

The Comprehensive Urban Development Programme in Hanoi Capital City of the Socialist Republic of Vietnam (HAIDEP)

FINAL REPORT

Vol.1 Master Plan Study

March 2007



**ALMEC Corporation
Nippon Koei Co., Ltd.
YACHIYO Engineering co., Ltd.**

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PREFACE

In response to the request from the Government of the Socialist Republic of Vietnam, the Government of Japan decided to conduct the Comprehensive Urban Development Programme in Hanoi Capital City and entrusted the program to the Japan International Cooperation Agency (JICA).

JICA dispatched a team to Vietnam between December 2004 and March 2007, which was headed by Mr. IWATA Shizuo of ALMEC Corporation and consisted of ALMEC Corporation, Nippon Koei Co., Ltd., and Yachiyo Engineering Co., Ltd.

In collaboration with the Vietnamese Counterpart Team, the JICA Study Team conducted the study including field surveys; demand forecast; conduct of pilot projects; formulation of comprehensive urban development program and subsector master plans for urban development, urban transportation, urban water and sanitation, and living conditions; and conduct of prefeasibility studies on the selected priority projects. It also held a series of discussions with the relevant officials of the Government of Vietnam. Upon returning to Japan, the Team duly finalized the study and delivered this report.

I hope that this report will contribute to the sustainable development of Hanoi City and to the enhancement of friendly relations between the two countries.

Finally, I wish to express my sincere appreciation to the officials of the Government of Vietnam for their close cooperation.

March 2007

MATSUOKA Kazuhisa
Vice President
Japan International Cooperation
Agency

March 2007

MATSUOKA Kazuhisa

Vice President
Japan International Cooperation Agency
Tokyo

Subject: Letter of Transmittal

Dear Sir,

We are pleased to formally submit herewith the final report of the Comprehensive Urban Development Programme in Hanoi Capital City in the Socialist Republic of Vietnam.

This report compiles the results of the study which was undertaken both in Vietnam and Japan from December 2004 to March 2007 by the Team comprising ALMEC Corporation, Nippon Koei Co., Ltd., and Yachiyo Engineering Co., Ltd.

We owe a lot to many people for the accomplishment of this report. First, we would like to express our sincere appreciation and deep gratitude to all those who extended their extensive assistance and cooperation to the Team, in particular the Hanoi City People's Committee.

We also acknowledge the officials of your agency, the JICA Advisory Committee, and the Embassy of Japan in Vietnam for their support and valuable advice in the course of the Study.

We hope the report would contribute to the sustainable development of Hanoi City.

Very truly yours,

IWATA Shizuo

Team Leader
Comprehensive Urban Development Programme in Hanoi Capital City

TABLE OF CONTENTS

MAIN TEXT

1 Introduction

1.1 Purpose of the Report	1-1
1.2 Study Background, Objectives, and Coverage	1-2
1.3 Study Process	1-7

2 Context and Issues

2.1 Brief History of Urban Development in Hanoi	2-1
2.2 Existing Conditions of the City	2-5
2.3 Comprehensive Assessment of Living Conditions	2-20
2.4 Current Urban Sector Management	2-27
2.5 Main Issues	2-35

3 Vision, Goals, and Key Spatial Development Strategies

3.1 Vision and Goals	3-1
3.2 Socio-economic Development Orientation	3-2
3.3 Key Spatial Development Strategies	3-4

4 Hanoi's Role in the Region

4.1 Approach	4-1
4.2 Profile of and Issues in Hanoi Region	4-4
4.3 Existing Regional Plans and Policies	4-32
4.4 Proposed Regional Development Strategies	4-35
4.5 Proposed Regional Development Orientation	4-44

5 Population and Urban Growth Management

5.1 Importance of Effective Management of Urban Growth	5-1
5.2 Future Population of Hanoi	5-2
5.3 Future Growth Pattern	5-6
5.4 Estimated Distribution of Population, Employment, and Students	5-8
5.5 Key Planning Principle for Spatial Development and Growth Management	5-16
5.6 Proposed Urban Growth Management Orientation	5-30

6 General Plan

6.1 Roles and Functions of the General Plan	6-1
6.2 Spatial Control Framework	6-11
6.3 Identified Strategic Action Areas	6-16
6.4 Formulation of the District Plan	6-23

7 Socio-economic Development

7.1 Overview	7-1
7.2 Socio-economic Characteristics	7-2
7.3 Socio-economic Development Orientation	7-11
7.4 Economic Development	7-12
7.5 Social Development	7-17
7.6 Quality of Life	7-19
7.7 Proposed Socio-economic Development Orientation	7-21

8	Urban Transportation	
8.1	Existing Conditions and Issues.....	8-1
8.2	Urban Transportation Planning Direction.....	8-17
8.3	Regional Perspectives.....	8-33
8.4	Urban Transportation Master Plan Framework.....	8-44
8.5	Urban Road Network.....	8-46
8.6	Urban Mass Rapid Transit.....	8-64
8.7	Public Transportation System.....	8-73
8.8	Traffic Management and Traffic Safety.....	8-79
8.9	Evaluation of the Urban Transportation Master Plan.....	8-94
8.10	Proposed Urban Transportation Development Orientation.....	8-114
9	Urban Water and Sanitation	
9.1	Introduction.....	9-1
9.2	Water Supply.....	9-2
9.3	Drainage System.....	9-16
9.4	Sewerage System.....	9-23
9.5	Lake and Pond Management.....	9-30
9.6	Flood Protection.....	9-36
9.7	Solid Waste Management.....	9-41
9.8	Cemetery.....	9-47
9.9	Proposed Projects and Evaluation.....	9-48
9.10	Proposed Urban Water and Sanitation Development Orientation.....	9-54
10	Housing and Living Conditions	
10.1	Introduction.....	10-1
10.2	Housing.....	10-1
10.3	Living Conditions.....	10-20
10.4	Proposed Housing and Living Conditions Development Orientation.....	10-24
11	Environment	
11.1	Overview.....	11-1
11.2	Current Conditions of Environmental Resources.....	11-1
11.3	Assessment of Environmental Network.....	11-6
11.4	Parks and Green Space Planning.....	11-9
11.5	Environmental and Social Considerations.....	11-22
11.6	Proposed Environmental Development Orientation.....	11-25
12	URBAN DESIGN AND LANDSCAPE	
12.1	Overview.....	12-1
12.2	Approach to Urban Landscape Management in Hanoi.....	12-1
12.3	Review of Existing Landscape Regulations.....	12-4
12.4	Assessment of Landscape Resources.....	12-7
12.5	Main Problems and Issues.....	12-22
12.6	Proposed Landscape Planning Orientation.....	12-23
12.7	Proposed Urban Design and Landscaping Orientation.....	12-36
13	SPECIAL AREAS	
13.1	Introduction.....	13-1
13.2	Red River Area.....	13-2
13.3	Thang Long – Co Loa Zone.....	13-18
13.4	Ancient Quarter.....	13-21

13.5	Ho Tay Waterfront Area	13-30
13.6	French Quarter	13-33
13.7	Proposed Development Orientation for Special Areas	13-35

14 IMPLEMENTATION PLAN

14.1	Prioritizing and Packaging Projects	14-1
14.2	Consolidated List of HAIDEP-proposed Projects	14-3
14.3	Possible Budget Envelope	14-7
14.4	Priority Projects	14-8
14.4	Summary of Investment Program	14-11
14.6	Proposed Strategic Projects and Actions	14-15

15 IMPLEMENTATION AND MANAGEMENT

15.1	Overview	15-1
15.2	Improvements to the Statutory Urban Planning System	15-3
15.3	Urban Land Development and Management	15-14
15.4	Urban Sector Funding	15-21
15.5	Improvements to the Urban Planning Institutions	15-29
15.6	Implementation Program	15-39
15.7	Urban Sector Project Assistance	15-41
15.8	Proposed Implementation and Management Orientation	15-43

APPENDICES

1A: STEERING COMMITTEE AND WORKING GROUP MEETINGS

1B: MEETINGS WITH RELEVANT GOVERNMENT AGENCIES

LIST OF TABLES

Table 1.2.1	HAIDEP Scope of Work	1-4
Table 1.2.2	Profile of the HAIDEP Study Area	1-5
Table 1.3.1	Steering Committee Members	1-8
Table 1.3.2	Working Group Members.....	1-9
Table 1.3.3	JICA and Study Team Members.....	1-10
Table 1.3.4	HAIDEP National Consultants	1-11
Table 2.2.1	Land-use Categories for Analysis	2-7
Table 2.2.2	Existing Lands by Use (unit:km ²).....	2-8
Table 2.2.3	Existing Lands by Use (unit: %).....	2-8
Table 2.2.4	Hanoi's Population by District	2-11
Table 2.2.5	Characteristics of Household in Hanoi	2-13
Table 2.2.6	Major Infrastructure Indicators	2-16
Table 2.2.7	Urban Service Coverage and Satisfaction Rates (%)	2-17
Table 2.3.1	International Comparison of Indicators as Applied to Hanoi	2-23
Table 2.3.2	Results of Living Conditions Analysis	2-25
Table 2.4.1	Key Departments Involved in Urban Planning and Policy in Hanoi.....	2-28
Table 2.4.2	Institutional Responsibility for the Various Development Plans in Hanoi	2-29
Table 2.4.3	Institutional Arrangements for Urban Development Projects and Services.....	2-32
Table 3.2.1	Objectives and Target Indicators of Hanoi SEDP.....	3-3
Table 4.1.1	Study Areas of Existing Plans and HAIDEP	4-2
Table 4.1.2	Profile of Study Area	4-3
Table 4.1.3	Profile of Province in the Study Area.....	4-3
Table 4.2.1	Demographic Characteristics.....	4-5
Table 4.2.2	Trend of Urbanization by Provinces	4-7
Table 4.2.3	Change of GDP Structure by Sector (%)	4-11
Table 4.2.4	Economic Growth by Province.....	4-12
Table 4.2.5	Industrial Output Value by Province.....	4-15
Table 4.2.6	Approved Industrial Zones in the Study Area.....	4-17
Table 4.2.7	Total Interprovincial Demand in the Study Area	4-18
Table 4.2.8	Major IWT Lines in the Northern Region.....	4-21
Table 4.2.9	Estimated Water Resources in Three Regions	4-24
Table 4.2.10	Major Social Indicators	4-27
Table 4.3.1	Objectives of Existing Regional Plan	4-34
Table 4.3.2	Main Target Indicators for the Study Area	4-34
Table 4.4.1	Characteristics of Major Development Growth Corridors.....	4-36
Table 4.4.2	Development Orientations by Subregion	4-39
Table 4.4.3	Profile of Major Urban Areas in the Urban Chain	4-47
Table 5.2.1	Urban Population Distribution in Hanoi Metropolitan Area	5-3
Table 5.2.2	Future Population of Hanoi and Integrated Areas	5-5
Table 5.4.1	Population Distribution in Hanoi City and Adjacent Urban Areas, 2020	5-8
Table 5.4.2	Employment Distribution at Workplace	5-12
Table 5.4.3	Student Enrolment by District and Education Level	5-14
Table 5.5.1	Factors Considered in Land Evaluation	5-21
Table 5.5.2	Comparison of 1998 Master Plan Population Forecast for 2005 and Population by District in 2005	5-24
Table 5.5.3	Identified Urban Clusters for Strategic Action (tentative).....	5-27
Table 5.5.4	Facilities and Possible Location of Urban and Activity Center	5-29
Table 6.1.1	Sample of a Use Class Table (paragraph format).....	6-7
Table 6.1.2	Restrictions on Building Use According to Use Zones.....	6-8
Table 6.1.3	Proposal on Land-use Zone Guide for General Plan	6-9
Table 6.1.4	Comparison between Proposed Land-use Zones and Existing Land-use Categories	6-10
Table 6.3.1	Priority Urban Development Actions and Criteria.....	6-17
Table 6.3.2	List of Urban Development Action Areas	6-18

Table 7.2.1	Socio-economic Indicators of Hanoi	7-3
Table 7.2.2	Number of Vehicles in Hanoi by Type	7-6
Table 7.2.3	Current Industrial Area and Development Plan	7-7
Table 7.2.4	Key Figures in Hanoi's Tourism Sector	7-8
Table 7.2.5	Profile of Hanoi Househlds by Income Group	7-10
Table 7.2.6	Socio-economic Profile of Hanoi City by District	7-10
Table 7.3.1	Target Socio-economic Indicators, 2020	7-11
Table 7.4.1	Tourist Arrivals and Expenditure	7-14
Table 7.4.2	Accommodation Requirements	7-15
Table 7.5.1	Development Indicators for Hanoi City for 2010 and 2020	7-18
Table 7.6.1	Characteristics of Households in Hanoi	7-20
Table 8.1.1	Sidewalk Conditions in Hanoi's Urban Areas	8-6
Table 8.1.2	Physical and Operational Conditions of Bus Terminals, 2005	8-12
Table 8.1.3	Ongoing Government Projects on Transportation Sector	8-15
Table 8.2.1	Trip Generation and Attraction by District, 2005 and 2020	8-20
Table 8.2.2	Distribution of 2005 Demand (Excluding Walk Trips)	8-21
Table 8.2.3	Distribution of Future Demand, 2020 (Excluding Walk Trips)	8-21
Table 8.2.4	Future Traffic Demand and Modal Share	8-21
Table 8.2.5	Composition of Travel Demand by Purpose and by Mode, 2005	8-22
Table 8.2.6	List of Ongoing and Committed Projects	8-23
Table 8.2.7	Results of Mini-screen Line Analysis	8-25
Table 8.2.8	Results of Area-based Demand and Supply Analysis	8-25
Table 8.2.9	"Do-Something" Network Performance	8-25
Table 8.2.10	Estimated Modal Shares by 2020	8-30
Table 8.2.11	Estimated Road Network Performance of HAIDEP	8-31
Table 8.2.12	Possible Budget Envelope for Transportation Subsector	8-32
Table 8.3.1	Modal Share of Interprovincial Transportation to/from Hanoi	8-34
Table 8.3.2	Main Types of Interprovincial Freight in Hanoi	8-34
Table 8.3.3	Import and Export Throughput at Hai Phong Port	8-34
Table 8.3.4	Estimated Modal Share of Interprovincial Transportation in the Study Area	8-34
Table 8.3.5	MOT Master Plan Projects (Roads)	8-36
Table 8.3.6	Estimated Modal Share of Interprovincial Transportation	8-38
Table 8.3.7	MOT Master Plan Projects (Railway)	8-39
Table 8.3.8	Existing Capacity of Airports in the Study Area	8-42
Table 8.3.9	Development Plan for Noi Bai International Airport	8-42
Table 8.5.1	Example of Target Road Density in Urban Area	8-47
Table 8.5.2	Vietnamese Cross-section Standards	8-47
Table 8.5.3	Typical Cross-sections of Proposed Roads	8-47
Table 8.5.4	Design Speeds in Urban Areas	8-49
Table 8.5.5	Types of Crossing Structure	8-49
Table 8.5.6	Proposed Bridges in the HAIDEP Master Plan Network	8-51
Table 8.5.7	Urban Road Projects in Hanoi	8-55
Table 8.5.8	Project Package Descriptions, Costs, and ROW Shares	8-58
Table 8.5.9	Land Acquisition and Compensation Costs	8-62
Table 8.5.10	Compensation Costs for Urban Land	8-63
Table 8.5.11	Compensation Costs for Rural Agricultural Land	8-63
Table 8.6.1	UMRT Lines, 2020	8-67
Table 8.6.2	Number of UMRT Passengers by Line, 2020	8-68
Table 8.6.3	Typical Multimodal Transportation Facilities at UMRT Line 1	8-70
Table 8.6.4	Preliminary Project Cost Estimates	8-72
Table 8.7.1	Bus Development Projects	8-78
Table 8.8.1	Characteristics of Selected Transportation Corridors	8-82
Table 8.8.2	Assessment of Selected Transportation Corridors	8-83
Table 8.8.3	Improvement Measures for Selected Transportation Corridors	8-84
Table 8.8.4	Short-term Traffic Management Policies	8-85
Table 8.8.5	Traffic Management Improvement Directions by Area	8-86

Table 8.8.6	Identified Intersections for Short-term Traffic Management Improvement	8-87
Table 8.8.7	Schedule of Signal Systems Project	8-87
Table 8.8.8	Future Daily Parking Demand	8-88
Table 8.8.9	Public Parking Facilities	8-90
Table 8.8.10	Study Items for Area Licensing System	8-91
Table 8.8.11	Subjects in Traffic Management Training	8-92
Table 8.9.1	Results of Mini-screen Line Analysis	8-95
Table 8.9.2	Comparison of Area-based Demand and Supply Analysis	8-95
Table 8.9.3	HAIDEP Master Plan Network Performance	8-95
Table 8.9.4	Bridge Capacities vs. Traffic Volumes	8-97
Table 8.9.5	HAIDEP Road Development Index	8-98
Table 8.9.6	Economic Evaluation of Highway Project Packages	8-99
Table 8.9.7	Results of Economic Evaluation of Road Projects	8-100
Table 8.9.8	Number of UMRT Passengers by Line, 2020	8-102
Table 8.9.9	Performance and Transportation Costs of UMRT Projects	8-103
Table 8.9.10	Economic Evaluation Results of UMRT Projects	8-103
Table 8.9.11	Sensitivity Analysis for UMRT Economic Evaluation	8-103
Table 8.9.12	Financial Evaluation of Ring Road 4	8-104
Table 8.9.13	Passenger Demand on UMRT Projects	8-105
Table 8.9.14	Financial Evaluation of UMRT Projects	8-105
Table 8.9.15	Reduction in Investment Costs to Obtain 15% FIRR	8-106
Table 8.9.16	Environmental and Social Impacts of Urban Transportation Subsector Plan	8-107
Table 8.9.17	NOx and CO ₂ Reduction by Urban Transportation Subsector Plan	8-108
Table 8.9.18	Environmental and Social Impacts of Proposed Urban Road Projects	8-109
Table 8.9.19	Mitigation Measures During Construction of Urban Roads	8-110
Table 8.9.20	Environmental and Social Impacts of Proposed UMRT Projects	8-111
Table 8.9.21	Mitigation Measures during Construction of the UMRT System	8-111
Table 8.9.22	Mitigation Measures during Operation of the UMRT System	8-112
Table 8.9.23	Environmental and Social Impacts of Proposed IWT Projects	8-112
Table 8.9.24	Mitigation Measures during Port Construction	8-113
Table 8.9.25	Mitigation Measures during Port Operation	8-113
Table 9.2.1	Summary of Current Conditions of Hanoi's Water Supply	9-3
Table 9.2.2	Quality of Raw and Treated Water at Four Water Treatment Plants	9-4
Table 9.2.3	Flow Conditions of Rivers in/around Hanoi	9-5
Table 9.2.4	Rural Water Supply in Hanoi City	9-6
Table 9.2.5	Targets for Water Demand Projections	9-6
Table 9.2.6	Population Forecasts for Hanoi	9-7
Table 9.2.7	Estimated Water Demand	9-7
Table 9.2.8	Planned Water Supply Area and Population, 2003	9-8
Table 9.2.9	Adopted Percentages for Estimating Nondomestic Water Demand	9-9
Table 9.2.10	Setting of Daily Peak Factor	9-9
Table 9.2.11	Daily Maximum Distribution of Water for Facility Development Plan	9-11
Table 9.2.12	Facility Development Plan	9-11
Table 9.2.13	Water Treatment Plant Development Plan	9-12
Table 9.3.1	Required Pump Capacities and Reservoir Areas	9-17
Table 9.3.2	Proposed Drainage System up to 2020	9-18
Table 9.4.1	Proposed Sewerage System up to 2020	9-25
Table 9.5.1	Criteria Used in HAIDEP for Lake Water Quality Assessment	9-30
Table 9.5.2	Proposed Delineation of Lake Management Tasks	9-35
Table 9.6.1	Dimension of Dykes along the Red and Duong Rivers	9-36
Table 9.6.2	MARD Decision on Design Water Levels	9-37
Table 9.6.3	Alarming Water Levels of the Red River in Long Bien	9-37
Table 9.6.4	Freeboards in Selected Countries	9-37
Table 9.6.5	Past Water Levels Estimated Based on Records	9-38
Table 9.6.6	Probable Future Water Levels Estimated Based on Records	9-38
Table 9.6.7	Alarming and Probable Water Levels in Areas Outside the Dyke in Long Bien	9-39

Table 9.6.8	Estimated Discharge during Floods in High Water Channels and between Whole Sections	9-40
Table 9.6.9	List of Potential Projects	9-40
Table 9.7.1	Forecast of Solid Waste Generation and Disposal	9-41
Table 9.7.2	Solid Waste Management Measures and Projects	9-44
Table 9.9.1	Proposed Water and Sanitation Projects	9-48
Table 9.9.2	Results of Economic Evaluation of Water Supply Projects	9-49
Table 9.9.3	Economic Evaluation of Sewerage Projects	9-50
Table 9.9.4	Economic Evaluation of Drainage Projects	9-50
Table 9.9.5	Cash Flows of the Water Supply Master Plan.....	9-51
Table 9.9.6	Results of Financial Analysis	9-53
Table 9.9.7	FIRR by Financial Sensitivity Analysis of the Water Supply Master Plan.....	9-53
Table 10.2.1	Housing Conditions in 1999.....	10-2
Table 10.2.2	Recent Changes in Housing Stocks in Hanoi	10-2
Table 10.2.3	Classification of Housing in Hanoi City	10-4
Table 10.2.4	New Housing Floor Areas by Capital Source, 1999 - 2004.....	10-7
Table 10.2.5	Required Floor Area and Housing Units by 2010 and 2020.....	10-10
Table 10.2.6	Rebuilding Demand by Housing Floor Area and Age.....	10-10
Table 10.2.7	Demand for Rebuilding by Housing Type	10-11
Table 10.2.8	Forecast of Minimum Rental Housing Prices and affordability Ratios.....	10-12
Table 10.2.9	Forecast of Minimum Housing Purchase Prices and Affordability Ratios.....	10-12
Table 10.2.10	Summary of Proposed Phased Housing Policies	10-15
Table 10.3.1	Contents of Urban Karte	10-21
Table 10.3.2	Examples of Urban Karte.....	10-22
Table 11.4.1	Areas and Shares of Green Spaces in Hanoi City	11-9
Table 11.4.2	Park Areas in Nine Urban Districts, 2004.....	11-10
Table 11.4.3	Park Areas in Nine Urban Districts Planned in the Hanoi Urban Development Master Plan up to 2020	11-11
Table 11.4.4	Required Per Capita Green Urban Area	11-12
Table 11.4.5	Minimum Land Area for Required Parks.....	11-12
Table 11.4.6	Maximum Building Coverage Ratios and Minimum Green Coverage Ratios by Building Type.....	11-12
Table 11.4.7	Number of Street Trees Planted by Year.....	11-14
Table 11.4.8	Number of Visitors to Two Large Parks in Hanoi	11-15
Table 11.4.9	TUPWS Maintenance Funds by Year	11-15
Table 11.4.10	Existence of Neighborhood Parks.....	11-16
Table 11.4.11	Importance of Good Access to Parks and Green Spaces	11-16
Table 11.4.12	Expected Functions of Parks and Gardens	11-17
Table 11.4.13	Required Facilities in Parks and Gardens.....	11-18
Table 11.5.1	Examples of Resettlement in Recent Road Projects	11-23
Table 12.4.1	Landscape Elements Favored by People in Hanoi	12-15
Table 12.4.2	Positive Paths and Their Reasons (Street).....	12-17
Table 12.4.3	Positive Edges and Their Reasons.....	12-18
Table 12.4.4	Positive Districts (Areas) and Their Reasons.....	12-18
Table 12.4.5	Positive Nodes and Their Reasons.....	12-19
Table 12.4.6	Positive Landscapes and Reasons.....	12-19
Table 12.4.7	Negative Paths (Streets) and Their Reasons.....	12-20
Table 12.4.8	Negative Districts (Areas) and Their Reasons	12-20
Table 12.4.9	Negative Nodes (Junctions) and Their Reasons.....	12-21
Table 12.4.10	Negative Landmarks and Reasons.....	12-21
Table 12.7.1	Proposed Urban Design and Landscape Development Orientation.....	12-37
Table 13.2.1	Profile of Outside-of-dyke Areas	13-4
Table 13.2.2	Development in Selected Outside-of-dyke Areas.....	13-7
Table 13.2.3	Areas and Population by Type of Area.....	13-8
Table 13.2.4	Size and Population by Type of Area	13-9
Table 13.2.5	Estimated Population for Resettlement.....	13-13
Table 13.2.6	Development Orientation for Outside-of-Dyke Areas	13-17
Table 13.3.1	Expected Function of Co Loa – Thang Long Zone	13-18
Table 13.4.1	Assessment of Traditional Culture	13-22

Table 13.4.2	Profile of Households and Their Living Conditions	13-23
Table 13.7.1	Proposed Development Direction for Special Areas	13-36
Table 14.2.1	Proposed Regional Transportation Projects.....	14-3
Table 14.2.2	Proposed Urban Transportation Projects.....	14-4
Table 14.2.3	Proposed Urban Water and Sanitation Projects	14-5
Table 14.2.4	Proposed Living Conditions Projects	14-5
Table 14.2.5	Proposed Urban Development Projects.....	14-6
Table 14.3.1	Possible Budget Envelope for Urban Sector.....	14-7
Table 14.4.1	Prioritization of Road Projects.....	14-8
Table 14.4.2	Prioritization of UMRT Projects	14-8
Table 14.4.3	Prioritization of Urban Water and Sanitation Projects	14-10
Table 14.4.4	Recommended Projects on Solid Waste Management.....	14-10
Table 14.5.1	Total Investment Cost by Subsector	14-11
Table 14.5.2	Summary of Urban Transportation Subsector Development Program	14-12
Table 14.5.3	Summary of Urban Water and Sanitation Subsector Development Program.....	14-13
Table 14.5.4	Summary of Living Conditions Subsector Development Program	14-14
Table 14.6.1	HAIDEP-proposed Strategic Projects	14-15
Table 15.2.1	Proposed Hierarchy of Urban Plans	15-4
Table 15.4.1	PPP Opportunities in HAIDEP Projects	15-28
Table 15.5.1	Proposed Institutional Responsibilities for Urban Plan Preparation and Review	15-29
Table 15.5.2	Proposed Area of Jurisdiction of Urban Construction Plans and Land-use Plans.....	15-32
Table 15.6.1	Institutional Arrangements for Plan Implementation.....	15-39
Table 15.7.1	Components of Urban Sector Project Assistance	15-41

LIST OF FIGURES

Figure 1.2.1	HAIDEP Study Components	1-3
Figure 1.2.2	HAIDEP Study Area at the Regional Level	1-5
Figure 1.2.3	Hanoi Metropolitan Area	1-6
Figure 1.2.4	HAIDEP Study Area at the City Level	1-6
Figure 1.3.1	Study Team Organization.....	1-7
Figure 1.3.2	Composition of Working Groups.....	1-8
Figure 2.1.1	Population Growth of Hanoi.....	2-3
Figure 2.1.2	Expansion of Urban Areas in 1983, 1996, and 2003.....	2-4
Figure 2.2.1	Terrain of Hanoi and Surrounding Areas.....	2-5
Figure 2.2.2	Districts of Hanoi.....	2-6
Figure 2.2.3	Classified Urban Areas for Analysis	2-7
Figure 2.2.4	Land Use of Hanoi, 2005.....	2-9
Figure 2.2.5	Population Growth, 1999 - 2003 (%/yr).....	2-11
Figure 2.2.6	Population Density (Net), 2003 (no/ha).....	2-11
Figure 2.2.7	Urban Service Coverage by District (%)	2-17
Figure 2.3.1	Conceptual Framework of for the Living Conditions Analysis	2-22
Figure 2.3.2	Conceptual Framework for the Objective Living Conditions Analysis	2-24
Figure 2.4.1	Hanoi City Administrative Framework	2-27
Figure 2.4.2	Framework for Development Planning in Hanoi	2-29
Figure 2.5.1	Urbanization Trend in Asian Countries.....	2-35
Figure 4.1.1	Coverage of Regional Plans and HAIDEP	4-2
Figure 4.2.1	Population and Population Growth, 2003	4-5
Figure 4.2.2	Population Trends in Hanoi Region	4-5
Figure 4.2.3	Migration of North Economic Region	4-6
Figure 4.2.4	Population Distribution.....	4-6
Figure 4.2.5	Urbanization Trend	4-8
Figure 4.2.6	Distribution of Cities and Towns.....	4-9
Figure 4.2.7	GDP and GDP Growth, 2003, HAIDEP Study Area	4-10
Figure 4.2.8	GDP/Capita and Expected Growth, Hanoi Metropolitan Area	4-10
Figure 4.2.9	GDP by Province	4-10

Figure 4.2.10	GDP by Economic Sector in Region	4-11
Figure 4.2.11	Labor by Economic Sector in Region	4-11
Figure 4.2.12	Import and Export by Province	4-12
Figure 4.2.13	Foreign Direct Investment.....	4-13
Figure 4.2.14	Industrial Output Value in 2002.....	4-15
Figure 4.2.15	Industrial Parks and Export Processing Zones	4-17
Figure 4.2.16	Volume of Passenger-km and Ton-km on Roads in Hanoi Region, 1995-2002	4-18
Figure 4.2.17	Cities and Transport Network in Study Area, 2002	4-19
Figure 4.2.18	Railway Network in the Study Area.....	4-20
Figure 4.2.19	Inland Waterway Network	4-21
Figure 4.2.20	Port Groups in the North Region.....	4-23
Figure 4.2.21	Main Source of Water in Communes in 1999	4-24
Figure 4.2.22	Power Supply Network in 1996.....	4-25
Figure 4.2.23	Social Indicators, 1999	4-26
Figure 4.2.24	Selected Economic Indicators in the Study Area	4-28
Figure 4.4.1	Development Growth Corridors	4-36
Figure 4.4.2	Regional Spatial Structure	4-37
Figure 4.4.3	Regional Development Zones	4-39
Figure 4.4.4	Spatial Structure of Areas within 30 - 50Km Radius of Hanoi	4-40
Figure 4.5.1	Proposed Strategies and Actions for Regional Development in the Study Area.....	4-45
Figure 5.1.1	Urban Growth Management Process Models	5-1
Figure 5.2.1	Urban Structure of Hanoi Metropolitan Area	5-3
Figure 5.3.1	Distribution of Future Population, Employment, and Students.....	5-7
Figure 5.4.1	Population Density in Hanoi, 2003 and 2020.....	5-9
Figure 5.4.2	Population Distribution in Hanoi, 2003 and 2020.....	5-9
Figure 5.4.3	Rate Increases in Daytime Employment by Sector, 2020/2003	5-13
Figure 5.4.4	Increases in Daytime Employment by Sector, 2003 - 2020	5-13
Figure 5.4.5	Rate Increases in Student Population by Education Level, 2020/2003.....	5-15
Figure 5.4.6	Increases in Student Population by Education Level, 2003 - 2020	5-15
Figure 5.5.1	Spatial Development Planning Framework	5-16
Figure 5.5.2	Integration of Hanoi's and Adjacent Urban Areas	5-19
Figure 5.5.3	Hazard Map of Hanoi.....	5-22
Figure 5.5.4	Development Suitability of Lands.....	5-22
Figure 5.5.5	Water System	5-23
Figure 5.5.6	Major Lakes in Urban Areas	5-23
Figure 5.5.7	Green Resources.....	5-23
Figure 5.5.8	Agricultural Lands.....	5-23
Figure 5.5.9	Concept of Urban Growth Boundary.....	5-25
Figure 5.5.10	Location of Identified Urban Clusters.....	5-28
Figure 5.6.1	Proposed Strategies, Actions, and Strategic Projects for Effective Urban Growth Management	5-31
Figure 6.1.1	Proposal on Function of General Plan and Detailed Plan.....	6-3
Figure 6.1.2	Proposed Draft General Plan 2020.....	6-4
Figure 6.2.1	Conceptual Spatial Control Scheme	6-15
Figure 6.3.1	Location of Urban Development Action Areas	6-22
Figure 7.2.1	International Comparison of Vehicle Ownership and Per-capita GRDP.....	7-4
Figure 7.2.2	Share of Industrial Outputs in Hanoi.....	7-5
Figure 7.2.3	Industrial Output Values and SOE Shares by Province in NFEZ	7-6
Figure 7.4.1	Tourist Destinations In and Around Hanoi.....	7-15
Figure 7.7.1	Proposed Strategies, Actions, and Strategic Projects	7-22
Figure 8.1.1	Comparison of Road Coverage Ratios Among Selected Asian Cities.....	8-2
Figure 8.1.2	Deficient Primary Road Sections in Hanoi's Urban Areas.....	8-2
Figure 8.1.3	Transportation Network in Hanoi, 2005.....	8-3
Figure 8.1.4	Public Transportation Ridership in Hanoi, 1979 – 2005	8-9
Figure 8.1.5	Old Tramway Network in Hanoi	8-9
Figure 8.1.6	Roads in Hanoi City Covered by Bus Routes, 2005	8-10
Figure 8.2.1	Transportation Demand Forecast Procedure.....	8-17

Figure 8.2.2	Zoning of HAIDEP Study Area	8-18
Figure 8.2.3	Trip Distribution, 2005 and 2020	8-20
Figure 8.2.4	Hourly Distribution of Trips by Purpose, 2005	8-22
Figure 8.2.5	Location of Ongoing and Committed Projects	8-23
Figure 8.2.6	Mini-screenlines for Demand-Supply Analysis	8-24
Figure 8.2.7	Traffic Assignment on “Do Something” Network	8-26
Figure 8.2.8	Indicative Target for Modal Share for 2020	8-30
Figure 8.3.1	Interprovincial Traffic Distribution in the Study Area	8-35
Figure 8.3.2	MOT Road Network Plan	8-37
Figure 8.3.3	Future Traffic Volume on Various Networks	8-38
Figure 8.3.4	Location of MOT Master Plan Projects (Railway)	8-39
Figure 8.3.5	IWT Corridors in the Red River Delta	8-40
Figure 8.3.6	Estimated Traffic Volumes on Major Inland Waterways, 2020	8-41
Figure 8.3.7	Proposed Inland Waterway Ports in Hanoi	8-41
Figure 8.4.1	HAIDEP Urban Transportation Network	8-45
Figure 8.5.1	Concept of Cross-section Planning based on Road Functions	8-48
Figure 8.5.2	Typical Cross-sections in the HAIDEP Road Master Plan	8-48
Figure 8.5.3	Proposed HAIDEP Road Network	8-52
Figure 8.5.4	Types of Interchange on the Proposed Road Network	8-53
Figure 8.5.5	Urban Road Projects in Hanoi	8-57
Figure 8.5.6	Location of Proposed Project Packages	8-61
Figure 8.5.7	Categories of Urban and Rural Land	8-62
Figure 8.6.1	Examples of Various Types of UMRT	8-65
Figure 8.6.2	Public Transportation Corridors	8-66
Figure 8.6.3	Urban Rail Routes Proposed by the MOT Master Plan	8-66
Figure 8.6.4	Proposed UMRT Lines	8-67
Figure 8.6.5	Estimated UMRT Patronage, 2020	8-68
Figure 8.6.6	Multimodal Stations	8-69
Figure 8.7.1	Components of the Public Transportation System	8-73
Figure 8.7.2	Different Network and Service Structures	8-74
Figure 8.7.3	Bus Priority Network in 2010	8-74
Figure 8.7.4	Variable Bus Priority Direction on RR2	8-76
Figure 8.7.5	Optional Stop Locations	8-76
Figure 8.7.6	Primary Bus Route Network	8-76
Figure 8.7.7	Secondary Bus Route Network	8-76
Figure 8.7.8	Priority Bus Routes Within Hanoi City, 2010	8-78
Figure 8.8.1	Selected Transportation Corridors and Traffic Management Areas for Traffic Safety and Management Facility Development	8-80
Figure 8.8.2	Identified Locations for Short-term Traffic Management Improvement	8-87
Figure 8.9.1	HAIDEP Master Plan Network Performance	8-96
Figure 8.9.2	Areas Reachable within 30- and 60-Minute Travel to/from Hoan Kiem Lake	8-96
Figure 8.9.3	Location of Bridges Across the Red River	8-97
Figure 8.9.4	Comparison of Road Network Densities	8-97
Figure 8.9.5	Project Prioritization Based on Economic IRRs	8-101
Figure 8.9.6	Daily Toll Rate and Daily Total Revenue, 2020	8-104
Figure 8.9.7	Cash Flow of Ring Road 4	8-104
Figure 8.9.8	Financial Cash Flow of UMRT Projects	8-106
Figure 8.10.1	Proposed Strategies, Actions, and Strategic Projects for Regional Transportation Development	8-115
Figure 8.10.2	Proposed Strategies, Actions, and Strategic Projects for Urban Transportation Development	8-116
Figure 9.2.1	Water Demand Ratio by Area and Purpose	9-7
Figure 9.2.2	Daily Maximum Distribution and Supply Capacity	9-10
Figure 9.2.3	Proposed Water Treatment Plants and their Service Coverage Areas	9-12
Figure 9.2.4	General Plan for Water Treatment Plants	9-13
Figure 9.2.5	Outline of Proposed Transmission Pipeline Network	9-14
Figure 9.3.1	Target Area for Drainage System Development	9-16
Figure 9.3.2	Hydrographical Conditions	9-17

Figure 9.3.3	Implementation of the Drainage System Development Plan.....	9-18
Figure 9.3.4	Drainage System in the To Lich River Basin.....	9-20
Figure 9.3.5	Drainage System in the Nhue River Basin.....	9-20
Figure 9.3.6	Drainage System in Long Bien and Gia Lam Districts.....	9-22
Figure 9.3.7	Drainage System in Dong Anh District.....	9-22
Figure 9.4.1	Target Area for Sewerage System Development.....	9-23
Figure 9.4.2	Implementation of the Sewerage Development Plan.....	9-25
Figure 9.4.3	Sewerage System in To Lich and Nhue River Basins and Long Bien District.....	9-27
Figure 9.4.4	Sewerage System in Dong Anh District.....	9-27
Figure 9.4.5	Proposed Projects up to 2010.....	9-28
Figure 9.5.1	Typical Structural Improvement of a Lake.....	9-33
Figure 9.5.2	Structural Countermeasures for Improvement of Water Quality.....	9-33
Figure 9.5.3	Layout of the Diversion of Environmental Maintenance Flow.....	9-33
Figure 9.6.1	Dyke Alignment around Hanoi City.....	9-36
Figure 9.6.2	Annual Highest Water Levels in Red River in Long Bien, 1902 – 2004.....	9-38
Figure 9.6.3	Assumed Cross-section of Red River between Long Bien and Chuong Duong Bridges.....	9-39
Figure 9.7.1	Recognized Solid Waste Management Issues.....	9-42
Figure 9.7.2	Proposed Solid Waste Management Flow in Hanoi City, 2020.....	9-44
Figure 9.9.1	Net Cash Flow of the Water Supply Master Plan.....	9-52
Figure 9.9.2	Accumulated Cash Flow of the Water Supply Master Plan.....	9-52
Figure 9.10.1	Proposed Strategies, Actions, and Strategic Projects for Urban Water and Sanitation Development.....	9-55
Figure 10.2.1	People’s Concern over Housing.....	10-5
Figure 10.2.2	Housing Affordability Levels of Average Households.....	10-8
Figure 10.3.1	Method for Analysis of Living Conditions.....	10-21
Figure 10.3.2	Examples of Urban Karte.....	10-22
Figure 10.4.1	Proposed Strategies, Actions, and Strategic Projects for Housing and Living Conditions Development.....	10-25
Figure 11.3.1	Environmental Zones and Green Belts in Hanoi Region.....	11-8
Figure 11.4.1	International Comparison of Park Area.....	11-10
Figure 11.4.2	Greenery Resources in Urban Districts.....	11-11
Figure 11.4.3	Photos of Parks in Hanoi.....	11-15
Figure 11.4.4	Frequency of Current Major Activities in the Parks.....	11-17
Figure 11.4.5	Frequency of “to Do Exercise” by Area (%).....	11-17
Figure 11.4.6	Green Area Plan.....	11-20
Figure 11.4.7	Use of Rivers and Retention Ponds for Parks.....	11-21
Figure 11.5.1	Resettlement Sites of Recent Projects in Hanoi City.....	11-24
Figure 11.6.1	Proposed Environmental Development Orientation.....	11-26
Figure 12.3.1	Existing Situation of Surrounding of Hoan Kiem Lake Area (East Side).....	12-6
Figure 12.4.1	Existing Lakes and Ponds.....	12-8
Figure 12.4.2	Landscape Elements in Traditional Rural Villages.....	12-12
Figure 12.4.3	Most Favorite Landscapes in Hanoi by District.....	12-13
Figure 12.4.4	Factors Affecting Landscape.....	12-14
Figure 12.4.5	Image for Future Hanoi City.....	12-15
Figure 12.4.6	Image for Future Hanoi City by Area.....	12-15
Figure 12.4.7	Negative Elements in Hanoi City.....	12-16
Figure 12.4.8	Positive Elements in Hanoi City.....	12-16
Figure 12.4.9	Positive and Negative Landscape Elements (Paths) in Hanoi City.....	12-17
Figure 12.6.1	Existing Urban Landscape in the Ancient Quarter (Hang Dao Street).....	12-27
Figure 12.6.2	Sample Improvement Image of the Ancient Quarter (Hang Dao Street).....	12-27
Figure 12.6.3	Example of Design Code in Other Countries (New York, USA).....	12-28
Figure 12.6.4	Example of Design Guideline in Other Countries (Kyoto, Japan).....	12-29
Figure 12.6.5	Existing Situation of the French Quarter (Trang Tien Street).....	12-30
Figure 12.6.6	Sample Improvement Image of the French Quarter (Trang Tien Street).....	12-30
Figure 12.6.7	Examples of Design Guideline for New Urban Center Developed (Japan).....	12-33
Figure 12.7.1	Proposed Urban Design and Landscaping Development Orientation.....	12-37
Figure 13.1.1	Location of Special Areas.....	13-1
Figure 13.2.1	Location of Red River and Outside-of-Dyke Areas.....	13-3

Figure 13.2.2	Past and Current Layout of Outside-of-Dyke Areas	13-3
Figure 13.2.3	Classification and Location of Outside-of-Dyke Areas in Hanoi City	13-5
Figure 13.2.4	Photos of the Left Bank of the Red River and Both Banks of the Duong River.....	13-6
Figure 13.2.5	Photos of the Right Bank of the Red River	13-7
Figure 13.2.6	Cultural Sites in the Red River Area	13-10
Figure 13.2.7	Planning Framework for Outside-of-Dyke Areas.....	13-14
Figure 13.2.8	Development Concept for Outside-of-Dyke Areas	13-15
Figure 13.3.1	Preliminary Development Concept for the Thang Long - Co Loa Zone	13-20
Figure 13.3.2	Image of the Proposed Cultural Core in the Thang Long - Co Loa Zone.....	13-20
Figure 13.4.1	Core Value of the Ancient Quarter	13-22
Figure 13.4.2	Proposed Block Renovation Plan for Hang Buom	13-25
Figure 13.4.3	Proposed Implementation Mechanism for the SustainableDevelopment of the Ancient Quarter.....	13-28
Figure 13.4.4	Proposed Business Model for the Ancient Quarter	13-29
Figure 13.5.1	Development Concept for the Ho Tay Waterfront Area	13-32
Figure 14.1.1	Framework for Project Evaluation and Prioritization	14-1
Figure 14.1.2	Planned Growth Strategy for Urban Areas.....	14-2
Figure 14.4.1	Prioritization of Road Projects.....	14-9
Figure 15.1.1	Overall Plan Implementation Framework.....	15-2
Figure 15.2.1	Stages of Control	15-5
Figure 15.2.2	Considerations in Granting Planning Permission.....	15-8
Figure 15.2.3	Example of a Planning Permission System	15-9
Figure 15.3.1	Urban Growth Boundaries	15-15
Figure 15.4.1	Strategic Mobilization of Funding.....	15-21
Figure 15.4.2	Maximizing the Effect of Public Sector Resource Allocation	15-25
Figure 15.4.3	PPP Models on the Basis of Profitability.....	15-26
Figure 15.4.4	Value Capturing of UMRT's External Benefit	15-26
Figure 15.5.1	Decentralized Town Planning Offices	15-31
Figure 15.5.2	Proposed Framework for Development Planning	15-33
Figure 15.5.3	Hanoi Public Transportation Authority.....	15-36
Figure 15.8.1	Proposed Strategies, Actions, and Strategic Projects for Socio-economic Development.....	15-43

BOXES

Box 2.4.1	Urban Development Process	2-31
Box 3.4.1	Mass Transit Development in Large Urban Areas	3-6
Box 3.4.2	Concept of Land Readjustment	3-8
Box 3.4.3	Management of the Urban Growth in Tokyo	3-12
Box 12.7.1	Preliminary Landscaping Guidelines.....	12-38
Box 15.1.1	Bases for Proposed Institutional Initiatives	15-1
Box 15.2.1	Example of Submission Checklist for a Planning Permission for a Layout Plan Approval	15-10
Box 15.3.1	Submittal Requirements for Major Subdivision Proposal	15-15

ACRONYMS AND ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
ADB	Asian Development Bank
AQ	Ancient Quarter
AQMB	Ancient Quarter Management Board
ATC	Area Traffic Control
B/C	Benefit-Cost
BCR	Building Coverage Ratio
BOD	Biochemical Oxygen Demand
BOT	Build-operate-transfer
BRT	Bus Rapid Transit
CAAV	Civil Aviation Authority of Vietnam
CBD	Central Business District
CCTV	Closed Circuit Television
CEETIA	Center for Environmental Engineering of Towns and Industrial Areas
CIET	Center for Environmental Technology Treatment
COD	Chemical Oxygen Demand
CP	Construction Plan
CPRGS	Comprehensive Poverty Reduction and Growth Strategy
CVM	Contingent Valuation Method
DAP	Department of Architecture and Planning
DARD	Department of Agriculture and Rural Development
DCI	Department of Culture and Information
DIS	Driver Information System
DOC	Department of Construction
DONRE	Department of Natural Resources and Environment
DTED	District Department of Education and Training
DWL	Design Water Level
EAP	East Asia and the Pacific
EIA	Environmental Impact Assessment
EIRR	Economic Internal Rate of Return
EMP	Environment Master Plan
EPF	Employment Provident Fund
ETC	Electronic Toll Collection
EVN	Electricity of Vietnam
FAR	Floor Area Ratio
FDI	Foreign Direct Investment
FILP	Fiscal Investment and Loan Program
FIRR	Financial Internal Rate of Return
FNPV	Financial Net Present Value
FPO	Flood Protection Office
GDP	Gross Domestic Product
GIS	Geographical Information System
GO	Green and Open Space
GOJ	Government of Japan
GOV	Government of Vietnam
GRDP	Gross Regional Domestic Product
HAIDEP	The Comprehensive Urban Development Programme in Hanoi Capital City
HAPI	Hanoi Authority for Planning and Investment
HAUPA	Hanoi Authority for Urban Planning and Architecture
HCMC	Ho Chi Minh City
HDI	Human Development Index
HEPR	Hunger Eradication and Poverty Reduction
HIS	Household Interview Survey
HMA	Hanoi Metropolitan Area
HOUTRANS	The Study on the Urban Transport Master Plan and Feasibility Study in HCM Metropolitan Area
HPC	Hanoi People's Committee

HPI	Human Poverty Index
HSDC	Hanoi Sewerage and Drainage Company
HWBC	Hanoi Water Business Company
IEE	Initial Environmental Examination
IP	Industrial Park
IRR	Internal Rate of Return
IT	Information Technology
ITS	Intelligent Transportation System
IWT	Inland Waterway Transportation
IZ	Industrial Zone
JBIC	Japan Bank for International Cooperation
JICA	Japan International Cooperation Agency
JV	Joint Venture
KTT	Collective Apartment Areas
LEP	Law on Environmental Protection
LI	Light Industrial Area
LUP	Land-use Plan
LURC	Land-use Rights Certificate
MARD	Ministry of Agriculture and Rural Development
MLIT	Ministry of Land, Infrastructure and Transportation (Japan)
MMUTIS	Metro Manila Urban Transport Improvement Study
MOC	Ministry of Construction
MOCI	Ministry of Culture and Information
MOF	Ministry of Finance
MONRE	Ministry of National Resources and Environment
MOT	Ministry of Transport
MP	Master Plan
MPI	Ministry of Planning and Investment
NCCP	National Council for Construction Planning
NER	Northern Economic Region
NFEZ	Northern Focal Economic Zone
NGO	Non Government Organization
NH	National Highway
NIMBY	Not in my Backyard
NIURP	National Institute of Urban and Regional Planning
NO ₂	Nitrogen Dioxide
NOWATRANCO	Northern Waterway Transport Corporation
NPV	Net Present Value
NSEP	National Strategy for Environmental Protection
O&M	Operation and Maintenance
O ₃	Ozone
OD	Origin - Destination
ODA	Official Development Assistance
PAC	Polyaluminium Chloride
PAHs	Polycyclic Aromatic Hydrocarbons
Pb	Lead
PBT	Priority Bus Transit
PC	People's Committee
PCU	Passenger Car Unit
PFI	Private Finance Initiative
PIMS	Public Image Mapping Survey
PM	Particular Matter
PMU	Project Management Unit
PPP	Public Private Partnership
PSP	Private Sector Participation
PTA	Public Transportation Authority
QI	Quasi-industrial Area
ROW	Right of Way

RPC	Regional Planning Committee
RR	Ring Road
RRD	Red River Delta
SC	Steering Committee
SEA	Southeast Asia
SEDP	Socio-economic Development Plan
SIDA	Swedish International Development Agency
SO ₂	Surphur Dioxide
SOE	State-owned Enterprise
SS	Suspended Solids
SWM	solid waste management
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TDM	Transportation Demand Management
TDR	Transfer of Development Rights
TDSI	Transport Development Strategy Institute
TEDI	Transport Engineering and Development Institute
TPC	Town Planning Committee
TRAMOC	Transport Management and Operation Center
TRANSERCO	Transport and Service Corporation
TRs	Technical Reports
TSP	Total Suspended Particulate Materials
TTC	Travel Time Cost
TUPWS	Department of Transport and Urban Public Works Services
UCA	Urban Control Area
UCP	Urban Construction Plan
UDA	Urban Development Area
UDAs	Urban Development Promotion Areas
UFW	Unaccounted-for Water
UGB	Urban Growth Boundaries
UMRT	Urban Mass Rapid Transit
URENCO	Urban Environmental Company
V/C	Vehicle-Capacity
VINACONEX	Vietnam Construction and Import-Export Corporation
VINAMARINE	Vietnam 's National Maritime Authority
VITRANSS	The Study on the National Transport Development Strategy in the Socialist Republic of Vietnam
VIWA	Vietnam Inland Waterway Administration
VIWASE	Vietnam Water Supply and Environment Company
VND	Vietnam Dong
VOC	Vehicle Operating Cost
VOCs	Volatile Organic Compounds
VR	Vietnam Railway
VUPDA	Vietnam Urban Planning and Development Agency
VUTAP	Vietnam Urban Transport Assistance Project
VUTIP	Vietnam Urban Transport Improvement Project
WB	World Bank
WG	Working Group
WHO	World Health Organization
WL	Water Level
WTO	World Trade Organization
WTPs	Water Treatment Plants
WWTP	Wastewater Treatment Plant

MAIN TEXT

1 INTRODUCTION

1.1 Purpose of the Report

1) Background

This Final Report presents the results of the study titled “The Comprehensive Urban Development Programme in Hanoi Capital City” (HAIDEP) which include the Draft Urban Development Master Plan covering the four subsectors of urban development, urban transportation, urban water and sanitation, as well as living conditions. Likewise included in this report are the results of the pilot projects on urban development and prefeasibility studies on priority urban transportation projects.

The Draft Master Plan was submitted to the Working Groups and relevant agencies in June 2006 and presented to the public at an exhibition held from 4 to 13 August 2006. It was also discussed at a workshop held on 10 August 2006, which was participated in by more than 100 experts in charge of urban planning and development in Hanoi City. Based on the comments provided by the Steering Committee and the Working Groups, people’s opinions gathered during the exhibition, and comments of experts who attended the workshop, the Draft Master Plan was elaborated. This Report was further revised based on the comments received in subsequent meetings, particularly in the 5th (last) Steering Committee meeting held on 6 February 2007.

2) Composition of the Report

This Final Report is composed of the following:

- A. Summary
- B. Main Text Vol.1 (this Report)
- C. Main Text Vol 2: Prefeasibility Study Reports on Ring Road No. 4 and Urban Mass Rapid Transit Line 2
- D. Main Text Vol. 3: Pilot Project Reports

The following unpublished reports are available as references for future planning work by relevant planning departments of the city government:

- A. Subsector Reports
 - A.1 Urban Planning and Development
 - A.2 Urban Transportation
 - A.3 Urban Water and Sanitation
 - A.4 Living Conditions
- B. Various technical reports (TRs) consolidating the main study outputs.

1.2 Study Background, Objectives, and Coverage

1) Background

Vietnam has been undergoing rapid urbanization associated with strong economic growth, and the trend is expected to continue further. This robust urbanization process has brought both positive and negative impacts all over Vietnam particularly in the Hanoi metropolitan area where both impacts are now being strongly felt. While societies and communities enjoy the fruits of economic prosperity as well as improved access to various services and opportunities, they also bear the brunt of various ill effects of urbanization, such as traffic congestions, traffic accidents, widening gaps in urban services, and worsening living environments. The negative impacts have hit the poor harder and this situation is expected to worsen unless effective measures are taken.

While there have been master plans prepared for various sectors, such as transportation, water, drainage and sewerage, and others, there has been no coordination and collaboration among such sectors, resulting in inconsistencies and inefficiencies in urban development. A comprehensive urban management is thus imperative in order to tackle the emerging urban problems.

Under this context, the Government of Vietnam requested the Government of Japan to conduct a study on comprehensive urban development to help ensure that Vietnam can attain an appropriate and sustainable urban development growth. Thereafter, the Japan International Cooperation Agency (JICA) sent a Preliminary Study Mission headed by Mr. Akira Nakamura to Vietnam in August 2004 to discuss the scope of work including the study area and requirements of the Vietnamese government. The Minutes of the Meeting were signed by the Mission and the Hanoi People's Committee (HPC) on 5 October 2004.

2) Objectives

The primary objective of the study titled, "The Comprehensive Urban Development Programme in Hanoi Capital City" (HAIDEP), is to translate the urban development vision of the capital city of Hanoi into a concrete master plan that will also cover the development of a capable administration that will implement it. The vision of the future Hanoi is rightly stated in the government's Ordinance on Hanoi Capital (Order No.1/2001/L-CTN) which says that Hanoi will be: ***"The heart of the whole country, making it more and more beautiful, civilized and modern; to inherit and promote age-old historical and cultural traditions of Thang Long – Hanoi; to contribute in making the country more beautiful and prosperous."***

Specifically, the study objectives are as follows:

- (a) **To formulate the Comprehensive Urban Development Program (Master Plan) for the Hanoi Metropolitan Area up to 2020:** The main subsectors that are incorporated in the master plan are urban development, urban transportation, urban water and sanitation, and living conditions.
- (b) **To formulate a short-term implementation plan:** On the basis, and as part, of the comprehensive urban development program, a short-term implementation plan was formulated, comprising all projects and actions to be implemented in three to five years.
- (c) **To implement pilot projects:** A number of pilot projects are being implemented to test the applicability of recommended project(s) and policies. The lessons learned from the

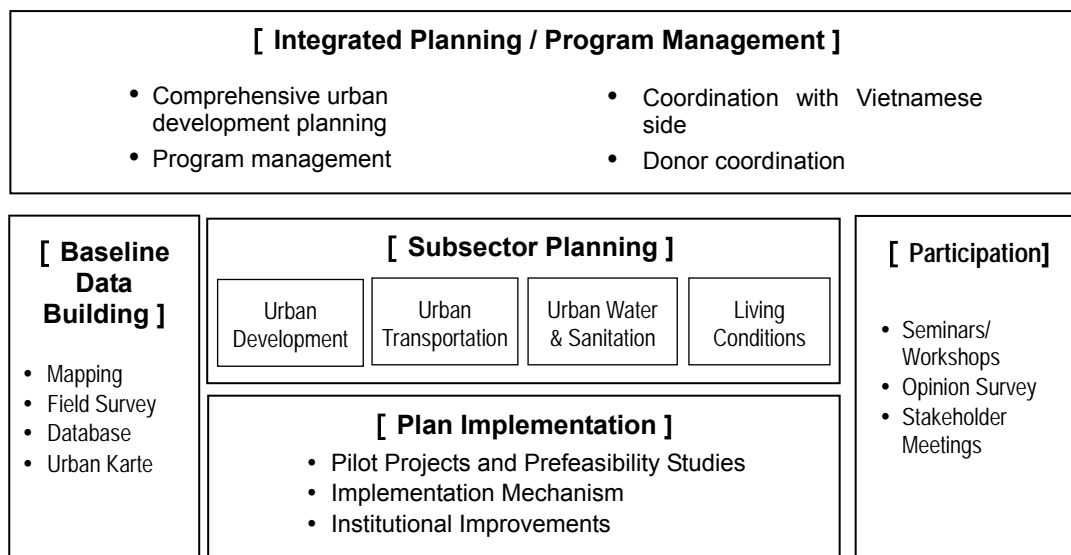
pilot projects will be reflected in the master plan and the short-term implementation plan.

- (d) **To conduct a prefeasibility study on priority urban transportation project(s):** Using a set of criteria, a number of urban transportation project(s) were selected from those included in the master plan for a prefeasibility study.
- (e) **To provide assistance in strengthening administrative capacities to implement the plan:** Necessary assistance toward capacity building in urban planning and development is continuously provided.
- (f) **To promote donor coordination:** Coordination among donors will be done through the “Urban Forum” and the “Transport Partnership Group.”

3) Scope of Work

The contents of the study are specified in the Scope of Work signed by the Mission and the HPC on 5 October 2004. Figure 1.2.1 and Table 1.2.1 summarizes them.

Figure 1.2.1 HAIDEP Study Components



4) Study Area

While the study area was defined in the Scope of Work to cover the areas within a 50-kilometer radius of Hanoi City, this has been expanded to include a total of 16 provinces (comprising the cities of Hanoi and Hai Phong and the provinces of Ha Tay, Vinh Phuc, Bac Ninh, Hai Duong, Hung Yen, Ha Nam, Quang Ninh, Hoa Binh, Bac Giang, Thai Nguyen, Nam Dinh, Thai Binh, Ninh Binh, and Phu To), all of which are in the northern region in order to relate to existing regional plans such as the *Red River Delta Development Plan*, the *Socioeconomic Development of the Northern Key Economic Region till 2010, with a Vision to 2020*, and the *Hanoi Metropolitan Area Development Plan* (see tables 1.2.2 and 1.2.3, as well as figures 1.2.2, 1.2.3 and 1.2.4).

Table 1.2.1 HAIDEP Scope of Work

Work Item	Work Item
<p>1. Urban Development Subprogram</p> <p>1.1 Work for the Urban Development Master Plan</p> <p>(a) review and analysis of the existing plans and basic data for city planning (ie population, industry structure, existing land use, etc).</p> <p>(b) supplementary survey to collect data and information.</p> <p>(c) review and analysis of the current implementation system (ie structure, capacity, legal system, budget, etc.).</p> <p>(d) finalization of the urban planning concept</p> <p>(e) development of land-use plan (ie housing area, commercial area, industrial area, other areas such as cemeteries, etc.).</p> <p>(f) formulation of an urban facilities plan (transportation facility, water and sanitation, parks and open space, etc.).</p> <p>(g) preliminary cost estimating, as well as implementation, and investment plans.</p> <p>(h) social, economic, and environmental impact assessment.</p> <p>(i) identification and prioritization of projects.</p> <p>1.2 Work for the Short-term (3-5 years) Implementation Plan</p> <p>(a) formulation of the short-term implementation plan, aiming at institutional capacity building.</p> <p>(b) implementation of parts of the short-term implementation plan.</p> <p>(c) suggestions for a smooth implementation of the master plan.</p> <p>1.3 Work Added</p> <p>(a) formulation of a draft regional plan that would serve as an input to the HMA development plan being formulated by MOC.</p> <p>2. Urban Transportation Subprogram</p> <p>2.1 Work for the Urban Transportation M/P</p> <p>(a) review and analysis of existing plans (including relevant existing data, information, etc.).</p> <p>(b) collection of data and information (ie supplementary traffic survey, household interview survey, cordonline interview survey, etc.).</p> <p>(c) traffic demand analysis (ie trip modal split analysis, projection of future trips, etc.).</p> <p>(d) formulation of basic transportation planning concepts and strategies.</p> <p>(e) formulation of master plan, including:</p> <ul style="list-style-type: none"> • road improvement and construction plan • public transportation plan • traffic demand management plan • related transportation plans (railway, inland waterway, airport) • economic and social analyses • financial analysis • implementation plan • suggestions for smooth implementation of the master plan (incl. institutional building and improvement of the current legal system, etc.). 	<p>2.2 Work for the Prefeasibility Study</p> <p>(a) identification and prioritization of projects.</p> <p>(b) conduct of preliminary design and cost estimating.</p> <p>(c) conduct of environmental impact examination.</p> <p>3. Urban Water and Sanitation Subprogram</p> <p>3.1 Work for the Water Supply Improvement Plan</p> <p>(a) data collection, field survey, and existing system survey.</p> <p>(b) review of existing water supply plans.</p> <p>(c) review of completed and ongoing projects.</p> <p>(d) analysis of current situation and problems with existing plans.</p> <p>(e) analysis of water resource capacities.</p> <p>(f) revision of water supply master plan.</p> <p>(g) social, economic, and environmental analyses.</p> <p>(h) formulation of the implementation plan.</p> <p>(i) formulation of the action plan for the water supply sector</p> <p>3.2 Work for Sanitation Improvement Plan</p> <p>(a) data collection, field survey, and existing system survey.</p> <p>(b) review of existing plans relevant to sanitation improvement.</p> <p>(c) review of completed and ongoing projects.</p> <p>(d) analysis of current situation and problems</p> <p>(e) revision of the master plan on drainage, sewerage, and wastewater.</p> <p>(f) social, economic, and environmental analyses.</p> <p>(g) formulation of the implementation plan.</p> <p>3.3 Work Added</p> <p>(a) study on lakes and ponds.</p> <p>(b) study on flood control.</p> <p>4. Living Conditions Subprogram</p> <p>4.1 Work for Housing Plan</p> <p>(a) review of existing plans related to the project.</p> <p>(b) review of completed and ongoing projects.</p> <p>(c) data collection, field survey, and survey of existing housing development system.</p> <p>(d) analysis of current situation and problems with existing plans.</p> <p>(e) Prioritization of cooperation project(s) on housing development.</p> <p>4.2 Work for the Green Spaces and Landscape Plan</p> <p>(a) review of relevant plans.</p> <p>(b) review of completed and ongoing projects.</p> <p>(c) data collection, filed survey, and survey of existing green and landscape planning system.</p> <p>(d) analysis of current situation and problems with existing plans.</p> <p>(e) prioritization of cooperation project(s) on green and landscape planning.</p>

Table 1.2.2 Profile of the HAIDEP Study Area

	Area (km ²)	Population (000)			Population Density (no./km ²)	Economic Indicator (2004)		Social Indicator (1999)		
		1999	2005	Growth Rate (%)		GRDP (mil. US\$)	GRDP/Capita (US\$)	HDI ¹⁾	HPI (%) ²⁾	
Study Area	Hanoi	921	2,672	3,183	2.9	3,456	3,135	1,015	0.80	11.1
	Surrounding Provinces ³⁾	35,334	19,623	20,425	1.0	578	7,448	361	0.68	17.0
	Study Area Total	36,255	22,295	23,432	1.3	646	10,584	446	0.69	16.6
NFEZ ⁴⁾	15,288	12,488	13,217	1.4	865	7,588	564	0.71	15.6	
RRD ⁵⁾	12,632	14,700	15,529	1.4	1,229	7,524	479	0.71	16.0	
HMA ⁶⁾	13,377	11,260	12,015	1.6	898	6,085	499	0.70	16.5	
Vietnam	329,297	76,597	80,902	1.4	246	45,297	552	0.70	20.1	
Share of Hanoi (%)	Study Area	2.5	12.0	12.8	-	-	29.6	-	-	-
	NFEZ	6.0	21.4	22.8	-	-	41.3	-	-	-
	RRD	7.3	18.2	19.4	-	-	41.7	-	-	-
	HMA	6.9	23.7	25.0	-	-	51.5	-	-	-
	Vietnam	0.3	3.5	3.7	-	-	6.9	-	-	-

Source: GSO, 2000 and 2004; AREES, 2005; UNDP, 2001.

- 1) The human development index (HDI) is a composite index developed by the UNDP to measure the achievement of human development, covering life expectancy, adult literacy rate, and per capita GDP. A higher index means a higher level of human development.
- 2) The human poverty index (HPI) is a composite index developed by the UNDP to measure deprivations in three basic dimensions – long and healthy life, knowledge, and a decent standard of living – and captures social exclusion. A lower value means a more improved condition.
- 3) Ha Tay, Vinh Phuc, Bac Ninh, Hung Yen, Thai Nguyen, Hai Duong, Bac Giang, Hai Phong, Quang Ninh, Phu Tho, Hoa Binh, Ha Nam, Ninh Binh, Nam Dinh, Thai Binh provinces. Data as of 2003.
- 4) 8 provinces (Hanoi, Ha Tay, Vinh Phuc, Hung Yen, Hai Duong, Bac Ninh, Hai Phong, Quang Ninh) as of 2003.
- 5) 9 provinces (Hanoi, Ha Tay, Ha Nam, Hung Yen, Hai Duong, Hai Phong, Ninh Binh, Nam Dinh, Thai Binh) as of 2003.
- 6) 8 provinces (Hanoi, Ha Tay, Vinh Phuc, Hoa Binh, Ha Nam, Hung Yen, Hai Duong, Bac Ninh) as of 2003.

Figure 1.2.2 HAIDEP Study Area at the Regional Level

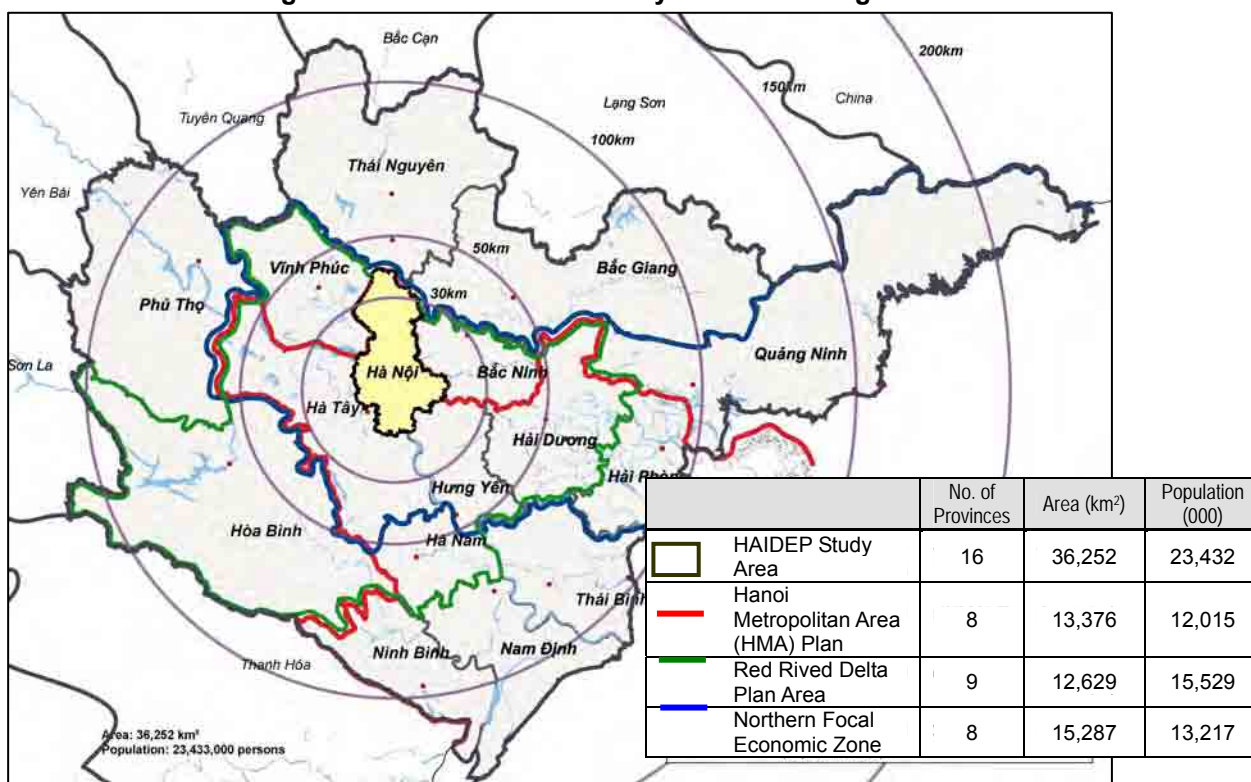


Figure 1.2.3 Hanoi Metropolitan Area

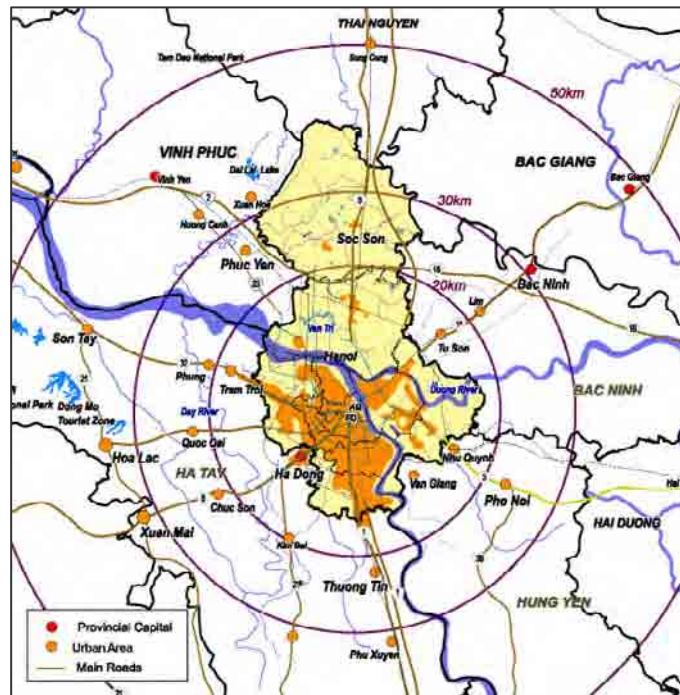
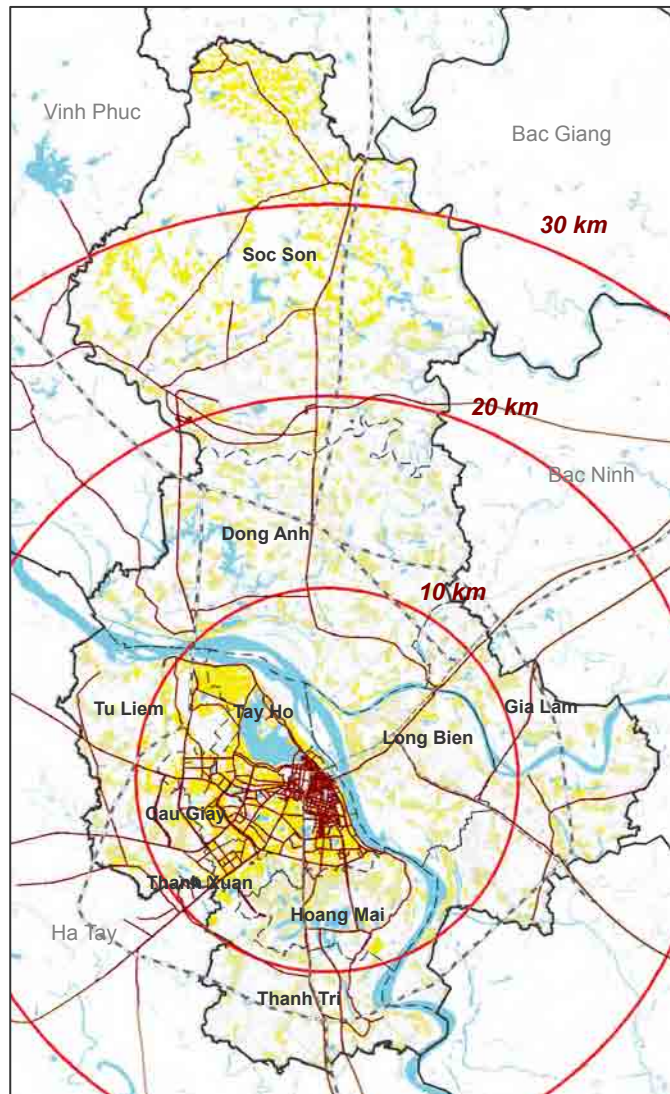


Figure 1.2.4 HAIDEP Study Area at the City Level



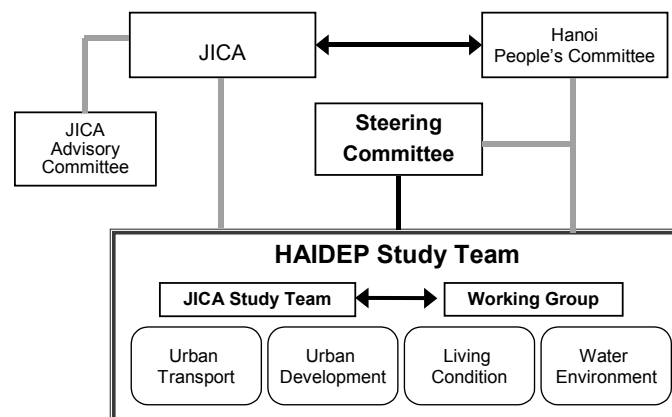
1.3 Study Process

1) Study Organization

The HAIDEP Study involves comprehensive planning that requires good and effective coordination among various organizations at different levels and sectors. At the central government level, the components are: the Ministry of Construction (MOC), Ministry of Transport (MOT), Ministry of Finance (MOF), Ministry of Planning and Investment (MPI), Ministry of Natural Resources and Environment (MONRE), and Ministry of Agriculture and Rural Development (MARD). At the provincial level, the components are the 14 provinces of Bac Giang, Bac Ninh, Ha Nam, Ha Tay, Hai Duong, Hoa Binh, Hung Yen, Nam Dinh, Ninh Binh, Phu To, Quang Ninh, Thai Binh, Thai Nguyen, and Vinh Phuc. At the city level, the areas covered are both Hai Phong City and Hanoi City. For Hanoi, the key departments of HPC involved in the study are: the Hanoi Authority for Planning and Investment (HAPI); Hanoi Authority for Urban Planning and Architecture (HAUPA); Department of Natural Resources, Environment, and Land (DONRE); and Department of Construction (DOC).

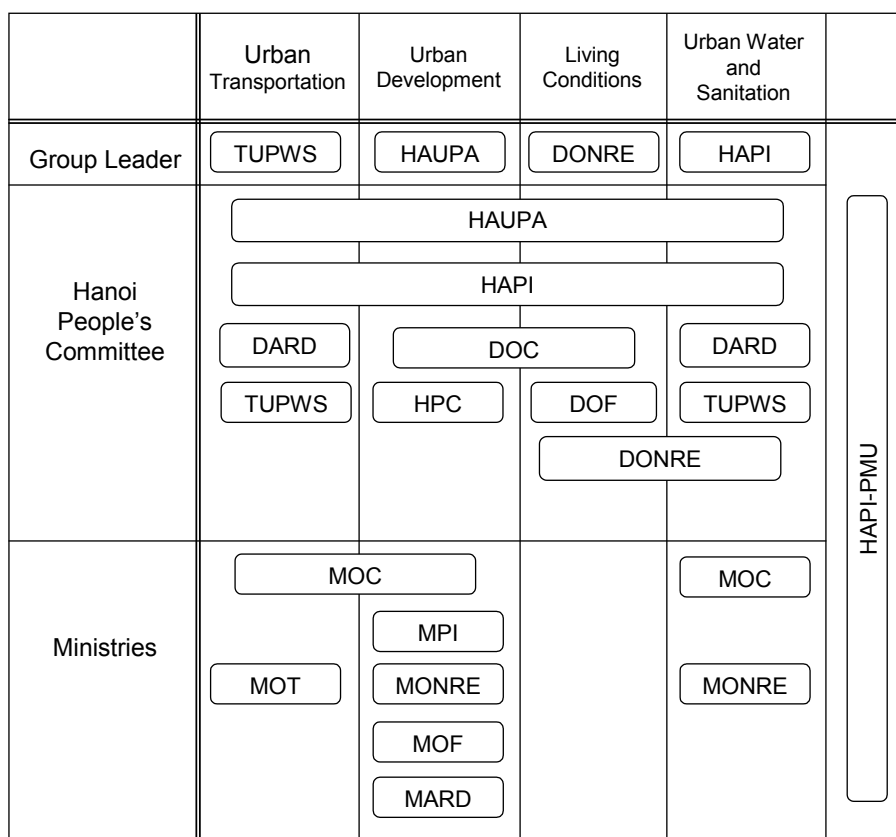
In order to facilitate the progress of the study, a coordination mechanism was formulated at the beginning of the study, comprising the JICA Study Team, the Steering Committee, and the Working Groups (see Figure 1.3.1).

Figure 1.3.1 Study Team Organization



- (a) **Steering Committee:** The study's Steering Committee is headed by the HPC Vice Chairman, Mr. Do Hoang An, and has eight members comprising the the vice ministers of MOC, MONRE, MOT, MARD, and MOF, as well as the directors of MPI and HAUPA. SC meetings were organized to guide the study and decide on key problems. SC members are listed in Table 1.3.1.
- (b) **Working Groups:** To form a joint study team, the Steering Committee organized a working group for each of the four subsectors. The working groups, whose members total 62, are each composed of experts from the various departments of HPC and the central government ministries. Figure 1.3.2 and Table 1.3.2 shows the composition of the working groups.
- (c) **JICA Study Team:** The JICA Study team is a joint venture of ALMEC Corporation, Nippon Koei Co. Ltd., and Yachiyo Engineering Co. Ltd.. Dr. IWATA Shizuo, program manager, heads the team which has 58 experts, as listed in Table 1.3.3. JICA and its advisory team administers over and provides the Team with advice.

Figure 1.3.2 Composition of Working Groups



Note: HAUPA: Hanoi Authority for Urban Planning and Architecture
 TUPWS: Department of Transport and Urban Public Works Services
 DONRE: Department of Natural Resources and Environment
 HAPI: Hanoi Authority for Planning and Investment
 DARD: Department of Agriculture and Rural Development
 DOC: Department of Construction
 DOF: Department of Finance
 MOC: Ministry of Construction
 MOT: Ministry of Transportation
 MPI: Ministry of Planning and Investment
 MOF: Ministry of Finance
 MARD: Ministry of Agriculture and Rural Development
 MONRE: Ministry of Natural Resources and Environment

Table 1.3.1 Steering Committee Members

Name	Designation
1. Mr. Do Hoang An	Vice Chairman, Hanoi People's Committee (HPC)
2. Mr. Dang Hung Vo	Vice Minister, Ministry of Natural Resources and Environment (MONRE)
3. Mr. Nguyen Cong Nghiep	Vice Minister, Ministry of Finance (MOF)
4. Mr. Pham The Minh	Vice Minister, Ministry of Transport (MOT)
5. Mr. Tran Ngoc Chinh	Vice Minister, Ministry of Construction (MOC)
6. Mr. Pham Thanh Tam	Deputy Director, Regional Local Economy Dept., Ministry of Planning and Investment (MPI)
7. Mr. Trieu Dinh Phuc	Director, Hanoi Authority for Planning and Investment (HAPI)
8. Mr. Dao Ngoc Nghiem	Director, Hanoi Authority for Urban Planning and Architecture (HAUPA) (up to 2005)
9. Mr. To Anh Tuan	Director, Hanoi Authority for Urban Planning and Architecture (HAUPA) (2005 to date)

Table 1.3.2 Working Group Members

Name	Designation
Urban Development Working Group	
1. Mr. Dao Ngoc Nghiem (Head)	Director, HAUPA (up to 2005)
2. Mr. To Anh Tuan (Head)	Director, HAUPA (2006 to date)
3. Mr. Do Viet Chien	Deputy Director, Construction Planning Institute, HAUPA
4. Mr. Nguyen Tuan Khai	Deputy Director, HAUPA
5. Mr. Le Manh Cuong	Chief, Architecture Planning Study Division, HAUPA
6. Mr. Trieu Dinh Phuc	Deputy Director, HAPI
7. Mr. Tran Minh Quang	Manager, Project Management Unit (PMU), HAPI
8. Mr. Nguyen Huy Anh	Chief, Urban Planning Division, HAPI
9. Mr. Le Ngoc Minh	Chief, Appraisal Division, HAPI
10. Mrs. Nguyen Minh Ha	Expert, PMU, HAPI
11. Mr. Do Xuan Anh	Director, Hanoi Construction Dept. (DOC)
12. Mr. Nguyen The Hung	Deputy Director, DOC
13. Mr. Ha Duc Trung	Deputy Director, Hanoi Agriculture and Rural Development Dept. (DARD)
14. Mr. Nguyen Bich Ngoc	Expert, Construction Group, HPC
15. Mr. Nguyen Phu Duc	Expert, Construction Group, HPC
16. Mr. Luu Trong Bat	Expert, Regional Local Economy Dept., MPI
17. Ms. Pham Thu Nga	Expert, Architecture Planning Dept., MOC
18. Mr. Do Duc Doi	Deputy Director, Land Registration & Statistic Dept., MONRE
19. Mr. Nguyen Van Thuy	Deputy Chief, Investment Dept, MOF
20. Mr. Vu Manh Dung	Expert, Investment Dept., MOF
21. Mrs. Pham Thi Tuoc	Deputy Director, Planning Dept., Min. of Agriculture & Rural Devt. (MARD)
22. Mr. Dao Quoc Luan	Expert, Planning Dept., Min. of Agriculture & Rural Devt. (MARD)
Urban Transportation Working Group	
1. Mr. Tran Danh Loi (Head)	Deputy Director, Dept. of Transport Urban Public Works (TUPWS)
2. Mr. Pham Hoang Tuan	Deputy Chief, Planning Investment Division, TUPWS
3. Mr. Van Tan Ho	Director, Construction Planning Institute, HAUPA
4. Mr. Hoàng Anh Tuan	Deputy Chief, Architecture Planning Division 2, HAUPA
5. Mr. Tran Xuan Bach	Deputy Director, PMU, HAPI
6. Mr. Tran The Phuong	Deputy Chief, Urban Planning Division, HAPI
7. Mr. Le Vu Dung	Expert, Appraisal Division, HAPI
8. Mr. Thieu Quang Hai	Expert, General Affairs and Planning Division, HAPI
9. Mr. Nguyen Chi Manh	Expert, PMU, HAPI
10. Mr. Nguyen Sy Luu	Chief, Planning Division DARD
11. Mr. Vu Dang Hung	Expert, Architecture Planning Dept., MOC
12. Mr. Nguyen Ngoc Dong	Deputy Director, Planning Investment Dept., MOT
Urban Water and Sanitation Working Group	
1. Mr. Tran Duc Vu	Vice Director, HAPI
2. Mr. Nguyen Minh Thuan	Manager, Dept. for International Loan and Assistance, HAPI
3. Mr. Luong Hoai Nam	Deputy Chief, Appraisal Division, HAPI
4. Mr. Tran Thi Kim Dung	Expert, Urban Planning Division, HAPI
5. Mr. Vu Thanh Cong	Expert, PMU, HAPI
6. Mr. Nguyen Truong Quyen	Expert, PMU, HAPI
7. Mr. Dang Duong Binh	Chief, Environmental Management Division, DONRE
8. Mr. Le Vinh	Deputy Director, Construction Planning Institute, HAUPA
9. Mr. Nguyen Van Ha	Deputy Chief, Architecture Planning Division 1, HAUPA
10. Mr. Le Huy Hoang	Chief, Planning Investment Division, TUPWS
11. Mr. Le Hong Quan	Expert, Planning Investment Division, TUPWS
12. Mr. Nguyen Hong Tien	Deputy Director, Urban Infrastructure Dept., MOC
13. Mr. Hoang Ngoc Phuong	Expert, Land Registration & Statistics Dept., MONRE
Living Conditions Working Group	
1. Mr. Trinh Kien Dinh (Head)	Deputy Director, DONRE
2. Mr. Nguyen Trong Dong	Deputy Chief, General Affair and Planning Division, DONRE
3. Mr. Hoang Dinh Tuan	Chief, Architecture Planning Division 2, HAUPA
4. Mr. Bui Manh Tien	Deputy Chief, General Affair and Planning Division, HAUPA
5. Mr. Tran Khanh Hung,	Expert, Urban Planning Dept., HAPI
6. Mr. Nguyen Bac Quan	Expert, Appraisal Division, HAPI
7. Mr. Le Sinh Tien	Expert, International Loan and Assistance Division, HAPI
8. Mr. Ta Ngoc Khue	Expert, PMU, HAPI
9. Mr. Le Van Phuc	Deputy Chief, General Affair and Planning Division, DOC
10. Mr. Nguyen Dinh Giang	Expert, General Affair and Planning Division, DOC
11. Mr. Nguyen Quang Thanh	Deputy Director, Hanoi Financial Dept.
12. Mr. Bui Xuan Dam	Deputy Director, Hanoi Financial Dept.
13. Mr. Nguyen Duy Phong	Chief, Urban Transport Division, Hanoi Financial Dept.
14. Ms. Vu Thi Bich Ha	Deputy Chief, Urban Transport Division, Hanoi Financial Dept.

Table 1.3.3 JICA and Study Team Members

Name	Designation
JICA and JICA Advisory Committee	
1. Mr. ONISHI Takashi (Dr. Engr.)	Professor, University of Tokyo JICA, Advisory Committee for Urban and Regional Development Sector
2. Mr. NAKAMURA Akira	Group Leader, Group II (Urban and Regional Development /Reconstruction) Soc. Devt. Dept., JICA
3. Mr. SANJO Akihito	Urban and Regional Development /Reconstruction Team I, Group II, Soc. Dvt. Dept., JICA (up to 2006)
4. Mr. KIKUCHI Fumio	Residential Representative, JICA Vietnam (up to 2006)
5. Mr. NAKAGAWA Hiroaki	Residential Representative, JICA Vietnam (2006 to date)
6. Mr. IZAKI Hiroshi	Deputy Residential Representative, JICA Vietnam
7. Mr. TOJO Yasuhiro	Deputy Residential Representative, JICA Vietnam
8. Mr. KOMORI Katsutoshi	Deputy Resident Representative (2003-2006), JICA Vietnam Urban and Regional Development /Reconstruction Team I, Group II, Soc. Dvt. Dept., JICA (2006 to date)
9. Mr. KOBAYASHI Kenichi	Deputy Resident Representative (2006 to date), JICA Vietnam
10. Mr. Phan Le Binh	Program Officer, JICA Vietnam office
JICA Study Team	
1. Mr. IWATA Shizuo (Dr. Engr.)	Program Manager /Comprehensive Urban Development
2. Mr. SEKI Yosui	Project Coordinator
3. Ms. IDEI Rika	Project Coordinator (2) / Water Supply Operation (2)
4. Mr. KOKUFU Yutaka	Geographic Information Development
5. Mr. HOSOMI Akira (Dr. Engr.)	Transport Survey
6. Mr. ARAKAWA Koichi	Transport Survey (2)
7. Mr. IIO Akitoshi	Natural Environmental Survey
8. Ms. KANEKO Motoko	Urban/Social Survey and Analysis/ Project Coordinator (3)
9. Mr. OKAMURA Naoshi	Data Processing / Demand Analysis
10. Mr. Mazhar IQBAL	Data Processing / Demand Analysis (2)
11. Mr. WAKUI Tetsuo	Economic / Financial Analysis
12. Mr. AOKI Tomoo	Environmental and Social Consideration
13. Ms. Beulah PALLANA	Resettlement
14. Mr. Dang Nguyen Anh	Resettlement 2
15. Mr. Hoang Huu Phe (Dr. Engr)	Urbanized Area Preservation
16. Mr. Mai Trong Nhuan (Dr. Engr.)	Land-related Problem/Urban Disaster /Flood Control
17. Ms. ABE Tomoko	Pilot Project
18. Mr. IWASAKI Masayoshi	Project Implementation Models
19. Mr. HAYASHI Kiyotaka	Subprogram Manager (Urban Development)
20. Mr. Philipose PHILIPS	Urban Planning / Institutions / Land Management
21. Mr. TANAKA Kenji	Land Use Planning
22. Mr. Joel CRUZ	Land Use Planning (2)
23. Ms. Anna M.S. TERNELL	Socio-economy / Financing
24. Mr. TOKURA Masaru	Infrastructure Development Planning
25. Mr. NAGAI Yasutaka	Regional Planning
26. Mr. KUSANO Makine	District Planning / Detail Land Use Planning
27. Mr. KOJIMA Masaaki	Land Readjustment
28. Mr. UESUGI Hidetaka	Architecture Planning
29. Mr. AOKI Seiichi	Industrial Development Planning
30. Mr. SHOYAMA Takashi	Subprogram Manager (Urban Transport)
31. Mr. Hans ORN	Transport Planning
32. Mr. Alistair W. KNOX	Public Transport Planning
33. Mr. TAKAGI Michimasa	Road Planning / Traffic Safety
34. Mr. NAGAI Takayasu	Transport Facility Planning
35. Mr. MATSUOKA Seiya	Traffic Management Planning
36. Mr. IZAWA Hiroshi	Traffic System Planning / Design
37. Mr. HONMA Kazufumi	Cost Estimate / Construction Plan
38. Mr. MISHIMA Teruki	Basic Design (Railway 1)
39. Mr. TAKAYAMA Tsuyoshi	Basic Design (Railway 2)
40. Mr. NISHIKATSU Yoshiaki	Basic Design (Road)
41. Mr. Alan CLOVER	Operation Planning
42. Mr. SUZUKI Tadao	Electricity/ Signal/ Communication Planning
43. Mr. Alan MORRIS	Station Facility Planning
44. Mr. John R. GRETTON	Rolling Stocks Planning
45. Mr. MATSUMURA Shigehisa	Subprogram Manager (Living Conditions) / Housing Planning
46. Mr. ASAKURA Isamu	Living Environment Planning
47. Mr. NOGUCHI Tetsuo	Living Environment Planning (2)

Name	Designation
48. Mr. KODAMA Ken	Building-Code Management
49. Mr. NISHIMURA Yoichi	Greenery Planning
50. Mr. AIZAWA Masayuki (Dr. Engr.)	Landscape Planning
51. Mr. SHIMIZU Fumio	Landscape Planning (2) / Urban Design
52. Mr. HASHIMOTO Kazuharu	Subprogram Manager (Water Environment) / Water Supply Planning
53. Mr. TSUBOI Yukimasa	Water Supply Facility Planning
54. Mr. OGINO Masayuki	Water Resource Development/Assessment
55. Mr. DOYA Mitsuhiro	Water Supply Operation
56. Mr. FUJII Masayuki	Sewerage and Drainage Planning
57. Mr. MIYAKE Akihiro	Sewerage and Drainage Facility Planning
58. Mr. TSUTA Hideo	Lake Management

Table 1.3.4 HAIDEP National Consultants

Name	Designation
1. Mr. Nguyen Toai	Transport Planner
2. Mr. Nguyen Dinh Nghien	Road Expert
3. Mr. Nguyen Van Du	Senior Advisor
4. Dr. Nguyen To Lang	Architect- Urban Planner
5. Mr. Tran Dinh Tuan	Institutional Expert
6. Ms. Tran Thi Thanh Tam	Economist
7. Dr. Pham Thuy Loan	Urban Planner
8. Ms. Dao Thi Minh Ngoc	Architect
9. Dr. Pham Hung Viet	Expert on Environmental Chemistry & Environmental Monitoring
10. Dr. Vu Quyet Thang	Expert on Environmental Impact Assessment
11. Mr. Trinh Duy Luan	Sociologist
12. Mr. Nguyen Xuan Mai	Sociologist
12. Dr. Pham Khanh Toan	Architect- Urban Design Expert
13. Dr. Do Minh Duc	Expert on Geoenvironment
14. Dr. Nguyen Minh Son	Architect
15. Ms. Tran Thi Thu Thuy	Sociologist

2) Coordination with Vietnamese Counterparts

(1) Subsectors

Since the commencement of the study, the HAIDEP Study Team had continuous and regular discussions and meetings with the Steering Committee and the four Working Groups. There were five Steering Committee meetings, three plenary working group meetings, four Urban Development Working Group meetings, eight Transportation Working Group meetings, eight Urban Water and Sanitation Working Group meetings, and five Living Conditions Working Group meetings (see Appendix 1A).

In addition, the Study Team met with the officers and key personnel of relevant agencies to discuss relevant policies and strategies, future development orientations and plans, and main issues and concerns of each subprogram of the study (see Appendix 1B).

(2) Regional Plans

In view of the significant role and influence of Hanoi City in the region, HAIDEP referred to existing regional plans such as the *Red River Delta Development Plan* and the *Socioeconomic Development of the Northern Key Economic Region till 2010, with a Vision to 2020*, as well as the ongoing planning work on the *Hanoi Metropolitan Area Development Plan* by MOC's NIURP to ensure the consistency of the development framework for Hanoi City and the Hanoi region.

3) Coordination with Donors

Since various donor-assisted projects and studies had been and are being undertaken in the Hanoi region, coordination among donors is critical for an effective, sustainable, and comprehensive urban development. Hence the HAIDEP Study Team met with donor agencies during the course of the study.

In addition to the existing donor coordination mechanisms, such as the Transport Partnership Group and the Urban Forum, the Study Team conducted individual discussions with each project team, including the “Bus Rapid Transport Project” of the World Bank (WB), the tram way project of the French government, the “Low-Income Housing Financing Project” of the Asian Development Bank (ADB), the “Red River Surface Water Development Project” of the Austrian government, and the “Infrastructure Improvement Project” and “Urban Drainage Improvement Project” of the Japan Bank for International Cooperation (JBIC), among others.

(1) Urban Forum

In Vietnam’s urban sector, the Urban Forum chaired by MOC and the World Bank has provided a venue for discussing various issues on urban planning and development and for exchanging information on donor activities. Since JICA is a member, the HAIDEP Study Team participated in Urban Forum meetings for easier coordination with other donors.

(2) Transport Partnership Group

Since its establishment in 2000, the Transport Partnership Group has consolidated the information and the experiences gained from projects and programs to gather support and improve project/ program effectiveness. Discussions are also held on policy issues to ensure that the Vietnamese government’s policies and strategies are aligned with those of donor-funded transportation projects/programs.

At the Transport Partnership Group meeting in July 2005, the HAIDEP Study Team explained the overall framework and progress of HAIDEP. Another meeting was held in November 2005 wherein the Study Team apprised the group with the latest study results. In addition to this general meeting, individual discussions have been held with donor agencies, including the World Bank, the French government, and others. At the latest meeting in May 2006, the Group was provided with the draft urban development master plan for Hanoi City.

4) Stakeholder Participation

During the course of the study, the participatory approach was adopted in dealing with all stakeholders, ranging from common citizens, project-affected people, and government officers, to urban planning experts. The participatory approach was reflected in the following schemes adopted by the study, as follows:

- (a) **Household Interview Survey:** A total of 20,000 households and their members were interviewed to determine their socio-economic characteristics and opinions on existing urban services, such as access to urban services, transport conditions, and others, as well as future development orientations.
- (b) **Workshops, Meetings, and Interviews:** The HAIDEP Study Team visited various related agencies, including ministries, city authorities, and provincial governments, state-owned enterprises (SOEs), and private developers that are involved in urban planning and development in Hanoi City in order to further understand the current problems and issues from the stakeholders’ points of view. Workshops and seminars were also organized periodically as well as a series of working group meetings.
- (c) **Community Participation:** Participation of project-affected residents was introduced in the pilot project on the “Sustainable Development of the Ancient Quarter.” A working group was organized comprising local government (*phuong*) leaders and

representatives of residents. Through a number of meetings, current problems and issues were discussed, based on which the vision, strategies, and action plans were formulated.

- (d) **Exhibition:** Prior to finalizing the Master Plan, an exhibition was organized to hear the voices of the people on the main findings of the HAIDEP Study; the identified issues in Hanoi City's development; the proposed vision, goals, and strategies for the city's development; as well as the proposed policies, actions, and projects worked out in the study. The exhibition was held at the Trang Tien Exhibition Hall on 4-13 August 2006, with more than 7,200 visitors viewing the exhibition and about 2,000 answering the questionnaire prepared by the Study Team. The exhibition, the first such an undertaking was done in the field of master planning for Vietnam, was successful in making the study outputs and proposed plans more accessible to the public and in involving them in the decision-making process.



(Far left) Deputy Prime Minister and Politburo member Mr. Nguyen Sinh Hung discusses the proposed plan.

(Left) HPC chairman and Central Party Committee member Mr. Nguyen Quoc Trieu (left) and JICA Vietnam resident representative Mr. Fumio Kikuchi (right) discuss the vision of Hanoi City.



< (Front, L-R) HAUPA director Mr. To Anh Tuan, Hanoi Party sec-gen. Mr. Pham Quang Nghi, HPC vice chairman Mr. Do Hoang An, and HAPI director Mr. Trieu Dinh Phuc read the proposed implementation mechanism for the master plan.



Note: Pictures were taken by the HAIDEP Study Team.

2 CONTEXT AND ISSUES

2.1 Brief History of Urban Development in Hanoi

1) Origin of Hanoi

Hanoi's origin dates back to more than 2,000 years when the capital of the Au Lac dynasty, which lasted for only 50 years, was Co Loa. The ensuing thousand years witnessed the rise and fall of various dynasties that brought with them changes in the location of the capital as well. In 939, Co Loa became the capital again when Ngo Quyen took power. In 968, the capital was moved to Hoa Lu by Dinh Bo Linh. In 1010, Ly Thai To started his reign and transferred the capital to Dai La which was later renamed Thang Long. The Thang Long citadel developed on the right bank of the Red River. Its commercial center is now called the Ancient Quarter. In the 15th century, the Hanoi citadel (a new royal citadel) was constructed on the site of the former Thang Long citadel and it reigned for over 460 years until it was pulled down in 1895.

In 1010 (year of Canh Tuất), Ly Thai To, the first king of the Ly dynasty, moved the capital from Hoa Lu to Dai La citadel and named the new capital Thang Long (Soaring Dragon). Thang Long capital under the Ly dynasty had 61 guilds and 13 stations of agricultural production established within the citadel's ring walls, the outer ring of which was La Thanh, 30 km long and used as the defending rampart as well as dyke against flood. Inside this wall was the Imperial City with many streets, guilds, markets, and houses. People made their living mainly through handicraft production and trade. The second citadel wall was the Royal Citadel, which was built with bricks and protected the residence of the feudal power. Inside the Royal Citadel there was the Forbidden City which was exclusively for the King and the royal families. The Thang Long Royal Citadel had four gates: Tuong Phu in the east, Dieu Duc in the north, Quang Phuc in the west, and Dai Hung in the south. In the Royal Citadel and Forbidden City there were palaces, houses, and stores to serve the members of the royal court, the mandarins, and the aristocracy.

The Tran dynasty, following the Ly in 1225, continued to reside in Thang Long, constructed Dai La imperial city and upgraded the Royal Citadel with unique architecture. In 1397, the Tran dynasty declined. Ho Quy Ly, with the conspiracy of deposing King Tran in mind, forced the King to move the capital to Vinh Loc (Thanh Hoa province), constructing there a new capital called Tay Do, and changing Thang Long into Dong Do. In 1407, the Minh invaded Viet Nam, took possession of Dong Do and changed it to Dong Quan. Until 1428, when Le Loi defeated the Minh, Thang Long was chosen again to be the capital of Le Loi (throned as King Le Thai To), but changed the name to Dong Kinh. At that time, the Royal Citadel had 3 gates: east gate, south gate, and Bao Khanh gate (the area of the current Bao Khanh and Giang Vo lakes).

In 1527 the Mac usurped the throne of the Le and the capital returned to the old name, Thang Long, but the architectural appearance did not change. In 1592, the Trinh Lord seized the capital and under the Le-Trinh the court only took care of the construction of the lord's palace outside of the citadel, leaving the Royal Citadel and the Forbidden City in ruins. In 1802, Gia Long founded the Nguyen dynasty and resided in Hue. Thang Long was left to be the capital city of the 11 northern provinces.

In 1831, Minh Mang King changed Thang Long into Ha Noi, capital city of the contemporary Ha Noi Province. In 1805, the Nguyen rebuilt Ha Noi citadel following the

model of France, basically as a square with kilometer-long edges that ran in tortuous angles. Outside was a 16-meter wide and 5-meter deep water trench and inside was a 4-meter high and 16-meter thick citadel wall.

Developing in contrast to the Hanoi citadel, there was the area of the “36 Guilds,” situated in the east and stretching from the east gate to the Red River. The old popular name of this marketplace indicated the most important function of the Ancient Quarter. The guild, when first established, was the living quarter for those who came from the northern delta villages. They brought with them their trades, lifestyles, customs, and traditional building techniques. Urban guilds were organized and built fully enclosed, separated from each other by big gates.

In 1883, France’s colonization of Vietnam began and the French Indochina Union was born. Hanoi became the capital of French Indochina during 1902 - 1953. During 1894 - 1897, after completing the invasion of Vietnam, the French had leveled out the citadel for the planning and construction of Hanoi streets as seen today. From the citadel of the Nguyen dynasty and the relic of the ancient Thang Long - Dong Do - Ha Noi are left the Doan Mon gate, the north gate, the base and footpaths of Kinh Thien Palace, as well as the flag tower.

The French Quarter was developed and major structures, such as the Long Bien Bridge, the post office, and the Opera House, were constructed. The population of Hanoi during the French occupation was about 150,000. Up to the end of the 19th century, France exercised a lake-centered planning and expanded the city area from the Hanoi citadel and the Ancient Quarter toward the southeast. Throughout the centuries, Hanoi’s population never exceeded 400,000.

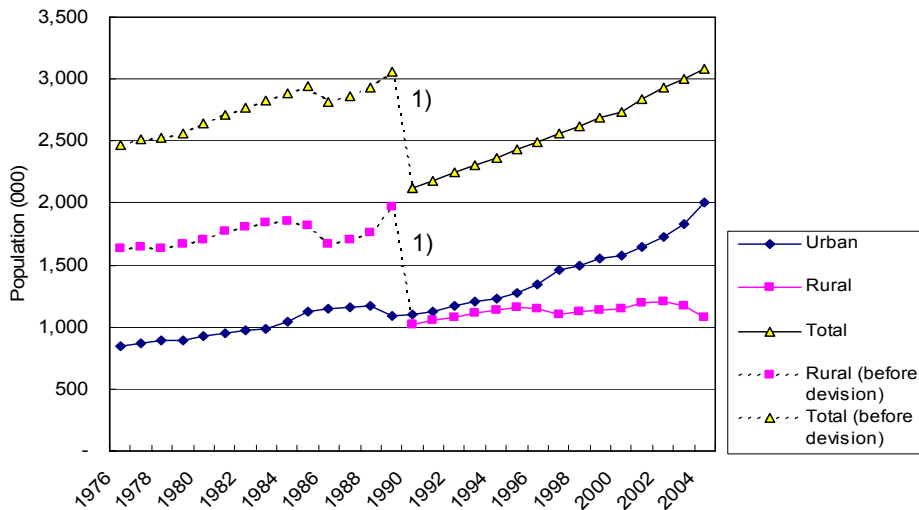
In 1946, the Vietnamese Democratic Republic was formed and Hanoi was declared as its capital. Hanoi went through the Indochina War and then the Vietnam War. Since 1976 Hanoi has served as the capital of the Socialist Republic of Vietnam.

2) Urban Development and Population Growth

Although Hanoi has been endowed with great potentials for urban growth, the government policy of de-urbanization or dispersal of population and industries from Hanoi during the war era limited its urban growth and urban population. In 1965, Hanoi’s total population reached 1 million. It did not exceed this figure up to the 1980s because of two factors: (i) the continued control on rural to urban migration even after the war and the reunification in 1975, and (ii) the economic crisis brought about by the wars and the inflation in the 1980s (see Figure 2.1.1).

The Doi Moi (economic reform) policy declared in 1986 was implemented in the following years, triggering an urban population explosion in Hanoi from the early 1990s to date and resulting in an urban population of 2 million in less than a decade. Total population increased at an average annual rate of 3.2% between 1990 and 1995 and 3.1 % between 1995 and 2005 with in-migration from other provinces and cities and rural-to-urban transfers.

Figure 2.1.1 Population Growth of Hanoi



Source: HAIDEP Study Team.

1) In 1990, the rural area of Hanoi was split into Hanoi, Ha Tay, and Vinh Phuc provinces. As a result, the total area of Hanoi changed from 2,141km² to 921km².

3) Expansion of Urban Areas

In the late 1950s, the city was developed only at the right bank of the Red River with Ba Dinh, Hoan Kiem, and southern Ho Tay being the center. The land area was 70 km². In the 1960s, the city was developed to the south of the Red River and further to the northeast (Gia Lam - Dong Anh). The city was divided into four urban and four rural districts with a total area of about 200 km².

Urbanization centering on the Ancient Quarter and the French Quarter during the period of state planning and administration leading up to the Doi Moi was contained within RR2 parallel to the To Lich River, which effectively blocked the outward sprawl of urbanization. The urban population then never went beyond a million. During this period, uniform high-rise apartment blocks, just like those in Kim Lien, Giang Vo, Thanh Xuan, and other residential blocks, were constructed within this boundary with the assistance of the former Soviet Union and other allied countries.

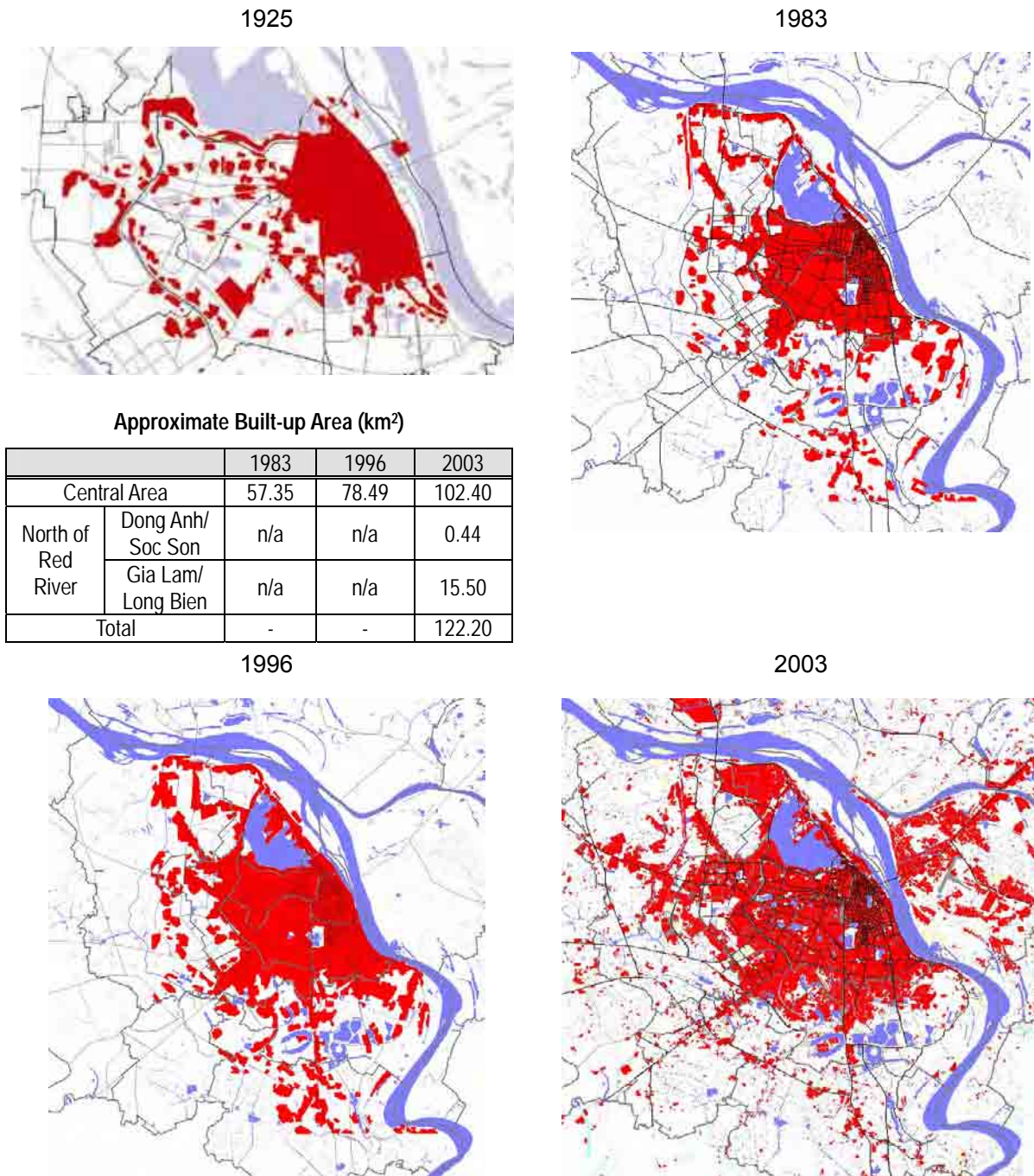
Urban development in Hanoi started after Doi Moi and has progressed since the 1990s. A comparison of the urban area in 1983, 1996, and 2003 clearly shows how the city has expanded in 20 years. Developments took place in the fringes of built-up areas and along major roads. The built-up area in the center has expanded roughly from 57km² to 102km² during this period.

Although the Doi Moi policy allowed Hanoi to further grow through its own potentials, the city's urbanization spilled beyond RR2. Following are the basic features of suburbanization or urban sprawl:

- **Housing Construction Boom by Households by the 1990s:** Households, whose finances improved as a result of the implementation of the Doi Moi policy, took the lead in the outward expansion of the built-up area along major urban arterial roads (national roads 1, 5, 6, and 32), which resulted in "ribbon development." These households built individual detached houses on land they acquired in areas with poor infrastructures.

- Development of Housing Estates:** To cope with the spread of individual housing developments and regain the lead in the housing boom, the government started developing housing estates through state-owned enterprises (SOEs) like the Housing and Urban Development Corporation or the VINACONEX. Private real estate developers enjoying the opportunities offered by Doi Moi followed suit, which resulted in the sprawl of housing estates. So far, all housing estate projects completed, under construction, or planned are in Linh Dam, Trung Hoo, Nhan Chinh, My Dinh, Nam Trung Yen and Dinh Cong. These developments especially influenced the spread of urbanization toward the west of Hanoi.

Figure 2.1.2 Expansion of Urban Areas in 1983, 1996, and 2003



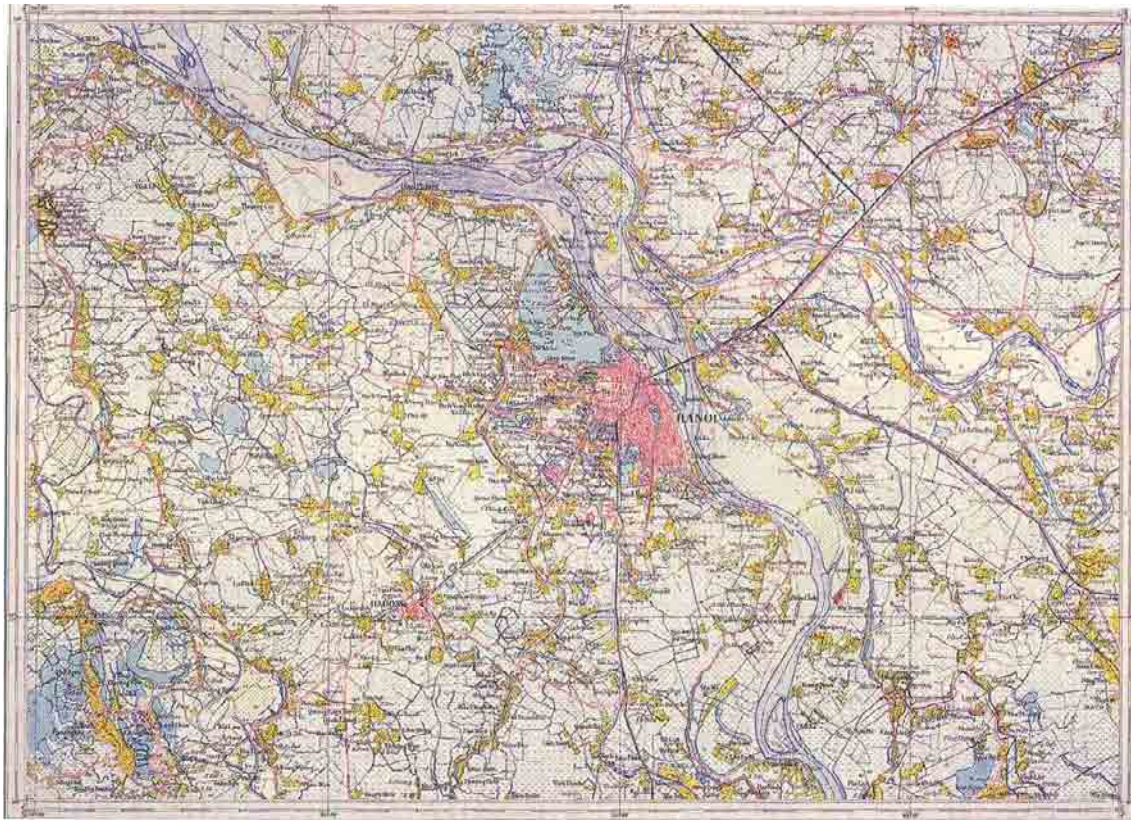
Source: Worked out by the Study Team based on maps and images.
 Note: Satellite imageries of Long Bien and Gia Lam are available for 2003 only.

2.2 Existing Conditions of the City

1) Location

Ha Noi is situated in the center of the northern delta, adjacent to Thai Nguyen Province in the north, Bac Ninh and Hung Yen in the east, Vinh Phuc in the south, and Ha Tay in the west. The northern delta with the Red River in the center has been associated with wet rice cultivation. Most of Hanoi's area lie within the Red River delta which has an average height of 5 to 20 meters from the sea level. The remaining area is part of Soc Son District where there are some mountains and hills at the edge of the Tam Dao mountain range. The range has a height of from 20 to over 400 meters, with the highest point on Chan Chim (Bird Foot) mountain at 462m (Figure 2.2.1).

Figure 2.2.1 Terrain of Hanoi and Surrounding Areas



2) Administrative Boundary

Hanoi City covers a land area approximately 921 km² in size and is part of the Red River delta. The area extends approximately 54km to the north and the south and 30km to the east and the west. It is bordered by Thai Nguyen and Bac Giang provinces in the north, by Bac Ninh in the east, by Vinh Phuc in the west, and by Ha Tay and Hung Yen in the south.

Hanoi is divided into 14 districts and these districts comprise 228 communes (*phuong* refers to an urban commune and *xa*, rural commune) which are the basic administrative units. The districts and their respective number of communes are as follows: Ba Dinh (12 communes), Hoan Kiem (18), Hai Ba Trung (20), and Dong Da (21) in the urban core; Tay Ho (8), Thanh Xuan (11), Cau Giay (7), Hoang Mai (14) and Long Bien (13) in the urban fringe; Tu Liem (16) and Thanh Tri (16) in the suburban area; and, Soc Son (26), Dong Anh (24), and Gia Lam (22) in the rural area. Not only each district but also each commune has

a people's council and a people's committee. For convenience in organizing community activities, some communes are divided into several informal units called *cum*.

3) Geography

In order to achieve sustainable development, planning must take into account the natural factors of the area such as geological conditions, land system or vulnerability to natural disasters. In order to examine the geographical conditions of Hanoi, basic data was obtained from the latest MONRE topographic map (1:5,000) and land-use map (1:5,000) and updated by the Study Team, plus additional data from the orthophoto map (1:5,000). In addition, in order to obtain detailed geological features, geomorphologic geotectonic maps, geodynamic maps, hydro-geological maps, geo environment maps, and engineering geology maps were examined.

(1) Topography

Most of the areas in Hanoi have an average elevation of 5 to 20 meters above sea level and the land is almost flat with 1 - 2% slope. The rest comprises the northern and northwestern parts of Soc Son District which is mountainous and with elevations of 20 to 400 meters (the highest is 462m). The land slopes from north to south and from west to east, following the flow of the Red River.

(2) Hydrology

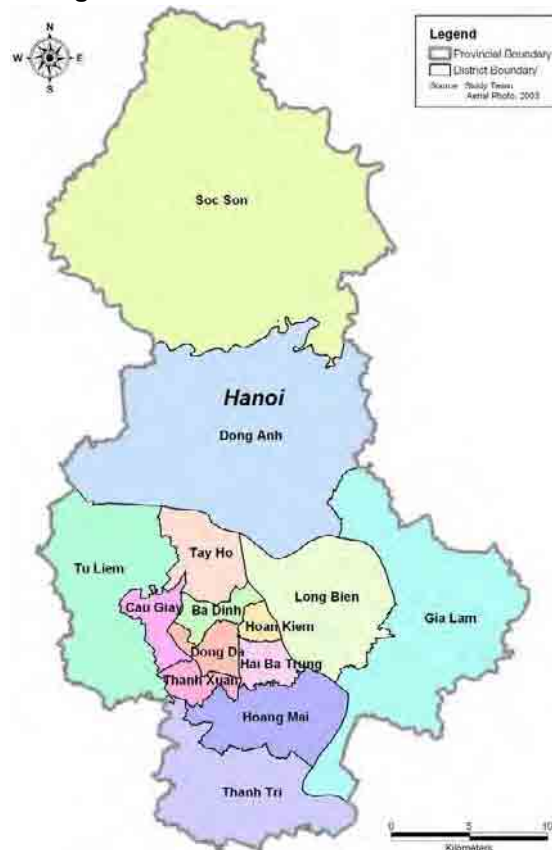
Hanoi is situated in the middle of the Red River delta. The Red River, extending to Vietnam, China, and Laos, covers 310,500 km² in Vietnam. It has three main tributaries, namely the Da River, Thao River, and Lo River. The river system has affected Hanoi's development for so long in its history as is evidenced from its name "Ha" meaning "river" and "Noi" for "inside." Because of the river's significance, developments in Hanoi must consider the opportunities and the threats posed by the Red River system. Inundations often occur along urban rivers, especially during the flood season, as the water levels of the Red River can rise 4 to 6 m higher than the ground level, putting the city under the threat of inundation. The annual fluctuation of the water level of the Red River is 2 - 12m (14.13m in 1971).

Hanoi has a large number of ponds and lakes. However, in the process of urbanization, up to 50% of ponds and lakes have been reclaimed for construction. Therefore, careful assessment of land condition is necessary. In addition, most lakes are heavily polluted because of discharged wastewater.

(3) Other Geographical Features

(a) **River Bank Erosion and Sedimentation:** During the low water period of 1971 - 1982, the riverbed became eroded. However, after the Hoa Binh hydropower plant became

Figure 2.2.2 Districts of Hanoi



operational, the natural flow of riverwater with the characteristic erosion and sedimentation changed. The flow discharge in the Son Tay - Hanoi section changed from 10,250 to 9,000 m³/s.

- (b) **Land Subsidence:** The most intense subsidence in Hanoi reached 35-40 mm/year. Most of the other areas have inundations of 20 to 25 mm/year, and 10mm/year in the northern part. The area along the Red River is not subject to subsidence. Land subsidence is directly related to the decline of groundwater levels, the thickness of the soft soil layer in the ground, and construction activities on the surface.
- (c) **Earthquake:** Earthquakes occur at the concentrated area of faults. There have been several large-scale earthquakes in the past. Major regional faults run across the city, therefore Hanoi has potential of adverse impacts by earthquake.

4) Land Use

Land-use map for Hanoi has been prepared based on the latest available maps (MONRE 2003), images and supplementary information collected from Vietnamese agencies as well as additional field surveys. In order to examine the characteristics, land uses were grouped into nine (9) categories, namely: rural, residential, commercial, institutional, industrial, parks, environmental, urban facilities, and others (see Table 2.2.8). Meanwhile, existing urban areas were grouped into four, that is urban core, urban fringe, suburban area, and rural area (see Figure 2.2.3).

Of the total land area of 921km², 68% of land (626.2km²) falls under rural use. As for urbanized areas (non-rural use), Hanoi has 62.5km² (6.8%) of residential land, 3.6km² (0.4%) of commercial land, 23.9km² (2.6%) of institutional land, 2.6km² (0.3%) of parks and 34.9km² (3.8%) of land for urban facilities. Other areas account for 16.3% of Hanoi's total land area.

Table 2.2.1
Land-use Categories for Analysis

Category	Description
1. Rural-use	Rice fields and other agricultural land, land for aquaculture purposes, rural residential land.
2. Residential	Urban residential land, mixed residential and commercial land.
3. Commercial	Land for commercial purposes.
4. Institutional	Government & quasi-public land, land for education and culture, security and military, health and welfare.
5. Industrial	Industrial (mixed) and Industrial parks/estates.
6. Urban Facilities	Transportation and service area and urban service facilities.
7. Park	Parks and recreational areas.
8. Environmental	Forest for production and land protection, other forests, land for religious purposes, cemeteries
9. Others	Water surface, unused flat land, and unused mountainous land.

Figure 2.2.3
Classified Urban Areas for Analysis

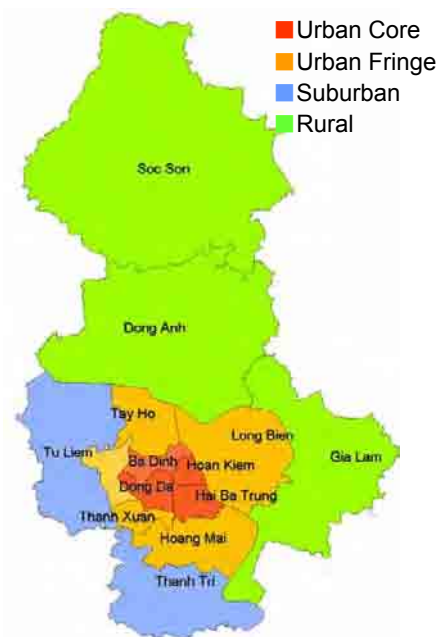


Table 2.2.2 Existing Lands by Use

Unit: km²

Area Type/District	Rural-use	Residential	Commercial	Institutional	Industrial	Urban Facilities	Park	Environmental	Others	Total
Hanoi City	626.2	62.5	3.6	23.9	16.8	34.9	2.6	44.9	105.6	921.0
Urban Core	0.6	16.9	1.4	5.4	4.0	1.2	1.2	0.1	3.9	34.6
Ba Dinh	0.2	3.8	0.7	1.1	1.9	0.1	0.5	0.0	0.9	9.3
Hoan Kiem	0.1	2.4	0.2	0.7	0.7	0.0	0.1	0.0	0.9	5.3
Hai Ba Trung	0.1	5.3	0.1	0.9	0.7	0.9	0.5	0.0	1.6	10.1
Dong Da	0.1	5.4	0.3	1.2	2.1	0.2	0.1	0.1	0.5	10.0
Urban Fringe	57.2	34.5	1.1	4.9	8.0	4.8	1.0	1.2	31.3	144.2
Tay Ho	5.2	6.8	0.5	0.7	0.4	0.1	0.1	0.2	9.8	24.0
Thanh Xuan	0.7	5.0	0.1	0.7	0.8	0.8	0.1	0.1	0.8	9.1
Cau Giay	2.0	5.4	0.2	1.3	1.6	0.1	0.2	0.2	1.0	12.0
Hoang Mai	19.0	6.2	0.2	2.4	0.6	1.2	0.6	0.3	9.0	39.5
Long Bien	30.3	11.1	0.1	2.9	1.4	2.6	0.0	0.4	10.7	59.5
Suburban	101.3	7.4	0.4	4.8	5.0	2.9	0.2	2.3	14.4	138.6
Tu Liem	49.6	7.3	0.3	3.3	3.7	1.6	0.1	1.0	8.4	75.3
Thanh Tri	51.7	0.1	0.1	1.7	1.1	1.3	0.1	1.2	6.0	63.3
Rural	467.1	3.7	0.7	8.8	17.9	8.0	0.2	41.3	56.0	603.6
Soc Son	230.3	0.4	0.3	10.0	5.2	1.3	0.0	39.0	20.0	306.5
Dong Anh	145.7	1.4	0.4	4.7	2.3	4.3	0.1	1.5	22.1	182.3
Gia Lam	91.1	1.9	0.0	3.2	1.3	2.4	0.0	0.9	14.0	114.8

Source: HAIDEP Study Team.

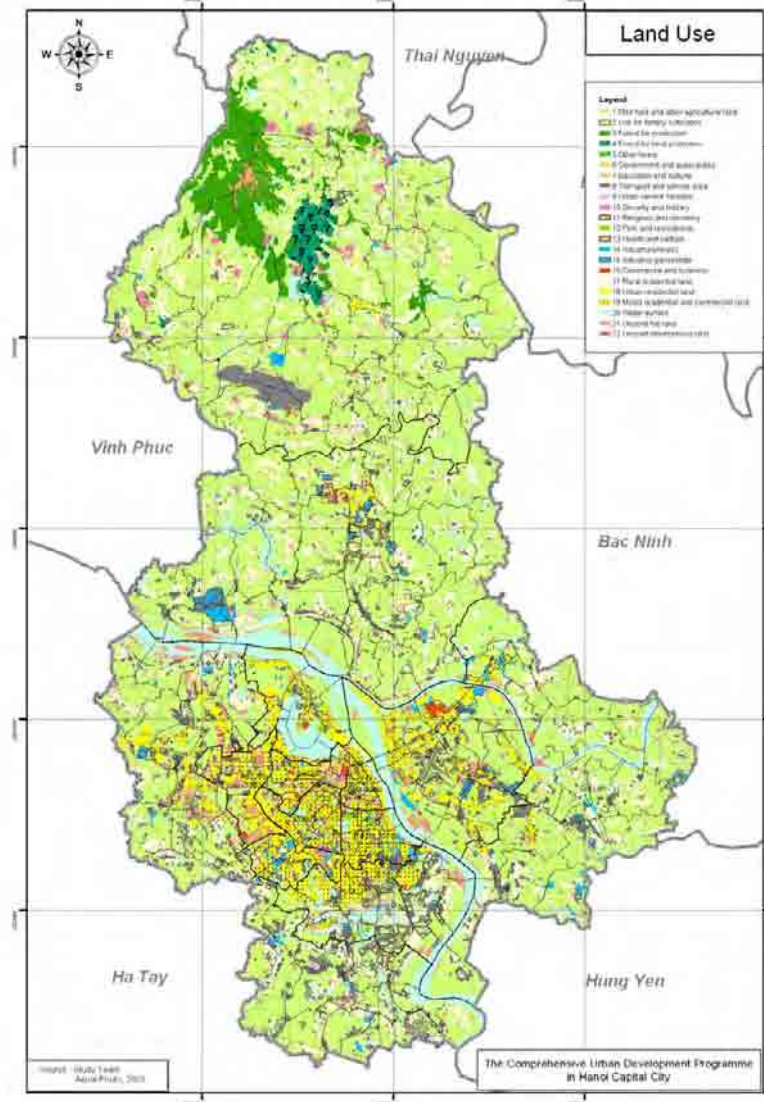
Table 2.2.3 Existing Lands by Use

Unit: %

Area Type/District	Rural-use	Residential	Commercial	Institutional	Industrial	Urban Facilities	Park	Environmental	Others	Total
Hanoi City	68.0	6.8	0.4	2.6	1.8	3.8	0.3	4.9	11.5	100.0
Urban Core	1.6	49.0	3.9	15.6	11.4	3.4	3.4	0.4	11.2	100.0
Ba Dinh	2.3	41.5	7.6	12.3	20.1	1.2	5.2	0.5	9.3	100.0
Hoan Kiem	2.2	45.3	3.9	13.4	14.0	0.6	2.3	0.5	17.8	100.0
Hai Ba Trung	1.5	52.9	1.1	9.0	6.7	8.5	4.6	0.2	15.6	100.0
Dong Da	0.8	53.9	3.4	12.1	21.3	1.9	1.1	0.5	5.1	100.0
Urban Fringe	39.7	24.0	0.8	3.4	5.6	3.4	0.7	0.8	21.7	100.0
Tay Ho	21.8	28.5	2.0	3.1	1.9	0.5	0.5	0.8	40.9	100.0
Thanh Xuan	7.6	55.3	0.6	7.9	9.1	8.6	0.8	0.8	9.2	100.0
Cau Giay	16.8	44.8	1.8	11.0	13.5	0.9	1.6	1.4	8.2	100.0
Hoang Mai	48.0	15.7	0.5	6.0	1.5	3.1	1.5	0.8	22.8	100.0
Long Bien	50.9	18.6	0.2	4.8	2.4	4.3	0.1	0.7	17.9	100.0
Suburban	73.1	5.3	0.3	3.4	3.6	2.1	0.2	1.6	10.4	100.0
Tu Liem	65.9	9.7	0.4	4.4	4.9	2.1	0.2	1.3	11.1	100.0
Thanh Tri	81.7	0.1	0.2	2.6	1.7	2.0	0.2	2.0	9.5	100.0
Rural	77.4	0.6	0.1	1.5	3.0	1.3	0.0	6.8	9.3	100.0
Soc Son	75.1	0.1	0.1	3.3	1.7	0.4	0.0	12.7	6.5	100.0
Dong Anh	79.9	0.8	0.2	2.6	1.2	2.3	0.1	0.8	12.1	100.0
Gia Lam	79.4	1.7	0.0	2.8	1.1	2.1	0.0	0.8	12.2	100.0

Source: HAIDEP Study Team.

Figure 2.2.4 Land Uses in Hanoi, 2005



Source: HAIDEP Study Team.

- (a) **Transportation Land:** Hanoi has a main road length of 624km, a railway length of 123.2km, and an inland waterway length of 80.7km. The ratio of road area to Hanoi's total land area is 1.9%, which is absolutely low compared to major cities in other countries. Other main transportation lands include airport, port, and railway yards, accounting for roughly 20 km², which include 10km² of Noi Bai Airport.
- (b) **Parks and Green Space:** Hanoi has a total of 622km² of green spaces, most of which are rice fields and other agricultural land (501km²), followed by water surface (81km²), forest area (37km²), and parks (3km²). While 90% of the agricultural area is in suburban and rural districts, 84% of parks are in urban core and urban fringe areas. In the 9 urban districts, there are 175ha of park areas, including water surface. In the old developed areas, such as Hoan Kiem and Hai Ba Trung districts, the average per capita green space is relatively higher. But in rapidly urbanizing districts, such as Dong Da and Gia Lam districts, the average per capita green space is only 0.05m². The average park area per person is still low compared with figures in other countries, e.g. average of cities in Japan with 7.5m²/person, London with 26.9m²/person, Berlin with 27.4m²/person, and New York 29.3m²/person.

- (c) **Distribution by Area:** The proportion of rural-use land significantly increases from the urban core toward the outer areas (1.6%), the urban fringe (39.5%), suburban (73.1%) and rural areas (77.4%). The same trend can be observed for environmental land. An inverse trend can be observed in land for residential, commercial, Institutional, parks, and urban facilities.

Clear characteristics can be observed when land use is examined by urban classification.

- (a) **Urban Core:** most of land is urbanized and almost half of it is used for residential. Commercial and institutional facilities are concentrated in urban core districts.
- (b) **Urban Fringe:** rural-use (39.7%) and residential (24.0%) lands occupies the majority of its land. Especially Long Bien District has the largest residential area in Hanoi.
- (c) **Suburban Area:** rural-use land dominates the land use of suburban area (73.1%), with rural-use proportion being the largest in Thanh Tri district (81.7%). There is only small land for commercial use (0.4 km²) in suburban area.
- (d) **Rural Area:** 77.4% of land is rural-use land. There are only few urban facilities, but it has the largest area for industry in Hanoi. The reason for the largest area for institutional and urban facilities is that because there are many large security and military lands located in rural districts, and also the largest area for urban facilities is due to Noi Bai airport's extensive land size.

This land-use pattern highlights the fact that the main economic and social functions are highly concentrated in the urban core districts even though the actual land size is very small. Currently, there are inadequate urban lands in Hanoi, as large areas are still used for the primary sector. In addition, people are densely inhabited in the urban core even if its residential land is small at 16.9 km².

5) Population and Household's Profile

Hanoi has grown rapidly in many aspects during the last decade. Its population has increased at a rate of nearly 3.0% per year (see Table 2.2.1 and Figure 2.2.3). As of 2005, Hanoi had a population of 3,183,000, 63% of which resided in urbanized areas.

Although such rapid population growth can be seen in the entire city, it is particularly significant in the urban fringe such as Thanh Xuan, Cau Giay, and Hoang Mai districts. The recent growth has even spilled onto suburban areas such as Tu Liem. While developments in peri-urban areas have accelerated, it is also of note that: (a) growth in the urban core is still active in spite of the already high population density, and (b) growth in rural areas is still moderate, and development pressure is not intense.

Hanoi's distinguishing characteristic is the compactness of its urban area with a high population density. While its urban core comprising four districts (Ba Dinh, Hoan Kiem, Hai Ba Trung, and Dong Da) occupies 35km² only, it has a population density of 305 persons/ha. In residential areas, the density increases to 622 persons/ha. In the urban fringe, population density is moderate at 57 persons/ha, except in Thanh Xuan which has 203 persons/ha and Cau Giay which has 131 persons/ha. However, the density in residential areas sharply increases to 211 persons/ha in the urban fringe. A similar pattern is also seen in suburban areas where population density in residential areas is 147 persons/ha, while total density is only 28 persons/ha.

Table 2.2.4 Hanoi's Population by District

Area	Size (km ²)	Population (000)				Annual Population Growth 99-05 (%/yr)	Population Density, 2005 (no/ha)		
		1999		2005			Total	Net ¹⁾	Residential Area ²⁾
		no.	%	no.	%				
Hanoi City	921	2,675	100.0	3,183	100.0	2.9	35	38	185
Urban Core	35	963	36.0	1,094	34.4	2.1	316	353	646
Ba Dinh	9	198	7.4	231	7.2	2.6	249	272	600
Hoan Kiem	5	165	6.2	179	5.6	1.3	338	407	746
Hai Ba Trung	10	272	10.2	312	9.8	2.3	310	362	585
Dong Da	10	328	12.3	372	11.7	2.1	374	392	694
Urban Fringe	144	673	25.2	896	28.2	4.9	62	75	229
Tay Ho	24	91	3.4	108	3.4	2.9	45	75	158
Thanh Xuan	9	149	5.6	196	6.1	4.6	215	226	386
Cau Giay	12	122	4.6	171	5.4	5.8	142	146	316
Hoang Mai	40	161	6.0	236	7.4	6.6	60	72	218
Long Bien	60	151	5.6	186	5.9	3.6	31	36	168
Suburban	139	343	12.8	427	13.4	3.7	3	34	159
Tu Liem	75	193	7.2	262	8.2	5.2	35	38	161
Thanh Tri	63	150	5.6	165	5.2	1.6	26	28	157
Rural	604	696	26.0	766	24.1	1.6	13	14	86
Soc Son	307	246	9.2	266	8.4	1.3	9	9	55
Dong Anh	182	261	9.8	288	9.0	1.7	16	18	115
Gia Lam	115	188	7.0	212	6.7	2.0	18	21	129

Sources: GSO, 2004, and Population and Housing Census, 1999.

- 1) Total land without water surface.
- 2) Total of urban, rural and mixed residential areas.

Figure 2.2.5 Population Growth, 1999 - 2003 (%/yr)

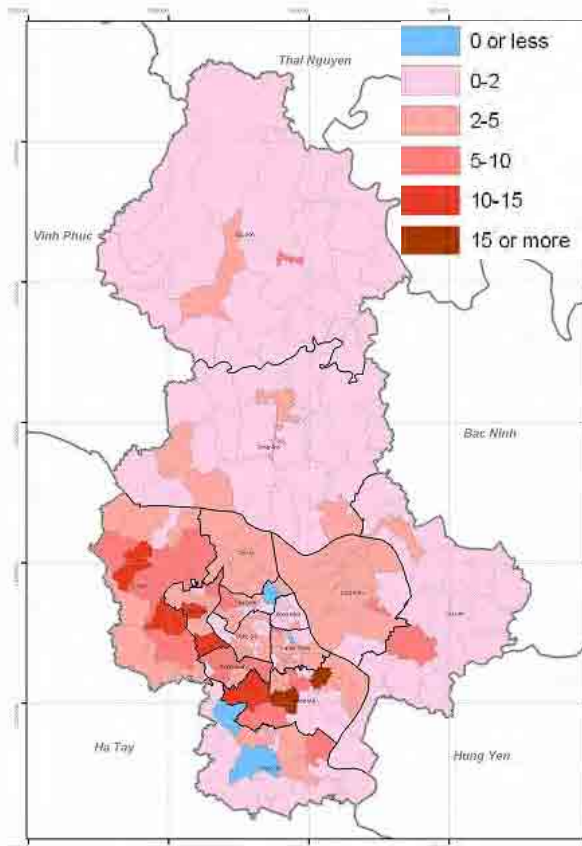
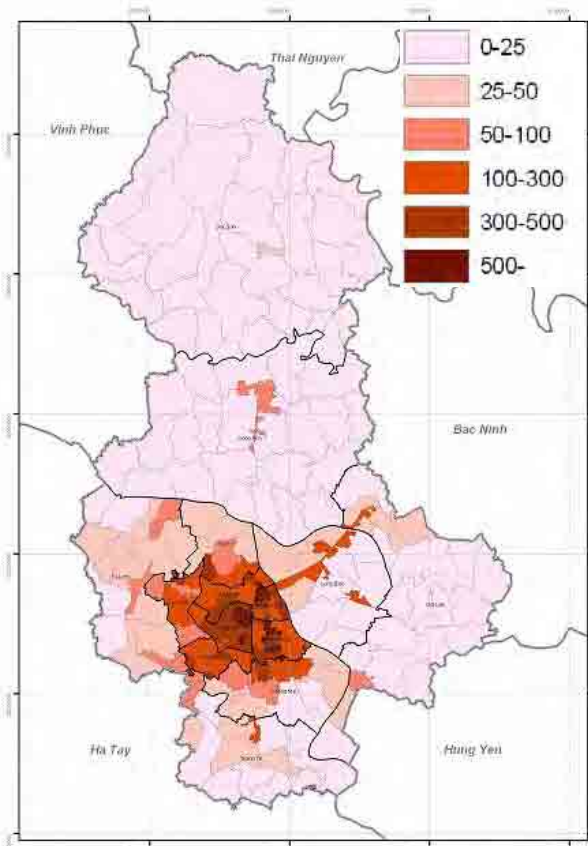


Figure 2.2.6 Population Density (Net), 2003 (no/ha)



Sources: GSO, 2004, and Population and Housing Census, 1999.

There are approximately 760,000 households with an average household member of 4.3 with a household income of VND 2.7 million per month. 89% of households have land-use rights and 92% own houses which are mostly detached. The ratio of apartments and high-rise residents is still low and only high-income class households live in such kinds of housing. No matter how low or high the income, 83% of households in Hanoi own motorcycles with 40% of them having more than two. Car ownership is still low at 2% in the whole city. Households in Hanoi can be classified into four household types by composition. Their socio-economic characteristics are summarized below.

- (a) **Single Households:** This household type mainly comprise the elderly living alone, 80% of whom are in their 50s and 60% in their 60s. 60% are female. Since most are retired or jobless, this type has the lowest average household income and lower than average vehicle and goods ownership. Per capita average living area, however, is the highest at 61m². The share of apartment dwellers is 24%, which is higher than average (12%).
- (b) **Shared Households:** This household type is common among students and workers who share rooms with friends and colleagues, and among the elderly who share rooms with relatives or others. The share of people in their 20s and are working in the tertiary sector are higher than average. The income level per gainfully employed worker is average. Per capita floor area is almost average but quite low considering the small household size.
- (c) **Nuclear Households:** This household type is fast becoming popular among 30- and 40- year-olds. Socio-economic conditions, housing standard, and area distribution are almost in line with the city's average. However, some households, such as those comprising single parents and children, have poorer conditions: motorcycle ownership is only 46% and average monthly household income is only VND 1.46 million. For households with both parents and children, it is VND 2.24 million.
- (d) **Multihouseholds:** This household type comprises members spanning more than 2 generations. It accounts for 61% of total households of Hanoi City and includes 58% with children and 42% without. Socio-economic conditions are slightly higher than average owing to its large number of gainfully employed members. Per capita floor area is the lowest at 18-21m² due to its large household size.

In general, the quality of life of Hanoi households is relatively higher compared to those in the same income levels in other countries. Ownership of basic household commodities and housing, as well as the coverage of urban services, is likewise relatively higher.

Table 2.2.5 Characteristics of Household in Hanoi

	Household size							Total		
	Single	Non-family household ¹⁾	Nuclear household			Multi household				
			w/o children	Single parents	With children	w/o children	With children			
Household										
Number of HH (000)	7	17	53	13	205	266	194	755		
% to total	1%	2%	7%	2%	27%	35%	26%	-		
Average size	1.0	2.8	2.0	2.6	3.8	4.5	5.4	4.3		
Household Member										
Gender (%)	Male	38.7	33.4	50.0	35.3	50.4	51.2	48.2	49.5	
	Female	61.3	66.6	50.0	64.7	49.6	48.8	51.8	50.5	
Age (%)	6-9	0.0	1.9	0.0	6.9	6.9	0.0	4.4	3.2	
	10-14	0.0	3.6	0.0	18.6	16.6	0.0	8.6	7.1	
	15-17	0.7	2.3	0.0	15.9	10.8	0.0	6.5	5.0	
	18-19	0.0	1.4	0.0	11.6	5.7	0.0	4.7	3.1	
	20-29	6.2	28.2	6.1	7.4	6.1	34.4	18.8	20.9	
	30-39	5.8	13.1	5.0	6.9	17.9	14.8	11.9	14.1	
	40-49	5.9	12.8	5.7	19.5	26.4	5.8	17.5	14.9	
	50-59	20.4	14.2	20.9	8.8	6.7	21.1	10.8	13.9	
60 more	60.9	22.5	62.4	4.2	3.0	23.9	16.8	17.7		
Housing										
Average Living Space (m ²)	Per HH	61	65	81	67	79	93	98	88	
	Per capita	61	23	40	26	21	21	18	21	
Housing type (%)	Traditional house	6.0	5.5	4.1	2.4	3.1	4.0	4.6	3.1	
	Apartment	23.7	24.4	21.6	13.4	11.8	14.6	11.4	11.8	
	High-rise apartment	5.2	1.3	0.9	0.4	0.7	0.5	0.3	0.7	
	Detached house	65.1	68.8	73.3	83.8	84.5	80.9	83.7	84.5	
Period of Stay (year)		34	36	39	30	39	45	52	44	
	Urban Core	49	49	46	36	33	36	33	35	
	Urban Fringe	32	31	29	31	25	32	25	28	
	Suburban	13	10	10	14	15	13	14	13	
	Rural	6	9	14	19	27	19	28	23	
Economic Conditions										
Household Income	Average (mil VND/month)	1.08	1.98	1.81	1.46	2.24	3.21	2.89	2.69	
	(%)	0.8 below	52.5	17.4	16.8	45.5	12.5	3.9	5.6	9.0
		0.8 – 2.0	35.3	45.1	54.7	37.3	45.0	27.3	34.2	36.4
		2.0 – 4.0	10.0	29.7	22.5	10.9	32.4	43.9	41.3	37.5
		4.0 – 8.0	2.2	7.2	5.2	5.0	8.7	21.7	16.5	14.9
		8.0 above	0.0	0.6	0.7	1.3	1.3	3.2	2.4	2.2
Vehicle Ownership (%)	Bicycle	45	65	63	79	81	75	88	79	
	Motorcycle	29	72	57	46	84	92	91	85	
	Car	0	1	1	1	2	2	2	2	
Access to Urban Services (%)	Electricity	100.0	99.4	99.8	97.8	99.5	99.8	99.5	99.6	
	Piped water supply	76.3	74.8	74.7	61.8	57.6	65.9	57.0	62.2	
	Toilet facility	87.1	82.8	83.3	73.0	77.5	81.3	76.7	79.2	
	Gas	69.8	78.2	81.3	62.9	73.7	80.4	73.5	76.4	
	Telephone (fixed)	67.7	79.9	82.9	59.2	74.5	88.5	82.2	81.8	
	Solid waste collection	87.2	88.5	87.4	81.6	82.0	87.1	80.8	84.0	
	Internet	9.2	10.7	7.9	4.9	7.5	12.0	9.4	9.7	
House Goods (%)	Air-con	14.2	16.8	23.2	11.4	18.0	19.9	18.0	18.9	
	Washing machine	25.8	35.7	41.5	25.0	38.6	45.0	39.2	40.8	
	Refrigerator	59.7	71.5	75.8	51.2	67.0	76.1	70.0	71.4	
	TV	93.4	96.9	97.6	91.9	98.1	98.9	98.7	98.3	
	Radio	56.2	50.9	60.6	39.5	51.8	63.4	59.0	58.2	
	Computer	16.1	32.3	18.8	25.6	25.8	38.8	32.3	31.7	
	Mobile phone	20.4	38.8	22.7	18.7	35.7	54.2	42.8	42.8	

Note: "Single household" has only one member. "Shared household" comprises same-gender friends, brothers or sisters, which are often seen among students or young workers in Hanoi City. "Nuclear household" comprises three types (one without children, one with a parent and child/children (less than 16 years old), and one with both parents and child/children). "Multiple household" comprises members spanning more than 3 generations.

6) Infrastructure and Services

Current infrastructure and services related to housing, parks and green space, water supply, drainage and wastewater system, solid waste collection and disposal, flood protection, transportation, etc. have been assessed based on the collected data and information in the study by comparing objective and subjective indicators. They are briefly as follows:

(1) Housing

In 2003, Hanoi's total housing floor area increased to 34 million m², showing a 20% increase from the 28 million m² in 1999. In Hanoi's urban areas, the housing floor area was estimated at 17.6 million m² as of 1999.

According to Hanoi's Department of Construction, illegal development activities are rampant in the city, although the situation has reportedly improved in the last couple of years. For instance, the number of construction permits issued in 2004 was around 2,800, while the number of illegal construction cases was about 3,000, or a difference of around 200 unauthorized projects.

(2) Water Supply

In Hanoi, 61.6% of households are supplied with piped water. Urban core and fringe areas are well connected to the service, while connection in rural areas is still poor. The people predictably tend to be more satisfied as water connection rates become higher. The urban water supply system in Hanoi consists of the piped water supply system of the water companies. On the other hand, water supply in rural areas is the responsibility of either the community or the households themselves. There are 15 water treatment plants in Hanoi and they produce 425,000 m³/day of drinking water. Hanoi currently depends on groundwater as drinking water source. However, it will be necessary to seek other sources, such as surface water from rivers because water consumption is expected to increase with urbanization. Moreover, groundwater extraction (with a volume of about 448,000 m³/day) will cause land subsidence in the city. Identification of new water sources as well as water supply service coverage areas by water companies and the communes are essential. In addition, water quality and water supply pressure should meet certain standards.

(3) Drainage System

The purpose of the drainage system is to prevent frequent inundations in urban areas. The system consists of natural systems, such as urban rivers and lakes, as well as manmade structures such as drainage canals, culverts, sewers, and pumping stations. With continuous dyke management combined with the strengthening of dykes along the Red River, Hanoi has been protected from destructive floodwaters from the river, except for the areas developed outside the dykes. Inundations are frequently observed in Hanoi, with depths of around 50 to 60cm in the city center in a typical year. However, deeper inundations have been observed during storms. Service coverage and quality should be enhanced to meet the development pressure as well as to reduce inundation. Identification of locations and capacities of discharge points, pump stations, reservoirs, and drainage pipes are required.

(4) Wastewater Disposal System

The drainage system in Hanoi was developed to also serve as a wastewater disposal system. Wastewater from toilets in urban areas goes through septic tanks or tanks, or is

discharged directly to drainage systems. According to HIS, 43.6% of households are connected to the urban sewerage system, 40.0% to on-site sanitation facilities (e.g. septic tanks) and collected by the public sector, and 16.5% have no access to sewage treatment. As for toilet facilities, 75.8% of households have flush toilets. The system is well provided in the urban area, but not in rural areas. However, as of 2005, only two wastewater treatment sites (Truc Bach and Kim Lien) exist in Hanoi serving only 1.2% of the population. Thus most wastewater is still directly discharged into rivers and lakes. Hanoi's wastewater treatment system should be improved to meet the effluent standards in Vietnam.

(5) Solid Waste Collection

Currently, public solid waste collection covers around 84% of households in Hanoi, while private or community level collection service covers other areas. Only Soc Son District has a low coverage at 30%, while others achieve more than 70% of solid waste collection coverage. The existing Nam Son landfill site is expected to reach its capacity earlier than expected, due to increased waste generation. Therefore, reduction of waste as well as the introduction of new methods to treat solid waste should be considered.

(6) Flood Protection

Hanoi is prone to flooding. Urban areas lie lower than the Red River when the river is occasionally at high water levels. Fairly wide areas in Hanoi are suffering from flood or inundation either all the time or whenever it rains. Serious flooding of the Red River may occur at the rate of once in 100 years. It is recommended that the existing dyke system should be well examined and strengthened to prevent Hanoi from serious damage.

(7) Transportation Infrastructure and Road Network

Hanoi has a total road length of 624km, a railway length of 123.2km, and inland waterway length of 80.7km. The ratio of road area to Hanoi's total land area is 4.2%, which is absolutely low compared to other major cities such as Tokyo's 18.8%. The road is densely developed in urban areas, while less dense in rural areas, which causes unequal distribution of accessibility within Hanoi. The road network basically consists of radial and ring roads. The radial road network is connected directly to the regional primary road network including NH1, NH5, NH6, NH3, NH2, NH32, and Lang - Hoa Lac Highway. It has been observed that the road design standard is often inconsistent with the road function, e.g. arterial roads suddenly becoming narrow or interrupted in many places. This causes "missing links" in the road network.

(8) International Comparison

For selected type of service, the level of infrastructure services in Hanoi has been compared with those in selected cities in the world.

In general, urban services are widely available in urban areas in Hanoi, while rural areas still lag behind in receiving proper urban services. This is especially obvious in piped water and flush toilet connectivity.

Table 2.2.6 Major Infrastructure Indicators

Infrastructure Service	Indicators	Current Condition	People's Assessment (% of Satisfied)	International Comparison
Housing	Average Housing Space / capita (m ²)	10.5 ¹⁾	46	27.2 (Tokyo)
Parks and Green Spaces	Park Area / capita (m ²) (urban)	4.7 ²⁾	30	26.9 (London)
Piped Water	Coverage (% of households)	61.6 ³⁾	41	100 (Tokyo)
Electricity	Electricity Coverage (% of households)	99.6	69	100 (Seoul)
Sanitation	Flush Toilet Coverage (% of households)	79.8 ³⁾	46	100 (Singapore)
	Wastewater Treatment (% of population)	1.2	-	70 (Chang Mai)
	Solid Waste Collection (% of households)	84.0 ³⁾	60	-
Urban Transportation	Road Area Ratio (%)	4.2 ⁴⁾	-	2.5 (Bangkok)
	Public Transportation Share (%) ⁵⁾	7.0 ³⁾	26	74.0 (Tokyo)
	Work Trips by Public Transportation (%)	3.5 ³⁾	-	28.0 (Bangkok)

Source: Prepared by HAIDEP Study Team.

- 1) Population data from 1999 census.
- 2) As of 2000 (TUPWS).
- 3) HAIDEP HIS, 2005.
- 4) JICA Studies (see Figure 2.3.1, Urban Transportation Subsector Report).
- 5) Modal share excluding walking.

(9) Availability of and People's Satisfaction with Infrastructure Services in Hanoi by District

Of the basic services, electricity, toilet, gas, telephones, and solid waste collection are provided with more than 80% household coverage, while piped water with 60% and Internet with minimal percentage. However, the satisfaction rates for services are lower than availability (see Table 2.2.7). The availability of services by district varies. In general, urban districts are better provided than rural districts (see Figure 2.2.7).

7) Urban Environment

(1) Air and Noise Pollution

Currently there is not serious air pollution observed in Hanoi except for total suspended particulate materials (TSP) for the whole city. Generally major pollutants sources causing air pollution include industrial activities, transport activities, construction, and somehow household cooking. According to DONRE, 17 factories out of 400 in Hanoi have generated pollutants to the air, where major pollutants are TSP and carbon mono-oxide (CO). Higher levels of air pollution are observed particularly around industrial areas.

Emissions from traffic have become major source of air pollution in urban areas. The heavy pollution of dust at traffic intersection was indicated in some environmental surveys. The levels of TPS, SO₂, NO₂ and CO at traffic intersection were slightly higher than those of ambient air around industrial areas, partly because of higher concentration of vehicle emissions. Since leaded gasoline was phased out in 2001, the lower concentrations of lead have been observed.

Noise and vibration pollution has been observed along the major highways and around major industrial area. Some industrial areas have seen improvement on the level of noise pollution, while the others have seen deterioration. Particularly along the certain highways, noise pollution level exceeds the standards even during the night.

Table 2.2.7 Urban Service Coverage and Satisfaction Rates (%)^{1), 2)}

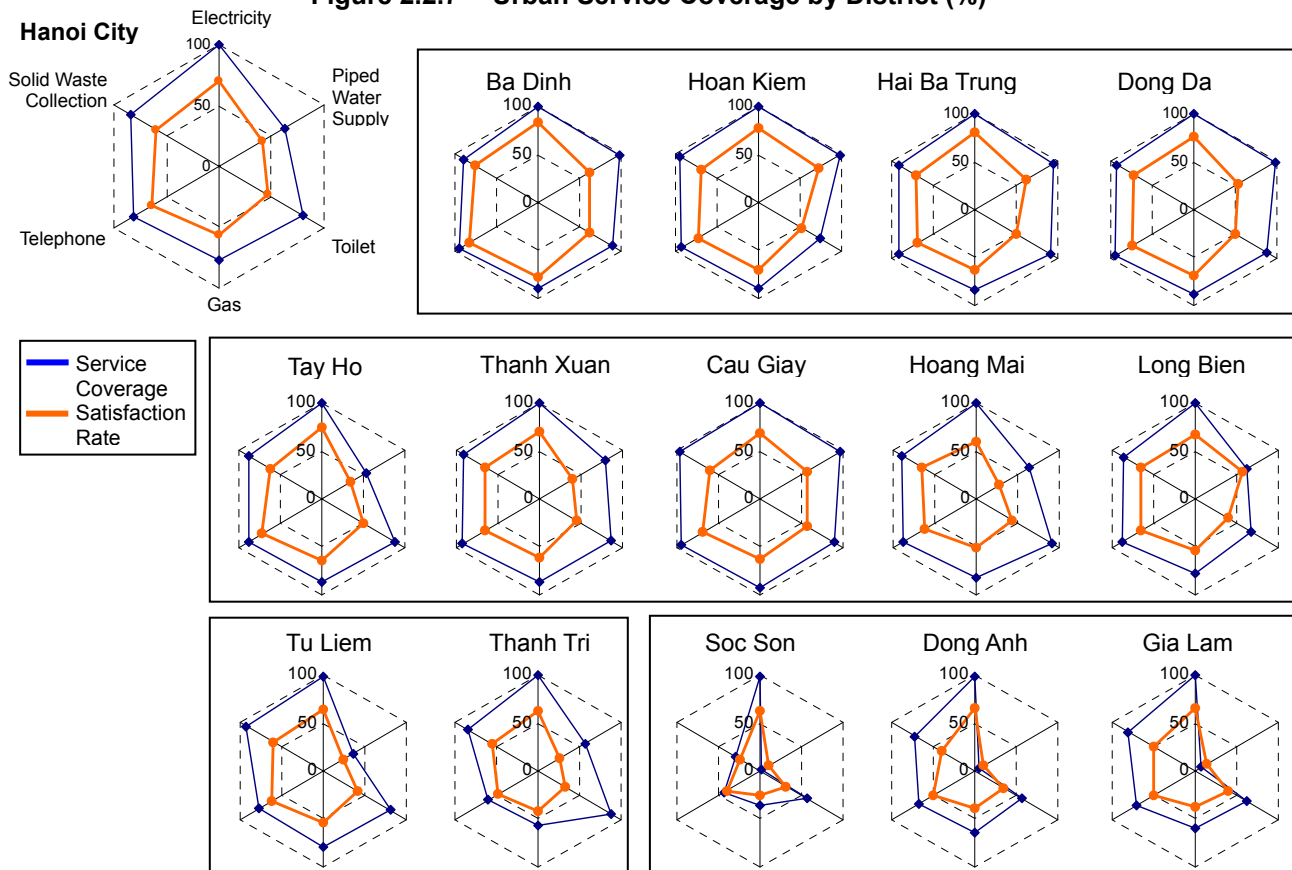
		Hanoi City	Urban Core				Urban Fringe				Suburban		Rural			
			Ba Dinh	Hoan Kiem	Hai Ba Trung	Dong Da	Tay Ho	Thanh Xuan	Cau Giay	Hoang Mai	Long Bien	Tu Liem	Thanh Tri	Soc Son	Dong Anh	Gia Lam
Electricity	Coverage	100	100	100	100	100	100	100	100	100	99	100	99	99	100	
	Satisfaction	70	84	77	80	76	75	70	68	59	67	64	63	62	65	66
Piped Water	Coverage	62	99	99	94	98	53	79	97	64	63	36	57	1	6	8
	Satisfaction	41	62	72	63	54	35	40	56	28	56	24	26	10	11	14
Toilet	Coverage	79	90	74	91	88	88	87	90	91	67	80	88	57	56	62
	Satisfaction	46	63	52	51	51	50	45	56	44	39	42	33	32	35	41
Gas	Coverage	77	89	89	83	88	87	87	93	82	77	79	56	36	64	60
	Satisfaction	56	78	70	63	69	64	61	62	51	54	53	42	26	39	38
Telephone	Coverage	82	94	93	91	95	88	93	96	88	88	77	59	43	67	70
	Satisfaction	64	82	73	68	75	71	66	69	62	66	62	48	40	50	49
Solid Waste Collection	Coverage	84	90	94	91	92	88	91	97	89	86	93	85	30	71	80
	Satisfaction	60	76	69	70	71	62	65	60	66	65	60	55	24	41	50
Internet	Coverage	10	16	14	13	19	9	12	18	10	6	5	2	1	2	2
	Satisfaction	64	82	73	68	75	71	66	69	62	66	62	48	40	50	49

Source: HAIDEP HIS 2005

1) Household coverage.

2) Satisfaction rate calculated based on households who answered "satisfied" and "very satisfied" with the services.

Figure 2.2.7 Urban Service Coverage by District (%)



Water Quality

While quality of ground water is good in general, deterioration has been observed both for quality and quantity due to uncontrolled exploitation and infiltration of contaminants from wastewater and solid waste. The hygienic contamination of ammonium has been serious problem particularly in the southern area of the city. The highest value is found in Phap Van water plant. Such high contamination of ammonium cannot be removed with the current water treatment technology. Alarming sign of ground water contamination is shown in arsenic in some areas of Hanoi City, which is originated from geological formation and fluctuated by season and area.

Most of domestic wastewater has been treated by septic tanks before released into drainage system or water bodies. However, ineffective septic tanks and lack of regular suction has deteriorated water quality of surface water bodies. Wastewater from industrial and hospitals are rarely treated or only 6% of total are treated. It has contributed the water pollution with a lot of pollutants.

Four main rivers flow through Hanoi City, Kim Nguu, To Lich, Set and Lu rivers, where wastewater is discharged. Kim Nguu river receives the highest load of pollutants from 14 main outlets. The ammonia concentration of those rivers ranges from 28.9 mg/l to 10.0 mg/l, which is almost the same as the groundwater in the southern part of Hanoi City.

In general, water running in the Red River is not polluted, where most of quality parameters pass the Vietnamese Standard. Due to high content of suspended solid and turbidity, however, the Red River cannot be used for water supply in Hanoi. Another major river system in Hanoi City is the Nhue river, which is originated from the Red River and run through Hanoi, Ha Tay and Ha Nam provinces. Untreated industrial and domestic wastewater in Cau Dien and Ha Dong areas is discharged into the Nhue River, resulting in higher content of COD and BODs compared to the Red River.

Hanoi has abundant resources of lakes and ponds. The quality of surface water varies by lakes and even within in one lake by distance from the inlet, where wastewater is discharged. Some lakes at the upstream of wastewater drainage system are heavily polluted such as Van Chuong, Giam, Linh Quang, and Truc Bach.

(3) Solid Waste Management

The total amount of municipal solid waste in Hanoi City is about 490,000 tons per year or 1,300-1,500 tons per day, which account for 70% of total non-hazardous solid waste. 13% and 16% of them are from industries and construction. Hazardous waste from industries and hospitals amount 19,500 tons per year. Those waste are not properly disposed, resulting in the risk for human health and urban environment.

Solid wastes are collected without being segregated and transported to treatment sites. The collection efficiency is about 80% and recycle and reuse rate, mostly by scavengers, is estimated at 20%. Most of collected solid waste is disposed at land fill site. There are one sanitary landfill and three simple ones. Serious issues are observed not only for the capacity but also for the quality of the leachate discharged from landfills.

Hazardous healthcare waste have been burned in incinerators installed at several hospitals and in the centralized incinerator at Cau Dien. Since the Cau Dien incinerator started operation in 2000, the rate of hazardous healthcare waste treatment has improved from 33% in 2003 to more than 90% in 2004.

(4) Parks, Green Spaces, and Landscape

Other important elements of the urban environment in Hanoi are abundant green areas and those forming landscapes. Central Hanoi has a number of parks with water bodies, and many green spaces cover vast areas in suburban and rural area. However, residential areas particularly in the peripheries of the urban core have limited greeneries. People strongly demand for community parks within walking distances from their residences, where they can exercise, rest, or meet.

The exquisite blend of diverse landscape resources, such as rivers and lakes, parks, historical buildings and cultural activities, makes Hanoi stand out from other cities, attracting people from other provinces and countries. However, the charm of Hanoi is being threatened as urban development progresses. Landscape blights, such as excessive advertisement materials, crisscrossing electric wires, disorderly parking on roads, and unregulated building/housing construction, have increased, thereby spoiling the vista. Hanoi's landscape must either be preserved or improved depending on the area to showcase the city's socio-economic status and cultural identity

(5) Illegal Housing Areas

There are some areas where housing developments have been carried out without undergoing any legal procedure such as the issuance of land-use rights certificates, housing ownership certificates, and construction permits, mainly due to the termination of housing subsidies, relaxation of controls on population movement and institutionalization of land market due to Doi Moi. Those areas are typically observed outside of the Red River, in the urban fringes, and some open spaces in urban districts.

These squatter areas and slums have undesirable living conditions, where infrastructure, such as roads and drainage, is not well provided and where inundations frequently occur causing further deterioration of sanitary conditions. While basic urban services, such as electricity, water supply, and solid waste collection, are generally provided formally or informally, households have difficulty accessing social services, such as education and health care, due to a lack of legal registration.

2.3 Comprehensive Assessment of Living Conditions

1) Methodology

In order to have a comprehensive understanding of the development orientation of Hanoi, it is necessary to look at Hanoi's structure. This was done *first*, by providing a general overview of the structure of Hanoi as a city and its performance in comparison with other cities; *second*, its structure as an integration of many parts – districts¹ and communes²; and *third*, the static and dynamic structures of its parts – physical, socio-economic and livability aspects. The approach was that of an analytical disaggregation of the component parts of Hanoi from the city down to the district and commune levels. It also provided valuable baseline information toward an appropriate development direction.

Scientific, practical, and empirical information was applied to develop a set of indicators appropriate for Hanoi. These indicators when compared with important socio-economic data should allow for information on the development direction, issues, inadequacies, and potentials of each commune and district and, complement the existing analysis of Hanoi in general. These indicators can serve as a tool to monitor specific concerns in the immediate and long term. Results will enable the Hanoi People's Committee (HPC) to have a detailed understanding of progress and, also act as a policy tool that will ultimately be reflected in the Master Plan. The evaluation process is summarized in three stages, as follows (see Figure 2.3.1):

(a) Stage 1

- Select a set of comparative indicators used as international standards of evaluation at country and city levels, which are appropriate for assessing and improving living conditions in Hanoi;
- Develop the selected evaluation indicators and apply these to the urban and rural districts and communes, based on existing and available data. The basis for these will include, among others, HAIDEP HIS (2005) and the 1999 Census. A compilation of these indicators should serve as important baseline information and a comprehensive set of policy tools for better understanding of Hanoi's structure and future development; and, for future monitoring and evaluation – “people's watch”.

(b) **Stage 2:** Compile data into an “urban karte³” for Hanoi, summarizing district and commune profiles (issues, trends, and growth), diagnosis, and summary.

(c) **Stage 3:** Provide a conclusion and recommendations for policy and planning, as well provide a “people's watch” on government.

¹ Hanoi has nine *quan* (urban district) and five *huyen* (rural district). These 14 administrative units will be hereinafter referred to as “district” in this report.

² Hanoi has 102 *phuong* (precinct), 118 *xa* (commune) and eight *thi tran* (town under a district). These 228 administrative units will be hereinafter referred to as “commune” in this report.

³ Concept developed by the World Bank for cities but in this case disaggregated and applied to districts and communes.

Hanoi was assessed from aspects critical for its sustainable and future development, as well as that of its districts and communes. These aspects include both the static and dynamic elements of population trends, land use, economy/competitiveness, poverty, livability, vulnerabilities, and environment.

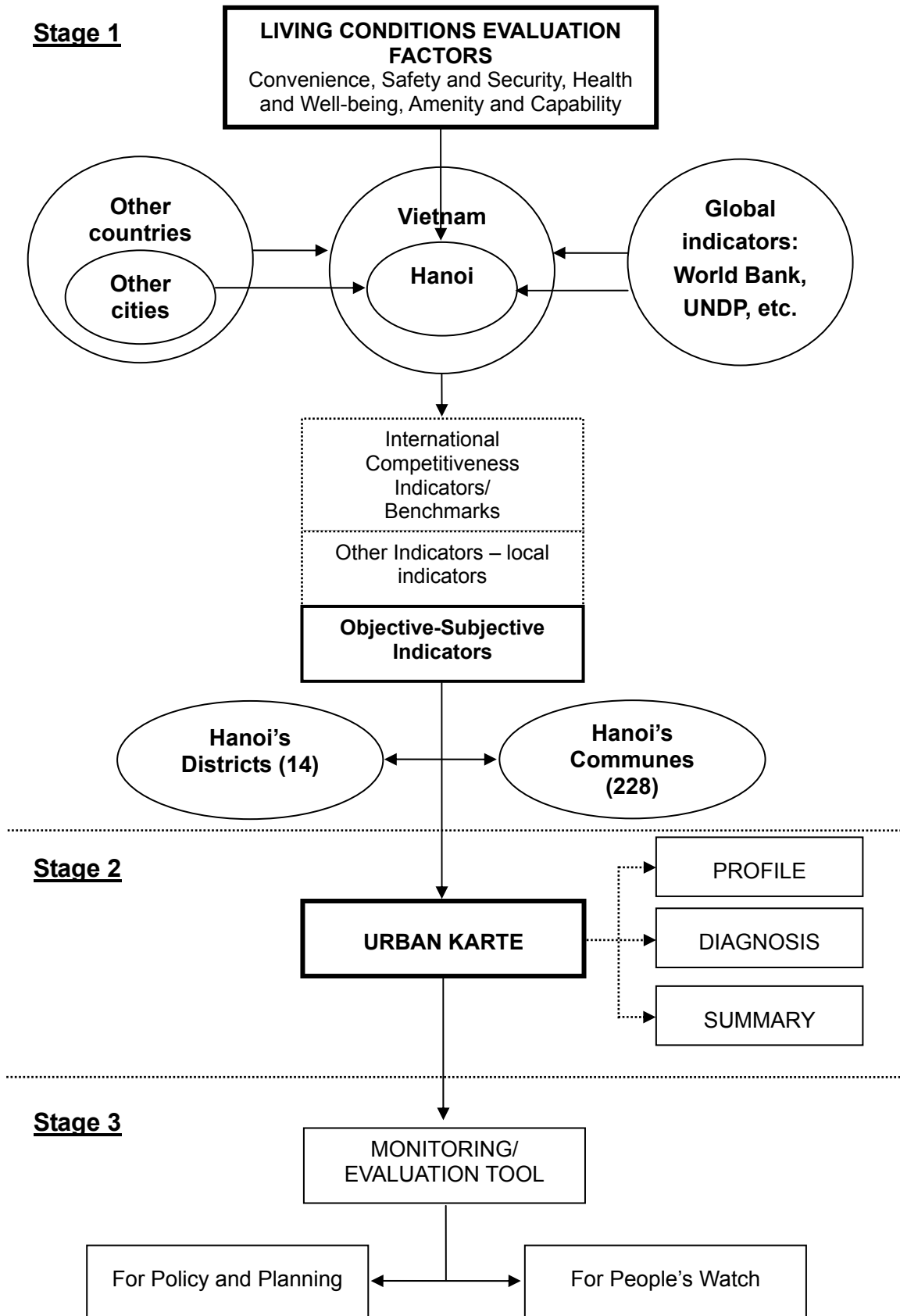
In 1961, the World Health Organization (WHO) concretized the notion of living conditions into four factors, namely: (i) convenience (and accessibility), (ii) safety and security, (iii) healthiness or health and wellbeing, and (iv) amenity. With more recent development studies, multidimensional aspects of poverty, human development, substantive freedoms, sustainable livelihoods, capabilities, and vulnerabilities were integrated as tools for a more holistic understanding of development issues/processes. Therefore, given these trends, a fifth factor was added in the analysis—that of (5) capability. This section summarizes all such factors and concepts at the district and commune levels in order to better evaluate the living conditions in Hanoi, as follows:

- (a) **Convenience and Accessibility:** This includes basic conveniences necessary for people to participate in daily activities and have access to information.
- (b) **Safety and Security:** This refers to safety from risks or accidents and to the protection of life and property from disasters and crimes.
- (c) **Health and Wellbeing:** This ensures that people have access to basic and health services in order to increase their resistance to diseases and have an improved wellbeing.
- (d) **Amenity:** This allows people to enjoy certain basic social and cultural freedoms as well as a comfortable environment.
- (e) **Capability:** Looks at people's assets and abilities to increase their capacities—"the more assets the less vulnerable...[where] vulnerability is linked closely to asset ownership."
- (f) **Limitations:** Because most of the data used for the districts and communes came were based on HIS results, there are some indicator data that would have improved assessment but have not been included in this instance, for example data on household expenditure, food expenditure, household livelihoods breakdown, etc.). This living conditions evaluation was prepared given the limitations of existing data.

For each living conditions factor, a set of indicators was selected either because it presents some comparative significance and/or it is very specific and relevant to Hanoi. As criteria, these indicators must be easily measurable and verifiable at the commune and district levels (see Table 2.3.1 and Figure 2.3.1). Some of these indicators have already been established at the international and national levels, while others have been developed specifically for Hanoi. Using basic statistical and mathematical methods, these indicators were translated to a score and a range, based on which all the communes and districts were ranked.

As a summary, the outputs of the five factors were aggregated to come up with an integrated analysis of living conditions and to serve as a complement to commune, district and city policy making, planning, and monitoring.

Figure 2.3.1 Conceptual Framework of for the Living Conditions Analysis



Source: HAIDEP Study Team.

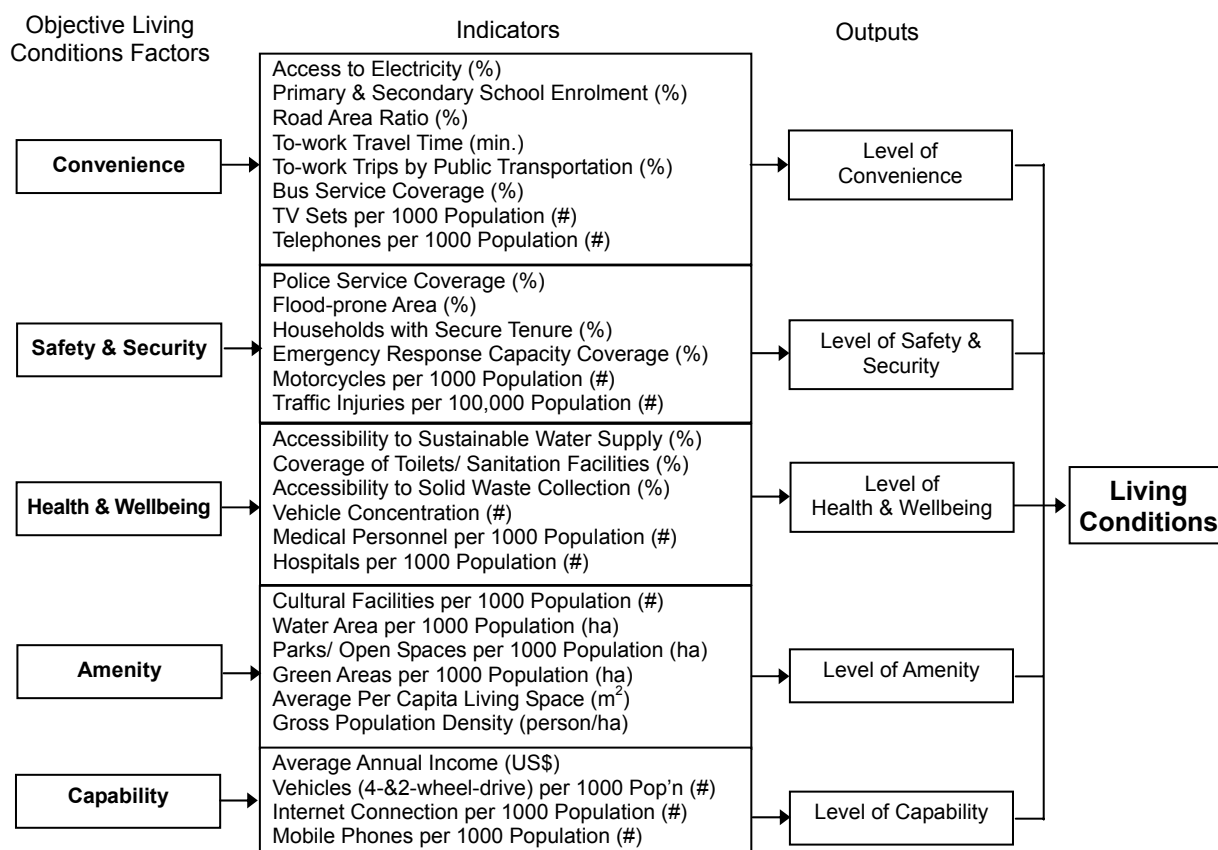
Table 2.3.1 International Comparison of Indicators as Applied to Hanoi

Indicator	Hanoi City	Other Cities/ Centers				Country Comparison			
		1	2	3	1, 2, and 3 Correspond to the Cities Listed Below	Vietnam	Ave. Low Income/ LHD	Ave. Middle Income/ MHD	Ave. High Income: HHD
Convenience									
Access to Electricity (%)	99.6	77.2	95.0	98.6	Bangkok, Cebu, Seoul	76.0	37.4	87.3	100.0
Primary & Secondary School Enrolment (%)	95.1	86.0	97.5	101.0	Hong Kong, Manila, Japan	83.0	70.0	93.0	102.0
"To Work" Travel Time (min.)	19.8	15.0	25.0	60.0	Davao, HCMC, Bangkok	20.0	57.0	42.5	30.0
"To Work" Trips by Public Transportation (%)	3.5	5.0	28.0	53-55	Chiang Mai, Bangkok, Singapore/Penang	50.0	-	28.0	53.0
TV Sets per 1000 Population (#)	230	385	600	877	Singapore, Cebu, HCMC	812	80	199	368
Telephones per 1000 Population (#)	191	40	286	620	HCMC, Shanghai, Fukuoka	35	135	223	499
Safety & Security									
Household with Secure Tenure (%)	91.5	-	-	-	-	-	-	86.0	100.0
Motorcycles per 1000 Population (#)	296	32	110	233	Singapore, Japan, Malaysia	775	-	233	59
Traffic Injury per 100,000 Population (#)	2,805	903	140	< 4	Korea, Ghana, US cities	1,156	140	65	7
Health & Wellbeing									
Accessibility to Sustainable Water Supply (%)	61.6	67.0	90.0	100.0	Malawi, Chittagong, Japan	50.0	61.0	83.0	100.0
Coverage of Toilet/ Sanitation Facility (%)	79.8	48.0	73.0	99.0	Kenya, Philippines, Thailand	41.0	35.0	61.0	100.0
Medical Personnel per 1000 Population (#)	15	59	116	140	Laos, Philippines, Singapore	53	2	59	201
Hospital Beds per 1000 Population (#)	3.3	3.1	5.0+	27	HCMC, Bangalore/Shanghai/Seoul, Manila	2.4	1.3	3.7	7.4
Health Expenditure per Capita (US\$)	-	30	69	816	Cambodia, Thailand, Singapore	21	23	118	2,841
Unemployment Rate (%)	10.3	2.2	4.6	7.0	Bangkok, Shanghai, Phnom Penh	<5.0	-	5.8	6.2
Amenity									
Cultural Facilities per Population	0.27								
Sports (Badminton, Basketball, Playground)/ 5000	-	-	-	1.0	Canada	-	-	-	-
Parks and Open Space per 1000 Population (ha)	0.08	3.1	5.3	4.8-8.0	San Francisco, Washington, Canada	0.1	-	0.1	2.7
Average Living Space per Capita (m ²)	10.5	20.4	31.0	60.0	China (2000), Japan, US	9.0	8.0	20.1	46.6
Population Density (person/ha)	33	-	-	-	-	2.4	0.9	2.4	32.4
Education Spending per Capita (US\$)	468	436	826	839	Beijing, Tokyo, Kuala Lumpur	448	-	99	448
Capability									
Average Income (US\$)	2,035	4,695	5,542	15,053	HCMC, Shanghai, Bangkok	-	-	4,678	36,436
Motor Vehicles (4&2-wheel) per 1000 Population (#)	105	32	572	779	Philippines, Japan, US	400	11	52	668
Internet Connection per 1000 Population (#)	3	4	13	30	HCMC, Delhi, Phnom Penh	24	4	77	477
Mobile Phone per 1000 Population (#)	20	25	87	155	HCMC, Phnom Penh, Shanghai	23	13	224	698
House Price to Annual Income (%)	142	96	21	16	HCMC, Shanghai, Phnom Penh	129	-	17	9.8
Population below International Poverty Line (%)	-	< 2.0	< 2.0	< 2.0	Thailand, Malaysia, Korea	18.0	34.0	15.0	6.0
Population below National Poverty Line (%)	-	44.2	32.9	13.1	Ethiopia, Chittagong, Bangkok	51.0	50.0	26.6	10.1

Source: World Bank 2001/2002, 2004; UNDP 2002/2003, 2005; WHO 2001, 2002; HAIDEP Study Team

Note: LHD: Low Human Development; MHD: Medium Human Development; HHD: High Human Development.

Figure 2.3.2 Conceptual Framework for the Objective Living Conditions Analysis



Source: HAIDEP Study Team.

2) Results of the Living Conditions Analysis at District Level

The results of the living conditions analysis at the district level are summarized in Table 2.3.2 and described below.

- (a) **Developed Infrastructures, Services, and Facilities in Urban Districts:** Basic urban infrastructure, particularly the road network, and urban services are well developed on the right bank of the Red River or the urban core and urban fringe. Since public facilities, such as cultural facilities, schools or hospitals, are distributed equally throughout Hanoi City, this has resulted in a lower per capita standard in the urban core due to its higher population density.
- (b) **Lack of Services in Suburban and Rural Districts:** The most influential factor that lowers the living conditions in rural areas is convenience, e.g. accessibility to urban areas. Another factor is healthiness with particular regard to low coverage of piped water supply, toilet facilities, and waste collection system. In suburban areas, the main issue is to improve “convenience” rather than healthiness, since the latter is well developed in suburban areas.
- (c) **Lack of Amenity in the City:** As a whole, the city absolutely lacks amenity, such as parks and open spaces. While greeneries, such as water bodies and trees, can be found all over the city, parks and recreational areas/facilities are denser in urban core and urban fringe districts.
- (d) **Southern Hanoi City Prone to Inundation:** One of the most critical issues in security and safety is the frequent occurrence of inundations due to the inefficient and

inadequate drainage system. The combined analysis of the level of land, precipitation run-off, and land use showed that the left bank of the Red River and the southern fringe of Hanoi City are more prone to flooding and inundation.

- (e) **Existence of Negative Externalities near Populous Areas:** Vehicles are more concentrated in urban core and urban fringe districts, most especially in the southern rim of the urban core. Highly dense communities are located along national and provincial roads which have heavy traffic and where vehicle emissions could trigger air pollution.
- (f) **Rapid Population Increase and Higher Living Conditions in Populous Areas:** The analysis of land types, living conditions, and current trends in population increase showed that the areas with lower living conditions have lower population densities and lower population increases. Those with population densities of about 250 persons/ha have experienced rapid population growth and enjoyed medium to high levels of living conditions.
- (g) **Homogeneous Living Conditions throughout the City:** The people in Hanoi City are generally satisfied with the level of living conditions in the city. Small gaps in the scores of living conditions factors reveal a relatively balanced physical urban structure.

Table 2.3.2 Results of Living Conditions Analysis

	Overall Analysis for Objective Score					Overall Analysis for Subjective Score					Overall Score	
	CO	SS	HW	A	CA	CO	SS	HW	A	CA	OBJ	SBJ
Hanoi	0.4	0.0	-0.5	0.0	0.0	0.4	0.4	0.2	0.1	0.5	-0.0	0.3
Urban Core												
Ba Dinh	0.9	0.8	0.0	-1.0	0.0	0.5	0.4	0.5	0.2	0.6	-0.0	0.4
Hoan Kiem	1.1	1.0	-0.2	-1.5	0.0	0.4	0.3	0.4	0.2	0.5	0.1	0.4
Hai Ba Trung	0.8	0.6	-0.2	-1.5	0.0	0.4	0.3	0.3	0.0	0.5	0.1	0.3
Dong Da	0.7	0.6	0.0	-1.3	0.0	0.4	0.2	0.3	0.0	0.6	-0.0	0.3
Urban Fringe												
Tay Ho	0.9	0.2	-0.5	-0.3	0.0	0.4	0.4	0.2	0.2	0.6	0.1	0.4
Thanh Xuan	0.8	0.0	-0.5	-1.2	0.0	0.3	0.2	0.1	-0.2	0.6	-0.2	0.2
Cau Giay	0.9	0.4	0.0	-1.0	0.0	0.3	0.3	0.3	0.1	0.6	0.1	0.3
Hoang Mai	0.6	-1.0	-0.3	-0.5	0.0	0.3	0.3	0.1	-0.1	0.5	-0.3	0.2
Long Bien	0.2	-0.4	-0.2	0.0	-0.5	0.4	0.3	0.2	-0.1	0.6	0.2	0.3
Suburban												
Tu Liem	0.4	-0.4	-0.3	-0.3	-0.5	0.3	0.3	0.1	0.0	0.6	-0.2	0.3
Thanh Tri	-0.2	-1.0	-0.2	0.0	-1.0	0.3	0.4	0.1	-0.1	0.4	-0.5	0.2
Rural												
Soc Son	-0.3	-0.4	-0.5	0.2	-1.3	0.3	0.5	-0.0	0.1	0.4	-0.5	0.3
Dong Anh	0.0	-0.2	-0.5	0.3	-1.0	0.3	0.5	0.0	0.1	0.5	-0.3	0.3
Gia Lam	0.1	-0.8	-0.3	0.2	-1.0	0.3	0.5	0.1	0.1	0.5	-0.4	0.3

Source: HAIDEP Study Team.

Note: CO: convenience, SS: safety & security, HW: health & wellbeing, A: amenity, CA: capability, OBJ: Objective Score, SBJ: Subjective Score

Recommendations to further develop the living conditions assessment are as follows:

- (i) Because of the use of international benchmarks for scoring the objective assessment of the living conditions factors, most of the districts fared badly. Of all the districts, only Dong Da got a positive score (+0.2) while Ba Dinh obtained a “decent” score (0). Other districts especially those in the urban fringe, suburban and rural areas have very bad living conditions, particularly Long Bien. Urban core districts have relatively better living conditions.

- (ii) Based on the subjective scores—the people’s opinion—most of the districts have above average living conditions. Comparing the districts, the people in Ba Dinh, Cau Giay, and Thanh Tri are quite satisfied with their living conditions, while the people in Hoang Mai appeared to be not much satisfied with theirs.
- (iii) It can be observed that there is a gap between actual conditions (objective score) and the people’s assessment of their living environment (subjective score). However, it can be found that both show a similar trend—Ba Dinh being the highest and Long Bien being one of the lowest. Thus the assessment of the living conditions or the monitoring of development/improvement levels can be done by the government merely by comparing actual conditions and the people’s perception of the development/improvement at the commune/district level. The proper selection and preparation of indicators in further assessments of the living conditions will also be a challenge for the government.
- (iv) It is recommended that the development focus and priority be directed toward areas which showed low scores. It is expected that the people’s satisfaction level with their living environment will increase in parallel with the improvement in actual conditions.

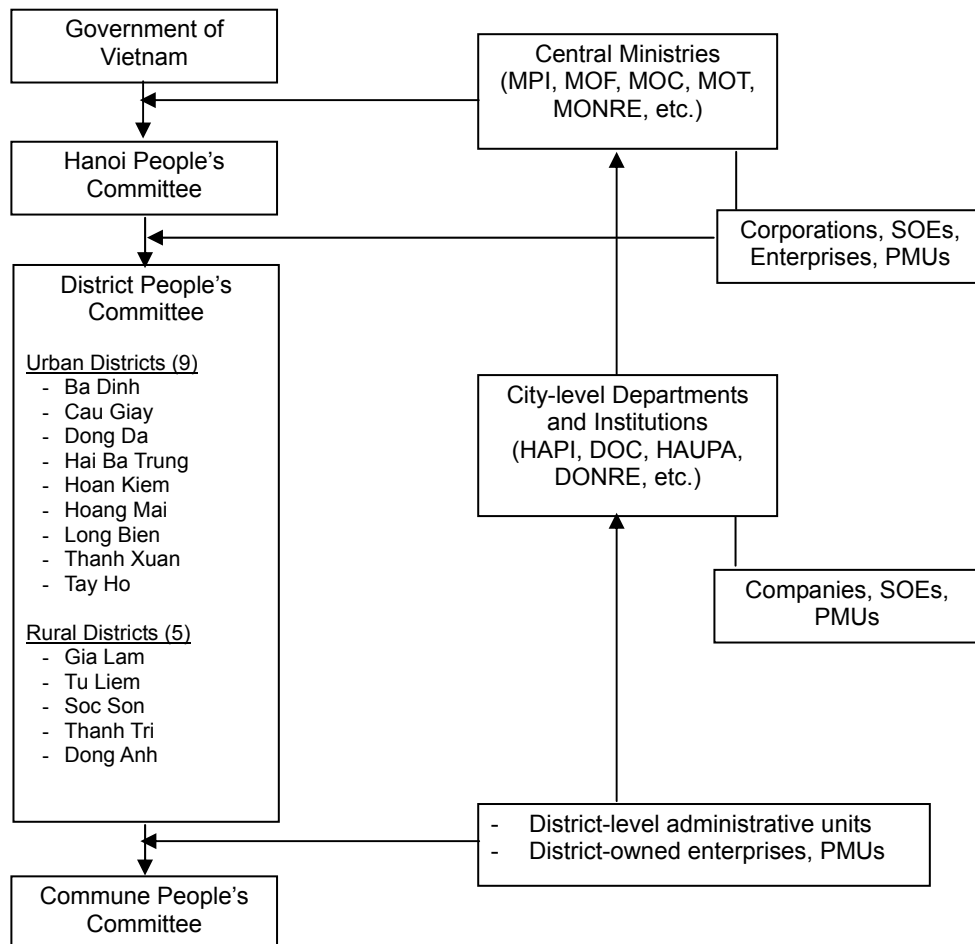
2.4 Current Urban Sector Management

As a centrally managed city, urban sector management in Hanoi involves several government agencies at both the central government and city levels.

The city is administered by the Hanoi People's Committee (HPC) which oversees several departments responsible for managing urban development and providing local public services (see Figure 2.4.1). Under the city authority are the district people's committees (PCs) and the commune / ward PCs who also have prescribed powers and responsibilities. There are several departments, boards, and advisory agencies that report to HPC. Some of the key departments involved in urban development and planning are:

- (i) Hanoi Authority for Planning and Investment (HAPI);
- (ii) Department of Natural Resources, Environment and Land (DONRE);
- (iii) Hanoi Authority for Urban Planning and Architecture (HAUPA);
- (iv) Department of Construction (DOC); and,
- (v) Transport and Urban Public Works Department (TUPWS).

Figure 2.4.1 Hanoi City Administrative Framework



Many of these departments also have profit centers known as state-owned enterprises (SOEs) and project management units (PMUs) within their organizations that implement urban and infrastructure development projects, as well as provide urban services.

Table 2.4.1 Key Departments Involved in Urban Planning and Policy in Hanoi

Department	Function
Hanoi Authority of Planning and Investment (HAPI)	<ul style="list-style-type: none"> • Prepare the socioeconomic development plan for Hanoi. • Advise the PC on the implementation of development projects. • Monitor the implementation of various projects. • Grant Certificate of Business Registration. • Coordinate with other HPC departments and institutions about overall planning and implementation. • Evaluate development projects including projects funded with ODA.
Department of Natural Resources, Environment and Land (DONRE)	<ul style="list-style-type: none"> • Prepare long-term, 5-year, and annual plans for the management of natural resources (mineral resources, water resources), environment, and housing land (land-use plans) with inputs from the districts and the communes. • Administer land including allocating and leasing of land. • Implement all laws and regulations on land use, land, environment, natural resources. • Issue LURCs. • Prepare cadastral maps. • Prepare statistics on land dealings including land transfers, auction of LURCs, etc.
Hanoi Authority for Urban Planning and Architecture (HAUPA)	<ul style="list-style-type: none"> • Prepare urban master plans / urban construction plans for the city. • Evaluate detailed plans of urban development projects. • Issue planning certificate for development projects. • Recommend long- and short-term urban development policies / proposals for the city.
Department of Construction	<ul style="list-style-type: none"> • Assess and approve technical design of civil and construction works. • Issue construction permits. • Compile information on construction prices. • Regulate consultancy practice and building contractors.
Transport and Urban Public Works Department	<ul style="list-style-type: none"> • Prepare annual and 5-year sector plans for the construction and repair of urban and rural transportation networks, traffic facilities, and transportation units. • Manage the construction of transportation facilities, water supply and drainage system, sanitary system, parks and public lighting. • Run transportation project management boards, maintenance organizations, and business enterprises including bus companies and construction companies.

Urban sector management is to a great extent affected by the existing prescribed powers to approve investment projects and development plans. Under the current laws of the country, the Prime Minister has the authority to approve large investment projects known as Group A projects. The influence of the central government is also seen in the development plan approval process. For example, the Hanoi socio-economic development plan (SEDP), Hanoi City land-use plan, and the urban construction general plan have to be approved by the Prime Minister. Hence urban sector management in Hanoi has to take into account the powers and authority of central government ministries as well as local authorities at the city, district, and commune levels.

1) Planning System

Urban sector management is also affected by the country's planning system. The planning system at the city level is influenced by four types of plans, i.e. the SEDPs, the regional and urban construction plans, the land-use plans, and the sector plans of the various departments in the city (see Figure 2.4.2). Both the urban construction plan and the land-use plan are prepared within the context of the Hanoi SEDP. However, all these plans could influence each other and need to be coordinated especially when they are reviewed. Each plan is prepared by different departments reporting to different ministries and people's committees at different administrative levels. Plans are also prepared at various levels of government, i.e. national, provincial, district, and commune. Table 2.4.2 lists the institutional responsibilities of preparing the various development plans in Hanoi.

Figure 2.4.2 Framework for Development Planning in Hanoi

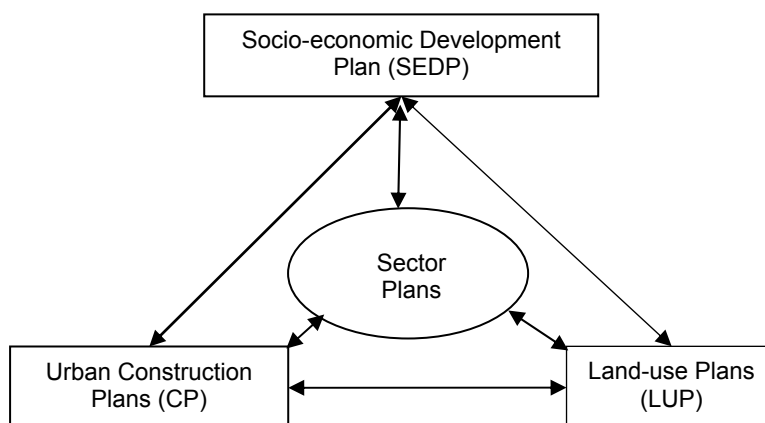


Table 2.4.2 Institutional Responsibility for the Various Development Plans in Hanoi

Type of Plan	Level of Authority	Prepared	Approved	Implemented	Monitored	
SEDP	National	MPI	National Assembly	All govt agencies	MPI	
	Hanoi SEDP	HAPI	Govt.	All Hanoi City level agencies	HAPI	
	District	DPC	HPC	All district agencies	DPC	
	Commune	CPC	DPC	All commune agencies	CPC	
Construction Plans	Regional Construction Plans	MOC	Prime Minister	Relevant ministries/provincial Peoples Committees	MOC	
	Urban Construction Plans	• General Plan	HPC (HAUPA)	Prime Minister	HPC, ministries/ Hanoi govt. dept./ agencies	HAUPA
		• Detail Plan for grades 1,2,3 urban areas (1:2000)	HPC (HAUPA)	HPC	DPC, district govt. dept./ agencies.	HAUPA
		• Detail Plan for grades 4 and 5 urban areas	DPC	DPC	DPC, district govt. dept/ agencies	HAUPA
		• Detail Plan (1:500)	DPC	DPC	DPC, district govt. dept.	HAUPA
Land-use Plans	National	MONRE	Govt.	Govt.	MONRE	
	Hanoi City	HPC (DONRE)	Govt.	HPC (DONRE)	DONRE	
	Districts	DPC	HPC	DPC	DPC	
	Wards (within urban areas)	DPC	HPC	CPC	DPC	
	Communes outside urban areas	CPC	DPC	CPC	DPC	
	Land for defense purpose	Ministry of Defense	Govt.	Ministry of Defense	Ministry of Defense	
	Land for security purpose	Ministry of Public Security	Govt.	Ministry of Public Security	Ministry of Public Security	

2) Urban Development Procedures

Procedures for implementing construction works vary by type of investment source, i.e. public fund, private fund, or foreign direct investment (FDI). Investment projects are classified into four categories depending on their importance and value of investment. Nationally significant projects are approved by the National Congress. The Prime Minister has the authority to approve Group A projects, while the respective ministers and the HPC chairman have the authority to approve Group B and C projects. Investment projects have to be supported by a Construction Investment Report which is appraised by the relevant ministry before approval is given. All major projects require an investment license to be issued by the competent authority before implementation works can proceed. In addition to the investment license, there are also other procedures involved, in particular planning certification and construction permits. The sequences of obtaining the various approvals may also vary slightly depending on the projects.

The existing institutional arrangements for urban development projects and services in Hanoi are shown in Table 2.4.3 and elaborated below. This shows the functional responsibilities with respect to planning, financing, implementation, maintenance, and regulation of the urban sector's different components such as urban development, urban transportation, urban water and sanitation, and other urban services. Notionally, the larger urban infrastructure projects are planned and implemented by the central government, while the smaller projects are executed by the city authority. The financing of large infrastructure projects is also dependent on central government allocations and external funding, in particular ODA. On the other hand, large-scale urban development projects, such as new town development and housing projects, are implemented by SOEs usually in a joint venture with foreign partners utilizing FDI and local funds. The implementation of local development projects and the provision of urban services utilize local revenue.

- (i) Large-scale urban developments, such as new townships and large-scale housing development, are increasingly carried out by joint venture companies financed by FDI. It is important that once the development is complete, emphasis should be given to the proper maintenance of public spaces and urban infrastructure. If the city is to take over the maintenance of the public areas and facilities, adequate budgetary allocation must be made to the city's maintenance budget.
- (ii) For effective development planning (SEDP, construction plans, and land-use plan), there has to be necessary financial allocations made in the five-year SEDP and the annual budgets of the ministries and the HPC to provide for the continuous review and to monitor the implementation of these plans.
- (iii) Low-income housing is an important component that both the city and the government must address. At the moment, there does not seem to be any particular department that is responsible for the planning and construction of low-cost housing for the lower-income bracket of the city population. Notionally, DONRE is responsible for public housing, but it has many other functions and it may be necessary to assign this to a Housing and Urban Development Corporation. This becomes all the more important as urbanization rates increase and more rural populations move into the city.

Box 2.4.1 Urban Development Process

The urban development process in Hanoi involves: (1) site introduction and issuance of planning certificate (HAUPA), (2) issuance of investment license (HAPI), (3) transfer of land-use rights (DONRE), and (4) issuance of construction permit (DOC).

1. Site Introduction and Planning Certification

- Site Location Introduction: In case the investor cannot find a suitable site he may submit a petition to HAUPA requesting the agency to identify a suitable site.
- Planning Certification: If the site is located in an area where there is an approved urban development plan, the investor has to submit an application for planning certificate that indicates the necessary planning controls that apply to the site.
- Architecture Planning Agreement: This is similar to a Planning Certification and is applied to areas without approved urban development plans where HAUPA will impose the necessary planning conditions. The investor is permitted to apply for the land and the architectural permit at the same time.
- Identification of Right of Way and Data on Infrastructure: Upon obtaining agreement on the site and the planning certificate/agreement the investor will have to identify the right of way (ROW) and data on infrastructure. He may do so from the Hanoi Planning and Construction Institute.
- Layout Planning Agreement: The investor then submits layout plans to HAUPA for approval.
- Endorsement of Architectural Design: The investor may also submit the architectural drawings with the layout plans and obtain the approval from HAUPA.

2. Investment License

Construction investment projects are broadly categorized into 3 groups (A, B, and C). Investment license is required for both FDI projects and domestic public projects. Projects under Group A are approved by the Prime Minister after they are appraised by the relevant ministry, whereas projects under groups B and C are approved by the relevant minister or chairman of HPC after they are appraised by the relevant departments.

- FDI Project: The investor applies for investment license either from the Prime Minister, the Minister of Planning and Investment, or the provincial PCs. There is currently a proposal to decentralize decisions on investment projects up to US\$ 40 million to Hanoi PC.
- Domestic Private Project: There is no need for an investment license but a business license is necessary.
- Domestic Public Project: Depending on the scale of the project the decision is made by the Prime Minister, the Minister of Planning and Investment, chairperson of the provincial PC, or head of the SOE.

3. Land Lease

Foreigners are not entitled to land-use allocation under the Land Law but may lease land from the Government. The premium for the lease may be paid as one-off payment for the whole lease period or as annual rental payment. For large urban projects land is usually recovered from the existing LUR holders and leased to the joint venture company. The usual period of the lease is 50 years, although for large-scale projects with difficult socio-economic situations, the period may be up to 70 years. In order to lease the land, both urban planning approval and investment license have to be submitted with the application.

4. Construction Permit

This is a formal requirement under the Construction Law. DOC issues the Construction Permit (CP) on behalf of the people's committee. DOC is also authorized to notify the utility agencies not to provide electricity and water for buildings without a valid CP. Construction permit is required for all construction activities except for the following:

- Works related to state secrets and temporary works.
- Facilities to be constructed urgently according to order from a competent agency (HPC Decision 28/2006/QD-UB).
- Temporary facilities.
- Facilities for new towns, industrial zones, and housing zones with a detail plan 1/500 in which urban designs have been approved by a competent authority.
- Facilities funded by state budget for which infrastructure design is approved by a competent authority.
- Works along routes not running through urban areas but in line with construction planning where the Investment project is approved by a competent state agency.
- Repair, improvement, and renovation of interiors without changing the overall architecture or alter safety aspects.
- Infrastructure facilities (roads, water treatment plants, water supply) with investment capital lower than VND 5 billion located in rural areas and not conflicting with historical and cultural protection zones.
- Individual houses of 3 stories or less with a total floor area of less than 200m² in remote areas outside rural residential zones.

5. Agreement on Sanitary Provisions, Utility and Prevention of Fire

The necessary approvals on sanitary facilities, prevention of fire, as well as supply of water and electricity must be obtained from the necessary authorities. Similarly, if the site is located close to historical or military facilities or dykes, then agreements have to be obtained from the relevant authorities.

Table 2.4.3 Institutional Arrangements for Urban Development Projects and Services

Group	Sector	Subsector	Planning	Financing 10)	Construction / Implementation	Operation & Maintenance/ Monitoring	Regulation / Guidelines	
Socio-economic Development	Socioeconomic framework	National level	MPI	CG	All Govt agencies	MPI	MPI	
		City level	HAPI	LG	All City agencies	HAPI	MPI	
Urban Development	Spatial planning	Regional planning	MOC/ NIURP	CG	Provincial PC	MOC/ NIURP	MOC/DPA	
		Urban master planning	HAUPA	LG	HPC	HAUPA	MOC /DPA(8)	
		Land use planning	DONRE	LG	HPC	DONRE	MONRE 9)	
		Detailed plan	HAUPA	LG	HPC	HAUPA	MOC / DPA(7)	
	Urban Development	New Town Development	Investor/ HAUPA	Local Private / FDI	SOEs, Investor	City/ Investor	MOC	
		Housing development	DONRE / HAUPA/ Investor	Local Private / FDI	SOEs, Investor	City/ Investor	MOC	
		Low-income housing development	DONRE	ODA / CG/LGs / SOEs	DONRE, DOC, SOE	City	MOC	
		Industrial Park and EPZ development	HAPI, MPI, DOI, DOSTE, Investor,	ODA / SOEs / Local Private / FDI	SOEs, Private, BIP	Hanoi Authority for IEPZ, Investor, BIP, City	MPI	
		Resettlement Programme	DONRE/HAUPA	ODA / LG/ Investor	DONRE (1) /HAUPA	DONRE / District PC	MONRE	
		Conservation of ancient quarter	HAUPA, DCI, AQMB	ODA / LGs	AQMB	AQMB	HPC	
		Park and green spaces	HAUPA, TUPWS	LGs	TUPWS	Green and Park Co. Thongnhat Park Co.	MOC, MONRE	
	Landscape and Conservation	Street trees	HAUPA, TUPWS	LGs	TUPWS	Green and Park Co.	MOC	
		Regulation on advertisement	DCI	n.a.	-	DCI	?	
		Regulation on construction	DOC	n.a.	-	DOC, District PC	MOC	
		Greenery management	HAUPA	n.a.	-	Green and Park Co.	MOC	
		Conservation of historical buildings	DCI, MCI	CG, LG	DCI, Owner	DCI	MCI	
		Urban Transportation	Master Plan	Regional Transport network	MOT/MOC	CG, ODA	MOT	MOT
	Urban Transport network			MOT / TUPWS/ HAUPA	LG, ODA	TUPWS	TUPWS	MOT
	Road Development		Inter-city road development	MOT	ODA / CG/FDI	PMU under MOT	RMMC	MOT
Urban road and bridge development			TUPWS / TEDI(2)/	ODA / LGs	TUPWS / PMU	TUPWS	MOT	
Road traffic management	Traffic signals		TUPWS	LG	Lighting Company	TUPWS	MOT	
	Traffic safety		TUPWS / Traffic Police	LG	TUPWS / Traffic	TUPWS/Traffic Police	MOT	
	Parking		TUPWS	LGs	TUPWS / District PC(3), Private	Hanoi Parking Company, private	MOT	
Public transport (road-based)	Bus		TUPWS	LG	TUPWS	HTC, Transeco, Buses Stations Management	MOT/ TUPWS(4)	
	Other modes of public transport 5)		TUPWS	LG, Private	TUPWS	Tramway co. Tourist buses services co.,	MOT / Taxi Union / private	
Railway	Heavy railway		MOT/ Vietnam Railway	ODA / CGs	Vietnam Railway -	Vietnam Railway	MOT	
	Light railway		na	na	n.a.	n.a.	n.a.	
Water transport	Ports		MOT	ODA / CGs	VIWA-PMU	Port Authority	MOT	
	River transport		MOT	CGs / LGs	SOE	SOE	MOT	
	Ferry		TUPWS	LGs	TUPWS	Ferry company	TUPWS	
Urban Water and Sanitation	Water Supply		Water resource management	MONRE/NBWR	ODA / CGs	MOC	MOC	MONRE/MOC
		Urban water supply	MOC / TUPWS	ODA / LGs/Private	TUPWS / Water supply 1A PMU	HWBC/ HWBC No.2	MOC	
		Rural water supply	MARD	ODA / CGs / LGs	MARD / DARD	CERWASS	MARD	
	Drainage and waste water treatment	Water quality management	MOC/MOH	CG/LG	TUPWS	MARD 6) / DONRE	MOC / MOH	
		Urban Drainage	TUPWS/MOC	ODA / LGs	TUPWS PMU	HSDC	MOC	
	River and lake management	Sewerage system / wastewater	TUPWS/MOC	ODA / LGs	TUPWS PMU /	HSDC	MOC	
		Water quality management- urban	MONRE/ DONRE	LG	DOC	DONRE	MONRE	
River Flood control	MARD	CGs	MARD	MARD	MARD			
Other Urban Services	Solid waste management	Collection	TUPWS	TUPWS	LG	URENCO	MOC	
		Treatment and Disposal	TUPWS	LGs	TUPWS PMU	URENCO	MOC	
	Power	Transmission	EVN	CGs	EVN	Hanoi Power Com.	EVN	
		Local distribution	EVN	CGs	Hanoi Power Com.	Hanoi Power Com.	EVN	
	Telecommunication	Trunk lines	MPT / VNPT	CGs	HNPT	HNPT	MPT	
		Local services	MPT / VNPT	LGs / private	HNPT /Private	HNPT / Private	MPT	
Education	Tertiary	Tertiary	DTED	CG, Private	Temporary PMB of DTED / Private	DTED-School Director Board / Private	Ministry of Education	
		Secondary	DTED	CG	Temporary PMB of DTED / Private	DTED-School Director Board / Private	Ministry of Education	
		Primary	CTED	CG	Temporary PMB of CTED/ Private	CTED-School Director Board / Private	Ministry of Education	
	Health Care	Hospital	MOPH	CGs	MOPH PMB	MOPH- Hospital Director Board	MOH	
		Clinic	DOPH	LGs	DOPH PMB	HDPH - Clinic Director	MOH	

AQMB Ancient Quarter Management Board
 CERWASS Center for Rural Water Supply and Environmental Sanitation
 CTED Commune Training & Education Division
 DARD Department of Agricultural and Rural Development
 DCI Department of Culture and Information
 DOC Department of Construction
 DOF Department of Finance
 DOI Department of Industry
 DONRE Department of Natural Resources and Environment
 DTED District Training & Education Division
 DPA Department of Planning and Architecture
 EVN Electricity of Vietnam
 HAPI Hanoi Authority for Planning and Investment
 HAUPA Hanoi Authority for Urban Planning and Architecture
 HAUPA Hanoi Authority for Urban Planning and Architecture
 HNPT Hanoi Post & Telecommunication
 HPC Hanoi People's Committee
 HTC Hanoi Transport Company (control 4 Bus Company)

IEPZ Industrial and Export Processing Zones
 MARD Ministry of Agricultural and Rural Development
 MBIP Management Board of Industrial Park
 MOC Ministry of Construction
 MOF Ministry of Finance
 MONRE Ministry of Natural Resources and Environment
 MOT Ministry of Transport
 MPI Ministry of Planning and Investment
 MPT Ministry of Post and Telecommunication
 NBWR National Board of Water Resources
 PMU Project Management Unit
 RMMC Road Maintenance & Management Companies
 TEDI Institute of Transport Engineering Development
 TDSI Transport Development Strategy Institute
 TUPWS Department of Transport and Urban Public Works
 VNPT Vietnam Post and Telecommunication
 HSDC Housing Sewerage Drainage Company

Notes:
 1) including construction of resettlement housing
 2) for designing
 3) TUPWS for car, Dist. PC for motorcycle
 4) Fare setting is under TUPWS
 5) including taxi, xeom, cyclo
 6) for monitoring of underground water
 7) for approval
 8) related with Construction Law
 9) related with Land Law
 10) Financing Arrangements
 CG Central Government
 LG Local Government
 ODA Official Development Assistance
 FDI Foreign Direct Investment
 Private Local Private

- (iv) In the case of industrial parks, HAPI and the management board of industrial parks are the main agencies responsible for the planning and management of such areas. However, much of the existing industrial land is owned by SOEs who have no incentive or legal means to sell / sublease the land to private business. It is reported that SOEs own an overwhelming 95% of industrial land leased to organizations in Hanoi, leaving less than 5% to private firms and cooperatives.⁴
- (v) The law requires that existing land users will be compensated with alternative sites or be awarded monetary payments based on prevailing prices of LURCs if their lands are acquired by the government for development projects. If it is a private initiative, the investor will have to make the necessary payments before the government recovers the land. The agency responsible for land recovery is DONRE and depending on the nature of the project, the financing may come from several sources.
- (vi) The conservation of the Ancient Quarter remains an important component of the city plan. The Ancient Quarter Management Board has been established to facilitate the management and conservation of this area.
- (vii) Services relating to parks and gardens and maintaining street trees are provided by TUPWS. However, it is still unclear as to who would be responsible for landscape planning. While urban design is featured in the Construction Law, landscape planning is not given much emphasis. This aspect should be given more prominence in city planning as the city modernizes. Functionally, the responsibility could be assigned to TUPWS or HAUPA.
- (viii) The conservation of historic buildings is functionally assigned to the Department of Culture and Information. Again, the conservation of such buildings and areas may require the enactment of sufficient regulations and financial support especially if the buildings are privately owned.
- (ix) The responsibility for transportation planning and transportation facilities lies with MOT and TUPWS. The planning and design responsibilities for urban roads and bridges are with TEDI and TDSI which serve as government consultants to MOT. Similarly, public transportation pertaining to buses and bus terminals falls under the responsibility of TUPWS. While heavy rail is the responsibility of Vietnam Railway, it is unclear as to who will be responsible for light urban rail. Ideally, the responsibility should be with MOT / TUPWS so that a consolidated strategy on urban transportation could be developed and better coordinated. Eventually, there may be a need to set up a Public Transportation Authority to plan, manage, and develop public transportation in the city.
- (x) Water resources management is the responsibility of MONRE and the National Board of Water Resources. Most of the water supply is extracted from ground water sources. The management of watersheds and aquifers is important to ensure sustainable water supply both for urban use and agriculture. The responsibility for constructing water supply facilities, such as dams, treatment plants, and pipes, lies with MOC and TUPWS. Water quality management is the responsibility of both MOC and the Ministry of Health which ensure compliance with the standards specified for potable water. Good coordination between water resources management and water supply arrangements in the aspects of policy, planning, financing, implementation, and regulations are important for sustainable urban water supply.

⁴ As reported in Private Sector and Land – Amanda Carlier and Son Thanh Tran. Private Sector Development Policy Note, World Bank, Hanoi May 2004.

- (xi) Urban drainage facilities are an important aspect of urban development. As the city develops and more agricultural lands are converted to urban use, there will be increased runoff that will put a strain on the existing drainage facilities. It is important that adequate guidelines are in place that require on-site water retention facilities, such as retention ponds for new urban developments, storage devices, and the landscape treatment (e.g. swales and wetlands), as part of the urban drainage strategy. The agency responsible for urban drainage is TUPWS. The programs on urban drainage should also be integrated with river flood control which is under the responsibility of the Ministry of Agriculture and Rural Development.
- (xii) Solid waste disposal remains a major problem in many cities. Final disposal sites, be they landfills or incinerators, as well as intermediate transfer stations have to be carefully sited and are best identified in regional plans. The earlier this is done the better to prevent urban encroachment into the buffer zone of the facility. The siting of such facilities is always associated with the NIMBY (Not in my Backyard) factor and it is understandable that most provinces will object to the siting of such a facility in their areas. TUPWS, which is responsible for the planning of the facility, should identify possible locations and coordinate them in the regional plan for metro Hanoi.
- (xiii) Power supply is provided by EVN, while telecoms facilities are the responsibility of the Ministry of Post and Telecoms. Education remains the responsibility of the government. The District Department of Education and Training (DTED) is responsible for tertiary and secondary school facilities, while primary schools are the responsibility of the communes. Health care facilities are provided by the government. There is, however, in recent years a growing number of private medical clinics in the city.

2.5 Main Issues

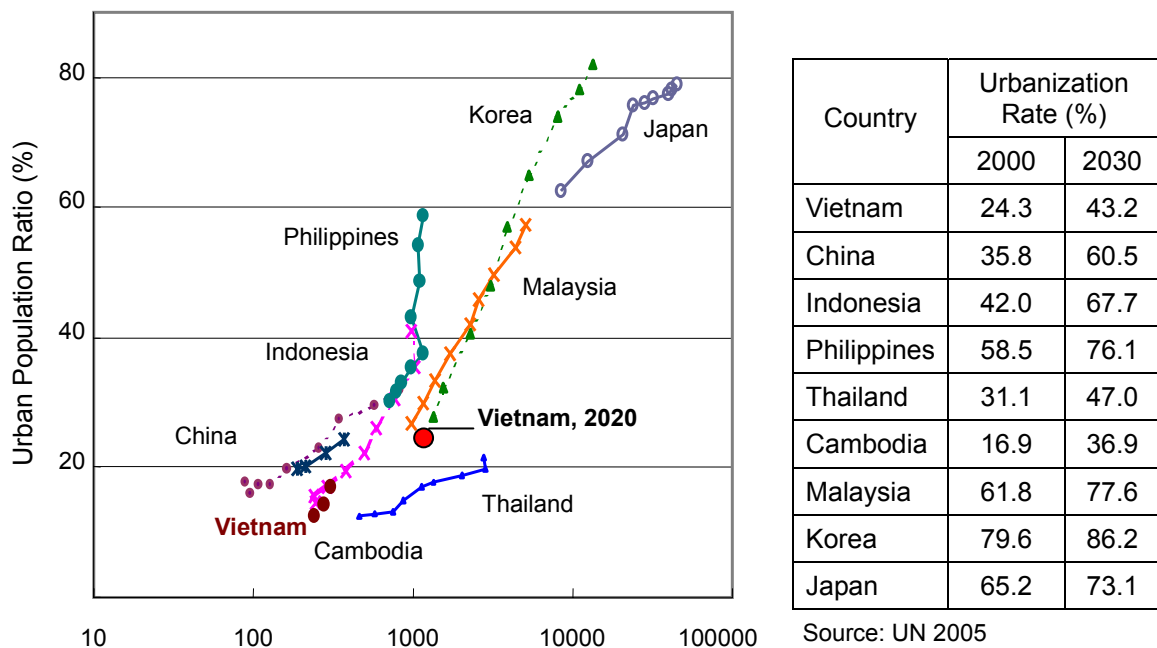
1) Urbanization Impacts

Vietnam with its relatively low rate of urbanization (24% in 2000) faces a great challenge due to rapid urbanization which was and is being experienced in many countries in the world. This trend is expected to continue until the urbanization rate reaches 70% - 80%. This implies that Vietnam is now in a long-lasting process of urbanization for the coming decades. It is estimated that the current (2005) urban population of almost 23 million will increase to nearly 47million in 2030 and furthermore thereafter.

Vietnam's urbanization, which has been associated with industrialization, modernization, and globalization, has immensely affected its socio-economic features and the shape of urban areas as well as the people's lifestyles. It is estimated that Vietnam is likely to follow the path of industrialized or industrializing countries such as Japan, Korea, Malaysia, and China (see Figure 2.5.1).

Urbanization brings about both positive and negative impacts both at national and city levels. At the national level, although urbanization associated with industrialization promotes economic growth, increases incomes, improve access to services, and provides better employment opportunities, it is common to see the inequalities between urban and rural areas as well as among regions widen, especially during the process of rapid urbanization. Differences in incomes between rich and poor also tend to increase. Congestions spread in urban areas, especially in large cities, and environment and safety worsen. The impacts are so rapid, diversified, and complex that many cities struggle and have a hard time managing them. How to mitigate the negative impacts of urbanization while promoting its positive impacts is a challenge for Hanoi in its pursuit of sustainable development.

Figure 2.5.1 Urbanization Trend in Asian Countries



Source: Worked out by the HAIDEP Study Team.

2) Main Issues in Urban Planning and Development in Hanoi

(1) Growth Management

Growth management policies are designed to guide the "smart" development of urban areas. Hanoi is expected to grow by around 1.5 - 2 millions people over the next 15 years. The city is the engine of the regional and national, as well as local, economies. Population increases and shifts of this scale indicate that growth management will become increasingly important in helping the city to accommodate growth, while maintaining livability.

Growth management is an old but critical and effective concept which entails many of the principles that urban planners worldwide have practiced for decades—strong and vibrant centers, open space networks, balanced transportation systems, provision of urban services, and livable communities. Urban growth boundaries define the extent of urbanization in most official plans. A map shows urban growth separated from rural and environmentally sensitive land. It is the most direct technique for implementing urban containment policies as part of growth management.

Urban growth management include a number of elements designed to shape growth, mitigate development impacts, protect natural systems (land, air and water), and preserve the quality of life for both urban and rural residents. Typical parts of a growth management framework include:

- (i) Strategies to discourage sprawl and encourage effective urban development and renewal.
- (ii) Provision of infrastructure (roads, schools, water, parks, etc.).
- (iii) Economic development strategies.
- (iv) Urban design requirements that aim at developing pleasant urban areas that combine moderate densities with people- and environment-friendly places.
- (v) Policies and programs that protect rural areas, sensitive lands, and open spaces.
- (vi) Policies and programs to assure that affordable housing is a defined and major component of new development.

With the fast-increasing urban growth, it is clear that policy on its own is not enough to meet the development. Critical elements of a growth management strategy should thus include:

- (i) Collaboration, coordination, and leadership among and between governments as no level of government can do this alone.
- (ii) Introduction of new tools and resources and the innovative application of existing tools to effectively guide growth (e.g. urban growth boundaries, growth phasing, environmental preservation techniques, zoning, housing linkage, smart codes, etc.).
- (iii) Use of public investment and incentives to leverage market forces.
- (iv) Investment decisions based on immediate needs and long-term (up to 50 years) timeframes.
- (v) Creation of a broad base of understanding and support for managing growth.

Basic principles in urban growth management are:

- (i) Local government should play a proactive role in managing growth. Growth should not be addressed in a reactive way, but should be guided by a plan based on

well-considered principles. The plan should include the phasing and timing of growth by location.

- (ii) The existing community—its living areas, schools, and businesses—should be the priority in terms of "vitality and development".
- (iii) The infrastructure (streets, water and sewerage systems, storm drainage, schools, and other facilities) in existing neighborhoods should be maintained, rehabilitated, and the deficiencies corrected as a high priority.
- (iv) Urban growth should be supported in an efficient way. In other words, grow first where urban infrastructure already is in place.
- (v) The process should not stop at a plan; implementation is crucial.
- (vi) Keep the community involved in carrying out the growth plan.

(2) Livability

Living conditions are generally better in urban areas than in suburban and rural areas. Urban areas have high levels of safety and security which are explained by the higher level of police coverage. The emergency response capacity is further higher in the urban core. Urban areas have higher levels of urban services such as piped water, toilets, solid waste collection, accessibility to roads and bus services, and access to markets. Welfare facilities (religious facilities, hospitals, and schools) are allocated relatively homogeneously throughout Hanoi. Since urban districts have higher population densities, people here tend to have less access to these facilities.

Urban amenities, such as green areas, water space, and housing space, decrease as the location gets closer to the urban center. Industrial areas, excluding industrial parks and estates, occupy a high proportion of the urban core and urban fringe areas. On the other hand, urban amenities, such as parks and recreational areas, have higher per capita densities in the urban core and urban fringe.

Vehicle concentration calculated from the results of the transportation survey shows high density in the urban core and urban fringe. Moreover, high vehicle densities can be seen in zones located along national and provincial roads characterized by heavy traffic. Emissions from these vehicles seriously contribute to air pollution.

Mixed industrial areas are distributed nearby populous areas, most prominently in the southern rim of the urban core. These industrial areas have several factories which discharge pollutants. Control of these industrial areas, as well as factories, is important to halt further environmental deterioration.

Urban fringe districts in this analysis show similar living conditions to that of urban core districts. However, their population growth is most rapid among any other areas in Hanoi City, thus more attention is necessary to balance population growth and living conditions here.

(3) Competitiveness

The city is not only the capital of the nation but also the political center and the hub for culture, science, education, and economy. It plays a leading role in the region being the gateway to national and international markets. Hanoi thus has competitive advantages for international trade.

Hanoi is a fast-growing metropolis with a population of 3 million and a GDP growth of 12.6% (2003). The area has the biggest industrial center in the northern region and attracts

most FDIs in northern Vietnam. Over 80% of GDP comes from the industry and construction sector. Many foreign banks have set up branches in the city. With modern technologies, IT, banking, and other services, Hanoi is the development force of the whole region. In addition, it is an attractive city, both to tourists and residents, due to the preservation of the beautiful and cultural surroundings and the stable political situation and low crime figures.

The infrastructure in and around Hanoi is well developed and generate favorable conditions for trade and exchange with other parts of the country or foreign countries. Hanoi is the most important transportation terminal in the northern Region for all transportation modes, including roads, inland waterways, railway, and air. Investments to improve the urban transportation network have been high. More than 90% of all roads are paved compared to only 50% in rural areas.

The development strategies for Hanoi City evolve around its upgrading into a modern metropolis with a stable economy and strong culture. The overall target will be to develop its GDP by focusing on the development of its industrial and services sectors. Unemployment rate should be reduced to 5 - 6% by 2010. The city has continuous high urbanization rate and therefore the city plans to be developed and modernized.

Hanoi (and Vietnam in general) still faces some disadvantages in the international marketplace for the following reasons:

- (i) The liberalization process has been slow. The process of reforming state-owned enterprises and the financial-banking system is slow.
- (ii) Most international competitors of Vietnamese firms are stronger and at a higher development level.
- (iii) Vietnam is a transition economy that has to be integrated into a highly competitive marketplace where it has to learn the rules of the game.
- (iv) High costs of doing business and high corruption mean it is harder for Vietnamese businesses to compete. Office rentals and transportation costs in Vietnam are higher than anywhere else in Southeast Asia⁵.

In order to maximize the huge opportunities brought by Vietnam's integration into the global market, it has to prepare well for the implementation of its international commitments, especially in terms of improving the competitiveness of the economy, firms, and products. It is also necessary to strengthen the economic and social institutions to ensure stability in the face of potentially negative impacts of integration.

(4) Environmental Sustainability

Urban development must be implemented in a way that natural, cultural, and social environments are preserved and sustained adequately. Hanoi is situated in a fragile natural environment. Existing urban areas spread in areas below high water levels of the Red River and are thus threatened by river flooding and frequent inundations from heavy rainfalls. Land subsidence is also observed in many locations.

At the same time, Hanoi's water resources provide a unique and attractive landscape. The Red River gives a magnificent view and forms an incomparable open space. Large numbers of lakes with different sizes contribute to the urban landscape and amenity for the

⁵ Japan External Trade Organization (JETRO) 2005

people. Abundant trees and greeneries further enhance the urban landscape and living environment. Moreover, Hanoi is gifted with a wide spectrum of tangible and intangible cultural resources. Meanwhile, traditional values are still maintained in everyday life in urban and rural areas.

A unique characteristic of Hanoi's environment is the wonderful blend of natural, cultural, and social elements which enhances the image of the city. Rapid urbanization resulting in unplanned and uncontrolled development taking place in many locations in the city is however affecting the environment negatively. These are briefly as follows:

- (i) **Natural Environment:** Lakes and ponds distributed all over the city have been reclaimed as urbanization makes progress. Although the actual situation is not exactly known, it is clearly see from aerial pictures and satellite images that many lakes and ponds have been filled in fully or partly to suit various developments. Groundwater is also getting polluted, especially in the south of the city. Ground subsidence is also progressing in many parts of Hanoi. Erosion of banks along the Red River is also observed. Air quality has gradually worsened due to increased vehicular traffic.
- (ii) **Social Environment:** The constant influx of population into the city has started to generate increasing social conflicts and has led to a loss or a weakening of the social network and community relations. Security and safety levels are likewise deteriorating. Land for cemeteries and solid waster disposal have become critical issues as well.
- (iii) **Cultural Environment:** Rapid urbanization and commercialization are quickly changing Hanoi's urban landscape. Numerous advertisement materials have sprung up seemingly without following clear guidelines, while new buildings with uncoordinated design and style have become eyesores. At the same time, traditional villages are deteriorating largely due to the lack of adequate measures on conservation or maintenance.

3 VISION, GOALS, AND KEY SPATIAL DEVELOPMENT STRATEGIES

3.1 Vision and Goals

The vision and goals for Hanoi are interlinked with the fact that it is the nation's capital and as such, it should be in the forefront of Vietnam's march toward future growth and the anchor for its identity as a proud and robust nation. This is rightly stated in the vision for Hanoi in Order No. 1/2001/L-CTN which reads: ***"Hanoi must be built as a modern and thriving capital city, symbolizing the whole country, and functioning as a national and regional center for policy, culture, science, technology, education, economy, and international trade."*** Realizing this vision will be done through the following main strategies: (i) acceptance and promotion of its historical and cultural traditions of Thang Long – Hanoi; (ii) development of a competitive economy that meets domestic requirements while integrating with the global market; (iii) promotion of a healthy and clean social environment; (iv) strengthening of security and safety; and, (v) development of modern and integrated infrastructures while ensuring the sustainability of its natural environments.

One primary aim is to develop Hanoi in an economically, socially, culturally, environmentally, and politically sustainable manner, making sure that the city's beauty, resources, and amenities will be sustained for generations to come. This will be ensured through the following goals:

- (i) To enhance the identity and image of the city which must be shared by the society and must appeal to the whole country and the international community.
- (ii) To ensure cultural, social, and natural environmental sustainability which has been, and will continue to be, the core value of the city.
- (iii) To ensure that socio-economic activities can be carried out conveniently and that good living conditions can be experienced by all, including businesses and visitors, now and in the future.

Since an integral part of the general goal is to help guarantee that the people of Hanoi will live safe and healthy lives, engage in convenient and comfortable socio-economic activities, and aspire for better incomes and livelihoods, new types of industries that will generate better jobs and employment will be introduced and encouraged. This will include knowledge-based, high-end technologies, high value-added urban services, tourism and MICE¹, expanded higher education, advanced urban agriculture, and various other economic sectors and activities expected to provide quality employment. The further opening up of an economy reflective of a better investment environment and the development of modern commercial and industrial centers, high-quality foreign and domestic investments in strategic locations will further drive the economic development of Hanoi. At the same time, efficiently provided and managed infrastructures, including a high-quality public transportation, will make it possible for the people to commute safely without traffic congestions and wherein goods will be transported efficiently. On the other hand, the preservation and the enhancement of the city's cultural heritage, greeneries, and water spaces, including the Red River system and the countless lakes, will create magnificent landscapes and incomparable sceneries.

¹ MICE = meeting, incentive, convention, exhibition.

3.2 Socio-economic Development Orientation

Hanoi's *Socio-economic Development Plan for 2006 - 2010* promotes the development of a competitive and livable city and specifies the development directions, in consideration of the upcoming 1000-year anniversary of Thang Long-Hanoi in 2010 which is an important event and the WTO accession in 2006 to promote international integration and globalization. It states the following development objectives:

- (i) To boost industrialization and modernization processes as well as international and regional integration, to improve economic efficiency and competitiveness toward "service-industry-agriculture" structure, and to strengthen the roles and functions of the capital in the region and the whole country.
- (ii) To promote economic, social, and cultural development in a comprehensive and sustainable manner.
- (iii) To stabilize local security and political environment together with the improvement of the capacity of local administrative bodies.
- (iv) To promote investments and accelerate infrastructure and superstructure development to strengthen the city's foundations.
- (v) To improve living conditions, reduce social evils and unemployment in urban and rural areas, and strengthen social services for the poor.
- (vi) To improve the standards of education, training, and technology and thus establish a modern civilization for Hanoi

The above development objectives are further categorically defined in four major areas, namely economy, social environment, living conditions, and infrastructure services together with a set of target indicators (see Table 3.2.1).

- (a) **Economy:** The city's economy should grow by 11% to 12% per year to take the lead in the development of the city and the region. Industrialization should further make progress and the service sector should expand, while the share of the primary sector should be reduced. FDI is further expected to increase. With this, per capita GDP will increase to about US\$ 6,000 by 2020.
- (b) **Social Environment:** Education should expand further and all school-age youths should be enrolled in secondary education. Training programs should also be expanded. Employment opportunities should increase, while unemployment rate should decrease to less than 5% by 2020. Poverty rate should be reduced to less than 1% by 2020.
- (c) **Living Conditions:** Living conditions should improve with an average living area of 15m²/person, a water consumption of 170-180 liters/day/person, and an average green area of 15m²/person and 31m²/person in urban areas and in the whole city, respectively.
- (d) **Infrastructure Services:** Infrastructure to support socio-economic development and environmental improvement should improve to a great extent. Public transportation services should expand to meet 50% of the total demand. Water supply should cover almost the entire city, drainage in urban areas should improve, solid waste collection should cover the entire urban area, all streets are lighted, and so on.

Table 3.2.1 Objectives and Target Indicators of Hanoi SEDP¹⁾

Area	Objective and Target Indicator		
Economy	<ul style="list-style-type: none"> to ensure sustainable and high economic growth. to improve the development efficiency and competitiveness to improve the capital's economic position in the region and the whole country. to strengthen, develop, and improve economic structure toward modernization and industrialization. to expand and improve external economic efficiency, and regional and international integration. 		
	<i>Indicator</i>	<i>2010</i>	<i>2020</i>
	GRDP growth rate (%/year)	11-12	11.0
	Per Capita GRDP (US\$)	2,400	6,000
	Economic Sector (1/2/3) (%)	1.2/41.2/57.4	0.75/41.7/57.3
	FDI growth rate (%/year)	15	-
	Employment structure (1/2/3) (%)	15 /31/ 54	7 / 35 / 58
Social Environment	<ul style="list-style-type: none"> to develop education, training, science, and technology to higher standards and create the foundation of a knowledge-based economy. to provide more job opportunities and reduce social ills and unemployment in urban and rural areas. to strengthen social services for the poor/other beneficiaries, and reduce poverty efficiently. 		
	<i>Indicator</i>	<i>2010</i>	<i>2020</i>
	High-school enrolment rate (%)	> 90	100
	Training employment rate (%)	60	70
	Unemployment rate (%)	< 5.5	< 5.0
	New jobs per year (000 jobs/year)	100	90-95
	Poverty rate (%)	< 4	<1
Living Conditions	<ul style="list-style-type: none"> to improve the quality of people's lives. to reduce social ills and unemployment in both urban and rural areas. to strengthen social services for the poor/other beneficiaries. 		
	<i>Indicator</i>	<i>2010</i>	<i>2020</i>
	Average housing area (m ² /capita) in urban area	10	15
	Water consumption (liter/day)	140-160	170-180
	Average greenery area (m ² /capita)	6-7	15 (urban area) 31 (total)
Infrastructure Services	<ul style="list-style-type: none"> to improve developed residential areas and integrate development investment with improved urban management capacity. to focus on development of inner-city roads, ring roads, and bridges, and strengthen public transportation. to properly maintain rivers, streams, and canals. to properly collect, transport, and treat solid wastes. to improve urban facilities such as lighting systems for roads and public squares, and maintain existing parks and green areas. 		
	<i>Indicator</i>	<i>2010</i>	<i>2020</i>
	Public transportation share in the city (%)	35	50
	Coverage of water supply (%)	-	99
	Drainage service area (system able to respond to rainfall volume of 310mm/2 days) (ha)	-	45,291
	Coverage of sewage (%)	-	49
	Service population for solid waste collection and disposal (%)	100 (UDA)	100 (UDA) 65 (UCA)
	Lightening system coverage for urban alleys (%)	100	-

Source: Socio-economic Development Plan of Hanoi City, 2006-2010.

3.3 Key Spatial Development Strategies




Urban development involves a wide range of complex and interactive issues that must be attended to comprehensively and in an integrated manner. For example, transportation development closely affects land-use pattern and vice versa. Land-use pattern and water environment are determinant factors for the quality of living conditions. For this, key strategies must be set in a way that development objectives are addressed, and at the same time actions and projects of related subsectors are clearly formulated. Seven core strategies were worked out, to wit:

Strategy 1: Establish a spatial backbone comprising “water,” “greeneries,” and “culture” to ensure environmental sustainability as well as to enhance the identity of Hanoi.

Hanoi’s uniqueness and identity can be found in its rich culture and magnificent natural environment. The Red River with its tributaries, the lakes and ponds of different scales widely distributed across the urban areas, as well as the well-maintained ancient trees, parks, and green spaces beautifully framing many of Hanoi’s streets, the Ancient Quarter and the French Quarter providing incomparable landscape and feast for the senses—it is here in this excellent blend of water bodies, greeneries, and culture which few cities can match lies Hanoi’s identity.

Therefore, it is proposed that the concept of “water,” “greeneries,” and “culture” be more explicitly incorporated in the city plan to ensure that such basis of Hanoi’s identity is developed, sustained, and enhanced.

- (a) **Red River and Co Loa - Thang Long areas must form the core axis of the “water-greenery-culture” concept.** This area must be treated as a special zone wherein land use, landscape, urban design, socio-economic activities must be adequately managed.
- (b) **“Water-greenery-culture” axis must be further expanded to cover the entire city** through the development of a water-greenery-culture network by connecting all the city’s resources including lakes, ponds, rivers, parks, streets with abundant trees, cultural spots and heritage sites, museums, tourist spots, community centers, etc.

		
<p>Abundant street trees in the city center.</p>	<p>Good access to water bodies.</p>	<p>Cultural resources under pressure from urbanization.</p>

Strategy 2: Develop public-transportation-oriented urban areas to ensure people's mobility and to promote an environment-friendly society.

For large urban areas, such as Hanoi, the only way to effectively meet transportation demand is to provide the city with a high-quality public transportation system which must be developed in integration with urban development. The core network will be composed of urban rail, metro, and bus rapid transit (BRT). Secondary and feeder services will be by buses with different sizes and types of services. However, building a good public transportation system is not an easy task; it requires large amounts of funds and operation and management capacities over a long period of time. Fares to be collected from users will hardly pay for the investment cost and poorly developed systems can attract only a limited number of passengers. Experiences of successful cities clearly indicate that mass transit networks serve as the backbone of the urban structure and are integrated with urban land use and development (see Box 3.4.1).

A public-transportation-oriented city cannot be realized solely by introducing mass transit as a mode of transportation; it must also be associated with effectively integrated urban areas and a corresponding lifestyle shift by the people. Key considerations must be given to the following:

- (a) **Integrated Urban Development:** Land use and urban development must be reorganized along the mass transit corridors in a way that socio-economic activities are more effectively articulated with mass transit. This requires a review of the existing urban master plan which is rather road-transportation-based.
- (b) **Adequate Role-sharing with Private Transportation:** Private transportation, including cars, motorcycles, and bicycles, is also an equally important mode as the society becomes affluent and demands diversify. Private transportation modes are also important feeder services to mass transit systems.
- (c) **Long-term Commitment:** A successful mass-transit-based city cannot be realized in a short time but needs long-term, consistent policy intervention and the people's good understanding and support.



Residential areas in Singapore integrated with public transportation development.



Subcenter development at a railway station in Tokyo.

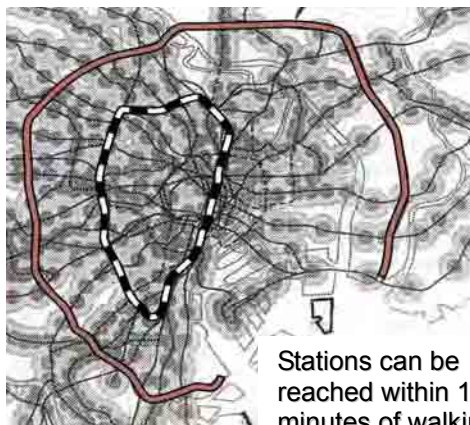
Box 3.4.1 Mass Transit Development in Large Urban Areas

Tokyo: Tokyo forms a large metropolitan region with a total of 20 million people and extensive socio-economic activities. Although its urban areas are congested, Tokyo functions efficiently and safely. People can travel on set schedules at reasonable costs and comfort levels largely because of the availability of an extensive metro and urban rail network. The many rail lines that densely cover the city center allow the people to reach a metro station within five to ten minutes walk. In outer areas, the rails are connected to good feeder bus services.

Singapore: With a population of 4 million, Singapore is admired for its strategically planned urban development which has taken place since the 1960s. More than 80% of the citizens are housed in new towns which are provided with high-quality amenity and urban services. These new towns are connected to the CBD by a modern metro system and feeder services including bus and AGT.¹⁾

Curitiba, Brazil: Curitiba is always referred to as the city that has achieved great success in sustainable development based on a unique integration of land-use management and high-quality BRT.

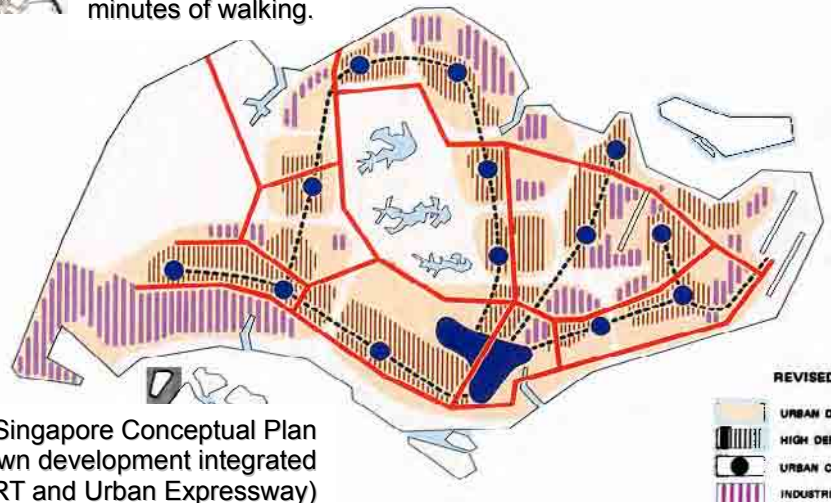
Tokyo Public Transport Network
 (High-density UMRT network in Urban Area)



Curitiba Land-use Plan
 (High-density land use along Busway)



Singapore Conceptual Plan
 (High-density new town development integrated with UMRT and Urban Expressway)



1) Automated guideway transit is a small-capacity transportation system which is computer-operated.

Strategy 3: Upgrade and revitalize existing built-up areas in the city center and fringe areas, including the Ancient Quarter and the French Quarter

Many parts of the existing urban areas suffer from extremely dense living environments with deteriorating buildings and poor urban services. Although HIS results show that in general the people are not dissatisfied with their current living conditions, it can be foreseen that the situation will turn for the worse and the people will become unhappy as incomes increase and a higher quality of life is demanded. A doable mechanism must be developed to prepare for such eventuality.

It is particularly important to ensure the sustainable development of the Ancient Quarter and the French Quarter which form the core of the urban system of Hanoi. The unique charm of the Ancient Quarter and the French Quarter is the result of an exquisite blend of cultural, social, and economic elements as well as physical and non-physical values that have been nurtured for a long time. Both areas are living and must continue to function as the heart of Hanoi. Thus the policy orientation must seek a balance among cultural preservation, social equity, and economic development.

In the urban fringe, it is a growing concern that the progress of suburbanization may intensify the expansion of unplanned developments which will worsen the living conditions in existing communities. Adequate infrastructures must thus be provided well ahead of the progress of such unplanned development.

Hanoi must be provided with alternative and more effective mechanisms that can promote the upgrading of existing urban areas including the following:

- (a) **Land Readjustment:** Many cities in Japan experienced unplanned developments during their own periods of rapid urbanization. The key intervention was to reorganize the urban structure by adjusting lands, modifying the rights of various stakeholders for the common good, and securing fund sources for infrastructure development (see Box 3.4.2).
- (b) **Urban Renewal:** A similar concept can be applied to congested urban areas to improve them without relocating the people and relying on government budget.
- (c) **Development of Adequate Institutional Framework and Active Involvement of the Community:** Clear rules and guidelines should be established to facilitate stakeholder participation, including the affected communities, who will equitably share the roles and shoulder part of the costs of development. The government is currently encountering increasing difficulties in implementing resettlement.



Future image of Hang Buom block in the Ancient Quarter.



Existing residential area in Dong Da District.

Box 3.4.2 Concept of Land Readjustment

What is land readjustment: Land readjustment is an urban planning method whereby a group of landowners (or those who hold the rights to a land) cooperate in amalgamating their lands and allowing their subdivision in accordance with the urban plan in order to construct the necessary public facilities such as roads, parks, schools, etc. In this process, the resettlement of landowners will be in the same area and not to a different location.

Why land readjustment: Land readjustment makes it possible to provide lands for infrastructure development and to regulate land use and spatial structure in a comprehensive manner.

Where can land readjustment be applied: In Hanoi, land readjustment can be applied both in the urban core and urban fringe. A practical area of application is where roads are planned. Necessary space for roads will be generated in a comprehensive land readjustment project, as was the experience in Japan (see photo below), where no cost for land acquisition was incurred.

Japan's Experiences in Area Redevelopment

Urban Core



Urban Fringe



Strategy 4: Develop modern and competitive new urban centers to attract diversified quality investments that will generate employment opportunities.

For a large city to be competitive and to meet the need for diverse socio-economic and cultural activities, modern and new urban centers for commercial and business purposes must be provided. This can be achieved by attracting quality investments which will also generate employment. Many large cities in Asia have developed or been developing these types of new CBDs. HCMC, for one, has started to develop the Thu Thiem New Town. Similar large-scale developments are taking place in areas along RR3 in Hanoi. With a modification of the planning concept from residential to more business and commercial, these areas have a good chance of being developed as multi-functional urban centers. Since this type of development is attractive to the private sector, the role of the government must be limited to that of facilitator and regulator, ensuring that benefits from the development are equitably shared among stakeholders—the people, developers, and the government—and that public interest expressed in the city plan is always protected.

While the potential role of new urban center is significantly important in developing a strategic and an efficient urban structure for Hanoi, considerations must be given to the following:

- (a) **Mixed Use:** Urban centers should provide adequate space and variety of services for different people and activities. Mixed land uses can make urban centers attractive and effective. Residential use should not dominate but should occupy an adequate portion of urban centers.
- (b) **Clear Role and Identity of Urban Centers:** In order for urban centers to become competitive, their respective roles and identities must be made clear.
- (c) **Appropriate Transportation Access:** Since urban centers generate and attract large traffic demand, both public and private, they must be integrated with mass transit, while ensuring the effective use of cars and motorcycles.



Strategy 5: Develop efficient infrastructure and services to ensure convenient and competitive socio-economic activities and affordable services.

Infrastructure is the most fundamental factor that determines the efficiency and quality of urban activities. It also shapes how public funds are spent. An inferior and inadequate network of roads worsen traffic congestion, increase vehicle operating costs, and wastes the time of road users. Weak traffic management decreases the efficient use of facilities as well as traffic safety levels. Poor performance of infrastructure services including transportation, power, water supply, drainage, sanitation, etc. lowers the quality of services and adds to the costs of services. All these inefficiencies become a burden to city authorities as well as the people.

Infrastructure development in urban areas must be planned and implemented in an integrated manner. Road development without consideration to surrounding land uses will neither contribute to an effective development of urban areas nor protect life. Unsynchronized development of utilities will cause repetitive road diggings. Without adequate collection of solid waste, it may reduce efficiency of drainage system and degrade sanitary conditions.

Since infrastructure development requires a large amount of public funding and is critical to sustain urban development, socio-economic activities, and living conditions, due consideration must be given to the following:

- (a) **Coordinated Development:** Infrastructure development aims to promote the quality of socio-economic activities and living conditions. For this infrastructure must be planned and implemented in a much more coordinated manner.
- (b) **Effective Operation and Maintenance:** Inefficiency in operation and management of infrastructure will not only spoil socio-economic activities but also increase the cost of services, thereby increasing the burden on government and users.
- (c) **Private Sector Participation:** In order to ensure the sustainability of infrastructure development and services, the private sector including providers and users, must fully participate in the development process and operation. This will also encourage efficiency and the provision of quality services



Ring Road 3.



Road expansion projects in the urban center.

Strategy 6: Prepare effective disaster prevention measures to protect against natural and man-induced disasters.

Hanoi is situated in an area that is vulnerable to various hazards such as flooding, inundation, land subsidence, river erosion, earthquake, etc. History would show that the city has in fact already suffered from a number of disasters. Densely inhabited urban areas with limited or narrow roads and no open spaces are at risk from fires that can ravage whole areas in an instant. In such situations, response to emergencies and relief activities would also be greatly hampered. Thus existing urban areas must be upgraded, while future development must avoid such pitfalls to guarantee the protection of life and property.

In order to promote disaster-free urban areas and ensure safety and security of life and property as well as efficient socio-economic activities, Hanoi must consider the following:

- (a) **Realization of Flood-free Urban Areas:** There are many negative effects due to floodings. In addition to direct damage to life, health, and property, they create traffic congestions, damage infrastructure, and downgrade the image of a city. Special consideration must thus be given to areas outside the dyke of the Red River in such a way that there is balance among disaster prevention, historical preservation, and legal aspect.
- (b) **Disaster Preparedness and Rescue:** The current structure of existing urban areas makes it difficult to provide necessary rescue work in case of fires and emergencies. There is a need to reorganize the urban areas.
- (c) **Earthquake Preparedness:** Hanoi's urban areas are not free from the threat of earthquakes. There is a need for a long-term strategy to reorganize the urban structure in a way that the central function of the city will not be directly compromised in the event of earthquakes.



Strategy 7: Strengthen institutions for effective urban management and capacity building.

Managing large urban areas is difficult. Urban challenges are so complex and interdependent that no solution can be had from one discipline alone; they require wide-ranging, integrated, and location-specific solutions which can sorely test a city's technical and financial capacities. On the other hand, a city that is properly managed can bring immense benefits that can be enjoyed by all stakeholders. To ensure that this happens to Hanoi, the following key areas must be carefully looked into:

- (i) Development of alternative implementation methods to carry out urban development (e.g. land readjustment, urban renewal, etc.).
- (ii) Encouragement of public-private partnerships.
- (iii) Involvement of stakeholders in the development process.
- (iv) Provision of open and business-friendly environment.
- (v) Enhancement of planning and administrative capacities for urban management.

Box 3.4.3 Management of the Urban Growth in Tokyo

Many cities in Japan initially developed into urban areas with limited sizes, narrow roads, and wooden houses with small living spaces. Population density was high and the urban areas were not protected against disasters such as fire, earthquake, and typhoons. In the early 1900s, urbanization started, accelerating in the 1930s together with the occurrence of rapid economic growth and industrialization as well as motorization. The situation is similar to that which Hanoi has faced since the 1980s. For example, Tokyo had to struggle against rapid urbanization and its attendant huge impacts. It grew from 2.6 million in 1910 to 8.3 million in 1960 and stabilizing thereafter. However, the population in integrated urban areas and satellite cities in adjoining provinces increased rapidly, forming an integrated Tokyo metropolitan region covering 30 million people.

Growth of Tokyo, 1870 - 1990

	1870	1910	1940	1960	1990
Population (000)	1,300	2,600	6,780	8,310	8,164
Urban Area (km ²)	59	120	320	618	618
Population Density (pax/ha)	220	217	212	134	132

Managing this process was hard for both the government and the people, who suffered a lot of negative impacts such as traffic congestion and lack of urban services. The main measures the government took during these difficult times include the following:

1. Expansion of roads and development of urban rail together with the provision of lands for housing and neighborhood parks.
2. Development of urban rail between the CBD and outer areas along main corridors to provide good access to the people who wanted to live outside the city center because of better living environments and affordable living costs.
3. Development of new urban centers to relieve the heavy concentration in the CBD and to satisfy the increasingly diverse needs of the market.