

Strategic Environmental Assessment - Hong Kong Experience

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Abstract

Hong Kong is one of the first Asian cities/regions to apply Strategic Environmental Assessment (SEA) to major development plans. This paper shares the two decades of SEA experience in Hong Kong. In 1988, the Hong Kong Government issued a revised administrative circular to require new town developments and major land use/development proposals to conduct environmental assessment and this represents the first application of SEA for spatial planning in Hong Kong. The Territories Development Strategic Review completed in 1995 was the first major government plan to undergo a comprehensive SEA in Hong Kong. The SEA resulted in the government's decision to explore sustainable development for Hong Kong. In 2004, the Environmental Protection Department of Hong Kong Government published the Hong Kong SEA Manual and in 2005 launched the SEA Knowledge Centre website. The website not only includes an interactive version of the SEA Manual, the local examples of SEA reports, study briefs, environmental outcomes but also information on the global environmental evaluations of policies and proposals, international web resources, links to other SEA knowledge centres, SEA practices in Mainland China, etc. With about 20 years of SEA experience, there has been increasing environmental awareness in the community and more and more requests from the public and environmental concerned groups to have wider application of SEA and potential broadening the scope to cover sustainability issues. The experience reflected the iterative and interactive dimensions of SEA in serving its purposes of facilitating options development; supporting informed public engagement and decision making; and having environmental gains.

Introduction

Hong Kong Special Administration Region (HKSAR) is one of the most densely populated places in the world. The land area of HKSAR is about 1,100 km² with a population of about 7.2 million.^[1] Figure 1 shows a simple map of HKSAR. Among the 18 administration districts in Hong Kong (HK), the most densely populated district, Kwun Tong, has a density of 56,200 people/km².^[2] Increase of population, economic growth and high housing and transport demands have led to pressures on the environment. Hong Kong is one of the first Asian cities/regions to apply Strategic Environmental Assessment (SEA) to major development plans.^[3] This paper aims to share the two decades of SEA experience in Hong Kong.



Figure 1: Map of Hong Kong Special Administrative Region

SEA in Hong Kong

Background

In 1988, the Hong Kong Government issued a revised administrative circular to require new town developments and major land use/development proposals to conduct environmental assessments. This represents the first application of SEA for spatial planning in Hong Kong. All submissions to the Executive Council, which is the highest decision making body in Hong Kong (i.e. similar to “cabinet” in some countries), have been required to include an “environmental implications” section and “sustainability implications” section since Oct., 1992 and Apr., 2002 respectively. The Territories Development Strategic Review completed in 1995 was the first major government plan to undergo a comprehensive SEA in Hong Kong. The SEA highlighted possible concerns on the long-term sustainability of some of the Territorial Development Strategy proposals and resulted in the government’s decision to explore sustainable development for Hong Kong.^{[4], [5]}

Other than administrative requirements mentioned above, the EIA Ordinance was enacted in Jan., 1997 and has become operational since Apr., 1998 in Hong Kong. The legislation requires a list of designated projects, including major urban development and redevelopment projects, to conduct mandatory environmental assessment documentation and public consultation.^[6] The major urban development and redevelopment projects are listed in Schedule 3 of the Ordinance and this type of assessments involving land use planning is regarded as SEA in many developed countries.^[5]

Hong Kong SEA Manual

In Nov., 2004, the Environmental Protection Department (EPD) of HKSAR Government published “Hong Kong Strategic Environmental

Assessment Manual” (see Figure 2). The SEA Manual aims to be as practical as possible, attempting to provide a systematic and user-friendly guidance on SEA process. The document introduces what is SEA; explain the SEA mechanisms; describes how to conduct SEA; provides the means to access the worldwide experience and world trend of SEA, etc.



Figure 2: HK SEA Manual

SEA Knowledge Centre Website

To allow easy and quick sharing of SEA experience, information and knowledge, EPD launched the SEA Knowledge Centre website (www.epd.gov.hk/epd/SEA)^[7] in 2005 (see Figure 3). The website not only includes an interactive version of the HK SEA Manual, the examples of SEA reports, study briefs, environmental outcomes but also the global environmental evaluations of policies and proposals, international web resources, links to other SEA knowledge centres in other countries, SEA practices in China, etc. The information of the website has been updated regularly as appropriate, such as uploading information on recent SEAs conducted in Hong Kong, improving web content accessibility, etc.



Figure 3: HK SEA Knowledge Centre Website

Examples of Major SEA Studies in Hong Kong

Since late 1980s, SEAs were conducted for various policies, plans and programmes (PPPs), e.g. those on territorial land use planning, major transport and broad infrastructure planning, etc. in Hong Kong. SEA experience of some major cases is summarized in Table 1.

Table 1: Summary of Some Studies with SEA in Hong Kong^{[5], [7] – [10]}

Key Descriptions	Key Recommendations and Environmental Outcomes
1) The Third Comprehensive Transport Study (CTS-3) (completed in 1999)	
● Territorial wide ● Comprehensive transportation strategies ● 4 scenarios of population & traffic growth with ranges of rail, road and traffic management strategic options considered. ● 99 main model runs with associated environmental component conducted for strategy development. ● Conducted SEA of alternatives/options. ● Attempted to analyse the full cost and benefit: Road vs Railway.	● Evaluated air, noise & ecological implications. ● Recommended potential actions, for example: - Integrated land-use and transport planning to reduce the need for travel. - More extensive rail network and promoting trunk and feeder services. - More drastic measures such as restraining the growth and usage of vehicles. - Further tightening vehicle emission controls and use of environmentally friendly vehicles, e.g. those using liquefied petroleum gas & trolley buses. - Expansion of river trade terminal operation to reduce road traffic of goods. - Pedestrianization and cycling. - Consideration of alternatives at project stage and conduct EIAs. ● Set out Strategic Environmental Monitoring and Audit (SEM&A) framework to check the environmental performance and ensure follow-up.
2) The Second Railway Development Study 2000 (RDS-2) (completed in 2000)	
● Territorial wide & cross-boundary ● Rail transportation strategies ● Focus on environmental benefits as well as impacts – a balanced approach. ● Highlight major implications not reflected in financial analysis. ● Focus on interface with mainstream economic and transport analysis.	● Fully considered the hidden environmental benefits and costs between rail and road to confirm "Priority to Railway" ● Increased rail share in the public transport system to reduce air pollution. ● Eliminated environmentally unacceptable alternatives. ● Recommended railway projects amounted to about HK\$80 – 100 billion (equivalent to about US\$10 – 13 billion). ● Other supports for marginally viable projects will be considered on the basis of the need for the individual projects.
3) Hong Kong 2030: Planning Vision and Strategy (HK2030) (completed in 2007)	
● Territorial wide ● Land use planning ● Strategy focus and sustainability driven.	● Evaluated environmental carrying capacity. ● Avoided major environmental problems and protected ecologically important areas.

Key Descriptions	Key Recommendations and Environmental Outcomes
● International benchmarking of environmental targets, long time-frame, up to 2030, vision-based. ● Integrated environmental considerations. ● High transparency and public involvement.	● Recommended: - new development areas for population growth in northern New Territories along with environmentally friendly public transports, e.g. additional railways. - further port development with limited reclamation - further studies and continuous monitoring to take into account changes.
4) Land Use Planning for the Closed Area - Feasibility Study (completed in 2010)	
● Land use planning ● Strategy focus and sustainability driven. ● Formulate the land use planning frame to guide the conservation and development of about 2,400 hectares of land to be released from the original Closed Area.	● Balanced between conservation and economic development. ● Avoided impact on habitats and species of high ecological values. ● Recommended: - designation of “conservation area”, country park and green belt on statutory land use plans to protect ecological important habitats. - building of sustainable communities - preservation of land resources for future generations.
5) Review and Update of Railway Development Strategy 2000 (RDS-2U) (<i>On-going</i>, started in 2011 for completion in 2014)	
● Territorial wide railway infrastructure planning ● Map out long-term railway development blueprint (including above-ground, under-ground, heavy or light rails) ● Improve the railway networks and continue to use railways as the backbone of passenger transport system.	<u>Possible issues:</u> ● improving railway network to reduce road traffic and vehicle-induced air pollution ● Improving the efficiency of transport system including those from energy / green house gas emission viewpoint. ● Adopting underground/tunnel design instead of above-ground options to minimize impacts of noise, landscape and visual quality, water quality, ecology, etc.

Discussions

SEA process has been implemented in Hong Kong for about two decades. The environmental awareness in the community has been increasing. In response, SEA process has also been refining to meet the public expectation and operational needs.

The PPP proponents have become more accountable for the environmental performance of their proposals. Nowadays, the proponents usually integrate environmental considerations in their initial formulation of their PPPs and option selection process. The environmental protection and sustainability considerations have formed

indispensable factors when an important decision is made. High conservation important areas are usually avoided and protected from a development proposal. Major pollution sources are proposed away from environmentally sensitive receivers when a new land use plan is prepared.

The extent and nature of public involvement in the SEA process has also changed significantly in Hong Kong. For example, in the past, the proponents used to conduct public consultation at the final stage of a study. The proponents now usually conduct multiple-stage public engagements to seek the views from various stakeholders since the initial stage of a

proposal/study. A major PPP study, such as HK2030 and RSD-2U studies in Hong Kong, usually involves 2 to 3 rounds of public engagement exercises. Each of the exercises may include press conference, roving exhibitions, public forums and meetings with various key stakeholders, e.g. environmentally concerned groups, local communities, academics, professional associations, etc. Thus, the comments received can be taken into account in revising the initial proposals to address different concerns as far as practicable.

To further enhance the SEA process, some potential ways for improvements are discussed below.

Firstly, suitable and up-to-date assessment tools and latest information communication technologies can be used in SEA studies. Conventional EIA assessment tools for projects might not be suitable for SEA which usually covers a much larger assessment area with less concrete information and more uncertainties. To improve the understanding and judgment of the importance of various environmental issues in SEA, the evaluation techniques and tools could be improved and “tailor-made” for the study area. The latest technologies, such as making use of Geographical Information System (GIS) and 3-dimensional (3D) electronic visualization for GIS-based habitat map and noise mapping software, have been used in SEAs. This could help the public and stakeholders to understand and accept the SEA findings more easily. In Hong Kong, a “tailor-made” regional air quality model is known as “Pollutants in the Atmosphere and their Transport over Hong Kong” (PATH)^[11] to simulate the air quality in Hong Kong after taking into account the regional air quality and metrological conditions. The regional water quality model for HK called “PRD Model” consisting of 1-dimensional river model and 3D estuary model for the Pearl River Delta area.^[12]

Secondly, based on Hong Kong’s experience, after a SEA study is completed, it is important to have follow-up actions to ensure that the environmental recommendations in the SEA are properly implemented and provision of feedback to the SEA process. It tallies with the European Union’s SEA Directive (2001/42/EC).^[13] requirement on “monitoring and review”. If there are major deviations in the assumptions adopted in the SEA studies leading to deterioration of environmental performance, a review if necessary should be conducted to follow up on the changes in circumstances in order to safeguard the environment. For example, the Third Comprehensive Transport Study (CTS-3) of Hong Kong, which was completed in 1999, recommended Strategic Environmental Monitoring and Audit (SEM&A) programme that has kept monitoring the progress of the transport infrastructure proposals recommended in the transport study and their potential strategic environmental implications.

Lastly, SEA experience in different PPPs in different countries under different circumstances is valuable resources for the future SEAs. International conferences, such as IAIA annual conferences, are useful events for the sharing of SEA knowledge and information. Internet is a useful tool for quick and convenient sharing. As mentioned above, EPD, HKSAR Government has set up the SEA Knowledge Centre website for that purpose since 2005. The finalised study briefs and reports of major SEA in Hong Kong have been placed on the website and available for all interested parties for sharing. More sharing of experience across the globe would certainly enhance the SEA process.

Conclusion

The application of SEA in Hong Kong, over the years, has yielded real environmental gains. It has

demonstrated that SEA is an appropriate and useful tool to support the decision making process to achieve sustainable development. SEA is an iterative and evolving process taking into account the experience gains, improvement of technologies and knowledge and public expectation. Some people have asked for wider application of SEA to cover sustainability issues, e.g. social and economical

factors. Since there is also sustainability assessment mechanism in Hong Kong, sustainability assessment together with SEA would cover all relevant environmental, social and economical factors, for consideration by the decision makers, to avoid compromising our future generations to meet their own needs.

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Raymond L.Y. LAI joined the Environmental Protection Department of Hong Kong Special Administrative Region Government in 1997. He has over 20 years of experience in environmental impact assessment, environmental monitoring and audit and strategic environmental assessment. He holds a Master's Degree in Engineering from the Hong Kong Polytechnic University.