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**Recycling in the Management of Solid Waste:  
A Study of the Governance of Hong Kong's EcoPark**

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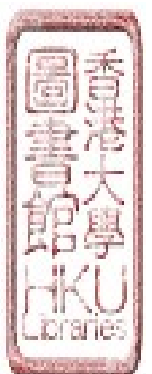
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Capstone Project Report submitted in partial fulfillment of the requirements of  
the Master of Public Administration

**Department of Politics and Public Administration**

**The University of Hong Kong**

August 2014



## DECLARATION

We declare that this Capstone Project Report, entitled Recycling in the Management of Solid Waste: A Study of the Governance of Hong Kong's EcoPark, represents our own work, except where due acknowledgement is made, and that it has not been previously included in a thesis, dissertation or report submitted to this University or any other institution for a degree, diploma or other qualification.

[Signed]

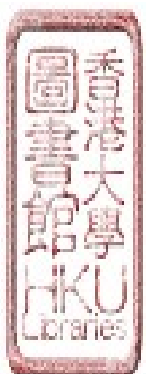
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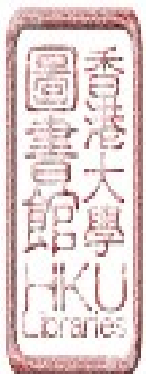


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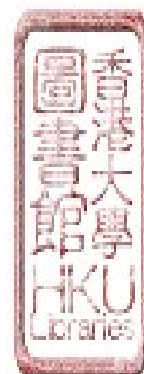
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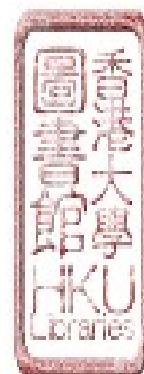


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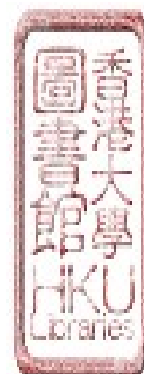


## ABSTRACT

The extension of landfills has become a hot topic in our community recently. The waste generation of Hong Kong is on upward trend. The statistics from the Environmental Protection Department (“EPD”) revealed that the solid waste disposal at landfills in 2011 and 2012 was 13,458 and 13,844 tonnes per day respectively which was still on a high side. On the other hand, the recovery of municipal solid waste (“MSW”) has been dropped from 48% to 39% in 2012 against 2011, which means that an accumulative of 2.16 million tonnes of solid waste with recyclable value were collected for recycling in 2012 while 2.10 million tonnes (97%) of recyclables were exported for recycling and 0.06 million tonnes (3%) recycled locally (EPD, 2014).

Landfills are the major disposal areas for solid waste management (“SWM”) in Hong Kong. When MSW is collected, it will be processed after disposal at the Southeast New Territories (“SENT”) Landfill in Tseung Kwan O, the Northeast New Territories (“NENT”) Landfill at Ta Kwu Ling, and the West New Territories (“WENT”) Landfill at Nim Wan, which are classified as the three strategic landfills in our city. With the growing trend of MSW, it is estimated that the three landfills will be exhausted from 2014 to 2019 accordingly (Legislative Council, 2013).

While the Government has paid substantial effort in deriving a 10-year strategic plan which includes relevant work plans with targets and policy settings for SWM to tackle the imminent waste challenge, it is quite crucial to critically assess the



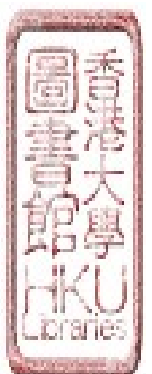
governance modes being adopted in connection with the hiccups during the recycling process which requires the local market players to play their part.

This project aims to examine the recycling in the management of solid waste in Hong Kong from the perspective of modes of governance. The methodology is then extended to incorporate an evaluation of the appropriateness and effectiveness of the governance arrangements adopted in the management of solid waste in Hong Kong.

The institutional dimensions of governance include the interlocking relationships between the influence of actors and their institutions. With the emergence of different governance modes, further study of their various dimensions such as strategy, structure, competencies, processes and procedures should be addressed (Meuleman, 2003).

The evolution of governance has shaped a more dynamic process within a loop containing the state, market and civil society. With the underlying assumptions of governance modes, the extent of roles being played by different actors need to be assessed.

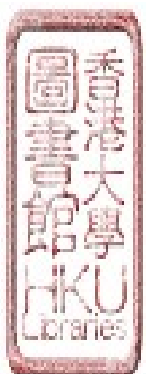
A case study of the recycling in the management of solid waste in the EcoPark highlights the tensions between governance approaches. Whether or not the governance mode being used in the EcoPark is effective to solve the problem of solid waste in Hong Kong is very much in doubt. The challenges of governance which the EcoPark is facing demonstrate the dynamic in the institutional design which is definitely important to the legitimacy of the collaborative process with a





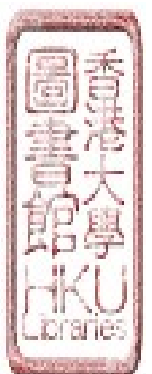
diverse systematic arrangement within and beyond the state, market and civil society.

A new form of governance has become significant for the success of recycling management, particularly the MSW in Hong Kong. A goal is also to build on the literature review and analytical framework resulting from it, and to evaluate the effectiveness of the mode of governance addressed in the empirical findings. The prevailing mode of governance involving cooperation is critically assessed, with experience from other countries being drawn on for further deliberation.



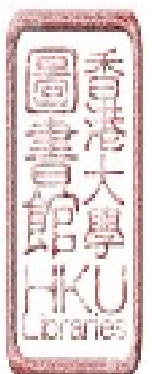
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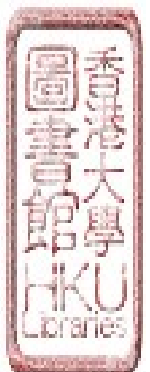
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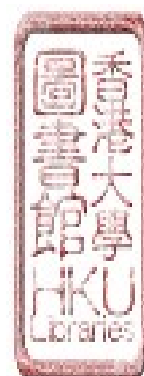


## LIST OF ABBREVIATIONS

CCTVs	Closed-Circuit Televisions
EAC	EcoPark Advisory Committee
ECF	Environmental and Conservation Fund
EIA	Environmental Impact Assessment
EOI	Express of Interest
EPD	Environmental Protection Department
F&B	Food and Beverage
GPS	Global Positioning System
NAO	Network Administrative Organization
NEA	National Environment Agency
NENT	The Northeast New Territories Landfill at Ta Kwu Ling
NGOs	Non-Governmental Organisations / Non-Profit Making Organisations
PE	Polyethylene
PELB	The Planning, Environment and Lands Branch
PET	Poly(ethylene terephthalate)
PP	Polypropylene
PS	Polystyrene
PVC	Poly(vinyl chloride)
R&D	Research and Development
SENT	The Southeast New Territories Landfill in Tseung Kwan O
SRP	Sarimbun Recycling Park
SSWP	Solid Separation of Waste Programme
SWM	Solid Waste Management
The 1989 White Paper	The First White Paper “Pollution in Hong Kong – A Time to Act”
The 2005 Policy Framework	A Policy Framework for the Management of Municipal Solid Waste (2005-2014)



The 2013 Blueprint	The Hong Kong Blueprint for Sustainable Use of Resources 2013-2022
WEEE	Waste Plastics and Waste Electrical and Electronic Equipment
WENT	The West New Territories Landfill at Nim Wan
WRFP	Waste Reduction Framework Plan



## Chapter 1: Introduction

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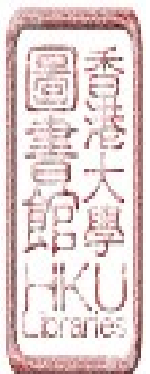
### Focus, Objectives & Background of the Project

This project addresses the management of recycling solid waste in Hong Kong. It appreciates that, while the Government has accorded top priority to the need to manage solid waste, its action to resolve the foreseeable environmental impact of increasing waste has not been very significant.

The objectives of the project are to identify and assess the modes and strategies of governance in the development of recycling management of solid waste in Hong Kong. From the roles of different actors as well as the institutional design in the recycling SWM in the EcoPark, some recommendations can be made for improvement as a whole.

The project recognises that MSW must be reduced at source. The Government is exploring how to maximize efforts from various stakeholders in reducing waste and raising the waste recovery rate.

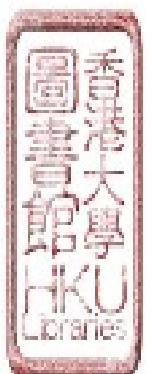
On the basis of collaboration among stakeholders, the Government targets to reduce the disposal rate of MSW in Hong Kong by 27% to 1 kg or below per capita by 2017, and further down to 0.8 kg or below by 2022 (Environmental Bureau, 2013). Apparently, there are quite a lot of Government's initiatives, including sources separation of waste, development of EcoPark, green procurement policy and etc., to support the operation of the recycling industries,



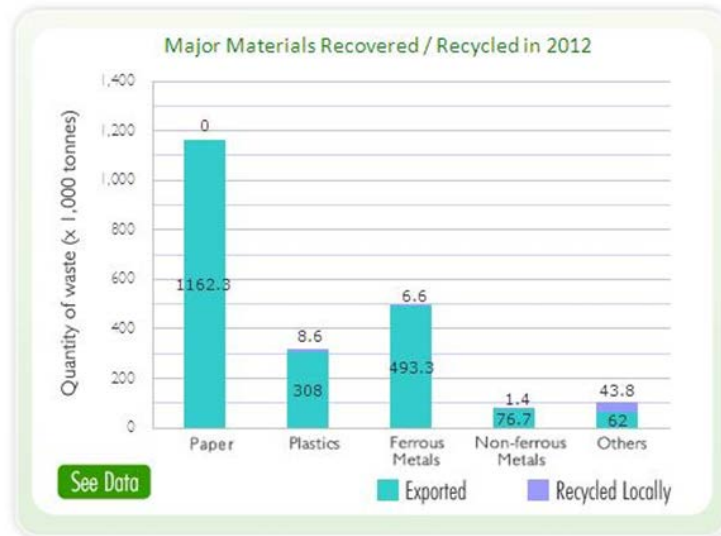
the pace of SWM being handled by the local waste recycling industry lags far behind many other countries.

The Government launched the Waste Reduction Framework Plan (“WRFP”) since 1998. The WRFP included a variety of environmental-friendly programmes so as to increase the serving period of the existing landfills. Over 10 years, the Government acknowledged that the solution for handling the waste management problem can be addressed by the joint-hand actions from the Government and the public. The strategy has shifted from a hierarchical approach to a collaborative approach which collaborates the different stakeholders together in collective actions with decision making by the authority.

In the recycling management of solid waste in Hong Kong, it is observed that EPD is still playing a key role to manage the hardware for handling the collection, transferal, treatment and disposal of various combinations of wastes. According to the EPD, about 2.16 million tonnes of MSW were recovered in Hong Kong in 2012. Since 2012, it appeared that 97% of export rate for majority of waste to the Mainland and 3% to the other countries was recorded. The remaining one then routed to the local recycling stream. Figure I presents figures on the 4 major materials recyclables in 2012.



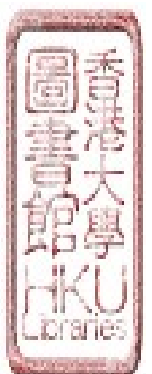
**Figure I: Major Materials Recovered / Recycled in 2012**



Source: Monitoring of Solid Waste in Hong Kong – Waste Statistics in 2012<sup>1</sup>

With low amount of materials being recovered / recycled, while the total solid waste has been a growing trend, this could serve as good source requiring a repository for further processing in the EcoPark. The main task of SWM is to reduce the quantity of solid waste disposed of on land. In return, there will be potential source of energy and materials being recovered from the recycling of solid waste under a cost-effective and environmental friendly process. To minimise the growing problem of solid waste, the EPD has placed a high priority on recycling and waste reduction promotion. The development of the EcoPark aims to provide processing areas at low land cost on a long-term basis which facilitates the setting up of infrastructure and development technology for the development of the recycling industry in Hong Kong.

<sup>1</sup> Major Materials Recovered/ Recycled in 2012. *Hong Kong Waste Reduction Website*. Retrieved from [https://www.wastereduction.gov.hk/en/quickaccess/stat\\_recycle.htm](https://www.wastereduction.gov.hk/en/quickaccess/stat_recycle.htm). Accessed 13 August 2014.



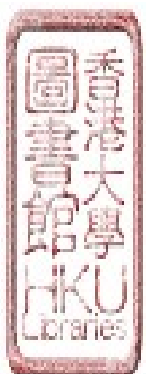


Through the tender arrangement, the lease of land areas in EcoPark was awarded to the potential tenants for waste recycling business. At present, there are a total of 14 lots (See Appendix I) in EcoPark. The tenants are experts in recycling of different wastes such as waste metals, waste cooking oil, waste electrical and electronic equipment (“WEEE”), waste wood, waste plastics, waste batteries, waste construction materials, waste glass, waste rubber tyres and food waste.

To instil a smooth pace of recycling and promotion of green habit in the community, the Government has injected subsidy to the successful bidders, which are non-profit making organisations through open tender process, to set up two waste recycling centres in EcoPark Phase 2. With funding support from the Environment and Conservation Fund, the two centres provide secured outlets for waste materials from the Source Separation of Waste Programme (“SSWP”) including waste plastics and WEEE.

Through proper recycling management, solid waste can be turned into resources and this can certainly increase the recycling rate and lessen the loading on landfills. Notwithstanding this, the export industry of solid waste can become an important source of income earning instead of spending money in handling them.

It is easy to understand that the waste generation is a by-product as a result of urbanization. If the Government is not going to steer the MSW policy in a prompt manner, the anticipated increase in solid waste per capita will soon go beyond the recycling plan. This will definitively exert huge pressure on the stretched SWM systems across the territories in Hong Kong. This phenomenon is further jeopardized by the insufficiency arising from capacity, institution and the chain

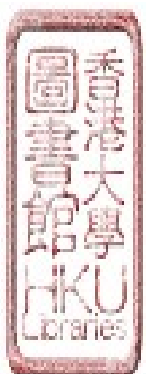


management of solid waste from collection, transportation, processing and final disposal.

With current pace of recycling movement, the MSW cannot be properly treated and left behind elsewhere. This will no doubt create nuisance to the public and deterioration on the hygiene and living standard. Moreover, the competitiveness of Hong Kong will be greatly affected which directly hinge on the economic growth and development. Thus, conclusion is drawn that the Government needs to extend the landfills for handling the booming need of SWM.

With the increasing demand for quality of life, the purchasing power of people in Hong Kong is rapidly increased. Thus, the more they purchase, the more rubbish they produce. Solid waste is considered to be the common issue of modern societies and Hong Kong is also facing this challenge. However, the community is very resistant to support the creation of new landfill sites especially when the waste facilities are located near their neighbourhoods.

As the Government do not have a by-law policy on recycling solid waste, with an increase of solid waste in Hong Kong, it is necessary to address the issue promptly and seek for remedial actions to manage the formation, disposal and recycling of solid waste. The solid waste problem in Hong Kong and the latest government policy are discussed in later chapters.

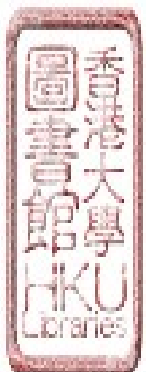


## **Research Questions and Related Propositions**

There are different kinds of governance modes involving processes of governing, decisions and action by various stakeholders, the exercise of legitimate power, and measures of performance. In response, the project addresses the following research questions:

- Q.1 What governance arrangements can governments adopt to manage solid waste?
- Q.2 According to what criteria can the appropriateness and effectiveness of the governance arrangements be evaluated?
- Q.3 What particular governance arrangements has the Hong Kong Government adopted concerning the EcoPark as a means of managing solid waste?
- Q.4 How appropriate and effective have these governance arrangements been?
- Q.5 What other governance arrangements might be adopted in future to further develop the EcoPark?

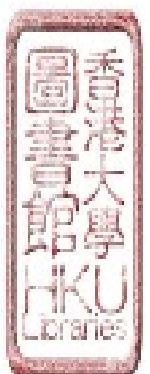
The recognition of the cooperative governance mode being more prevalent in the case of the EcoPark offers a fundamental public management infrastructure and solution for solid waste. Through the case study of the EcoPark, the adoption of cooperative governance is a significant means of involving various kinds of stakeholders in the recycling industries. Record in EPD showed that there were about 2.16 million tonnes of MSW recovered in Hong Kong in 2012 under the existing waste recovery system (EPD, 2012). Of that total, 97% was exported to the Mainland and other countries for recycling which earned HK\$6 billion for Hong Kong while only 3% was recycled locally (EPD, 2012).



The success of waste recycling operations relies on several core factors, such as the availability of uncontaminated and properly separated recyclable materials; the operating costs for arrangement of collection, transportation, sorting and processing of these materials; the availability of land and facilities for recycling; as well as the interests from the buyers and markets (i.e. outlets for recyclables) etc. The Administration's support measures seek to address the above needs on multiple fronts.

In the waste management hierarchy, recycling is one of the preferred ways to avoid and decrease the amount of waste generation (Burton, 1998; Cristobal Andrade, Gomez Miguez, Taboada Gomez & Bello Bugalo, 2012). Thus, the same principle can also be applied to SWM. The development of the EcoPark is potentially crucial to reduce solid waste and also minimize the impact of waste generation in Hong Kong.

Cooperative governance is probably not a good strategy for situations in which agencies must make or implement decisions promptly (Ansell and Gash, 2007). Reinforcing the argument about interdependence and the governance modes, it is necessary to examine whether the agencies are required to articulate means of legitimacy where interdependence might only foster a force of proactive participation and involvement to subsequent collaborative work. Whether cooperative governance is prevailing or not, the requirement for better collaboration between government and the key policy actors involved is still strongly desirable.

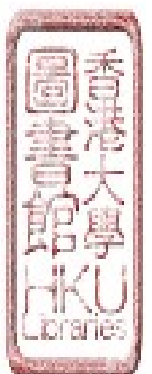


## **Overview of the Analytical Framework**

Over the past few decades, there is an emergent form of governance to replace the traditional governance mode. The project recognises this by establishing an analytical framework in which governance can be viewed “as regimes, laws, rules, judicial decisions and administrative practices that constrain, prescribe and enable provision of publicly supported goals and service” (Lynn, Heinrich, and Hill, 2001, p.7).

Use is made of the arguments of Knill and Tosun (2012) who distinguish four ideal-types of governance: interventionist governance, regulated self-governance, private self-governance and cooperative governance. Each of these ideal-types of governance has a prominent characteristic which can be assessed through a four-dimensional analysis from the perspectives about source of rationality, form of control, primary virtue and service delivery focus (Considine and Lewis, 2011, p.133).

The core attributes of interventionist governance are defined as the hierarchy control, high reliance on law regime and it expects top-down decision-making. However, the declining popularity of this mode of governance has been seen from the emergence of other alternatives which require more degrees of coordination. The regulated self-governance is evolved in which the Government relies on outside agencies by means of a stronger strategic partnership. The source of rationality comes from management instead of law. This form of governance is goal-driven. In addition to the regulated self-governance, an emerging mode of cooperative governance and private self-governance can be observed. For cooperative governance, culture and coproduction is substituted by joint action.

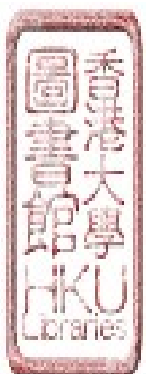


The public and private actors are more flexible. They are eager to win cooperation from others, more trust-building and more likely to see success as the service delivery focus upon joint-users' action. In the structure of private self-governance, competition is the source of rationality. Confidentiality of contract is acted as a source of control. Under a market, the primary virtue is cost driven with service delivery focus on price.

Although cooperative governance now operates as norms in reality, it is not easy to differentiate successful mixtures of governance as separate governance styles. It is possible that the use of four-ideal types of governance can provide a basic analytical tool for understanding governance. The concept of interventionist governance, regulated self-governance, private self-governance and cooperative governance offer a comprehensive analytical framework for studying the conflicts and synergies within and between governance approaches.

A much bigger approach to governance as an analytical framework is illustrated as Figure II below. Public administration requires execution of collective control and influence. Different governance approaches will lead to outputs / outcomes as the end product of a governance regime. The outputs / outcomes are subject to the level of coordination and articulation between the state, market and civil society under a dynamic environment.

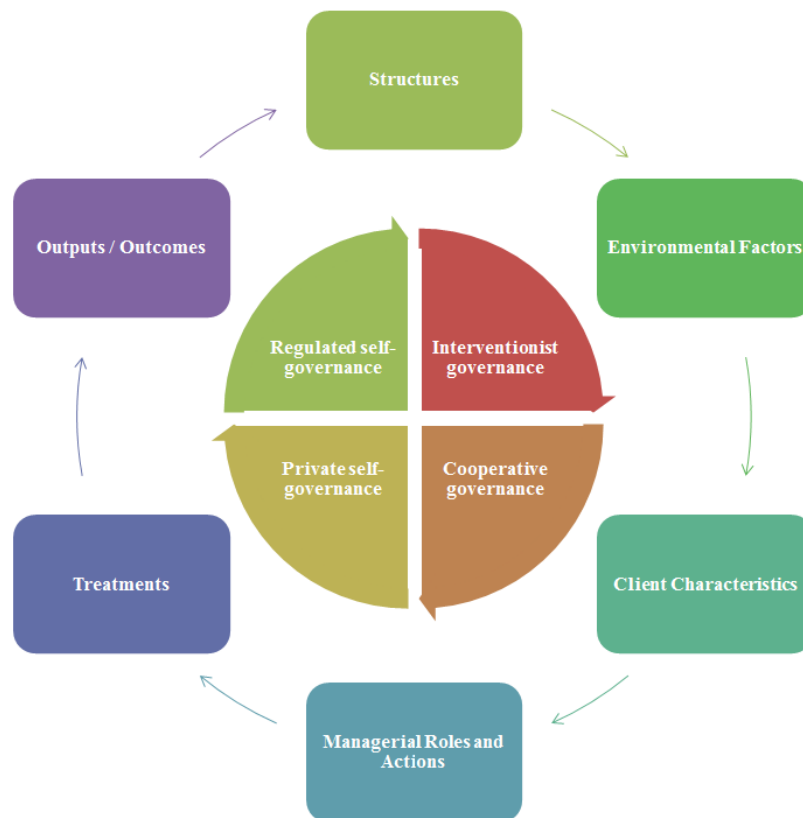
However, a mixture of four-ideal types of governance may impose certain degree of conflicts. It is observed that the main reason for network failure is that different styles define different types of relations with other parties. There are forces come



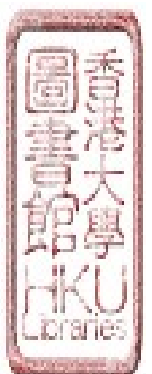
from the institutional culture and values interlocking with the managerial roles and actions.

Frederickson argued that “nongovernmental institution or organization making and implementing policies which affect citizens in the same way as the policies or actions of the state are practicing the public administration of governance” (Frederickson, 1997). Policy integrations need to combine and undermine by means of a hybrid administrative approach. It is observed that all four types of governance depend on one or more than one form of power. Most importantly, legitimacy is the most fundamental elements when power is exercised in and beyond public administration.

**Figure II: Overview of the Analytical Framework**



Source: adapted from Knill & Tosun (2012, p. 8) and Frederickson (2014, p. 8)



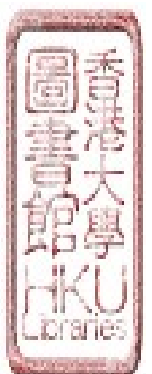
## **Research Methodology**

Data collection involved a site visit to the EcoPark (which unfortunately could not be complemented by discussions with relevant officials), various statistical data from the EPD, various government documents, qualitative data (e.g. public engagement reports) via web search, newspaper articles, and other printed material on the situation of solid waste recycling in Hong Kong. A case study is used to examine the prevailing governance mode adopted in the EcoPark and its impact on the appropriateness and effectiveness towards the success of recycling management of solid waste in Hong Kong. It concludes that cooperative governance is most commonly used mode of governance. However, it shows that the outcome of this governance mode has not performed well as expected as a result of conflicts and complementarity from different governance modes.

The research methodology is appropriate to the study because there is variety of evidence from different sources as quoted above which are very useful for the exploratory nature of the project. It enables an investigation into a phenomenon in its context in order to better understand the phenomena of recycling management of solid waste in Hong Kong.

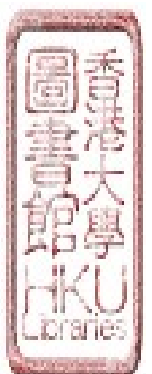
## **Chapter Outline**

This study is organized into five chapters, including this introductory chapter. Chapter 2 establishes the analytical framework of the project based on a review of the literature on modes of governance in the public administration. It distinguishes the traditional governance mode from new modes of governance for illustrating the importance of governance, its implication for collaboration and networks, and the underlying significance of legitimacy. Chapter 3 outlines and evaluates the





transformation of governance modes and related developments in the recycling management of MSW in Hong Kong. Chapter 4 analyses the case of the EcoPark in terms of the nature and significance of the organizational context and form of governance. Chapter 5 concludes the study by highlighting the key findings, providing some relevant insights from other countries' experiences, and making some recommendations concerning possible future solid waste recycling arrangements in Hong Kong.



## Chapter 2: Analytical Framework

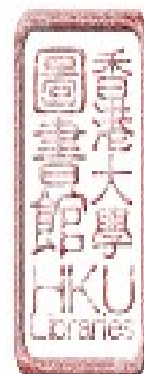
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### Introduction

Traditionally, government refers to the structure and function of public institutions (Kettl 2002). It manages most of the service delivery, enjoys the legitimacy in the bureaucracy, and controls all the politics and policies on hand. However, in the recent years, attention has been shifted from “government” to “governance”, which focuses on all kinds of organizations and arrangements involved in the pursuit of public interest, and the steering role of government in the management of public affairs. In this regard, government is only one of the many actors in service delivery.

Governance is an extended meaning of government. In a simplified term, the Government aims to get its job done. Instead of focusing on the state hierarchy, it concentrates on the inter-relationship between different actors in regards to social, technological, political and economic problems. There are various definitions and interpretations of the term “governance”. For instance, Kettle (1993) and Nye and Donahue (2000) indicated that governance is the market-based approaches to government. On the other hand, Milward and Provan (2000) claimed that governance appears to be transformed from the bureaucratic state to the hollow state or to third-party government.

In regards to the concept of governance, Cleveland (1972) believed that big problems should be fixed by big responses. Those responses should be multi-organizational as well, involve both public and private actors and led by many

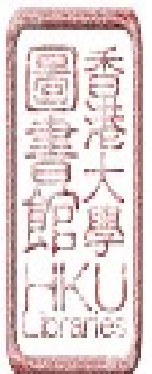


leaders. From his point of view, governance should be broad and comprehensive enough to address the issues in the society. As a result, governance is inseparable from all of us. With reference to Cleveland's perception, Rhodes (2000) further elaborated that governance is everywhere and appears to mean anything and everything.

In this chapter, various modes of governance are addressed, along with the importance of governance, its implication for collaboration and networks, and the underlying significance of legitimacy. The modes and related ideas are addressed here as constituting an integrated analytical framework to structure, guide and inform the empirical analysis in subsequent chapters.

#### **Four Ideal Types of Governance**

According to Knill and Tosun (2009), governance patterns vary across countries and policy actors, depending on the level of legal obligation in political steering activities as well as the degree of cooperation between public and private actors in policy-making. Different political and economic institutions could be addressed by different types of governance. In this regard, the adoption of which governance pattern depends on the decision making capacity of different actors. Governance by public or private actors should not be seen as exclusive alternatives, but as mutually reinforcing. Table I presents four ideal types of governance identified by Knill and Tosun (2012) in terms of its dynamic, structures and processes.



**Table I: Four Ideal Types of Governance**

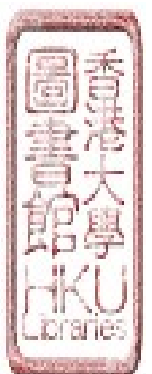
		Cooperation of Public and Private Actors	
		High	Low
Degree of Legal Obligation	High	Regulated Self-governance	Interventionist Governance (Government)
	Low	Cooperative Governance	Private Self-governance

Source: Knill & Tosun (2012, p. 210) as drawn from Knill & Lehmkuhl (2002b: 49)

***Interventionist governance***

Interventionist governance is a classical mode of policy making. The Government rules the state by intervention. Under this governance mode, the public and private actors have very limited governance capacity, and the Government has the absolute power to affect or interfere with any decision made by every actor in the society. In general, this pattern is characterized by a hierarchical relationship in between public and private actors, with the state intervening “from above” into society through highly detailed and legally binding requirements, i.e. on the basis of clearly defined rules and regulations which have to be complied with by the public and private actors concerned (“command and control”) (Knill & Tosun, 2012).

Under an interventionist government, the structures of the state would be vertically developed. In this case, the state is separated from the rest of society; on the other hand, it governs the society by implementation of law and other forms of regulation. As regards to the process and outcomes, the interventionist government actively involves in the governance process by steering, “top down”, command and control. Subnational government could enjoy some degree of



autonomy but the central state never surrenders its legal authority over the related actors.

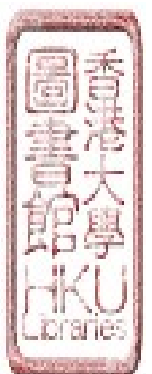
### ***Regulated self-governance***

For regulated self-governance, the Government also plays an important role in ruling the state. Moreover, the state allows public and private actors cooperating with each other in order to formulate and implement public policies. It implies that the participation of society takes place on the basis of clearly formalized and institutionalized procedures, although the state still plays a dominant role in making the final decision on policy context and regulatory arrangements (Knill & Tosun, 2012). For example, the private actors could offer suggestions and proposals in policy-making and implementation; they could also delegate their responsibilities to other organizations.

Regulated self-governance is governed by policy networks. Such networks comprise various actors in a given policy sector, such as public institutions, concerned parties / groups, scholars and politicians. The policy networks could facilitate and balance the coordination of different interests and resources, so as to enhance efficiency in the implementation of public policy. Although the networks could enjoy a certain extent of flexibility and freedom during the implementation process, the policy framework should be guided and limited by the central state.

### ***Cooperative governance***

Cooperative governance refers to the governance through negotiations and voluntary agreements between public and private actors. Moreover, private actors rather than the state play a dominant role in policy formulation and



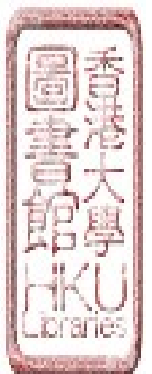
implementation (Knill & Tosun, 2012). In the society, the public and private actors have the same level of influence in the discussion process and the policy decisions are based on the result of negotiation. As a whole, the results should be widely accepted because they are based on mutual and voluntary agreement.

Under cooperative governance, the state is believed to be too big and too bureaucratic to deal with societal issues, as a result, the communities should solve their problems with a minimum state involvement. In this regard, the most ideal remedial action to resolve this problem is to exercise governance without government. Moreover, a civic spirit would be cultivated in the community. It also creates framework on collaboration, fosters unionization, or even promotes human rights.

### *Private self-governance*

The cooperation of state and society under private self-governance is based on voluntary rather than legally binding instruments (Knill & Tosun, 2012). However, the state might provide guidance and framework on “refining” societal self-governance. For example, the Government could increase the legitimacy by mediating and moderating the conflicting interests between different actors (Willke, 1995). Governance by public or private actors should be seen as mutually reinforcing in this case (Knill & Tosun, 2012).

In the structure of private self-governance, market dominates the operation because it is believed to be the most efficient allocative mechanism and politics would be not able to achieve the same result. Under a market, monetary criteria would be adopted to determine an efficient resource allocation. As a result, it



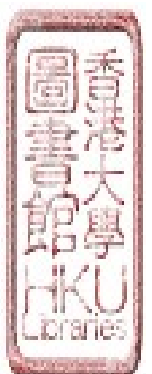
could also empower citizens because the citizens exercise powers as consumers. Furthermore, the private self-governance also refers to various mechanisms in which economic actors can cooperate to resolve common problems by distorting the market.

### ***Interrelationship of the four types of governance***

The above-mentioned four ideal types of governance are inter-related. Interventionist governance plays an important role in a large number of national contexts, and its control over legislation would affect the operation of regulated self-governance. On the other hand, a well-developed regulated self-governance could be strong enough to resist state power and impose pressure to the central government. It also fosters the development of decentralization and horizontalization.

Cooperative governance emphasizes on organizing governance without government. It could resolve the common problems without bureaucracy. Its significance is the cooperation among the social actors as the state under interventionist governance could not intervene the societal process effectively.

Under private self-governance, the citizens are empowered as consumers. Increasing numbers of public goods are provided by private actors and the actors are more rely on market coordination. Besides, competition would be emerged in the provision of public services and the service quality would be enhanced. However, people in this governance mode would only concentrate on economic rather than societal problems. As a result, the control over legal obligation is still very important to regulate the state.

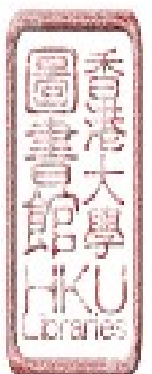


Interventionist governance and regulated self-governance are traditional modes of governance as they focus on the vertical implementation of policy design and process. The state has a high degree of legal obligation and the Government processes the decision through “top down” execution. On the other hand, cooperative governance and private self-governance are relatively modern and they emphasize on the horizontal interaction in between public and private actors.

### **Cooperative Governance is about Collaboration and Networks**

The four types of governance provide a solid foundation for the government to establish and implement various policies in the society. They indicate different dynamics in between the cooperation of the central government, public actors and private actors. They are also closely interrelated and inseparable. Among the four types of governance, it could be seen that the cooperative and collaborative arrangement plays an underpinning role because it illustrates the interactions among the actors. Hence, it is particularly relevant here to explore cooperative governance in some depth and analyze the significance of collaboration and networks under cooperative governance.

Collaborative governance is an extended development of cooperative governance. It has become the new paradigm for democratic public administration (Frederickson, 1991; Jun, 2002; Kettle, 2002). Collaborative governance emphasizes on the processes and structures of public decision making and management, it also fosters constructive engagement within or across different public agencies, levels of government, private and public interest sectors, and the public at large (Emerson, et al, 2010). Most importantly, it involves various steps in which both public and private actors would work together to solve public



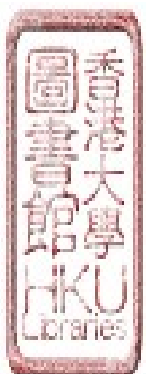


problems that go beyond what any sector could achieve on its own (Carlson, 2007).

Collaborative governance has developed as an alternative to the adversarialism of interest group pluralism and to the failure of managerialism's accountability (Ansell & Gash, 2007). On the other hand, the growth of knowledge and institutional capacity also contribute to the increasing significance of collaboration. The demand for collaboration increases when knowledge becomes more specialized and distributed; and when institutional infrastructures become more complex and interdependent. As indicated by Gray (1989), all of the above-mentioned phenomena may be the increasing "turbulence" faced by policy makers and managers.

Collaborative governance is the most significant mode of contemporary governance. First of all, it serves as a response to the failures of downward implementation. Besides, it emerged as a solution to the high cost and politicization of regulation (Ansell and Gash, 2007).

According to Ansell and Gash (2007), collaborative governance is defined as "A governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets". In order to implement collaborative governance successfully, there are several pre-requisites that the actors have to fulfil (Ansell & Gash, 2007). Firstly, they must have a trust-building commitment to process. The actors have to recognise their mutual interdependence. They

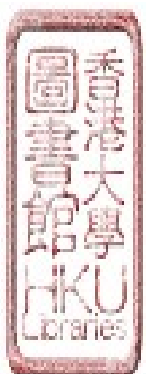


should have a sense of shared ownership, open to explore new ideas in order to achieve the mission. Secondly, they should have a shared understanding with each other. The actors should have the same definition to a common problem and share the common values. Through a series of face-to-face dialogue, conclusion or solution could be sorted out.

Effective collaboration governance could prevent high costs of policy making under an adversarial system, spread out democratic participation, and even restore the rationality of public management. For examples, it could encourage the actors' engagement in productive discussions for developing a better relationship with stakeholders. Besides, it could develop different forms of collective learning and problem solving. However, there are some potential problems of collaborative strategies. For instances, some powerful stakeholders might manipulate the process, public agencies might lack of real commitment to collaboration; and the distrust among stakeholders would generate a barrier to sincere negotiation. As a result, there should be an authority (e.g. the central government) to facilitate and monitor the process of collaborative governance.

Collaborative governance embodies several strands of theory and practice in public management, negotiation and participatory democracy (Emerson & Murchie, 2010). In regards to public management, the importance of horizontal network management and collaborative public management are rising (Wright, 1988; Agranoff and McGuire, 2001; Kamensky and Burlin, 2004).

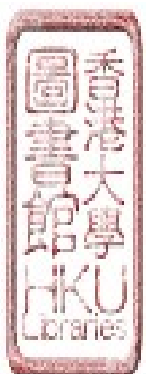
There is a strong relationship between collaborative governance and networks. Network has become a focal point of the study of governance because it is



considered as a formal strategy for effective governance nowadays (Agranoff & McGuire 2003, Imperial 2005, Provan, Isett & Milward 2004). A great variety of formal and informal network connections in between governments and other sectors are becoming more vital and hence need to be “seriously” addressed (O’Toole 1997: 1). Several scholars have identified a formal shift in decision making processes by devoting more efforts on governance and network analysis. Consequently, the term “policy network” is introduced by Rhodes (2007: 426) and it is described as a “description, theory, and reform” of the process of governance.

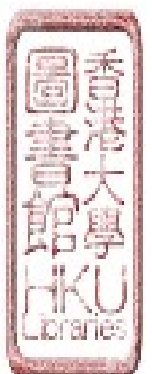
Network is a process of learning through the exchange of knowledge and experience. It is also described as a response to the failure of other kinds of governance structure (Popp, MacKean, Casebeer, Milward and Lindstorm, 2013) such as hierarchies or markets etc. A policy network may involve both public agencies and stakeholders (Ansell & Gash, 2007). Moreover, policy networks infer that there is cooperative deliberation, or the actors could make the decision within the network. As a result, the terms of “policy network” and “collaborative governance” could be interpreted as similar phenomena. However, the cooperation within the policy networks may be informal and remain implicit (e.g., unacknowledged, unstated, nondesigned). In addition, it may operate via informal patterns rather than through formal multilateral processes.

Network governance which focuses on the collaboration among the actors is an evolution of cooperative governance. Different scholars have different definition and interpretation on network governance. Provan and Kenis (2008) pointed out that network governance is “the use of institutions and structures of authority and collaboration to allocate resources and to coordinate and control joint action



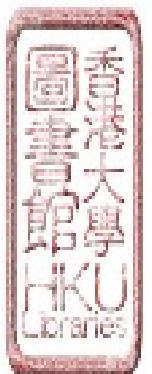
across the network as a whole”. They identify three distinct types of governance structures within networks which are shared governance, lead organization and network administrative organization (“NAO”). NAO refers to an establishment of a separate entity to manage the network. Shared governance describes all participants’ contribution to the management of leadership in the network. Lead organization indicates that the network manager and administrative entity are the key network members. On the other hand, Torfing (2013) indicates that there are three types of governance networks which are cooperative, coordinating and collaborative networks. He pointed out the spread of different types and forms of governance networks depend on the context in terms of political institutions, cultures and discourses.

There are many advantages of network governance. The most direct merit of network governance is that it departs from the hierarchical control of the state and encourages the cooperation among the actors. According to Sørensen and Torfing (2008), governance network could foster efficiency gain because it enhances the participation of people from different backgrounds which enables various network actors to identify policy problems, explore new opportunities and sort out solutions together. Besides, governance networks could help different parties accessing to specialized knowledge; as a result, a better performance and result could be achieved. The actors could also benefit from information aggregation, so that the quality of policy decision could be improved as well. Thirdly, it increases the adaptive capacity of the actors and creates a sense of ownership among them. The policy decision would then face less resistance upon implementation.



In essence, network governance helps to achieve a better collaboration; but there are some limitations on network governance. The potential efficiency gains of governance networks could only be achieved by a well-functioning governance network (Sørensen and Torfing, 2008). For examples, the failure of mobilizing relevant actors, the absence of a capable leader and the presence of conflicts etc., all these factors hinder effective network governance. Secondly, the negotiation process is time consuming. As there are a lot of actors from different backgrounds involve in the discussion, it is hard to make a compromise in a short period of time because they have different points of view. The network might spin out of control. Thirdly, it is difficult to ensure a symmetric power relation among the network and sometimes the overall situation might favor specific parties. All these factors hinder an effective collaboration when discussing or implementing different policies.

As a result, in order to maximize the benefits obtained from collaboration, network governance could not be self-operated effectively. In this aspect, the Government and political authorities must use their powers to influence the composition, conceptions and incentives of the network actors (Sørensen and Torfing, 2008). Having regard of this, the Government could regulate the governance network through different strategies, technologies and tools of metagovernance. Metagovernance (Klijn & Koppenjan, 2004; Sørensen, 2005) is an attempt to influence the form, functioning and results of network governance without reverting too much to the traditional hierarchical means of control. For examples, the Government could involve in the design of network in order to influence the composition, character, institutional procedures, or even the scope of networks. It could also frame the network by determining the political goals,

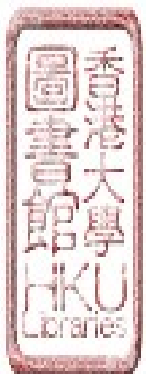


financial conditions and legal foundation of networks. Strictly speaking, the Government could manage the process of network so as to lessen its tensions, relieve conflicts, empower actors and reduce transaction costs. Last but not least, it could participate in the network such as influence the agenda, offer feasible options and negotiate policy decisions. Metagovernance could ensure a certain extent of state control but maintaining the authority of collaboration and cooperation among the network actors. Hence, the effectiveness of collaboration could be greatly enhanced.

### **The Underlying Significance of Legitimacy in Governance**

Having regard to the prerequisites in achieving well-functioning collaborative governance, the strengths and limitations of network governance, it could be concluded that effective collaboration could not be well-maintained by non-intervention and be solely achieved by networks. The Government or political authorities should regulate the collaboration and governance network proactively. Where power is acquired and exercised according to justifiable rules, and with evidence of consent, it refers to rightful or legitimate (Beetham, 2013).

Legitimacy of a government means its power status over its people, policies and actions. According to Beetham (2013), “Legitimacy embodies three distinct levels which comprises of (i) the conformation to established rules; (ii) the rules can be justified by reference to the beliefs shared by both dominant and subordinates; and (iii) there is evidence of consent by the subordinate to the particular power relation”. In other words, the Government should fulfil the above criteria in order to obtain the power to dominant over the subordinates and its collective organizations so as to achieve the purpose of legitimacy.



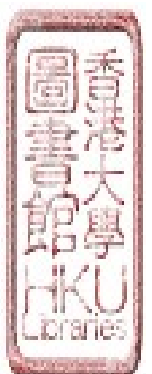
Legitimacy is fundamental and essential in the effective exercise of power in and beyond public administration (Thynne, 2013) in order to ensure a smooth implementation of public policies. As a result, for those who are responsible for and how power is granted, exercised, constrained and reviewed, they must develop a high “legitimation capacity” (Thynne & Massey, 2013). As mentioned earlier, the use of different strategies, technologies and tools of metagovernance are good examples to consolidate the legitimacy of political authorities.

Although many governments still serve the role to lead or steer the society via various forms of policies, the power difference between the Government and its citizens are diminishing and evolving. Instead of ruling or controlling the society by hierarchy, the contemporary governments have to earn and build their legitimacy in order to successfully or smoothly implement policies and steer the alignment of people, systems and action.

### **Concluding Comments**

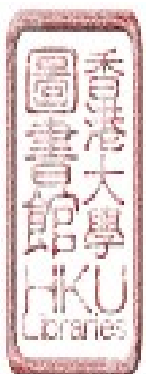
The four types of governance provide a valuable indication of the degree of cooperation and decision making capacity between public and private actors in policy-making. They are interrelated to each other, and the imbedded collaborative and cooperative arrangements underpin the contemporary development of governance.

Governance could not be managed well without legitimacy. It could only attain efficiency subject to a well-organized government which is able to grant, exercise, constrain and review the power skilfully. The Government has to ensure its



legitimacy and balance power relationships among different actors. As a result, public policies could be successfully formulated and implemented.

In the following two chapters, the analytical framework established here is adopted to examine the policy of SWM in Hong Kong. The EcoPark is taken as a case study, against the background of the Government's SWM policies and action. The focus is on the governance arrangements in terms of their efficacy, strengths and weaknesses in achieving the intended objectives of SWM.





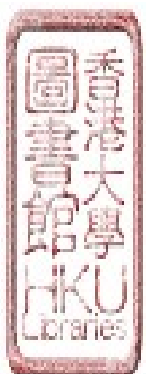
## **Chapter 3: Solid Waste Management in Hong Kong -- Policy and Organisational Context**

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### **Introduction**

The analytical framework in Chapter 2 has examined the various governance modes which serve as a basis for the assessment of SWM in Hong Kong. This chapter focuses on the policy and organizational context of the development of policy of SWM in Hong Kong, as well as on the various governance modes adopted by the Government.

Based on the policy frameworks designed and implemented by the Government, five eras are identified to explicate the governance of SWM in Hong Kong. Policy direction for SWM could hardly be found until the first white paper “Pollution in Hong Kong – A Time to Act” was published in 1989 and the Government dominated the role of SWM in Hong Kong until 1994. By then, Waste Reduction Study was commissioned in 1994 and increased collaboration initiatives with business partners were observed since 1998, forming two eras of increasing collaboration between government and non-government organizations which are distinguished by the transfer of sovereignty over Hong Kong from United Kingdom to the People Republic of China in 1997. The last two eras are easily identified by two 10-year policy framework, namely “A Policy Framework for the Management of Municipal Solid Waste (2005-2014)” and “The Hong Kong Blueprint for Sustainable Use of Resources 2013-2022”.



## **Solid Waste Management Pre-1994**

Not until the late 1980s, the problems of solid waste were perceived from the environmental and public health perspectives and the Government solved the problems by interventionist governance through its absolute power to decide the policy decision and execution of rules and regulations. The problems defined at that time were associated with the odour, containment, noise, dust and hygiene issues created during the waste collection process (White Paper: Pollution in Hong Kong – A Time to Act, 1989). To reduce and avoid environmental and public hygiene impacts, the Summary Offences Ordinance (Cap. 228) and Public Cleansing & Prevention of Nuisances Bylaws (Cap 132)<sup>2</sup> have been in place since 1933 and 1960 respectively (Bilingual Laws Information System, 2014) to tackle with littering and public health related problems.

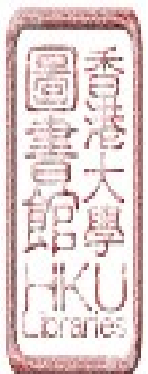
Two municipal councils<sup>3</sup> and the executive arms of the two Councils (i.e. the Regional Services Department and the Urban Services Department) were responsible for the street cleaning, collection and removal of the bulk of Hong Kong's street-level waste, household and commercial waste at refuse collection points under their control to avoid public health impacts. Incineration and landfills had dominated the role in the disposal of household, commercial, industrial and construction wastes (Hong Kong 1990 Annual Report, 1991).

The Waste Disposal Ordinance (Cap. 354) was the first piece of legislation on SWM which contributes to providing a comprehensive framework for managing

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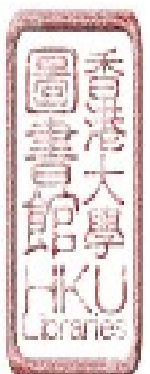
<sup>2</sup> Waste Disposal Plan for Hong Kong, December 1989. Currently the ordinance is called Public Health and Municipal Services Ordinance.

<sup>3</sup> Two municipal councils are the Urban Council and the Regional Council which collected waste deposited at refuse collection points under their control.



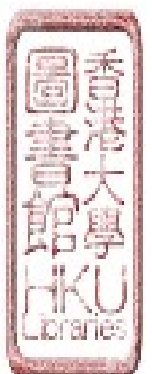
waste from the point of arising to the point of final disposal (White Paper: Pollution in Hong Kong – A Time to Act, 1989). Together with other relevant environmental legislations, various types of wastes are disposed in an environmentally acceptable manner. As there was a growing demand for the colonial Government to cope with the waste problem in Hong Kong, Environmental Protection Unit comprising environment specialists within the Government was set up in 1977 which was later replaced by the Environmental Protection Agency in 1981. It was the main government body to develop and execute environmental policy as well as to formulate related legislation (Hong Kong 1983 Annual Report, 1984). Furthermore in 1989, the Planning, Environment and Lands Branch comprising of the Government Secretariats was formed as the policy branch to better integrate environmental matters and issues into the policy planning system. It is observed that the Government has the absolute power in the development and execution of related legislation, by including only the specialists and secretariats within the Government, excluding the public, private or related actors.

During the early colonial era, the Government governed the society by “top down” approach through implementation of legally binding requirements, i.e. the above-mentioned Summary Offence Ordinance, Public Cleansing & Prevention of Nuisances Bylaws and Waste Disposal Ordinance. The legal authority was dominated solely by the Government officials and bodies and formed a hierarchical relationship between public and private actors. It is observed that the Government possessed the ultimate control of the SWM and never surrendered its legal authority over the related actors. Participation from private and related actors was not involved in the governance process.



Strategies to limit the amount of waste generated and the recovery and recycling of waste had not yet been well developed in the early colonial days. In 1989, recycling activity was mainly limited to the materials with recycling value scavenged by scrap dealers for export to other countries (White Paper: Pollution in Hong Kong – A Time to Act, 1989). As stated in the Waste Disposal Plan for Hong Kong published by the Waste Disposal Authority of EPD, public participation and cooperation as well as the role of the private sector had been identified but strategies had not yet been developed. It also identified that the design, construction and operation of waste disposal and treatment facilities by the private sector, based on some forms of contractual arrangement with the Government would bring a number of potential advantages to the Government in terms of professional experience, financial management and operational flexibility. Though such collaboration had yet to be explored when it was considered to be appropriate, it implied that the Government intended to include public and private actors in the formulation and implementation of public policies in the SWM in Hong Kong. The regulated self-governance was identified to enhance the participation of society and efficiency in the implementation of the public policy.

As the annual generation of waste had increased in line with the population and Gross Domestic Product, the Government began to aware of the serious environmental pollution. The Executive Council advised that a White Paper should be prepared on pollution. The first white paper “Pollution in Hong Kong – A Time to Act” (“the 1989 White Paper”) was published in 1989 which outlined a comprehensive ten-year plan to achieve the following two policy objectives for the management of wastes: (i) to ensure the provision, by either the private or the public sectors, of facilities for the cost-effective and environmentally satisfactory

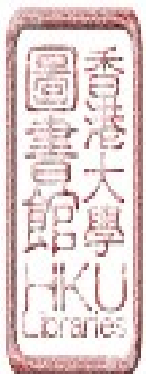


disposal of all wastes; and (ii) to ensure the availability and proper enforcement of legislation which aimed at safeguarding the health and welfare of the community from any adverse environmental effects associated with the storage, collection, treatment and disposal of all wastes (White Paper: Pollution in Hong Kong – A Time to Act, 1989). As we can see from the first policy objective of the 1989 White Paper, the Government allowed public and private actors to participate in the waste disposal policy. With the inclusion of related actors in the governance process, a policy network was formed to cooperate with each other and facilitate coordination of different interests and resources in managing of solid waste.

On one hand the Government played an important role in the SWM, with an intention to increase involvement from the public and private actors, to provide secure, long term, strategies for the final disposal of the growing quantity of wastes produced by the general public. On the other hand, publicity campaign comprising poster, pamphlets, television “Announcements in the Public Interest”, World Environment Day programme and some publicity activities were organized by the Government to increase public awareness of the problems caused by pollution as well as reduction and recycling of solid waste (First Review of Progress on the 1989 White Paper, 1991).

### **Increased Collaboration with the Private Sector from 1994 to 1997**

As the Waste Disposal Plan had been carried out by the relevant authorities progressively, on top of managing waste disposal, the Government started to realize the importance of waste reduction in the process of SWM. In February 1994, EPD commissioned a Waste Reduction Study and identified ways to

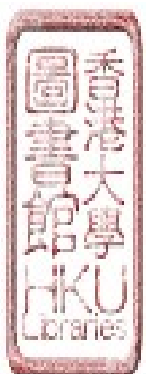


encourage waste avoidance, minimization, recycling and recovery (Heading towards Sustainability: Third Review of Progress on the 1989 White Paper, 1996).

Drawing from overseas and local experiences, waste reduction plan could hardly be effectively carried out by the Government alone. The Waste Reduction Plan encouraged the Government and non-government partnership whenever possible. The forms of collaboration involved participation and contribution, including financial support from both the Government and private sectors. The collaboration with commerce and industry in the SWM included setting voluntary waste recovery / recycling target, e.g. take-back and deposit-refund schemes, and financially assisting the recycling industry, e.g. assistance in funding suitable sites (Heading towards Sustainability: Third Review of Progress on the 1989 White Paper, 1996). Such collaboration allowed greater flexibility and implemented the measures in a quicker manner. The need for regulated self-governance or even cooperative governance had become more prominent that private actors rather than the Government had to play a more dominant role in formulation and implementation of policy. Such cooperation and interrelationship between public and private actors could be found in the following examples.

#### **Collaboration Initiatives from 1998 to 2004**

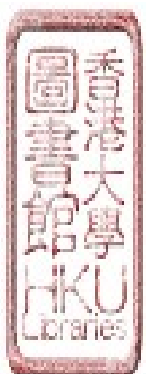
Networks comprising public and private sectors are formed through various policy initiatives such as Wastewi\$e Scheme and Eco-Business Award which were launched in 1999 to promote and gather waste reduction efforts from both the Government and non-government organizations. The Scheme involved wide range of organizations including construction industry, property management, public utilities, manufacturing industry, restaurants, department store, hotels,



aircraft maintenance as well as government departments (Annual Review – Waste Reduction Framework Plan, 2000).

To further promote waste reduction initiatives among non-government organizations, Waste Reduction Committee and six task forces for housing, private housing, hotel, government, construction sectors and airport community, were established in February 1999. The communication among the sectors involved allowed sharing of knowledge and experience, as well as immediate feedback could be reverted to the Waste Reduction Committee for assistance that the sectors needed to participate in the waste reduction and recycling initiatives (Annual Review – Waste Reduction Framework Plan, 2000). Though the Government still possessed the final decision on the policy content and waste reduction initiatives, feedbacks, suggestions and proposals from the private actors were considered in the policy making and implementation.

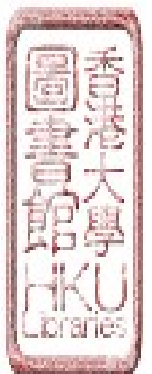
Involvement of the private actors and general public in the waste reduction and recycling initiatives had been increasing since 1999, they had started to play a more dominant role in the implementation of these programmes and campaigns. Public awareness of waste reduction and recycling was raised through the Government's increasing effort put in the public campaigns and activities. In November 1999, to further enhance the public awareness of reduction and recycling, EPD in collaboration with Environmental Campaign Committee, Housing Department, Housing Society and other bodies, had launched the recycling bins campaign to promote waste separation at housing estate. 250 public and private housing estates had installed recycling bins by November 1999, to facilitate and gain the effort from the public to participate in the reduction and



recycling campaign. Furthermore, a working group comprising representatives from 9 tertiary educational institutions was set up in September 1999 so that the Government could gain more knowledge and experience regarding the waste reduction and recycling from the academics (Annual Review – Waste Reduction Framework Plan, 2000).

The waste reduction and recycling responsibility was extended to all walks of life, from public, private and related sectors to every citizen in Hong Kong. The cooperative governance had been adopted as the Government provided the policy framework, supported the environmental policies, programmes and campaigns based on mutual and voluntary agreement with the private and related actors, and also promoted the joint cooperation with the communities to solve the solid waste problems.

Not only the Government was responsible in raising public awareness of waste reduction and recycling, the non-government organizations also played a significant role in education and publicity activities. Green groups, youth and community associations initiated to organize various workshop, exhibition, fun fair, pilot project and publicity activities to promote waste reduction and recycling programme, for example, in the first half of 1999, the Conservancy Association convinced major manufacturers and retailers to voluntarily incorporate plastic coding in their products, and provided collection services in housing estates to facilitate plastic waste collection (Annual Review – Waste Reduction Framework Plan, 2000).



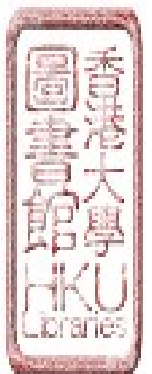


The WRFP listed out specific roles for the private sector, non-profit making organisations (“NGOs”), and the community to contribute to SWM. Although some of the initiatives were trivial such as incorporating plastic coding to raise public awareness of recycling and promote purchasing goods with recycled or recyclable contents or with unnecessary packaging, it is observed that the involvement of non-government organizations and the public were highly increased throughout the Waste Reduction Plan and WRFP. Cooperative governance could be observed in the waste reduction and recycling policies and a civic spirit of solving the solid waste problem through waste reduction and recycling was cultivated in the community. With the collaboration with all related parties and the community, it was expected that waste recycling and reduction rate could be further improved.

#### **Emphasis on Waste Reduction and Recovery from 2005 to 2014**

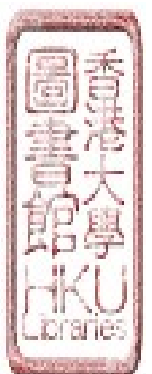
From time to time, the Government maintains its important role in defining the waste problem in Hong Kong and guiding the direction of SWM. The Government has recognized to solve the waste problems in a sustainable way that is economically, financially and environmentally sound. In the document, “A Policy Framework for the Management of Municipal Solid Waste (2005-2014)” (“The 2005 Policy Framework”), published in 2005, emphasis was placed on the waste reduction and recovery in contrast to the focus on waste disposal (A Policy Framework for the Management of Municipal Solid Waste (2005-2014), 2005).

There were three main areas that the 2005 Policy Framework focuses on, namely (i) waste prevention; (ii) institutional arrangements; and (iii) waste bulk reduction. It is noticeable that the Government’s effort was paid to set up institutional



structures to oversee waste reduction and the legislative measures to make participation in some waste reduction measures mandatory. The steering role of the Government is prominent in certain SWM policy in Hong Kong because the regulated self-governance helped to implement the formalized and institutionalized procedures more clearly and efficiently in order to achieve the ultimate goal. The introduction of construction waste charges in 2005 and the environmental levy on plastic shopping bags in 2009 had marked a significant role of the Government in ruling Hong Kong through law and regulation.

On the other hand, the cooperative governance adopted in the waste reduction and recycling policies successfully generated collaboration from the community to solve the waste problem in Hong Kong. In 2005, there were already 28,000 three-coloured waste separation bins located at 9,300 points throughout the territory which had collected more than 663,000 tonnes of MSW since the scheme was implemented in 1998 (A Policy Framework for the Management of Municipal Solid Waste (2005-2014), 2005). More programmes and schemes were run by the business sectors and green groups such as Computer Recycling Programme, Rechargeable Battery Recycling Programme, Fluorescent Lamp Recycling Programme, Source Separation of Domestic Waste Scheme and Plastic Shopping Bags Levy Scheme; Short term tenancy for recyclers to process a wide range of recycling materials, and; EcoPark is set up in Tuen Mun to provide affordable and long term land to the recycling and environmental industry. More examples of cooperation between the Government and private or related actors could be observed in recent decade (Building a Green City, 2014).

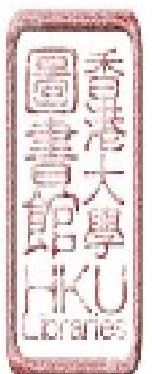


## **Sustainable Use of Resources beyond 2014**

The Government has further initiated to solve the problem from waste reduction and recycling to use less especially when 13 out of the 16 landfills has been closed down between 1988 and 1996 while by 2015, the existing landfills are expected to be full. The Government aims to promote an environmentally-sustainable culture into people's daily life by develop a comprehensive waste management plan and promote a new social contact with the community to save resources and reduce waste (Hong Kong Blueprint for Sustainable Use of Resources 2013-2022, 2013). The Hong Kong Blueprint for Sustainable Use of Resources 2013-2022 (the 2013 Blueprint) has set out the policy direction that:-

- (a) Take multiple, concurrent actions to prevent and reduce waste;
- (b) Mobilize the community to participate; and
- (c) Fill missing gaps in Hong Kong's waste-related infrastructure.

According to the 2013 Blueprint, recycling efforts are now gathered from household, workplace, community and schools through abovementioned government-led and voluntary based programmes and schemes. NGOs, green groups and social enterprises are concurrently running various recycling programmes to fit in particular recycling market in Hong Kong, for example, Caritas, Salvation Army, St. James' Settlement etc., these recycling organizations receive unwanted but still usable items for recycling; EPD also collaborated with District Councils and various organizations to launch Community Participation Programmes in all districts in Hong Kong (Waste reduction and recycling, 2014);



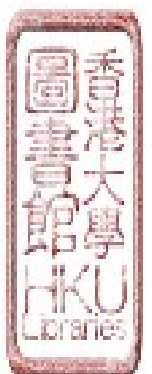
HK Recycles, a multi-faceted social enterprise which provides convenient and low-cost solution to household recycling (Reuse, Rejuvenate, Recycle, 2014).

It is no doubt that the Government maintains its leading role in giving out directives and implementing policy in the overall SWM in Hong Kong. Collaboration with the non-government organizations and the public has been in progress for decades, particularly since the implementation of WRFP in 1998, more emphasis has been placed on the collaboration with and mobilization of the community to participate in the overall waste management process. Therefore in the 2013 Blueprint, the role of the Government is to increase the penetration rate of recycling facilities together with the collaboration with the District Councils, neighbourhoods and NGOs etc. Both regulated self-governance and cooperative governance have been used nowadays to enhance the management of solid waste in Hong Kong.

### **Concluding Comments**

The management of solid waste is a challenge to the Government especially in Hong Kong, the land is a scarce resource, the Government has to strike a balance in land utilization for housing, commerce, industry, transport, recreation, nature conservation, heritage preservation and last but not least the community needs which includes the final disposal of waste in landfills. As the Government defines the problem of solid waste in various ways, the policy approaches changed along with the governance modes adopted by the Government.

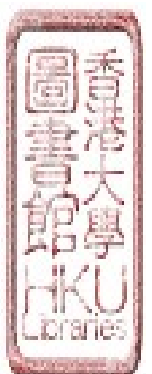
In the early colonial era, the main concern for the Government was to dispose the solid waste in a way that upholding the standard of public hygiene. Laws and



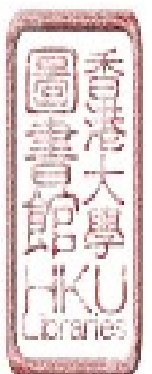
regulations were formulated to be complied with by the public and private actors concerned. Under the interventionist governance mode, no flexibility or autonomy could be enjoyed by the public and private actors but to act according to the defined rules.

While during the years approaching the transfer of sovereignty over Hong Kong from United Kingdom to the People Republic of China, more collaboration was carried out with non-government organizations and the public to reduce waste; and finally in the recent years the Government promotes use less, it is observed that the Government has put more effort to collaborate with green groups, NGOs, business partners and the community as a whole to solve the problem together. Legal-binding requirement such as implementing policies and legislations to drive behavioural change have a significant role and success in the overall SWM in Hong Kong. The degree of legal obligation varies in different environmental policies, yet as SWM is a societal issue that requires high cooperation of public and private actors, thus both regulated self-governance and cooperative governance exist in Hong Kong.

Depending on the characteristics of the waste reduction, recycling or disposal policies, different governance modes could be adopted. The intervention by the Government and the collaboration of the Government with the non-government organizations and the community are highly interrelated in the waste management in Hong Kong. Regulated self-governance and cooperative governance are interrelated and inseparable in the process of SWM such that a sustainable use of resources can be achieved progressively and able to transform the waste management structure in the future.



In addition to adopting a mixed governance modes, legitimacy needs to be built by the Government in order to put policies into actions effectively. As comprehensive recycling policies have been in place for almost a decade and running smoothly by government, public and private sectors, part of the focus of SWM is now shifted to disposal policies such as expansion of landfills and building an incinerator. However, consent for these policies have not yet received from the community and green groups which give rise to objections and grievance from the public. In order to secure consent for the rules being crafted and used, significant widely held beliefs and deliberative processes that are open and transparent should be maintained (Thynne & Massey, 2013). As the Government serves the role to lead SWM in Hong Kong, “legitimation capacity” needs to be developed for effective exercise of power and policy implementation.



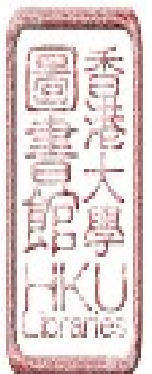
## **Chapter 4: Case Study: Assessment of the Governance Arrangements, Effectiveness and Limitations of the EcoPark**

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### **Introduction**

Chapter 3 reviewed the SWM strategies adopted by the Government at different periods (i.e. from Pre-1994, 1998-2004, 2005-2014; 2014 and beyond) and identified the shift of the policy objectives from “waste disposal” to “waste reduction and recycling”. To achieve the new objective, the Government’s has started to increase collaboration with the private sector and the general public since 1994. In short, regardless of the pace, the Government seems to be heading in the right direction in its SWM policies, with the dominant governance mode evolving from purely “interventionist governance” to a mix of “regulated self-governance” and “collaborative governance”, Government-led solutions have comprised increasing participation of the private sector and the general public, with the Government maintaining its active role in steering and formulating the overall SWM policies in Hong Kong throughout the last few decades and despite the change of the sovereignty and leadership.

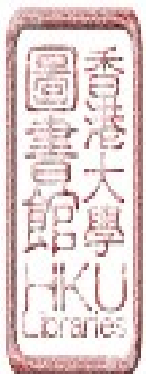
In this Chapter, using the analytical framework devised in Chapter 2 together with the development of SWM policies reviewed in Chapter 3, the focus is on the management of the EcoPark project in terms of the nature and efficacy of the mode of governance adopted. The EcoPark experience, including the shortcomings revealed, will form the guiding principle for comparison with overseas examples and for making recommendations in Chapter 5.



## **Objectives and Development of the EcoPark**

The 2005 Policy Framework (Hong Kong Special Administrative Region, 2005) emphasizes on “waste reduction and recovery”, and the EcoPark was one of the initiatives therein to promote local recycling industry via the provision of long term land, promotion of reuse, recovery and recycling; and return the waste resources to the consumption loop. Under the custody of EPD, the EcoPark aims at facilitating the said processes; helps to realize the full potential of the industry and reduces the dependence on export of recyclable waste materials recovered from Hong Kong. The Government invested a capital of HK\$319 million for building the relevant infrastructure, aiming to turn the EcoPark as an “ideal place” for the recycling industry. The EcoPark commissioned its operation in 2007 and occupies a site area of over 200,000 sqm in Tuen Mun, providing the recycling industry with rentable land of about 140,000 sqm at affordable costs (EcoPark website, 2012). Please refer to [Appendix II](#) showing the location of the EcoPark.

The EcoPark project aims to “promote the local recycling industry and jump-start a circular economy by providing long-term land for the environmental and recycling industry” (EcoPark website, 2012). By encouraging and promoting the reuse, recovery and recycling of our waste resources and returning them to the consumption loop, the EcoPark can help realize the full potential of the local recycling industry and alleviate the heavy reliance on the export of recyclable materials recovered from Hong Kong. To turn the EcoPark into an “ideal place” for the recycling business, the Government has formulated the policy, developed a business model and offered a series of administrative and financial incentives to

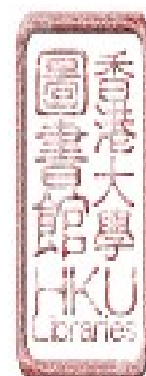




attract potential tenants (EcoPark website, 2012). Photos showing the amenities and facilities are attached in Appendix III.

First of all, the 2005 Policy Framework set out the policy design and the potential sites of the EcoPark project. The subsequent Environmental Impact Assessment (“EIA”) conducted in April 2005 pre-approved a spectrum of selected recycling business to be carried out in the EcoPark (see Appendix IV). From March to April 2006, the EPD conducted an Express of Interest (“EOI”) exercise for understanding and evaluating the business needs and commercial viability of the EcoPark. These steps fulfilled the statutory requirements for taking this project further. To encourage the industry to set up long term value-added recycling businesses in the EcoPark, the Government offered a series of financial incentives to lure investment and participation from the private sector. Basic infrastructures, amenities and facilities (such as a marine frontage and a weighbridge) were provided on site. Appealing commercial terms (e.g. 20-year lease term at affordable rental) were offered to allow sufficient time for recouping capital investments. A professional management service contractor, Serco Guardian JV, was appointed via open tender to manage the park and to help tenants in planning, construction, commissioning and operation of their plants, at no additional charge (EcoPark website, 2012).

The first phase of the project commissioned since 2007, attracting six tenants to set up their recycling business in the EcoPark; whereas the second phase recruited an additional eight tenants in 2012. The EPD (ECF Paper 13/2009-10, 2009) had invited two non-profit making organisations (“NGOs”) to invest and operate two processing centres, one for plastic waste and one for WEEE wishing to sustain the



local recovery of plastic waste retrieved from the SSWP as well as to recycle more WEEE. At present, there are a total of fourteen tenants in the EcoPark, including the NGOs which were funded by the Environment and Conservation Fund (“ECF”).

## **Modes of Governance in the Management of the EcoPark**

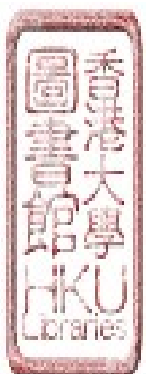
### *Legal obligations and cooperation*

Based on the latest information provided from the website of the EPD (EPD website, 2014), Table II summarises the major management tools adopted by the Government in steering and managing the EcoPark project. They are categorized in terms of “legal obligation” and “cooperation of public and private actors” as in the four ideal types of governance modes by Knill & Lehmkuhl (2002b:49)

**Table II: Management Tools Related to the EcoPark Project**

<b>Legal Obligations</b>	<b>Cooperation of Public and Private Actors</b>
<ul style="list-style-type: none"> <li>▪ Statutory requirements (Pre-1994)</li> <li>▪ Tenancy agreement (2006)</li> </ul>	<ul style="list-style-type: none"> <li>▪ EcoPark Advisory Committee (2006)</li> <li>▪ Environment and Conservation Fund (2009)</li> <li>▪ Recycling Fund (2014)</li> </ul>

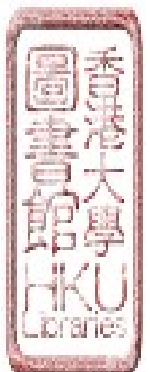
Similar to all business operations in Hong Kong, operators (also referred as tenants) in the EcoPark are required to comply with all relevant statutory regulations, ordinances and laws applicable in Hong Kong. For instance, the Environmental Impact Assessment Ordinance and Environmental Standards and Guidelines looked after by the EPD; the Building Ordinance under the Buildings Department; as well as the Shipping Ordinances under the Marine Department.



Failing to observe these mandatory rules and regulations, the tenants will face penalties ranging from fines, suspension of business operations to prosecution by the Government.

On top of the above general and common rules applicable to all business operations in Hong Kong, the tenants of the EcoPark are required to comply with additional legal and contractual bindings designed for this particular project. The operators who successfully bided for a plot of land at the EcoPark are required to enter into lease agreement with the EPD (on behalf of the Government). The lease agreement clearly lists out the terms and conditions, pre-approved waste types, the operators' obligations and the Government's rights as well as the performance monitoring parameters of the EcoPark. In short, under the governance of all relevant statutory regulations and laws and through the signing of the lease agreement, the Government sets out all the "game rules" for the operators to follow suit through a hierarchical tenancy relationship.

Since the core objective of the EcoPark project is to promote the local waste recycling industry, the active participation of and close collaboration with the private operators are apparently indispensable factors leading to success. To engage participations of the stake-holding parties and the trade, the Government set up an EcoPark Advisory Committee ("EAC") right at the formulation of the EcoPark initiative back in 2006 (Paper WMSC 11/06, EPD, 2006), comprising of representatives from chambers of commerce, professional and trade bodies, to advise the Government on the development of the EcoPark. Having regard to the local business environment and the development of the recycling industries, EAC also advises the Government on the lot allocation arrangements, tenant admission

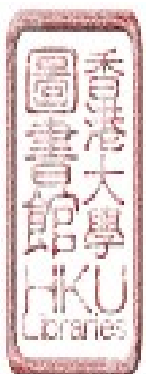


criteria, and tender evaluation scheme of the EcoPark (EPD website, 2014). As per Sørensen and Torfing (2008), such participation of people from different backgrounds could enhance efficiency in policy design, implementation and performance.

In addition to the private operators, the Government has also expanded the collaboration network to NGOs through open tender with funding support from the Environment and Conservation Fund. This design could potentially expand the network, drain in more resources, expertise and knowledge to benefit the project as well as to build legitimation capacity of the project. In April 2014, the Government proposed to set up a recycling fund to further support the recycling industry and to alleviate the burden and reliance on landfills (Secretary for Environment, 2014). This fund aims at providing direct funding to individual companies (up to HK\$5 million) or associations (up to HK\$10 million) who proposed project-based recycling initiatives that align with the objectives, regardless of scale and waste types. This latest proposal, if well executed, could supplement the existing SWM strategies with greater flexibility and open up the recycling industry to less resourceful small- and medium-sized companies.

### ***Evolution in modes of governance***

From the above analysis, the governance mode the EcoPark at the time of setup in 2006 was largely “interventionist governance” which is commonly featured by its relatively high degree of legal obligation (i.e. all the statutory and contractual bindings) and relatively low level of cooperation between the public and private actors (i.e. the existence of the advisory committee). Through the policy making and civic engagement (e.g. EOI) processes, the Government identified the site of

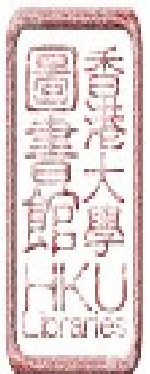


the project, defined the business environment and formulated the business models of the project. The relationship between the Government and the private sector is apparently hierarchical and largely in the form of contractual arrangements. There was minimal collaboration between the public and private sectors; or among the private operators. The invitation of NGOs in the EcoPark project in 2009 and the recent announcement of the recycling fund (in 2014) could possibly signify that the Government intends to increase the cooperative elements of the project; so as to reshape or evolve the governance mode towards “regulated self-governance” or ultimately to “collaborative governance”, an ideal state which the Government and all stakeholders could resolve the problem through negotiation, collaboration, coordination and most importantly without state’s direct and hierarchical governance.

## **Evaluation of the EcoPark Project**

### ***Unsatisfactory performance in statistical terms***

As per the statistics provided by EPD (EPD website, 2014), the territory only managed to recycle 2.16 million tonnes of waste in 2012, representing a year-on-year drop of 860,000 tonnes. The number was rather a low record since the commissioning of the EcoPark in 2007: see [Table III](#). Out of the total MSW collected, majority (97%) was exported for recycling and the remaining 3% was recycled locally. In terms of occupancy, the EcoPark only manages to lease out about 67% of the lot spaces (see [Appendix V](#) for details of the tenancy). From the statistical figures, it is not surprising for the industry and the public to accuse the ineffectiveness of the project in fostering local waste recovery and recycling. The limitations identified in this EcoPark project are set out in the following paragraphs.



**Table III: Statistics of Municipal Solid Waste Recovered (2007-2012)**

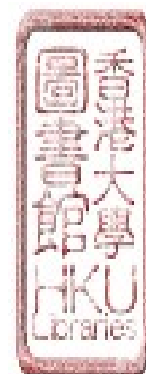
Year	2007	2008	2009	2010	2011	2012
Paper	1102	1091	1027	1195	1278.4	1162.3
Plastics	820	1023	1211	1577	843.2	316.6
Wood	21	18	17	17	17.7	9
Ferrous metals	594	793	733	566	667.3	499.8
Non-ferrous metals	187	140	101	155	115.1	78.2
Glass	1	1	3	5	4.8	18.3
Textiles	15	10	16	20	10.8	3.8
Rubber tyres	13	7	9	10	14.8	12
Electrical & Electronic Equipment	59	59	64	61	66.7	56
Food Waste					0.6	6.7
<b>Total (1,000 tonnes)</b>	<b>2812</b>	<b>3142</b>	<b>3181</b>	<b>3606</b>	<b>3019.4</b>	<b>2162.7</b>

Source: Hong Kong Waste Reduction Website, Environmental Protection Department<sup>4</sup>

***Limitation (1): Single model for different recycling processes***

The policy and business model of the EcoPark project looks fine in the first place. It provides land at affordable rate and shared infrastructure and management services. However, such support is not sustainable in the long run, particularly to those recycling businesses that are of low value. The existing business model provides incentives and facilitation at the setup stage and the operators are expected to survive by themselves throughout the 20-year lease term. Those low-value wastes such as wooden planks could hardly survive under the prevailing model.

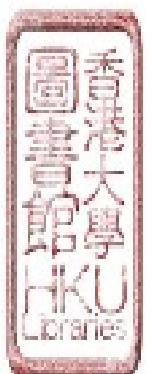
<sup>4</sup> Statistics of Municipal Solid Waste Recovered (2007-2012). *Hong Kong Waste Reduction Website*. Retrieved from [https://www.wastereduction.gov.hk/en/quickaccess/stat\\_recycle.htm](https://www.wastereduction.gov.hk/en/quickaccess/stat_recycle.htm). Accessed 13 August 2014.



The recycling business could be seen as one single industry to many people. However, the operators within the trade could easily identify differences from one waste type to another. For instance, some waste resources such as used tyres and batteries are of higher recycle value whereas wooden planks and plastics are of less commercial value. To facilitate the business start-up of the tenants at the EcoPark, the Government has sought pre-approval for a list of waste processing for the EcoPark project. However, the industry has been commenting that the pre-approval list as “limited” and “high-value orientated”. Recycling companies suggested that the existing positioning and business model of the EcoPark does not support the recycling of low-value wastes as such “wooden planks, glass bottles and plastic stuff” (China Daily HK, 2014), which hinders the long-term development of the EcoPark and its effectiveness in achieving the intended goal. One of the local recycling companies commented that the Government’s strategy to position EcoPark as a project to produce “high-value added products” failed to take the high operating costs into consideration (China Daily HK, 2014). The cost to process and reproduce recyclables locally is merely impracticable in a service-oriented economy like Hong Kong. Their company was therefore forced to transform from production to destruction.

***Limitation (2): Conflicting financial supports causing distrust***

The financial supports offered under the EcoPark project and other waste management initiatives are somehow uncoordinated and conflicting. Table IV below summarises the relevant financial aids provided by the Government to various actors.

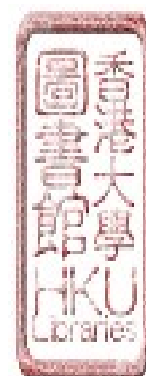


**Table IV: Financial Aids Provided by the Government**

<b>Financial Aid</b>	<b>Eligible Actors</b>
Favourable lease terms in EcoPark	Private operators
Environment and Conservation Fund	Private operators and NGOs
Recycling Fund	Any individual company or association

For private operators who wish to participate in the EcoPark project, the Government offers favourable lease terms (i.e. affordable rent & long lease term) and shared management services to facilitate their start-up; they are expected to self-sustain thereafter and throughout the lease term. For the non-profit sector, the Government has established the ECF under the ECF Ordinance in 1994 and has in 2013 injected HK\$5 billion into the ECF which serves as “seed money to generate annual investment returns to support green projects and activities” (ECF website, 2014). The original intent was to invite more players to foster the growth and development of the recycling industry. But since all NGOs are eligible to apply for the ECF, the injection of funding in 2013 has considerably changed the ecosystem of the EcoPark and the recycling industry. The emergence of NGOs in the recycling industry has increased the competition for waste materials, particularly those of higher recycling or reselling value such as plastics. However, since NGOs are not profit-oriented, they are sometimes accused of being cost inefficient and ineffective by its private counterparts (Sing Tao Daily, 2014).

The latest proposal of setting up a Recycling Fund of HK\$1 billion was also considered unfavourable to small- and medium-sized companies as they often lack resources to formulate attractive business proposal to bid for the fund (China Daily HK, 2014). Some recycling companies reckon that instead of setting up a



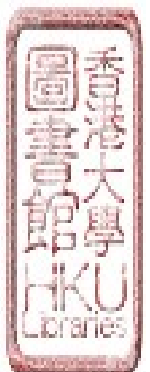


fund that could be applied by inexperienced player like the NGOs, direct subsidies to private operators would be more effective and sustainable approach. The above reveals that the conflicting financial aids have undesirably caused distrust between the operators and the Government and hindered the development of the EcoPark project.

***Limitation (3): Failure to effectively steer the collaborations***

In addition to the distrust caused by the conflicting financial aids, the Government has also failed to identify common goals for the actors. From the existing management tools tabulated in Table II above, we could see that the Government mainly serves as a landlord who provides limited steering and policy support to its tenants and the recycling industry as a whole. However, to enhance the effectiveness of public-private collaboration, the Government should serve as a capable leader in steering the collaboration, such as identifying common goals and resolving conflicts.

Private operators have been complaining about the ineffective steering and insufficient support provided by the Government. For instance, one operator criticised that the Government officials did not acquired “genuine and sufficient information” on the need of the local recycling industry; whereas another operator commented that the public “lacks knowledge of separating recyclables and waste at source” which tremendously increases the operating costs and adversely affects the commercial viability; and urged the Government to conduct more campaigns to educate the public (China Daily HK, 2014).

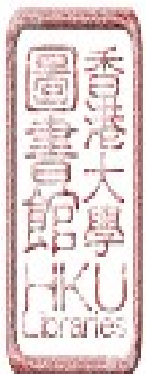


The way the Government engage the non-profit sector in SWM could also be improved as the private sector and non-profit sector do not necessarily share common goals and objectives. The private operators reckon that the most efficient way to run waste recycling should be sustainable in commercial terms. The business should generate sufficient returns to keep operations running without reliance on public money; whereas NGOs who are usually funded by public or charity money may not put profit or business sustainability in the first priority. A private operator commented that NGOs often lack the expertise and network to balance their books, which gives the industry a perception that the NGOs are wasting public money as they would not survive without the funding by public money. Such difference in operation philosophy can be detrimental to the collaboration.

The above illustrated that the Government has failed to serve as a capable leader in leading the project. It failed to carefully formulate a business model that suit difference waste types; to envisage the diverged thinking, operation philosophy and objectives between the private operators and the NGOs; and to identify common goals to build trust and enhance collaboration.

***Significance (1): A pioneer private-public collaboration project***

Despite the overall figures failed to proof the values of the EcoPark and limitations were identified in various aspects, the EcoPark project has brought about positive impacts to SWM in the territory. The project is an innovative initiative the Government designed to promote waste recovery and recycling involving the private sectors. It successfully pulled in participation from the private and non-profit sectors. The design of the business model and the financial



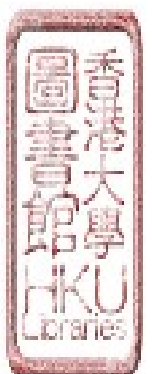
terms helped the start-up of operations in the EcoPark. At present, the project manages to recruit a total of twelve private operators and two NGOs occupying over 93,900 m<sup>2</sup> of land (see [Appendix V](#) for details). It proves that the solid waste problem can be looked at a different perspective; from a social problem solely taken care by the Government to a commercially viable and sustainable business given reasonable policy and financial supports. It also pioneered the collaboration between the public and private sector in coping with the solid waste problem; and at the same time offers local business and job opportunities for the recycling industry.

***Significance (2): Verified the importance of Government steering in public-private collaboration***

The above analysis reveals that the success of a public-private collaboration vests largely in the presence of a capable and persistent leadership. The policy of waste recovery and recycling, the business model of the EcoPark as well as the evolution of the governance mode are all in the right direction. The missing element was mainly a capable leadership that could persistently and effectively steer and legitimize the project.

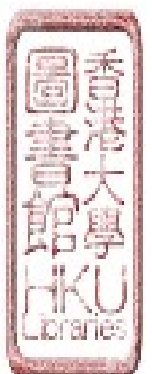
**Concluding Comments**

The solid waste problems have long been solely handled by the Government for decades mainly through legislations in Hong Kong. The Government has identified the shortcomings of such model and started engaging the private sector as well as the public since the 1990s. The EcoPark could be considered as a pioneering project that steers public-private collaboration in waste recovery and recycling in Hong Kong.



The Government adopted a governance mode with high degree of intervention which was considered appropriate in leading new and challenging projects, at least at the early stage. However, the Government seems to have failed to implement the project well and supplement the governance mode with appropriate management tools in order to build trust, encourage genuine collaboration between the actors and legitimize the EcoPark project.

In the next chapter, overseas experiences are reviewed to identify potential measures to address the shortcomings identified in the EcoPark project, followed by recommendations to the Government for possibly improving the present model of the EcoPark as part of the SWM strategy in Hong Kong.



## Chapter 5: Conclusions and Recommendations

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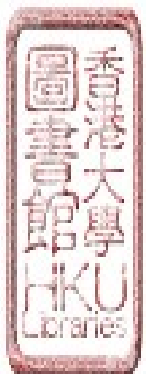
### Introduction

While the effectiveness of EcoPark on recycling local waste is still in doubt, with the increasing amount of waste generated every day in Hong Kong, the capacity of the landfills would soon be exhausted in less than ten years. Therefore, it is of utmost importance of the Government to devise more SWM solutions, especially on the area of waste reduction, waste recycling and the development of recycling infrastructure in Hong Kong.

SWM policy itself is a complicated issue and requires a high degree of collaboration among the actors, so that the quality of policy decisions can be improved with less resistance upon implementation. It is observed that the Government in other countries has also been devoting much effort in collaborating with the public and private players, while building their legitimacy to balance the power relationship among the players to ensure that policy can be implemented successfully and smoothly. This project also attempts to draw up some lessons from the successful waste management policies in other Asian countries with similar economic development and growth rate as Hong Kong.

### Overview of Solid Waste Management Policy in Other Countries

Even with the recycling rate at nearly 50%, 9,000 tonnes of solid waste (EPD, 2012) still needs to be dealt with in Hong Kong every day, and the amount of garbage produced per capita is the highest among the Asian Dragons - Singapore, South Korea and Taiwan.

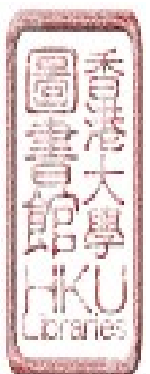


## *Taiwan*

Like Hong Kong, Taiwan has also been promoting the philosophy of “Reduce, Reuse and Recycle” and has achieved great success in waste reduction and the development of recycling programs in recent years. The amount of garbage per capita per day has been drastically reduced from 1.14 kg in 1997 to 0.43 kg in 2011. Whereas only about 60 percent of people sorted and discarded their refuse properly in Taiwan in 1989, almost 100 percent of people have already done so in 2008 (Ministry of Foreign Affairs, Republic of China (Taiwan), 2013).

Following are few examples of Taiwan’s recent successes in promoting recycling practices (Ministry of Foreign Affairs, Republic of China (Taiwan), 2010 & 2013):

- It is mandatory for households to do recyclable materials segregation into few major categories. Trash collectors would conduct pick up and further segregate the waste into more than 30 subcategories. Recyclable items such as furniture and bicycles would be first reconditioned, and then auctioned or donated to low-income households for good cause.
- Despite a sharp rise in the volume of electronic waste in recent years, the recycling rate of such products in Taiwan exceeds 50%, including mobile phones and batteries. Much of the recycling cost is recovered through the recovery and sale of precious metals. Moreover, trucks transporting electronic waste are mandatory to install Global Positioning System (“GPS”) tracking system to prevent illegal dumping.
- There are nearly 300 factories recycling waste plastic container that made of



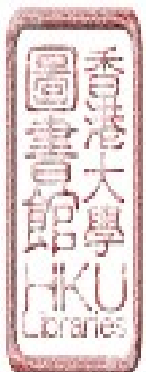
poly(ethylene terephthalate) (“PET”), polyethylene (“PE”), polypropylene (“PP”), poly(vinyl chloride) (“PVC”) and polystyrene (“PS”). Usable raw material was reclaimed from this waste with a production value of NT\$4.83 billion (US\$163.93 million).

- The 24 incinerators in Taiwan are the primary solution for solid waste, while landfills are only employed as an auxiliary. The incinerators mainly handle household garbage and a large portion of industrial waste. The waste-to-energy type incinerators can convert the heat generated from garbage burning into electricity. The electricity is then sold to Taiwan Power Company for a profit.

### *Singapore*

Singapore government has also been promoting the waste management hierarchy, i.e. the 3Rs - Reduce, Reuse and Recycle, and assigned National Environment Agency (“NEA”) to look after the SWM. The state has been actively involved in waste recycling and processing in the following ways (National Environment Agency, Singapore Government):

- Residents are provided with designated recycling bags for different types of recyclable materials, such as paper, clothes, electronic waste, etc. Apart from the recycled bins at common area, recyclables are also collected via door-to-door on regular days.
- Most residential blocks (public and private housing) are equipped with refuse chute in which refuse can be passed down from the opening of each floor to

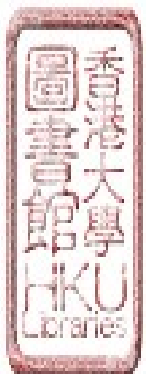


the central refuse room on the ground floor of a building. Singapore government would appoint cleaning contractors to sort the mixed waste and identify potential recyclable materials.

- Singapore government has collaborated with local food and beverage (“F&B”) industry in forming voluntary packing agreement early in 2007, which promotes environmental friendly packaging. For example, Coca Cola Singapore (Zero Waste Singapore, 2010) has shortened the neck closure and reduced the weight of their plastic bottles, saving up of about two hundred tonnes of materials in a year. This agreement has been extended to cover all types of product packaging in 2009.
- Similar to Hong Kong’s EcoPark, NEA has set up the Sarimbun Recycling Park (“SRP”) with an attempt to boost the domestic waste recycling industry. The land was previously a landfill closed in 1992 and is now offered to domestic recycling companies to operate recycling facilities at low costs. The SRP plays an important role in resource recovery and it has contributed about 30% of total waste recycled in Singapore in 2012 (National Environment Agency, Singapore Government, 2014).

### ***South Korea***

Riding on the success of South Korea in waste management, the Delegation of the Panel (“the Panel”) on Environmental Affairs of the Legislative Council has initiated a duty visit in April 2013 to South Korea to study their experience in waste management. A report on the findings of the visit has been produced

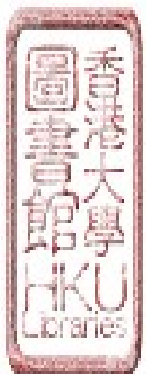




(Legislative Council, 2013) summarizing the observations and the Panel commented that the experience of South Korea is very useful and some of them can be transplanted to Hong Kong

South Korea has been keen on reducing waste generation at the source since early 1990s and has implemented a series of new policies on that. Some successful examples are:-

- Under the "producer-pays" principle, users or polluters are required to pay the disposal cost according to the quantity and types of wastes they produce. This volume-based waste fee system is applicable to both households and small commercial sector. Residents are required buy respective types of garbage bags, e.g. general garbage, food waste, etc. Penalties would be imposed if a wrong bag was used. According to the Ministry of Environment of South Korea, the amount of domestic wastes produced per person was reduced 23% from 1.33 kilogram per day before its introduction in 1994 to 1.03 kilogram per day in 2009, which proved to be successful.
- Public are not allowed to dump the garbage except during the designated time and dates as this would bring unpleasant effect to the surrounding environment if the garbage was not collected timely. There are closed-circuit televisions ("CCTVs") installed at every waste collection point for monitoring.
- The Ministry of Environment of South Korea has been providing various assistance to the local recycling businesses, which includes but not limit to long-term low interest loans to small recycling businesses for the



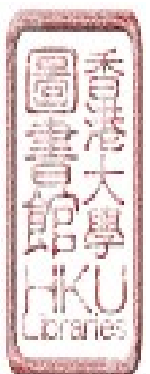
development of recycling facilities and technologies and consultancy service from business initiation experts to help new recycling businesses on their start-up work.

## **Recommendations**

From the experiences of other nearby countries, it is observed that while the Governments are still taking an active role in SWM, either in setting up legislation, providing financial subsidies or as a leader in the network governance, and there is also a good balance between the Government and other players such as the entrepreneurs, the public and green groups. The success of other countries in waste reduction, waste recycling and the development of infrastructure shows that collaborative governance mode with a dominant role from the Government is somehow effective in SWM. Drawing from the success of other countries in waste management solutions, below are some recommendations that the Government should do in improving the management of Ecopark and enhancing the SWM policy.

### ***Support from the Government***

It is observed that the great success of other countries in SWM is largely attributed to the support from the Government. It can be in the form of financial terms such as recycling fund, subsidy, low tax loan, low land rent, but also in the form of law enforcement - the imposition of control and restrictions, such as the punishment for the wrong garbage bags used in Singapore, and the dumping of garbage at non-designated locations and time in South Korea. Moreover, all the three countries discussed have already implemented waste charging scheme, which has proven to be effective in reducing the waste and changing the habits of



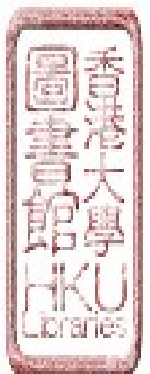
the people to use more recyclable products. While Hong Kong has just completed the public consultation on MSW charging, the society is still on hot debate with the different charging scheme (South China Morning Post, 2013) and it is recommended that the Government should speed up on finalizing the issue.

Moreover, some tenants of EcoPark, like the waste wood recycler Hung Wai, complained that they faced problem of not recovering sufficient wood for recycling, has the risk of closing down if the situation persists (Oriental Daily, 2012). To tackle this, the Government may actively liaise with some major wood waste producers such as developers, construction companies, logistic companies, cleaning companies and etc., or even government departments to appeal their support to have their wood waste dumping at EcoPark directly instead of landfills.

One of the reasons for the unsatisfactory statistical performance of EcoPark is the exceptionally low recycling rate in Hong Kong. To tackle this, Hong Kong government may make reference on the Singapore government, in which they had greatly increased the disposal fee for landfills, so that the waste collection companies have a higher incentive to send the waste to the Sarimbun Recycling Park to recycle as it is cheaper at cost.

### ***Public education***

All the governments of the three countries are observed to be doing well on their public education on waste reduction and recycling, leading to the ever decreasing amount of waste generated per capita in recent years. Citizens in those countries are accustomed to sort the waste into different categories before dumping. In Singapore, environmental education is a mandatory subject in the curriculum for

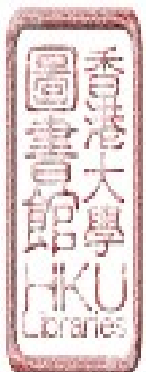


school children and that they are educated of the concept of waste reduction and recycling in the early childhood (Legislative Council, 2005). It is recommended that the Government should step up publicity efforts to educate the public on the importance of waste reduction and waste recycling. The public should be educated to separate and handle waste properly (e.g. plastic bottles) to prevent contamination of recyclables so that the quality of recyclables collected can be improved and lessen the burden of subsequent treatment, especially at the younger generation.

The Government also has to strike a good balance between offering comprehensive solutions for the public against raising the public awareness on waste recycling. For the case of Singapore, where most residential blocks are equipped with refuse chute and contractors are appointed to do waste segregation at later stage, the residents are only required to dump all the household waste at the chute. However, this convenience has somehow reduced the public awareness on waste reduction and segregation and this had not changed their behavior after all (The Straits Times, 2010).

### ***Collaboration with private sectors***

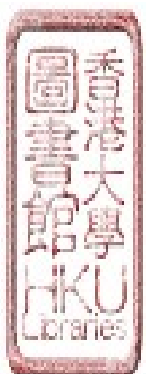
It is observed that the Singapore government has actively engaged in collaboration with the private sectors in coming up with more SWM solutions. The collaboration with the F&B industry in forming the voluntary packing agreement in 2007 had successfully made the giant like Coca Cola Singapore to shorten the neck closure of their plastic bottles and saved up tonnes of waste generated in a year. Moreover, the South Korea Government has also had close collaboration with private sectors. The waste separation plants in Seoul are



established by the Government but most of them are commissioned to the private sector for operation. With this mode of collaboration, some privately owned and managed recycling plant start to emerge in South Korea. For waste recycling to be successful in Hong Kong, it is recommended that the Government should move at a faster pace towards collaborative governance and engage more private actors at an earlier stage, so that they may find it viable to continue the recycling business.

### ***Public participation***

Apart from enhancing public education and collaboration with private sectors, the influence of the local green groups cannot be underestimated as they can always successfully draw in wide public support in their publicity program on some hot environmental issues, such as “No Shark Fin Pledge” and “No Animal testing”. In Hong Kong, the local green groups often criticize on the green policy of the Government and the cooperation between the two can hardly be seen. The Government is always being blamed for not offering sufficient support to the local green groups and formulating policy that are not widely consulted, e.g. the land reclamation and development plan which may hurt the endangered species. Drawing from the success of South Korea, it is recommended that the Government should work closely with the local green groups or NGOs to engage them more in the consultation, formulation and implementation of environmental policies so that their opinions collected from the citizens can be properly channeled into constructive inputs at the stage of policy formulation instead of merely criticism. Financially, the Government should review the existing policy to see if it is feasible to offer more financial support to the local green groups such as providing low land rent or funding to encourage their participation in the waste recycling issue.

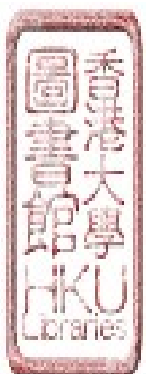


## Concluding Observations

Previous chapters have considered what an appropriate governance mode and degree of collaboration should look like. While our analysis agreed that government nowadays could no longer simply rule the state by intervention with only rules and regulations and that collaborative governance has become a dominant trend in the contemporary world, this “ideal” governance mode is not without limitations. Challenges like assignment problems, overlapping responsibilities, discretion problem, the lack of trust, etc. cannot be underestimated as they would not but hinder policy implementation if not solved properly. As such, it is argued that government still plays a steering role in the society and efforts have to be made to build their legitimacy to balance the power relationship among the actors so that that policy can be implemented successfully and smoothly.

Through reviewing the SWM policy implemented in Hong Kong back in the colonial era up till now, it is not difficult to observed the trend that Hong Kong is undergoing the evolution from “interventionist governance” with a high degree of legal obligations and hierarchical relationship between the Government and the private sectors, gradually towards “regulated self-governance” and “collaborative governance”, in which the cooperation among government and other players has been gradually enhanced. Ultimately, the Government should “let someone to do something”, reaching the status of governance without government.

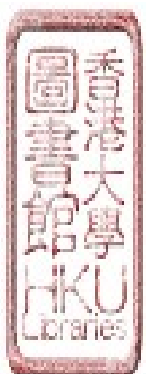
Though EcoPark is regarded by the Government as one of the SWM solutions, we opined that the Government was on the right track in pioneering the local



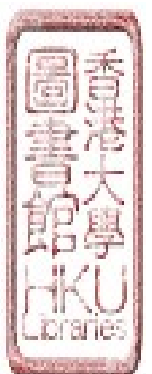
recycling industry, but is still far from being called as a remarkable success. The collaboration between government and the private players at EcoPark are still very limited, not to mention the consistently low domestic waste recycling rate at the Park after seven years of operation.

In the world of collaborative governance, it is always ideal for the state to help the community to build the capacities so that they can rule themselves, so that the Government itself can step back and hands off. Hence, the Government should focus on building the capacities of the non-state actors on waste management.

In the long run, the Government should continue to exercise the mix of interventionist and cooperative governance. On one hand, the state should focus mostly on “collaboration” - negotiation with the stakeholders, such as green groups, NGOs, environmental business players, etc. to understand their needs, get their involvement and provide assistance (participatory governance), public education on the responsibilities to reduce waste at source and recycling. On the other hand, “sticks and carrots” cannot be avoided in providing both incentives and mandates. Measures like enacting laws and regulations related to waste management (e.g. levy of tax / proper channel of waste to appropriate recyclers), increasing subsidies towards research and development (“R&D”) facilities, making more generous land provision, tax concessions like South Korea, setting up recycling fund etc. Last but not least, the monitoring on the performance of the tenants of EcoPark and regular evaluation of its effectiveness are of equal importance.



In the ideal world, the waste producers should know where their waste should go to, and for the domestic recyclers, they could make waste recycling as a viable business and sustain by themselves. On the other hand, the public should be well aware of the importance of reducing waste at source and is held responsible for waste recycling as well. The success of EcoPark has already acted as a jumpstart for other local potential recyclers to start / invest in their business so that more types of waste can be recycled in the coming days. Drawing from the success in other countries, it is optimistic that our Government would continue to collaborate with other non-state stakeholders in coming up with more sustainable SWM solutions.





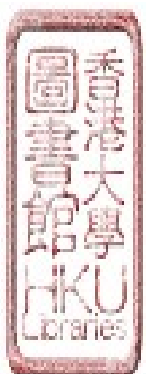


## Appendix II: Location of EcoPark



Source: EcoPark: An Ideal Place for Your Recycling Business<sup>6</sup>

<sup>6</sup> Location of EcoPark. *EcoPark: An Ideal Place for Your Recycling Business*. Retrieved from [http://www.ecopark.com.hk/files/phase2/pe1202128\\_ecopark%20tender%20brochure\\_ww\\_r7.pdf](http://www.ecopark.com.hk/files/phase2/pe1202128_ecopark%20tender%20brochure_ww_r7.pdf). Accessed 13 August 2014.



**Appendix III: Photos Showing the Amenities and Facilities of EcoPark**



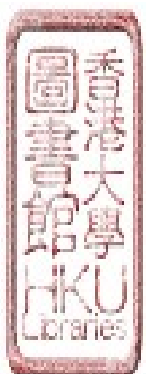
Marine Frontage –  
Loading / unloading spaces are available for rent



Weighbridge –  
A management tool for keeping the waste throughput



Meeting and Seminar Rooms –  
Ancillary facilities which are free to use





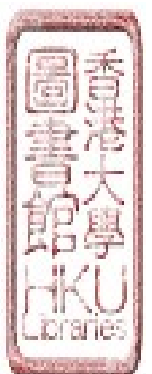
Open Areas –  
Display an exquisite working environment in EcoPark



Green Parking Spaces –  
Meet the car parking need for visitors



EcoPark Visitor Center –  
As an information center



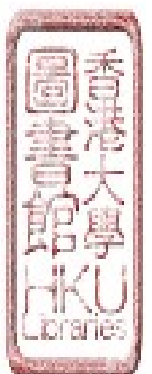


Product Gallery –  
For exhibition of tenants' operations and products

Source: EcoPark: An Ideal Place for Your Recycling Business<sup>7</sup>

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<sup>7</sup> Photos Showing the Amenities and Facilities of EcoPark. *EcoPark: An Ideal Place for Your Recycling Business*. Retrieved from [http://www.ecopark.com.hk/files/phase2/pe1202128\\_ecopark%20tender%20brochure\\_ww\\_r7.pdf](http://www.ecopark.com.hk/files/phase2/pe1202128_ecopark%20tender%20brochure_ww_r7.pdf). Accessed 13 August 2014.



## Appendix IV: Materials and Processes Examined and Allowed under the EIA

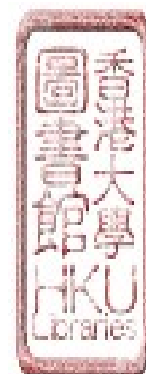
Material Types	Typical Recycling Processes to be Carried Out
Batteries	Mechanical / physical separation, shredding, neutralization (of electrolyte)
Electronics	Separation and testing, shredding, electromagnetic and electrostatic sorting, manual dismantling
Glass	Manual / automated sorting, crushing, melting, moulding, forming and finishing
Organic Food Waste	In-vessel composting
Ferrous Metals	Sorting and baling, shearing and shredding
Non-ferrous Metals	Sorting and baling, shearing and shredding, melting, refining and alloying
Paper	Sorting and baling, pulping, cleaning, de-inking, non-chlorine bleaching, pressing and drying
Plastic	Sorting, crushing and baling, flaking, shredding and cutting, blending, moulding and extrusion, Plastic Wood Composite (PWC) manufacturing
Textiles	Sorting and baling
Rubber Tyres	De-beading, shredding, crumbing, processing, re-treading
Wood	Dismantling and sorting, compaction, shearing, pallet refurbishment, chipping, non-chlorine bleaching, PWC manufacturing
Spent Copper Etchant	Electrolysis

Source: Website of Environmental Protection Department<sup>8</sup>

### Point to Note:

For new processes not covered in the EIA, recyclers are required to satisfy the Environmental Protection Department that the proposed processes can comply with the requirements stipulated in the Environmental Permit before they would be considered for admission in EcoPark.

<sup>8</sup> Materials and Processes Examined and Allowed under the EIA. *Website of Environmental Protection Department*. Retrieved from [http://www.epd.gov.hk/epd/english/environmentinhk/waste/prob\\_solutions/eco\\_material\\_processes.html](http://www.epd.gov.hk/epd/english/environmentinhk/waste/prob_solutions/eco_material_processes.html). Accessed 13 August 2014.

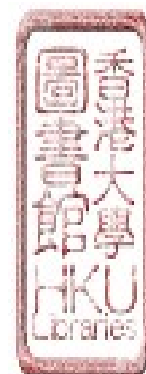


## Appendix V: List of Tenants at EcoPark

Phase	Name of Tenant	Recycling Business	Space (sqm)
1	Champway Technology Limited	Cooking oil, restaurant waste (oil, grease trap) to biodiesel	6,000
	Hong Kong Hung Wai Wooden Board Company	Waste wood	5,000
	Shiu Wing Steel Limited	Waste metals	9,500
	Li Tong Group	Waste electronic and computer equipment	6,500
	Hong Kong Telford Envirotech Group Limited	Waste plastics	5,000
	Cosmos Star Holdings Company Limited	Waste car batteries	4,000
2	Yan Oi Tong EcoPark Plastic Resources Recycling Centre	Waste plastics	5,000
	St. James' Settlement WEEE GO GREEN	Waste electrical appliances	10,000
	K. Wah Construction Products Limited	Waste construction materials	10,000
	E-Tech Management (HK) Limited	Waste electrical and electronic equipment	5,000
	On Fat Lung Electrical & Metal Company Limited	Waste rubber tyres	4,400
	Chung Yue Steel Group Company Limited	Waste metals	10,000
	SSK Metal Limited	Waste batteries	10,000
	South China Reborn Resources (Zhongshan) Company Limited	Food waste for high protein content feed for livestock farming and aquaculture	8,500
Total			98,900

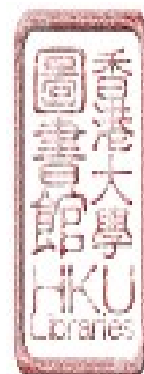
Source: EcoPark: An Ideal Place for Your Recycling Business<sup>9</sup>

<sup>9</sup> List of Tenants at EcoPark. *EcoPark: An Ideal Place for Your Recycling Business*. Retrieved from [http://www.ecopark.com.hk/files/phase2/pe1202128\\_ecopark%20tender%20brochure\\_ww\\_r7.pdf](http://www.ecopark.com.hk/files/phase2/pe1202128_ecopark%20tender%20brochure_ww_r7.pdf). Accessed 13 August 2014.



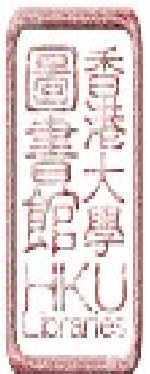
## LIST OF REFERENCES

1. Agranoff, R. and McGuire, M., (2001). Big Questions in Public Network Management Research, *Journal of Public Administration Research and Theory*, 11: 3, pp295-326.
2. Anonymous, (12 December 2010). Recycling in Singapore: 10 years on-Chute, we got it wrong. *The Straits Times*. Retrieved from <http://www.eco-business.com/news/recycling-singapore-10-years-chute-we-got-it-wrong/>. Accessed 13 August 2014.
3. Ansell and Gash, (2007). Collaborative Governance in Theory and Practice, *Journal of Public Administration Research and Theory*, Oxford University Press. Retrieved from <http://sites.duke.edu/niou/files/2011/05/Ansell-and-Gash-Collaborative-Governance-in-Theory-and-Practice.pdf>. Accessed 13 August 2014.
4. Burton, J. M., (1998). Sustainable waste management – A case study from the UK water industry. *Water Science and Technology*, 38(11), 51-58. Retrieved from [http://dx.doi.org/10.1016/S0273-1223\(98\)00639-8](http://dx.doi.org/10.1016/S0273-1223(98)00639-8). Accessed 13 August 2014.
5. Chris Ansell and Alison Gash, (2007). Collaborative Governance in Theory and Practice, pp.563. *Journal of Public Administration Research and Theory, Inc.* Oxford University Press.
6. Christoph Knill and Jale Tosun, (2012). *Public Policy: A New Introduction*, pp. 211-212. Palgrave Macmillan.
7. Cristóbal Andrade, L., Gómez Míguez, C., Taboada Gómez, M. C., & Bello Bugallo, P. M., (2012). Management strategy for hazardous waste from atomised SME: application to the printing industry. *Journal of Cleaner Production*, 35(0), 214-229. Retrieved from <http://dx.doi.org/10.1016/j.jclepro.2012.05.014>. Accessed 13 August 2014.
8. Chung Kin Yee (鍾健怡), (10 April 2012). 探射燈：政府寧葬廢木 扼殺環保園 (Article in Chinese only). *Oriental Daily*. Retrieved from [http://orientaldaily.on.cc/cnt/news/20120410/00176\\_097.html](http://orientaldaily.on.cc/cnt/news/20120410/00176_097.html). Accessed 13 August 2014.
9. David Beetham, (1991). *The Legitimation of Power*, Palgrave Macmillan.
10. Department of Justice, (July 2014). *Bilingual Laws Information System*. Retrieved from <http://www.legislation.gov.hk/home.htm>. Accessed 13 August 2014.
11. EcoPark Official Website, (1 August 2014). Retrieved from <http://www.ecopark.com.hk/>. Accessed 13 August 2014.

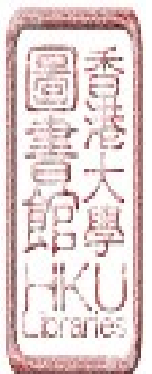




12. Elaine C. Kamarck, (2007). *The End of Government ... As We Know It*, Boulder, Colo.: Lynne Rienner Publishers, Inc.
13. Emerson, Kirk, and Peter Murchie, (2010). Collaborative Governance and Climate Change: Opportunities for Public Administration. In *The Future of Public Administration, Public Management, and Public Service around the World: The Minnowbrook Perspective*, edited by Soonhee Kim Rosemary O'Leary, and David Van Slyke, pp. 141-61. Lake Placid, NY.
14. Environment Bureau, (May 2013). *Hong Kong Blueprint for Sustainable Use of Resources 2013-2022*. Retrieved from <http://www.enb.gov.hk/en/files/WastePlan-E.pdf>. Accessed 13 August 2014.
15. Environment Conservation Fund Website, (21 January 2014). Retrieved from <http://www.ecf.gov.hk/en/home/index.html>. Accessed 13 August 2014.
16. Environmental Protection Department, *Leading to a Greener Future*. Retrieved from <http://www.ecopark.com.hk/files/ecopark/EcoPark-leaflet.pdf>. Accessed 13 August 2014.
17. Environment Protection Department, (2005). *A Policy Framework for the Management of Municipal Solid Waste (2005-2014)*. Retrieved from [http://www.epd.gov.hk/epd/msw/htm\\_en/content.htm](http://www.epd.gov.hk/epd/msw/htm_en/content.htm). Accessed 13 August 2014.
18. Environmental Protection Department, (April 2005). *Development of an EcoPark in Tuen Mun Area 38*. Retrieved from [http://www.epd.gov.hk/eia/register/report/eiareport/eia\\_1042005/index.htm](http://www.epd.gov.hk/eia/register/report/eiareport/eia_1042005/index.htm). Accessed 13 August 2014.
19. Environment Protection Department, (28 April 2006). *Waste Reduction Framework Plan*. Retrieved from [http://www.epd.gov.hk/epd/english/environmentinhk/waste/prob\\_solutions/wrfp\\_ch1.html](http://www.epd.gov.hk/epd/english/environmentinhk/waste/prob_solutions/wrfp_ch1.html). Accessed 13 August 2014.
20. Environmental Protection Department, (December 2006). *Progress Update on EcoPark Development (Paper WMSC 11/06)*. Retrieved from [http://www.epd.gov.hk/epd/english/boards/advisory\\_council/files/waste\\_paper\\_06\\_11.pdf](http://www.epd.gov.hk/epd/english/boards/advisory_council/files/waste_paper_06_11.pdf). Accessed 13 August 2014.
21. Environmental Protection Department, (June 2009). *Environment and Conservation Fund (ECF) Paper (ECF Paper 13/2009-10): Funding to Support Non-governmental Organisations to Operate Plastic Waste and Waste Electrical and Electronic Equipment Processing Centres at EcoPark Phase II in Tuen Mun*. Retrieved from [http://www.ecf.gov.hk/doc/ECF\\_Paper\\_13\\_EcoPark.pdf](http://www.ecf.gov.hk/doc/ECF_Paper_13_EcoPark.pdf). Accessed 13 August 2014.
22. Environmental Protection Department, (May 2012). *Green Hong Kong: Reducing Waste at the Source*. Retrieved

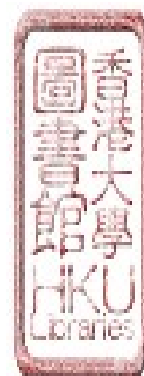


- from [http://www.epd.gov.hk/epd/english/news\\_events/newsletter/files/Green\\_HK\\_May\\_2012\\_eng.pdf](http://www.epd.gov.hk/epd/english/news_events/newsletter/files/Green_HK_May_2012_eng.pdf). Accessed 13 August 2014.
23. Environmental Protection Department, (2014). *Monitoring of Solid Waste in Hong Kong Statistics for 2012*, p.3, 12.
  24. Environmental Protection Department, (28 January 2014). *Waste Recycling Statistics*, Retrieved from [https://www.wastereduction.gov.hk/en/quickaccess/stat\\_recycle.htm](https://www.wastereduction.gov.hk/en/quickaccess/stat_recycle.htm). Accessed 13 August 2014.
  25. Environmental Protection Department Official Website, (19 June 2014). Retrieved from <http://www.epd.gov.hk/>. Accessed 13 August 2014.
  26. Ernest Kao and Samuel Chan, (16 December 2013). Debate over best method for waste levy. *South China Morning Post*. Retrieved from <http://www.scmp.com/news/hong-kong/article/1381912/green-groups-and-property-management-firms-come-out-support-waste>. Accessed 13 August 2014.
  27. Frederickson and Smith, (2003). *The public administration theory primer*, p. 226. Westview Press.
  28. Frederickson, (1997). *The Spirit of Public Administration*, p. 224. Jossey-Bass.
  29. Government Information Services, (1984). *Hong Kong 1983 Annual Report*.
  30. Government Information Services, (1991). *Hong Kong 1990 Annual Report*.
  31. GovHK, (January 2014). *Waste reduction & Recycling*. Retrieved from <http://www.gov.hk/en/residents/environment/waste/wasteredrecyc.htm>. Accessed 13 August 2014.
  32. H. Brinton and Milward and Keith G. Provan, (2006). A Manager's Guide to Choosing and Using Collaborative Networks, *Networks and Partnerships Series*, IBM Center for The Business of Government.
  33. HB Milward & KG Provan, (2000), Governing the Hollow State, *Journal of Public Administration Research and Theory* 10 (2), 359-380, Public Management Research Association.
  34. H. George Frederickson, (2004). *Whatever Happened to Public Administration? Governance, Governance Everywhere*, Queen's University Belfast, Institute of Governance Public Policy and Social Research.
  35. HK Recycles, (July 2014). *Reuse, Rejuvenate, Recycle*. Retrieved from <http://www.hkreycles.com/>. Accessed 13 August 2014.
  36. Hong Chi Association, (July 2014). *FOR People with intellectual disabilities*. Retrieved from [http://www.hongchi.org.hk/en\\_about\\_intro.asp](http://www.hongchi.org.hk/en_about_intro.asp). Accessed 13

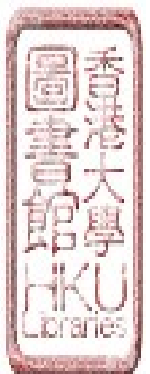


August 2014.

37. Hong Kong Waste Reduction Website, (July 2014). *Building a Green City*. Retrieved from <https://www.wastereduction.gov.hk/en/>. Accessed 13 August 2014.
38. Hong Kong Waste Reduction Website, (28 January 2014). *Waste Recycling Statistics*. Retrieved from [https://www.wastereduction.gov.hk/en/quickaccess/stat\\_recycle.htm](https://www.wastereduction.gov.hk/en/quickaccess/stat_recycle.htm). Accessed 13 August 2014.
39. Ian Thynne, (2013). Governance and Organizational Eclecticism in the Public Arena: Introductory Perspectives, *Public Organization Review: A Global Journal*.
40. Ian Thynne, (2014), In Celebration of Public Administration: The Sustaining Significance of Power – Introductory Perspectives, *Asia Pacific Journal of Public Administration*, 36(1).
41. Imperial, M.T., (2005). Using collaboration as a governance strategy: Lessons from six watershed management programs, *Administration & Society*, 37: pp281-320.
42. Information Note, Legislative Council, (2005). *Management of Municipal Solid Waste in Selected Places*. Retrieved from <http://www.legco.gov.hk/yr04-05/english/sec/library/0405in30e.pdf>. Accessed 13 August 2014.
43. Information Services Department, (11 April 2014). *Transcript of remarks by Secretary for Environment*. Retrieved from <http://www.info.gov.hk/gia/general/201404/11/P201404110847.htm>. Accessed 13 August 2014.
44. Jessop, (2004). *The political economy of scale and European governance*. p. 228.
45. Knill, C & Tosun, J., (2012). *Public Policy: A New Introduction*, Palgrave MacMillan, Basingstoke: ch 9 – Governance: A Synoptic Perspective on Policy-Making.
46. Legislative Council, Delegation of the Panel of Environmental Affairs, (April 2013). *Report on the duty visit to the Republic of Korea to study its experience on waste management*. Retrieved from <http://www.legco.gov.hk/yr13-14/english/panels/ea/papers/ea1125cb1-377-1-e.pdf>. Accessed 13 August 2014.
47. Lo Hin Leung & Lau Oi Ting (勞顯亮 劉愛婷), (3 June 2014). 社企踩入回收業爭食 覷準基金肥肉 回收商搶客還擊 (Article in Chinese only). *Sing Tao Daily*.
48. Lynn, Laurence E. Jr., Carolyn Henrich, and Carolyn J. Hill, (2001).



- Improving Governance: A New Logic For Empirical Research*. Washington, DC: Georgetown University Press.
49. Martin Painter & B. Guy Peters, (2010). *Tradition and Public Administration*, Palgrave Macmillan: ch 1 – The Analysis of Administrative Traditions.
  50. Maxine Chen Li San, (23 March 2010). *Committee of Supply Debate 2010: Recycling and Waste Minimisation*. Zero Waste Singapore. Retrieved from <http://www.zerowastesg.com/tag/sarimbun-recycling-park/>. Accessed 13 August 2014.
  51. Meuleman, L., (2003). *The Pegasus Principle: Reinventing a credible public sector*. G7 Books.
  52. Meuleman, L., (2008). *Public Management and the Metagovernance of Hierarchies, Networks and Markets*, p.11. Physica-Verlag HD.
  53. Ming Yeung, (9 May 2014). Recycling the unrecyclable. *China Daily Hong Kong (F04)*. Retrieved from <http://epaper.chinadailyasia.com/focus-hk/article-2413.html>. Accessed 13 August 2014.
  54. Ministry of Foreign Affairs, Republic of China (Taiwan), (2 May 2013). *Recycling and Waste Management*. Retrieved from <http://www.taiwan.gov.tw/ct.asp?xItem=104634&ctNode=1927&mp=1001>. Accessed 13 August 2014.
  55. Ministry of Foreign Affairs, Republic of China (Taiwan), (27 May 2010). *Recycling and Waste Management*. Retrieved from <http://www.taiwan.gov.tw/ct.asp?xItem=27612&ctNode=1927&mp=1001>. Accessed 13 August 2014.
  56. Ministry of Foreign Affairs, Republic of China (Taiwan), (2 May 2013). *Environmental Protection of Taiwan*. Retrieved from <http://taiwanfoodculture.net/print.asp?xItem=104634&ctNode=1927&mp=999>. Accessed 13 August 2014.
  57. National Environment Agency, Singapore Government, (17 April 2014). *Tips on 3Rs-Reduce, Reuse, Recycle*. Retrieved from <http://app2.nea.gov.sg/energy-waste/recycling/tips-on-3rs---reduce-reuse-recycle>. Accessed 13 August 2014.
  58. National Environment Agency, Singapore Government, (14 June 2013). *Sarimbun Recycling Park - Wasteland Returns to Useful Life*. Retrieved from <http://app2.nea.gov.sg/energy-waste/recycling/sarimbun-recycling-park---wasteland-returns-to-useful-life#sthash.ChkvREnH.dpuf>. Accessed 13 August 2014.
  59. O'Toole, L. J., (1997). Treating Network Seriously: Practical and Research-Based Agendas in Public Administration, *Public Administration Review*, 57: 1 pp45-52.



60. Parket and Bradley, (2001). *Bureaucracy or post-bureaucracy?*, p.197.
61. Planning, Environment and Lands Branch, the Government Secretariat, (5 June 1989). *White Paper: Pollution in Hong Kong – A Time to Act*. Retrieved from [http://www.epd.gov.hk/epd/english/resources\\_pub/policy/files/White\\_Paper-A\\_time\\_to\\_act.pdf](http://www.epd.gov.hk/epd/english/resources_pub/policy/files/White_Paper-A_time_to_act.pdf). Accessed 13 August 2014.
62. Planning, Environment and Lands Branch, the Government Secretariat, (May 1991). *Saving our Environment: First Review of Progress on the 1989 White Paper*. Retrieved from [http://www.epd.gov.hk/epd/english/resources\\_pub/policy/files/White\\_Paper-A\\_time\\_to\\_act-1st\\_review.pdf](http://www.epd.gov.hk/epd/english/resources_pub/policy/files/White_Paper-A_time_to_act-1st_review.pdf). Accessed 13 August 2014.
63. Planning, Environment and Lands Branch, the Government Secretariat, (November 1993). *A Green Challenge for the Community: Second Review of Progress on the 1989 White Paper*. Retrieved from [http://www.epd.gov.hk/epd/english/resources\\_pub/policy/files/White\\_Paper-A\\_time\\_to\\_act-2nd\\_review.pdf](http://www.epd.gov.hk/epd/english/resources_pub/policy/files/White_Paper-A_time_to_act-2nd_review.pdf). Accessed 13 August 2014.
64. Planning, Environment and Lands Branch, the Government Secretariat, (March 1996). *Heading towards Sustainability: Third Review of Progress on the 1989 White Paper*. Retrieved from [http://www.epd.gov.hk/epd/english/resources\\_pub/policy/files/White\\_Paper-A\\_time\\_to\\_act-3rd\\_review.pdf](http://www.epd.gov.hk/epd/english/resources_pub/policy/files/White_Paper-A_time_to_act-3rd_review.pdf). Accessed 13 August 2014.
65. Popp, J., MacKean, G., Casebeer, A., Milward, H. B., & Lindstrom, R., (2013). *Inter-organizational networks: A critical review of the literature to Inform practice*.
66. Provan, K. G., Isett, K. R. and Milward, H. B., (2004). Cooperation and Compromise: A Network Response to Conflicting Institutional Pressures in Community Mental Health, *Nonprofit and Voluntary Sector Quarterly*, 33: pp489-514.
67. Torfing, J., (2005). Governance network theory: Towards a second generation, *European Political Science*, vol 4, no. 3, pp. 305-315.
68. Waste Reduction Committee, (January 2000). *Annual Review – Waste Reduction Framework Plan*. Retrieved from [http://www.epd.gov.hk/epd/english/environmentinhk/waste/prob\\_solutions/files/AV0100.pdf](http://www.epd.gov.hk/epd/english/environmentinhk/waste/prob_solutions/files/AV0100.pdf). Accessed 13 August 2014.
69. Waste Reduction Committee, (March 2001). *2000 Review – Waste Reduction Framework Plan*. Retrieved from <http://www.legco.gov.hk/yr00-01/english/panels/ea/papers/annual-e.pdf>. Accessed 13 August 2014.

