

A Study on Master Plan for Parks and Green Spaces in Japan, China & Korea

Yue Shen* · Bae, Hyun-Mi** · Tomoko Takeuchi*** · Yohei Saito*

*University of Hyogo

**Mokpo National University in Korea

***Bureau of Construction Tokyo Metropolitan Government

ABSTRACT

The purpose of this study is to consider the idea and the background of the establishment of master plans for parks and green spaces of metropolis in Japan, China and Korea after a careful comparative review of layout planning of green areas, plan objectives, future images and main measures. The method of study is the analysis of the control and plans in these three countries. The study reveals the characteristic of each plan as follows: 1) the conservation and revitalization of the shape of land and the river system in Tokyo; 2) the materialization of ideal green spaces in Beijing, the combination of the ring green and the radial layout of parks and green spaces; 3) the combination of cruciform greenery and the utilized existing public open spaces in Seoul. The result also shows that these cities have the different development of projects but face the common challenges.

Key Words: Master Plan, Open Spaces, Japan, China, Korea

I. Introduction

As the capital represents its country, the landscape planning for the capital also epitomizes the ideal parks and green areas of the country. Therefore, the analysis of the plan helps to find the hints for revitalizing the environment by green resources. This study is to consider the idea and the background of the master plans for parks and green spaces (hereafter cited as "the Green Master Plan") of the metropolis in Japan, China and Korea by reviewing the layout planning of parks and green spaces, plan objectives, future images and main measures comparatively.

The past studies on landscaping in Japan, China and Korea have been made on the legal systems governing the conservation and maintenance of traditional landscapes and the comparison of plans for urban landscaping in Japan and China. However, no comparative studies have ever focused on the Green Master Plan of these three countries. Accordingly, this study features the three plans by comparison and ex-

tracts Asian wisdoms of landscaping from the report on those plans. It also contributes to a future studies by creating the database.

II. Method of Study

The method of study is mainly the analysis of reference materials such as historical documents and reports on the plans. To complement the political and social contexts, the interview with city planning bureaus, administrative organizations and members of the project team has been conducted.

III. Three Green Master Plans

The Table 1 summarizes the comparative review of master plans of these three metropolises. The study reveals the plan-making process and the characteristic of each plan as follows.

1. Tokyo, Japan

1) Background of Plan-making

In Tokyo, the key principles for urban green open spaces used to be referred to a part of the basic policies called "Construction and Development; or Conservation" in the city planning scheme that formulated in 1970. "Greenery Master Plan" formulated in 1981 was directly placed in the city planning scheme. In other words, the principles for urban green spaces were recognized as a part of main policy of the city planning scheme. However, replacing the new basic plan by the revised Environment Conservation Law in 1994, the Green Master Plan was repealed in 2000, its first target year. In 2000, Tokyo Metropolitan Government mapped out "the Green Tokyo Plan" to show the strategies to realize green Tokyo examined from diverse angles, including city planning, protection of nature, tree planting and vitalization of agriculture and forestry. In 2001, the Tokyo also laid down "the Policy for the Preservation of Nature and the Development of Open Public Land Spaces." Reported by the Tokyo city planning in 2005, Tokyo has worked on the new strategic guidelines for greenery that reflects the color of Tokyo, an attractive metropolis rich in greenery.

2) Challenges of Plan

The rapid urban development of late twentieth caused drastic transformation of the base of landscape and brought substantial evils. It is the challenge of the master plan to deal with the troubles.

3) Plan Objectives, Future Images and Main Measures

According to the Green Master Plan in Tokyo, the future image shows "the city with distinctive character that has the networks of greenery and water" in 50 years. The plan also indicates the objectives to achieve in 15 years and its main measures (Table 1). The first objective is to achieve 32% (29% at present) in the ratio of green spaces. Table 1 shows 5 basic principles to actualize the project. In the project, the main stress falls on the conservation and revitalization of environment in metropolitan Tokyo.

4) Layout Planning of Parks and Green Spaces

The general ideas of layout planning of green open spaces have been introduced in "Green Tokyo Plan". However, this is actually originated in "the Master Plan for green open

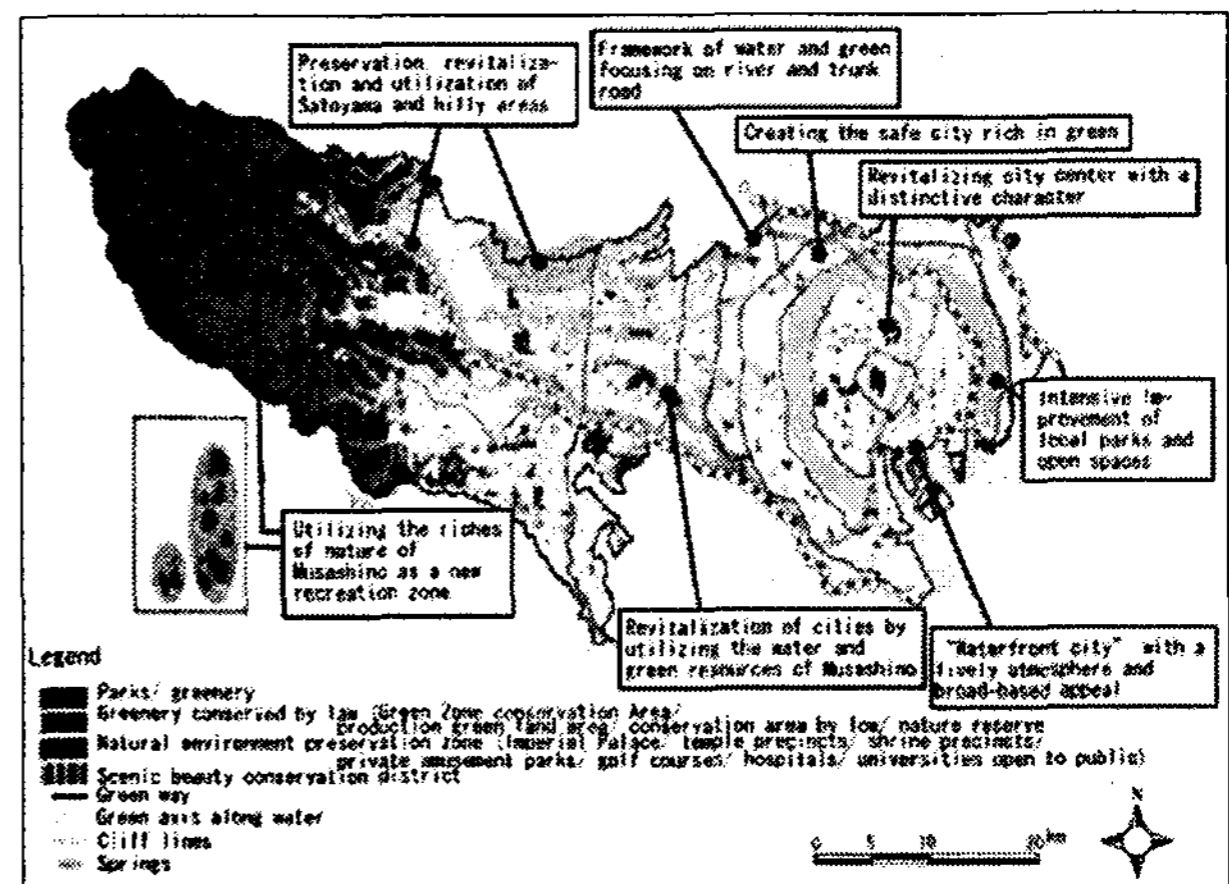


Figure 1. The Master Plan for Open Spaces of Tokyo (Japan)

space in Tokyo" formulated in 1981. The master plan in 1981 considers the undulating landscape such as waterfront areas, Tokyo Lowland, Musashino tableland, Tama Hills and Kanto Range; and waterways that run through the area as the foundation of the city of Tokyo. The layout plan is based on the organic networks of forests, fields and city parks around the axis of water consists of major rivers, irrigation canals, coasts, reservoir area on hills and fountainheads in mountains (Figure 1). Focusing on the undulating terrain such as coasts and lowland, the plan sets the axis of land to encourage improvement of environmental networks.

2. Beijing, China

1) Background of Plan-making

After started working on landscaping planning in 1950s, Beijing formulated the full-scale plan in 1983. Since then, with the widened urban development and the expansion of the city, new plans were formulated in 1994 and 2002. They accommodate the growing demands for improvement of infrastructure. The new plan begun in 2006 has more detail plans on the expanded metropolitan area by setting "satellite cities" originated in the master plan in 2002.

2) Challenges of Plan

The metropolis only 300km away from a desert has a major issue of "environmental improvement" by arranging greenery. It also faces the major challenge to maintain the sustainable ecosystem as well as the ratio of green spaces despite the fact that the expanding city demands for the massive infrastructure building.

Table 1. Comparison of Master Plan for greening of three metropolises in Japan, China and Korea

		Japan(Tokyo)	China(Beijing)	Korea(Seoul)
		Population: 12million, Area: 2,187km ² , Type: Oceanfront	Population: 11million, Area: 16,808km ² , Type: Inland	Population: 10,35million, Area: 605.4km ² , Type: Inland
Main Constituent	Department and Bureau	Bureau of urban development, Tokyo Metropolitan Government	Beijing City Planning Administration Bureau	Parks Division, Green city Bureau, Seoul Metropolitan Government
		Bureau of environment, Tokyo Metropolitan Government	Beijing City Planning Research Institute	City Park Committee, Seoul
Examine the plan	Examining Organization	None. Conducts hearings with metropolitan government monitors	Beijing City Capital Planning Committee	Capital Planning Committee, Ministry of construction & transportation
Contents of plan	Name of the Plan	"Green Tokyo plan"(no legal basis) [covered by city planning]	Beijing City Afforestation Plan	Greenery City Park Plan, Seoul
	Subject Scale	The entire Tokyo metropolitan region(wards, cities, towns and village)	City area(8 districts in the city center) Suburban area(2 districts and 8 prefectures at the outskirts of the city)	The entire Seoul Metropolitan region
	Year of Creation	2000	2004	2005
	Target Year	2025	Long term: 2020 Short term(a plan to be submitted by): 2010	2020
	Zoning	City center, waterfront, urban areas, Tama Hills, mountains and islands	Mountains, plain, city(Specific handling for natural reserve, landscape areas and green buffer zone)	City center, northeast, southwest, south east These are under the greenery network
	Future image	Image for each zone. As the entire region, fully utilized urban spaces with diverse functions, rich in green and water	Flower garden city featuring cleanliness, elegance and a healthy ecological system	Green Forest City, living in harmony with nature
	Major index	Ratio of green space: 29% → 32% Tama region: 80% → in status quo	Ratio of green space: 55% Target for public greenery in the city area: 40~45m ² /person	Ratio of green space: 45%, Target for public greenery in the city area: 6m ² /person
	Measures for the entire city	1) "Urban environment" protected by green spaces 2) "Disaster-resistant city" supported by green open spaces 3) "Lure of Tokyo" Created by Green 4) "A Green Habitat" for Living Creatures 5) "Tokyo Citizens" to 11 ways of the Approach to the garden city	1) Setting "greenery barrier" to minimize the pollution and to improve the living environment 2) "Ecological corridors" to creates the networks of eco systems 3) "Fourism" encourages the networking systems among sightseeing spots 4) "Conservation district and swamps" for nature conservation 5) "Forest parks" to promotes the use of forests 6) "Yellow resistance" to reduce the damage of yellow sand, 7) "Rural parks" to maintain parks 8) "Agricultural land" to conserve the fields 9) "Preservation of historical gardens and cultural properties" to promote the cultural properties 10) "Urban greenery" to enhance the systematic approach for greening 11) "Green open spaces among neighborhoods" to control the use of land in order to reserve a land for greening. Perform the Main Role in Generating Green	1) Parks with easy access 2) Approachable parks 3) Restoration of nature 4) Green open spaces provides ecological integrity 5) Park management by citizen
Measures for the major part of the city	23 wards in the center of Tokyo 1) Center of Tokyo: Creating open public land through redevelopment, promoting greenery on rooftops and riverside 2) Seaside: Maintaining seaside parks, preserving tideland 3) Cities around the center of Tokyo: Creating greenery to prevent disasters, maintaining a greenery axis, forestation of land for public facilities, maintaining locals, greenery-promoting activities by citizens and corporations	Plain Area 1) Maintaining greenery ecology in a "loop" shape, centered around the roads surrounding the city 2) Protecting the area from wind erosion and sand infestation 3) Maintaining woodlands parks at the outskirts of the city 4) Afforestation of roads and riversides 5) Fulfilling the network of agricultural land 6) Afforestation of satellite Cities and landscaping in rural areas		
Plan disclosure	Sales of planning document, HP, interim report	Distribution of brochures to related organizations, HP	HP	
Procedure	Main Promotion Body	Greenery Tokyo Promotion Committee	Capital Afforestation Committee	Urban Planning Division, Environment division
	Cooperation between wards, cities & towns	Depending on the local regulation	Each administration takes a responsibility for the project	Depend on the on-going projects
	Cooperation with neighboring cities	Discussions at top-level meetings of the 7 surrounding prefectural governments and special department meetings for greenery policy		
	Cooperation with residents	Holding open conferences separated by policy, such as a rooftop greenery promotion conference		Public hearing before the confirmation of plans
	Government administration support plan	Supplying data, places for activities and equipment, Training people	National gardener, expanding seedling parks, providing funding	
	Citizen support plan	Tokyo citizens to take part in the development of greenery in Tokyo and support their activities, registered volunteer(No. of Target: 10,000)	Compulsory planting	Advertising a variety of volunteer jobs

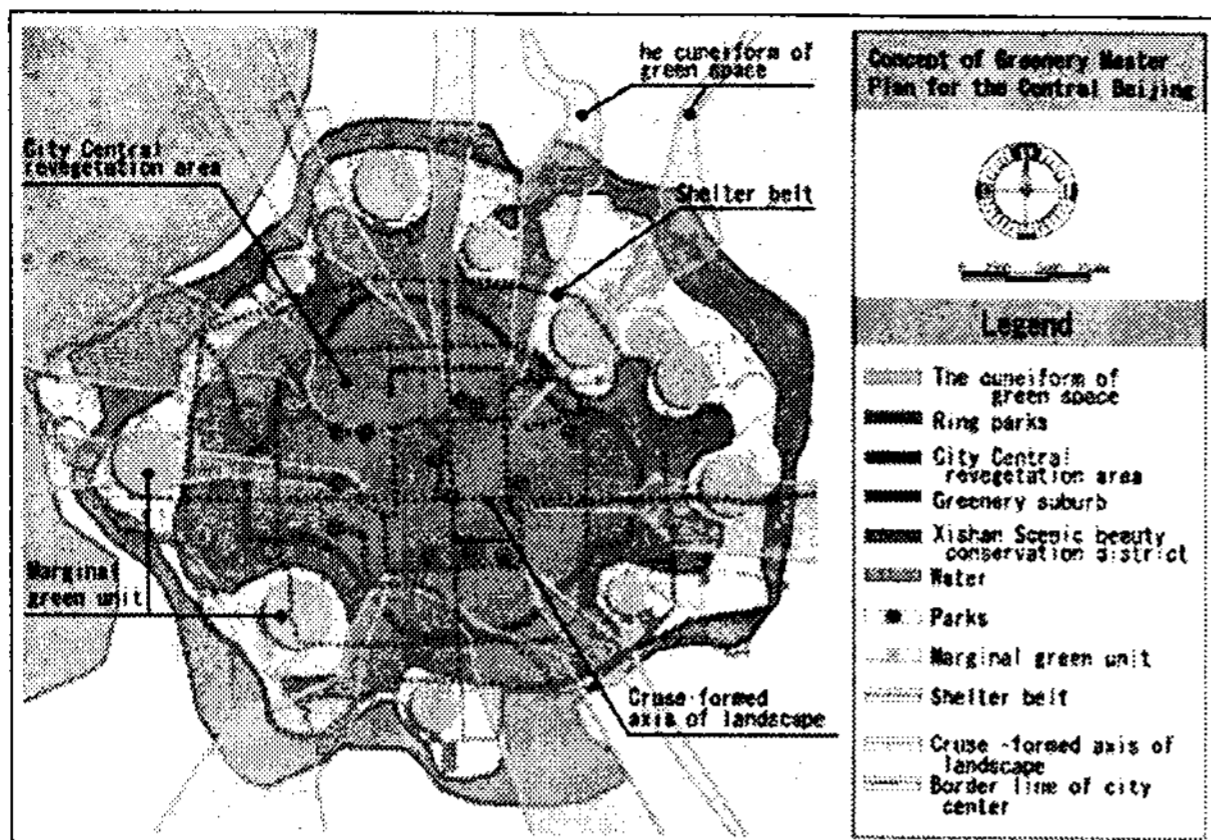


Figure 2. The Master Plan for Open Spaces of Beijing(China)

3) Plan Objectives, Future Images and Main Measures

Beijing gives the priority to sand prevention and regards greening the affected area as important. It aims to become "a garden city abundant in nature". To achieve its goal, major roles of green spaces are categorized into 11 basic systems (Table 1). On the other hand, the basic policies on the layout plan for green in the city center. It contains ring parks placed around the city, the radial layout of green spaces and green shelter belt and the advanced networking system of the city greenery(Figure 2). The goal is 55%(32% at present) in the ratio of greens and 40~45m² per person in the area of public open spaces.

4) Layout Planning of Parks and Green Spaces

It consists of 2 zones, the plain and the mountain. The plain is made of the city and agricultural areas; and the area of city is divided into center and rural. The mountain is used for forest or reservoir areas. Especially the important area in terms of landscape and eco system is labeled as the conservation area or the scenic area. The plain has concentric layers of areas such as the city central, the rural and the agricultural. Each area is bordered by ring parks. And a green belt is set on the border of the city center and rural areas. Adding the cuneiform of green spaces along the main road and rivers, the entire area is covered by networks of the Ring-radial greenery unit.

3. Seoul, Korea

1) Background of Plan-making

In 1997, "Greenery Development plan in Seoul" was formulated to operate the total plan for greenery and open space

more effectively. Since 2003, conservation and revitalization of environment; and improvement and reform of the landscape are the top priority in the national land management. According to the policy and the principals the city development plan, the project emphasizes the revitalization and reform of the landscape.

2) Challenges of Plan

Even though the more people demand for the city parks in residential areas, the most of green is spread around the outline of the city. In addition, the mal distribution of parks has no network at all. Especially the impact on the ecology has been an issue. Recovery and reconstruction of nature around the city is the top priority.

3) Plan Objectives, Future Images and Main Measures

The future image of the city indicates the Green forest city encourages the society co-existing with nature. To achieve this goal, there are 5 basic policies and 4 objectives(Table 1). The plan shows 45% in the ratio of green space and 6m² person in the per capita size of parks in the residential as the major index.

4) Layout Planning of Parks and Green Spaces

The suburban green area forms the ring green around the city of Seoul. The ring green is conserved as a green habitat for living creatures. The major green spaces in the city center and rivers shape the axis of green. Combining the ring green

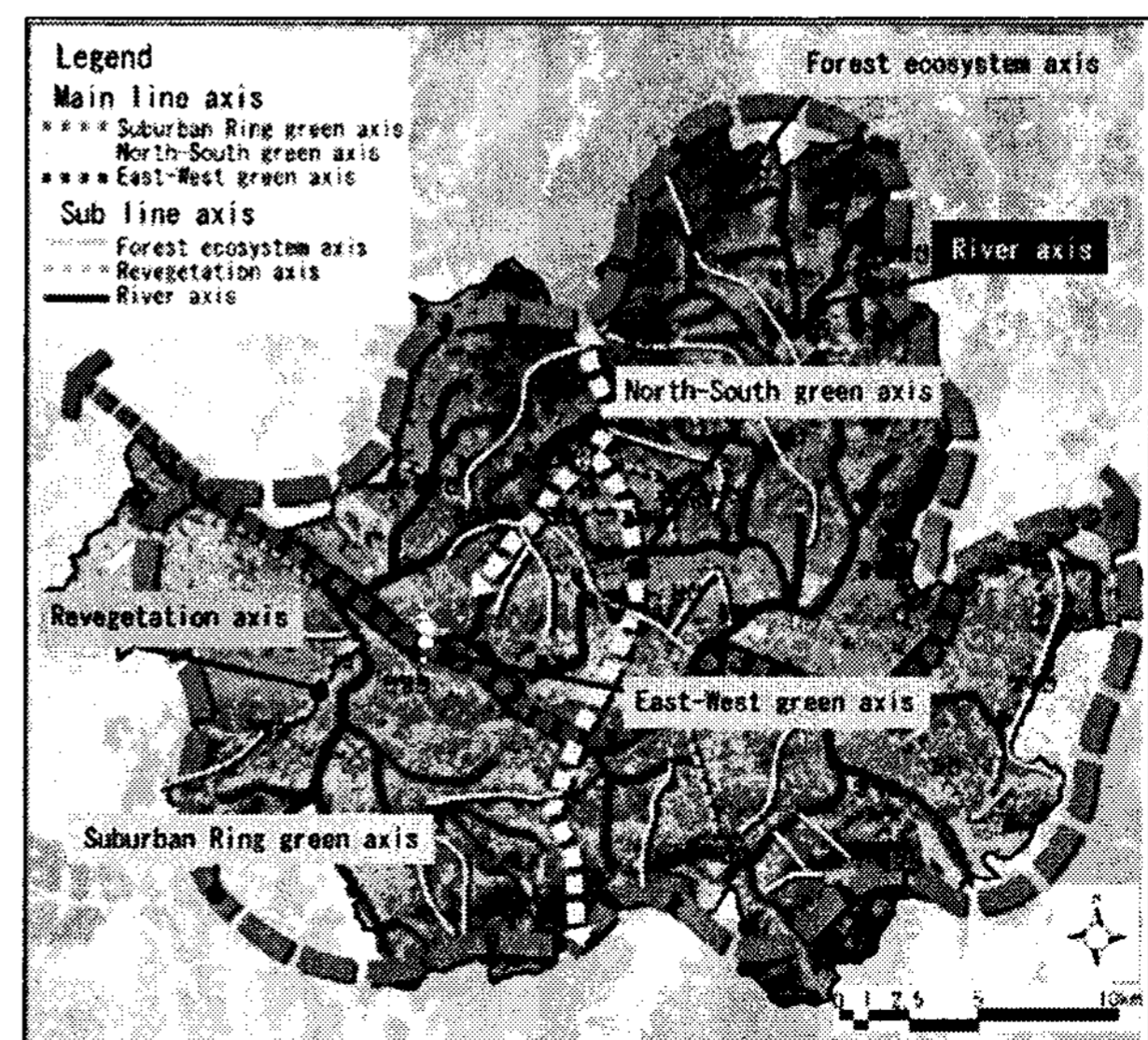


Figure 3. The Master Plan for Open Spaces of Seoul (Korea)

with the axis of green, the metropolis completes a green network. The layout plan features the utilization of ring green conservation area and the existing cross-shaped green axis (Figure 3).

IV. A Study of Three Green Master Plans

1. The Characters and Background of Plans

Tokyo considers water, the lay of the land and greenery as the infrastructure of city planning. It is rather unique and can be called as "Nature based type". Dealing with a nature crisis caused by the disorganized city development in the second half of 20th century, the revitalization of nature is one of the top priorities of this plan. To achieve its goals, Tokyo has strategies: 1) focusing on the ecosystem the biodiversity rely on; 2) setting the natural system as a basic component of urban structure; 3) utilizing a variety of existing resources. Tokyo perceives "water system" as the natural system to improve the urban development. The "water system" connects mountains and ocean with the green corridor that brings a breath of air, the biological diversity, outdoor recreations, the improvement of urban landscape and the functions in disaster prevention. Tokyo has developed the principle of revitalizing the water-green network is the key of new urban development.

The plan of Beijing has two characteristics: "the improvement of living environment" and "the combination of the ring green and the radial cuneiform green space". Due to the expansion of the desert, Beijing sets the priority on the improvement of city environment to secure the urban living. In addition, the recent infrastructure building and housing land development in suburbs encourages Beijing to work on the nature conservation by creating networks of the Ring- radial greenery unit. As the entire area of land belongs to the government, Beijing makes a maximum use of the great advantage and realizes the ring green and the radial cuneiform green space, one of the most ideal patterns of greenery development.

While having vast tracts of green land in suburbs, Seoul has few green areas in the central area. To generate the comfort with greenery, Seoul develops the green network by reconnecting the redeveloped green axes and the existing ring green. The basic policy is to provide the comfort and the spacious open spaces areas in the city center. Because of the short of land for greenery, Seoul removed a part of highway

to revitalize the river axis. The disadvantage gives Seoul a tip to be more creative in terms of land use.

2. Similarities and Differences

As observed in the preceding chapter and Table 1, the similarities and differences among three master plans are summarized as follows: 1) the structure of plans fits the natural features of each city. Meanwhile each plan shows concrete measures for their tasks by arranging greens: disaster-resistance, sand prevention, green residential area; 2) the importance of ecology lies behind the future images, however, each image shows different pictures: an attractive metropolis rich in greenery(Tokyo); a garden city abundant in nature(Beijing); the Green forest city co-existing with nature(Seoul); 3) although not much similarities in the process of planning, both Beijing and Seoul have the judging organs independent from the city planning bureaus. The organ deliberates the quality of a plan to make it more specific about materialization. On the other hand Tokyo focuses its efforts on achieving a consensus of opinion about the project in the planning stage by holding a public hearing.

References

1. Yue Shen, Kyungrock Ye, Takeshi Kinoshita, Yohei Saito(2000) Comparative Study of the Legal Systems Governing the Conservation and Maintenance of traditional Landscapes, including Gardens, in Japan, Korea, and China. *Journal of The Japanese Institute of Landscape Architecture, International Edition* no. 1 pp. 136-139.
2. Yue Shen, Kyungrock Ye, Takeshi Kinoshita, Yohei Saito(2001) Comparative Study of a Plan for Urban Landscaping in Japan and China. *Journal of The Korean Institute of Landscape Architecture, International Edition* no. 1 pp. 53-58.
3. Tokyo Metropolitan Government(1981) The Greenery Master Plan.
4. Tokyo Metropolitan Government(2000) The Green Tokyo Plan. (<http://www.metro.tokyo.jp/INET/KEIKAKU/SHOUSAI/70ACQ800.HTM>)
5. Tokyo Metropolitan Government(2001) The Policy for the Preservation of Nature and the Development of Open Public Land Spaces. (http://www.toshiseibi.metro.tokyo.jp/seisaku/master_plan/master01.htm)
6. Beijing City Planning Administration Bureau(1995) Beijing City Afforestation Plan.
7. Beijing Municipal Institute of City Planning and Design(2002) Report on Greenery Development Plan. Beijing.
8. Beijing Municipal Institute of City Planning and Design(2006) Report on Greenery Development Plan. Beijing.
9. Seoul Development Institute(1997) Green Space Expansion For Green Network in Seoul, Department of Urban Environment, p. 227.
10. Seoul Development Institute(2002) Thematic maps of Seoul, 2000, p. 156.
11. Agency for City Planning of Beijing(1998) Assembles of management laws concerning City Planning and Construction.
12. Beijing Municipal Institute of City Planning & Design(1992) Beijing Striding Forward to the 21st Century.
13. http://www.seoul.go.kr/minsun4th_project/5th/index.html(2007).