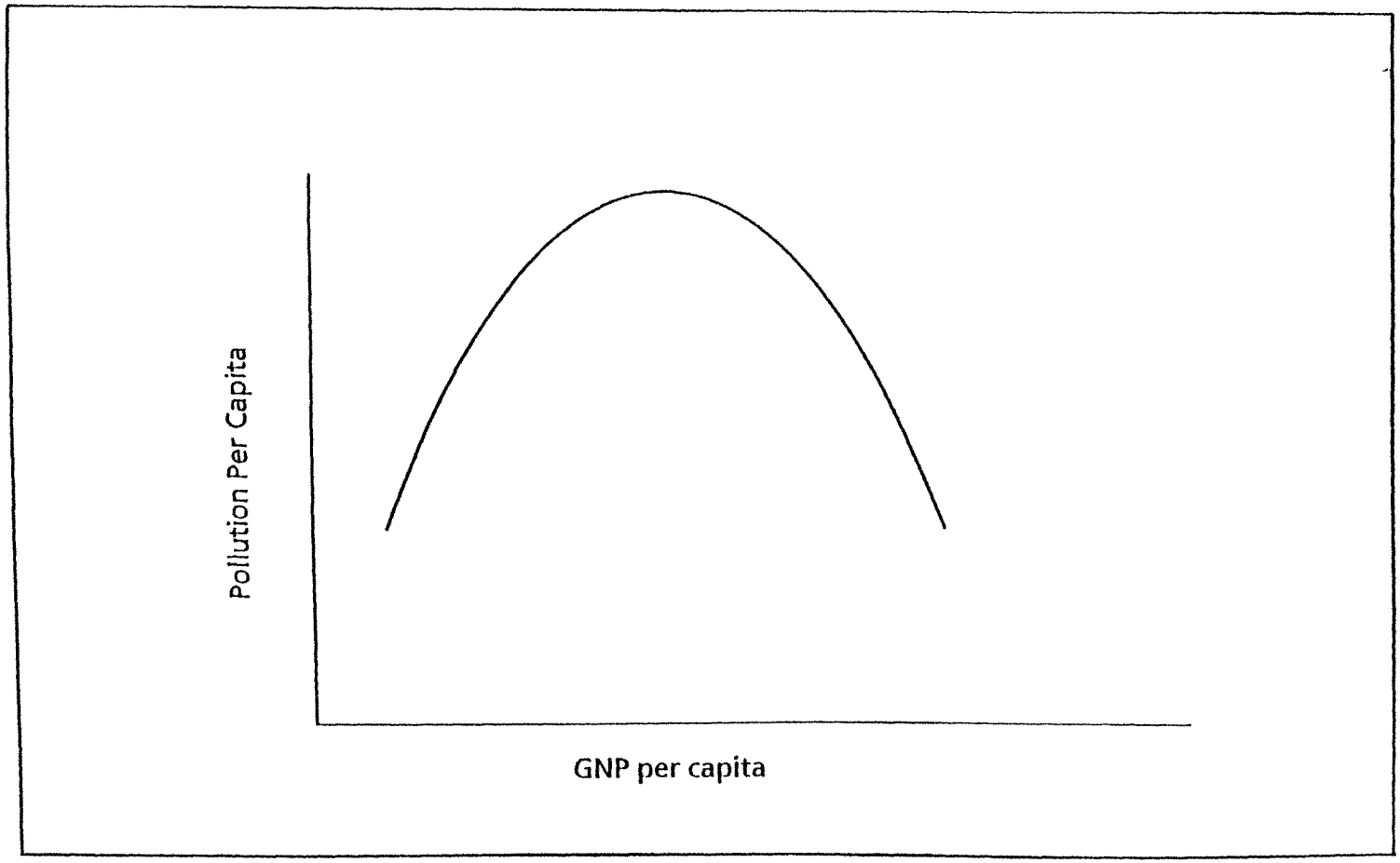

Figure 1. Rich Is Clean : The Inverted U
Source: Grossman, 1995, pages 19 – 44; Baldwin, 1995, page 61

Sustainability: is it relevant and workable in Hong Kong?

I do not propose to say too much about the concept of sustainability in the Hong Kong context as other speakers will be dealing with the issue in a later session. However, I would like to make a few general observations on the matter.

Hong Kong has come to sustainability relatively late in the day. To some, this represents a weakness, and is a reflection of certain shortcomings in our ability to keep up with the evolving international environmental agenda. I am less convinced of this than I was. Indeed, had Hong Kong visited sustainability in the early 1990s, then I doubt very much that significant progress would have been made in resolving how it could be integrated into the policy making process here. Developmental pressures have been especially intense throughout much of the 1990s (e.g., the Airport Core Programme) and it is difficult to envisage a lengthy debate ensuing about whether such development projects are desirable from a sustainability viewpoint.

It is, of course, debatable whether Hong Kong, at least in its modern form, has ever been 'sustainable'. Hong Kong's existence and its success reflects the ability of a small, open economy to add value to products and services through its human resources. As we know, its natural resource base is limited, but Hong Kong's ecological footprint is far more substantial, extending as it does across much of the region and elsewhere in the world. Some interesting work on ecological footprints has been carried out in various countries (Wackernagel and Rees, 1996). The ecological footprint of London, for example, is 120 times the land area of the city. This is the area required to supply London's environmental needs. The Netherlands has an ecological footprint 15 times larger than Dutch territory itself. This pattern of ecological deficits is repeated among most of the industrialised nations, and even where there are apparent surpluses (e.g., Australia and Canada), a significant part of these may be incorporated into the footprints of other countries via the international trading system. This appropriation of ecological surpluses (which might also be seen as the carrying capacity of other countries) is what actually sustains large cities and the industrialised economies. Hong Kong is no exception. It appropriates resources from elsewhere -

much of these come from other parts of China. This process of appropriation does not simply extend to natural resources such as water, fuels and agricultural land. It also extends to the appropriation of the absorptive capacity of the environment, where it manifests itself in problems of cross-border pollution (Hills, Zhang and Liu, 1998).

This is an interesting area to investigate in the case of Hong Kong, and it would perhaps bring home to us the extent to which we are dependent on other peoples' environments to sustain our society.

I have already referred to the problem of cross-border pollution and it is worth emphasising that this may present Hong Kong with some of its most important challenges in the coming decade. There is no doubt that our own environment is increasingly influenced by the changing environmental conditions in Guangdong Province, and perhaps even further afield in the Mainland. The initial task is to gain a clearer understanding of the nature and extent of the possible problems that may develop as Hong Kong is exposed to an increasing pollution burden that arises from sources outside its control. Then there is a need to develop appropriate institutional structures and policy responses, including the mobilisation of resources, to tackle these problems. Cross-border cooperation in the environmental field has been limited in the past for a variety of political and practical reasons. The barriers that have existed in the past must now be overcome, and greater attention given to the development of regional environmental management strategies for the Pearl River Delta and the coastal zone of central and southern Guangdong, including Hong Kong.

Cross-border pollution and environmental interactions between Hong Kong and Guangdong Province may represent an increasingly serious constraint on Hong Kong's ability to address sustainability concerns. Equally, if not more significant, is the issue of population growth. It is unlikely that there is any other economy at Hong Kong's current level of national income (i.e., GDP per capita) which is anticipating population growth on the scale expected here over the next decade and a half. Clearly, there are profound political and practical constraints on Hong Kong's ability to control the rate of growth in population. While I have no doubt that Hong Kong can absorb the

expected numbers, this situation does suggest to me that there has to be a fundamental rethink about Hong Kong goes about the development process in general. In particular, there has to be a shift from an emphasis on *quantities* to a clear commitment to create a *high quality environment* here. This will require a new vision for Hong Kong and a reappraisal of social and governmental priorities. This might be done within the framework provided by sustainable development, but personally I do not feel that sustainability is the only option open to us, at least over the medium term (say the next twenty years). Considerable progress towards the creation of a new Hong Kong as a livable, high quality city with an overall quality of life commensurate with its level of 'national' income can be made by tackling existing environmental problems more aggressively on the basis of the solutions already open to us, by addressing the increasing inequalities that are appearing in the society, by reshaping and modernising many established social attitudes, preferences and values, and by emphasising quality over quantity.

Conclusions

The crux of the problem in the sustainable development debate remains the transition from theory to practice, and the creation of operational principles that can effectively guide policy over the long term. There may well be certain elements where this is feasible. For example, it may be possible to establish that there are some environmental assets the current stock of which represents a minimum (or even sub-minimum) level, and which therefore ought not to be further depleted. Indeed, they might need to be augmented. In such a context, policy formulation should be directed to ensuring that minimum thresholds are not breached or are re-established. Concepts such as environmental compensation might be useful here, namely, that if an environmental resource is lost as a result of "development", then there should be a requirement to compensate by re-establishing an equivalent amount of the same resource, or a substitute which is deemed to be equivalent.

While sustainable development continues to occupy centre stage in the debate

on linking environmental and developmental concerns, it is important to recognize that the concept involves far more than resolving environmental trade offs. Indeed, it is arguable that the whole issue of trade offs only becomes a relevant concern once certain basic levels of human and ecological system health and well-being have been achieved. In other words, trading off the environment is inappropriate unless we can be sure that minimum standards for key indicators relating to both human and natural systems have been met.

Sustainable development is also fundamentally concerned with a host of social, economic and political issues and the extent to which these are dealt with successfully will influence the transition to sustainable societies just as much as our ability to manage environmental resources in an appropriate manner.

I contend that the viability of sustainable development as the paradigm for guiding economic, social and environmental change in society in the 21st century should not be taken for granted. It is no longer an uncontested concept and its position has not been helped by the fact that too much of the debate surrounding sustainable development has failed to move beyond statements of (good) intent. What are needed now are practical indicators of sustainability, together with achievable policies which demonstrably lead societies to sustainable paths of development. However, these efforts will be in vain unless we recognize the importance of, and the necessity for fundamental changes in social values and institutional structures, which will provide the appropriate framework within which sustainability might be pursued. The present signs are not encouraging in that respect.

I finish with a telling point from the paper by Tate and Mulugetta (1998) who in their discussion on the technocentric challenge to sustainability argue that:

> An honest debate on the utility of the concept [of sustainability] to environmental discourse will not happen at all without the recognition that there is nothing sacrosanct about the concept and that there are powerful alternative perspectives. Meanwhile the whole debate remains clouded by a seemingly ambiguous concept which has all the makings of an ideology, in the negative sense of that term.

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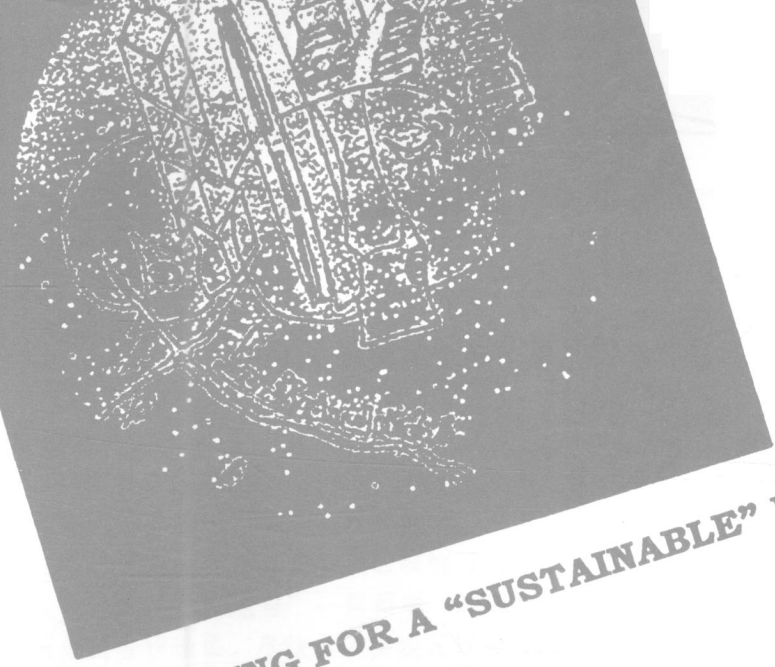

PLANNING FOR A "SUSTAINABLE" HONG KONG

"SUSTAINABLE"

Sustainable Development and Environmental Cooperation between Guangdong & Hong Kong

Ms. MA Xiao Ling

可持续发展与粤港环境合作

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摘 要：

广东和香港经济“一体化”的发展趋势，使处在同一自然地理条件下的广东珠江三角洲和香港交界地区环境污染负荷加重，逐渐引发区域性环境污染危害，粤港实现可持续发展战略，需携手合作处理解决区域性环境保护问题。合作需解决的实际问题有：尽快建立环境合作机制；内地与“一国两制”地区环境法律衔接问题。在此基础上，粤港需共同探讨有效的合作途径，尽快着手实现区域可持续发展的具体步骤。

关键词：可持续发展　合作　机制　一国两制　法律　公平

1992 年联合国环境与发展大会形成的《21 世纪议程》中关于可持续发展的理论、方法和实施机制，使全球社会经济发展找到了一个共同点，就是国家不分社会制度、不分种族和不分贫困富有，各国发展的目标是共同追求可持续发展的机会和最佳途径。环境与发展问题对于人类未来生活水平提高、安全和繁荣是至关重要的问题，也是可持续发展最紧迫最具挑战性的核心内容。为了改善和保护人类发展的生存条件，各国只有建立起新的伙伴关系，通过共同努力去实现这个目标。今天，当我们讨论香港与广东的环境问题时，面对我们生活的环境去思考共同的未来，可持续发展的理论和方法对加强粤港环境保护具有非常重要的现实意义。

1. 影响粤港可持续发展的环境问题

1.1 粤港现行经济规划对区域环境资源的开发管理缺乏协调机制

广东珠江三角洲和香港最近分别在经济方面完成发展规划，如广东省《珠江三角洲经济区现代化建设规划纲要》（1996.8.）和香港《全港发展策略》（1996 年咨询方案）。“规划”反映了两地未来经济发展的路向，是两地政府实施区域可持续发展战略的具体方案。广东珠江三角洲经济区规划与以往规划比较的重要特点，一是把环境保护规划纳入经济发展规划纲要；二是注重珠江三角洲与香港经济建设的衔接。使规划的关键是解决资源、人口、环境协调发展，实现可持续发展战略。香港《全港发展策略》于 1984 年制定，由于受到内地“改革开放”政策的推动，内地与香港经济关系对香港的发展产生重大影响，香港政府于 1990 年和 1996 年对《全港发展策略》作出修订，其发展策略的重大修订内容，是以珠江三角洲作为香港主要经济腹地规划未来的发展模式。

由于管理体制的原因，粤港以行政区划开展环境管理的格局在短期内不可能突破，涉及到两地跨界污染和可能形成的区域性生态环境污染危害的问题，各自很难依赖现行的经济发展规划解决。粤港现行经济发展规划对环境污染问题的处理，是尽量减少都市人口集中地区的污染负荷以达到改善局部地区环境质量状况，对自然资源利用和污染控制只能在本地区内的空间范围作出选择。在共有资源地区“各自为政”的环境保护措施，缺乏区域性可持续发展战略的考虑。当前，两地经济建设，重视对粤港城市经济功能合理利用的协调研究，忽视跨地区经济发展可能引发生态环境影响的协调研究。如，对跨越两地的大型基建项目的可行性论证和建设，缺乏必要的环境影响论证和环境保护方面的相互协商。资源开发阶段不解决好环境保护方面需要协调的问题，等到发生污染影响之后才引起重

视，其结果不但会增加区域发展的成本，甚至造成不可逆转的影响，更加重区域性的环境问题。

广东省和香港现已形成的建设布局，注重区内自然资源的充分开发利用，忽视区际间资源合理配置，区际缺乏自然资源开发利用、管理的协调机制。如，位于深圳市和香港东面的大鹏湾是两地共通的水域，香港一边是重要的海岸公园及海岸保护区，深圳一边是新建的盐田集装箱货运港口，建设盐田港在经济上不但对中国内地起到举足轻重的作用，也减轻了香港港口发展的压力，其经济效益是明显的，可是，港口建设和运输可能会对大鹏湾内生态系统产生不良影响。对同一自然资源采用不同的利用方式，是粤港交界地区资源开发管理不相协调的特征。广东珠江口水体、香港海域和南中国海是一个共通的水体，珠江口和南中国海海域是广东省的重要渔业资源和海产养殖保护区，而香港在与此相通的维多利亚水域和南区水域的水质利用功能主要以纳污为主。粤港资源开发管理不相协调，对边界地区环境保护带来很多矛盾。

1.2 粤港环境污染逐步发展成区域性污染趋势

粤港经济“一体化”发展的紧密关系，使处在同一自然地理条件下的广东珠江三角洲和香港交界地区环境污染负荷加重，污染在区内连片发展，存在引发区域性环境污染的潜在危害，具有一定的广泛性、持续性、综合性、复杂性。

陆源和大气污染物对边界海区的污染。根据国家海洋局南海分局海洋监测部门在珠江口重点海域多年定期监测的资料反映，珠江口水质主要污染物是无机磷、无机氮和油类。珠江口海域污染物主要来自珠江三角洲地区和香港地区陆源污染。珠江三角洲全年排放工业废水 19.44 亿吨，其中城市生活污水量 10.82 亿吨，城市生活污水的处理率不到 10 %。污水中污染物的最终去处主要是沿东、北、西江的主杆流，随三江进入到位于珠江口的八大人海口门，再进入珠江口的伶仃洋水道入海。香港日排生活污水量 180 万吨，（其中 25 %经一级处理，11 %经二级处理，其余 64 %直接排放。）每日约 73.8 万吨未经处理污水直接排入海域。这些污染物在潮汐作用下对珠江口水质和珠江口外的外伶仃洋水域水质造成不同程度的污染。此外，珠江三角洲城市排放的大气污染物，随风力和重力及降雨作用大部分落到陆地和海洋。珠江口水质继续恶化的现象表明，珠江三角洲和香港的污染物没有得到有效控制。

倾倒活动造成边界海域污染。据国家海洋局南海分局 1997 年 3 月发布的“1996 年海洋倾废公报”的统计数字：分布在珠江口外海域的海洋倾倒区和临时倾倒区共计有 12 个；批准三类疏浚物倾倒量 1604.34 万立方米，碱渣海洋倾倒量 8 万吨，其中受理香港疏浚泥来我海域倾倒申请 12 宗，批准疏浚泥倾倒量 195.645 万立方米。据广东省海洋水产部门反映，由于水质污染，该海区九十年代以来海洋捕鱼量下降 60 %左右，海区的中国对虾群体基本绝迹，国家一类保护的中华白海豚数量也因此大大减少。

海上船舶溢油污染相互影响。据有关统计，珠江水系有各种船舶超过 1 万艘；珠江口各海岛有渔船 725 艘；每年到香港航运的船舶有 36.07 万艘，加上到珠江三角洲沿岸各城市活动的渔船 2432 艘。珠江水系和珠江口各岛屿现有各种船舶溢油污染不可忽视。

大气污染物相互输送影响。电力短缺是影响珠江三角洲地区经济发展的制约因素之一，区内“九五”期间到 2010 年电力还将继续发展。据有关预测，到 2010 年珠江三角洲、香港和澳门地区，火电总装机可超过 4000 万千瓦。根据研究分析显示，1994 年香港地区的大气环境主要受香港火电源的影响，火电源对该区

二氧化硫地面平均浓度、最大浓度、柱浓度及最大柱浓度的贡献分别是 54%、72%、75%、94%，其中市区二氧化硫地面浓度贡献值达 92%。而受香港火电源影响的地区有：广东江门、珠海、深圳、惠州和澳门等地，其贡献值一般都在 20%以上。（杜国瑶等，1997.6.）研究表明，广东省酸雨严重，至今没有一个脱硫工程，空气污染物在地区电力大幅增长并以火电群形式出现的发展趋势下，大气污染物总量难以得到有效消减。~~珠江三角洲地区 1993 年二氧化硫排放为 31 万吨，平均每平方公里每年为 7.4 万吨，为全省平均值的 250 %，全国平均值的 474 %。~~粤港大气污染物在气象影响下存在互相输送污染的潜在危害。

废物越境转移问题。据不完全统计，由于香港原有的废物加工行业在八十年代逐步转移到广东珠江三角洲，香港近年进口到内地的废物约 80 %是分布在珠江三角洲地区进行加工处理。内地与香港废物越境转移，以香港废物进口到内地为主。香港进口到内地的废物种类主要有：黑色和有色金属、废纸、塑料、皮革、纺织品和有害废物等。1996 年 4 月中国政府实行废物进口许可证制度，广东省对废物进口采取严格控制政策。粤港废物转移和处置过程产生的环境污染问题，有待粤港继续合作，妥善解决。

2. 粤港环境保护需要解决的实际问题

2.1 建立区域可持续发展合作的机制

香港和广东珠江三角洲经济合作的紧密关系和“一体化”发展的经验表明，香港地小人多的资源条件，需要以珠江三角洲为腹地，从整个生态系统的社会、经济因素加以考虑，才有可能实现真正意义的可持续发展。可持续发展是粤港环境发展所追求的根本目标，为实现这个目标，双方需在资源利用及合理配置方面，为保护环境资源和控制污染开展广泛的协商对话，寻求合理高效的资源利用方式。如，消减各自对共同水域、气域的污染排放量；解决交通、能源建设活动中造成区域生态环境破坏的防治问题；粤港需要以现有经济发展水平，合理承担环境污染的责任，共同负担治理污染和减少环境危害的费用。采取这些行动，需建立起区域环境保护协调管理的有效运行机制，激励全社会共同实施。通过建立促进共同发展的制度，制定有益于经济增长和环境保护协调发展的区内和区际政策，培养和提高各个领域实施可持续发展的能力，去实施区域可持续发展战略。

2.2 解决“一国两制”地区环境法律衔接问题

研究解决区域可持续发展的方案，会涉及两地环境法律和环境政策的衔接问题。根据《中英联合声明》和《香港基本法》的规定，中国政府对香港恢复行使主权后，香港原有法律除同基本法相抵触或经香港特别行政区的立法机关作出修改者外，予以保留。因此，香港特别行政区在《香港基本法》的拘束下，环境法律会在现有基础上独自发展，成为中国环境法律体系下的一个有鲜明特点的地区性法律。香港环境法律受其法律制度的影响，环境保护制度和法律渊源自成体系，与内地环境法律有重大差异。香港特别行政区与内地的法律关系，由于处在不同的法域，因经济、文化交流合作等活动日益密切，当应用各自法律对同一法律关系调整而产生抵触，便会发生法律冲突。如，香港与广东交界地区水域管理，各自应适用自行颁布的环境标准，但由于各自制定标准的技术规则不同，实施的污染消减政策不同，环境标准仅以本地区水质利用功能考虑，在共通水域实行不同的水质利用功能，环境标准适用会产生边界水质保护和环境污染纠纷。又如，内地同香港环境法律的适用，对同一问题的处理，双方加入同一国际公约的，可以共同适用有关国际公约的规定，但是，两地价值观和法律价值观的差异，对国际公约的适用会存在不同的法律解释和实施措施。内地与香港环境法律抵触的现

象，不但表现在一些低级规范上，还表现在重要的法律制度上。如“一国两制”条件下环境保护的法律问题，由于环境污染不分边界，污染控制需要采取一致的行动，[illegible]，环境法的效力，在“一国两制”问题上有一定的特殊性和复杂性。不加以认真的研究解决，影响两地政府环境决策和环境合作的具体实施。

3. 粤港需加强环境合作机制的研究和实践

3.1 探讨粤港环境法律合作的机制

现代环境管理取得的最新研究成果反映出，在解决国家与区域环境冲突或资源分配的问题时，人们不论采用何种途径和方法，最终是以合作的机制解决。1992 年国际环境与发展大会通过的《 21 世纪议程》在“国际法律文件和机制”的方案中，对解决环境争端和环境合作的机制，给予了极大的重视。

总结人类解决环境争端到建立伙伴关系的方法，主要有两个途径，即谈判、协商和国际仲裁或国际司法。谈判本身是一种合作的过程，谈判与裁决相比，可以引导出更有建设性的解决办法。国际环境纠纷对于跨界污染的鉴别、具体责任和污染损失估算，较难取得科学论证，案件往往同时涉及个人和国家，而且缺乏明确的法规，在这种情况下谈判，有较大的商量余地。在立法方面，国际环境法在制定和实施方面的“软法”和“框架公约模式”现象，在 1992 年环发大会以后尤为瞩目，它们是指在严格意义上不具有法律拘束力但又具有一定法律效果的国际文件，是指国际社会对环境危机的重大问题在政治和道德态度等作出的及时反映，这些“软法”经过实践与合作，可以逐步发展为有拘束力的法律规范。“框架公约模式”在实体义务方面，只规定在某一领域的目标和一般义务，并不规定这些目标所需采用的具体管制措施和时间期限。但在具体事项方面，公约包含了许多详细具体的规定，如对环境的监测、信息交换、通知、报告、定期审查、协商、公约的修正等。公约仅为某一环境保护领域的法律规则树立了一个框架，使得各国在环境保护的早期阶段能够绕过由于科学认识的不确定及利益冲突的障碍，先制定原则性的公约，而具体的实体义务或强制性的法律规则，放到日后的合作中逐步解决。一般而言，只有在谈判解决争端或促成谈判解决争端的全部努力均告失败后，才提起国家仲裁或国际司法程序。香港回归祖国，中央政府对香港实行“一国两制”方针，在法制方面我国出现了“一国、两法和两法域”的局面。因为香港与内地之间不存在居于两者之上的司法协调机制，有关法律问题的解决按照《香港基本法》的规定，只能用司法协助的办法解决。香港特别行政区是我国的一个地方政府，香港与内地的司法协助不完全等同于国家间的司法协助，有关问题的根本解决，除参照两地现有法律外，仍然需要两地共同协商研究。香港特别行政区与广东省是一国条件下的不同行政区和不同法律之间的平等关系，根据粤港的实际情况借鉴国际环境法的合作机制，是实践可持续发展的重要步骤。

3.2 探讨区际环境资源管理的公平机制

联合国宪章和国际法原则，各国有按照自己环境政策开发自己资源的主权权利，并且有责任保证在它们管辖和控制之内的活动，不致损害其他国家的或在国家管辖范围以外地区的环境。为了实现可持续发展的目标，所有国家和地区都需要在公平和有效的基础上就分配保护环境的责任而达成一致，因为没有一个国家和地区有能力在一个时期只依靠自己保护环境。平等发展是可持续发展的中心问题，往往人们在可持续发展问题上较易形成共识，但由于环境污染的责任或合理分配资源的收益在各方不明确的情形时，谁应支付环保费用和支付多少的协商不

能取得一致，就难以取得共同的行动。当前，寻求在公平上达成共识是各国解决资源分配考虑的主要因素和所遵循的基本规则，认为“公平”的功能有：“弥补法律的分歧，为公正的解释提供依据，为国际法规则的规范运用的例外提供依据，为以不按照现行法的方式作出裁决提供依据。)”

遵照“一国两制”方针和《香港基本法》原则，香港特别行政区享有高度行政自治权，香港境内的土地和自然资源属于国家所有，特区政府享有管理、使用、开发等权利。在承认对方环境管理权的基础上，对粤港区域共有资源管理的协调取得一致，才有可能取得共同实施的方案。如，如何用公正和有效的方法去弄清各方造成污染或危害的责任，诸如污染控制标准、污染者付费和支付污染治理费用等；如何在共享环境地区去共同分担责任，但可能又是有区别的环境责任；如何选择粤港区域资源配置的方式，采用何种模式管理；都是粤港实施可持续发展需要共同研究解决的问题。

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Sustainable Development and Environmental Cooperation between Guangdong and Hong Kong

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Abstract

There has recently been a trend towards the integration of Guangdong and Hong Kong in economic development. Under this circumstance, the pollution load would be further deepening in the transboundary area of the Pear River Delta and Hong Kong which share the same natural geographical condition, eventually resulting in regional environmental hazard. The sustainable development strategy for Guangdong and Hong Kong demands the close cooperation in handling the regional environmental issues practically as follows, the establishment of environmental cooperation mechanism and the linkage in the environmental law between mainland China and the area under the “ one countury, two systems ” policy. Based on this, the effective collaboration could be discussed by Hong Kong and Gangdong sides to find the concrete measures to realize the regional sustainable development.

Key words: sustainable development, cooperation, mechanism, law, fairness, one country, two sistems.

Sustainable Development and Environmental Cooperation between Guangdong & Hong Kong (translation)

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Abstract

The deepening of economic integration between the geographically contiguous Guangdong Province and Hong Kong has increased pollution load in the Pearl River Delta and Hong Kong transboundary areas, which may eventually lead to regional environmental hazards. To develop a sustainable development strategy for the region, the co-operation of Guangdong and Hong Kong is required to resolve the following practical issues: establishment of effective environmental cooperative mechanisms, and the question of compatibility of local environmental laws within the "one country, two systems" policy. Based on these, Guangdong and Hong Kong can collaborate to explore concrete measures to realise sustainable development in the region.

The ' Agenda 21' which was formed in United Nation' s Earth Summit in 1992 formulates the concept, methodology and implementation mechanism for sustainable development, which in turn have become a common objective for socio-economic development around the world. Countries with different social, economic and racial backgrounds now pursue opportunities for sustainable development and the best way to achieve it. Environmental and development problems in relation to raising human' s living standard and ensuring safety and prosperity are not only the main issues, but also the most urgent and challenging core content of sustainable development. Countries have to establish new relationship and partnership through mutual effort in order to improve and protect the survival conditions of human development. Today, when we are discussing the environmental problems in Hong Kong and Guangdong, we have to think about the common future of our living environment. Thus the concept and methodology of sustainable development are very important in enhancing environmental protection in Hong Kong and Guangdong.

1. Environmental problems affecting sustainable development in Hong Kong and Guangdong

1.1 Lack of coordinating mechanism for management of regional environmental resources in current economic planning between Hong Kong and Guangdong

The recent economic development planning in the Pearl River Delta (PRD) and Hong Kong include "The Outline Planning for Modernized Construction in the Pearl River Delta Economic Region" (1996) in Guangdong Province and the "Territorial Development Strategy Review" (Consultative Digest 1996) in Hong Kong. ' Planning' represents the future direction of economic development in both places. It is also the broad framework for the two governments to implement the strategy for regional sustainable development. There are two important characteristics in planning of the economic zones of the PRD. The first one is the integration of

environmental protection planning into economic development planning. The second one is the close connection of economic infrastructure between PRD and Hong Kong. Here the key point in planning is solving the coordination problem of resources-population-environmental development in order to realize the strategy for sustainable development. The Territorial Development Strategy in Hong Kong was formulated in 1984 and it was reviewed in 1990 and 1996 because of the ' open door' policy in mainland China. The economic relationship between Hong Kong and the mainland has influenced the development of Hong Kong enormously. The major amendment in the Territorial Development Strategy Review is postulating the extension of Hong Kong' s economic catchment into the PRD.

Because of different system of environmental management in Hong Kong and Guangdong, it is impossible to alter the existing environmental management which is based on administrative regions in the short term. The transborder pollution and probably the regional ecological problems are very difficult to resolve under the current economic development and their own planning. What the current economic development planning does to treating the problems of environmental pollution is reducing as much pollution burden as possible in areas of high population density in order to improve the environmental quality in individual areas. The utilization of natural resources and pollution control is very limited to local areas. There are many separate environmental protection measures in places which share common resources, without considerations of strategies for regional sustainable development. Now, the economic development in Hong Kong and Guangdong focuses very much on coordination studies of the two places' compatibility of economic functions. Studies on ecological and environmental problems arising from regional economic developments are neglected. Example of which include the negligence of environmental impact assessment and mutual coordination of environmental protection in feasibility studies and implementation of large scale transborder infrastructure. It will be to too late to focus on environmental problems if conciliation on environmental protection are not resolved at resources exploitation stage. Once the problems have occurred, not only the regional development cost would increase, but irreversible impacts and exacerbated regional environmental problems may also arise.

The existing development pattern in Guangdong Province and Hong Kong only takes care of the full utilization and exploration of natural resources locally. Reasonable resource allocation is neglected and coordinating mechanism for resource exploration, utilization and management is lacked in the regional context. Take Mirs Bay for example. It is the common water between Shenzhen and the eastern part of Hong Kong. On the Hong Kong side of Mirs Bay, it is an important Marine Park and Coastal Protection Area. On the Shenzhen side, there is a new container port called Yantian. This port not only has enormous economic value to mainland China, but it can also release some development pressure in the port of Hong Kong. The economic merits of Yantian is obvious. However, the container port and the associated traffic may threaten the ecosystem in Mirs Bay. Having different utilization of the same natural resources is just a characteristic showing the lack of coordination in cross-border resource exploration and management.

Taking fishing as another example. The Pearl River, Hong Kong and the South China Sea belong to a common water body. Among them, the Pearl River month and South China Sea are important areas for fishing and breeding fish in Guangdong Province. Hong Kong' s Victoria Harbour, which is connected to the Pearl River and the South China Sea, however, is primarily

used for discharging effluence. The lack of coordination in resource exploration and management between Guangdong and Hong Kong brings a lot of contradictions in cross-border environmental protection.

1.2 A trend towards regional pollution problems

The ' unification' of economic development between Guangdong and Hong Kong has increased the pollution burden in these places which share common geographic conditions. Environmental pollution has occurred all over the region. The existing situation is likely to develop into a regional pollution problem which is pervasive, continuous, comprehensive and complex.

Transborder water pollutant generated by land and atmospheric pollutants

The Maritime Monitoring Department of the National Marine Affairs Bureau (South Sea Branch), carry out regular monitoring over the years in certain strategic waters at the month of Pearl River. The results show that the major waters pollutants in PRD are inorganic phosphate, inorganic nitrogen and oil substance. Water pollution at the month of Pearl River mainly originated from the PRD region and the land area of Hong Kong. The PRD discharges 1.944 billion tons industrial effluence annually. Among it the domestic discharge accounts for 1.082 billion tons. Less than 10 per cent of the domestic effluence is treated before being discharged. The destination of the water pollutants will be the Pearl River, the Lingdingyang Channels and finally to the sea. The daily effluence discharge in Hong Kong is 1.8 million tons (among them 25% is treated first-class, 11% second-class, and the rest 64% is untreated). There is 0.73 million tons untreated effluence being discharged into these waters directly everyday. These pollutants impose different levels of impact to the water quality of the Pearl River and the Lingdingyang Channels. In addition, the air pollutants generated from cities in PRD will end up on the land and in the sea by wind, gravity force and precipitation. The water quality in the PRD seems to continue to deteriorate. Obviously, the pollutants in the PRD and Hong Kong are not controlled effectively.

Pollution generated by dumping activities in transborder waters

On March 1997 the ' Maritime Dumping Report 1996' was published by the National Marine Affairs Bureau. The statistics in this Report show that there were 12 maritime dumping areas located in the Pearl River month. 3 kinds of dredged matter with dumping capacity of 16.0434 million cubic meter and eighty thousand tons of alkaligre are allowed to be dumped into the sea in these dumping areas. There were 12 approved applications to dispose the 1.9 million cubic meter of dredged matter in the Chinese waters from Hong Kong. According to Guangdong Province' s Ocean Productivity Department, the fishing capacity in the area has reduced by about 60 % since the 1990s because of water pollution. The Penaeus chinesis has disappeared altogether in the area; and the number of Chinese White Dolphins which are nationally protected has also fallen dramatically.

Oil leakage from vessels

According to statistics, there are more than 10,000 boats of different types on the Pearl River system; Among them there are 725 fishing boats on islands off the PRD; 360,000 boats coming

into Hong Kong water; and 2432 fishing boats from the cities along the PRD. The problem of oil leakage from these boats in the Pearl River system and the delta cannot be neglected.

Atmospheric pollution

Electricity shortage is one of the factors affecting economic development in the PRD. The demand for electricity have been growing from 1995 through to the year 2010. According to a forecast, the capacity of fuel-burning power in the PRD, Hong Kong and Macau will reach 40 million kilowatt. The result of an analysis in 1994 showed that fuel-burning power is the major factor affecting the atmospheric environment in Hong Kong. The sulphur dioxide from fuel-burning power in Hong Kong contributed to 54%, 72%, 75% and 94% of the surface mean density, maximum density, column density and maximum column density respectively. Among them 92% was the surface sulphur dioxide density in urban areas. The areas affected by Hong Kong' s fuel-burning power include Kiangmen, Chuhai, Shenzhen, Huizhou and Macau etc. The fuel-burning power in Hong Kong accounted for more than 20% of the sulphur dioxide density in these areas (To *et al*, 1997). A study shows that the problem of acid rain in Guangdong Province is serious. These is no de-sulphurization scheme to cope with this problem. The development trend of increasing demand or electricity leads the atmospheric pollutants to occur massively in the cluster of fuel-burning power plants. Atmospheric pollutants cannot be reduced effectively. These cross-border atmospheric pollutants which are potentially hazardous will be inter-transported through meteorological systems.

Problem of transporting solid waste

According to statistics, the local waste-treating plants in Hong Kong have been shifting to the PRD since the 1980s. About 80% of the solid waste from Hong Kong is destined in the PRD for processing. The transferring of solid waste between the two places is dominated by movement from Hong Kong to the PRD. The solid waste exported from Hong Kong include black and coloured metal, paper, plastic, hide products, textiles and toxic waste. In April 1996 the Chinese Government introduced a new ' permit system' to import solid waste from other countries. Guangdong Province has very strict policy in managing and controlling the imported solid waste. The problem of transporting solid waste and the pollution generated by processing the waste between Hong Kong and Guangdong is yet to be solved properly.

2. Issues of environmental protection for Guangdong and Hong Kong

2.1 Establish a cooperation mechanism for regional sustainable development

The close economic relationship and the ' unification' of development between Hong Kong and Guangdong shows that Hong Kong as a small but densely populated territory needs the PRD as its hinterland. The social and economic factors in the whole ecosystem need to be taken into account. Thus sustainable development could be attainable in real sense, which is the basic goal Guangdong and Hong Kong are pursuing. In order to realize this goal, both parties have to find ways to dialogue extensively in order to seek rational and effective methodology to protect environmental resources and to control pollution. Some of the ways include reducing pollutant emission level in common waters and atmospheric environment; formulating mitigation measures to solve regional ecological and environmental problems that brought by transportation and energy infrastructure. There is a need for both Guangdong and Hong Kong to

share the responsibility of environmental pollution reasonably according the their levels of economic development and to share the costs of treating the pollution and reduce the harmful effects to the environment. To implement these measures, a mechanism should be established to coordinate and manage the tasks of environmental protection and raise the awareness of the public. Through formulating a mechanism which has inputs from both sides of the border, a policy which is beneficial to economic growth and environmental protection within and outside the region can be set up. The establishment of such a mechanism and policy can then raise the ability of different aspects of the environment to implement the strategy of sustainable development.

2.2 Resolve the legal problems of ' One Country, Two Systems'

Formulating a strategy for regional sustainable development involves the compatibility of environmental law and policy between Hong Kong and China. According the ' Sino-British Joint Declaration' and the ' Basic Law' , all laws in Hong Kong except those in conflict with the ' Basic Law' or amended by the legislature of the Hong Kong Special Administrative Region (HKSAR) are retained after China has resumed the sovereignty in Hong Kong. Therefore the HKSAR' s environmental law will develop independently from the existing foundation, and become a local law with a distinctive character under the Chinese environmental law system. The environmental protection regulation and legal system in Hong Kong are very different from the environmental law in the mainland. The legal relationship between Hong Kong and China is becoming increasingly close because of more and more economic and cultural cooperation and activities. Legal conflict may well happen if both places (actually in different legal region) bring constrictions in using their own laws to adjust the legal relationship. For example, different environmental standards for managing cross-border water quality are used in Hong Kong and Guangdong. Since the technical requirements in both places' standards are different, their mitigation measures to reduce pollution are also not the same. These environmental standards are set after considering local water quality and utility. These standards may not apply to common waters where the qualities and utility functions are different. As a result, conflicts in pollution and protecting cross-border water quality and environmental pollution will occur. In addition, Hong Kong and the mainland could face with the same environmental problem but there would be different approaches to treat this problem under their individual environmental laws. In this case, both places could join an international convention and just follow the regulations of the convention. However, the different social and legal values between Hong Kong and China will have different legal interpretation and implementation measures of the international convention. The phenomenon of conflicting environmental law between Hong Kong and China does not only occur at the lower level of the hierarchy , but also at the important level of the legal system. Environmental pollution is a problem which cannot be defined by international boundary. There must be unified measures in controlling pollution under conditions of ' one country, two systems' in order to resolve the legal problems of environmental protection. The effectiveness of environmental laws does have certain level of uniqueness and complexity under the situation of ' one country, two systems' . Therefore the legal problem will seriously affect the formulation of environmental policy and environmental cooperation between Hong Kong and Guangdong if it is not thoroughly researched.

3. Enhance the research and implementation of environmental cooperation between Guangdong and Hong Kong

3.1 Investigate the mechanism of cooperating the environmental laws in Guangdong and Hong Kong

The result of a recent research into modern environmental management shows that cooperative mechanism is the only approach in which environmental conflict or resource allocation is solved, no matter what kind of methodology is used. The strategy of ' international legal documents and mechanism' is given in the ' Agenda 21' which was passed in the Earth Summit in 1992. This strategy gives emphasis to mechanism of solving environmental conflict and enhancing environmental cooperation.

There are two ways in which human can establish cooperative partnership from the situation of environmental conflict: negotiation and international arbitration. Negotiation itself is a process of cooperation. Comparing negotiation with arbitration, the former can lead to a more constructive solution. There will be more room to negotiate international environmental conflict because it is very difficult to obtain scientific evidence for defining cross-border pollution, responsibility and loss due to pollution. The problems may also involve individual and the whole nation and there is no clear-cut rules in dealing with such problems. In the legislative aspect, there are ' soft law' and the ' framework convention approach' to deal with the formulation and implementation of international environmental law. They are particularly emphasized in the 1992 Earth Summit. Strictly speaking they are international documents which do not have legal power, but to some extent, they can achieve legal effectiveness. They are timely in response to reflect the major problem of environmental crisis in the international political and ethics arena.

Using the ' soft law' , a restrictive legal setting can be gradually developed through cooperation and practicing. On the other hand, the ' framework convention approach' only specifies the goals and objectives and the general obligation of a particular aspect. The detailed controlling measures and time period to achieve these goals and objectives are not specified. However, the convention does include some concrete and explicit matters such as environmental monitoring, information exchange, notification, reporting, regular examination, negotiation, amendment of the convention, etc. The convention only establish a framework for legal regulations in a particular aspect of environmental protection. This enables different countries to set down a principle convention before any obstacles such as uncertain scientific knowledge and conflicting interest which may arise in the initial stage of environmental protection. The detailed substantial duty and compulsory legal regulations are resolved at the later stages of cooperation. Generally speaking, international arbitration will only be adopted if all efforts to negotiate or attempts to organize a negotiation are failed.

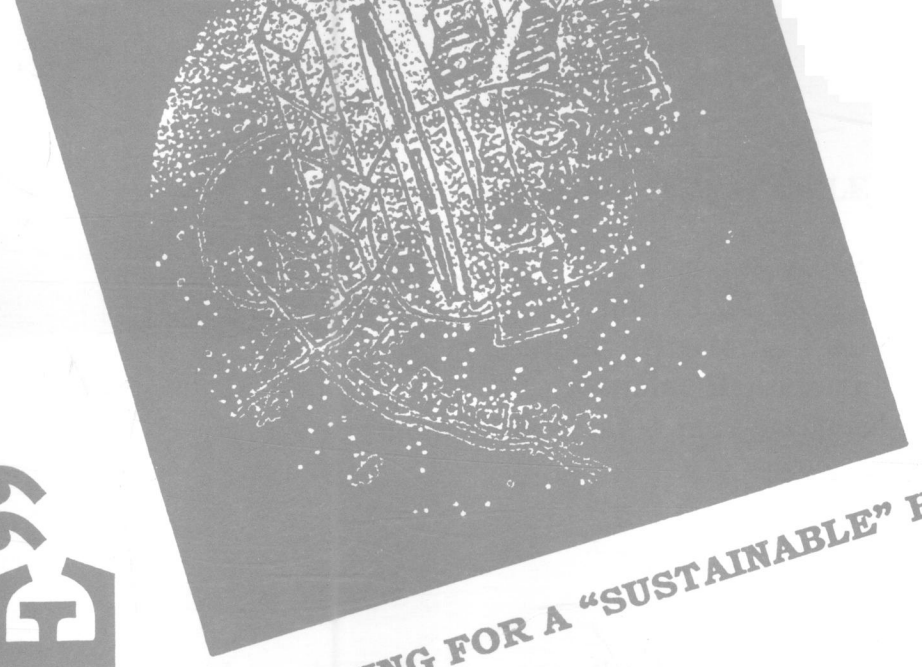
The sovereignty of Hong Kong has reverted back to China and the Chinese central government has implemented the ' one country, two systems' policy. On the legal aspect, a situation of ' one country, two legal systems' has occurred in China. Because there is no common legal conciliation mechanism at the highest level of the legal hierarchy between Hong Kong and China, any legal problems have to be resolved by legal assistance as the ' Basic Law' has

specified. The HKSAR is a local government within China. The legal assistance between Hong Kong and China is different from those between countries. To solve the root problem, it is necessary not only to refer to the laws in both places, but negotiation and detailed research are also required. Under the nation as a whole, Hong Kong and Guangdong Province are different administrative region and have different legal system on the same level of the hierarchy. A cooperative mechanism which adopts the international environmental laws in the context of Hong Kong and Guangdong is an important step toward achieving sustainable development.

3.2 Discuss an equitable mechanism in managing regional environmental resources

Every country has autonomy to explore her own resources according to her environmental policy under the principles of the UN Charter and international laws. Countries are also obliged to ensure all activities that they manage and control will not be harmful to the environments of other countries or areas which are outside their own government. In order to realize the objectives of sustainable development, all countries and regions have to agree upon allocating responsibility of environmental protection based on the foundation of equity and effectiveness. It is because no single country is able to protect the environment on its own during a period of time. Equitable development is the core issue of sustainable development. Very often it is easier for people to obtain consensus on issues of sustainable development. However, uncertainties may also occur in allocating the responsibility of pollution and distributing the resource benefits. In this case, agreements on who and how much to pay for environmental protection will be difficult to reach. At this moment, finding consensus on an equitable basis is the main factor for countries to consider resources allocation and it is also the basic rule for countries to follow. The functions considered as ' equitable' include filling the gap of legal conflict; providing explicit interpretation of equity; providing definitions for areas outside regulation of international laws; and providing definitions for verdicts which do not follow the existing procedure.

The principles of the ' one country, two systems' policy and the ' Basic Law' state that the HKSAR has a high level of administrative autonomy. All land and natural resources within the territory of Hong Kong belong to the central government. The HKSAR government have the right to manage, utilize and develop these resources. Consensus on resource management between Guangdong and Hong Kong need to be built upon the foundation of recognizing the mutual right of environmental management. In this way a implementation strategy for both places can be achieved. The issue of the strategy include i) how to use equitable and effective ways to clarify the responsibility of pollution or crisis, such as standards of pollution control and the polluter-pay principle; ii) how to distribute different environmental responsibility in common environmental region; iii) how to choose a methodology for allocating Hong Kong' s and Guangdong' s resources and what management approach to adopt. All these issues need to be thoroughly researched and settled by both Hong Kong and Guangdong in order to realize sustainable development.



PLANNING FOR A "SUSTAINABLE" HONG KONG

"SUSTAINABLE"

Planning for A Sustainable HK

Mr. Bosco FUNG

PLANNING FOR A SUSTAINABLE HONG KONG

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Setting the Scene

1. Less than 20 years ago, the New Territories was a place for picnics and outings; it was where villages, green-fields and cows were shown to the children. Today, many villages and green-fields have given way to new towns; and cars replaced cows. Container back-up and open storage uses have sprung up sporadically in our once tranquil rural area. These rapidly changing scenes reflect the kind of paradoxes that we have faced, and will continue to encounter more, in meeting the economic and social needs of our community on the one hand, and in protecting and enhancing our environmental quality on the other.

2. Today, Hong Kong faces tremendous pressures for development, at a scale never before. The economic transformation that has taken place in our hinterland has greatly impacted upon us. At the same time, we have to cater for the needs of a rapidly growing population, and a population of rising aspirations too. A question that has from time to time been raised is whether we are able to satisfy in a sustainable way all our development needs. Put simply, can sustainable development be achieved in Hong Kong?

Meaning of Sustainable Development

3. Before attempting to answer this question, it may, perhaps, be relevant to ask what sustainable development is all about, and what it should mean for us here in Hong Kong.

4. According to Holmberg and Sandbrook (1992),[1] there are over 70 definitions for sustainable development. The most commonly used Brundtland definition, namely 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs',[2] is so broad that it can mean different things to different people. There is, clearly, no consensus on a universally applicable definition.

5. Hong Kong is a very small place by the standard of most world cities, with the harbour possibly its only natural asset. It does not have the capability of meeting all its own needs from locally available resources. Consequently, the commonly adopted natural resource-based definitions of sustainable development are not applicable here.

6. Although deficient in natural resources, Hong Kong people are resourceful and they have a very strong desire for economic and social development to secure rising standards of living, both for themselves and for their children. They also have a strong aspiration for a good environment. As I see it, balancing and integrating these aspirations is at the heart of pursuing sustainable development for Hong Kong.

7. Turning back to the question about whether we can satisfy our development needs sustainably, I see the answer rests upon how well we can integrate our economic, social and environmental needs in the development process. In other words, sustainable development is, in my view, not just a state of development; it is also about how well we can manage the development process.

Planning for a Sustainable Hong Kong

8. If sustainable development is about balancing the community's social, economic and environmental needs, I would venture to suggest that considerations for sustainable development have long been very much a part of our planning process, albeit under a different cover. Afterall, as planners, we are trained to balance and reconcile competing, and often conflicting, needs of society.

9. At the strategic level, for example, the Hong Kong Planning Standards and Guidelines provides guidance not only for the provision of essential community and infrastructure facilities to satisfy the economic and social needs of the community, but also for improvements to the environment as well as the conservation of significant landscapes and cultural heritages with a view to enhancing and enriching our living environment.

10. The latest review of the Territorial Development Strategy (TDS), as another example, provides an integrated land use - transport - environmental planning framework to guide the physical development of Hong Kong up to year 2011 and beyond.[3] Again, the framework provides not only for meeting our development needs, but also for protecting and enhancing our environment through such means as encouraging high-density, compact urban development rather than low-density urban sprawl, promoting rail-based transport system to

reduce air pollution, designating more areas for country parks, and protecting environmentally sensitive areas.

Main Sustainability Issues

11. Given that sustainability considerations are already a part of planning, what then are our 'sustainability' problems?

Demand Management

12. Hong Kong is physically a small place but has been subject to immense development pressures. Notwithstanding, the Government's philosophy has hitherto been to accommodate and satisfy development needs as far as is practicable, according to projected demand. However, the Strategic Environmental Assessment carried out as part of the recently completed TDS Review has indicated that if we were to continue with this demand-led development path, there could well be potentially serious long-term environmental consequences, particularly in deterioration in air and water quality and in the disposal of solid waste. (4)

13. It has also become increasingly obvious that due to our physical size and constraints imposed by resource allocation, it would be difficult, if not impossible, to provide all the necessary facilities of the right scale, at the right locations and at the right time to satisfy all development needs, and without any adverse environmental impacts. This is especially the case as a lot of our development demands are generated from outside the territory of Hong Kong - the large amount of Pearl River Delta manufactured goods passing through the Hong Kong port is a case in point. In the face of rapidly rising demands for land and infrastructure but with limited supply of physical and financial resources, land use planning by itself will not be able to address and resolve all development problems.

14. In order that our limited resources could be utilised for the biggest benefit of the community, there is a need to re-think on our long-established way of tackling with development needs. We need to think more vigorously on which aspects of, and how, the ever growing demands for land and infrastructure could be managed. We also need to think hard on the policies required to promote environmentally friendly economic activities, and to discourage environmentally damaging activities. We should ultimately aim at cultivating a sense of sustainability into our way of living.

Trans-boundary Issues

15. With the tremendous increase in socio-economic interaction between Hong Kong and the Mainland in recent decades, Hong Kong is now very much part of South China, and the Pearl River Delta (PRD) Region in particular, in development terms. The bulk of our food and water supplies come from the Region. Hong Kong residents made more than 60 million trips into and out of the Mainland in 1996. Hong Kong business-owned factories in the PRD employ nearly 4 million workers whereas our own local manufacturing employment is now less than 10% of that number. In 1996, over 90% of Guangdong's container cargoes were actually handled through the Hong Kong port.

16. With rapid development growth also has come immense environmental pressures; and of course environmental pollution respects no administrative boundaries. Deteriorating air and water quality is a growing concern for the whole Region caused by rapid development and urbanisation on both sides. (The declining area of wetlands in the PRD has also resulted in a substantial increase in the number of migratory birds visiting Hong Kong.) In short, in environmental and ecological terms, the whole PRD is one common entity.

17. It is therefore important that we examine more closely the emerging development patterns and trends in the Region and understand their implications on the long-term sustainability of Hong Kong's development.

Need for Strengthened Institutional Support

18. Hong Kong has a well-established system for policy formulation, planning, resource allocation and the implementation of public works. (However, the current system of decision making operates to a large degree within a vertically organised structure. There has been a tendency for economic, social and environmental policies, plans and programmes to be dealt with on their own account, with each sector competing for the allocation of scarce resources (Figure 1(a)). Whilst integration mechanisms within the Government are available, they tend to operate towards the later stage of the decision-making process when inter-policy sector conflicts become apparent.)

19. We need to move towards an improved system of government decision making that provides a more integrated way of setting, and measuring, community-based goals, and of deploying resources and introducing timely administrative measures to achieve such goals. We also need to ensure that all policy and programme areas are consistent with the objectives of sustainable development, and that major decisions taken in one policy sector should be balanced against

the impacts on other sectors (Figure 1(b)). Existing channels for liaison on cross-boundary matters and issues with the Mainland authorities may also need to be strengthened.

Public Awareness and Support

20. Although sustainable development has become a popular, if not fashionable, subject in many places throughout the world, to the majority of people in Hong Kong it is very much a new and unfamiliar concept.

21. In order that members of the public support the sustainability cause, we need to raise their awareness of the importance of sustainable development. It is important that members of the community understand that :

(a) sustainable development is a process of aiming to achieve both economic growth and an improved quality of life. There is no fundamental conflict between economic growth and environmental protection. Instead, they should go hand in hand;

(b) sustainable development means a culture of longer term thinking so that there is greater awareness of the implications of today's decision on tomorrow's quality of life; and

(c) for sustainable development to be successfully achieved, partnership between the Government and every member of the commun required.

22. With greater awareness, it is hoped that there will be more active public participation and stronger community support in the pursuit of sustainable development in Hong Kong.

Study on Sustainable Development for the 21st Century

23. To address the above issues, we have recently launched a consultancy study on Sustainable Development for the 21st Century, SUSDEV 21 for short. The primary objective of the Study is to develop a framework to enable us to evaluate and monitor, in a more systematic manner, the relevant parameters relating to the overall sustainability of our future development.

24. To fulfil that objective, the SUSDEV 21 Study will undertake the following tasks :

(a) bringing the attention of the community to the importance of sustainable development and soliciting their views on sustainability issues;

(b) defining what the term 'sustainability' should mean for Hong Kong;

(c) developing guiding values, sustainability indicators and criteria covering the economic, social and environmental aspects to provide a basis for measuring our performance on sustainability;

(d) conducting baseline economic, social and environmental studies for the Territory to establish the extent to which the baseline conditions satisfy the developed guiding values and sustainability indicators;

(e) establishing a 'Sustainable Development System' to provide a framework for corporate decision-making on relevant government policies, plans, programmes and resource allocation to achieve sustainable development;

(f) testing and refining the sustainability indicators, criteria and the Sustainable Development System using the latest TDS as reference; and

(g) identifying policy and/or institutional areas that may need to be improved so as to facilitate the taking of decisions relating to sustainable development in a more informed, balanced and integrated way.

Conclusion

25. The Study commenced in September 1997, and we hope we can complete it before the turn of the century. To-date, an Inception Report to provide a broad basis for conducting the Study has been completed. Three reports have also been prepared, respectively documenting the international experience on sustainable development; regional development trends; and the key findings of completed and on-going studies in Hong Kong having implications on sustainable development.

26. Soon, a major public participation/consultation exercise will be launched with the view of developing greater community understanding of sustainable development and soliciting their views on sustainability issues. We hope members of the public, including the distinguished audience here today, will be generous enough to give us their views on this very important subject.

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BROAD CONCEPT FOR SUSTAINABLE DEVELOPMENT SYSTEM

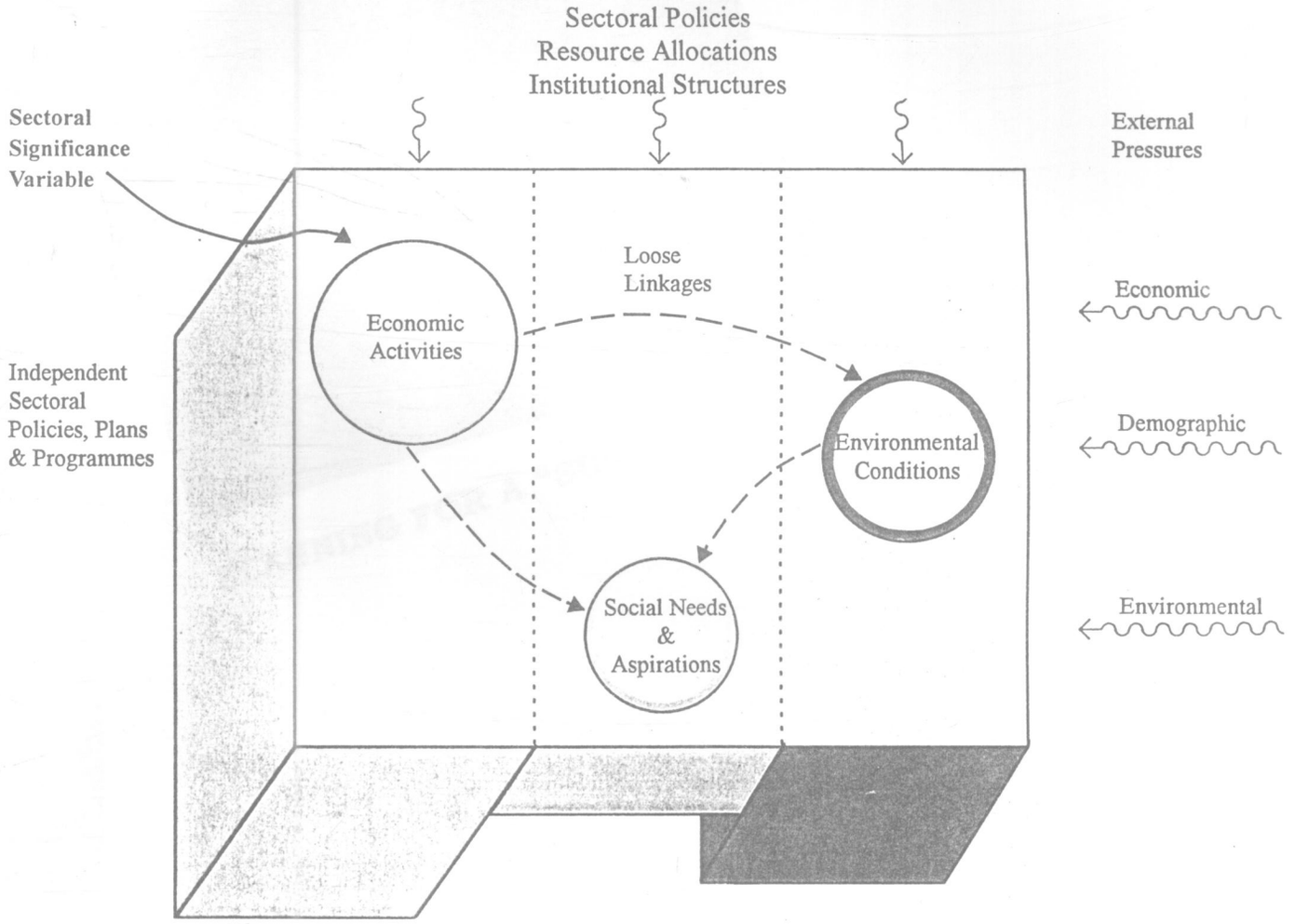


Figure 1 (a) : Current System

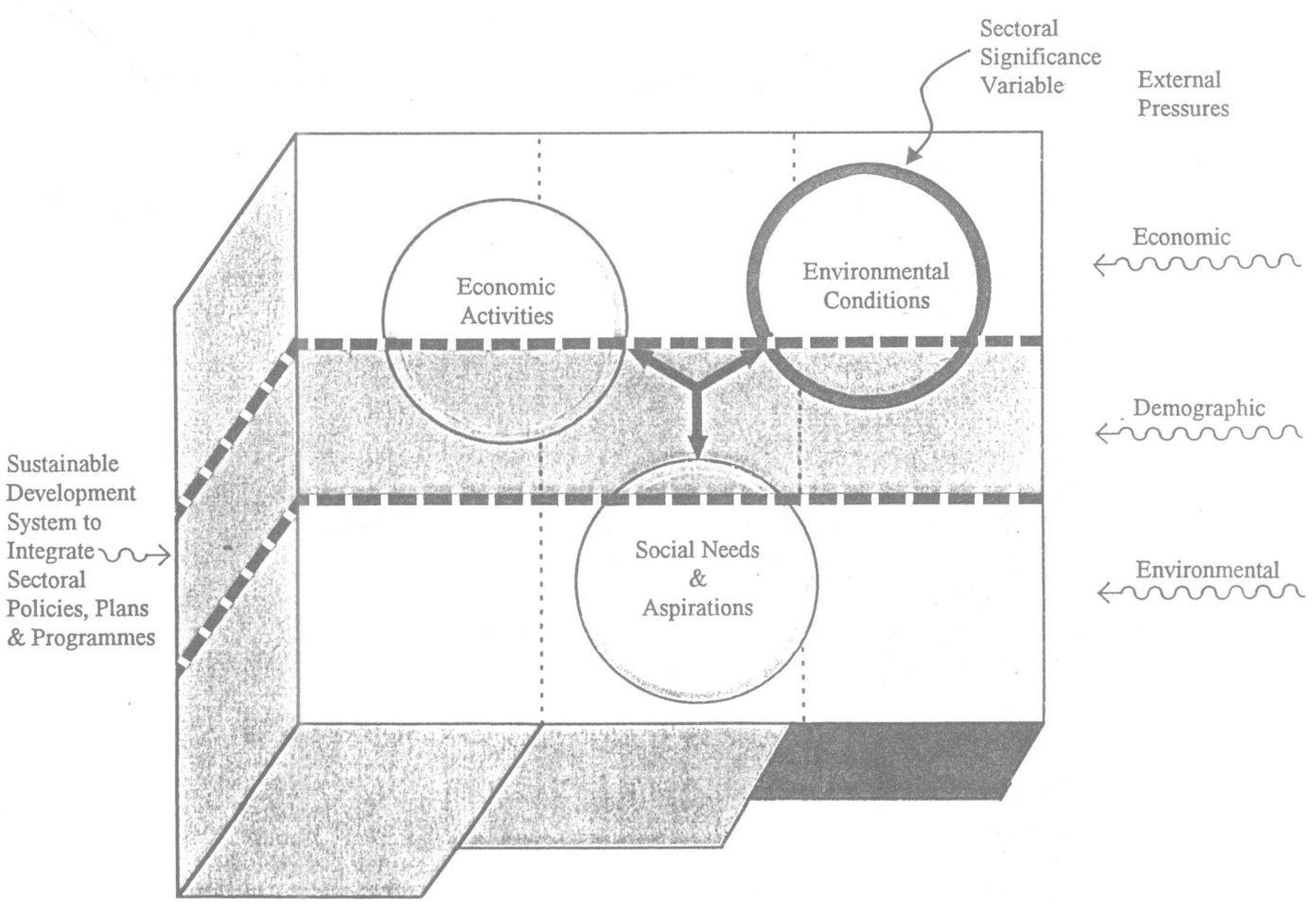
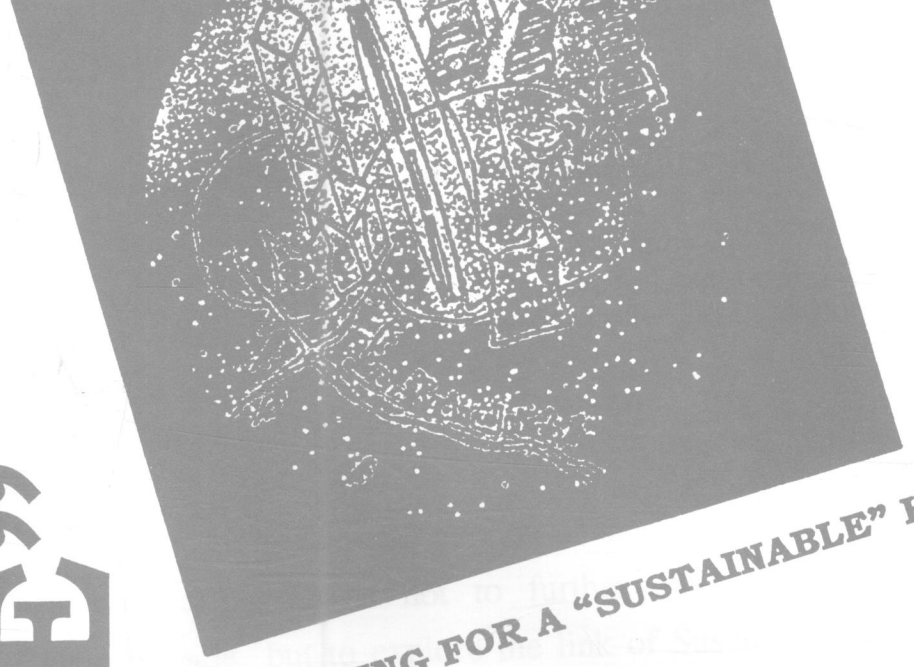


Figure 1 (b) : Sustainable Development System



PLANNING FOR A "SUSTAINABLE" HONG KONG

"SUSTAINABLE"

Sustainable Development : What Will Our Children Inherit From Us?

Mr. Raymond CHAN

Sustainable Development - What will our children inherit from us?

by
Raymond Chan
Assistant Director (Environmental Assessment & Noise)
Environmental Protection Department

Introduction

The Chinese version of the conference flyer says that the intention of the conference is not to further any academic debate on Sustainable Development, but to explore the link of Sustainable Development to our daily life and to find out what can be done about it. I think this is a very excellent objective and I have therefore made an attempt in this paper along that direction.

Sustainable Development: No more definitions; make it operational

A UNEP advisor on Sustainable Development once said to me that whether Sustainable Development would be judged as a mere buzzword or a major breakthrough in mankind's history would depend very largely on whether we could make Sustainable Development operational in the next few years. Therefore, I shall not rehearse any more definitions today. Instead, I would like to take this opportunity to explore Sustainable Development's relevance and what could be done.

Firstly, I would suggest that Sustainable Development and planners, to a very large extent, share something in common. Both start from historical trends and current situation, look to the future and try to do something today so that things would be functioning better in the future. To cut through all technical jargons, Sustainable Development, and planners, both hold dear something all parents or grandparents have found to be an undeniable duty, at some stage in their lives, to address: what will our children (or even grand-children) inherit from us? If we can grasp this image before we approach the

subject of Sustainable Development, we may have a much better chance of coming up with ideas which will make Sustainable Development operational. This is so because parents and grandparents never dish out empty promises.

What we can do

Recently there were media coverages suggesting that the two wealthiest men in the US have decided to leave very little of their estates to their children. Both were quoted to have said something similar: that giving a large inheritance to children may not necessarily be the best option (clearly not the best from taxation point of view!). I suppose there is some wisdom in it as Stephen Covey once said "Give a man a fish, you can feed him for a day; teach him how to fish, he can feed himself for life."

The point I'm trying to make here is this. As we bear in mind the images of our children and grand-children when we approach the issue of Sustainable Development and explore what we can do, simply do not restrict ourselves to a limited vision of providing them this or that project as "sustainable developments". These will be static and as limited in value as a large amount of money in an inheritance. We should hand to them Sustainable Development in much the same way as Covey's allegory of "teaching someone to fish" --- so that our children can too, make their own decisions as they are confronted with challenges.

So, what is it that we can do today if we are serious about Sustainable Development and genuinely concerned about the future, one that our children and grand-children will have no choice but to live in?

Sustainable Development as a framework of values

The very key thing we should do is to work towards laying down Sustainable Development as a guiding value for decision making. This will then become a self-perpetuating principle that will help and guide future generations long after we are gone. However, there is more to it than just imposing a certain set of values on to any community. We must endeavour to firstly engage the community in a multi-stakeholder dialogue, to explain the interdependencies of the economic, social and environmental dimensions in local, regional and global contexts, before we can arrive at a sustainable development framework of values which can reflect the aspirations of the community. This framework must be set out and explained in unequivocal terms so that the relationships amongst the triple bottom-line (social-economic-environmental) could be readily comprehended.

Obviously this would require the adoption of a great number of indicators and to some degree, an ability to predict how these indicators would interact with one another. For example, one should be able to correlate growth in container throughput with job creation, diesel vehicle mileage travel, air pollution and loss of life and productivity due to respiratory illnesses. This is by no means an easy task. But it is an essential task because without this capability, it would be almost impossible to illustrate to the community the process by which Sustainable Development values are adopted and that decisions are made with Sustainable Development as a guiding principle. This transparency and ability to be comprehended is extremely important if it is our desire that future generations can, through observing, take similar steps in the future and embrace Sustainable Development when they become decision makers themselves. The more it is understood and appreciated, the more likely the Sustainable Development values would be adopted as their own in future.

This to me is more important than arriving at a blueprint of future Hong Kong which we feel are "Sustainable Developments". Of course, having a blueprint and vision of the future is important. But I firmly believe that if we fail to treat Sustainable Development as a fundamental value and if we fail to facilitate that such a value is passed on and treasured in every generation of decision makers, we will have missed the mark badly.

Our society has become rather sophisticated and with the rapid globalization of trade and international relationship, it will become increasingly sophisticated. Gone are the days where a simple trade-off will satisfy the multitude. Leaders have come to realize that successes, and staying ahead, lies in the art of keeping the social, economic and environmental dimensions in tension and at equilibrium. Why do I suggest that providing this framework is important to our future generations? Even more so than handing them a sustainable project or technology? Again, I'd like to come back to viewing Sustainable Development through the images of our children. It's very analogous to parenting children and passing on to them our values. But it is more. Not only should we endeavour to build Sustainable Development through encouraging our society of this and future generations to embrace the values, we should also leave an inheritance with them in the form of the framework, through which they can clearly see how and with what consequences we have adopted such values. It may well be the case that in future, people may need to tackle different problems and have different aspirations. The important thing is, however, that the sustainable development framework will enable them to adjust to the values of their times, to predict the shift of balance amongst the factors and to engage their own contemporary stakeholders in shaping their own future.

Arriving at the framework for our time is not an easy task and it is exactly where we can all contribute. Government has taken the lead in carrying out the Study on Sustainable Development for the 21st Century (SUSDEV21), and will soon be undertaking one of many stages of consultation. It is very

critical for us as individual or as member of professional societies and pressure groups, to respond actively and to articulate our aspirations. The time to devise and refine definitions of Sustainable Development is over. It's time for participation with the objective of making it operational.

Sustainable Development in Action

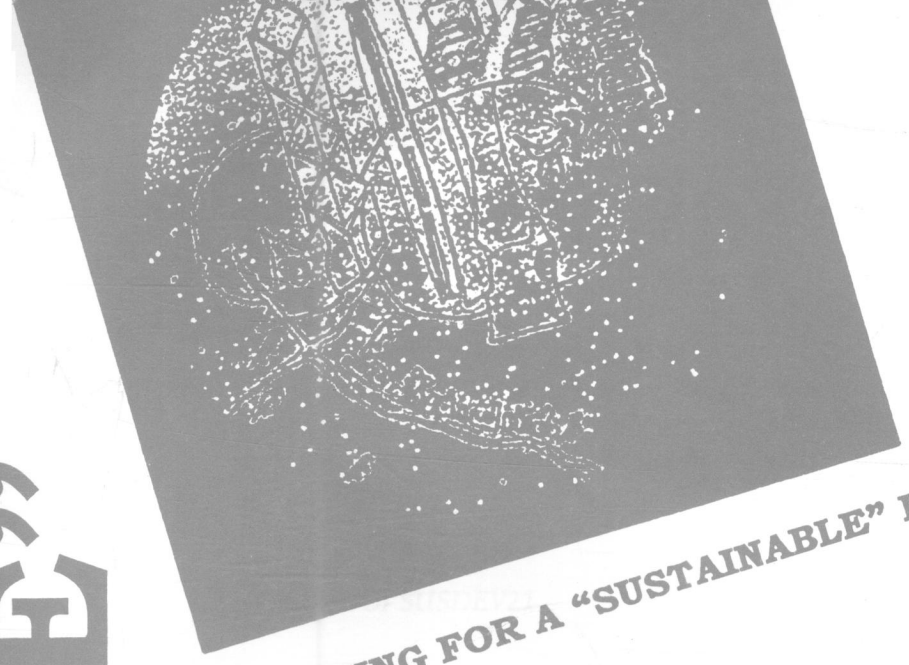
Having said all these and if I were to omit what I am going to say, I could be rightly accused of misleading the audience into believing that all there is to contributing towards Sustainable Development now is to wait for the Government study of Sustainable Development for the 21st Century. This is clearly not the case, and I would like to just suggest one area of work all of us can contribute to, again with a view to making Sustainable Development operational.

Many communities have gone before us in their endeavours to embrace Sustainable Development and have laid down some good practices for us as a reference. Although there are always differences in the various approaches taken, one common theme seems always to emerge and it appears also to suit us best. This is the enhancement of multi-stakeholder dialogue, in particular one involving corporate business. Everywhere I go for conferences and every piece of literature I check into, I have found an acceptance that on the road to Sustainable Development, there is no room for the "them-us" attitude. Most communities have emerged with a much better communication amongst the stakeholders: the traditionally labelled "bad guys" of industry and big business, the regulators, the consumers and the green groups. This is an encouraging response to the Agenda 21 call for stakeholder dialogue. This is, therefore, the area that I feel Hong Kong should not have to wait for the outcome of any study to make some improvement. Those of us here who have access to corporate management within our respective organisation note this: convince your management to open up a dialogue with various stakeholders by

publishing your environmental performance in an environmental report. It is an inevitable trend and an essential first step to demonstrate commitment to sustainable development. It will help to engage your stakeholders in a dialogue. They will then understand you better and in return, you will know what their demands are before such demands become criticisms and objections. The China Light & Power has recently taken the lead in publishing an environmental report and I am sure they will belong to the circle of trend setters and market leaders. No community can embrace Sustainable Development without a good understanding of the needs of various stakeholders, more so for a place like Hong Kong where the business sector has such an influence. We will need enhanced communications amongst all of us ultimately if we were to adopt Sustainable Development in our future decisions. So we might as well start engendering one right now.

Conclusion

In the early part of my paper, I brought in the images of our children into the discussion of Sustainable Development. I cannot therefore leave the subject without referring to those images again. A couple of weeks ago, a very notable planner, and cartoonist, sketched a cartoon visualizing in 10 years' time that his colleagues might be walking and sleeping in space suits because the air quality would have gone terribly bad. None of us would wish to leave that scenario as an inheritance to our children and the only way to prevent that is to collectively work hard to make Sustainable Development operational.



PLANNING FOR A "SUSTAINABLE" HONG KONG

"SUSTAINABLE"

HK's Sustainable Development System: Origin, Preparation & Implementation

Mr. Paul MITCHELL

HONG KONG'S SUSTAINABLE DEVELOPMENT SYSTEM: ORIGIN, PREPARATION AND IMPLEMENTATION

Paul Mitchell, Director ERM Asia-Pacific and Study Manager for SUSDEV 21

SYNOPSIS

The paper discusses the origins of the Study for Sustainable Development in the Twenty First Century (SUSDEV21), its preparation, the main components and its implementation. The major challenges in introducing a sustainable development system are highlighted.

1 *ORIGINS OF SUSDEV21*

The TDSR, completed in 1997, drew the conclusion that there was likely to be sufficient land in Hong Kong to meet demands for housing, employment and transport needs, and to satisfy a range of hub functions but that it would be difficult to meet all specified objectives, particularly with respect to environmental protection. The TDSR drew the following conclusion about sustainable development in Hong Kong:

> "It is crucial to balance the perceived economic benefits of development scenarios and that related to hub functions of Hong Kong ..... against ..... potential resource availability, environmental objectives, the efficiency of infrastructure systems, the provision of essential land use requirements, standards of public health and the quality of life preferred. The urban system as a whole needs to be considered, having regard also to regional interactions. Taking account of all these broad aspects of sustainability is a complex issue".

This statement recognises the multi-faceted nature of sustainable development and that it is a fundamentally different way of viewing development and environmental issues; traditionally these issues have been viewing as being in opposition to each other, where achievement of development goals would be at the expense of environmental ones or vice versa. In contrast, the aim of sustainable development is concurrent achievement of improved socio-economic and environmental conditions about sustainable development.

The conclusions of the TDSR about sustainable development were similar to those given in the third review of the White Paper "Pollution of Hong Kong. A Time to Act" completed in March 1996. The review had the sub-title "Heading Towards Sustainability" and it included proposals for including sustainability considerations into development planning and a proposal to carry out SUSDEV21.

The above conclusions were reflected in the SUSDEV brief issued by Planning Department in August 1997. Three aspects of the brief are particularly important.

Firstly, there is identification of the one of the key dilemmas for Hong Kong, that its hub functions particularly the port and airport are major wealth generators but are also the cause of many environmental problems. Thus, a fundamental

question is to determine which hub functions should be promoted and by implication phased out or limited.

Secondly, there is recognition that achievement of sustainable development will take time; to quote the brief, achieving "a comprehensively sustainable pattern of development...will need to be reached by degrees over the long term (say by 2020 and beyond)" This view is consistent with international experience which shows that implementing a sustainable development strategy is a process that occurs over time, requiring consensus building and progressive implementation of actions by all participants, it is not something that occurs as a result of a single plan or programme

Thirdly, there is acknowledgment that traditional institutional arrangements for development planning and resource management are not effective for sustainable development. The brief says that there is a tendency for economic, social and environmental policies and programmes to be devised and implemented separately, but recognises that a more integrated means of objective setting, resource deployment and monitoring progress is needed. Again, this view is consistent with international experience.

2 *MAIN COMPONENTS OF SUSDEV21*

The study is being conducted over a twenty four month period commencing in September 1997. There are four main stages in the study, namely:

- Defining sustainability for Hong Kong;
- Establishing baseline data to provide a basis for assessments;
- Developing the Sustainable Development System (SDS); and
- Implementing the SDS.

These stages component tasks and key outputs are shown in Figure 1.

There are a very large number of specific deliverables that the study will provide but there are three main outcomes and these are discussed below.

The first is awareness raising and education about sustainable development. Agenda 21 states that sustainable development strategies should be prepared with the widest possible public participation and this approach is being followed in Hong Kong. A two staged education and consultation programme will be conducted. The first stage will have two goals: to raise awareness about sustainable development issues and how they apply to Hong Kong, and to gain participation in the development of guiding values, indicators and the associated targets or "evaluative criteria". The second stage will introduce the pilot SDS to interested parties and will seek their participation in refining it through a process of testing against various development scenario.

Thus, the main outcomes being sought from this aspect of the study are: an increased awareness of sustainability issues, values and indicators that reflect societal objectives in Hong Kong, and an understanding of the SDS, specifically its purpose and means of application.

STAGES :	DEFINING SUSTAINABILITY FOR HONG KONG	ESTABLISHING BASELINE DATA	DEVELOPING THE SUSTAINABLE DEVELOPMENT SYSTEM (SDS)	IMPLEMENTING THE SDS
TASKS:	• REVIEWING INTERNATIONAL PRACTICES • ESTABLISHING REGIONAL DEVELOPMENT AND ENVIRONMENTAL PRESSURES • EDUCATING AND CONSULTING THE PUBLIC AND STAKEHOLDERS ABOUT SUSTAINABLE DEVELOPMENT	• IDENTIFYING THE ADEQUACY OF EXISTING DATA • CONDUCTING INVESTIGATIONS TO FILL DATA GAPS	• ASSESSING THE SUSTAINABILITY IMPLICATIONS OF TDS AND OTHER DEVELOPMENT SCENARIOS • REVIEWING DECISION MAKING PROCEDURES FOR DEVELOPMENT PROGRAMMES • RECOMMENDING INTEGRATION OF SDS INTO ENHANCED DECISION-MAKING PROCEDURES • PREPARING DECISON-SUPPORT TOOLS • PILOT TESTING THE SDS	• MODIFYING THE SDS AFTER THE PILOT TESTS • TRAINING THE USERS OF THE SYSTEM • EDUCATING AND CONSULTING THE PUBLIC AND STAKEHOLDERS ABOUT THE SDS AND HOW IT WILL WORK
KEY OUTPUTS:	• DEFINITION OF SUSTAINABILITY, GUIDING VALUES AND INDICATORS • INCREASED STAKEHOLDER AWARENESS • PUBLIC EDUCATION AND CONSULTATION	• BASELINE SOCIOECONOMIC AND ENVIRONMENTAL DATA	• INITIAL SDS AND DECISION SUPPORT SYSTEM	• FINAL SDS • TRAINING OF USERS • PUBLIC EDUCATION AND CONSULTATION

FIGURE 1 - SUSDEV 21 SIMPLIFIED METHODOLOGY

Environmental Resources Management
6th Floor
Hecny Tower
9 Chatham Road
Tsimshatsui, Kowloon
Hong Kong
ERM

The second main outcome will be the SDS. It will be a set of tools to allow sustainable development issues to be integrated into Government decision making. The tools will be computer based and will consist of a geographic information system (GIS) and a decision support system (DSS). The GIS will contain information on the current state of socio-economic and environmental conditions relevant to the sustainable development indicators. It will have an input module that will enable users to calculate the changes to baseline conditions that will occur as a result of a proposed projects or policies. The DSS will integrate the baseline data and changes to it and from proposed projects or policies with the sustainability indicators. This allow assessments of the sustainability implications of proposals to be made by comparing expected changes in socio-economic and environmental conditions to the indicator targets.

An overview of how the SDS will work is given in Figure 2.

The third main outcome will be the introduction of institutional arrangements that will facilitate implementation of sustainable development. The fundamental tenant of sustainable development is integration of socio-economic and environmental considerations in development planning and resource use decisions. This requires the participation of virtually all sectors of government including those agencies dealing with economic services, land use planning, transport, community services, water supply and sewerage, natural resources management and environmental protection. As the study brief notes, in Hong Kong these sectors have tended to operate with a high degree of autonomy and this is not conducive to achievement of sustainable development. Thus, the outcome being sought in this regard is integrated decision-making procedures for policies, programmes and projects that are relevant to sustainable development.

3 *IMPLEMENTATION OF SUSDEV21*

The formal process for implementation of SUSDEV21 consists of: training programmes in the use of the SDS; testing the system against a range of development scenarios; preparing operations manuals and draft legal or administrative instruments. While the formal process is clearly specified the actual means of administration of the process is unknown at this early stage in the study and in this regard it is useful to look at some international models.

The UN's Commission on Sustainable Development has suggested that appropriate mechanisms for institutional integration could include national sustainable development councils, committees or task forces. These types of mechanisms have been adopted in a number of countries or provinces, with an additional element being inclusion of parties beyond government, particularly business and key interest groups.

There are numerous examples of institutional arrangements that could be instructive for Hong Kong, falling into three broad categories.

Multi-stakeholder approaches are the first category and they involve a diverse range of organisations, including many outside national government. Examples; include: the US President's Council on Sustainable Development, which judges its greatest achievement as being the consensus reached among diverse interests from business, government, community and environment groups and the

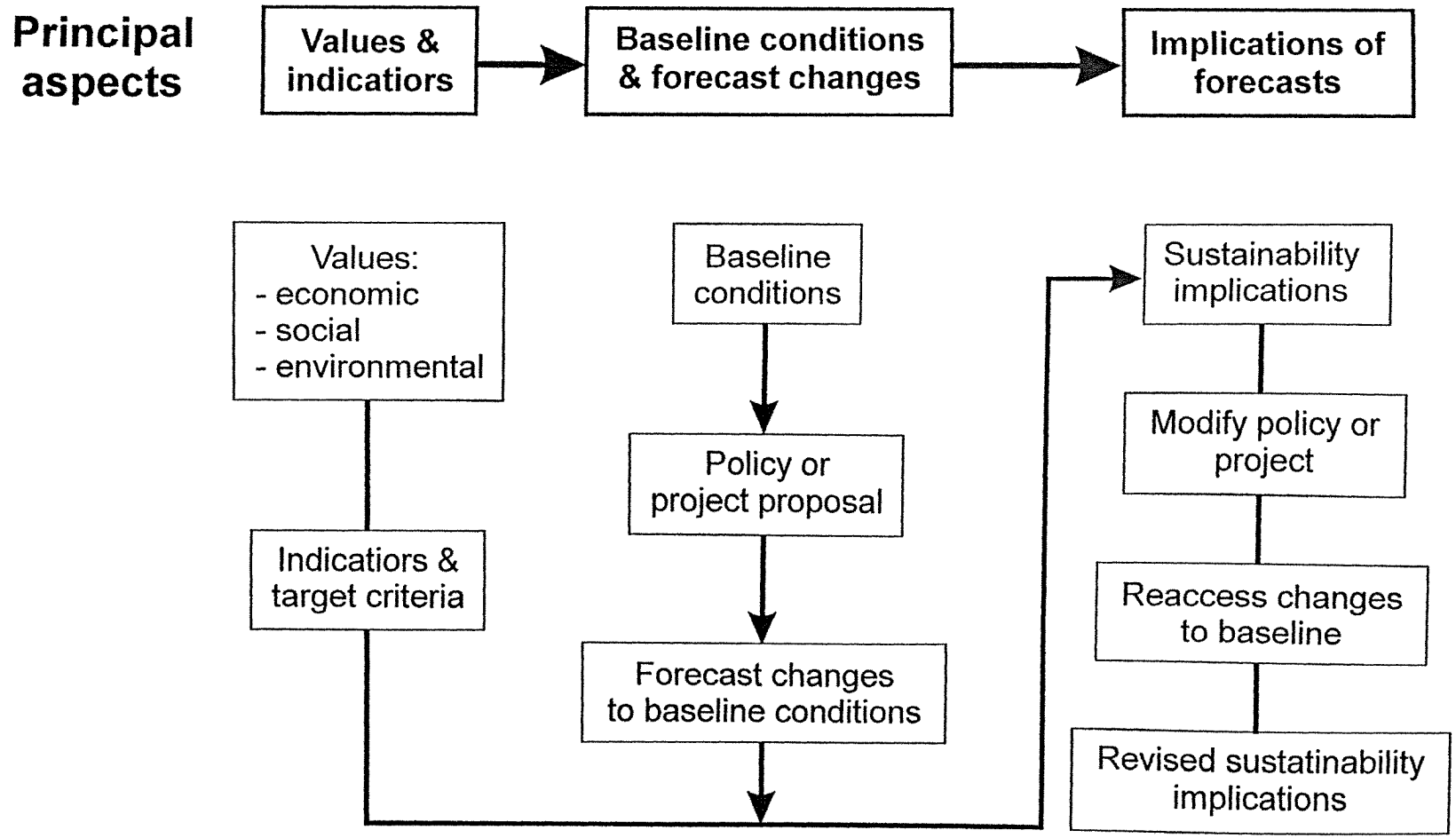


FIGURE 2 - SIMPLIFIED SDS FLOWCHART

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education community; the Canadian Round Table on Environment and Economy (NRTEE) which comprises a chair and 24 distinguished Canadians appointed by the Prime Minister and having a mandate to serve as a catalyst in identifying, explaining and promoting the principles and practices of sustainable development; and the UK Round Table on Sustainable Development which is co-chaired by the Environment Secretary and a senior academic and has about 50 members drawn from central and local government, business, environment groups and the community.

Interministerial organisations are a second option. Their mandate is generally to track progress in meeting planned objectives and to ensure sustainable development is being implemented across government. Examples include: Germany's Permanent Committee on Sustainable Development, Singapore's Inter-ministerial Steering Committee on the Green Plan, Japan's Council of Ministers for Global Environmental Conservation and Sweden's Delegation on Ecologically Sustainable Development.

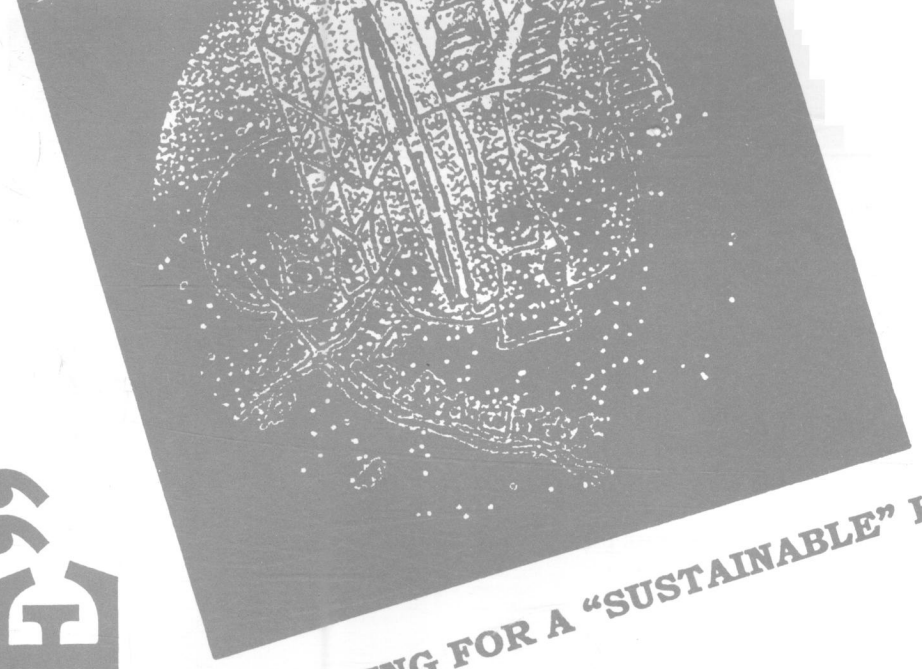
The final option is sector specific partnerships. Interesting examples are the Forest Stewardship Council and the Marine Stewardship Council which link multi-national companies and NGOs to promote sustainable use of natural resources.

4 *CHALLENGES AND IMPLICATIONS*

The definition of sustainable development for Hong Kong, together with the guiding values, indicators and targets will describe aspirations for a sustainable future Hong Kong. Clearly, there are numerous challenges in developing and implementing this framework.

Conducting an effective participation and education programme, building consensus about the definition, values, indicators and targets, and devising an acceptable and effective institutional structure all stand out as significant challenges. However, there is substantial enthusiasm and good-will in Government for SUSDEV21, and this will assist greatly in meeting these.

Introducing a sustainable development system in Hong Kong will produce significant changes in the planning system. If they are effective, these changes will be beneficial for all sectors of the Hong Kong community. The planning profession must be actively involved to ensure that these processes are both effective and efficient and to further a general acceptance of the benefits of sustainable development.



"SUSTAINABLE"

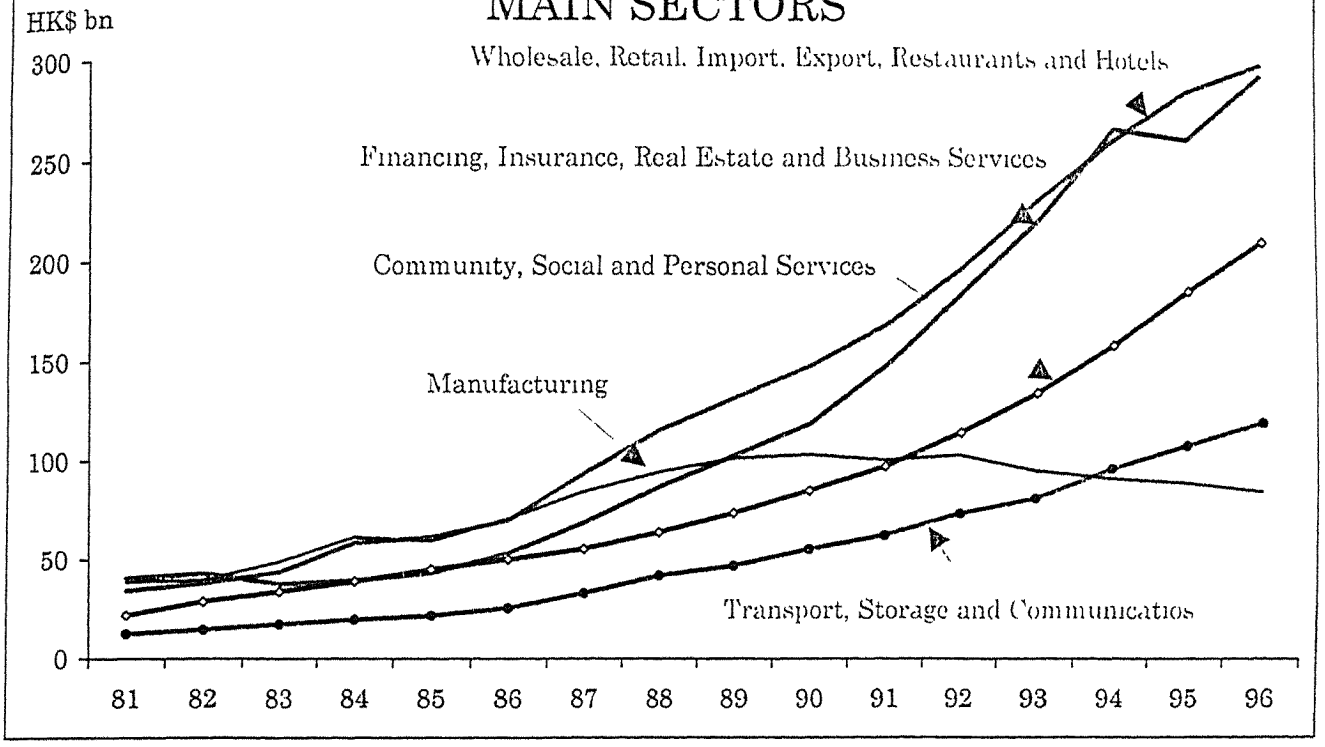
PLANNING FOR A "SUSTAINABLE" HONG KONG

Some Thoughts on HK's Medium-term Economic Prospects

Mr. KWOK Kwok Chuen

Standard Chartered

HONG KONG : VALUE-ADDED BY MAIN SECTORS



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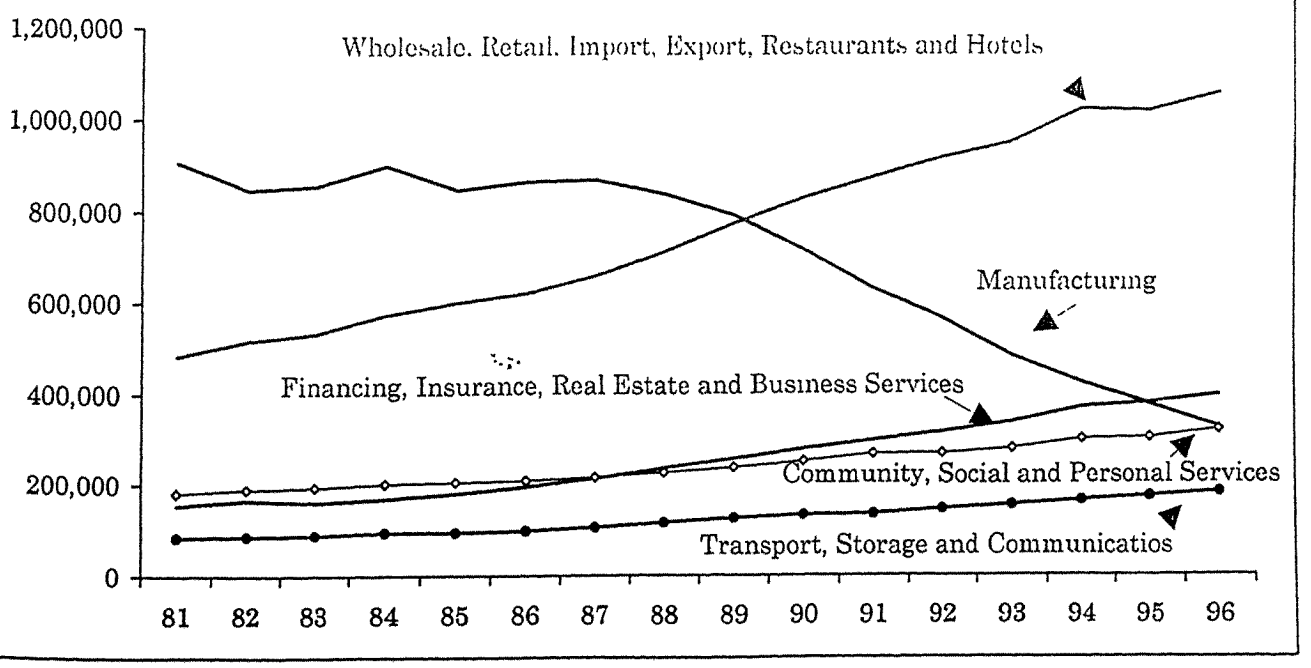
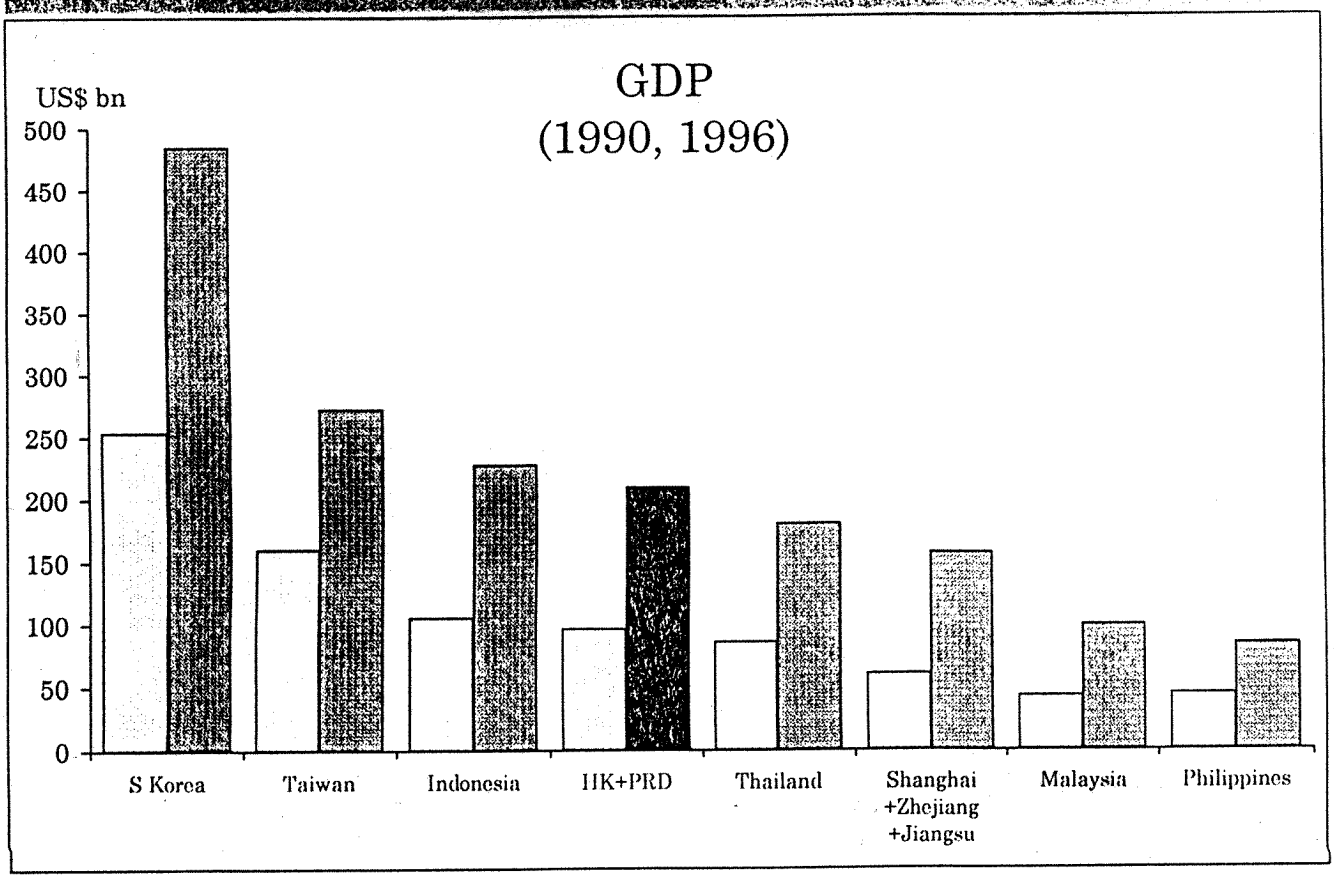
HONG KONG : EMPLOYMENT BY MAJOR SECTORS





A-GDP.XLS Chart 1 Work

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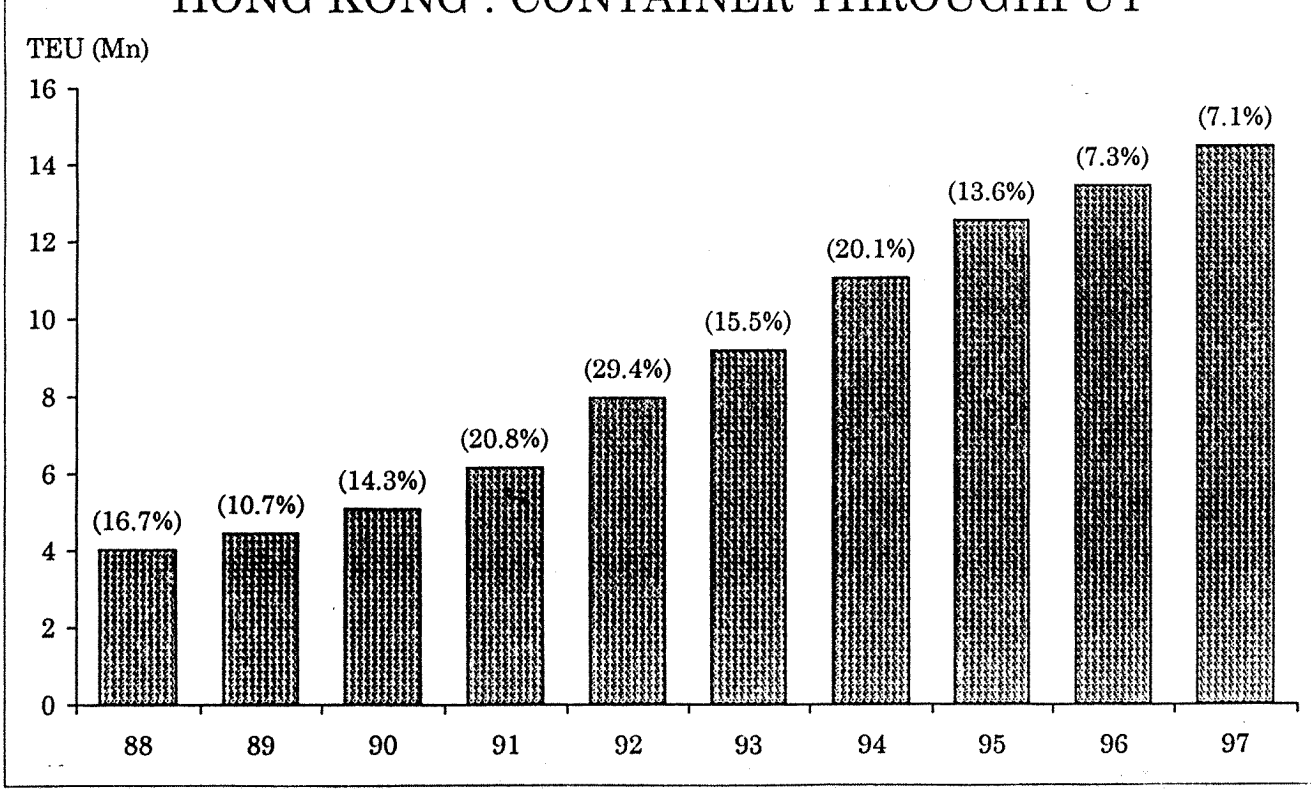

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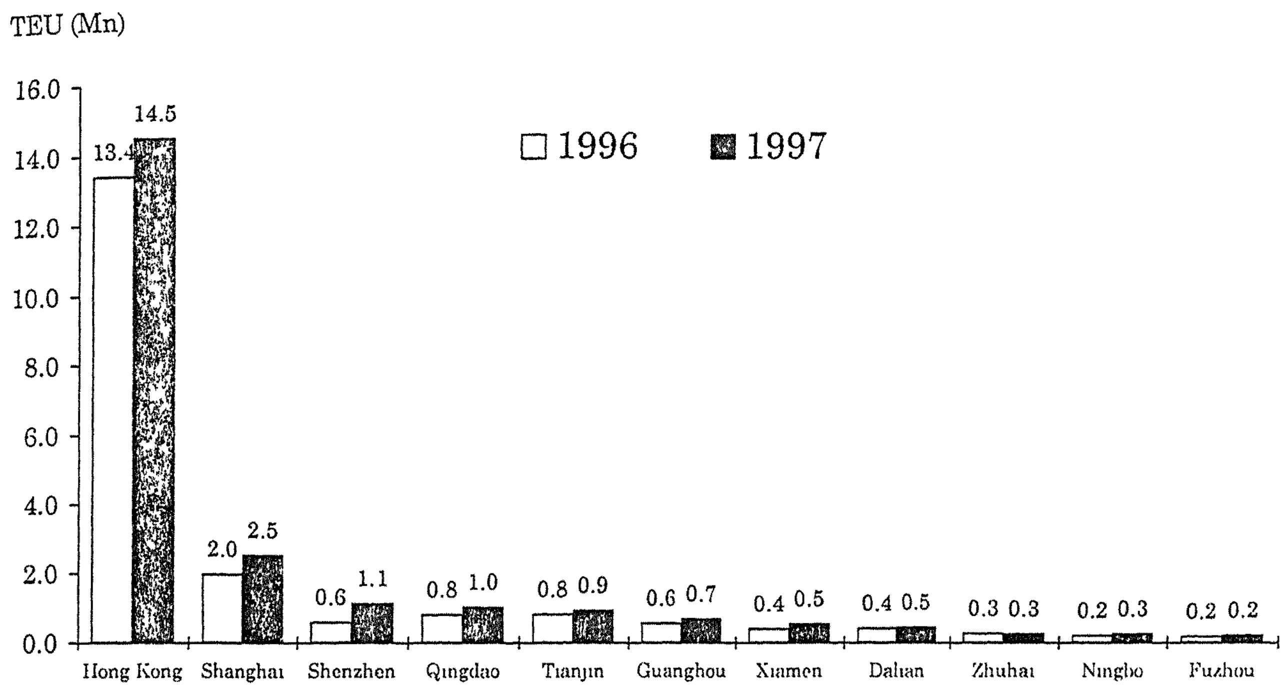
CHINA : CONTAINER THROUGHPUT



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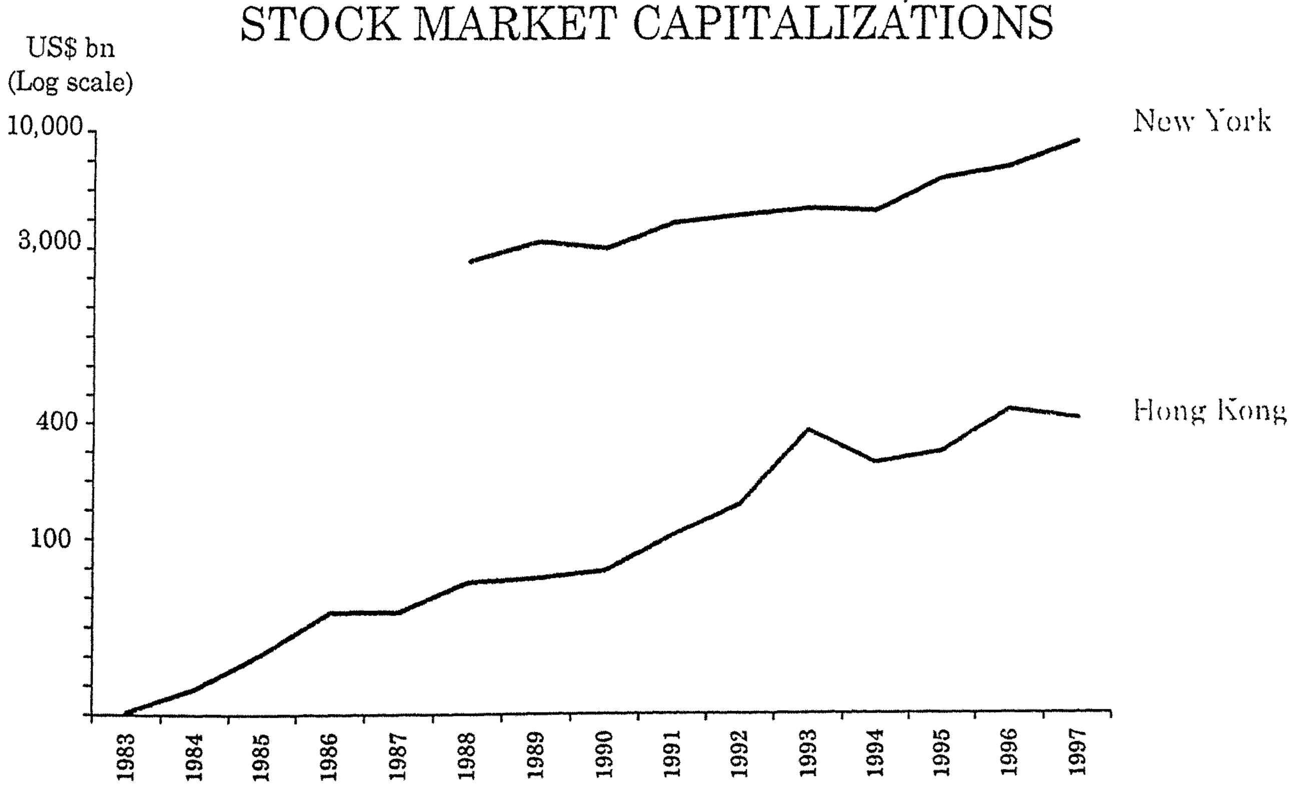
STOCK MARKET CAPITALIZATIONS



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Thoughts about HK's economic prospects

- Should/will Hong Kong develop high-tech industries ?
- Will Hong Kong's role as a trading centre be eroded because of high cost and as other cities in the mainland develop ?
- Will Hong Kong continue to survive as a financial centre ?

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Thoughts about HK's economic prospects (cont'd)

- What makes London the financial centre of Europe despite the growth of other European cities?
- Why is Osaka's relative importance as a business and financial centre declining ?
- Will the " home office" concept replace business centres ? Will commercial building be replaced by computer chips ?
- Will Hong Kong become anther Venice ? Zurich ? or London ?

"We (Hong Kong) don't make things.

We make things happen."

Victor Fung
Chairman, HKTDC

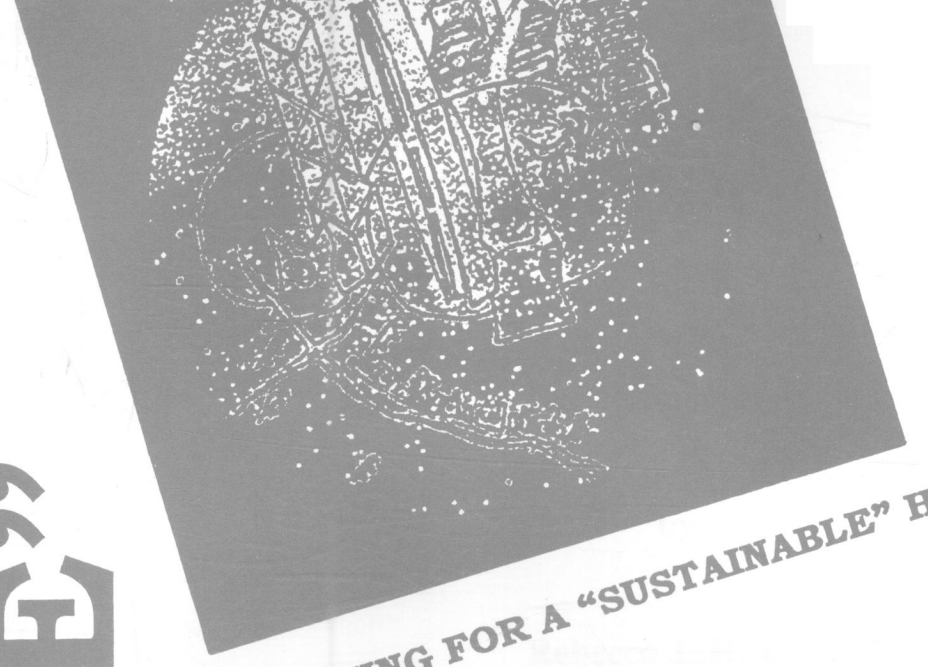
Standard Chartered

In a book published in 1996, Julian Simon made two predictions for the coming century :

(1) Humanity's conditions will improve in just about every material way, whether it is life expectancy, the price of a natural resource, or the number of telephones in China.

(2) Humans will continue to sit around complaining about everything getting worse.

"The Economist" Feb 21, 98.



PLANNING FOR A "SUSTAINABLE" HONG KONG

"SUSTAINABLE"

Housing in HK : How Sustainable ?

Dr. Rebecca CHIU

Housing in Hong Kong: How Sustainable?

by

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Paper presented at the Conference on Planning for a "Sustainable" Hong Kong, jointly organized by the Centre of Urban Planning & Environmental Management, The University of Hong Kong and the Hong Kong Institute of Planners, Hong Kong Convention and Exhibition Centre, Hong Kong, 25 February 1998.

Housing in Hong Kong: How Sustainable?

by

Rebecca L.H. Chiu

Introduction

Socio-ecologically housing development is a process that involves the transformation of natural resources, via labor power, into livable spaces. Subsequently the housing units so produced provide shelter, use and reproduce energy, and deliver waste to the wider community. Further, an important function of the housing units is to act as a form of social and cultural capital to the occupants (Bhatti *et al*, 1994). Thus, while housing development should be continued to meet socio-cultural needs and economic demands of society, given the environmental impact of housing, the development must be checked by sustainability. That is, it should comply with the concept of sustainable development: housing development that meets the housing needs of the present generation should not compromise the ability of the future generations to meet their own housing needs (Rydin, 1992; Stren, 1992). We thus need to consider the impacts of housing exerted on the local and global environment, and the inter-generational and intra-generational equity in housing (Gibson, 1994, Chiu, 1997).

Sustainable housing development has particular relevance to Hong Kong in view of the shortage in developable land, high population density, high-rise development, and an active housing market characterized by high price and quick return. Adopting Rydin's (1992) and Chiu's (1997) framework for examining sustainability issues in housing, this paper aims to establish a framework for examining the environmental problems in Hong Kong's housing sector *vis-a-vis* the sustainable development concepts, and to present some of the initial findings to estimate the sustainability of Hong Kong's housing sector.

The housing process model

While the work of Bhatti *et al* (1994) demonstrates that the production, management and consumption of housing affect global warming, ozone depletion, depletion of non-renewable resources, as well as human health and well being, Rydin's (1992) model inserts an environmentally-sustainable dimension to a building life cycle applicable to residential properties. It divides the building cycle into six stages, spanning from inception, design and construction, through building use, to refurbishment and demolition. At each phase of the cycle, questions concerning the use of natural resources are raised, followed by possible environmental impacts exerted by the respective phases. This model has been applied by Chiu (1996, 1997) to conduct a preliminary examination of the state-of-the-art of green practices in Hong Kong's housing sector. In this paper, Rydin's model and Chiu's (1996, 1997) findings will be used as a base to further identify and examine the major environmental problems in the local housing system.

Green practices and environmental problems

Project conception and brief

The questions raised by Y. Rydin for this phase of housing developments are: whether the project is the most appropriate and optimal use of resources (land, energy, minerals etc); whether the foregoing opportunity to conserve resources have been considered; whether the project complements existing infrastructure and permits environment friendly uses; whether new demands on infrastructure has been duly assessed. Even if answers to these questions are positive, we still need to ask: how much of the existing housing stock was given these environmental consideration at the conception stage?

It was found that the incorporation of the Environment Chapter in the Hong Kong Planning Standards and Guidelines in 1985, and the imposition of an environmental impact assessment study on major private and public housing development projects (which are not less than 2000 units) since the mid-eighties (The EIA Ordinance was promulgated in 1997) are important environmental considerations for this stage of the housing process (Chiu, 1997; Reference:HKPSG and EIA Ordinance). Based on these directives and the legislation, the Environmental Protection Department scrutinizes all town plans and the Town Planning Board accords a major emphasis to the environmental aspects when it considers planning applications (Third Review on the Progress of the 1989 White Paper). These considerations focus on the impacts on the local environment, complementarily and compatibility with existing land uses and infrastructure, the avoidance of aggravating environmental problems and the seeking of opportunities to improve the environment. However, it is important to note that about 58% (1,193,419 units) of the existing housing stock was produced prior to 1985 when environmental consciousness was weak (Rating and Valuation Department, 1985; information provided by Census and Statistics Department, 18 February 1998). Hence a majority of the current housing stock has not been given adequate or even any environmental consideration when it was planned, not to mention the worsening of the living conditions by the construction of infrastructure such as flyovers and trunk roads in their close proximity at the times when environmental awareness was weaker than today.

As a matter of fact, the Territorial Development Strategy Review of 1996 pointed out that given the estimated population growth, Hong Kong would potentially face serious environmental impacts even mitigation measures are implemented. The need for conducting a comprehensive environmental baseline study was called for (Third Review,p.41) In particular, Ng and Ng (1997) pointed out that in some parts of the territory such as Tuen Mun Areas, vehicle-related air pollution would be likely to cause excesses of the statutory Air Quality Objectives. As well, sewerage infrastructure would be overloaded in many areas, especially Northwest N.T., Northeast N.T. and the Metro Areas. While solid waste generation may exceed estimated rates, traffic noise is expected to exceed current acceptance level, especially the Northwest N.T. because of increased port-related activities and the growth of associated traffic volume (p.499-500). These general environmental problems would impose fundamental constraints in selecting environmentally desirable sites for locating housing development. If these predictions materialized, one may ask: do we have any choice at all?

Further, out of the environmental issues raised by Y. Rydin for the initial stage of

project development, the more general and fundamental issues of resource conservation, alternative resource utility, apart from land resources, have not been addressed in the project conception process. The allocation of land for residential use to either the private or public sector in Hong Kong is based on housing need and demand and generating government revenue, and they are often in conflict. The government was alleged that its goal in land allocation seemed to be to maximize land values in selling land to developers for development or redevelopment, neglecting possible social impacts (Loh, 1994). The controversies over housing development in Sha Lo Tung and Nam Sang Wai are examples demonstrating the conflicts between conserving the ecology and economic benefits of housing development. There is also criticism that the existing Country Parks system is inadequate to protect valuable habitats and species in Hong Kong as park boundary does not include lowland rivers, fresh water marshes, and *fung shui* woods (Ng and Ng, 1997).

Housing design

For this stage of the housing process, it is necessary to find out the proportion and features of the existing housing stock which has been given environmental consideration at the design stage. The environmental considerations are: whether the functional arrangement is designed for the present and long term usage; whether the project is designed to enable energy saving, minimum resource utilization and efficient waste management when the building is put to use; whether environment friendly building materials and construction system have been chosen for the projects; whether privacy and community life are adequately catered for in the design, and whether the designs encourage simple life style (Rydin, 1992; Ng and Wong, 1997; Jia, 1995).

Overall, government's guidance in green housing design is minimal, although the Housing Authority and the Housing Society have been active in experimenting with green designs, the use of environmentally friendly building materials, and waste management. These endeavors, together with those attempted by the architecture profession in Hong Kong, are recent but they pertain to most of the environmental concerns raised by Rydin for the design stage. However, it needs to be noted that most of the innovative designs experimented are ad hoc pioneering endeavor: their wide adoption is yet to come. Further, environmental considerations in housing design have not been made mandatory either by law or professional practice requirements. However, architects have pointed out that the building regulation intended to ensure natural ventilation for public health purposes is in tune with the low energy housing design concepts. Nonetheless, the effectiveness of the implementation regulation, i.e. the natural ventilation cooling effect, has often been dwarfed by the high building density and the overwhelming emphasis on spatial efficiency. May be primarily because of this reason, Hong Kong was heavily dependent on mechanical air conditioning for cooling, and architects generally do not attempt to include solar shading and thermal insulation design for cooling (Ng and Wong, 1997). Indeed Cole and Wong (1996) concluded from a life-cycle energy analysis of high-rise dwellings in Hong Kong that among the four kinds of energy consumption involved in the housing process, the recurrent operational energy was the one that needed reduction most. Space conditioning and water heating were the two key types of domestic energy consumption, which was a major form of recurrent operational energy consumption.

Yet Wong and Ng (1997) argue that the use of sea water for toilet flushing in Hong

Kong instead of potable water is a distinct environmentally friendly practice, reducing about 30% of the domestic potable water use. The reduction will be greater if the new development areas such as the Tseung Kwan O new town are installed with the sea water infrastructure. The high density housing estates of Hong Kong potentially would also increase the efficiency of water recycling on the neighborhood level when the appropriate technology is developed. In contrast, the segregation and collection of recyclable from household solid waste (such as paper and aluminum tins) are already widely practiced in public housing estates. However, Wong and Ng (1997) recommend that to reduce disposal at land fill sites, an architectural strategy is needed to provide dedicated, well-ventilated storage space with specially-designed bins, compartments, or even chutes for collection of designated recyclable, including computable organic waste.

Finally, Y. Rydin's concern of whether the design is of human scale and is conducive to simple life styles have been generally ignored thus far (Chiu, 1997). Similarly, Jia's concern about the functional adaptability in the long term has generally been ignored. While the consideration for privacy has been inevitably inadequate given the high-density living environment, the provision of facilities for community life is made possible by the estate design of much of the housing stock and the directives of the Hong Kong Planning Standards and Guidelines (discussed in greater detail later).

Construction

Issues investigated are: to what extent has consideration been given to using environment friendly construction materials; whether and how disruption (noise, dust, traffic etc.) is kept down to the minimum particularly in view of the high density development in Hong Kong; whether health and safe site operatives are guaranteed; and whether the disposal of construction waste and hazardous materials causes environmental hazard.

Chiu (1997) found that on the whole, environmental consciousness and practices in the construction process in Hong Kong is strongest in mitigating noise pollution and ensuring better waste management. Tighter control on air pollution and safety operatives are yet to be achieved. Whereas both the private and public sectors have given greater attention to environmental concerns in the choice of construction material, it seems that the public sector is taking the lead. Likewise the Housing Authority has a better record in improving industrial safety in construction sites. However, Ng and Wong (1997) point out that the construction sector in Hong Kong is still a major consumer of hardwood sourced from tropical rain forests. They also argue that clear and consistent environmental information on the construction material is often lacking. The fact that materials produced in the region (especially China) are generally preferred is however welcome because the embodied energy is lowered due to the saving of transport energy.

Building use

This phase is an outcome of the previous phases of work. Issues raised for this stage can be attributed to two categories: the impact on the local and global environment in the use of the building, and the environmental problems affecting the daily living of the building users. Specific issues may include: general comfort of homes (e.g. ventilation, lighting, internal partitioning, cleanliness of the surroundings); use of domestic fuel; intensity of using

air-conditioning; whether residents can get their daily needs met within close proximity; whether they feel safe in the surroundings; whether the living environment has caused any serious or chronic health problems; and whether they are aware of and in support of the environmental measures installed for the dwelling. An essential issue not to be neglected during the building use stage is proper building management and maintenance, as it directly affects the quality of the immediate living environment.

The general environmental issues in Hong Kong discussed previously (such as domestic energy consumption, domestic solid waste production and the noise problem) are as a matter of fact part and parcel of the environmental conditions associated with the use of the residential buildings. More in-depth and micro studies are of course necessary to solicit the residents' perception of their environmental problems. An analysis of some secondary data is however useful for understanding the general living environment of the Hong Kong people.

The 1996 By-census found that 46% of Hong Kong's households (855,937 households) live in permanent public housing which were self-contained quarters in high rise blocks clustering as estates (Table 1). The estates were equipped with a full range of community facilities complying with provisions in the Hong Kong Planning Standards and Guidelines. Another 49% of households live in private permanent housing (private residential flats, villas and stone structures) with more diversified conditions. Fortunately by 1996 only 787 households still lived in non-self contained properties. But in the same year, 95,190 (5%) households only occupied a room, a cockloft or a bedspace in self-contained quarters having to share bathroom and kitchen with other occupiers. The 29,558 households (2%) living in simple stone structures may occupied larger space than this group of households, but their units might not be served with internal piped water supply and a flush toilet system. Households living in the remaining types of private residential flats would enjoy self contained facilities, but only those residing in housing estates would be provided with a full range of community facilities. Needless to say, those who stayed in temporary housing would have limited internal and external facilities. On the whole, the living conditions are improving as reflected in the diminishing number of households living in sub-standard housing and the corresponding increase in the number of those who were residents of better equipped dwellings in the period between 1986 and 1996. One may of course query whether the pace of improvement could have been made faster.

Similarly the degree of sharing in private housing also reduced in the same period (Table 2). The degree always approximated[1] to one in public housing due to the allocation policy. As an indicator of overcrowding, the pattern of the degree of sharing shows that overall public housing is less crowded than private housing. However, Table 1 demonstrates quite clearly that those who had to share the premises with another households in private housing were mostly those who lived in rooms, cocklofts or bedspaces. Indeed the average living space per capita was only 6.9 sq m (internal area) in the public sector but 17.2 sq m (saleable area) in the private sector in 1996 (Hong Kong Housing Authority, 1996; Census and Statistics Department, 1996; and Rating and Valuation Department, 1997).

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[1] The degree of sharing is slightly higher than one because of the co-dwelling elderly housing schemes.

Another important aspect at the building use stage is the services of professional housing managers. Proper property management is not only essential for providing a hygienic immediate living environment, but is also indispensable for a safe living environment and for the protection of property value. By to-date, all public housing and most of the private housing estates are professionally managed. However, residents of most low quality private housing blocks, squatter settlements and temporary private housing areas would be deprived of such services and have to tolerate poor and unsafe living environment. The recent fire hazards of the old tenement buildings could not be better examples.

Before leaving this sub-topic, it is necessary to point out that while high-density living, which is mandated by need rather than by choice in Hong Kong, may produce many environmental vices, it does reduce some potential environmental problems. The economy of scale and the considerable clientele built up in the estates enable the provision of shopping and other community facilities within walking distance. Thus the need to travel by vehicle for shopping and community facilities is reduced. High density living, i.e. high concentration of potential passengers, also makes the operation of public transport financially viable, enabling Hong Kong to develop one of the best public transport system in the world. Private transport, which is less efficient and less environmentally friendly in aggregate terms, is thus made less attractive in Hong Kong.

Refurbishment

Environmental issues involved in refurbishment are: whether large-scale replacements of building components are minimized; whether refurbishment periods are extended by careful maintenance, whether disruption is kept down to the minimum, whether safety of site operatives is attended to; whether construction waste is well managed; and whether a recycling pool of building materials is in operation.

It was found that minor and major maintenance programs have been regularly carried out in Hong Kong's public housing sector as well as generally in private housing blocks and estates with proper management (Chiu, 1997). In recent years, more effective maintenance management systems, such as the CARE system (Condition, Appraisal, Repair, and Examination) and the MASS system (Maintenance Assessment Score System) have been introduced by the Housing Authority (Hong Kong Housing Authority, 1993). The maintenance work has certainly extended the refurbishment periods. It is nevertheless difficult to give a simple answer to Y. Rydin's question of whether small scale repairs are possible instead of large scale replacements of building components. Very often, refurbishment also involves the upgrading of substandard buildings or units to the prevailing standards and therefore basic replacement does not suffice. There is, however, no evidence to show that considerations have been given to using recyclable building materials for renovation and to conserve existing building fabric with embodied resources. The environmental problems incurred during refurbishment would be subject to controls as for the construction process.

Obsolescence and demolition

Environmental issues addressed at this phase are: whether alternative uses of buildings are considered when their economic building life expires before the physical life; whether

buildings of heritage value are preserved; whether environmental hazard caused by the demolition process is minimized; and whether redevelopment makes a positive contribution to the environment. Some of the issues raised for the earlier phases will also be relevant.

Generally redevelopment in Hong Kong does provide a chance for improving the living environment, and regulations are being or have been developed to minimize disruption to the environment during the demolition and re-construction process, notably the Building (Demolition Works) Regulations and other environmental laws and regulations. However, inadequate attention has been given to maximizing the utility value of residential buildings. As well, heritage preservation may require more effort, not only from the government redevelopment agent, but also from the private developers which produce over half of new private housing from redevelopment projects (Planning, Environment and Lands Branch (Hong Kong), 1995).

Conclusion: how sustainable?

Though preliminarily, the above discussion throws light on the sustainability of Hong Kong's housing sector. Owing to the introduction of environmental consideration at the planning stage, housing built before 1985 would be more friendly environmentally, even more so with the imposition of environmental impact assessment on major housing projects around the same time. However the sizeable stock built after 1985 would need remedial action. The future of a health living environment does not look promising with the projected rate of population growth. Environmental strains posed by population growth may severely limit the availability of housing sites meeting environmental requirements. Environmental standards may need to be compromised by the current strive for optimizing land efficiency to meet projected housing need. As the paramount concern of the SAR government to meet housing need is indisputable, the only possibility to improve or at least to upkeep the sustainability of the housing sector lies with the research and development of mitigating measures and green designs and strengthening the legal back-up for reducing adverse environmental impact of a highly densely-populated city.

So far, the endeavors of green housing design are ad hoc pioneering experiments. As discussed, a high density living environment offers both opportunities and constraints for introducing environmentally-friendly designs and measures, and reducing environmental hazards. While a lot more work need to be done in this area, the provision of clear and consistent information on the building materials as suggested by Ng and Wong (1997) seems to be fundamental and relatively easier to be mandated.

Concerning the use, management, refurbishment and demolition of the existing housing stock, several preliminary conclusions can be drawn. First, the intra-generation housing inequity should be eradicated as soon as possible. Residents living in the sub-standard portion of the housing stock, though a minority, should be rehoused in quarters meeting the basic prescribed standard. Second, professional housing management should be universally introduced to all housing stock as this would improve the immediate local living environment, strengthen safety especially reducing fire hazard, prolong the life span of the buildings due to more careful maintenance of the property, and help to create and encourage community life. Third, partly due to the strong investment nature of Hong Kong's housing sector and partly due to the weak environmental consciousness, preservation of heritage

especially by the private sector is almost non-existent. For the same reason, buildings are demolished before their physical utility value expires, and building materials are seldom recycled. Fourth, the profit-oriented developers are generally hesitant to try out environment-friendly designs unless they offer a better profit prospect. The fact that about half of the housing stock is produced and managed by the government is thus more conducive for introducing an environmentally sustainable housing policy. As a matter of fact, the public sector is already taking the lead in experimenting green housing design and measures. The public housing stock is also managed by professional staff. Finally, it must be emphasized that at a time when the community is committed to quicken housing production in the long term to meet housing demand, it is more important that the environmental impacts are attended to because the quicker the housing development, the greater are the adverse environmental impact and repercussions, and much of these are irreversible or takes a long term to be eliminated. The research and development on sustainable housing design, building materials, and a sustainable housing policy generally is therefore not a luxury but a must for Hong Kong today.

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Table 1 Domestic Households by Type of Quarters, 1986, 1991 and 1996

Type of Quarters	1986 Number	%	1991 Number	%	1996 Number	%
Permanent housing						
Public rental flats	513,849	35.5	576,313	36.5	657,026	35.5
Housing Authority Subsidized sale flats	57,183	4.0	115,729	7.3	194,332	10.5
Housing Society Subsidized sale flats[1]	N.A	N.A	N.A	N.A	4,579	0.2
Private residential flats[1]						
Whole house/flat[2]	447,937	31.0	585,392	37.0	714,110	38.5
Room/Cockloft/Bedspace[2]	186,074	12.9	120,113	7.6	95,190	5.1
Non self-contained Quarters	2,128	0.1	1,180	0.1	787	0.0
Villas/Bungalows/Modern village houses	42,000	2.9	50,763	3.2	76,096	4.1
Simple stone structures	50,281	3.5	32,189	2.0	29,558	1.6
Staff Quarters	20,265	1.4	20,275	1.3	23,556	1.3
Non-domestic quarters[3]	15,904	1.1	12,461	0.8	15,622	0.8
Temporary housing						
Public temporary Quarters	35,637	2.5	27,703	1.8	14,127	0.8
Private temporary Structures	74,431	5.1	37,954	2.4	28,265	1.5
Total[4]	1,445,689	100.0	1,580,072	100.0	1,853,248	100.0

Source: Census and Statistics Department, 1996, *1996 Population By-census: Summary Results*, Government Printer, p.42.

[1] Housing Society subsidized sale flats include flats built under the Flat For Sale Scheme (FFSS) and the Sandwich Class Housing Scheme (SCHS) of the Housing Society. These flats were classified under 'Private residential flats' in the 1986 Population By-census and the 1991 Population Census and no separate figures were available then.

[2] These types of accommodation refer to those found in self-contained quarters which has internal piped water supply and a flush toilet system.

[3] Please see Definition of Terms for the detailed coverage of this quarters type. The counting rule for quarters in hospitals, penal institutions and barracks adopted in the 1996 By-census is different from those adopted in the previous census/by-census. The above figures are therefore not strictly comparable.

[4] The figures exclude domestic households living on board vessels.

Table 2 Average Number of Domestic Households per Quarters by Type of Housing, 1986, 1991 and 1996

Type of Housing	Average Number of Domestic Households per Quarters		
	1986	1991	1996
Public rental housing	1.01	1.01	1.01
Housing Authority subsidized sale flats	1.00	1.00	1.00
Housing Society subsidized sale flats[1]	N.A	N.A	1.00
Private permanent housing[1]	1.21	1.12	1.08
Temporary housing	1.07	1.03	1.03
Non-domestic housing[2]	1.12	1.06	1.34
Overall	1.11	1.06	1.05

Source: Census and Statistics Department, 1996, *1996 Population By-census: Summary Results,* Government Printer, p.43.

[1] Housing Society subsidized sale flats include flats built under the Flat For Sale Scheme (FFSS(and the Sandwich Class Housing Scheme (SCHS) of the Housing Society. These flats were classified under 'Private permanent housing' in the 1986 Population By-census and the 1991 Population Census and no separate figures were available then.

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PLANNING FOR A "SUSTAINABLE" HONG KONG

"SUSTAINABLE"

Hong Kong the Sustainable Metropolis for Well-being Living

Dr. Simon S.C. CHAU

HONG KONG THE SUSTAINABLE METROPOLIS FOR WELL-BEING LIVING

Simon S C Chau
Director, Produce Green Foundation

TO SURVIVE, WE MUST REDRESS THE PRESENT
ECOLOGICAL IMBALANCE IN TIME.
TO LIVE WELL TOGETHER, REAL HUMAN
BASIC NEEDS ARE TO BE FULFILLED.
TO ACHIEVE THESE AIMS, THERE HAS TO BE
A SEA CHANGE IN PEOPLE'S WORLDVIEW
AND LIFESTYLES.
TIME IS NOT ON OUR SIDE.
BUT THE GOOD NEWS IS THAT THIS IS
ACTUALLY HAPPENING.
THE CRITICAL MASS IS GATHERING TO
BRING ABOUT THIS TRANSFORMATION.

1. BEHOLD OUR CITY OF FOLLY

A 'modern' city, by definition, is a malignant tumor on this planet.

With its unnatural concentration of polluting activities, consumption of non-renewable resources, and the separation of food production and consumption, not to mention the degradation of the physical environment, human settlement of this kind is a curse to all creatures under heaven.

Hong Kong is one of the worst examples of urban irresponsibility on a grand scale. While most mega-metropolises around the world today are fighting similar battles against air, noise and water pollution, we distinguish ourselves from the others with our pathetic lack of awareness of the situation. Go and ask Mr Chan out there about SUSTAINABILITY. "What? Which horse?".

2. WHY SUSTAINABILITY?

To me, the answer is simple. It is a matter of survival, and it is a moral responsibility.

Yes, in the end we are all dead. But what happens before then should certainly matter. The eco-logic is that we need a network of well-balanced conditions to survive. When the this balance is upset to a critical degree, one disaster after another will follow, and there will be universal suffering and mass extinction. The process has already begun, thanks to the ruthless urge to 'develop' on the part of the present human generation.

If we were to enjoy life in the coming decades, we must reverse this destructive trend promptly. Unless we make it in time, unimaginable catastrophes will be waiting round the corner-- climatic changes, diseases, water and food shortage, or even a lack of oxygen. Animals and plants in their trillions will be deprived of their right to enjoy life in this paradise. Our children and innumerable unborn souls will suffer a similar fate. All because of our blindness and selfishness.

3. WAKING UP TO THE CALL TO WELL-BEING

As the millennium draws to a close, ecological disasters are speeding up the general public's awakening: What is the price we are paying for these cars, electronic wonders, shopping malls, and cyber-nirvana? We struggle to survive with poisonous air. We are constantly bombarded by noises which drive us crazy. Our food and drinks are becoming chemical and radioactive cocktails. We are locked up in ugly and uninspiring artificial environments, as more and more of the countryside is covered with concrete. Our very health is threatened by a lifestyle molded by this kind of a civilization.

Man does not live on bread alone. Physical comfort and sensual satisfaction do not guarantee happiness, they are not even its pre-requisites. Now that an increasing proportion of the world's population has access to the basic elements of "modern life" (e.g. telephone, TV, washing machine, and safe drinking water), people are in a position to reflect on "What this is all about?" and "What are we doing?". Washing machines and computers and the like are supposed to save labor, why are we busier than ever? Cars are designed for carrying people to places, why are we finding ourselves increasingly difficult to get around? Telephones and electronic mails connect people across oceans, why are we

losing our ability to communicate our minds and feelings? Medical miracles are supposed to improve our health, why are we more sick and weak than our ancestors? The television and videos are supposed to entertain, why are there more people frowning daily than ever before?

So it is not enough just to "save our Planet" in the sense of re-establishing its ecological balance. It is not enough just to provide all the people on earth with all the material needs and wants. If our mission is to ensure that people by and large can have a chance to live *in a state of well-being*, then the envisioning of our city's future must address to human emotional, social and spiritual needs as well. The satisfaction of these needs is as essential to people's quality of life as food and air.

While the definition and understanding of happiness vary from culture to culture and from individual to individual, it is safe to assume that a few common denominators regarding well-being do exist, such as
-- access to air, food, water, and shelter;
-- access to sunshine and the natural environment;
-- physical and emotional security;
-- social life;
-- meaningful work;
-- spiritual satisfaction.

It is only when these basic requirements, perhaps among others, are met that people can enjoy a state of well-being.

4. WHAT IS A SUSTAINABLE CITY LIKE

To be "sustainable", as I understand it, means that a minimal balance of the essential life maintaining mechanism is retained, so that the life process can go on year after year, and millennium after millennium.

In the context of a human settlement, that entails a closed system of resources and waste management. This means, on the one hand, all the resources required to sustain life (water, air, food, and raw material, etc.) will be renewed within the community, with no input from outside apart from sunlight, and on the other, there is zero emission of pollutants (sewage, gases, chemicals, radioactive substances, etc.) to the outside environment.

That is undoubtedly a tall order for a city. Yet we have no choice. If we were to live in peace with the environment, knowing that all will be well, this must be the long term goal of our civilization.

5. WHAT DO WE DO?

As it is now, Hong Kong is unsustainable in every aspect. Its economic success so far thrives on a deeply ingrained, territory-wide and time honored ethos of short-sightedness and self-interest. People here just do not think in terms of seven months, not to mention seven generations, as the wise American Indians do. To turn Hong Kong around and march on the road to sustainability, we need tremendous imagination fueled by a collective will to transform the society.

And here are the main sub-targets:

WATER SUPPLY AND SEWAGE--
Every district (e.g. Tsimshatsui) and every housing estate (e.g. Taikoo Shing) will be required by law to treat its domestic sewage to the extent that it is fit to drink. The treated water will be pumped back to the taps in houses or to irrigated local farms. Every factory will do the same. There will be no discharge to the environment apart from natural evaporation.

FOOD--
There will be a large-scale change of diet habits. People will be eating foods (mainly fruits, vegetables and grains), and drinking teas and juices, all locally grown. Most of the gardens and rural areas will be growing these. Roads and lanes will be lined with fruit and tea trees, and every household will be growing its own herbs, sprouts and beans in the kitchen and sitting room, by the windows, and on rooftop. All kitchen wastes will be composted, and every toilet will recycle its wastes to fertilize the large amount of plants in the vicinity.

AIR AND ENERGY--
Machines will run on perfectly clean and renewable energy sources, such as solar power, wind power, tidal power, biomass and human and animal power. No toxic or green house gases will be allowed to be released to the atmosphere, and there will be no heat pollution. Every factory and vehicle will be strictly monitored in this respect.

RAW MATERIALS AND GARBAGE--
As only recyclable materials will be allowed to be used to manufacture goods, there will be no such thing as garbage, nor will there be any shortage of raw materials. Consumer goods will be drastically reduced, and people will enjoy life and Nature in very different ways from our shopping-mall culture today. Toxic materials endangering the environment or people's health will be banned forever. Activities which consume next to nothing, such as hiking, meditating, massaging, music making and bird watching, will become favorite pastimes.

6. FROM HERE TO PARADISE

I will be the first to admit that this kind of a society is light years' away from the everyman's image of a paradise. I can imagine many of my students protesting: they are looking forward to air-conditioned mega shopping malls the size of Switzerland, with variety shows and buffet dinners, free for all, round the clock. Limited by the confines of time and green wisdom, I cannot but provide in this paper a very rough sketch of what is possible. I do have more detailed green conceptions about food and consumer goods production, diet and health, political, economic and social structure, entertainment and past time, work and employment, human relationship, education, religion, urban planning and transport, etc. Many people with better vision and knowledge have proposed ingenious models. There is no room to go into any detail here. The point I wish to make, though, is that we have no choice but to dream of ways to attain sutainability, and work hard together to materialize it as soon as possible. Time is not on our side.

A quarter century of green campaigning taught me a good lesson: it all begins in the 'heart', as the Buddhists insist. The planet and our civilization came to this horrifying state because we have a problematic worldview, which gives us a problematic image of ourselves. That, in turn, cooked up this kind of a lifestyle based on a problematic definition of happiness. Until the day when we wake up, and once more regard ourselves as spiritual beings sharing this paradise with other fellow creatures, people will be most reluctant to change their diets and habits, transform their goals in life and their idea of a good life. There will be little chance for a sustainable settlement to develop.

But the good news is that this is actually happening. "We are on the cutting edge of a new consciousness awakening for the whole planet", establishing a civilization that reconciles our real needs and the laws of Nature, as Louis Hay says in her bestseller *Heart Thoughts*. The critical mass is in fact gathering to

bring about this change, when those who dismiss the very idea of sustainable cities will congratulate themselves for being stubbornly wrong. When the future generations look back, the lessons of the sinful twentieth century will be material progress is one thing, and quality of life is quite another. The big mistakes our present generation makes is that we allow material progress to go on for its own sake, to the extent that it teams up with human greed to destroy the very life supporting system we depend on to survive. When there is a will, there is a way. After all, the transformations outlined above are nothing particularly far-fetched, given our technological know-how and our collective wisdom. All that is needed is for enough people to change their hearts, realizing that in the end, our priority lies with the well-being of all creatures large and small.

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A Sustainable Transport System for Hong Kong: In Search for our Sagacity

by

L H Wang and R D Flint

1. INTRODUCTION

The massive amount of regional growth witnessed in the last thirty years has seen Hong Kong transition from a pre-industrial settlement to a dynamic economic leader. The tiger characteristics of today's Hong Kong are forecast to carry it well into the next century and beyond. However, the future of this dynamic and highly sophisticated city can be made more tenable the sooner its *modus operandi* becomes more sustainable. The tiger's backbone, Hong Kong's transport system, needs refinement and improvement in a holistic and regional context if the goals of tomorrow are to be realised and their fruits enjoyed by as many people as possible.

1.1 The Sustainability Concept and Hong Kong

The concept of sustainability in all things including transport can be summarized in the following quote from the World Commission on Environment and Development in 1987. It defined sustainability as

> ***"...being able to meet the transport needs of today without compromising the ability of future generations to satisfy their own needs..."***

The uniqueness of Hong Kong and its highly diverse transportation system, dictate that the aim of a sustainable transportation system as identified above requires re-definition in order to be useful to Hong Kong's situation. Such a definition, may look something like this:

> ***To promote (i) efficiency and equity and (ii) accessibility in transport through the enhancement and extension of the existing infrastructure within the bounds of economics and social acceptability.***

To achieve this, some primary targets need to be identified and ranked based on severity and available resources. To consider the sustainability issue conceptually, a first step in terms of transport would be to reduce its negative spatial and temporal externalities.

2. HOW GOOD ARE WE?

It is tempting in light of the mountain of references and comments against motor vehicles to take the view that the only solution to our transport problems lies in completely redesigning our transport system. Whilst a redesign could be valuable and, in some quarters, is required, examination of the existing transport system with a view to streamlining and improving it could be an effective and useful step towards greater sustainability in transport. Over the years, Hong Kong has developed a sophisticated transport system incorporating just about every conceivable method of transportation. The existence of such a situation suggests that Hong Kong has the dynamism, courage and fiscal ability to further enhance its system in the short to medium terms. Possible ways of doing this are considered later in this paper.

There is no shortage of material detailing the damage caused as a result of motor vehicle use. However, demand for transport is derived from the

requirement to travel for work and recreation. With this and a growing population and economy in mind, the number of Hong Kong people travelling along the SAR's arteries will inevitably increase. We must therefore devise means of allowing people to fulfil their trip requirements and daily functions whilst at the same time operate a system that is not dependent on non-renewable resources and does not damage the environment. Promotion of the so-called benign modes in certain situations may be a means of achieving this.

It is tempting to be seduced by the radicalism and "newness" of many sustainable transport options. The new trends of hating motor vehicles, especially private cars and favouring cycling and walking are very plausible and some would say exciting concepts. However, a truly sustainable system is not realizable over night and religiously following trends in the case of transport is likely to be a road to disaster rather than one of well planned sustainability. A major consideration therefore is keeping firmly in mind the validity of the options favoured for a particular area. In Hong Kong, it is not, for example practical for commuters to use bicycles *en masse* as part of their working day. It is however, conceivable to provide an alternative to provide extra, faster and more comfortable buses at peak times and simultaneously introduce measures to reduce the number of private cars.

The previous paragraph hinted at the fact that policies need to be directed in terms of spatial merit rather than wholesale application. A holistic approach to improving the transport system in the context of the socio-economic and environmental factors that effect it is vital if a truly sustainable system is to be achieved.

To be fair to Hong Kong, the current level of sustainability in transport is creditable by world standards. In 1994, the working party on measures to reduce traffic congestion reported that 80% of trips in Hong Kong were on public transport. This is a highly creditable statistic and cannot easily be matched. The number of vehicles per 1000 people in Hong Kong is also very low when compared to other countries in the region. Table 1 below refers:

Table 1 – Cars Per 1000 Head of Population and GDP Per Capita
(Transport Branch, 1994)

	Cars per 1000 population (1992)	GDP per capita (US$)
Hong Kong	41	17300
Singapore	101	16300
Taiwan	147	10000
Japan	281	29500
South Korea	75	6800

Hong Kong fairs very well in these statistics too but this is not an excuse to relax and compliment ourselves on our excellence. Road traffic is increasing and infrastructure is being stretched. Previously, Hong Kong could build its way out of the problem to keep pace with congestion. This response is no longer viable due to high land rents, land scarcity and reasoned economic arguments for avoiding expansion. What this means is that a more sustainable response to congestion is required to allow Hong Kong to grow profitably.

Having said that, nobody could accuse Hong Kong of sitting on its laurels with regards to its future transport requirements. There are a considerable number of schemes being studied or implemented and a larger number of smaller initiatives and considerations ongoing. The recent launch of the experimental LPG powered taxis is an encouraging move towards the improvement of air quality and transition to a more sustainable power source. The use of LPG technology is being considered for public light buses and light goods vehicles. As there are currently 78500 LGVs and 4350 PLBs on Hong Kong's roads[1] adoption of this technology must inevitably improve the general air quality through reduced emissions. These steps should, however, be viewed as a transitional step to even more sustainable propulsion technology such as electricity (discussed later) but the short term implications especially for air quality improvement in the medium term are somewhat encouraging.

The bus lane studies currently being carried out in Hong Kong are aimed at examining the viability of increased public transport priority. Such measures are positive and have a two-fold impact on congestion and system improvement. Firstly, they allow larger numbers of people to travel to their destination avoiding congestion. Secondly, those using their cars see the buses passing through quickly which acts as a persuading factor to leave the car at home, especially if congestion worsens.

To tackle congestion and inefficient use of road space, the Hong Kong Government is currently conducting studies into Electronic Road Pricing so as to ensure greater equity and efficiency of use on the SAR's road network. The current privileges of free road space to car users will be reduced to a level more equitable with other modes of transport. This will allow congestion to be regulated and provide a source of income for maintenance of the transport infrastructure.

It is not only roads which are being studied in Hong Kong, the expansion and enhancement of the rail network is actively underway with the birth of West Rail and other associated projects such as the Ma On Shan link, Quarry Bay Extension and extension and enhancement of the MTR's Island line. These improvements will allow greater accessibility for commuters living in the New Territories, especially the North West New Territories, to the airport at Chek Lap Kok and to the commercial concentration areas of Kowloon and northern Hong Kong Island. In addition to these new schemes, existing systems are being enhanced to increase capacity and service. MTRC is installing new technology for driverless trains allowing a faster but safer computer controlled service. KCRC is investigating new signaling techniques to improve headways whilst at the same time, maintaining a high standard of safety. Both operators are in the process of upgrading their rolling stock, improving the capacity, speed and level of comfort for their passengers.

3. CURRENT PROBLEMS

In spite of all these good works by the government and private sector, unsustainable characteristics are still evident and growing in our transport system. Congestion especially is becoming a particular concern. Whilst most would agree, a level of congestion can be tolerated as part of a sustainable transport system, the current rising levels of congestion and its negative externalities are becoming more prevalent. The implications of these

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1 Transport Department Monthly Traffic and Transport Digest, August 1997

externalities are very serious. Declining air quality poses a significant threat to the physical health and well being of all Hong Kong people rich and poor. The psychological impacts of constant high levels of traffic noise are well documented and again pose a threat to the health and well-being of a large proportion of the population. The damage caused by vibration also shortens the life of buildings and roads. The situation in Hong Kong is reaching a point where people are demanding cleaner air and more pleasant living standards with heavy goods and diesel vehicles commonly targeted as public enemies.

With the increase in vehicular traffic comes a growing threat to pedestrian safety especially in busy areas such as Central, Tsim Sha Tsui and Mong Kok. People and vehicles do not make good bedfellows, especially in areas where traffic can approach at reasonable speed such as the area around Pedder Street in Central. The essence of the problem can be summarized in the following quote:

> ***"The safest vehicle on the road is a truck, if you are inside it. The most dangerous vehicle on the road is a truck, if you are outside it"***

The recent increases in cross border trade is good news for Hong Kong and should be encouraged but the method by which goods are transported needs to be examined to avoid the socio-economic negativities mentioned above.

Long and uncomfortable commutes are becoming a common factor for many Hong Kong workers. The thought of pushing and shoving one's way on and off different modes of transport is a source of irritation and in some cases dread for many a commuter. Often, commuters interchange more than twice on each leg of their journey wasting up to 2 hours a day travelling. This is clearly unacceptable for a place as geographically small as Hong Kong.

There appears, however, to be a lack of public awareness towards changing the negative aspects of moving around the SAR. This is changing slowly, but there is an overwhelming need to inform and educate the population so that plans can be holistic and involve those who are affected. Great things can and have been achieved by co-operating bodies of people, the challenge is to foster and nurture this environment to make our transport system efficient, affordable and sustainable.

4. TACKLING THE PROBLEMS

4.1 Air and Noise Pollution

There has been considerable media coverage regarding declining air quality in Hong Kong and South China and it may come as no surprise that a large percentage of such pollution is directly attributable to motor vehicle emissions. Commensurate with the increase in emissions is the growth in noise pollution caused particularly by heavy goods vehicles. Residents living near the Tai Po or Leung Cheung Roads have in recent years experienced massive growth in vehicle noise, and emissions. This increase in traffic, despite government restrictions on the registration of vehicles, is also damaging the very infrastructure it requires, the road. The vibration and sheer weight of HGVs using Hong Kong's roads are resulting in significant and costly damage. A first step of any sustainability proposal must be to address this situation and act accordingly.

These problems have in part been addressed by the government, which, as has been mentioned, is examining alternatives such as LPG technology for light diesel vehicles. However, there are some courses of action open to us that would benefit from further exploration. One of the best ways to reduce air and noise pollution is to reduce absolute numbers of vehicles on the roads. The Hong Kong Government has tried through charging policies to achieve this. The first registration tax and vehicle license fees are amongst the highest in the world but we still have growing congestion. The answer may lie in congestion charging and ERP but that is still several years away. One method of regulation that is relatively simple to implement is to restrict vehicles carrying only one occupant to a single lane giving buses and vehicles carrying more than 2 people priority access on another lane. This idea has been used to some effect in the USA and Indonesia. Although there is a small fortune to be made by small children who, for a fee, will ride in your car to allow you to fulfill the 2 persons + criteria.

If further restrictions on private cars are put in place, there is more than likely to be considerable resistance encountered from car owners and other interested groups. They could, quite reasonably, argue that sustainability in transportation should not be about restriction of choice but about its enhancement. This is a reasonable point but can be countered by the fact that non-car users have been the subjects of restriction by cars for many years worldwide. Having to wait for traffic lights to change, climb bridges or descend into underpasses whilst motorists move along roads in comfortable seats has been a long stranding norm that a sustainable policy should aim to change.

If road pricing and occupant limitation measures are effective, it is fair and sensible to not only offer drivers an alternative mode of travel but also improve the quality of that alternative. Upgrading of buses and trains is well under way with operators advertising the quality and youthfulness of their fleets. If public transport is further enhanced in terms of ride quality, frequency and service reliability, the transition from car to mass mode is eased and indeed welcomed.

Another measure is to reduce the quantity of energy used by transport modes. It is well known that internal combustion engines are at their least efficient when idling or moving at slow speeds. In other words, in congested conditions. Tackling congestion should help alleviate this problem but there is also a responsibility with the engineering fraternity to develop technology to cleanse our current engines and make them more efficient.

Hong Kong has always be a place of wonder and dynamism. Now is the time to apply some of this unique ability to the concept of transport. There are many alternatives that Hong Kong is ideally suited for such as LPG power for light diesel vehicles as previously mentioned. Additionally, the current advances in electric technology could be a viable alternative for Hong Kong. Electric vehicles are now on sale that are capable of travelling 100 + Km on one battery at an average speed of 50 Kph. Information has recently been released stating that an 800 hour battery will soon be available for electric cars. A complaint often leveled at electric cars is the fact that they transfer their environmental negative externalities to the point of generation (the power station). Whilst this is true, it can be counter argued that if the negativity is concentrated it can be tackled more easily as the solution can be

focused. The use of technology such as lime scrubbers for power stations and filtration and recycling facilities for the acids used in making the battery plates is likely to be more effective than attempting to introduce corrective engineering measures for the wide range of individual private cars spread over the SAR.

4.2 Rail Freight

One of the comments regarding the negative state of Hong Kong's roads mentioned above referred to the increase in HGV traffic witnessed as a result of enhanced Mainland trade. Whilst increased trade is to be encouraged, the current method of transport is both non-optimal and incurs a heavy social cost along primary corridors. Motorists and local residents of the area around Tai Po Road cannot have failed to notice the dramatic increase in HGVs on this road and the commensurate decline in air quality and road surface. Those that benefit directly, namely the operators, are unlikely to be the ones who have to shoulder the consequential burdens of this method of transport. A percentage of Hong Kong's economy depends on freight movement but the current road dependent system imposes a heavy social cost and does not generate adequate GDP to compensate for these externalities.

One solution would be to use a rail ink to transport containers, imposing a toll on freight vehicles using the roads. This toll would act as a deterrent and a means of paying for road maintenance. KCRC is well advanced in designing a port rail ink as part of package 2 of West Rail using double deck container transporters, however, the main sticking point is to be found on the Mainland. Whilst Hong Kong is lucky in that it would be building the rail link from scratch and budgeting accordingly, the Mainland already has a rail system that is not compatible with double deck trains. Significant cost would be incurred if the existing railway was upgraded and considering the recent job losses in the Mainland rail sector, such a scheme is unlikely to go ahead. Whilst the KCRC state that a double deck alignment is essential, the true answer may be to meet half way. If, after privatisation, part of the upgrade costs of the Mainland rail system could be borne by Hong Kong, the plan may enjoy more sympathy. Revenue gained from freight patronage and HGV penalty tolls could be used to recoup some of the costs.

4.3 Park and Ride

For many of the new town areas served by rail links, a system of Park and Ride may be appropnate. This scheme, which is very successful in towns such as Oxford in the UK and Dallas in the USA involves providing car parking facilities in out of town areas which are served by dedicated mass transport modes which move commuters and shoppers into the CBD areas. Parking is cheaper than in the CBD and the cost of mass transit to and from CBD is deliberately set very low or is free. Such a scheme could work in Hong Kong in the new town areas of the New Territories although the premium that land enjoys in the SAR may offset the likely benefits of the system. However, the short distances involved in our daily commuting movements may not be conducive to encouraging park and ride to a level we would like to achieve.

4.4 Bus Priority

For passengers, an increase in bus priority, especially during peak times is likely to be welcomed with open arms. Furthermore, the efficiency of bus services could be further enhanced through restriction of private cars in central areas at specific times, particularly during the morning and evening peak hours. Such restrictions could be supplemented by more frequent services. Generally speaking, people do not enjoy the daily crush experienced whilst boarding and alighting from buses during the morning and evening peaks. The suggestion here is that more frequent services could be paid for by small fare increases that are likely to be borne by the passenger in exchange for reduced passenger congestion and faster journey times.

4.5 Road Pricing

As mentioned above, a system of road pricing is already under investigation as part of the electronic road pricing (ERP) study. Road pricing is a useful means of bringing the real cost of car travel home to users allowing this cost to be viewed in the context of alternative means of transport rather than in terms of a high sunk cost as is currently the case with private cars. Congestion and inefficient road usage, it can be argued, are the result of an incorrect pricing policy. Based on the first principles of supply and demand, control of the supply of a good or service (in this case road space) will regulate demand. Road pricing achieves this through variable tolling dependent on time of day or extant traffic conditions. Motorists can be advised of increases in advance and are therefore offered the choice to switch to another transport mode. Provided revenue gained from charging is reinvested in the transport network either through extension of tax concessions, on enhancing the road network, better maintenance and improved choice of non-car transport options, those that decide to remain on the road and pay the toll benefit from reduced congestion and saved time. Those that decide not to pay the toll and take other means also benefit as their chosen mode matches their value of time. The government also gains through increased revenue and reduced congestion; the latter also being a benefit to business and the public generally.

4.6 Pedestrianisation

To further aid the pedestrian a system of pedestrianisation in heavily peopled areas such as Central and Tsim Sha Tsui could be imposed during the busiest periods similar to the policy for Chater Road on Sundays. This way people can move around in a relaxed atmosphere free from the dangers of road accidents. A study in the UK revealed that pedestrianisation was resisted by many traders and shop owners when it was first introduced in many British cities. However, after implementation, the increased pedestrian access served to boost patronage and increase profits in all but one of the 10 towns and cities studied.

In addition to the above, increasing the overall connectivity of transport termini to the surrounding area for pedestrians is likely to reap rewards through better accessibility to transportation. The construction of overhead walkways serving public transport termini would improve access and pedestrian flow. This is just as valid for out of town termini as it is for facilities within the urban area.

4.7 Flexible Working Hours and Telecommuting

Another possible means of tackling the commuter congestion experienced during the ever widening morning and evening peaks would be a reconsideration of the flexible working hours scheme piloted some time ago. The rationale behind this idea was for companies to allow employees to work their 8 hour day on a flexible basis so that morning and evening peaks could be avoided. Unfortunately, the nature of many businesses in Hong Kong at the time made it difficult to implement and was eventually abandoned. Today, Hong Kong has advanced considerably with information technology standards at a very high level. These standards should allow a re-evaluation of this policy.

Leading on from this, another idea is that of telecommuting. The high standard of IT in Hong Kong is more than capable of supporting a system of telecommuting whereby employees work from home using fax and email links. Many businesses would find this difficult due to the nature of their work and current set up, however, the suggestion here is related to the requirement for a holistic transport plan in the interests of sustainability. This plan involves more than simply the transport or planning sectors. The bottom line is the approach required is for industry to examine its *modus operandi* in the interests of streamlining the general corporate operating system of which transport is just one part. The theory of telecommuting is an attractive one but requires further examination in the interests of viability in today's environment.

4.8 Enforcement

A further measure against congestion and towards a more sustainable transport system is greater enforcement of transport and traffic regulations. Motorists already enjoy a privileged position in Hong Kong in spite of their high fixed start up costs of car purchase, licensing and registration. It is only reasonable that they should obey the rules of the road on which they drive. Disregard for traffic regulations and management measures is not only dangerous but also disrupts smooth traffic flow and exacerbates congestion. Greater enforcement of traffic regulations would serve to remind motorists that they are required to conform to traffic management regulations in the interests of safety and smooth flow and also provide a source of income to pay for the stepped up enforcement measures.

4.9 Community Transport

To tackle more localized transport problems, a policy of improved community services could be investigated. The concept here is of a community serving goods delivery service and increased Public Light Bus services so that communities, especially low income ones, can enjoy an improved level of accessibility and transport utility. Encouraging shops and businesses to promote the idea currently used by Park'N Shop of localized deliveries makes shopping easier for those without personal transport and can act as a disincentive to using a private vehicle for those that own them.

An argument commonly tabled in the UK about car use is that vehicles are required to transport weekly groceries that are too heavy or large to carry on a public transport network. To take the idea a step further, local businesses could conceivably group together and jointly invest in a local delivery network.

This could be a means of providing the customer with a higher level of service and accessibility without a large increase in cost.

4.10 Traffic Calming and Environmental Traffic Management (ETM)

Many areas of Hong Kong, particularly low rise residential and heavily peopled areas may benefit from a policy of traffic claming and ETM. This is simply creating a more equitable situation between users of vehicles and those on foot or on bicycles. The mixing of people and motor vehicles in areas such as Central and Mong Kok already mentioned is stressful to both drivers and non-drivers alike. In an effort to formalize the system and ensure safer, more efficient movement, traffic calming measures could be introduced into these areas. Such measures include speed humps, chicanes, narrowing and specially designed road markings to ensure safe operation and promotion of a less stressful environment.

4.11 Cycling for Rural and New Town Areas

The gains to be achieved from cycling are well documented by commentators such as Tolley who point out the high level of utility to be gained from minimal input. In Hong Kong, cycling has enjoyed steady growth as a recreational pursuit but has no great impact as a means of general transport. In Sha Tin, for example, there is a highly comprehensive (and sadly under-used) cycle network. Whilst cycling to work does promote health and is sustainable, people in Hong Kong are unlikely to use it *en masse* as it is thought of as hot, slow, difficult to carry things on and unglamorous. All fair points, but the potential for cycling in areas such as Sha Tin for school children is quite considerable.

Cycle to school networks can not only relieve the congestion caused by buses but also avoid congestion caused by parents who drive their children to and from school. Cycling also has the fiduciary gain of improving juvenile health and fitness whilst allowing children to develop a level of independence. Whilst it is obvious that many areas of Hong Kong are unsuitable for such a policy due to terrain, there are many more that would benefit. A segregated network is essential to ensure safety and an area for storing bicycles is also required if the scheme is top be a success which involves cost. However, through reduced bus and car usage and if the long term health benefits are considered, the savings from reduced motor transport and the long term gains of improved health merit consideration of cycle to school routes.

4.12 Promotion of Pedestrian Safety

The number of people killed or injured on Hong Kong's roads every year alone justifies examination of safety measures and precautions to reduce such occurrences. A sustainable transport system not only promotes ease and efficiency of movement in a renewable context but also improves the overall safety of the system and reduces stress for all users. For this reason the current accident levels need to be tackled. The pedestrianisation and traffic calming measures already mentioned will serve to promote safety for pedestrians in areas of high concentration. Furthermore, vehicles themselves can also be made less dangerous to pedestrians in the event of a collision. Outlawing the installation of bars and protruding badges on motor vehicles ensures less damage to pedestrians should they be involved in an accident.

In areas of concentration the use of raised pedestrian crossings and increased pedestrian priority would serve to slow traffic and highlight the vulnerability of pedestrians to drivers

4.13 Private Non-Residential Parking

A proven means of reducing traffic congestion and increasing system efficiency in terms of private vehicles is to reduce the number of non-residential parking spaces. It is a well-documented fact that if there is no parking space at the point of destination, people will not attempt to use their car. However, this apparently foolproof plan was attempted in the past in Hong Kong. The result was a rise in the use of limousines which would circulate in the CBD whilst waiting to collect their passengers. Limousines would also commonly park illegally in CBD areas while waiting for their passengers. Both the increased circulation and illegal parking resulted in a worsening of the overall traffic condition than would not have been the case had parking facilities been more widely available. The answer here is a delicate balance between demand and the number of spaces and highlights the uniqueness of Hong Kong and therefore the form of improvement measures. Pricing can perhaps be used to regulate this problem without the negative externalities of too many waiting limousines.

4.14 Land Use Planning

Hong Kong has long suffered from past poor land use planning resulting in unnecessary traffic congestion. Past policies have designated our new towns as mainly residential serving the CBD of the Kowloon peninsula and northern shore of Hong Kong Island. This served to increase commuter distances and resulted in a captive ridership for the public transport system. Unfortunately, the increase in new town size has caused significant congestion along the main commuting desire lines. The prognosis for the future is not, currently, encouraging either. Greater dispersion of population without the encouragement of sufficient commercial decentralisation will only serve to worsen existing congestion problems. Furthermore, such asymmetrical development of residential concentrations over commercial ones is likely to result in increased infrastructure development and construction costs that, in turn, will force transportation costs up. This will mean that commuters have to pay out more to fulfil their transport needs as they are "forced" to live away from their place of work. As employment functions are still located in the urban centre, its pull increases leading to further concentrations of traffic in the CBD. The relocation of population also causes traffic problems in certain, less affluent perhaps; areas such as Kowloon City to be neglected which leads to neglect of certain groups of people and the creation of a class of transport poor.

There is a need for a more holistic and integrated planning approach with the focus on close location of home and work. This will entail developing brownfield residential sites and encouraging commercial enterprise to relocate some of its functions to the newly developing areas. Creating of enterprise zones or special commercial development areas that are semi-integrated with residential land uses may serve to alleviate the above problems.

4.15 Greater Communication

As has already been pointed out, the key to a successful programme of sustainability in transportation lies in communication and co-ordinated action. Hong Kong benefits from a cohesive system of government and administration which is mindful of both industry's and the public's requirements. The promotion of dialogue and joint action between organs of government, planners, business, the public and transport operators is essential if a truly sustainable system is to be realized. In the flexible working hours example cited earlier, the actors are government (in promotion of the scheme in response to recognizing a need), business (in re-evaluating its modus operandi to accommodate the scheme without incurring loss), employees (who must be prepared to work unconventional hours to avoid congestion) and the operators (who must be willing to supply the required off peak services). Without communication the plan is for naught. Independent agencies pursuing different unco-ordinated goals and objectives will not enjoy the level of success possible with a co-ordinated and more holistic plan.

4.16 Accessibility and Equity

A truly sustainable transport system allows people access to the facilities they require at a price they can afford without jeopardizing future generations' chances of doing the same thing. For this reason Hong Kong's transport needs and movement patterns need to be studied further in the interests of future planning for optimum accessibility. Studies need to conducted at all levels to establish the SAR's collective goals but also the needs of the individual. Such an approach will encompass greater integration of transport modes and allow greater flexibility for the individual and Hong Kong generally. One way of achieving this is to use data from the study mentioned above to audit Hong Kong's transport network and highlight areas for improvement. One such area may be an east / west transport link across the Kowloon peninsula and a similar link for the Northern New Territories.

If the plethora of research and sustainability models are considered, it is tempting to attempt a wholesale application of a foreign model to "solve" our problems. This blanket application of methods is not a new concept and was experimented with as part of the "modernization" of many former colonies in the 1960s and 70s. The failures of this approach are well documented and have promoted the concept of "home grown" solutions using, where applicable, foreign principles. Hong Kong is a focus for excellence and technological and artistic skill. What we lack, we can import but there is a wealth of local experience and knowledge that can be drawn from to examine alternatives and produce a Hong Kong solution for Hong Kong. Such measures, if based on local need and experience enhanced where necessary with foreign expertise, are likely to be highly effective.

4.17 Improve Public Awareness

As with any change (and Hong Kong people are more dynamic than most) there is always an element of suspicion when changes are considered or announced by governments. It is therefore essential to inform the people who are going to be effected by transport improvements of what is going to happen and where possible to involve them in the process. Public consultation in the interests of transport enhancement is a vital step if the plan is to be effective. Besides, the more people are involved in the construct of

the plan, the more they are likely to promote it and help sustain it. Such involvement could stretch to the piloting of projects such as park and ride which allows people to experience the new methods and government a chance to examine viability.

5. VIABILITY

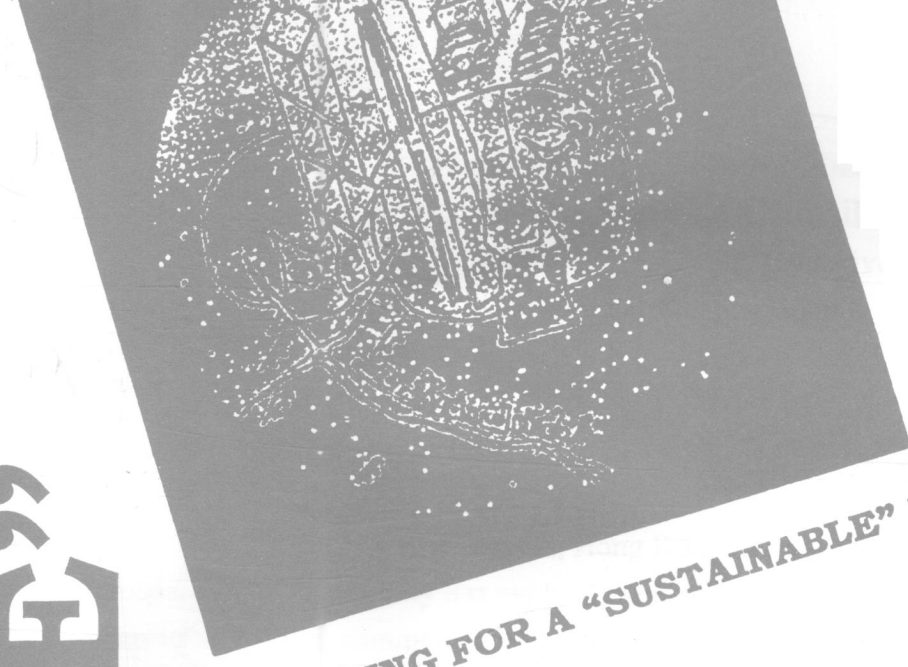
It is all very well promoting and installing a sustainable transport system but if the system is less efficient than its predecessor, it will be worse than useless. A watchword of sustainability in transport is viability. It is essential to tailor the overall transport plan to the different spatial conditions extant in Hong Kong. The promotion of cycle to school networks, for example, in Mid-levels would be both unsuitable and dangerous.

Viability also encompasses an element of economic capability. A sustainable transportation system cannot be purchased "off the shelf" and applied to Hong Kong, it is an evolutionary process, which takes time and, in spite of the potentially massive benefits is very expensive in the short term. This has to be considered prior to setting in motion a sustainable transport policy. To quote the famous and now somewhat cliched phrase "Rome was not built in a day"!

Financing will also have to incorporate an element of compensation especially in such cases as charging diesel vehicles to LPG or electric propulsion. New engines and filling stations cost money, and therefore have to be considered in the master plan.

6. SUMMARY

To summarise, Hong Kong has already achieved a high standard of sustainability in its transportation systems, which is highly creditable. This positive situation needs to be reviewed and strengthened to carry Hong Kong into the next century using new ideas moderated with experience. People need to be consulted and educated as to the options and methods of promoting sustainability in transport without disadvantage. Basing a system on real need as opposed to popular ideas is essential if success is to be achieved. The mass transport focus in Hong Kong has proved its worth over the years offering a good standard of accessibility and choice to the travelling public. If the decline in air quality and increased congestion is to be countered, the solution lies with refining this mass transit focus. Even in a place as geographical small as Hong Kong, plans need to be tailored to fit individual areas in order to achieve viable use of resources. Finally, transport sustainability cannot be achieved overnight. It is only through structured planning based on available knowledge, experience and resources that will allow Hong Kong to perfect its transport system and serve its people in the future.



PLANNING FOR A "SUSTAINABLE" HONG KONG

"SUSTAINABLE"

Planning for a Sustainable HK - the VTS Experience

Professor LEE Ngok, J.P.

Planning for a Sustainable Hong Kong – The Vocational Training Council Experience

(By Professor LEE Ngok, J.P. Executive Director,
Vocational Training Council)

Preamble: Planning Overview

In the past few decades, Hong Kong has enjoyed sustained economic growth and prosperity. Our economy has evolved from an entrepot to a robust manufacturing base, and then to a regional commerce and services centre. Now over 83% of Hong Kong's Gross Domestic Product is attributed to the commerce and services sectors which employ over 80% of the workforce. The scoreboard of Hong Kong's economic success has listed more than 30 areas of achievements. For example, Hong Kong is the world's most service-oriented economy; it has the world's second highest per capita income; and it is the world's second highest per capita holding of foreign exchange.

Paradoxically, although Hong Kong will thrive as a leading commerce and services centre, its manufacturing industry will continue to play a vital role in future economic development. The MIT 'Made by Hong Kong' Study has suggested that besides providing technical and logistic support to its manufacturing operations in the Mainland, Hong Kong should strike a new direction as a world class industrial power. It should enter into the production of new generations of service-oriented products with original design and high technology. To be able to do so, Hong Kong has to be strengthened in a number of important areas, the upgrading of the capabilities of its workforce being one. Hong Kong will require a better educated and trained workforce with multi-skills and adaptability to meet new challenges.

Planning from the Human Resources Development (HRD) Perspective - the Vocational Training Council Experience

The transformation of Hong Kong to a high value-added manufacturing and service-oriented economy has been facilitated by a comprehensive system of human resources development (HRD). If Hong Kong is to sustain its economic growth, continuing investment in HRD by both Government and employers is indispensable. From a broader perspective, HRD embraces all levels of education and training, from university to primary schooling, and from pre-employment to in-service skill upgrading training. As Head of the Vocational Training Council, naturally I would like to focus on one important aspect of HRD – vocational education and training. I would share with you our experience in strategic planning and measures taken to meet the challenges of the changing economy.

The Vocational Training Council (VTC)

The VTC was established in 1982 by Government as a statutory and public funded body under the Vocational Training Council Ordinance. It has the specific object 'To ensure that there is a comprehensive system of technical education and industrial training suited to the developing needs of Hong Kong'. Since its inception, the VTC has expanded rapidly. Now it has two Technical Colleges, seven Technical Institutes, 24 Training Centres, a Management Development Centre, and three Skills Centres. It also operates a wide range of industry-wide training schemes from technologist to operative levels. In total, the VTC provides vocational education and job-related skill upgrading training for over 100,000 people a year. The operations of the VTC institutions have been supported by a complex structure of Training Boards, General Committees and Academic Advisory Broads.

Strategic and Organisational Review of the VTC (August 1996)

Despite its achievements in the past decade, the VTC must possess flexibility and ability to respond quickly to manpower and training needs of the dynamic economy. Government therefore commissioned SQW Consultants to undertake a Strategic and Organisational Review of the VTC. The consultants reported in August 1996. Their major recommendations subsequently approved by Government to be taken forward include :

- VTC to be a responsive, robust and flexible organisation
- VTC to be the primary agency for providing manpower training and skills upgrading
- VTC to prepare three-year strategic plan and annual business plan
- System of Training Boards and General Committees to be reviewed
- System of apprenticeship to be reviewed
- Future expansion of Sub-degree courses to be mainly with VTC's Technical Colleges
- More financial and administrative authority to be devolved to the operating units within the VTC

Implementation of Recommendations and Strategic Planning

As Executive Director of the VTC, I have the responsibility to implement these recommendations in order to transform the VTC into a more proactive and effective provider of vocational education and training (VET). To me, an effective VET provider must incorporate the following key elements and objectives, among others, in its strategic planning:

(a) A robust mechanism with built-in flexibility and total quality improvement.
(b) Partnership with employers and stakeholders
(c) Capability in Labour Market Analysis

VTC's Strategic Plan, Vision, Mission and Main Goals

With these objectives in mind, I have taken steps to draw up VTC's Strategic Plan, Vision, Mission and Main Goals, and all VTC staff have been widely consulted. (Appendix I) The Mission will soon be finalised after further consultations with the VTC Council and external consultants. The VTC's 5-year Strategic Plan(1997-2001), which has been approved by the VTC Council, will pave the way for the VTC to become a robust, flexible and responsive organisation. It will provide a viable and to some, a preferred Alternative Route to employment for students from Post-Secondary 3 and 5 and people in the workforce. The VTC is being vitalised to enable itself to maintain and increase its quality output. I shall elaborate the measures we have taken to achieve the strategic goals.

A Robust Organisation

The VTC has streamlined its management structure to reduce the levels of hierarchy and to become more proactive and efficient. Business process re-engineering has been introduced to change VTC's organisation and work culture. Resources Review Teams have been set up and led by an external consultant with a view to redistributing resources for optimal resources utilisation.

Formation of the Hong Kong Institute of Technology (HIT)

The most important organisational change is to revamp the management and academic structures of the two Technical Colleges (TCs) and the seven Technical Institutes (TIs) to form a single academic institution – The Hong Kong Institute of Technology (HIT)

by 2001. The HIT will have common curricula and in-takes of students. It will comprise three nexuses through re-organisation of academic departments and amalgamation of resources (Appendix II: Nexus Map):

Nexus A	*Nexus B*	*Nexus C*
Technical College (Chai Wan)	Technical College (Tsing Yi)	Sha Tin Technical Institute (to be upgraded)
Haking Wong Technical Institute	Morrison Hill Technical Institute	Kwai Chung Technical Institute
Lee Wai Lee Technical Institute	Tuen Mun Technical Institute	Kwun Tong Technical Institute

The Sha Tin Technical Institute will be upgraded to head Nexus C. The existing Technical Institutes will be modernised with enhancement in human and physical resources. Appendix III shows the Matrix of Management and Academic Structure of HIT. Appendix IV illustrates HIT's Diploma/Higher Diploma Structure and Appendix V Modular Courses Structure.

The unification of the existing two TCs and seven TIs into HIT would enable the VTC to offer a portfolio of coherent and high quality courses to better satisfy the needs of both employers and young people. Academic support services in three areas will be established to ensure that the VTC can turn out high quality students:

- Staff Development Office
- Teaching and Learning Centre
- Curriculum Development Office

To reinforce the attainment of quality, the VTC is implementing Total Quality Management (TQM) for all its programmes and activities. It has also set up a Total Quality Improvement (TQI) Sub-committee to draft VTC's Quality Policy and to establish a TQI support culture. (Appendix VI)

As a result of the restructuring, the HIT will be able to increase at marginal costs the existing baseline of 23010 BFTE student places by 2372 places (or 8.9%) in disciplines of high demand by the economy e.g. information technology, business and commerce, construction and building services.

Partnership with Employers and Stakeholders

One of the important objectives of an effective VET provider is to work in partnership with employers and stakeholders. The VTC is no exception. It must know the needs of the economy, employers and stakeholders, and respond quickly to satisfy the needs. The VTC must work in partnership with all parties concerned to provide the right type of quality products and services required by the customers.

One of VTC's greatest assets is its comprehensive system of Training Boards, General Committees and Academic Advisory Boards, which forms a well-knitted network with employers, government departments, and other course providers. Subsequent to a recent review, the system now comprises 18 Training Boards and 5 General Committees, of which 10 Training Boards deal with manpower training in the commerce and services sectors. These include two new Training Boards for real estate services and security services. (Appendix VII) Now two-thirds of their memberships are employer representatives. Special attention has also been paid to the predominance of SMEs in the economy. Each Training Board/General Committee has a fair representation from SMEs. Chairmen of these Training Boards/General Committee will be Vice-Chairmen of HIT's Discipline Boards. In future, about one-third of the Training Board/General Committee Chairmen would serve on the VTC Council. These are some of the steps taken to realise greater employer ownership in VTC's work especially in course planning and provisions for their sectors. VTC's partnership and interfaces with the business sectors, government departments and other course providers will facilitate and reinforce its effort in responding quickly and effectively to meet the manpower and training needs of Hong Kong.

Capability in Labour Market Analysis

It is paramount that manpower training and course provision must be planned on the basis of reliable labour market information. Manpower planning, especially long-term forecasting, can never be an exact exercise. Yet it is a necessary evil. The VTC is given such a challenge as one of its statutory functions under the VTC Ordinance. It is required to assess the manpower and training needs of Hong Kong in the short, medium and long term. Based on the survey findings, training programmes can be adjusted and new ones introduced

to meet the needs. The VTC realises the limitations of its present manpower survey arrangements. An external consultant will be appointed to identify a new manpower assessment methodology, enhance VTC's labour market analysis capability and assist in building up a data warehouse for speedy release of manpower and other information to the public.

The Way Ahead

Expansion of Sub-degree Courses

Government has accepted the recommendation of SQW Consultants that any future expansion of Sub-degree courses will be mainly with VTC's Technical Colleges. The University Grants Committee's Report on Higher Education in Hong Kong has suggested the need to expand sub-degree places in 2001-2006 over and above the present ceiling of 6% for the relevant age group (17-20). An increase to 8% would mean 7000 additional student places. Indeed there are strong indications that Hong Kong requires more education output at the technician and supervisory level. According to VTC's manpower surveys, the demand for technicians and supervisors in the major manufacturing and services sectors has increased steadily in recent years. On the manufacturing side, the percentage of technicians in the plastic industry has increased from 14% in 1991 to 24% in 1997; the electronic industry from 21% in 1990 to 29% in 1996; and the electrical industry from 13% in 1989 to 18% in 1995. In the commence and services sectors, the proportion of supervisors in banking and finance has risen from 18% in 1990 to 26% in 1997; insurance from 12% in 1991 to 25% in 1997; and wholesale/retail and import/export from 9% in 1990 to 13% in 1997. The VTC is prepared to accept the task of meeting these additional and urgent demands for a better-educated and trained workforce.

Lifelong Education

Those in Hong Kong's workforce must constantly update and upgrade themselves in order to face new challenges and to survive in an increasingly competitive labour market. It is important that planning for HRD should take into account the training needs of in-service workers. The VTC has not ignored the crucial role of lifelong education for the workforce. At present, it already provides a comprehensive range of skill upgrading courses for in-service employees, mainly at commercial Training Centres in areas such as banking and finance, insurance, information technology, hotels and tourism, and wholesale/retail and import/export. The total number of training places annually exceeds 25 000. At the TCs and TIs, part-time day and evening courses at technician and craft levels amount to 45 000 student places. With the existing capacity as baseline, the VTC will

expand its skill upgrading training and part-time courses to meet the increasing demand for training in-service employees.

There is a large market of over 900 000 adult students for continuing and professional education. The market will continue to grow. There is also an increasing number of companies which would seek external assistance in running customised in-house programmes and consultancies. To be in a more flexible and responsive position to meet such market demand, the VTC will set up a Continuing Professional Development (CPD) Centre to co-ordinate and market full-fee courses for working adults who wish to pursue personal development and professional qualifications. The Centre will also co-ordinate and conduct consultancy projects and customised training programmes. The CPD Centre will be self-financing. A Business Plan has been submitted to Government for consideration.

The Alternative Route

With a full range of programmes to cater to the training needs at all skill levels, the VTC plays a significant role in sustaining Hong Kong's economic success. It provides an Alternative Route (Appendix VIII) to the S5 - S7 – University route, by offering vocational education up to the higher diploma level and in-service training up to managerial and technologist level in subjects of direct relevance to commerce and industry. The high graduate employment rate epitomises VTC's ability to turn out what employers need.

Conclusions

The VTC is not complacent with its achievements. In order to prepare for the challenges in the new millennium, it is re-engineering itself through academic and management integration to achieve its mission of being a flexible, proactive and robust organisation. With the formation of the Hong Kong Institute of Technology, the support of a Total Quality Management culture, and other strategic measures taken, the VTC aspires to become a leading institution of vocational education and training in the region. In so doing, it contributes positively to human resources development for a sustainable Hong Kong.

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HONG KONG AND GUANGDONG SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PLANNING HOUSING TRANSPORT HONG KONG AND GUANGDONG HUMAN RESOURCES QUALITY OF LIFE ECONOMICS SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PLANNING HOUSING TRANSPORT HONG KONG AND GUANGDONG SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PLANNING HOUSING TRANSPORT HONG KONG AND GUANGDONG SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PLANNING HOUSING TRANSPORT HONG KONG AND GUANGDONG HUMAN RESOURCES QUALITY OF LIFE ECONOMICS SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PLANNING HOUSING TRANSPORT HONG KONG AND GUANGDONG SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PLANNING HOUSING TRANSPORT HONG KONG AND GUANGDONG SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PLANNING HOUSING TRANSPORT HONG KONG AND GUANGDONG HUMAN RESOURCES QUALITY OF LIFE ECONOMICS SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PLANNING HOUSING TRANSPORT HONG KONG AND GUANGDONG SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PLANNING HOUSING TRANSPORT HONG KONG AND GUANGDONG SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PLANNING HOUSING TRANSPORT HONG KONG AND GUANGDONG HUMAN RESOURCES QUALITY OF LIFE ECONOMICS SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PLANNING HOUSING TRANSPORT HONG KONG AND GUANGDONG SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PLANNING HOUSING TRANSPORT HONG KONG AND GUANGDONG SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PLANNING HOUSING TRANSPORT HONG KONG AND GUANGDONG HUMAN RESOURCES QUALITY OF LIFE ECONOMICS