Pilot Project C: Improvement Plan and Strategy for Outside-of-Dyke Area

PILOT PROJECT C:

"IMPROVEMENT PLAN AND STRATEGY FOR OUTSIDE-OF-DYKE AREA"

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

AQ	Asian Quarter
FDI	Foreign Direct Investment
HAIDEP	The Comprehensive Urban Development Programme in Hanoi Capital City
HH	Household/s
HIS	Household Interview Survey
HOC	Housing Ownership Certificate
HPC	Hanoi People's Committee
IRR	Internal Rate of Return
LURC	Land Use Right Certificate
MARD	Ministry of Agricultural and Rural Development
MONRE	Ministry of National Resources and Environment
TV	Television
VND	Vietnam Dong
WACC	Weighted Average Capital Cost

1 INTRODUCTION

1.1 Background

Many high-density residential areas, including aging buildings and infrastructures, in Hanoi have further degraded with the rapid urbanization. Infrastructure investments in these areas have not been adequately promoted, thereby further deteriorating their living environments. In public apartment areas constructed between the 60s and the 80s, many illegal construction activities have occurred, such as irregular extensions and renovations without permits, housing construction without land registration, etc.

In the urban area of Hanoi, the area outside the Red River dyke spreads about 12km in length, between Thang Long Bridge in the north to Hanoi Port in the south. The residential area is mostly clustered at the left bank of the Red River which includes 8 communes.

Historically, traditional craft villages and agricultural areas existed outside the dyke. Then, starting in the 80s, migration from rural to urban areas resulted in rapid construction of housing. After Doi Moi in 1986, the government called on the private sector to invest on housing improvement. However, continuous immigration prevented the appropriate implementation of housing policies and urban management. This resulted to illegal construction without Land Use Right Certificate (LURC) and construction approval, undeveloped infrastructure condition and proliferation of social problems particularly in the low-income residential areas. After the construction of highway and consolidation of the dyke in the 1990s, this area was left completely isolated from the city center.

Several fundamental issues of the area outside-of-dyke are as follows:

Social Aspects: Uncontrolled development activities and immigration has worsened public security and has degraded local community network. Moreover, the government is incapable of properly updating necessary information on this area because of its lack of urban management and legal framework.

Physical Aspects: Residents of this area are always exposed to risk of flooding, though there are no serious damages in the past several decades. At present, there are no proper measures for disaster prevention of flooding except for evacuation to upper floors. In addition, unplanned infrastructure development widens the gap of quality of urban service provision among communes.

Economical Aspects: There are only a few economic activities which can maximize the high potential of this area such as good access to urban area, adequate land and natural values. So far, major economic activities are wholesale in Long Bien Market, distribution at Hanoi Port, production activities in some factories, etc.

Cultural Aspects: Though there are many traditions in this area such as craft making and religious practices, these cultural values have been ignored.

Ecological Aspects: Rampant housing construction has worsened the landscape. Untreated sewage and waste from residential areas flow directly into the River. The residents in the area have been completely ignoring the ecological system of the Red River.

These problems, however, cannot be solved merely by controlling illegal construction. It is necessary to institute a comprehensive area redevelopment mechanism including area-wide development policies and practical implementation methods.

At present, the area outside of the dyke serves as a buffer zone for the city center. However, this area's development potential and ecological values are being neglected. Thus, this area needs to become a public property for Hanoi City to connect the city center and the Red River like before.

Therefore, it is necessary for Hanoi City to redefine the values of the outside of dyke area as well as the Red River, and plan for the appropriate urban management and development of the area to maximize its potential multiple values.

1.2 Objectives

This pilot project intends to achieve the following specific objectives:

(i) To determine the conditions of the area outside of the dyke, its constraints and redevelopment potentials.

(ii) To propose alternative scenarios for future development of the Action Area.

(iii) To propose the spatial and financial plan of the Action Area as a case study of the special area's development. and

(iv) To propose the development orientation for outside-of-dyke area.

1.3 Coverage

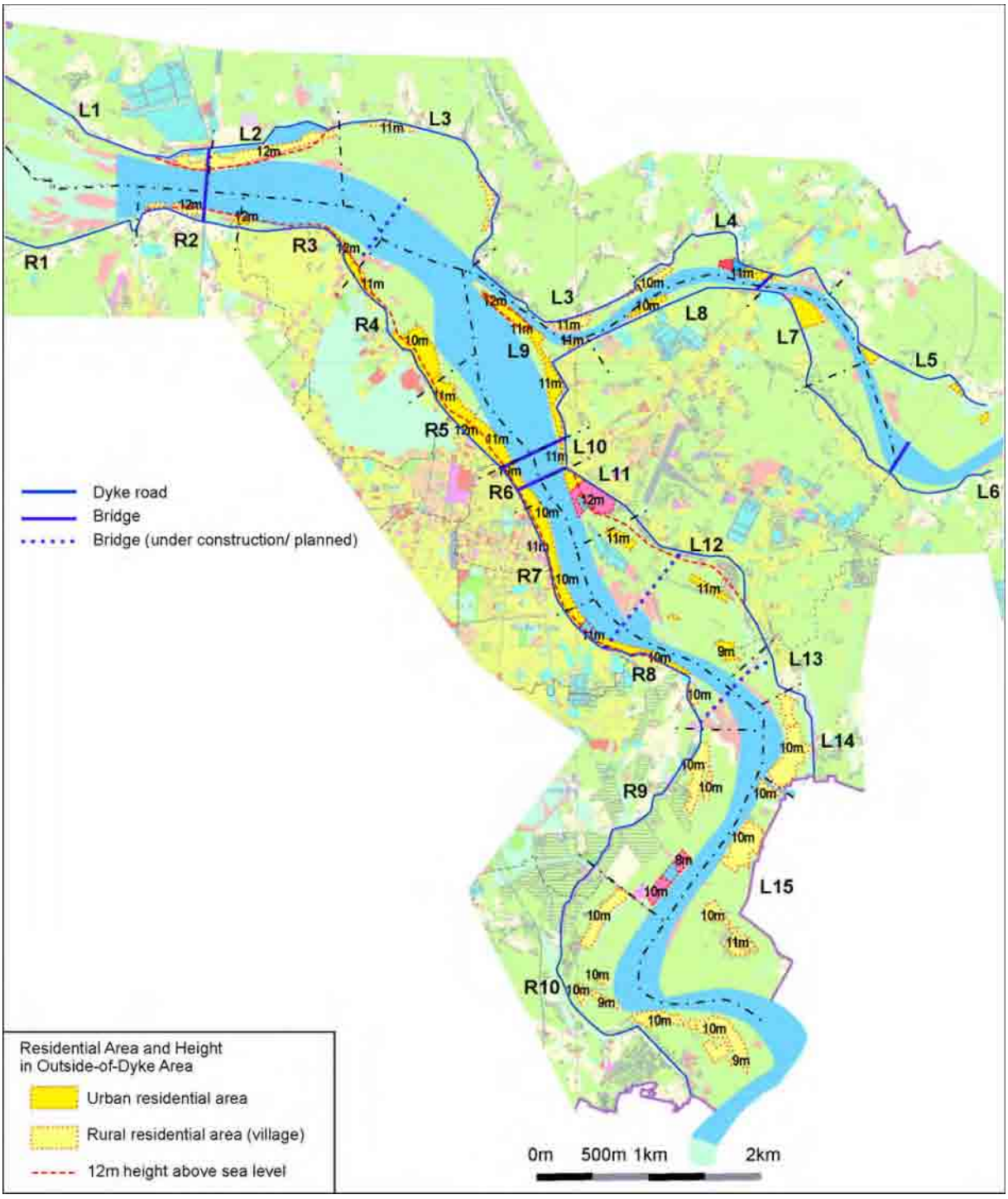
The whole outside-of-dyke area in Hanoi City includes 50 communes, which are located along the Red River and the Duong River (see Figure 1.3.1). The Project Area was selected from among areas outside of the dyke (see Figure 1.3.2). The study was conducted covering three communes; Phuc Xa, Yen Phu and Phuc Tan. Among these 3 communes, Yen Phu Commune (141.4ha, app.19,660 people), located between Ho Tay (West Lake) and the Red River, is part of the "green axis" which is proposed in the Hanoi City Master Plan. The Action Area (app. 20-50ha) was selected from Yen Phu commune further for a detailed proposal, including drawings and implementation mechanisms.

Table 1.3.1 Profile of Outside of the Dyke Area in Urban Center

Commune	District	Area (ha)	Population (person)	Residential Area (ha)[1)]	Population Density (person/ha)[2)]
Nhat Tan	Tay Ho	349.5	8,106	46.9	173
Tu Lien	Tay Ho	311.8	8,290	41.3	201
Yen Phu	Tay Ho	141.4	19,660	58.1	338
Phuc Xa	Ba Dinh	100.3	18,641	40.6	459
Chuong Duong Do	Hoan Kiem	100.9	21,969	34.6	636
Phuc Tan	Hoan Kiem	69.7	14,830	22.9	647
Bach Dang	Hai Ba Trung	106.0	17,618	48.7	361
Thanh Luong	Hai Ba Trung	142.0	21,143	55.5	381
Total		1321.6	130,257	348.6	374

Source: Hanoi Statistical Year Book, MONRE
1) Area occupied by residents
2) Population density of residential area

Figure 1.3.1 Location of Whole Outside of the Dyke Area in Hanoi City



Source: HAIDEP Study Team

Figure 1.3.2 Site Photos of Left Side of Red River and Both Sides of Duong River

		
L1: Near Thang Long Bridge (Vong La, Dong Anh)	L3: New rural village (Tam Xa, Dong Anh)	L3: View of Duong River (Xuan Canh, Dong Anh)
		
L4: Marsh land (Mai Lam, Dong Anh)	L4: Gravel port (Yen Vien, Gia Lam)	L4: Duong Bridge (Thuong Thanh, Long Bien)
		
L8: Dyke Road of Duong River (Thuong Thanh, Long Bien)	L8: New residential area (Thuong Thanh, Long Bien)	L9: Entrance to Bac Cau (Ngoc Thuy, Long Bien)
		
L9: Cornfield in river terrace (Ngoc Thuy, Long Bien)	L9: Gravel port (Ngoc Thuy, Long Bien)	L11: High-dense residential area (Bo De, Long Bien)
		
L12: Dyke road of Red River (Long Bien, Long Bien)	L12: Access road to village (Cu Khoi, Long Bien)	L13: Thanh Tri Bridge under construction (Cu Khoi, Long Bien)

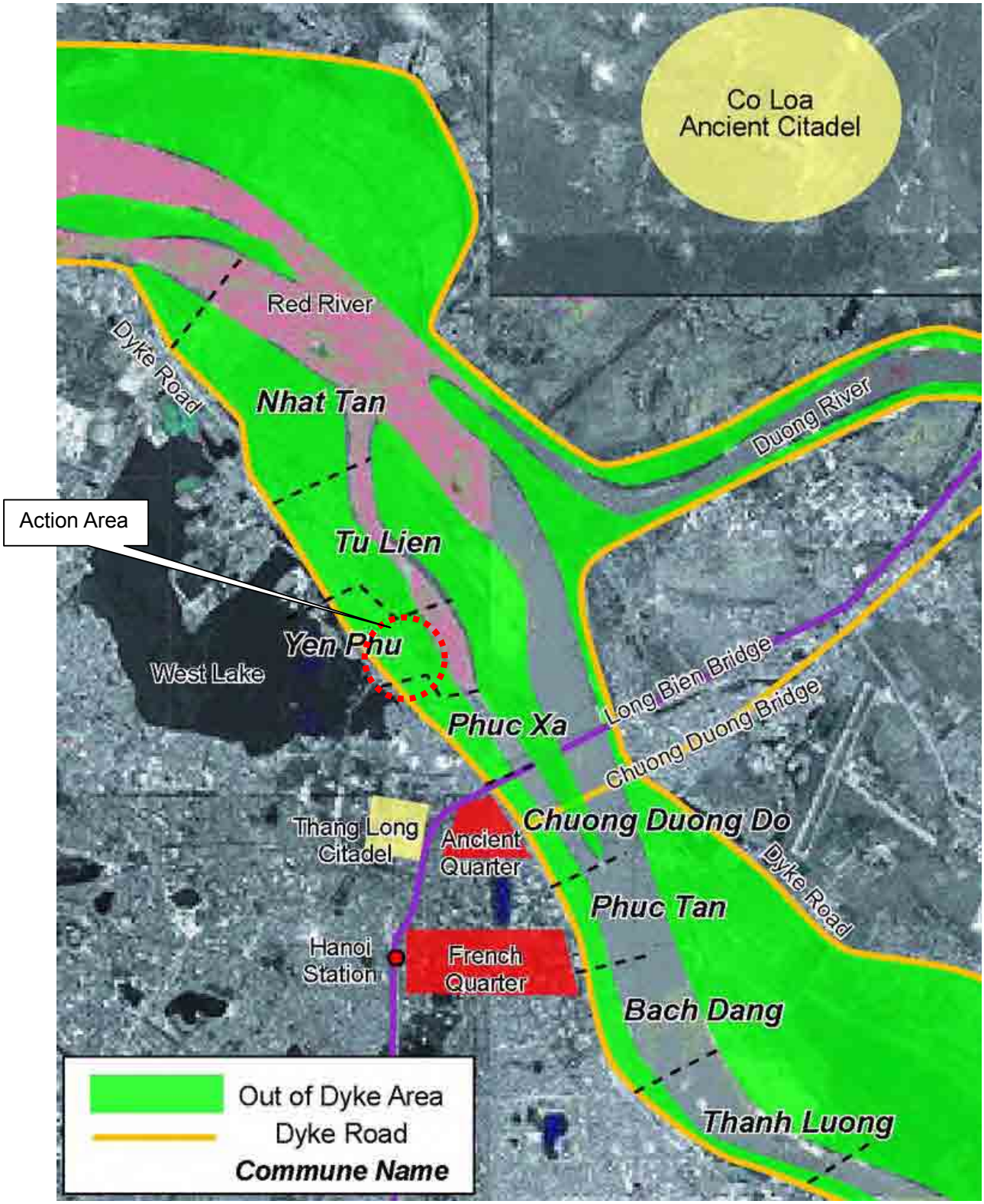
Source: HAIDEP Study Team

Figure 1.3.3 Site Photos of Right Side of Red River

		
R9: Linh Nam Commune (Linh Nam, Thanh Tri)	R9: Quay (Yen My, Thanh Tri)	R9: Industrial port (planned) (Yen My, Thanh Tri)
		
R10: Rural agricultural village (Duyen Ha, Tranh Tri)	R10: Bank road (Duyen Ha, Tranh Tri)	R10: Marsh and grazing land (Duyen Ha, Tranh Tri)
		
R10: Agricultural land (Van Phuc, Tranh Tri)	R10: Rural agricultural village (Van Phuc, Tranh Tri)	R10: Dyke road (Van Phuc, Thanh Tri)

Source: HAIDEP Study Team

Figure 1.3.4 Location Outside of the Dyke Area in Urban Center (Project Area)

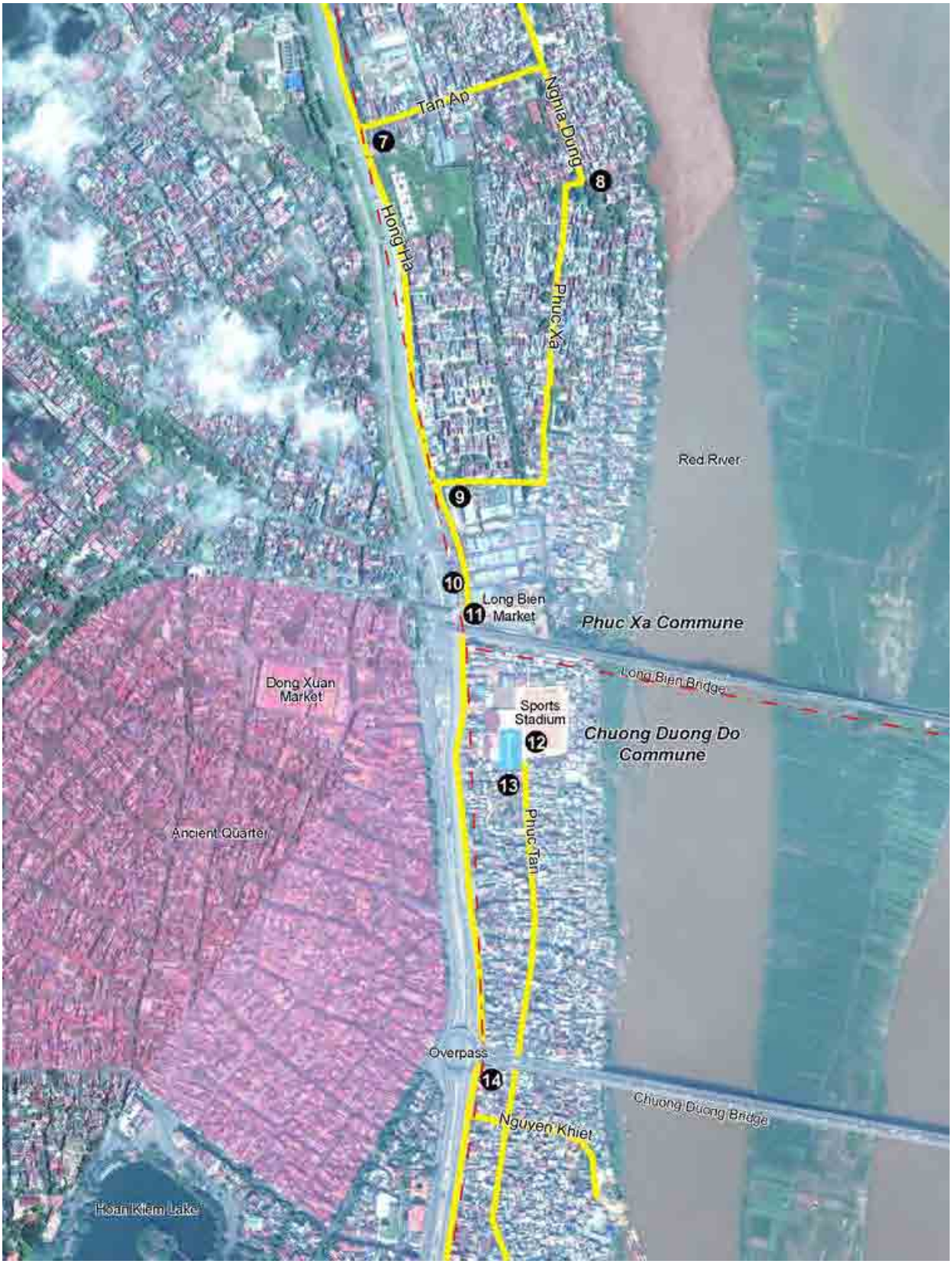


Source: HAIDEP Study Team

Figure 1.3.5 Location Outside of the Dyke Area (Yen Phu and Phuc Xa communes)

Source: Satellite photo of QuickBird, 2003

Figure 1.3.6 Location Outside of the Dyke Area (Phuc Xa and Chuong Duong Do communes)



Source: Satellite photo of QuickBird, 2003

Figure 1.3.7 Location Outside of the Dyke Area (Chuong Duong Do and Phuc Tan communes)

Source: Satellite photo of QuickBird, 2003

Figure 1.3.8 Location Outside of the Dyke Area (Phuc Tan communes)

Source: Satellite photo of QuickBird, 2003

Figure 1.3.9 Major Streets and Facilities Outside of the Dyke Area (1/2)


1) An Duong (Yen Phu)


2) An Duong Ngo 76 (Yen Phu)


3) An Duong Ngo 72 (Yen Phu)


4) Tan Ap Ngo12 (Phuc Xa)


5) Tan Ap Ngo71 (Phuc Xa)


6) Tan Ap (Phuc Xa)


7) Hong Ha (Phuc Xa)


8) Nghia Dung (Phuc Xa)


9) Phuc Xa (Phuc Xa)


10) Long Bien Bus Stop (Phuc Xa)


11) Long Bien Market (Phuc Xa)


12) Sports Stadium (Chuong Duong Do)


13) Phuc Tan (Chuong Duong Do)


14) Hong Ha (Chuong Duong Do)


15) Phuc Tan (Chuong Duong Do)

Note: The numbers of photos are corresponding to the one of the maps (Figure 1.3.3-6).
Source: HAIDEP Study Team

Figure 1.3.10 Major Streets and Facilities Outside of the Dyke Area (2/2)


16) Phuc Tan (Chuong Duong Do)


17) Vong Ha (Chuong Duong Do)


18) Vong Ha (Chuong Duong Do)


19) Chuong Duong Do (Phuc Tan)

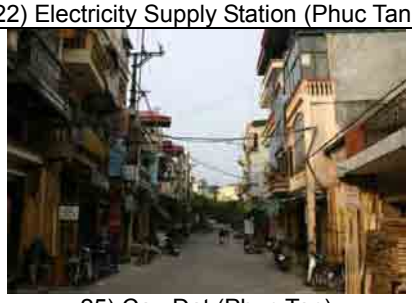
20) Phuc Tan Port (Phuc Tan)


21) Wood processing factory (Phuc Tan)


22) Electricity Supply Station (Phuc Tan)


23) Private School (Phuc Tan)


24) Cau Dat (Phuc Tan)


25) Cau Dat (Phuc Tan)


26) Van Kiep (Phuc Tan)


27) Water Supply Station (Phuc Tan)


28) Residential Housing Block (Phuc Tan)


29) Tay Kiet (Phuc Tan)


30) Hanoi Port (Phuc Tan)


31) Bach Dan (Phuc Tan)


32) Residential Housing Block (Phuc Tan)


33) Bach Dan (Phuc Tan)

Source: HAIDEP Study Team

2 EXISTING CONDITIONS AND MAIN ISSUES

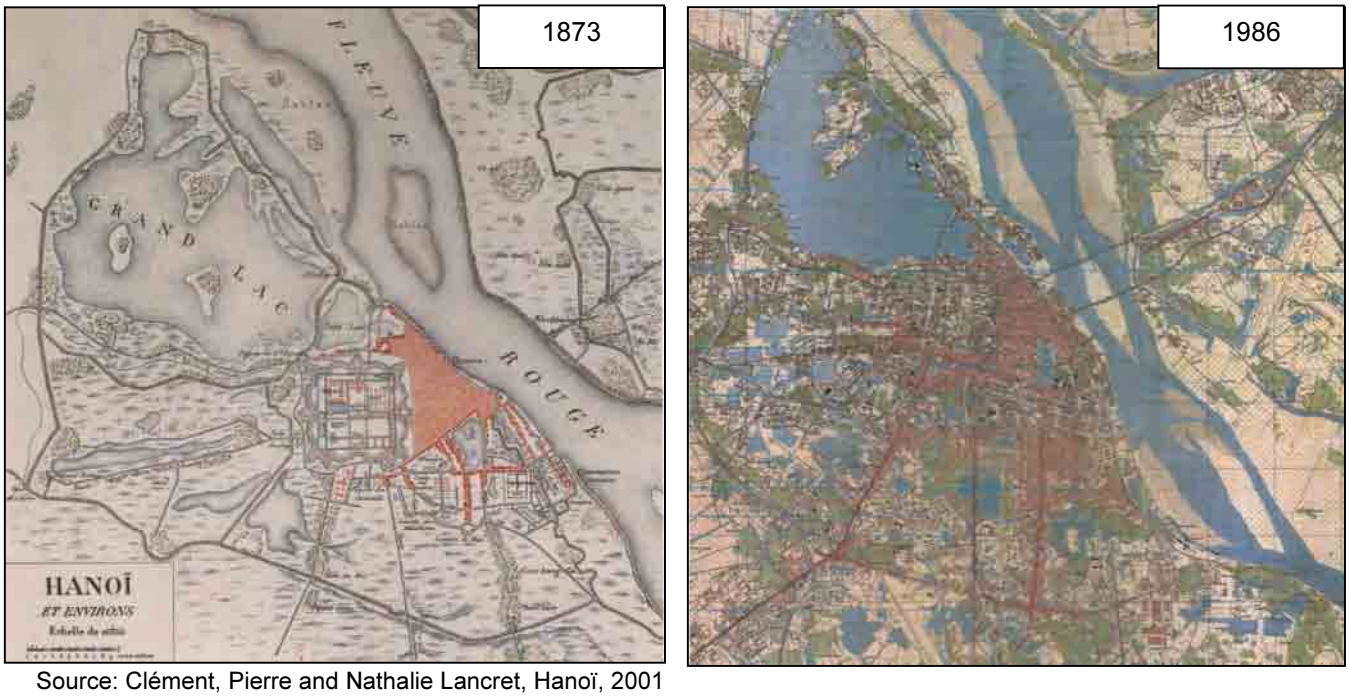
2.1 Historical Background

1) Overview

Almost 1000 years ago, Hanoi was founded on its actual location because of favorable "feng shui" (geomancy) of the place. Preoccupations of this sort, centered on the location of the citadel, included the proximity of water as an important element. The Red River also provided a very convenient road for communication, and for transport of people and merchandise. Thus, the traditional market area was located between the citadel and the Red River, servicing the former and benefiting from the latter for transport of merchandise. It is widely accepted that, historically, the main two functions of Hanoi were of being a political centre (thanh/do = walls, ramparts, administrative or military centre) and a node for commercial activities (thi = market, economic centre).

Hanoi is originally a city of water. In the 19th century, the city centre was still directly connected to the Red River (see Figure 2.1.1). France and Holland maintained custom authorities on what is now Yen Phu street. When Hanoi became the administrative centre of Indochina, French authorities assumed the responsibility of restructuring and modernizing it, which included the building of main transport axis, destroying of the citadel, infilling of various rivers and small lakes, and moving the port and customs. Long Bien Bridge, the first bridge across the Red River, was built in 1898. Until that time, most of our target area didn't exist as such. Permanent settlements were only found in Yen Phu area.

Figure 2.1.1 Historical Changes of Hanoi



Source: Clément, Pierre and Nathalie Lancret, Hanoï, 2001

2) Outside the Dyke Area

(1) Attraction for Migrants

Behind its dyke, Hanoi actually conceals some “undesirable” aspects of its current state of development. For most of it, the land of the Action Area is relatively “new” and settlements were never really planned. Due to its proximity to Hanoi economic centre, the area has been a pole of attraction for migrants coming to Hanoi since Doi Moi in 1986. This largely contributed to the unplanned and unsanitary condition that is the present state today. However, it would be shortsighted to consider this area only based on the current social and environmental issues.

In terms of the history of the area in search for “heritage” and local traditions, a few significant places and constructions can be found. Furthermore, at present, there are still traces of a few traditional urban villages located in the area. It is also found that economic links of Hanoi with other towns and villages along the Red River were maintained through this area. Progressively, this search leads back to two fundamental facts: Hanoi is a city of water, and the market function is at the source of its raison d’être. In both cases, the target area of this study has an intrinsic high value in Hanoi’s history and future development.

(2) Early Interventions

The area outside of the dyke exists due to natural erosion processes and consolidation of soil forced by the flow of the Red River. Infilling of inland rivers (such as the To Lich River), small lakes and ponds largely contributed to the current situation, by modifying the course and flow of the Red River and by consolidating the land structure.

In 1943, France had the following plans to improve connections between Hanoi city centre and the Red River: (1) infrastructure projects in Phuc Tan area, (2) development of an administrative area in Phuc Xa, (3) additional infilling of small lakes, (4) maintaining traditional villages in Yen Phu area, and (5) creating an important Northwest-Southeast axis inside the dyke area. However, those plans were never implemented.

During decolonization and American wars, development activities in this area considerably slowed down. Nonetheless, a slow settlement process occurred during the 1960-1975 period. New urban quarters and building developments were built. However, densification was limited due to the strict governmental control over migration. During this same period, the Chuong Duong Bridge was also built across the Red River.

(3) Impact of Urbanization after Doi Moi Policy

Following Doi Moi in 1986, in line with government’s resolve to mobilize private investment to improve housing conditions, the people slowly gained ownership of buildings and land. Some residential projects were developed such as those for the Army and government officials. But most importantly, residents began to “improve” their houses. However, authorities lacked capacity to control development and construction works. The area outside the dyke (expanding further towards the Red River), which was considered high-risk area, was not adequately planned and monitored. The land was subdivided to lots to benefit the greatest number of people, without due consideration for the larger “public good”. Moreover, as control of people movements was reduced, migration and density rates increased in the target area. Changes occurred rapidly in a chaotic manner, and urban infrastructures remained insufficient and deficient. The area’s development was relegated as “behind the scene” of the city.

More recently, a few infrastructure upgrading projects such as that in Phuc Xa were

undertaken to improve living conditions in the area. One major project in the past was supported by the Netherlands, while small projects which contribute to improving drainage and hygiene are still ongoing.

Figure 2.1.2 Urban Structure Outside of the Dyke Area and the Ancient Quarter in the Past and at Present

The port and the Ancient Quarter directly connected to the Red River in the past

The alluvial plain area outside of the dyke presently occupied by buildings

Source: "Hanoi Ancient Features", VNA Publishing House, 2005 (left), Google Earth (right)

Figure 2.1.3 Red River and Long Bien Bridge in the Past and at Present

Source: "Hanoi Ancient Features", VNA Publishing House (left)

3) 3 Communes of the Project Area

Yen Phu Commune: Among the three areas within the study, the one with the longest history of settlements is the Yen Phu-Nghi Tam area. Traditional villages producing flowers, silk and handicrafts were already located there during the 19th century, but it is possible that it has a longer history. Previously called Yen Hoa, the area was renamed Yen Phu in 1841. Specific information about the development of Yen Phu is difficult to obtain through study of maps. However, it is most probable that few changes occurred until the Doi Moi. At that time, densification happened primarily along Yen Phu street. Traditional village structure and activities now tend to disappear. A large area close to Red River remains undeveloped and serves the agricultural sector.

This area was replenished by the Red River at the end of the 19th century. In 1925, when the French built Tu Tong peers (Tu Lien), the land was made more stable. During colonization, this area was used to grow corn and mulberry trees to feed silkworms. There was a hamlet of street signers (hat xam). Residents were living on this street and come back only to sleep in their shelter. In 1957-58, the city dug soil from An Duong street to enlarge Co Ngu Street. Following this, a few rows of one-storey houses were constructed to provide for the Vietnamese people coming from Thailand. This became the collective housing area of An Duong. From 1960-70, migrants came from different regions and

density drastically increased. Small factories were built in the 1970-1980s.

Phuc Xa Commune: Phuc Xa, formerly Co Xa, has a long history. In 1010, the king Ly Cong Uan decided to build his palace in the village of An Xa, and moved this village on the bank of the Red River. In 1132, Li Than Tong changed the name of the village to Co Xa. At that time, it occupied a long beach stretching from Phu Yen to Dong Nhan (south of Hanoi). At the beginning of the 19th century, Co Xa village was subdivided into smaller hamlets. The actual Phuc Xa was one of those hamlets, its name given in 1911. The community which first settled in Phuc Xa area formed initially on the island in front of Hanoi, and eventually relocated on the riverbank. The area began to get structured in the second half of the 20th century. Through infilling of small lakes, the area is made available for permanent settlements. Many migrants then moved to the area.

Nghia Dung Street is 400m long, and reaches from the Red River to Yen Phu street. It is located on the land that belonged to Nghia Dung hamlet (of Co Xa village). At the beginning, the hamlet was contained within the peers, but it eventually extended out of this area, gaining land on the Red River. People living in this area were poor migrants coming from all over the country. They cultivated vegetables and were hired as labourers in the city. During flooding, they intercepted logs of wood floating down the river.

Tan Ap street is 300m long, going from the Red River to Yen Phu street. Tan Ap was a new hamlet formed in 1930s, located on a new beach of Phuc Xa. A Catholic Church was built in Tan Ap in 1940. The old market of Tan Ap is now used by the army. Professional schools of Finance and of Construction are located in this densely-built area.

Phuc Tan Commune: Phuc Tan is a village outside of the dyke which stretches from Long Bien Port (or from the stadium) to Ham Tu Quan Street. In 1918-1920, this area originally belonging to Phuc Xa village was still vacant. Due to changes in the flow of the Red River, the site was progressively levelled-up and augmented in size. Migrants came to settle, creating Phuc Tan hamlet, that is, the new Phuc Xa. Some ancient traces exist in this area, but the community is mostly composed of new migrants. For a long time, settlements were vulnerable to flooding and location tended to change from year to year. At the beginning of the 20th century, an initial urban structure is in place, including a main West-East axis connecting Hanoi to the Red River. Settlements then developed towards the North. Many migrants moved to the area following Doi Moi, making the area especially dense and chaotic.

Phuc Tan Street is a relatively new street, formed after Hanoi liberation. The street crosses Phuc Tan hamlet.

2.2 Urban Structure and Land Use

1) Overview of Whole Outside-of-Dyke Area

The urban structure outside of the dyke area is very complex, which may be explained by three major factors: (i) polarization-expansion around traditional village structures, (ii) functional differentiation determined by the street layout and (iii) mass migration following Doi Moi.

The road network lacks coherence and continuity within each commune, but the break between communes is particularly evident. Most roads are narrow, resulting from spontaneous, uncontrolled urbanization. Infrastructures, especially the drainage system, are inadequate Community facilities are insufficient and are often “invisible”. Public spaces are almost inexistent.

Land uses of the whole outside-of-dyke area are mostly agricultural lands or marshlands, except for urban residential areas in Hoan Kiem and Hai Ba Trung Districts (see Table 2.2.1). There are several traditional craft villages are located, which had been developed craft making with advantage of its location for promotion and delivery by river transport.

2) Overview of Outside-of-Dyke Area in Urban Center

Most of the area outside of the dyke in the urban area (10 communes in left bank) are occupied by buildings for residential purpose. There are some public facilities like schools, playgrounds and governmental apartments, as well as private companies and factories. There are Phuc Tan Port and Hanoi Port along the left bank. In addition, there are small docks to deliver goods from rural villages (e.g. ceramics in Bat Trang village in Gia Lam District) and agricultural products from fields in holms. These holms and river terraces are often submerged in the river when it rains hard during short periods of time. Some areas of the river terrace in Nhat Tan, Tu Lien Communes are used as agricultural fields. Though this area was historically the strategic economical and physical connection point to connect to other countries and regions by the Red River, current land use prevents it from reaping its potential economic benefits.

While there is limited statistic information on outside of dyke area, it is said that more than 160,000 people[1] live outside the dyke area, which has nearly doubled in the past 10 years (see Table 2.2.2 and 2.2.3). Population growth 1999-2003 (4.28%) is quite high as compared with that of Hanoi City average growth rate (2.97%). Population density varies among communes: the highly densed areas are Phuc Tan and Chuong Duong Do communes, both located conveniently near Long Bien Bridge, Chuong Duong Bridge and the Ancient Quarter. Population densities of Phuc Xa and Yen Phu communes which are next to the West Lake are also high.

[1] According to the result of HIS-HAIDEP survery in 2004, the estimated population of the outside-of –dyke are in 10 urban communes is about 130,000 (see Table 2.2.2).

Table 2.2.1 Profile of Outside-of-Dyke Areas

Commune			District Name	Area (ha)			Population			Population Density (no/ha)	Landuse	
Code	Zone No.	Name		Whole Commune		Outside-of-Dyke	Whole Commune	Outside-of-Dyke				
				Whole	Residential Area	Residential Area		no	%		Main Landuse	Special sites
L1	162	Dai Mach	Dong Anh	812	83	13	8,988	1,365	15.2	108	A	
L1	163	Vong La		634	73	19	6,378	1,651	25.9	88	R	foot of Thang Long Bridge
L2	164	Hai Boi		806	115	70	11,749	7,135	60.7	102	A, T, R	
L3	174	Vinh Ngoc		935	88	23	11,179	2,916	26.1	127	A, R	
L3	173	Tam Xa		503	21	0	4,006	0	0.0	192	A	foot of Nhat Tan Bridge (planned)
L3	172	Xuan Canh		618	77	17	9,329	2,045	21.9	122	A	
L3	171	Dong Hoi		710	89	28	9,055	2,796	30.9	101	A, R	
L4*	170	Mai Lam		632	108	20	10,102	1,875	18.6	94	A, R	
L4*	216	Yen Vien	Gia Lam	360	60	7	11,392	1,289	11.3	189	T, I, R	
L4*	207	Thi Tran Yen Vien		96	69	16	11,792	2,761	23.4	170	R	
L5*	214	Duong Ha		265	42	12	5,071	1,423	28.1	120	A	
L5*	212	Phu Dong		1,171	93	26	11,501	3,227	28.1	123	A	
L5*	213	Trung Mau		448	104	0	4,920	0	0.0	47	A	
L6*	209	Le Chi	Long Bien	769	59	43	9,898	7,226	73.0	168	A	
L6*	228	Kim Son	Gia Lam	614	120	20	10,371	1,723	16.6	87	A	
L6*	226	Phu Thi		495	83	0	6,706	0	0.0	81	A	
L6*	227	Dang Xa		584	65	0	7,912	0	0.0	121	A	
L6*	218	Co Bi		465	56	0	7,672	0	0.0	137	A	
L6*	123	Hoi Xa		625	65	0	8,394	0	0.0	129	A	
L7*	116	Giang Bien	Long Bien	430	51	35	4,756	3,237	68.1	92	A, R	
L8*	117	Thuong Thanh		461	99	16	11,760	1,859	15.8	118	R	
L9*	119	Ngoc Thuy		856	170	70	18,008	7,395	41.1	106	R, A	
L10	112	Gia Lam		268	112	15	34,230	4,565	13.3	306	R	foot of Long Bien & Chuong Duong Bridge
L11	121	Bo De		392	85	26	10,144	3,055	30.1	119	A, R	foot of Chuong Duong Bridge
L12	122	Long Bien		762	90	24	9,595	2,518	26.2	107	A, R	foot of Vinh Tuy Bridge (planned)
L12	124	Cu Khoi		481	66	30	5,967	2,724	45.7	91	A, R	foot of Thanh Tri Bridge (planned)
L13	224	Dong Du	Gia Lam	367	39	26	3,882	2,623	67.6	101	R, A	Ceramic village
L14	208	Bat Trang		176	39	39	7,078	7,078	100.0	181	R, I, T	Traditional ceramic village
L15	217	Kim Lan		264	77	77	5,395	5,393	100.0	70	R, A	Ceramic village
L15	223	Van duc		650	53	53	6,377	6,432	100.9	121	A, R	Ceramic village
R1	180	Thuong Cat	Tu Liem	411	61	32	6,592	3,506	53.2	108	A	
R1	181	Lien Mac		618	67	3	7,018	284	4.0	105	A	
R2	182	Thuy Phuong		288	62	4	7,457	526	7.1	119	R, T	
R2	183	Dong Nga		345	120	12	18,094	1,823	10.1	151	R, A	foot of Thang Long Bridge/ Rattan & bamboo village
R3	20	Phu Thuong	Tay Ho	633	330	25	12,185	938	7.7	37	A, R	foot of Nhat Tan Bridge (planned)
R4	17	Nhat Tan		350	47	47	8,106	8,106	100.0	173	R	Flower Market
R4	16	Tu Lien		312	41	41	8,290	8,290	100.0	201	R, A	
R5	15	Yen Phu	Tay Ho	141	58	40	19,660	13,539	68.9	338	R, I	
R5	1	Phuc Xa	Ba Dinh	100	41	41	18,641	18,641	100.0	459	R	Long Bien Market
R6	37	Phuc Tan	Hoan Kiem	70	23	23	14,830	14,830	100.0	647	R	foot of Long Bien & Chuong Duong Bridge
R7	38	Chuong Duong Do		101	35	35	21,969	21,969	100.0	636	R, T	
R7	47	Bach Dang	Hai Ba Trung	106	49	49	17,618	17,618	100.0	361	R, I, T	
R8	48	Thanh Luong		142	55	55	21,143	21,143	100.0	381	R, I, T	foot of Vinh Tuy Bridge (planned)
R8	105	Thanh Tri	Hoang Mai	339	75	26	10,788	3,778	35.0	143	I, R	foot of Thanh Tri Bridge (planned)/ food processing village
R9	110	Linh Nam		535	134	76	14,117	8,033	56.9	105	A, R, T	
R9	106	Tran Phu		400	39	0	5,761	0	0.0	149	A	
R9	107	Yen So		730	115	0	10,908	0	0.0	95	A	
R10	194	Yen My	Thanh Tri	371	31	31	5,435	5,435	100.0	175	R, A	
R10	195	Duyen Ha		272	40	40	4,469	4,469	100.0	113	R, A	Food processing village
R10	196	Van Phuc		489	101	80	8,774	6,963	79.4	87	R, A	Rattan & bamboo village
TOTAL				23,403	3,875	**1,383**	525,466	**244,202**	**46.5**	**136**		

Source: HIS-HAIDEP Survey, 2004

1) Code with asterisk represents those along the Duong River.

2) Symbols denote as follows; A=agriculture, R=residential, I=industry, T=transportation

Table 2.2.2 Characteristic of Population by Commune in Urban Center

Commune	District	Area (ha)	Population	Gross Pop Dens 2003 (p/ha)	Water Surface (ha)	Land Area NET (ha)	Net Pop Density (p/ha)	Annual Pop Growth 99-03	Residential Area Total (ha)	Population Density (Residential Land) (p/ha)
Nhat Tan	Tay Ho	349.53	8,106	23.2	151.32	198.21	40.9	3.35	46.91	172.78
Tu Lien	Tay Ho	311.83	8,290	26.6	117.62	194.21	42.7	3.97	41.33	200.58
Yen Phu	Tay Ho	141.42	19,660	139.0	52.70	88.72	221.6	2.73	58.08	338.47
Phuc Xa	Ba Dinh	100.29	18,641	185.9	26.73	73.56	253.4	4.28	40.62	458.95
Chuong Duong Do	Hoan Kiem	100.87	21,969	217.8	54.21	46.66	470.9	1.74	34.55	635.84
Phuc Tan	Hoan Kiem	69.67	14,830	212.9	24.32	45.35	327.0	1.09	22.92	647.09
Bach Dang	Hai Ba Trung	106.03	17,618	166.2	38.62	67.41	261.4	1.80	48.74	361.46
Thanh Luong	Hai Ba Trung	141.95	21,143	148.9	58.00	83.95	251.9	2.98	55.45	381.32

Source: HIS-HAIDEP Survey, 2005

Table 2.2.3 Population, Density and Population Growth in Urban Center

Commune Name	Area (ha)	Population				Population Density (person/ha)				Population Growth		
		1989	1999	2003	2020	1989	1999	2003	2020	1989-1999	1999-2003	2003-2020
Nhat Tan	349.53	5,237	7,104	8,106	14,811	15.0	20.3	23.2	42.4	3.10	3.35	3.61
Tu Lien	311.83	4,856	7,095	8,290	9,140	15.6	22.8	26.6	29.3	3.86	3.97	0.58
Yen Phu	141.42	13,054	17,652	19,660	20,993	92.3	124.8	139.0	148.4	3.06	2.73	0.39
Phuc Xa	100.29	11,647	15,767	18,641	13,049	116.1	157.2	185.9	130.1	3.08	4.28	-2.08
Chuong Duong Do	100.87	12,092	20,508	21,969	15,378	119.9	203.3	217.8	152.5	5.42	1.74	-2.08
Phuc Tan	69.67	8,851	14,199	14,830	10,381	127.0	203.8	212.9	149.0	4.84	1.09	-2.08
Bach Dang	106.03	12,881	16,402	17,618	13,309	121.5	154.7	166.2	125.5	2.45	1.80	-1.64
Thanh Luong	141.95	12,098	18,797	21,143	15,727	85.2	132.4	148.9	110.8	4.51	2.98	-1.73
Total	1321.58	80,716	117,524	130,258	112,788	61.1	88.9	98.6	85.3			

Source: Hanoi Statistical Year Book, MONRE

3) Overview of Project Area

Land use of the Project Area is largely for residential areas (see Figure 2.2.1). As elsewhere in Hanoi, economic activities are widespread and occupy basement floors of buildings, sometimes entire buildings, along major streets and some inner streets. In addition, institutional and administrative functions are also common. Every commune has schools, a health clinic, a cultural centre, and a market. There are also a few dispersed industrial functions and agricultural activities are still present in Nhat Tan and Yen Phu.

Land is used by various public and private entities. Land plots are usually small. Buildings are thus most often built on small lots, and quality of construction is highly disparate; ranging from semi-permanent structures to modern 5-storey buildings. There may only be traces of initial settlements but they certainly have important value with regard to the history of Hanoi. Architectural values of existing built assets, the Long Bien Bridge and Chuong Duong Bridge and probably a few pagodas and memorials, are relatively low.

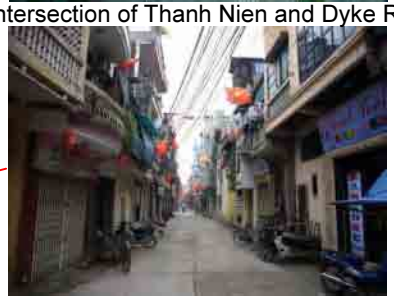
Other important public features existing “behind” the dyke include the stadium in Phuc Tan commune, the Long Bien Market and a few other markets, some of which have important seasonal functions. Some traditional economic relations remain between this area and other village along the river, most notably with Bat Trang ceramic village. Finally, and most importantly, the area conceals the massive and colossal Red River.

Figure 2.2.1 Urban Structure and Land Use


Agricultural land in Yen Phu


Thanh Nien Street and West Lake


Intersection of Thanh Nien and Dyke Road


Phuc Tan Street in north


Bach Dang Street in south


Phuc Tan Port

Source: HAIDEP Study Team

The construction of the dyke road and consolidation of the dyke in the 1990s contributed to the isolation of the site from the rest of the city. Instead of being regarded as an important part of the dynamic city, the Red River is now disconnected from Hanoi. This situation is highly reflected in the area outside the dyke. Further, when the dyke structure is a wall, instead of a street, a strong divide is evident on both sides of the dyke. In addition, the “urban highway” that runs parallel to the dyke wall the more increases this break.

The continuing population growth is still mainly due to migration from rural areas. Flooding is recurrent in some areas, and sometimes aggressive. Due to high density, the number of people affected is very high. The land market is not organized, which doesn’t help for planning and management activities, and probably encourages speculation. Finally, the area requires improved planning but the authorities lack capacity to enforce regulation, which results in indirectly encouraging illegal activities.

In summary, the Hanoi dyke area is largely a “buffer zone”: a flood-prone zone that protects the city, a point of exchange for commercial activities before they reach the city, a point of attraction for migrants, and a zone for illegal activities.

4) Yen Phu Commune

The area outside of the dyke in Yen Phu commune resulted in new developments on vacant land closer to the Red River, while the village centre lies on the bank of the West Lake. The administrative boundaries of the site reveal a certain complexity; besides An Duong area, Yen Phu densification is apparent mostly along the highway. A portion of vacant/agricultural land belongs to Tu Lien commune, in Tay Ho district.

Though Phuc Tan and Phuc Xa areas were already occupied in 1920, urbanization of Yen Phu actually began between the 60s and 70s. During the colonial period, the area around An Duong was still highly agricultural, with only a small hamlet of street singers. In the 1930s, a small factory producing tiles settled there. Between 1957 and 1958, in order to enlarge the Thanh Nien axis, the City took a share of land from An Duong area. The first housing quarter in An Duong was built soon after. Then densification of the sector happened along rural subdivisions of land through waves of migration. Between the 60s and 70s, many factories came to settle in the area. And between the 80s and 90s, the Army developed a new residential quarter of individual housing units up to the boundary of Phuc Xa commune. At the same time, townhouses were built along Nghi Tam Street, increasing the density in big residential blocks.

This historical evolution of the site brought a complex morphology, composed of unorganized pieces of land, developed of the frame of past rural traces. The center of the commune, northeast of An Duong Street, is quite dense but shows a good basic organization, with public facilities: market, school, cultural centre. The rest of the commune, however, shows spontaneous development and lacks organization. Factories and warehouses of construction materials along An Duong Street reveal a disorderly occupation of space. The connection with Phuc Xa commune is prevented by the new residential quarter of the Army, which is closed on itself. Nghi Tam Street is densely built with 4-5 storey houses, which create a wall “hiding” the real life of the quarter. Vacant land plots, rural land spaces and housing areas are irrationally juxtaposed. Interior of some blocks remain empty. Growth of the commune is not directed, and construction tends to spread in all directions.

In comparison with Phuc Tan and Phuc Xa communes, Yen Phu is more open towards the

city. From An Duong Street, the concrete dyke structure disappears and the road protects the inner city from flooding. Local roads are managed both sides of the highway. An Duong street connects directly with Thanh Nien Street, an important landscape axis of Hanoi City. However, the riverbank, sensitive to land speculation, remains rural and disconnected from the City.

In conclusion, Yen Phu commune is less dense than the other two communes being studied. It is also better connected with the city and the Red River. Yen Phu commune presents the one with the most evident potential for development. It nonetheless needs to be provided with a better structure. Industrial functions should be relocated elsewhere, to allow returning to ecological values of the Red River.

5) Phuc Xa Commune

Phuc Xa commune is located north of Long Bien Bridge. The early core of this quarter is organized by the following principal axis: two of them are parallel to the Red River (Phuc Xa and An Xa Streets) and two are perpendicular (Tan Ap and Nghia Dung Streets). This original core didn't develop along the dyke because of the presence of a series of ponds, and the community settled close to the river. During the 1990s, the ponds were progressively filled by the City Government, to allow for housing development. Today, only a small canal remains, creating a "natural" barrier splitting the area in two. The canal runs from close to Tan Ap Street, and ends up behind the Long Bien Market before reaching the Red River.

The development of the commune during those two different periods explains the complexity of its urban morphology. The area along the dyke is a new development, and the urban organization shows a relatively good basic structure where land is still available for development. However, low-quality spontaneous housing development is found along the canal, especially behind the market. In this area, sanitation is low, and roads are small and unorganized. The original core of Phuc Xa, along the above-mentioned main axes, is now built with high density. Tan Ap and Phuc Xa Streets regroup public facilities of the commune and of the city (schools of economy; of medicine; of construction), as well as commercial activities. However, the legibility of the urban space is also difficult in this area. The urban frame lacks coherence: axes along the river (Phuc Xa and An Xa streets), which should ensure connection with neighboring communes (Phuc Tan and Yen Phu) are in fact discontinued segments.

In contrast with Phuc Tan commune, Phuc Xa commune has two direct accesses to the highway through the dyke. The commune is nonetheless relatively closed on itself. The big Long Bien Market and the truck station constitute an obstacle to enter Phuc Tan. At present, it also provides a negative image to the commune. The entry point close to Long Bien Market gives the impression of penetrating a slum area. The other entry point is Tan Ap Street, which theoretically allows a direct connection to the Red River. However, until now the Red River remains invisible, not to say that the hazardous streetscape is uninviting to visitors. Like Phuc Tan commune, the riverfront in Phuc Xa is occupied by high-density housing. The bank of the river is of bad quality and uninviting; wastewater flows through the accumulation of solid waste.

In conclusion, Phuc Xa commune possesses some assets to support its further development such as an axis reaching the Red River, a few land plots available, etc., but also has many constraints. Incoherencies in the urban structure are the most important aspect that should be reorganized.

6) Phuc Tan Commune

The area of Phuc Tan is defined by Nguyen Khiet Street in the south and by Long Bien Bridge in the north. Chuong Duong Bridge is located in the middle of this site. The only access to this site is by Long Bien Market and by Ham Tu Quan Street.

This area is structured by one main axis running parallel to the Red River, Phuc Tan Street, and by a series of perpendicular axis: Nguyen Khiet Street, Bao Linh Street, Thanh Hien Street, and Ngo 57 and Ngo 87. Phuc Tan Street runs from Ham Tu Quan Street but stops at the stadium. The only road that connects to the neighboring commune (Phuc Xa) is the one next to the dyke, Hong Ha. Phuc Tan Street is an important axis, where commercial activities and community facilities are located. Housing in this area is especially dense.

The stadium is a public facility of the city. It was initially connected to the Red River, and was a place where Hanoi people used to enjoy outdoor activities. Now, the only access to the stadium is through Phuc Tan Street, and it is surrounded by high density settlement. There is no other public space available in this area. Besides the main streets mentioned above, the area is disorganized. Small alleys result from the uncontrolled migration and settlement.

Housing in this area developed on small land lots which are of low quality. Following economic improvement of the country, people began to build high-storey housing units. This however affected public spaces; small alleys became darker due to poor access to natural lighting. Moreover, the road network is not convenient for urban sanitation and traffic circulation. On the bank of the Red River, housing also developed in an uncontrolled manner. The commune becomes built with its back to the River. Only a few access points allow people living on boats to get to the commune. The riverbank becomes a big garbage receptacle for people, converting this area into a slum where drug dealing and use as well as other illegal activities take place.

In conclusion, Phuc Tan is a highly densed commune with low quality of life and is closed in itself. Moreover, it is not connected to the rest of the city because of Long Bien Bridge and the dyke.

2.3 Natural Condition

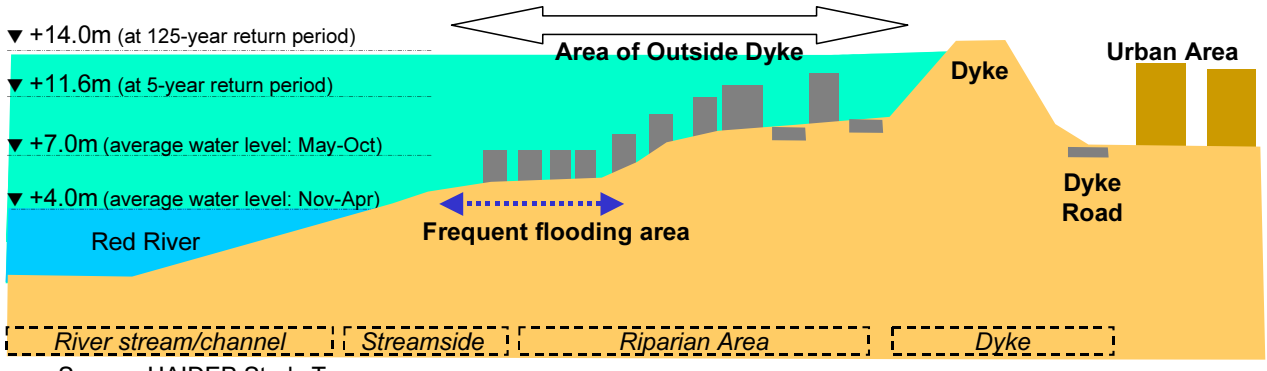
1) Natural Condition

Climate, topography and hydrology of the Red River Delta present risks to Hanoi City, and to the Action Area in particular. Since the very foundation of the city, many projects have been developed to value the potentials of the river and to limit its threats on existing human settlements. However, the river remains largely undomesticated. Today, many problems exist in relation to the Red River. Among them, drainage and irrigation of arable land are of very high priority. Maintaining and augmenting navigation potentials is also of prime importance for the economic development of the Red River Delta region. But considering the rapid urbanization and modernization of Hanoi City, it could be argued that transforming the relationship between the River and the City is big a challenge.

The average monthly intensity of the Red River's flow varies greatly, reaching its highest peak in July and August (11,000 m3/s), and its lowest in December and January (less than 2,000 m3/s). The average annual flow of the Red River in Hanoi since 1905 is 3,860 m3/s. While those mean intensities are high for a big river, specific intensities can be much higher. They average 30,000 m3/s when the river rises after tropical storms, while the highest score ever recorded was in 1945 at 13,000 m3/s. This makes the Red River one of the big rivers with the highest specific flow. In general, the water level of the Red River rises relatively slowly, except after typhoons (up to four in two months) where the water level can harshly rise to 1.0 to 4.0 meters within 24 hours.

The average water level of the Red River ranges from 4.0 meters in the months of November to April, to 7.0 meters from May to October (see Figure 2.3.1). These can reach up to 11.6 meters and 14.0 meters under 5-year and 125-year return periods of flooding. It should be noted that the elevation of Hoan Kiem District is 9.0 meters on average, while that of Dong Da District is only 6.0 meters.

Figure 2.3.1 Current Section of the Dyke and Urban Areas



Source: HAIDEP Study Team

2) Water Management and Flooding Condition

Attempts to manage water resources of the Red River likely began soon after the foundation of Hanoi, for the purposes of developing irrigation, ensuring water supply, favoring sanitation and drainage, and limiting risks related to flooding. The first dyke could have been built in the 9th century, but it is only in the 15th and 16th centuries that serious efforts were undertaken on the dykes in the whole delta. During French colonization, extensive works were conducted to stop piracy in flood prone zones, to protect Hanoi, to improve agricultural production in the delta, to allow permanent settlement of populations and improve awareness on taxes. The work was supervised by Mandarins and conducted

by villagers. Dykes were completed all along the Red River in the 19th century. During the socialist period, major works were undertaken by the government to support rationalization of infrastructure networks, centralization of management capacities and realization of production targets.

As a result of this long history and due to the complexity managing the Red River, authority over water management is reportedly very fragmented, and legal texts are numerous.

The Action Area forms a band approximately parallel, which suddenly enlarges in Yen Phu commune. At the moment (not considering the 125 years return period), very few of the built areas in Yen Phu commune seem to be affected by flooding. The situation is more ambiguous in Phuc Xa commune. In any case, it is the most worrying in Phuc Tan commune.

In summary, while the Action Area is definitely prone to flooding, the situation varies greatly from place to place. The most vulnerable area is found in Phuc Tan commune, where the problem is certainly aggravated by an inadequate system for drainage. In any case, it should be verified if settlements closer to the dyke are at higher level, and thus generally less affected by flooding (see Table 2.3.1).

The most important impact during “normal flooding” is likely to be on people’s activities. However, while human vulnerability is probably not very high, some interviews should nonetheless be conducted to understand how flooding affects the health of residents.

Social vulnerability increases due to lack of safety requirements and degraded state of the environment. When considering development options, risk has to be minimized. Two alternative scenarios for redevelopment would be considered, as follows:

(i) To improve existing settlements and reduce risks. A series of impact mitigation measures should be designed, including awareness building among the community.
(ii) To evacuate residing populations and forbid residential uses in this area.

In-between those extremes, options could include allowing residential functions where the land is at a sufficient level and/or building a new dyke closer to the river to secure additional areas of land. In all cases, redevelopment plan will require a poverty eradication strategy.

Table 2.3.1 Flooding Condition by Commune

Commune	No. of HIS Samples	Normal Flooding								Most Serious n the Past	
		Up to Ankle		Up to Knees		Up to Waist		Higher than Waist		Higher than Waist	
		No.	%	No.	%	No.	%	No.	%	No.	%
Nhat Tan	43	16	37.2	3	7.0	0	0.0	1	2.3	6	14.0
Tu Lien	43	13	30.2	4	9.3	1	2.3	3	7.0	4	9.3
Yen Phu	103	38	36.9	6	5.8	3	2.9	0	0.0	2	1.9
Phuc Xa	103	31	30.1	15	14.6	0	0.0	0	0.0	10	9.7
Chuong Duong Do	110	83	75.5	11	10.0	5	4.5	4	3.6	39	35.5
Phuc Tan	74	46	62.2	5	6.8	2	2.7	4	5.4	31	41.9
Bach Dang	93	37	39.8	22	23.7	15	16.1	0	0.0	23	24.7
Thanh Luong	108	28	25.9	3	2.8	0	0.0	0	0.0	0	0.0

Source: HIS-HAIDEP, 2005

2.4 Socio-Economic and Cultural Condition

1) Profile of Residents

(1) Origin of Residents

The immigrants increased rapidly after Doi Moi in 1986, especially during the 90's. According to the HIS result, 51.2% of residents have been in residence for less than 20 years, after Doi Moi (see Table 2.4.1). These immigrants were said to come from rural areas or other regions, but the result of HIS indicates that 70.2% of the residents come originally from the urban area, including area outside of the dyke (see Table 2.4.2). This means that these immigrants have already settled in the area and that the next generation has moved inside the Action Area.

Table 2.4.1 Years of Stay

Years	5 or less	6-10	11-20	21-30	31-40	41-50	51 or more	Total
No.	87	89	138	110	66	52	72	614
%	14.2	14.5	22.5	17.9	10.7	8.5	11.7	100.0

Source: HIS-HAIDEP Survey, 2005

Table 2.4.2 Previous Address of Residents

Area	District	No. of HH	%
Urban Core	Ba Dinh	56	9.5
	Hoan Kiem	143	24.2
	Hai Ba Trung	141	23.9
	Dong Da	32	5.4
Urban Fringe	Tay Ho	75	12.7
	Thanh Xuan	8	1.4
	Cau Giay	6	1.0
	Hoang Mai	7	1.2
	Long Bien	12	2.0
Suburban	Tu Liem	5	0.8
	Thanh Tri	1	0.2
Rural	Soc Son	1	0.2
	Dong Anh	5	0.8
	Gia Lam	9	1.5
Other provinces	Ha Tay	7	1.2
	Vinh Phuc	0	0.0
	Others	83	14.0
Total		591	100.0

Source: HIS-HAIDEP Study, 2005

(2) Structure of Household

A total of 40.9% of the residents are under 40 years old while those over 60 years old comprise only 15.4%. The households outside the dyke area have an average of 4 family members, which is almost the same as the average of Hanoi City (4.3 members) (see Table 2.4.3). The family with 3 to 5 members account for 81.7% in total. More than half of the residents are younger than 40 years.

(3) Income Level

The average income is rather higher than the average of Hanoi City. In reality, income level varies from the communes. About 40% of residents of Phuc Xa commune, which is the most convenient location being next to Chuong Duong Bridge and gate to the Ancient

Quarter, has income of more than 400,000VND/month, which is higher than other areas. On the contrary, the communes in the north and south are poorer. For example, in Nhat Than of north commune, there are no piped water supply and hospitals. Poor households still use well water. There are some governmental apartments in the north and factory storages near the Hanoi port in the south. These immigrants were said to come from rural areas seeking for jobs in the urban area; however, they cannot afford housing in the city except for this area outside the dyke which the government has not considered as a legal residential area.

(4) Goods Ownership

Ratio of vehicle ownership is lower than the average except for bicycle (see Table 2.4.3). Streets in this area are narrow for cars, which residents don't need anyway since the city center as well as the bus stations (Long Bien station, etc.) are relatively convenient to access. Ownership of household electrical goods is rather higher than the average as compared with that of Hanoi.

(5) Urban Service

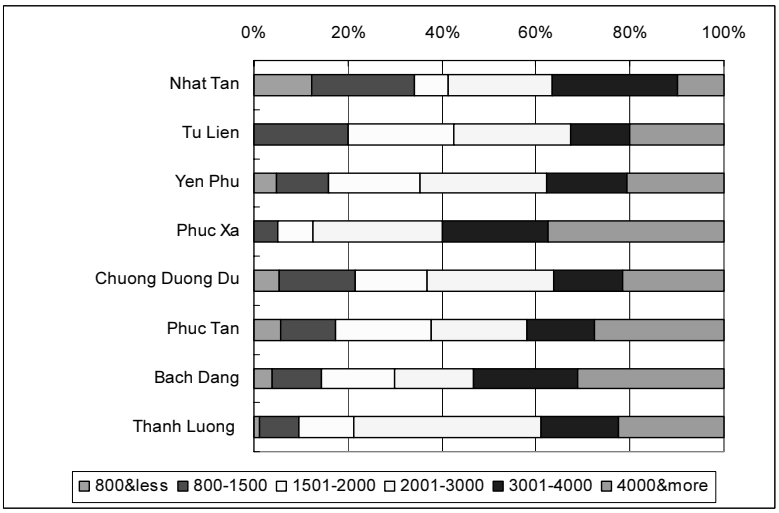
Expenditure of electricity is higher than the average, while water supply and sewerage services are cheaper (see Table 2.4.3). Though the central government does not pay attention to this area, local governments provide the required urban services.

Table 2.4.3 Characteristics of Households

			Out of Dyke	Hanoi
Area (ha)			1,322	92,097
Net population density (persons/ha)			99	36
Household	% of Household		100.0	-
	No. of HH		33,000	760,000
	Ave. No. of Living Together		4.0	4.3
	Ave. HH Income (VND000/month)		3,073	2,567
Vehicle Ownership (%)	Car		2.2	2
	Motorcycle	One	39.1	43
		More than 2	22.1	40
	Bicycle		69.1	12
	No vehicle		12.6	2
Goods Ownership (%)	Air conditioner		19.4	19
	Washing machine		52.5	41
	Refrigerator		86.7	71
	TV		98.6	98
	Radio		55.3	58
	Computer		38.7	32
	Mobile phone		54.4	43
Average Monthly Expenditure (VND000)	Transportation		262.6	256
	Electricity		215.9	169
	Water Supply		34.6	41
	Sewerage services		0.8	8
	Solid waste management		9.3	8

Source: HIS-HAIDEP Survey, 2005

Figure 2.4.1 Monthly Household Income by Communes



Source: HIS-HAIDEP Survey, 2005

(6) Employment

Many employees work in government as well as private companies engage mainly in production or service sectors, since this area is near the Red River and the Ancient Quarter.

Table 2.4.4 Distribution of Occupation

			Outside the Dyke Area										Hanoi (%)
			Nhat Tan	Tu Lien	Yen Phu	Phuc Xa	Chuong Duong Do	Phuc Tan	Bach Dang	Thanh Luong	Total	%	
Professionals	Leader of branch admin. level and unit		3	1	2	1	13	4	8	5	37	1.6	1.9
	Professional		6	2	16	18	18	6	8	7	81	3.5	3.2
	Technical and associate professional		1	4	22	12	21	8	7	32	107	4.6	3.7
Subtotal		No.	10	7	40	31	52	18	23	44	225	9.8	8.8
		%	6.1	4.1	12.9	18.6	9.4	6.2	7.5	13.0	9.8		
Skilled workers	Clerical worker		20	36	50	35	109	43	56	72	421	18.3	10.4
	Service workers and shop and market sales worker		1	3	7	2	9	6	1	7	36	1.6	11.8
	Skilled agriculture, forestry and fishery worker		22	0	0	0	0	2	0	0	24	1.0	1.1
	Craft and related trades worker		9	6	13	5	20	10	10	9	82	3.6	4.4
	Plant and machine operator and assembler		3	2	0	1	11	7	8	5	37	1.6	1.6
Subtotal		No.	55	47	70	43	149	68	75	93	600	26.1	29.3
		%	33.5	27.5	22.6	25.7	27.0	23.3	24.4	27.4	26.1		
Students	Elementary		30	26	45	19	92	50	63	53	378	16.4	21.5
	High school & Univ.		11	9	17	11	26	13	12	27	126	5.5	4.8
Subtotal		No.	41	35	62	30	118	63	75	80	504	21.9	26.3
		%	25.0	20.5	20.0	18.0	21.4	21.6	24.4	23.6	21.9		
Unemployed	Housewife		3	4	9	5	20	9	11	6	67	2.9	2.2
	Jobless / Retired/too young		33	48	92	44	166	80	75	91	629	27.3	22.9
Subtotal		No.	36	52	101	49	186	89	86	97	696	30.2	25.1
		%	22.0	30.4	32.6	29.3	33.7	30.5	27.9	28.6	30.2		
Elementary occupation			13	13	9	4	23	16	20	8	106	4.6	4.6
Small venders			9	12	27	10	24	38	29	17	166	7.2	5.5
Military people, police			0	5	1	0	0	0	0	0	6	0.3	0.1
Others			0	0	0	0	0	0	0	0	0	0.0	10.2
Total			164	171	310	167	552	292	308	339	2,303	100.0	100.0

Source: HIS-HAIDEP Survey, 2005

Table 2.4.5 Types of Company

	Nhat Tan	Tu Lien	Yen Phu	Phuc Xa	Chuong Duong Do	Phuc Tan	Bach Dang	Thanh Luong	Total
Government	31.7	22.8	21.0	28.1	27.2	13.0	20.5	30.4	24.2
Collective	4.3	1.2	0.3	0.6	0.9	0.7	0.3	1.2	1.0
Capital	34.1	21.1	22.9	19.2	13.6	31.5	22.4	14.2	20.8
Mixed	1.2	2.9	2.6	3.6	1.8	2.7	2.9	1.5	2.3
Foreign	1.2	0.0	1.0	0.6	1.8	0.0	1.0	0.6	0.9
No answer	27.4	52.0	52.3	47.9	54.7	52.1	52.9	52.2	50.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: HIS-HAIDEP Survey, 2005

Table 2.4.6 Major Employment Sector

Employment Sector	No.	%
Wholesales & retail trade	175	15.6
Transport, storage and communications	112	10.0
Manufacturing	85	7.6
Construction	81	7.2
Services	78	7.0
Education and training	67	6.0
Electricity, gas & water supply	61	5.4

Source: HIS-HAIDEP Survey, 2005

2) Living Condition

(1) Difference by Location

Evaluation of living conditions outside of dyke area is different by communes. In general, the area near Hanoi port in the south is worse than the one in the north near Ho Tay and Long Bien Bridge. Many factories are clustered in the south where low income workers live; while residents in the northern part can enjoy good accessibility to the urban center, and the local market, infrastructure and less transport. High-quality houses are found to have been newly built in these areas.

(2) Housing Type

Detached houses largely dominate the residential landscape (84.6% of total). Houses generally have permanent structure, but around 20% are semi-permanent. Buildings in Phuc Xa are relatively new, with an average of 17.5 years of existence. Buildings in Yen Phu are on the average 29.3 years old. Those in Phuc Tan are relatively older, with an average of 36.8 years old. Buildings are generally in average or good conditions.

(3) Housing Structure

Housing infrastructure is good with large space and number of rooms, and these are not aged (see Table 2.4.7). People in Phuc Tan and Yen Phu communes have a mean 65 m2 as living space, while those living in Phuc Xa benefit from much more space, with a mean 101 m2. The average number of rooms available for a family is 2.68 in Phuc Tan, 3.59 in Phuc Xa and 4.00 in Yen Phu.

Table 2.4.7 Living Condition by Communes

		Nhat Tan	Tu Lien	Yen Phu	Phuc Xa	Chuong Duong Do	Phuc Tan	Bach Dang	Thanh Luong
Years Stayed		48.22	46.94	34.30	28.25	29.75	46.96	28.55	40.60
Rental Fee (000 VND/Month)		-	1.59	1.68	6.25	4.63	-	-	-
Living Area		97.66	64.02	74.99	101.68	60.13	66.75	85.44	60.63
No. of Rooms		3.46	3.35	3.59	4.00	3.05	2.68	3.39	3.86
Age of House		16.83	20.70	29.27	17.48	26.07	36.80	16.39	13.29
Monthly Expenditure (000 VND/Month)	Transportation	185.12	223.75	456.52	274.50	207.08	267.25	217.47	253.25
	Electricity	130.61	160.25	475.90	170.50	166.96	188.32	202.22	205.51
	Water Supply	-	13.48	40.79	36.55	34.50	35.04	34.88	48.90
	Sewerage Services	-	0.85	1.21	-	1.04	-	0.49	0.01
	Solid Waste Management	9.17	8.55	12.78	9.58	7.60	9.80	9.18	10.03

Source: HIS-HAIDEP Survey, 2005

Table 2.4.8 Satisfaction of Housing Condition

	Nhat Tan	Tu Lien	Yen Phu	Phuc Xa	Chuong Duong Do	Phuc Tan	Bach Dang	Thanh Luong	Total
No	36.6	32.5	20.7	12.5	29.5	20.3	15.6	11.8	22.3
So-so	7.3	22.5	18.3	25.0	33.6	52.2	33.8	21.2	28.6
Yes	56.1	45.0	61.0	62.5	36.9	27.5	50.6	67.1	49.1

Source: HIS-HAIDEP Survey, 2005

(4) Urban Infrastructure

Distribution rate of infrastructure is good except for access to internet (see Table 2.4.9). But piped water supply doesn't cover Nhat Tan and Tu lien communes in the north of this area. People in all three communes are connected to the main public infrastructure services: electricity, water supply, telephone, and to some extent, toilet facilities (Phuc Tan has only 70%). Solid waste collection is also widely provided, but some areas in Phuc Xa are not being served. It should be noted that 40.6% of respondents in Phuc Tan area say that their wastewater is evacuated/treated on-site. People from the three communes are generally satisfied with their sanitary conditions.

Table 2.4.9 Coverage of Urban Services

	Nhat Tan	Tu Lien	Yen Phu	Phuc Xa	Chuong Duong Do	Phuc Tan	Bach Dang	Thanh Luong	Total
Electricity	100.0	100.0	100.0	100.0	99.3	100.0	100.0	100.0	99.8
Piped Water Supply	0.0	75.0	97.6	100.0	98.0	85.5	97.4	99.0	87.5
Toilet Facility	97.6	77.5	89.0	90.0	55.7	69.6	62.3	99.0	74.5
Gas	73.2	87.5	91.5	92.5	89.3	89.9	87.0	88.7	88.2
Telephone	75.6	87.5	87.8	90.0	89.9	85.5	81.8	94.8	87.1
Solid Waste Collection	97.6	90.0	98.8	85.0	91.3	95.7	100.0	99.0	94.8
Internet	9.8	7.5	9.8	12.5	11.4	1.4	13.0	13.4	10.0

Source: HIS-HAIDEP Survey, 2005

Table 2.4.10 Dissatisfaction Rate of Current Water Supply Service

	Nhat Tan	Tu Lien	Yen Phu	Phuc Xa	Chuong Duong Do	Phuc Tan	Bach Dang	Thanh Luong	Total
Water Pressure	-	27.5	8.5	30.0	25.5	20.3	9.1	16.5	17.7
Hours of Supply	-	35.0	4.9	12.5	18.1	15.9	2.6	4.7	11.5
Water Quantity	-	22.5	3.7	15.0	14.8	18.8	2.6	7.1	10.5
Water Quality	-	20.0	6.1	10.0	10.7	13.0	2.6	14.1	9.6
Price	-	7.5	9.8	7.5	4.0	4.3	5.2	4.7	5.3

Source: HIS-HAIDEP Survey, 2005

(5) Flooding Condition

Flooding issue is considered problematic by most residents from Phuc Tan, Bach Dang and Chuong Duong Do (see Table 2.4.11). Besides flooding, important issues are open and green space, access to public transport, telecom, access to park place, and landscape, etc. While the level of living condition including infrastructure and urban services meet the standard or better quality, residents are seeking for better amenities and livelihood.

(6) Issues of Living Condition

Respondents are generally satisfied with their actual housing conditions (see Table 2.4.11). Overall, it seems that people are more satisfied with their housing conditions than the average people in Hanoi City. Lack of space is the main cause of dissatisfaction.

Table 2.4.11 Dissatisfaction Rate of Living Environment and Services

		Nhat Tan	Tu Lien	Yen Phu	Phuc Xa	Chuong Duong Do	Phuc Tan	Bach Dang	Thanh Luong	Total
Living Environment	Flood	34.1	35.0	20.7	17.5	45.0	60.9	49.4	16.5	36.5
	Housing	22.0	27.5	13.4	5.0	24.8	20.3	11.7	8.2	17.2
	Air quality	17.1	22.5	13.4	7.5	21.5	31.9	35.1	23.5	22.5
	Tranquility	9.8	20.0	15.9	12.5	14.8	40.6	39.0	10.6	20.4
	Sanitary condition	22.0	27.5	6.1	10.0	19.5	15.9	27.3	7.1	16.5
	Landscape	12.2	35.0	17.1	32.5	30.2	46.4	29.9	20.0	28.0
	Greenery	17.1	57.5	26.8	42.5	36.9	50.7	32.5	27.1	35.5
Urban Services	Power supply	7.3	5.0	4.9	0.0	5.4	7.2	6.5	3.5	5.1
	Water supply	65.9	50.0	9.8	15.0	14.1	23.2	5.2	5.9	18.4
	Gas supply	7.3	2.5	0.0	2.5	6.7	10.1	3.9	1.2	4.5
	Telecom	39.0	17.5	37.8	22.5	26.8	50.7	28.6	30.6	31.9
	Solid Waste Collection	4.9	25.0	3.7	7.5	8.1	5.8	7.8	7.1	7.9
Access to Services	To market	14.6	7.5	9.8	7.5	16.1	2.9	5.2	11.8	10.3
	To health care	24.4	25.0	11.0	10.0	11.4	7.2	22.1	9.4	13.7
	To public transport	12.2	30.0	37.8	12.5	20.1	49.3	37.7	40.0	30.9
	To primary school	12.2	12.5	8.5	2.5	4.7	5.8	10.4	5.9	7.2
	To park place	4.9	40.0	15.9	35.0	26.2	29.0	57.1	21.2	28.5
	To entertainment facility	17.1	32.5	31.7	25.0	15.4	14.5	45.5	25.9	25.0
	To public admin. office	4.9	5.0	12.2	10.0	4.0	11.6	20.8	5.9	9.1

Source: HIS-HAIDEP Survey, 2005

(7) Condition of Ownership

Most of the housing and land use rights are self-owned. In Chuong Duong Do commune, there are some group-owned or religious houses. The HIS results do not indicate the ownership of "Housing Ownership Certificate" (HOC) and "Land Use Right Certificate" (LURC) which show proof of legal ownership.

In fact, the government doesn't issue HOC and LURC since this area outside of the dyke is prohibited from constructing housing in accordance with the "Dyke Ordinance". So most of the residents own their housing and land use rights on a "person-to-person" transfer papers, and they are considered illegal settlements (see 2.5 in detail).

In these circumstances, it is difficult to specify the difference of housing conditions by legal ownership. Though current new construction and renovation activities are actively ongoing in many places in this area, these are done without any construction permits since they don't have any legal status and local governments overlook these acts. Consequently, while living conditions of each housing has been improved considerably, urban infrastructure doesn't meet the increasing demands, and no official information is accessible and updated by the governments. This may cause problems to grasp the current condition (population, infrastructure, etc.) statistically for any urban development projects in the future, and especially in events of emergency and evacuation.

Table 2.4.12 Condition of Housing Ownership and Land Use Right Ownership

		Nhat Tan	Tu Lien	Yen Phu	Phuc Xa	Chuong Duong Do	Phuc Tan	Bach Dang	Thanh Luong	Total	%
Housing Ownership	Self-own	41	39	78	37	108	69	77	48	497	91.0
	State-own for rent	0	0	4	1	3	0	0	0	8	1.5
	Group-own or religion's	0	1	0	2	21	0	0	0	24	4.4
	Joint ownership of state and individual	0	0	0	0	16	0	0	0	16	2.9
	Uncertain ownership	0	0	0	0	1	0	0	0	1	0.2
Total		41	40	82	40	149	69	77	48	546	100.0
Land Use Right Ownership	Self-own	40	38	78	36	92	68	75	46	473	87.1
	State-own for rent	0	0	4	2	10	0	0	0	16	2.9
	Group-own or religion's	0	2	0	2	33	0	2	2	41	7.6
	Joint ownership of state and individual	0	0	0	0	8	0	0	0	8	1.5
	Uncertain ownership	0	0	0	0	4	1	0	0	5	0.9
Total		40	40	82	40	147	69	77	48	543	100.0

Source: HIS-HAIDEP Survey, 2005

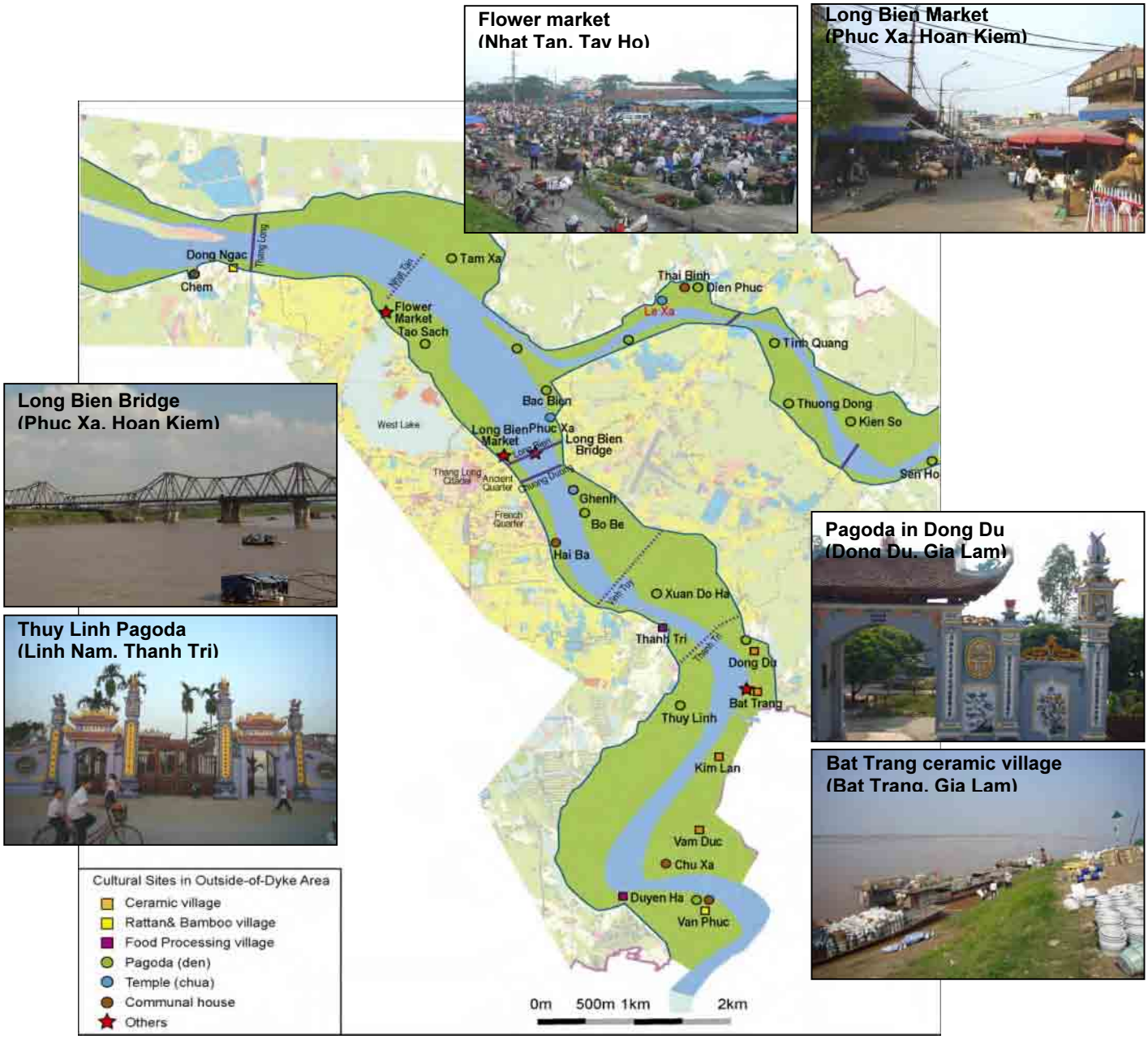
3) Cultural Conditions

The outside-of-dyke area was recently named as ”outside” after construction of the dyke road. Historically, this area was a part of the city and had a significant role especially in an urban center. The area, where is conjunction with the urban centers like the Thang Long Citadel and the Ancient Quarter, is an important distribution area of river transportation.

Traditional craft villages were distributed and many skilled craft artisans of rural areas had been gathered to stay there. Bat Trang village, the most popular craft villages in Vietnam, is also located outside-of-dyke area, where is convenient to deliver fragile ceramics and materials by river transportation. Pagodas and temples are preserved in each agricultural village until now.

Both cultural heritages and economic links of Hanoi with other towns and villages along the Red River were maintained through this area (see Figure 2.4.2).

Figure 2.4.2 Cultural Sites in Outside-of-Dyke Area



Source: HAIDEP Study Team

2.5 Regulating Framework and Development Activities

1) Existing Regulation

A "Dyke Law" is currently being drafted by the Ministry of Agricultural and Rural Development (MARD), based on the "Ordinance on Dyke and Dyke Maintenance". The Law will include 8 Chapters and 43 Articles and will be submitted to the National Assembly for approval in the upcoming 9th Meeting. At the moment, everything related to the dyke is still based on the two following documents.

(i) "Ordinance on Dyke and Dyke Maintenance", No. 26/2000/PL-UBTVQH10 issued on 07/9/2000

(ii) "Stipulating in Detail the Implementation of Some Articles of the Dyke Ordinance", No.171/2003/ND-CP issued on 26/12/2003

In the Article 11 of the "Dyke Ordinance", building works and houses within the protected areas of dykes, on alluvial ground, in riverbed are prohibited, except for works that serve purposes of flood control, transportation and security and other special works.

In the Article 18 of the "Dyke Ordinance", houses and works that already existed in the protected areas of dykes and on alluvial ground, in the river before the date of promulgation of this Ordinance, except specialized works used for purposes of flood control, transportation, defence, security and other special works are dealt with as follows:

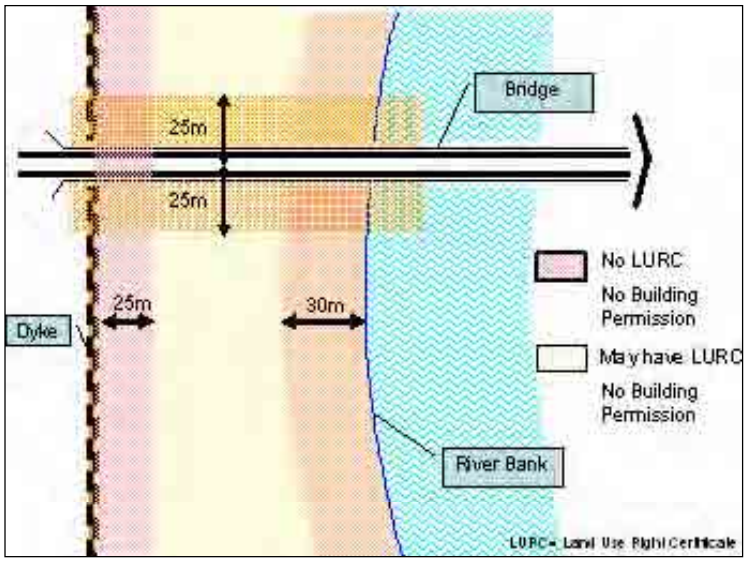
(i) Houses and works built on dyke surfaces, taluses and bergs and within 5 meters from the existing dyke foot out communes for all dyke grades must be relocated.

(ii) Houses and works located 5 meters away from the existing dyke foot but still within the dyke protection limit may be kept for continued use but expansion thereof shall be forbidden; their owners or users must take measures to ensure safety for dykes.

(iii) Houses and works located in river sandbanks or beds, which do not directly affect the flood drainage, may be kept for continued use; if directly affecting the flood drainage, they must be relocated.

In urban and residential areas, the protected area of the dyke is 5 m wide from the existing dyke foot on both the riverside and the field side. The protected area of an embankment which directly protects a river and sea dyke is 50 m wide from the outer edge of the dyke foundation on both sides. Considering digging activities carried out outside the dyke protection area: For boring 1m deep in the natural ground, the boring must be located 10 m more from the dyke foot in normal geological foundation, and 200 m from the dyke foot in bad geological foundation where sand boils can occur in the flood season, except in special cases permitted by State authorities.

Figure 2.5.1 Condition of LURC ownership



Source: HAIDEP Study Team

In special cases which require a change in the dyke protected area, the Ministry of the Agriculture and Rural Development is responsible for submitting the case to the Prime Minister.

2) Definition of Illegal Construction in Outside-of-Dyke Area

The basis for defining illegal and illegal constructions in this area should be institutionalized based on three conditions: (i) ownership of housing ownership certificates (HOCs) and LURCs, and (ii) compliance with the dyke ordinance[2] that was adopted in January 2001, and (iii) vulnerability to flooding, which is considered the most important condition.

In Article 11 of the 2001 dyke ordinance, structures are prohibited on the dyke and several meters from it, on alluvial ground, or in the riverbed except for works on flood control, transportation, security, and other special works. So any house which was constructed in these parts after January 2001 can be considered illegally constructed. At the same time because of the administrative complications arising from the rapid urban development after Doi Moi, there have been no issuances of HOCs and LURCs in the surveyed area in Chuong Duong Do Commune. The widespread existence of person-to-person transfer papers (accounting for about 60%) reveals the relaxation in urban management over the past years.

Upon consideration of these three conditions, illegal constructions are thus defined as: (i) structures built on flood-prone areas, (ii) those constructed without official documents after the enforcement of the dyke ordinance came into effect, and (iii) those constructed without any legal documents at all.

Based on the above criteria, residents in the surveyed area outside the dyke can be roughly classified into three groups, namely:

(1) Group A: Those with sufficient legal papers and whose houses were constructed before the enforcement of the dyke ordinance (0%).

(2) Group B: Those with person-to-person transfer certificates and whose houses were constructed before the enforcement of the dyke ordinance, and those with person-to-person transfer certificates and commune certificates (41%).

(3) Group C: Others (59%).

From the viewpoints of legitimacy and vulnerability to flood, it is roughly estimated that about 60% of the constructed buildings in the surveyed area need to be relocated or attended to through adequate physical or institutional measures. Particularly, about 36% of these structures need to be resettled as they are located in areas that are highly vulnerable to flooding (see Table 2.5.1).

[2] At the moment, everything related to the dyke is still based on the two following documents: (i) “Ordinance on Dyke and Dyke Maintenance”, No. 26/2000/PL-UBTVQH10 issued on 07/9/2000, and (ii) “Stipulating in Detail the Implementation of Some Articles of the Dyke Ordinance”, No.171/2003/ND-CP issued on 26/12/2003.

Table 2.5.1 Classification and Conditions of Illegal Construction (Preliminary Estimate)

Vulnerability to Flood	Status of HOC and LURC	With HOC and LURC (%)	With Person-to-person Transfer Certificate (%)			Without Paper (%)	Total (%)
			Plus Commune's Certificate (%)	Plus Othe Papers[1] (%)			
Low Vulnerability	Before enforcement (~ December 2000)	A (0)	B (3)	B (15)	B (20)	C (3)	41
	After Enforcement (January 2001 ~)	B (0)	B (3)	C (0)	C (20)	C (0)	23
High Vulnerability		C (0)	C (3)	C (10)	C (20)	C (3)	36
Total		0	9	25	60	6	100

Source: Illegal Settlement Survey, HAIDEP, 2005

1) Other papers means house/ land papers issued by a state agency, such as agencies house/ land papers, certifications of dwelling houses and the adjacent gardens and ponds shared by several people after owners of the LURC sold the land to them.

3) Condition of Illegal Settlement

To focus on the current situation of illegal settlements and constraints of its regulatory framework, the interview survey was conducted in Chuong Duong Do Commune, which is one of the clustered area of illegal settlement The interviewees were urban management officials at municipal and ward levels in charge of planning, cadastral work, public security and administration, etc.

(1) Background

The resettlement of this area mainly took place from 1990-2000. In the 1990s, a number of officials were allocated land for building houses. Many of them swelled toward the riverbank and the surrounding. Some inhabitants came from other places, squatted land and resided there, then sold and bought land. During the period 1995-2000, the price of land was low and many households were split into smaller ones; many households experienced economic fluctuation while others went bankrupt, and migrants flowed to Hanoi from other provinces. This situation had prompted a great number of people who have residential registration in Hanoi and people from other provinces to come to buy land and build houses (Table 2.5.2).

(2) Status of Residential Registration

At present, 23,919 people or 5,812 households are living in Chuong Duong Do commune. The population growth is very high. Based on 1999 census, the number of households has nearly doubled over the past 15 years. Its population has increased by 4,371 and its households by 669 as compared with five years ago.

Land in cluster 9 in this commune originated from State forest product companies, rangers' agencies, etc, and some households that have for long lived along the Van Kiep Road.

Table 2.5.2 Status of Residential Registration in Cluster 9, Chuong Duong Do Commune

	No. of HH	%
Residents who have residential registration and live in the commune (KT1)	778	66.8
Residents who live in the commune but have residential registration in other communes in Ha Noi (KT2)	267	22.9
Residents who came from other provinces (KT3)	116	10.0
Seasonal migrants (KT4)	4	0.3
Total	1,165	100.0

Source: Illegal Settlement Survey, HAIDEP, 2005

(3) Legal Status

In general, illegal settlement can be categorized by the status of (i) ownership of Housing Ownership Certificate (HOC) and Land Use Right Certificate (LURC), (ii) acquisition of construction permit for new construction or extension/renovation (see Table 2.5.3). In case of the area outside the dyke, in addition to the status of administrative procedure, this area is considered an illegal settlement area since it belongs to public land and housing construction is prohibited by the “Dyke Ordinance”.

Table 2.5.3 Types of Illegal Settlement

Types of Illegal Settlement		Settlement and Development Pattern
1	Illegal settlement on public land	・ Houses built on the right-of-way for infrastructure development ・ Houses built on the dyke ・ Houses built in public open spaces ・ Houses within the public facilities area
2	Illegal settlement without residential registration	・ Houses of households without residential registration (no ownership of HOC)
3	Illegal settlement without land use ownership	・ Houses inhabited without land-use ownership (no ownership of LURC)
4	Illegal construction without appropriate construction permit	・ Houses constructed without or prior to appropriate construction permit (including delay of administrative procedure)
5	Illegal buildings with unsuitable buildings	・ Houses of which structures are in violation of the building code, in terms of height, floor area ratio, land use, etc

Source: Illegal Settlement Survey, HAIDEP, 2005

(4) Actual Condition of Administrative Procedure

In this area, the common case is that house owners only have “person-to-person transfer papers,“ without communes’ certification of the house/land purchase (see Tables 2.5.4 and 2.5.5). Some of them have at least one type of house/land papers issued by a State agency, i.e. agencies’ house/land allocation papers, certifications of dwelling houses and the adjacent gardens and ponds shared by a number of people after owners of the land use right sold the land to a number of people. But others have no certification papers from State agencies. In the latter case, the majority of this housing type lies in the former agricultural area in the inner city, squatted areas of public land, along canals, the Red River alluvial plain. A majority of the more than 30,000 houses/apartments in the outside of dyke area belong to this type of illegal settlements. The widespread existence of person-to-person transfer papers reveals the slackening in urban management over the past years, particularly on the squatting in public lands.

Table 2.5.4 Status of House Ownership in Chuong Duong Do Commune

	No.	%
Having Housing Ownership Certificate (HOC)	0	0.0
Houses on legal dwelling land, without HOC	0	0.0
Person-to-person transfer papers and other papers	13	25.5
Person-to-person transfer papers with commune's certification	3	5.9
Person-to-person transfer papers only	33	64.7
No papers at all	2	3.9
Total	51	100.0

Source: Illegal Settlement Survey, HAIDEP, 2005

Table 2.5.5 Status of Land Use Right Ownership in Chuong Duong Do Commune

	No.	%
Having Housing Land Use Right Ownership (LURC) and HOC	0	0.0
Legal purchase but without LURC or HOC	0	0.0
Person-to-person transfer papers with commune's certification	1	2.0
Person-to-person transfer papers and other papers	13	25.5
Person-to-person transfer papers only	35	68.6
No papers at all	2	3.9
Total	51	100.0

Source: Illegal Settlement Survey, HAIDEP, 2005

Furthermore, the people cannot apply for construction permits because all construction in this area will breach the Dyke Ordinance, therefore no responsible agencies would issue permits. In reality, based on the interview conducted on a Commune Chairman in this area, the local administration, in response to people's requirement in construction, allowed construction on the condition of keeping the status quo intact, i.e. only upgrade the present structure. So, when residents undertook construction or repairs, they informed the commune administration. However, the new construction or upgrade by households often go beyond the original status quo of houses and the local administration only imposed a fine but still allow them to exist. As a result, the quality of houses, whether the construction activities were carried out without permits or illegally, are of high quality, including illegal settlements. At present, many new detached houses with 4-5 floors can be seen in this area.

4) Ongoing Development Activities

In reality, development activities do happen in the area. Considering the public sector, it is observed that each commune has a minimal set of community facilities: administration offices, police, health clinics, public market, schools, kindergarten, cultural centre, etc. It is also noticed that various public companies, small industries and training centers are located in the area, with some relatively new public buildings. Most significantly, infrastructures are currently being upgraded in some areas, at least for water supply, drainage and roads, especially in Phuc Tan. Generally speaking, it is obvious that the government does not intend to forbid permanent occupation in this area, including residential functions. In regard to the semi-legal status of land occupation in this area, public investments are somehow surprising.

With regard to private investments in the area, major projects are stopped, or on hold. However, smaller private investments are numerous, most notably for renovation and

construction of new buildings. While construction permits are not issued, local authorities do not enforce this regulation when it comes to controlling on-site constructions. Besides making it impossible to control quality of construction works, this attitude probably contributes to discredit the role of local authorities in general in this area.

5) Issues

The fundamental issue behind ongoing development activities in the area outside of the dyke is the ambiguity about their legality. As presented in the previous section, the existing dyke regulation states that occupation of wide shares of land is illegal along the dyke structure and along the Red River. Besides, a non-construction zone is also supposed to be managed close to bridges. Finally, it is said that while residents and entities having activities in the area are entitled to Land Use Right Certificate (when they comply with legal requirements), no construction permits is issued. This implies that important renovation works or construction of new buildings is not allowed. But it is not clear if the residents really have the right to stay there, or if the local government is only tolerating it.

The current ambiguity in which development activities are taking place is largely due to the complexity of regulations applying in the area, linked with the limited capacity to enforce them. Of chief importance is the clarification of the legal status of residing populations. While the “Dyke Law” is being drafted and reviewed by the national authorities, what will be most needed is a mechanism to implement its objectives.

2.6 Main Issues

1) Overview

Outside-of-dike areas involve wide range of complex problems which have been accumulated in their long history of development. While the urban areas and socioeconomic activities of Hanoi were closely integrated with the Red River for transport and living, they suffered from periodic flooding which lead to the construction of the dyke to protect life and property of the people and at the same time separated the outside-of-dyke areas from main urban areas and activities. Even after the Red River transport became less important for the city, the outside-of-dyke areas continuously developed and have grown to significant size and extent. The areas are still growing in spite of various restrictions and regulations to prohibit further construction of facilities. This is because of a number of reasons. One, the areas are so conveniently located in the city; two, equally attractive alternative areas for resettlements are not available nor provided by the Government; three, historically developed communities already exist.

Problems and issues extend not only to protection of the people and properties from flood, but also to environment, social, economic, cultural, management aspects which are interrelated, too. (see Table 2.6.1)

Table 2.6.1 Main Issues and Problems of the Area Outside the Dyke

Issues	Problems	Description
Disaster Prevention and Preparedness	・ Flood ・ Fire and rescue ・ River management (erosion, water flow, pollution, etc.)	Because of high density occupation and unplanned infrastructure development, urban structure such as road network, water and electronic system is vulnerable to disaster and there is no adequate disaster prevention system.
Environment	・ Spoiling prime landscape ・ Negative impacts on ecosystems ・ Overcrowding	Though the ecosystem and landscape of the Red River are the values of Hanoi City, these are disregarded by governments and citizens. Increasing population and unplanned resettlement cause environmental pollution.
Social	・ Insufficient urban service ・ Social evils ・ Community isolation/ rupture	The area of outside dyke served as supply area of commodities from rural areas carried from the Red River before construction of the dyke. At present, these functions have been weakened and it is nothing but an isolated buffer zone, with a weak social stability.
Economic	・ Loss of waterfront activities ・ Low productivity of land use ・ Low value of infrastructure stock	Though there are big development potentials due to accessibility to urban center and abundant natural resources, economic competitiveness is still low because of limited economic activities and unplanned urban development.
Cultural	・ Disregarded historical/ cultural properties ・ Damage to traditional/ cultural values	Due to the Red River and its riverfront, the Thanh Long Royal Citadel and the Ancient Quarter have flourished. There were traditional craft villages, pagodas and entertainments. Both tangible and intangible cultural values have been disregarded and damaged at present.
Management	・ Lack of cohesive policy, regulatory framework and management mechanism ・ Lack of information on the area for effective plan/ policy formulation	Since most of illegal settlement and construction took place in the 90's, and existing housings and facilities are out of control by the "Dyke Ordinance", it is difficult to improve urban structure effectively. In addition, the central and city governments have left this area unsolved, and local governments implement infrastructure improvement and administrative works, without effective urban management mechanism.

The detailed description and orientation for each issue are summarized below:

2) Disaster Prevention and Preparedness

(1) Recurrent and Aggressive Flooding

The fundamental issue behind redeveloping the outside area of the dyke is that of flooding. At the moment, flooding is a frequent and recurrent risk in many areas, and it sometimes affects all residents. In the 125 years return period, flooding can also be threatening the central districts of Hanoi. Until now, government authorities are not clear about how the target area should be treated, which encourages current status quo.

(2) Inadequate Infrastructure

At present, residents are prevented from minor flooding only by evacuation to upper floors of buildings. The road network is not formulated adequately to secure evacuation routes since there are many alleys and cul-de-sac. The few open spaces do not serve as evacuation centers. It is necessary to plan appropriate infrastructure system to prepare against disaster.

(3) Lacking Disaster Management

Since preparedness for natural calamities is not a major concern by both governments and citizens, it is necessary to raise awareness on disaster prevention by way of education, disaster drills and evacuation planning. Governments need to formulate effective disaster management system and plans and promote them to citizens.

Figure 2.6.1 Typical Scenes of Disaster Prevention Issues

Many alleys and cul-de-sacs interfere with safe evacuation from disaster.

Management of the river and riverfront is not effectively conducted.

Source: HAIDEP Study Team

3) Environment

(1) Negative Image of Landscape

There are limited places to see the landscape of the Red River because most of the riverfront is occupied by buildings. Even this area can be seen from the Chuong Duong Bridge, the scenery is not as beautiful as the scenery of riverfront. In general, urban waterfront area provides a positive image and contributes to the beauty of the city which can be seen in other countries. It is necessary to improve the landscape of this area to increase the values of the Red River and its waterfront.

(2) Degraded Ecosystem and Environmental Pollution

The drainage is already constructed in most of residential area, and garbage is regularly collected by a service company. These areas seem to be clean except for some poor areas. But in reality, wastewater and solid waste are directly disposed to the river terrace

from congested residential area outside of the dyke as well as other areas of Hanoi City. The river terrace of the Red River may become a kind of dump of Hanoi City if no treatment measures will be done. In addition, though there are some fields in river terrace to supply fresh vegetables, flowers and trees to the City, this is not integrated into the ecosystem of the River. Lack of awareness of natural environment as well as waste materials from urban area may destroy the precious ecosystem of the Red River.

Figure 2.6.2 Typical Scenes of Environmental Issues

The landscape of the Red River and waterfront is not attractive.

Solid waste is accumulated in the river terrace.

Source: HAIDEP Study Team

4) Social Aspects

(1) Isolation and Physical Divide Created by the Dyke

At city scale, an important challenge is to “repair” the urban structure in conjunction to the area outside of the dyke and the Red River. In the Action Area, this is particularly true for Phuc Xa and Phuc Tan communes, where the dyke wall and Yen Phu road has practically divided the surrounding urban spaces. While the dyke structure has to be maintained and/or improved, the challenge is to create better access and transport networks. In the future development scenario, the outside area of dyke should be integrated with the whole city to enhance the value of the Red River as a main axis of the City.

(2) Negative Image of the Area by Society

Most parts of the area share characteristics with slums, especially in the south. At night, the area is also prone to illegal activities such as drugs, prostitution, etc., thus Hanoi citizens and visitors avoid going there. To eradicate these negative images of the area may be more difficult than to improve physical urban infrastructure. To improve the values of the area, rehabilitation of social network and community is necessary. In case of urban development projects, community involvement with social consideration is indispensable.

Figure 2.6.3 Typical Scenes of Social issues

The area is isolated from the city center separated by the dyke and dyke road.

Poor residential areas still remain.

Source: HAIDEP Study Team

5) Economic Aspects

(1) Limited Access and Visibility of the Red River

While the Red River is the primary backbone of Hanoi, and one of its most important assets for its future development, it is currently hidden and isolated from the urban area. Though the location is conveniently accessible to city center, the Red River is not visible and very few connections are available for people to access it. Revitalizing the riverfront and making it accessible is a major challenge to enhance economic values of the area including commercial and tourism development.

(2) Poor Quality of Infrastructure

While the situation is improving and many people are investing to renovate their houses, many buildings in the area are of poor quality. While unplanned private construction activities occur spontaneously, it is difficult to estimate the demand of urban infrastructure and service and to provide them accordingly.

Figure 2.6.4 Typical Scenes of Economic Issues

The access points to the Red River are mostly occupied by housings.

Households in some areas still use well water with poor quality.

Source: HAIDEP Study Team

6) Cultural Aspects

(1) Forgotten History and Tradition

Historically, this is a gate to Thanh Long Royal Citadel from other regions. The Red River is the main transportation corridor. Merchants, distributors and craftsmen lived in the riverside and established traditional villages. It is necessary to revitalize these religious sites as a symbol of rural villages and a community center for local community.

(2) Revitalization of Cultural Values

A few local assets can be valued through the redevelopment of the target area. This should include the Long Bien Bridge and Phuc Tan Stadium, which histories are relatively short in regard of Hanoi, but living in the memory of many Hanoians. Consideration could also be given to Long Bien Market.

Figure 2.6.5 Typical Scenes of Cultural Issues

Religious sites are disregarded from community.

Long Bien Market is the cultural asset.

Source: HAIDEP Study Team

7) Management

(1) Lack of Information and Reliable Data

One major challenge in designing a suitable redevelopment plan and strategy is the limited access to information about the area. For one, information from government units and public administration offices is not easy to access. Moreover, very little research has been undertaken to date about this area.

(2) Poor Planning of Local Urban Structure and Infrastructures

Little planning has been done to support the development of the area. The whole area is more or less a simple complex of “individual” projects, and many zones developed spontaneously. A comprehensive plan for the development of the target area, let alone the whole area outside of the dyke of Hanoi, is yet to be designed. Drainage and roads are inadequate in many cases; community facilities, parks, green spaces are lacking; urban landscape is poor. Those deficiencies largely contribute to poor sanitary conditions in the area.

(3) Required Scale of Planning

It can be said the scale of planning required to redevelop the area is challenging in itself. The site must be planned at the scale of the city, considering both sides of the Red River, and in consideration of both short- and long-term perspectives.

(4) Difficulties for Urban and Land Management

The excessive division of land plots makes it difficult for local authorities to manage the area and to plan an intervention to improve environmental conditions. This issue is linked with the unclear legality of such subdivisions and rights of tenants. In turn, those affect the fiscal basis available from land taxation. This vicious cycle is difficult to escape given the existing resources and means. From the local management perspective, authorities lack the strength to establish regulations and guarantee enforcement.

(5) Fragmentation of Authority over the Area

Legal power over the target area is complex and fragmented, involving authorities from different levels, sectors and spatial divisions. The top-down level of power presents specific challenges with regard to planning and management of the area. Horizontal coordination between sectors is generally complicated in Vietnam. This area is divided into districts and communes, and there are no local administration units to cover the whole Red River waterfront in Hanoi though the Ministry of Agriculture and Rural Development is in charge of water and river management. Coordination of public stakeholders and political leadership of the project are important challenges for the redevelopment of the area.

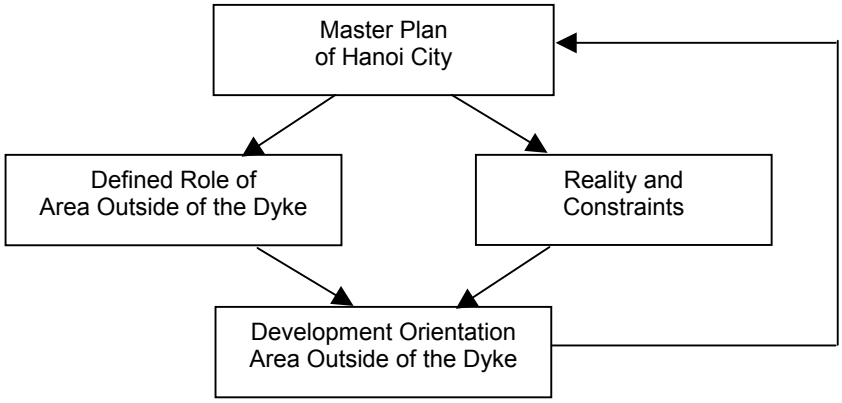
3 FUTURE DEVELOPMENT SCENARIOS AND ORIENTATIONS

3.1 Basic Development Orientations

1) Planning Process

For planning future development and orientations of the area outside the dyke, the basic concepts must be in line with the Plan of Hanoi City. Since this area is a part of the Red River in conjunction with urban city, future development should contribute both to the development goal of the Red River as well as Hanoi City, while resolving current constraints (see Figure 3.1.1). Basic development orientations are proposed with following steps below:

Figure 3.1.1 Planning Process of Development Orientation



2) Development Goal in the City Plan

The Red River is an important asset of the city which characterizes Hanoi differently from the others. It has a large basin area which has contributed to the shape and physical setting of Hanoi City. Nevertheless, the Red River is neither effectively used nor made to enrich the life and activities of the people as well as improve the landscape.

In surrounding area of the river, there are many crucial areas including the West Lake, the Ancient Quarter, the French Quarter, and the Co Loa citadel. The Red River and its river terrace is the backbone of the City to connect these areas as an axis.

In the proposed Hanoi City Master Plan of HAIDEP Study, the development goal of Red River area is proposed, “to form the most important cultural and environmental backbone of the city which will strongly represent the envisioned integrated image of “water”, “greeneries,” and “culture” for the city”. The area must be constantly improved and must integrate existing/future urban developments along the river.

3) Defined Role of the Area Outside of the Dyke

To improve this area radically and to achieve the development goal in the future, the area needs to play an active role for the city, as follows:

(i) Integration of urban areas with the Red River space including the out of dyke areas.
(ii) Important component for enhancing identity of the city and creating new socio-economic development opportunities.
(iii) Buffer zone to link between the Red River and main urban areas in terms of physical, social and ecological aspects.

4) Reality and Constraints

At present, the area outside the dyke is nothing but a physical buffer zone to separate urban areas from the Red River. Values of this area are disregarded by the governments and citizens, and even are considered as a slum of the city. For citizens of Hanoi, social ills and high risk of natural disaster cause negative images on this area.

In terms of urban development, this area is already built-up and established community especially by new immigrants. Now this area is one of the typical highly-densed and degraded residential areas in Hanoi. Though there are strong development pressures on this area, ambiguous regulatory framework make all development activities complicated and uncontrolled. In addition, historical practice of unplanned urban development and management caused illegal settlement of this area.

5) Opportunities

There are ample opportunities to maximize the value of the area and have it contribute to the Hanoi City, as discussed below:

(1) Prime Location

The main strength of the area is its prime location. It is connected to the historical and economical centre of Hanoi. The Red River has various contributions to the area, particularly for transport of merchandise, for nourishing agricultural land and for economic activities.

(2) Cultural Identity

This area is connected to both the history of the Red River and the history of the city of Hanoi. The area thus has a strategic importance for the development of Hanoi, by recovering cultural, spiritual and historical values and restructuring its urban structure.

(3) Natural Resource and Landscape

The Red River is full of natural resources and its axis also brings favorable air and wind. Magnificent space and views of the Red River is an incomparable resource to enhance the city's landscape and image. Areas outside the dyke can also be improved much through green spaces and parks, including tree planting, urban agriculture, etc.

(4) Economic Potentials

Water space and the areas outside the dyke can provide ample opportunities for economic development, especially recreation and tourism for both citizens and visitors: cruising tours, waterfront promenade and parks, water sports and recreation, etc. As its history indicates, this area can be a supply area of commodities and materials to urban city.

6) Basic Development Orientations

To set up the fundamental basis for accomplishing the development goal, it is necessary to clear the minimum requirements, as follows:

(i) safety of people's life
(ii) correction of illegal development and activities
(iii) ensuring adequate river management
(iv) After achievement of these requirements, the ultimate development goal of the Red River area will be realized.

3.2 Goals, Strategies and Objectives

1) Development Goal for Area Outside of the Dyke

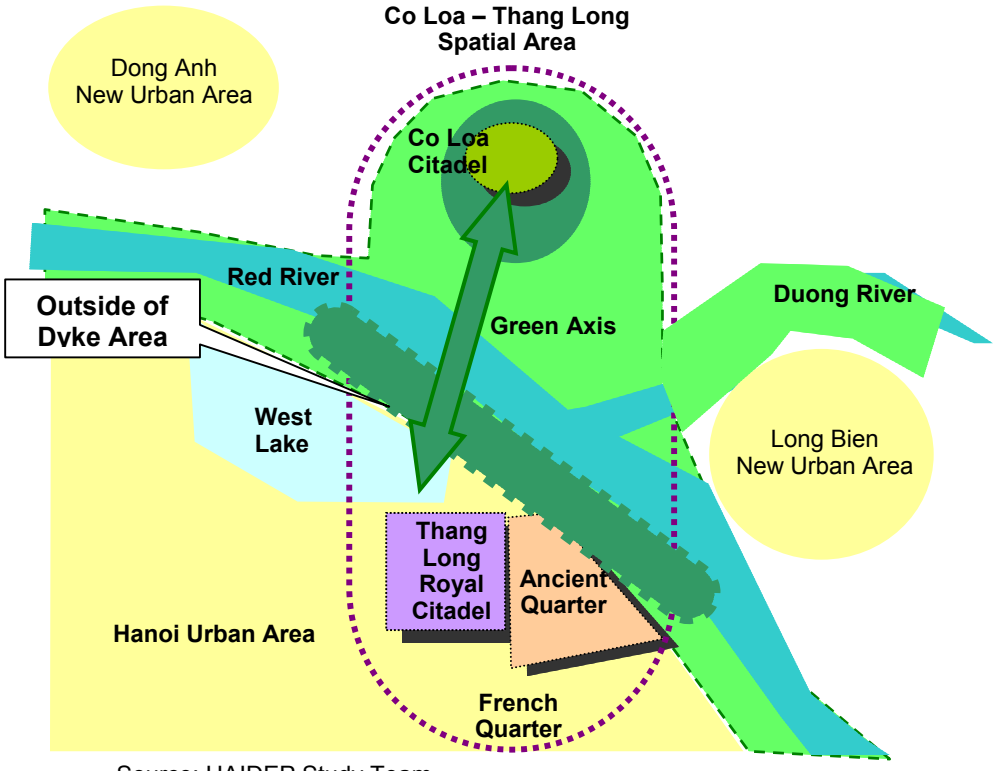
It is important to consider revitalization and development of the area outside of the dyke from perspectives not limited to economic aspects but also of cultural, social, environmental aspects. As one part of the Red River Development Area, the functions shall be enhanced to integrate other core areas to formulate a solid urban axis (see Figure 3.2.1).

Vision and Goals

The area outside of the dyke shall enhance the values of the Red River to create the new urban image of "water", "green" and "culture" while improving physical and social conditions and strengthening economic competitiveness.

- The Red River shall be the environmental and cultural backbone of Hanoi, as well as a crucial component to establish image and identity of the city.
- The area outside of the dyke shall be the buffer and adhesive zone between the Red River and urban area to integrate the image of the city.
- The area outside of the dyke shall provide new public space for citizens of Hanoi for cultural, economical and ecological purposes to enhance its land values.
- The area outside of the dyke shall be a waterfront area facing the Red River with establishment of a sustainable ecological system.

Figure 3.2.1 Development Concept of the Red River Development Area



Source: HAIDEP Study Team

2) Strategies and Objectives

To achieve these goals, strategies and objectives are proposed which need to be integrated among multiple aspects toward a balanced development in the future.

Strategies		
Economic Development	Preservation of Environment/ Landscape/ Culture	Social Development
• New urban economic activities • Waterfront development • Tourism and recreation • Cultural and art activities • Urban agriculture • Distribution and river transportation	• Thang Long-Co Loa Special Area • Landscape of waterfront • Green, water and open space • Preservation and revitalization of traditional culture and villages • Traditional festivals	• Reorganization of community • Improvement of living condition • Creation of new lifestyle (non-residential type) • Strengthening of linkage with existing urban areas • Promotion of events

Based on the strategies above, objectives for development are set as follows:

(1) Economic Development

A1: Revitalization and strengthening as an area of new economic development activities to contribute to job creation, tax income and revenue of the city

A2: Activation of regional economy based on water transportation

(2) Preservation of Environment/ Landscape/Culture

B1: Creation of urban waterfront space to consolidate the image of Hanoi City

B2: Securing safety of life from disaster

(3) Social Development

C1: Safety and security

C2: Formulation of new urban ecological lifestyle and community

3.3 Development Concept for Outside of the Dyke Area

1) Overall Space Management

The area outside of the dyke, which is about 40km-long, is a huge open space in harmony with water and the greens. The landscape, as a public property of Hanoi City, shall be a symbolic landmark and a skyline view from the opposite shore and bridges. The land use shall be controlled to meet the demand and capacity of the area, and rampant urban development activities shall be restrained. Overall space management should be integrated between urban development and natural environment control.

2) Basic Principles of Preservation and Development

(1) Environmental Zoning

The variety of environmental resources distributed all over the city must be properly identified, conserved and optimized to enrich the city and its people. This area outside of the dyke includes various resources such as: (i) water space and its tributaries, ponds and canals; (ii) greeneries including river terrace and (iii) agricultural lands. These resources must be integrated as a network and zoned together as well as cultural heritage assets to form the development foundation. Hazard mapping of flooded districts, cultural and historical sites in danger and ecological distribution area is one of the necessary elements for the environmental zoning. In addition, environmental axis which connects the other crucial sites such as the Co Loa Citadel and the West Lake should be identified and zoned to protect the area from urban development activities. To control land use and urban development properly in the regional and city level, the environmental zoning should be planned in both regional and detailed scale.

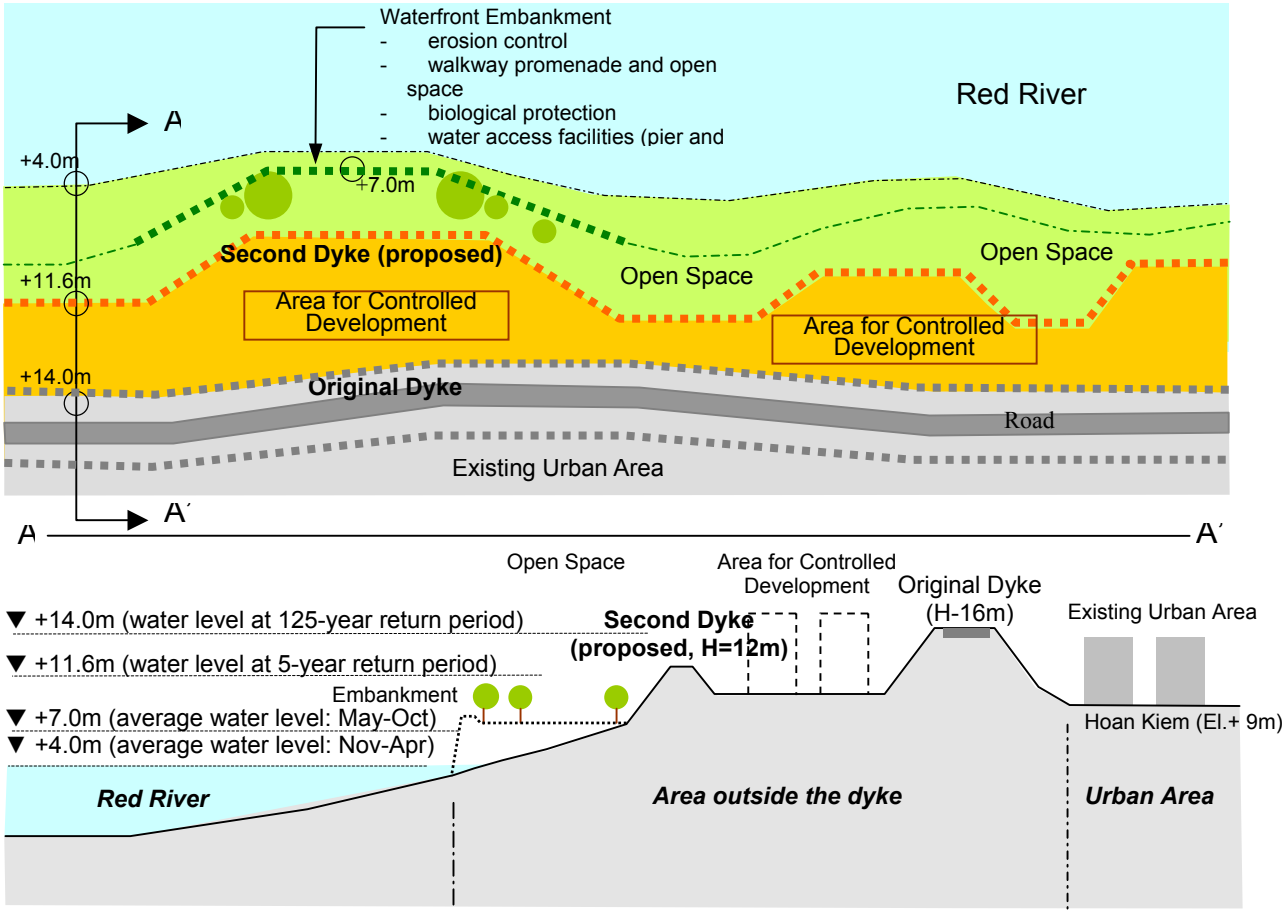
(2) Development Concept

The area outside the Red River dyke is a precious asset for the city because of its historical value, landscape, disaster prevention, and urban development. To enhance the development potential of the area outside of the dyke as well as to secure people's quality of life, the construction of a second dyke closer to the river is proposed. This structure would be at the height of flooding for the 5 years return period, which would allow for limited development projects within the newly protected area. In addition, a clear policy must be formulated with due consideration of the following (see Figure 3.3.3):

(i) Areas lower than the water level of a 5-year return period must be free from any kind of development, except temporary public facilities.

(ii) In the proposed special areas, where shall be preserved as cultural assets of the city or be developed as urban spaces, construction of a secondary dyke (H=12m) along the water level line of a 5-year return period to protect the area between the existing dyke where non-residential developments, such as markets, parking, recreation facilities, commerce/ business, etc., can be located.

Figure 3.3.3 Development Concept for Outside of Dyke Area



Source: HAIDEP Study Team

(3) Development Guideline

The area outside of the dyke is along the two axes: the one for connecting with the opposite shore over the Red River, and the other is for connecting neighboring communes. The development orientation should be planned to strengthen the linkage of these two axes as well as the characteristics of each hinterland and its future orientation (see Figures 3.3.1).

(4) Development Orientation

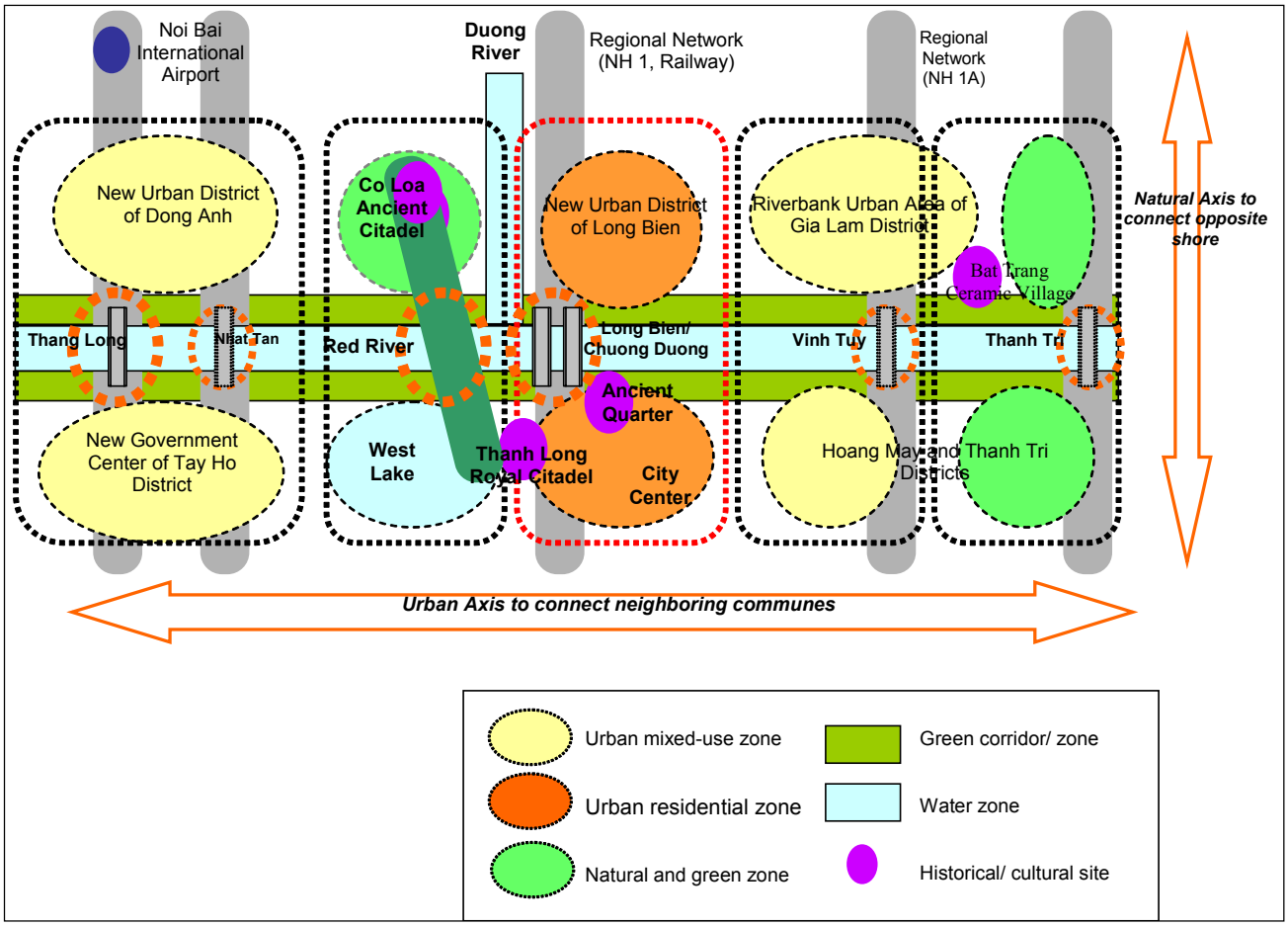
In the future, all of the outside-of-dyke area shall not be used as residential purpose in terms of security of life, environmental and landscape conservation. Since the inside-of-dyke areas will be developed with residential and commercial areas in near future, the outside-of-dyke areas shall be preserved as openspace and agricultural lands, especially rural areas (see Figure 3.3.2).

Most of the outside-of-dyke areas in urban center are occupied with residential and industrial areas. The prioritized areas for resettlement are the areas where violate the current Dyke Ordinance to secure people's livelihoods. The residential areas along the river terraces, around bridges, nearby the dyke roads must be relocated for protection and creation of openspace for evacuation.

Some areas have cultural values, especially traditional Bat Trang ceramic villages. To preserve and protect these cultural areas for future, it is proposed to construct the 2nd

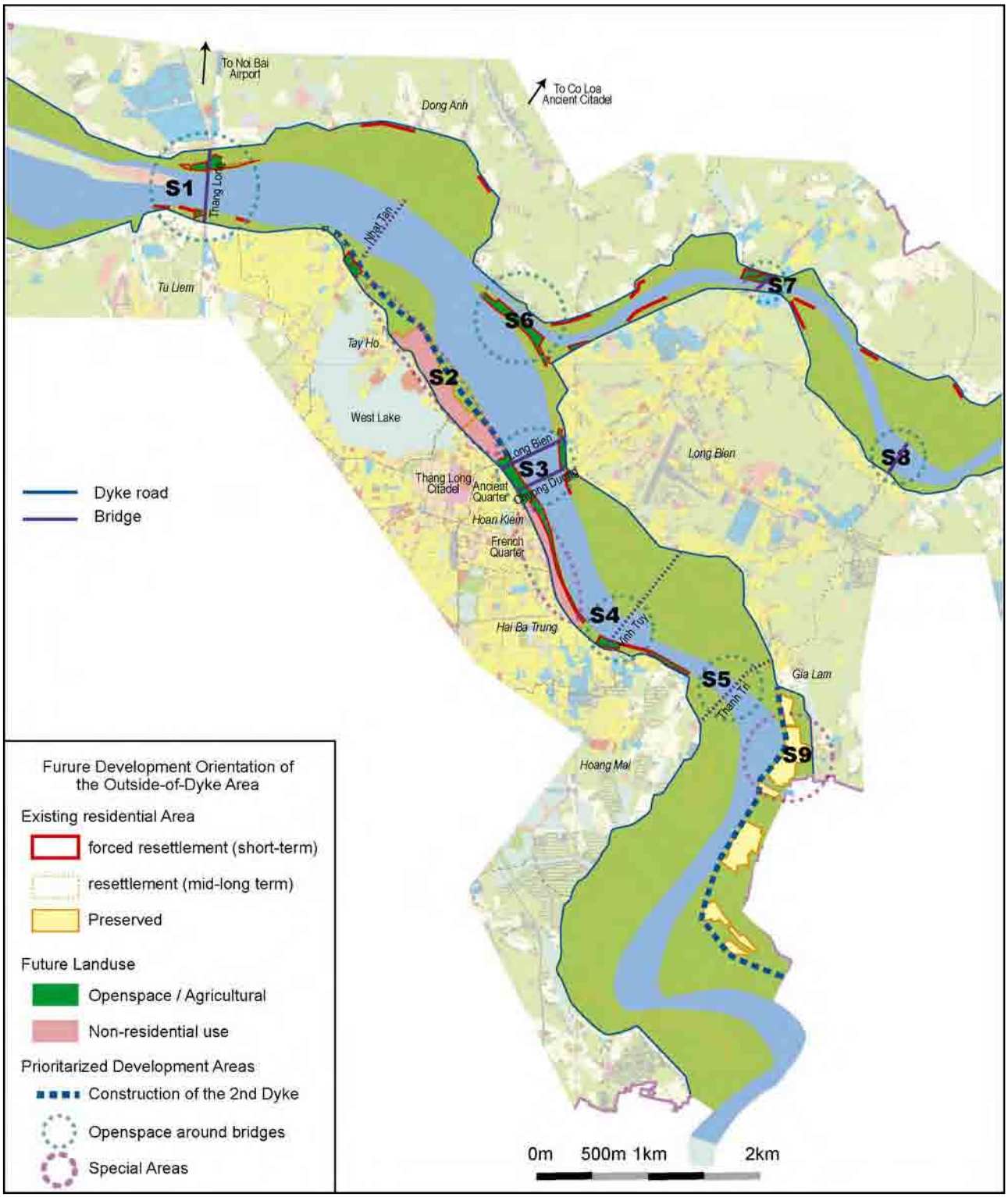
dyke around them. Since urban communes like Phuc Xa, Yen Phu, Chuong Duong Do, etc. are traditionally flourished and have long history as one of the part of the urban city, these urban functions shall be preserved and these areas shall be utilized as non-residential use with protection by the new 2nd dyke.

Figure 3.3.1 Development Guidelines of the Surrounding Areas of the Red River



Source: HAIDEP Study Team

Figure 3.3.2 Future Development Orientation of the Outside-of-Dyke Area



Source: HAIDEP Study Team

Table 3.3.1 Future Development Orientation of the Outside-of-Dyke Area

Commune			District Name	Overall Landuse	Population				Prioritized Areas and Measures	
					for Resettlement			for protection		
Code	Zone No.	Name			Forced (short-term)	Voluntary (mid-term)	Voluntary (long-term)		for Protection	for Development
L1	162	Dai Mach	Dong Anh	A, O	867	0	498	0		
L1	163	Vong La			615	422	615	0		resettlement for openspace
L2	164	Hai Boi		A	1,937	2,079	3,119	0		
L3	174	Vinh Ngoc		A	1,268	482	1,166	0		
L3	173	Tam Xa			-	0	0	0		
L3	172	Xuan Canh			609	618	818	0		
L3	171	Dong Hoi			1,216	462	1,118	0		
L4*	170	Mai Lam		T, I, O	937	562	375	0		
L4*	216	Yen Vien	Gia Lam		76	955	258	0		
L4*	207	Thi Tran Yen Vien			2,557	0	205	0		resettlement for openspace
L5*	214	Duong Ha		A	1,674	0	-251	0		
L5*	212	Phu Dong			370	2,212	645	0		
L5*	213	Trung Mau			-	0	0	0		
L6*	209	Le Chi	Long Bien	A	0	5,780	1,445	0		
L6*	228	Kim Son	Gia Lam		0	1,378	345	0		
L6*	226	Phu Thi			-	0	0	0		
L6*	227	Dang Xa			-	0	0	0		
L6*	218	Co Bi			-	0	0	0		
L6*	123	Hoi Xa			-	0	0	0		
L7*	116	Giang Bien	Long Bien	A	1,572	1,017	647	0		
L8*	117	Thuong Thanh		O	1,350	137	372	0		resettlement for openspace
L9*	119	Ngoc Thuy		A	2,113	3,275	2,007	0		
L10	112	Gia Lam		O	3,064	588	913	0		resettlement for openspace
L11	121	Bo De		O	597	1,480	979	0		resettlement for openspace
L12	122	Long Bien		O, A	0	2,014	504	0		
L12	124	Cu Khoi			0	2,179	545	0		
L13	224	Dong Du	Gia Lam	R	0	2,099	0	525	construction of 2nd dyke	
L14	208	Bat Trang		R	3,448	799	0	2,831		
L15	217	Kim Lan		R	1,681	1,555	0	2,157		
L15	223	Van duc			0	3,859	0	2,573		
R1	180	Thuong Cat	Tu Liem	A	2,164	519	822	0		
R1	181	Lien Mac			0	114	170	0		
R2	182	Thuy Phuong		O	478	0	48	0		
R2	183	Dong Nga			1,507	121	196	0		
R3	20	Phu Thuong	Tay Ho	A	222	281	436	0		
R4	17	Nhat Tan		A	0	5,805	0	2,301	construction of 2nd dyke	
R4	16	Tu Lien			802	5,656	0	1,831		
R5	15	Yen Phu	Tay Ho	C	0	10,696	0	2,843		resettlement for new cultural area
R5	1	Phuc Xa	Ba Dinh		6,884	7,802	0	3,955		
R6	37	Phuc Tan	Hoan Kiem	O	13,589	1,165	76	0		resettlement for openspace
R7	38	Chuong Duong Do		C	10,173	6,994	0	4,802	construction of 2nd dyke	
R7	47	Bach Dang	Hai Ba Trung		6,868	6,651	0	4,100		
R8	48	Thanh Luong		O	6,864	9,380	4,899	0		resettlement for openspace
R8	105	Thanh Tri	Hoang Mai		1,717	630	1,431	0		resettlement for openspace
R9	110	Linh Nam		A, R	0	4,820	3,213	0		
R9	106	Tran Phu			-	0	0	0		
R9	107	Yen So			-	0	0	0		
R10	194	Yen My	Thanh Tri	A	0	3,261	2,174	0		
R10	195	Duyen Ha			1,691	990	1,788	0		
R10	196	Van Phuc			0	4,178	2,785	0		
TOTAL				**No.**	**78,908**	**103,016**	**34,361**	**27,917**		
				%	**32%**	**42%**	**14%**	**11%**		

Source: HAIDEP Study Team

3) Alternative Scenarios and Proposed Functions of the Action Area

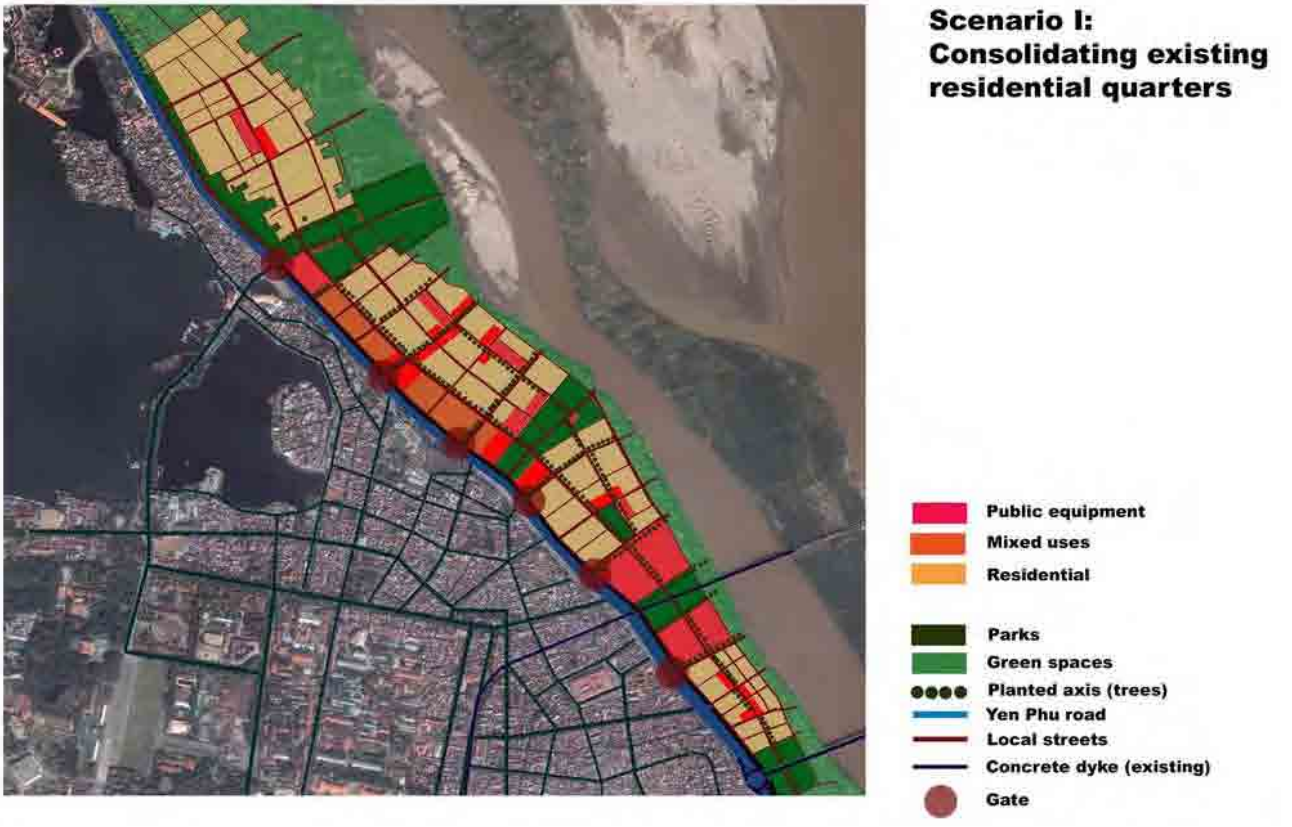
Based on the development orientation of the whole area, the Action Area shall be utilized for non-residential use. Since Yen Phu Commune is one of the valuable areas in line with the green axis between Co Loa – West Lake, the landuse shall be significant in terms of cultural, economical and ecological aspects. Several alternative scenarios are proposed (see Figure 3.3.4, 3.3.5 and 3.3.6).

Figure 3.3.4 Alternative Scenarios of the Action Area <Scenario I>

Scenario I: Consolidating Existing Residential Quarters

The first scenario for the redevelopment of the target area focuses on improving environmental conditions of existing settlements. This scenario is a short- to medium-term option, which could then allow for pursuing other scenarios.

- Improved connections between the city centre and the Red River are defined. The riverfront is made accessible.
- The street network is made clearer and the urban structure is improved, allowing for better hygiene and urban management. Connections between the three communes are possible. Density is progressively reduced. Public parks and green spaces are developed.
- Settlements are reduced along the river.



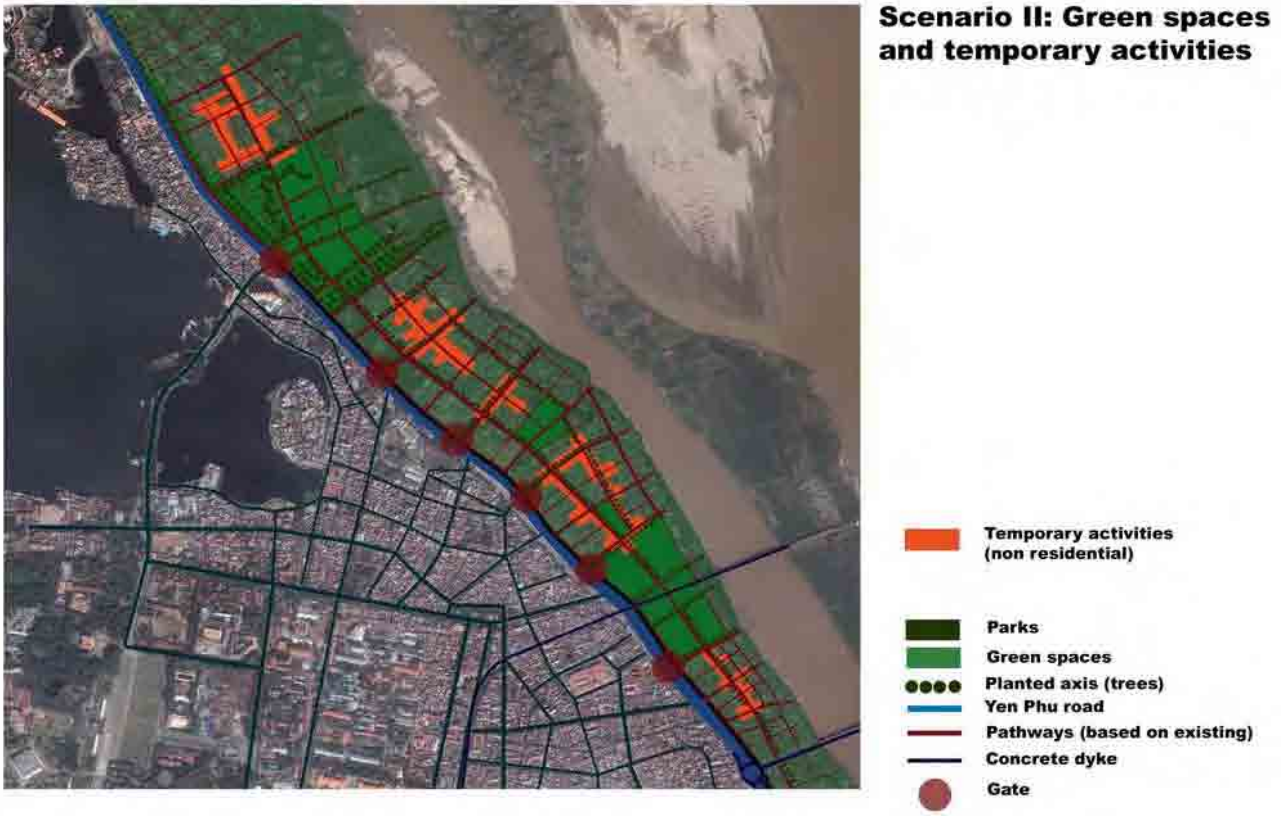
Source: HAIDEP Study Team

Figure 3.3.5 Alternative Scenarios of the Action Area <Scenario II>

Scenario II: Green Spaces and Temporary Activities

This second scenario proposes to radically transform the area by creating a huge park along the Red River and prohibiting residential functions.

- Gates are created to invite crossing the dyke and accessing the Red River waterfront.
- Mix-uses (2-3 storey buildings) and temporary activities are managed in the area. Those are organized as villages, using existing traces from initial settlements in the area.



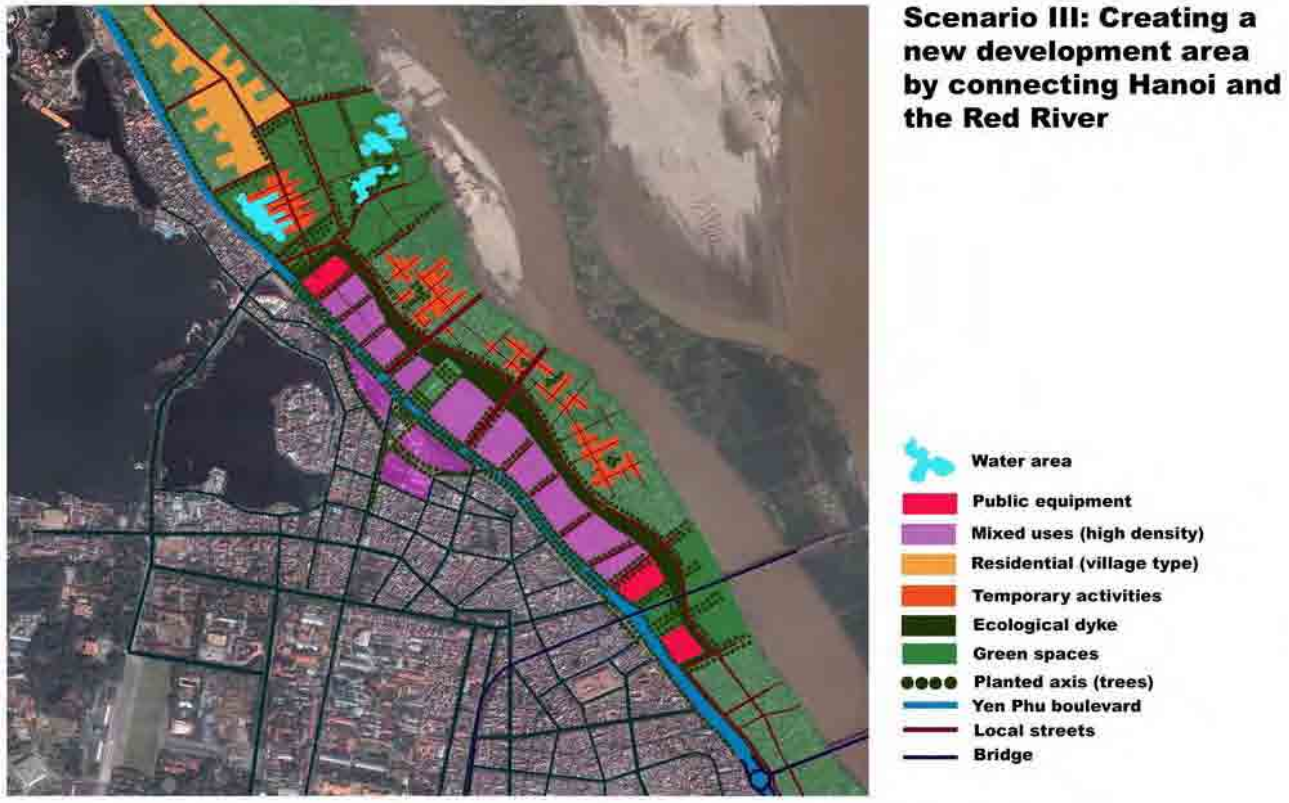
Source: HAIDEP Study Team

Figure 3.3.6 Alternative Scenarios of the Action Area <Scenario III>

Scenario III: Creating a New Development Area, Connecting Hanoi to the River

This scenario is based on the idea of building a new dyke closer to the Red River, securing a new land area for development. The band created is between 120-170 meters wide. The new dyke follows indications from the Scenario II.

- The existing dyke is erased, allowing for the transformation of Yen Phu road into an urban boulevard. The target area is completely integrated with Hanoi.
- The secured band allows for the construction of a few important public and collective facilities such as for cultural, sports, leisure functions. Those facilities are located on the axis penetrating the area and reaching for the Red River.
- Three main axes are managed between Hanoi and the Red River: (i) in line with An Duong street in Yen Phu commune, (ii) in line with Tan Ap street in Phuc Xa commune connecting directly with the citadel and (iii) in line with Long Bien market.
- The project intends to develop a new image for the city of Hanoi. The secured band allows for a limited number of prestigious residential or mixed-used projects, which could include high-rise towers (8-15 floors). Those are located along the Yen Phu Boulevard.
- The ecological zone closer to the river is developed on traces of ancient villages. This area supports clusters of temporary activities, and possibly for a limited number of expensive villas (which design would integrate the necessary features to avoid risks related to flooding).



Source: HAIDEP Study Team

3.4 Conceptual Plan for a Proposed Project

1) Background of the project

(1) Background

Since it is proposed that the area outside of the dyke shall be a public space to enhance the values of the Red River as well as Hanoi, it is important to share this image of future development in detail. It is therefore necessary to develop the Action Plan to include the physical and financial plans to describe the future development concept so that the concerned governments and citizens can share a common understanding of the values of this area as well as the Red River and obtain a consensus for future development orientation.

(2) Objective

The goal of this pilot project is to propose detailed plans and workable mechanisms to redevelop degraded residential areas between the dyke and the Red River and enhance the values in a comprehensive manner. It aims to develop alternative proposals (concepts and plans) of the future development concept and improvement of the area outside of the dyke for the Hanoi People's Committee and citizens of Hanoi.

(3) Target Area

The area for the pilot project is located around An Duong Street, in Yen Phu ward. It stretches from Yen Phu road to the Red River. The area along the road should be developed as a corridor, while the area closer to the Red River should be reasonably wider. The project area should also include considerations for improving the intersection and the entrance to the site from Yen Phu road.

(4) General Concept

The proposed intervention should have the goal to provide public and open spaces accessible to all, and be limited to non-residential functions and uses. The basic concepts are in line with the proposed Hanoi City Master Plan (see Table 3.4.1).

Table 3.4.1 General Concept of the Project Area in Hanoi City Master Plan

General Coals and Objectives

- To develop Hanoi in 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.
- To promote developing of areas enriched with "green", "water" and "culture".
- To recover the Red River in a way that it will form the city's backbone with environmental, cultural, social, and economical functions.

Role and Function of the Red River Development Area

- Disaster prevention: safety of life, infrastructure improvement
- Environmental: environmental axis, landscape, water network, green space, open vista
- Social: Recreation, integration of communities along the river.
- Cultural: Thang Long-Co Loa special area, cultural villages, Red River waterway.
- Economic: Urban development of non-residential purpose, waterfront development, recreation and tourism, and water transportation.

2) Project Concept and Plan

In the proposed Master Plan, the city will spread on both sides of the Red River in the future and the river will be a backbone of the city. This orientation represents an important change of scale and requires rethinking the cohesion and the structure of the whole city. The significance of the Red River will be increased in many aspects and the river will become a central asset of the future city. Reconnecting Hanoi to its main river implies essential historical, cultural and ecological values.

Basic concepts of the project area and its functions are proposed, as follows:

(1) Cultural Core

To formulate a cultural green axis from West Lake to Co Loa Ancient Citadel

(2) Buffer Zone

To integrate existing urban areas with the Red River space

(3) Ecological Value

To provide open air recreational and relaxation spaces

(4) Economic Development

To provide opportunities for cultural- and environmental- based business activities for citizens and tourists.

The Action Area belongs to the city center and functions as a gate to the historical city and to the new administrative city district around the west lake. The Action Area can also be seen in relationship with the most ancient part of Hanoi: Co Loa citadel.

In this project, it is proposed to develop a “Spiritual Center” of Hanoi on this site. While the dyke area has various potentials and expected functions such as cultural, historical, political, economical, social, ecological, etc., this Action Area on the axis of Thang Long-Ho Tay-Red River-Co Loa can be sacred and spiritual core for people of Hanoi.

3) Spatial Plan of the Project

In this proposed plan, the main facilities are a spiritual center and a tower. This tower will be a sightseeing tower of 300m-high as well as TV tower. So far, there is no sightseeing tower or a public place except for some hotels. This tower will be the symbol of Hanoi and contribute both spiritually and economically to Hanoi City.

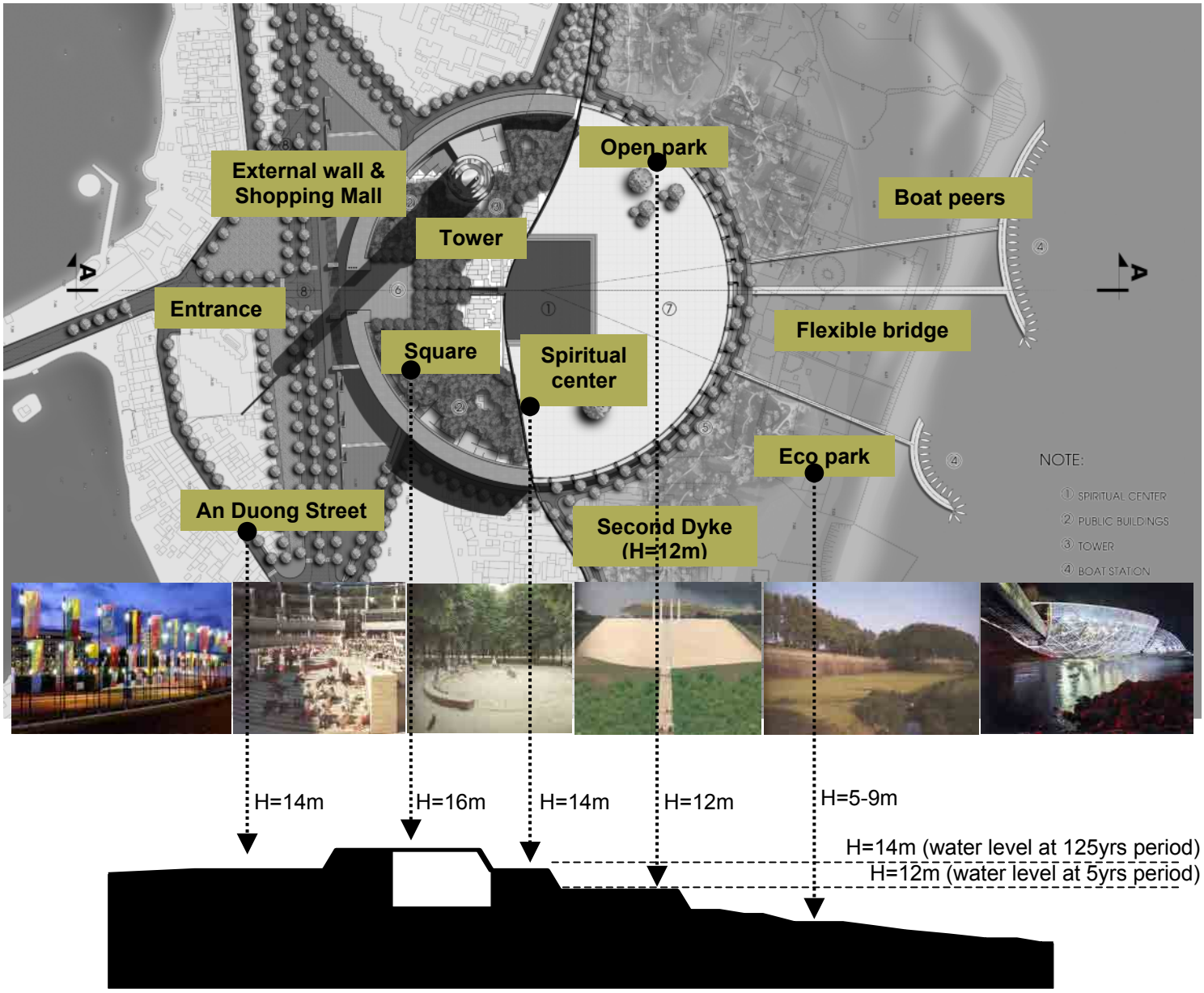
In this spiritual center, people can feel the sense of unity of core value of Hanoi such as Thang Long, Ho Tay, Red River and Co Loa. Expected activities and functions are as follows:

(i) Smooth and safe access from Thanh Nien Street and An Duong Street (Dyke road) to spiritual center
(ii) Shopping and entertainment mall along the circle wall
(iii) Symbolic tower as viewing deck and TV antenna
(iv) Spiritual center to overlook an eco park and Red River for meditation
(v) Eco park to connect between urban and nature
(vi) Boat station to approach Red River

Figure 3.4.1 Plan of the Spiritual Center

Source: HAIDEP Study Team

Figure 3.4.2 Facility Plan of the Spiritual Center



Source: HAIDEP Study Team

4) Assessment

(1) Benefits of the project

After completion of this project, private sectors like broadcasting companies will use this tower, and citizens of Hanoi and visitors can enjoy sightseeing from the top of the tower and new commercial area as well as natural environment in Eco Park and Red River. This project also makes the Government guarantee to implement policies to ensure people's life outside of the dyke, to improve public service and facilities and to revitalize the values of Red River. In other words, this project can contribute to various stakeholders such as governments, investors (private sectors), citizens of Hanoi, and residents.

So far, there is no place to gather people to enjoy commercial activities in combination with ecological and natural condition. This project will be a good challenge for waterfront development project in Hanoi City and shall hopefully open doors for recognizing the values of the Red River. Among others, the citizens of Hanoi will welcome the concept of "Spiritual Center" which respect the Red River, the West Lake and the Co Loa Citadel as precious cultural sites for Hanoi and this center will integrate these sites into one.

In summary, benefits of the project are sufficient in terms of economical, social, cultural, and economical perspectives.

(2) Assessment

(a) Effectiveness

Benefits of this project are not only economic aspects generated by the commercial revenues, but also social, cultural and ecological aspects. By giving back this area for public use will generate social equality and the people shall enjoy the sense of well being with natural environment. As already discussed, this project can achieve the goal of enhancing the values of the Red River area in a comprehensive manner.

(b) Efficiency

This project will be initiated by private sectors. Though land expropriation and resettlement may take a long period, implementation and raising revenue will be smoothly done.

(c) Impact

This project will be the trigger to rethink about the significance and values of the Red River and its surrounding environment. Once both the governments and citizens realize these values again, concern and awareness of culture and environment of Hanoi City will be raised. The impacts of this project will not only attract urban redevelopment projects in other areas but also to enhance the understanding of values of culture and nature.

(d) Relevance

While public sector lacks the financial capability to invest more for public services, this project will be implemented by private sectors. Investors, users and visitors can enjoy benefits in this project. As compared with other projects which many private sectors including FDI invest on for limited beneficiaries, benefits and impacts of this project will be wide-ranging. In this context, this project will be considered reasonable and appropriate.

(e) Sustainability

In terms of financial sustainability, rental fees from commercial floors and income of TV tower will be continuing revenue for a long time. Project costs of construction and management can be secured mainly from these revenues rather than initial investments by governments. As for sustainability of other aspects, usages of the project site are flexible including open space and rental of commercial spaces, so any events can be implemented to attract repeat visitors. The most important aspect of sustainability is the environment of the Red River and river terrace. Since this project aim to improve natural environments of the area, eco-park will contribute to sustain ecosystem of the river, and impact of education for next generation will be significant. Sustainability of this project will be lasting once the concepts and objectives of this “Spiritual Center” will be properly understood by the people.

5) Implementation Mechanism

This project will be initiated by the private sector but not limited for private work and shall entail public sector involvement, which includes construction of public facility and spaces as well as embankment and river area improvement.

For the feasible implementation and sustainable management, it is necessary to clarify construction and management costs, stakeholders to invest and manage and measures for management. The key for feasibility is to determine how much private sectors can be involved in.

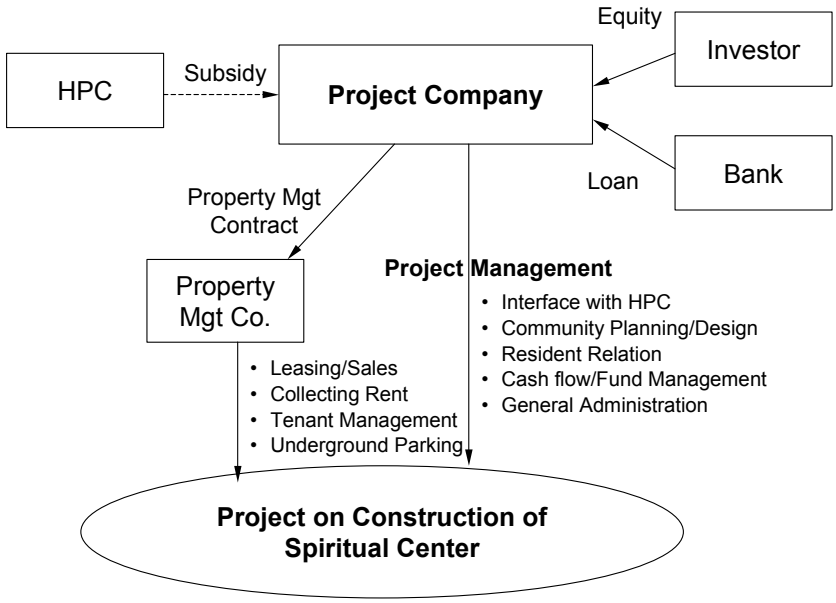
To implement this project, a special purpose company will be formed. The project company shall be responsible for the total project management which includes: (i) interface with HPC, (ii) community planning/design, (iii) coordination with residents (resettlement, consensus building, etc.), (iv) cash flow/fund management, and (v) general administration.

The project company subcontracts a property management company to undertake the following tasks: (i) Leasing/selling of rentable/saleable floors; (ii) Collecting rent from tenants/residents; (iii) Tenant management; and (iv) Underground parking management.

Investor shall put in a 20% equity to the total project cost. The company takes a bank loan for the rest of the project cost and could receive subsidy from HPC, if necessary, for the initial capital investment.

The company shall be liquidated after 14 years (10 years from the completion of the renovation) by selling its asset to the market so that the investor could recoup its investment.

Figure 3.4.3 Project Structure



Source: HAIDEP Study Team

Available floors for sale/rent are mainly the square (about 70,000m2), where a shopping mall will be constructed. Revenues are calculated on the basis of the abovementioned floor area and the unit rates. The revenue of the admission fee for sightseeing tower (5$/person) and of underground parking (5$/vehicle/day) are also expected as revenue to cover construction and management cost.

It is assumed that the design and construction will take four years with the cost of each year distributed in accordance with the ratio mentioned. Operation and maintenance costs are calculated based on the ratios of the revenue.

The project shall be financed by (i) Equity from the investor, (ii) Loan from the bank and (iii) Subsidy from HPC.

Subsidy is determined for the profitability of the project to reach the sufficient level for private investment, say Equity IRR of more than 20%. The project company will own the asset of the total project cost, which means this project is feasible with private initiative.

Financial simulation is conducted based on i) Profit and Loss Statement, ii) Cash Flow Statement and iii) Financial Evaluation (the assessment of profitability indicators).

The result of the simulation of two case studies is illustrated in Table 3.4.2. Case 1 is that private investors such as broadcasting companies will mainly finance this project, and Case 2 is that both private and public shall equally share the cost.

Table 3.4.2 Summary of Alternative Financial Simulation

		Case 1	Case 2
Condition			
Participation of Government		Low	High
Participation of Private sectors/ Investors		High	Low
Usage Purpose of Benefits		Private and commercial use	Public works (infrastructure, 2nd dyke construction, compensation)
Assumption			
Financial Resource	Equity from the investor	20%	30%
	Loan from the bank		
	Subsidy from HPC	10%	50%
Depreciation of Company owns		90%	50%
Unit rates of rentable floor in Square	Open air	20 US$/m2	
	Ground floor of the mall	70 US$/m2	
	2nd floor of the mall	50 US$/m2	
Evaluation for Profitability			
Project IRR		15.4$ (more than 12.6% of WACC)	23.4% (more than 16.7% of WACC)
Equity IRR		23.2%	32.3%
Debt Service Coverage Ratio		More than 1	More than 1

Source: HAIDEP Study Team

Net cash flows for most years are negative due to the debt repayment except for year 5 and year 14 when the company enjoys sales proceeds from the asset sales. The sale value of the asset owned by the company in the final year is estimated as the book value of the asset remained divided by the cap rate of 90% in Case 1 and 50% in Case 2 (capitalization method).

The profitability indicators in Case 1 and 2 are as follows:

(i) Project IRR (Internal Rate of Return) is greater than the weighted Average Capital Cost (WACC) of the procured fund for the project.

(ii) Equity IRR is greater than the threshold level for the private investment of 20%.

(iii) Debt Service Coverage Ratios are more than 1.0 for most years except the last three years but the project itself would generate enough cash flow to service the debt.

(iv) The project was assessed on the basis of profitability indicators which are applied to the private investment and proven profitable if a certain amount of the subsidy support by the government is provided in the capital investment.

The criteria to select alternative cases depend on the balance of participation from governments and private sectors. If this project will be initiated by private sectors like broadcasting companies such as that in Case 1, this tower shall function both as a TV antenna and a sightseeing tower. Investors can gain revenue from tower admission fees and rental fees of commercial areas. Finance will be turned over from benefits in this project. On the other hand, if the governments can pay enough subsidies such that in Case 2, this project is rather a public undertaking than a private investment project, and benefits should contribute for public spaces and other expenses such as construction fee of the second dyke and compensation for resettlement.

There is another issue to be addressed to make the project feasible in view of social benefit to be generated by the project, which is how to achieve equitable balance of risk

and return sharing among stakeholders.

The project will be feasible when an equitable balance of risk and return sharing among the stakeholders involved in the project is achieved, as illustrated in Figure 3.4.4. The stakeholders have their own corresponding risks and returns when involved in the project.

The project should be designed very carefully considering the balance on each risk and return that each stakeholder has. The equitable balance should be achieved among all stakeholders. It is relatively easy to assess the tangible monetary benefits (return) as illustrated in the evaluation of this report. Also, it is easy to value the monetary costs (risk) involved in the project. However, it is important to carefully assess the social benefits and costs to be brought about to each stakeholder when designing the equitable balance.

Figure 3.4.4 Equitable Balance of Risk and Return Sharing among Stakeholders

	Public (citizen)	Government	Residents	Investor	Land Owners	Tenants
Risk (Cost)	• Fees	• Subsidy	• Resettlement	• Equity • Investment	• Contribution	• Rent paid
Return (Benefit)	• Better public space and environment	• Improved public service and facilities	• Safe Living • Improved public service	• Business profit • Investment return	• Increased Asset value	• Business development and profit

Table 3.4.3 Assumptions for Evaluation of Case 1

I. Assumptions										
1. Floor Areas		Gross		Net						
1) Total Project Area			m2		m2					
2) New Building Area			0%	70,000	100%					
3) New Rentable Area/Commercial	Openair			30,000	49%					
	GF of mall			20,000	26%					
	2F of mall			20,000	26%					
	sub total	0		70,000	100%					
2. Unit Rates					m2/month					
1) Sales Price: Commercial Floor	GF			0	0	US$				
	2F			0	0					
	3F-7F			0	0					
2) Rental Price: Commercial Floor	Openair			320,000	**20**					
	GF of mall			1,120,000	**70**					
	2F of mall			800,000	**50**					
3.Capital Investment Requirement										
Park		131,137,400,000	VND	8,196,088	US$					
Tower		1,600,000,000,000	VND	100,000,000	US$					
Other Expenses		7,407,116,112	VND	462,945	US$					
Contingency		86,556,870,000	VND	5,409,804	US$		5.0%			
SubTotal		1,825,101,386,112	VND	114,068,837	US$	@		16,000	/US$	
Interest During Construction		440,395,283,571		27,524,705						
Government Subsidy		-182,510,138,611		-11,406,884						
Total		2,082,986,531,072		130,186,658						
4. Distribution over the years										
year 1		10%								
year 2		30%								
year 3		40%								
year 4		20%								
Total		100%								
5. Revenue Calculation										
1) Sales Proceeds in the year 5		0	VND	0	US$					
2) Rent Revenue from the Commercial Floor		48,000,000,000	VND/montl	3,000,000	US$/month					
3) Rent Revenue from the Residential Floor		0	VND/montl	0	US$/month					
4) Rate of Appreciation										
Commercial		50%								
Residential		30%								
5) Underground Parking		48,000	VND/Vehic	2,000	Vehicles(Car+MotorB		3.0	US$/vehicles		
6) Admission Fee		80,000	VND/Persc	3,000	Persons/day		5.0	US$/person		
6. Operation and Maintenance Costs										
1) Contract Fee for the Property Management			VND/month		70%	of Revenue				
for leasing,collecting rent, tenant management, underground parking,etc										
2) Project Company Management Cost					5%	of Revenue				
3) Other costs										
Total										
7. Financing				US$						
1) Equity		416,597,306,214	VND	26,037,332	**20%**	of the total capital requirement				
2) Debt		1,666,389,224,857	VND	104,149,327						
3) Loan Interest Rate		10.0%		Short-term loan	8.0%					
4) Repayment Period		10	year							
5) Grace Priod		4	year		WACC	12.64%				
8. Tax										
1) CIT		30%	of profit before tax							
2) VAT										
3) Other										
9. Depreciation				%	year	Res. Value				
Percentage Company Owns	90%									
Asset value to be depreciated	Building	1,090,616,562,000	VND	70%	40	10%				
	Equipment	467,407,098,000		30%	15	10%				
Depreciation/year	Building	24,538,872,645								
	Equipment	28,044,425,880								
10. Subsidy				year 2	year 3	year 4				
				30%	40%	30%				
% of Total Project Cost before IDC	**10%**	182,510,138,611	VND	54,753,041,583	73,004,055,444	54,753,041,583				

Source: HAIDEP Study Team

Table 3.4.4 Result of Financial Simulation of Case 1

II. Profit and Loss Statement (in VND Million)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Total
1. Revenue															
1) Revenue from Sales Proceeds					0									2,867,449	2,867,449
2) Revenue from Commercial Rent					843,322	927,654	1,020,419	1,122,461	1,234,707	1,358,178	1,493,996	1,643,395	1,807,735	1,988,508	13,440,374
3) Rvenue from Residential Rent					0	0	0	0	0	0	0	0	0	0	0
4) Parking Fee					51,302	56,432	62,075	68,283	75,111	82,622	90,885	99,973	109,971	120,968	817,623
5) Admission Fee					128,255	141,081	155,189	170,708	187,778	206,556	227,212	249,933	274,926	302,419	2,044,057
Total	0	0	0	0	1,022,879	1,125,167	1,237,683	1,361,452	1,497,597	1,647,357	1,812,092	1,993,301	2,192,632	5,279,343	19,169,503
2. O&M Cost															
1) Contract Fee for the Property Management					626,237	688,860	757,746	833,521	916,873	1,008,560	1,109,416	1,220,358	1,342,394	1,476,633	9,980,598
2) Administration Cost for Project Company					44,731	49,204	54,125	59,537	65,491	72,040	79,244	87,168	95,885	105,474	712,900
3) Other Cost															0
Total	0	0	0	0	670,968	738,065	811,871	893,058	982,364	1,080,600	1,188,660	1,307,526	1,438,279	1,582,107	10,693,498
3. Depreciation					52,583	52,583	52,583	52,583	52,583	52,583	52,583	52,583	52,583	52,583	525,833
4 Operating Profit	0	0	0	0	299,328	334,519	373,228	415,810	462,650	514,173	570,849	633,192	701,768	3,644,653	7,950,172
5. Interest Payment					166,639	156,183	144,682	132,030	118,113	102,805	85,966	67,443	47,067	24,654	1,045,582
6. Profit before Tax	0	0	0	0	132,689	178,336	228,547	283,780	344,536	411,368	484,883	565,749	654,702	3,619,999	6,904,589
7. Tax	0	0	0	0	39,807	53,501	68,564	85,134	103,361	123,410	145,465	169,725	196,411	1,086,000	2,071,377
8. Profit after Tax	0	0	0	0	92,882	124,835	159,983	198,646	241,175	287,958	339,418	396,024	459,291	2,533,999	4,833,212

III. Cash Flow Statement

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Total
1. Operating Cash Flow															
1) Profit after Tax	0	0	0	0	92,882	124,835	159,983	198,646	241,175	287,958	339,418	396,024	458,291	2,533,999	4,833,212
2) Depreciation	0	0	0	0	52,583	52,583	52,583	52,583	52,583	52,583	52,583	52,583	52,583	52,583	525,833
Total	0	0	0	0	145,465	177,418	212,566	251,229	293,759	340,541	392,001	448,608	510,875	2,586,582	5,359,045
2. Investment Cash Flow															
1) Capital Investment	-182,510	-547,530	-730,041	-365,020											-1,825,101
2) Other Investment	0	-28,743	-136,878	-274,774											-440,395
Total	-182,510	-576,274	-866,919	-639,794	0	0	0	0	0	0	0	0	0	0	-2,265,497
3. Financing Cash Flow															
1) Equity	182,510	234,087													416,597
2) Subsidy		54,753	73,004	54,753											182,510
3) Debt		287,434	793,915	585,041											1,666,389
4) Debt Repayment					-104,558	-115,014	-126,515	-139,167	-153,084	-168,392	-185,231	-203,754	-224,130	-246,543	-1,666,389
Total	182,510	576,274	866,919	639,794	-104,558	-115,014	-126,515	-139,167	-153,084	-168,392	-185,231	-203,754	-224,130	-246,543	599,107
4. Net Cash Flow	0	0	0	0	40,907	62,404	86,051	112,062	140,675	172,149	206,770	244,853	286,745	2,340,040	3,692,656
5. Cumulative Net Cash Flow	0	0	0	0	40,907	103,312	189,363	301,425	442,100	614,249	821,019	1,065,872	1,352,617	3,692,656	

IV. Financial Evaluation (in VND Million)

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Total
1. Project IRR																
Cash Flow for PIRR	15.4%	-182,510	-521,521	-793,915	-585,041	312,104	333,601	357,248	383,260	411,872	443,346	477,967	516,050	557,942	2,611,237	
2. Equity IRR																
Cash Flow for Equity IRR	23.2%	-182,510	-234,087	0	0	40,907	62,404	86,051	112,062	140,675	172,149	206,770	244,853	286,745	2,340,040	
3. Debt Service Coverage Ratio						1.151	1.381	1.698	2.111	2.630	3.265	4.027	4.930	5.988	14.616	

V. Subsidy Requirement

1. Amount of subsidy required	182,510		54,753	73,004	54,753											
10%																

Assumptions

1 Escalation	10%	1	1.10	1.21	1.33	1.46	1.61	1.77	1.95	2.14	2.36	2.59	2.85	3.14	3.45	
2 Loan Calculation (Long-term)						1	2	3	4	5	6	7	8	9	10	
Interest payment			28,743	136,878	274,774	166,639	156,183	144,682	132,030	118,113	102,805	85,966	67,443	47,067	24,654	1,485,978
Principal						104,558	115,014	126,515	139,167	153,084	168,392	185,231	203,754	224,130	246,543	1,666,389
subtotal(Int+Principal)						271,197	271,197	271,197	271,197	271,197	271,197	271,197	271,197	271,197	271,197	
Loan Balance					1,666,389	1,561,831	1,446,817	1,320,301	1,181,134	1,028,051	859,659	674,427	470,673	246,543	0	
Loan Disbursement			287,434	793,915	585,041											
Loan Outstanding			287,434	1,081,348	1,666,389											
3 Residual Value																
Book Value of Asset owned by company at the end of project					1,642,591	1,590,008	1,537,425	1,484,841	1,432,258	1,379,675	1,327,091	1,274,508	1,221,925	1,169,342	1,116,758	
Market Value of Asset at the end of project															2,867,449	
Cap Rate	10%															
4 Loan Calculation (Short-term)						1	2	3	4	5	6	7	8	9	10	
Interest payment						0	0	0	0	0	0	0	0	0	0	0
Net Cash Flow						40,907	62,404	86,051	112,062	140,675	172,149	206,770	244,853	286,745	2,340,040	
Cumulative Net Cash Flow						40,907	103,312	189,363	301,425	442,100	614,249	821,019	1,065,872	1,352,617	3,692,656	
Balance						0	0	0	0	0	0	0	0	0	0	
Loan						0	0	0	0	0	0	0	0	0	0	
Repayment							0	0	0	0	0	0	0	0	0	

Source:HAIDEP Study Team

Table 3.4.5 Assumptions for Evaluation of Case 2

I. Assumptions									
1. Floor Areas		Gross		Net					
1) Total Project Area			m2		m2				
2) New Building Area			0%	70,000	100%				
3) New Rentable Area/Commercial	Openair			30,000	49%				
	GF of mall			20,000	26%				
	2F of mall			20,000	26%				
	sub total	0		70,000	100%				
2. Unit Rates					m2/month				
1) Sales Price: Commercial Floor	GF			0	0	US$			
	2F			0	0				
	3F-7F			0	0				
2) Rental Price: Commercial Floor	Openair			320,000	**20**				
	GF of mall			1,120,000	**70**				
	2F of mall			800,000	**50**				
3.Capital Investment Requirement									
Park		131,137,400,000	VND	8,196,088	US$				
Tower		1,600,000,000,000	VND	100,000,000	US$				
Other Expenses		7,407,116,112	VND	462,945	US$				
Contingency		86,556,870,000	VND	5,409,804	US$		5.0%		
SubTotal		1,825,101,386,112	VND	114,068,837	US$	@	16,000	/US$	
Interest During Construction		218,080,075,164		13,630,005					
Government Subsidy		-912,550,693,056		-57,034,418					
Total		1,130,630,768,220		70,664,423					
4. Distribution over the years									
year 1		10%							
year 2		30%							
year 3		40%							
year 4		20%							
Total		100%							
5. Revenue Calculation									
1) Sales Proceeds in the year 5		0	VND	0	US$				
2) Rent Revenue from the Commercial Floor		48,000,000,000	VND/montl	3,000,000	US$/month				
3) Rent Revenue from the Residential Floor		0	VND/montl	0	US$/month				
4) Rate of Appreciation									
Commercial		50%							
Residential		30%							
5) Underground Parking		**48,000**	VND/Vehic	2,000	Vehicles(Car+MotorB		**3.0**	US$/vehicles	
6) Admission Fee		80,000	VND/Persc	3,000	Persons/day		5.0	US$/person	
6. Operation and Maintenance Costs									
1) Contract Fee for the Property Management for leasing,collecting rent, tenant management, undergroiung parking,etc			VND/month			70%	of Revenue		
2) Project Company Management Cost						5%	of Revenue		
3) Other costs									
Total									
7. Financing				US$					
1) Equity		339,189,230,466	VND	21,199,327		30%	of the total capital requirement		
2) Debt		791,441,537,754	VND	49,465,096					
3) Loan Interest Rate		10.0%		Short-term loan		8.0%			
4) Repayment Period		10	year						
5) Grace Priod		4	year		WACC		17.47%		
8. Tax									
1) CIT		30%	of profit before tax						
2) VAT									
3) Other									
9. Depreciation				%	year	Res. Value			
Percentage Company Owns	50%								
Asset value to be depreciated	Building	605,898,090,000	VND	70%	40	10%			
	Equipment	259,670,610,000		30%	15	10%			
Depreciation/year	Building	13,632,707,025							
	Equipment	15,580,236,600							
10. Subsidy				year 2	year 3	year 4			
				30%	40%	30%			
% of Total Project Cost before IDC	50%	912,550,693,056	VND	273,765,207,917	365,020,277,222	273,765,207,917			

Source: HAIDEP Study Team

Table 3.4.6 Result of Financial Simulation of Case 2

II. Profit and Loss Statement (in VND Million)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Total
1. Revenue															
1) Revenue from Sales Proceeds					0									4,147,136	4,147,136
2) Revenue from Commercial Rent					843,322	927,654	1,020,419	1,122,461	1,234,707	1,358,178	1,493,996	1,643,395	1,807,735	1,988,508	13,440,374
3) Rvenue from Residential Rent					0	0	0	0	0	0	0	0	0	0	0
4) Parking Fee					51,302	56,432	62,075	68,283	75,111	82,622	90,885	99,973	109,971	120,968	817,623
5) Admission Fee					128,255	141,081	155,189	170,708	187,778	206,556	227,212	249,933	274,926	302,419	2,044,057
Total	0	0	0	0	1,022,879	1,125,167	1,237,683	1,361,452	1,497,597	1,647,357	1,812,092	1,993,301	2,192,632	6,559,030	20,449,190
2. O&M Cost															
1) Contract Fee for the Property Management					626,237	688,860	757,746	833,521	916,873	1,008,560	1,109,416	1,220,358	1,342,394	1,476,633	9,980,598
2) Admninistration Cost for Project Company					44,731	49,204	54,125	59,537	65,491	72,040	79,244	87,168	95,885	105,474	712,900
3) Other Cost															0
Total	0	0	0	0	670,968	738,065	811,871	893,058	982,364	1,080,600	1,188,660	1,307,526	1,438,279	1,582,107	10,693,498
3. Depreciation					29,213	29,213	29,213	29,213	29,213	29,213	29,213	29,213	29,213	29,213	292,129
4 Operating Profit	0	0	0	0	322,698	357,889	396,599	439,181	486,020	537,543	594,219	656,562	725,140	4,947,711	9,463,562
5. Interest Payment					79,144	74,178	68,716	62,707	56,097	48,827	40,829	32,032	22,354	11,709	496,593
6. Profit before Tax	0	0	0	0	243,554	283,711	327,884	376,474	429,923	488,717	553,390	624,531	702,785	4,936,001	8,966,969
7. Tax	0	0	0	0	73,066	85,113	98,365	112,942	128,977	146,615	166,017	187,359	210,836	1,480,800	2,690,091
8. Profit after Tax	0	0	0	0	170,488	198,598	229,519	263,532	300,946	342,102	387,373	437,171	491,950	3,455,201	6,276,879

III. Cash Flow Statement

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Total
1. Operating Cash Flow															
1) Profit after Tax	0	0	0	0	170,488	198,598	229,519	263,532	300,946	342,102	387,373	437,171	491,950	3,455,201	6,276,879
2) Depreciation	0	0	0	0	29,213	29,213	29,213	29,213	29,213	29,213	29,213	29,213	29,213	29,213	292,129
Total	0	0	0	0	199,701	227,811	258,732	292,745	330,159	371,315	416,586	466,384	521,163	3,484,414	6,569,008
2. Investment Cash Flow															
1) Capital Investment	-182,510	-547,530	-730,041	-365,020											-1,825,101
2) Other Investment	0	-13,010	-69,468	-135,603											-218,080
Total	-182,510	-560,540	-799,509	-500,623	0	0	0	0	0	0	0	0	0	0	-2,043,181
3. Financing Cash Flow															
1) Equity	182,510	156,679													339,189
2) Susidy		273,765	365,020	273,765											912,551
3) Debt		130,096	434,488	226,858											791,442
4) Debt Repayment					-49,659	-54,625	-60,088	-66,097	-72,706	-79,977	-87,975	-96,772	-106,449	-117,094	-791,442
Total	182,510	560,540	799,509	500,623	-49,659	-54,625	-60,088	-66,097	-72,706	-79,977	-87,975	-96,772	-106,449	-117,094	1,251,740
4. Net Cash Flow	0	0	0	0	150,041	173,185	198,644	226,648	257,453	291,338	328,611	369,612	414,714	3,367,320	5,777,566
5. Cumulative Net Cash Flow	0	0	0	0	150,041	323,227	521,871	748,519	1,005,971	1,297,309	1,625,921	1,995,533	2,410,247	5,777,566	

IV. Financial Evaluation (in VND Million)

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Total
1. Project IRR																
Cash Flow for PIRR	25.2%	-182,510	-286,775	-434,488	-226,858	278,845	301,989	327,447	355,452	386,256	420,141	457,415	498,416	543,517	3,496,123	
2. Equity IRR																
Cash Flow for Equity IRR	34.9%	-182,510	-156,679	0	0	150,041	173,185	198,644	226,648	257,453	291,338	328,611	369,612	414,714	3,367,320	
3. Debt Service Coverage Ratio						2.165	3.509	5.052	6.811	8.810	11.072	13.623	16.493	19.713	45.856	

V. Subsidy Requirement

1. Amount of subsidy required	912,551		273,765	365,020	273,765											
	50%															

Assumptions

1 Escalation	10%	1	1.10	1.21	1.33	1.46	1.61	1.77	1.95	2.14	2.36	2.59	2.85	3.14	3.45	
2 Loan Calculation (Long-term)						1	2	3	4	5	6	7	8	9	10	
Interest payment			13,010	69,468	135,603	79,144	74,178	68,716	62,707	56,097	48,827	40,829	32,032	22,354	11,709	714,673
Principal						49,659	54,625	60,088	66,097	72,706	79,977	87,975	96,772	106,449	117,094	791,442
subtotal(Int+Principal)						128,803	128,803	128,803	128,803	128,803	128,803	128,803	128,803	128,803	128,803	
Loan Balance					791,442	741,782	687,157	627,069	560,973	488,266	408,290	320,315	223,543	117,094	0	
Loan Disbursement			130,096	434,488	226,858											
Loan Outstanding			130,096	564,584	791,442											
3 Residual Value																
Book Value of Asset owned by company at the end of project					912,551	883,338	854,125	824,912	795,699	766,486	737,273	708,060	678,847	649,634	620,421	
Market Value of Asset at the end of project															4,147,136	
Cap Rate	10%															
4 Loan Calculation (Short-term)						1	2	3	4	5	6	7	8	9	10	
Interest payment						0	0	0	0	0	0	0	0	0	0	0
Net Cash Flow						150,041	173,185	198,644	226,648	257,453	291,338	328,611	369,612	414,714	3,367,320	
Cumulative Net Cash Flow						150,041	323,227	521,871	748,519	1,005,971	1,297,309	1,625,921	1,995,533	2,410,247	5,777,566	
Balance						0	0	0	0	0	0	0	0	0	0	
Loan						0	0	0	0	0	0	0	0	0	0	
Repayment							0	0	0	0	0	0	0	0	0	

Source: HAIDEP Study Team

4 CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

It is important to consider the revitalization and development of the area outside the dyke from the economic, cultural, social, and environmental aspects. As part of the Red River space, the area's functions shall be enhanced and integrated with other core areas to form a solid urban axis.

The area outside the dyke is deemed to have high potentials to contribute to Hanoi City's growth economically, culturally and ecologically. However, prevailing issues on safety of life, public order and environment, should be solved first.

Future landuse of this area shall be openspace or agricultural areas in rural areas. These lands in the center of city will be natural and ecological assets under the process of urbanization of the Hanoi City. Some areas near trunk roads and bridges shall be kept as openspace for evacuation and landscape preservation. Some traditional craft villages as well as religious sites shall be preserved as cultural assets of the city.

In urban area, with proper measures for safety, some areas shall be revitalized in conjunction with the urban center. The proposed project, as the symbol of the Red River will attract people to reconsider and respect the value of the river.

After the preservation and development of the outside-of-dyke area, both the governments and citizens will achieve; (i) realization of safety of life and proper river management by prohibition of residential use, (ii) preservation and revitalization of traditional culture, industry and natural assets, (iii) promotion of non-residential use and contribution of urban activities, and (iv) promotion of improvement of worsened or illegal residential areas in proper manner.

4.2 Recommendations

Amendment of the Dyke Ordinance: The dyke ordinance should be amended soon so as to ensure the safety of both dykes and flood release, while balancing the need to acknowledge house ownership and land-use right of those who have settled on stable land. There should also be a definition of illegal constructions based on clear criteria, and a complementary relocation plan to improve the quality of life of households who will become affected by such definition. .

Consensus Building for the 2nd Dyke Construction: To utilize outside-of-dyke area effectively, a second dyke (H=12m) between the existing dyke and the river terrace will be constructed in some prioritized areas. In this project, it is proposed to construct the new dyke around urban communes and rural craft villages. Locations of the 2nd dyke shall be further discussed and detained among stakeholders, in comparison with socio-economical impacts of resettlement and construction of the dyke.

Detailed Landuse Planning: The area outside the second dyke shall be an open space, and the area between the two dykes shall be used for non-residential purposes. The landuse will be designated by area in consideration of the relationship with the hinterlands, neighboring communes, as well as historical and natural conditions.

Relocation Planning: For implementation of resettlement, the areas where violate the current Dyke Ordinance shall be forced from a standpoints of safety and legality. It is

necessary to conduct the detailed survey of legal condition of residential areas. The political priority for implementation are; (i) implementation of forced resettlement with compensation (about 79,000 people, 32% of total resettlement), (ii) construction of the 2nd dyke (about 28,000 people, 11%), (iii) promotion of voluntary resettlement with subsidy in mid-term (about 113,000 people, 46%), and (iv) promotion of voluntary resettlement in long-term (about 25,000 people, 10%). In other words, the governments need to start to consider about issue of compensation for about 80,000 people and necessity of the 2nd dyke.