13.3 Present land use inside the Red River in Hanoi City

13.3.1 Present land use

The Study Area where we will formulate the Master Plan and the Short Term Plan is the space in the Red River Segment of Hanoi City. This river space can be divided into three sections and outline of these sections can be summarized as the **Table 13.3.1**.

Table 13.3.1 Outline of the Study River Space

Section Distance.	Distance between Right and Left Bank (Average Distance)	Height of Dyke (Normal High Water Level)	Number of Curvature	Average Width Water Level at +6.0m	Level of River Bed		Representative Ports & Berth (Land Use)
					Min.	Max.	
A 17km	1,200～4,050m (Aver. 2,525m)	+14.5～+16m (+10～+11m)	2	820m	-0.3m	-1.2m	Thuong Cat, Chem Thang Long Bridge (Mostly Firm Land)
B 11km	1,250～2,800m (Aver. 2,340m)	+13～+15m (+10～+10.5m)	2	620m	+1.8m	-4.5m	Hanoi Port, Long Bien Bridge, Chuong Duong Bridge, (Right Bank densely Populated)
C 11km	2,100～6,500m (Aver. 3,750m)	+12～+14m (+10～+9m)	2	600m	-2.0m	-10m	Khuyen Luong Port Thanh Tri Bridge (under construction) (Partially Factories located)

Source) Complied from Pre- F/S Report, Red River - Hanoi Section Rehabilitation Project in June 2001TEDI

Section A that starts Dong Lai and ends the Duong River mouth is 17km long. Section B from the Duong River mouth to Thanh Tri is 11km long and Section C is 11km long from Thanh Tri to Van Phuc.

Each section has ports and small berths (cf. **Table 13.3.1**) and outside the dykes (space between the dykes and the River flow) land use and traffic condition is different to some extent.

However, these spaces are quite precious for not only inland water transport but also urban environment as water front areas because these spaces are located in the center axis of Hanoi City.

Present land use inside the Red River is examined based on the topographic survey map carried out in December 1999 by TEDI-port.

The results are shown in the **Figure 13.3.1** and **Table 13.3.2**.

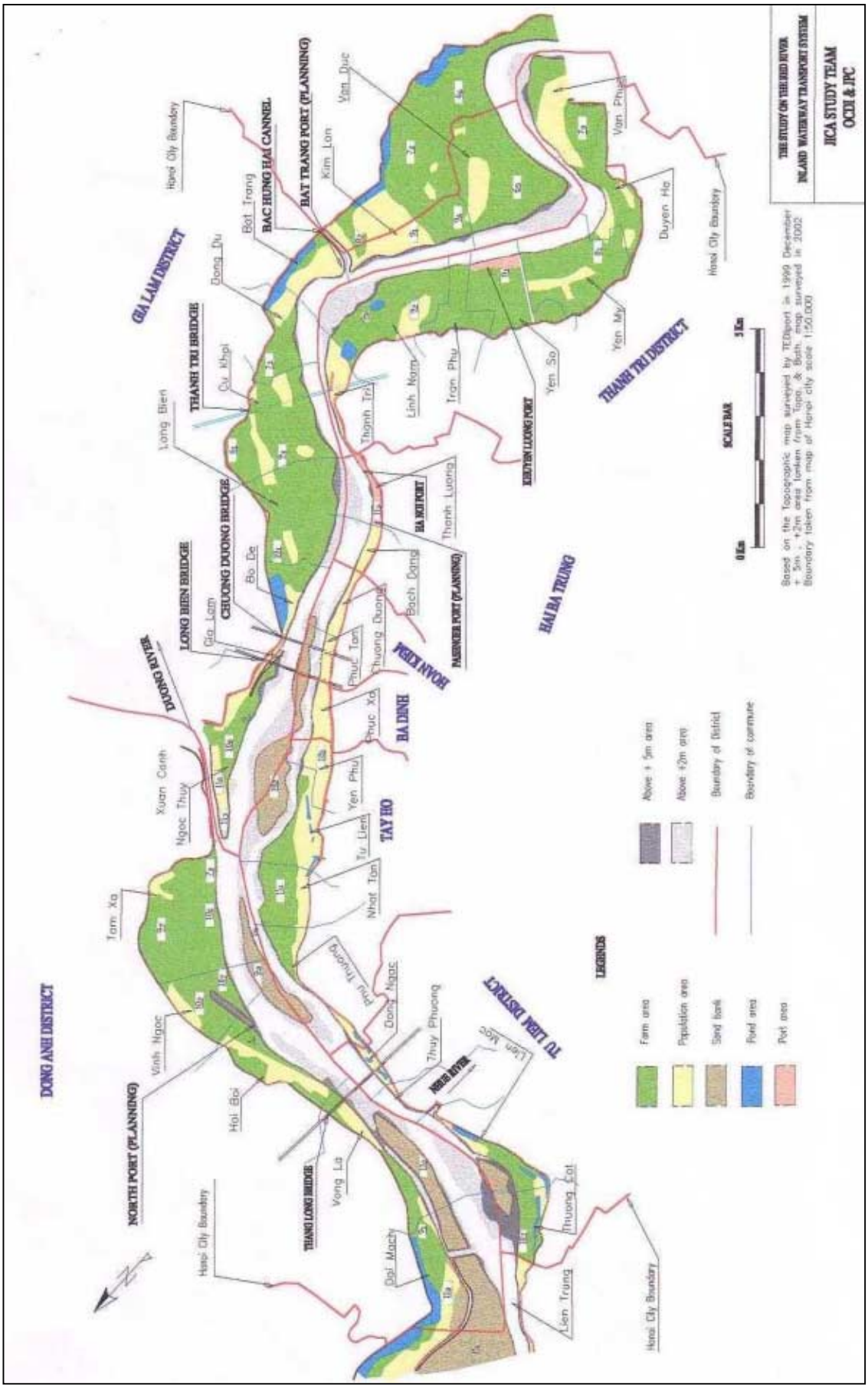


Figure 13.3.1 Land Use inside The Red River

Table 13.3.2 Land Use inside the Red River

Land use	Left bank (ha)	Right bank (ha)	Total (ha)
Farm	2,154	1,199	3,353
Residence	690	735	1,425
Pond	123	56	179
Sand bank	210	254	464
Port	4	57	61
Sub Total	3,181	2,301	5,482
River Basin	-	-	3,632
Total	3,181	2,301	9,114

Note) (1) Calculated from the Topographic Map in December 1999 by TEDI-port.
(2) River basin calculated between right shoulder bank of the lower stream and left shoulder.
(3) When calculates river basin bellow +2.0m or +5.0m, river basin area becomes 1,752ha and 2,772ha respectively.

Source) JICA Team

This survey map covers the area about 3km downstream from the southern boarder of City. However within Hanoi City the total area including river basin is calculated **9,114ha**. Farming land is over 50% both side but Right bank side has less farming land and more residential area.

The composition of each kind of land use is shown in the **Figure 13.3.2**.

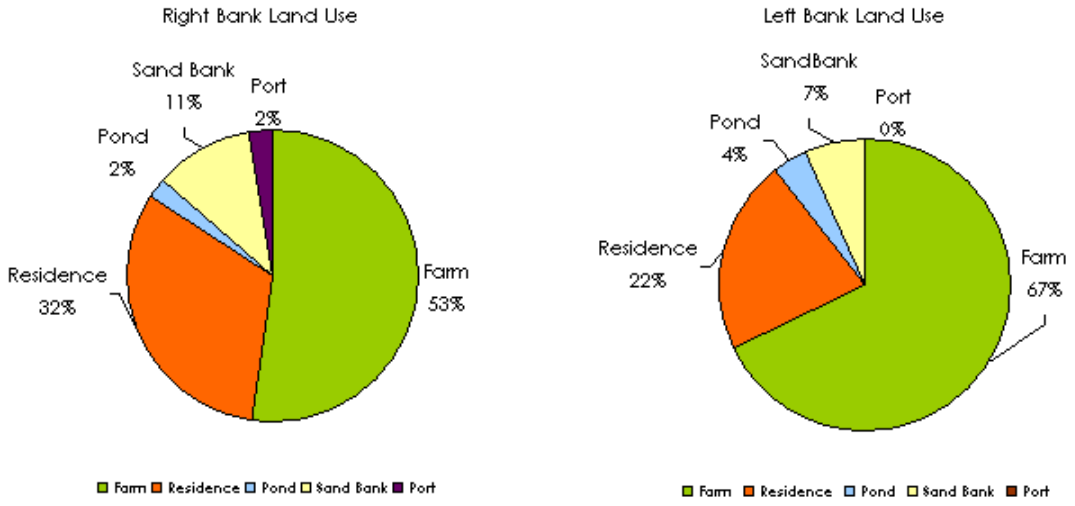


Figure 13.3.2 Composition of Each Land Use inside the Red River

The most densely populated area is along the right side bank from Hoan Kiem to Hai Ba Trung Urban Districts.

These areas with land height of 10.5～11.0m suffer from flood during summer season July to August once per year or once every two years. Water Level usually comes up 0.5～1.0m above ground level lasting one week or two weeks.

According to HNPC Architect Office, water current in these housing areas usually is not so fast to give damage to house building structures.

This year on 2nd ～4th August water level reached warning level 2, +10.5m and on 13th～21st the same August, warning Level 3,+11.3m. Then these areas suffered flood because the maximum water level reached +12.15m.

Photo 13.3.17～**Photo 13.3.20** were taken on 22nd August 2002 when the water level had already begun to decrease to level 2,+10.5m. The houses in these areas were sunken in several ten cm and some people living in these areas had to evacuate.

From the topographic map these areas are calculated **346 ha** (Tay Ho, Hoan Kiem, Hai Ba Trung Urban Districts). There are no statistics available how many people are living in these areas. However, supposing 200 persons per ha, it might be that **70** thousand peoples are living in these areas. (cf. **Photo 13.3.7, 13.3.9~13.3.14**)

In order to estimate the number of people living inside the Red River in detail, a trial calculation has been carried out. **Table 13.3.3** is the result of estimation. Land areas are calculated based on the topographical map surveyed in 1999 by TEDI-port and using average population density by districts described in Hanoi Statistical Yearbook 2000, the number of people by commune has been figured out.

This estimation shows that the total population inside the Red River becomes about 79,000 of which in three urban districts Tay Ho, Hoan Kiem, Hai Ba Trung are about 57,000. This number seems to be underestimated because the used average population density of Ho Tay Districts is lower than actual living areas due to the wide water area of West Lake.

It is useful to know the number of people generally. However it needs investigation works to grasp more precise figures for further planning.

Table 13.3.3 Land Area and Population inside the Red River

Name	(1) Area (km^2)	(2) Population (thousand)	Inside the Red River				
			Name of commune	(3) Area (ha)	(4) Population area (ha)	(5) Pers/ha	(6) Population (person)
7 urban districts	**84.30**	**1,474.3**		**569**	**412**	**1545**	**56,680**
Tay Ho	24.00	94.8	Phu Thuong	44	37	40	1480
			Nhat Tan	127	39	40	1560
			Tu Lien	162	100	40	4000
			Yen Phu	62	62	40	2480
Ba Dinh	9.25	205.9	Phuc Xa	52	52	225	11700
Hoan Kiem	5.29	172.9	Phuc Tan	28	28	330	9240
			Chuong Duong	34	34	330	11220
Hai Ba Trung	14.65	360.9	Bach Dang	30	30	250	7500
			Thanh Luong	30	30	250	7500
Dong Da	9.96	342.3	-	-	-	-	-
Thanh Xuan	9.11	159.3	-	-	-	-	-
Cau Giay	12.04	138.2	-	-	-	-	-
5 Suburban districts	**836.67**	**1,282.3**	-	**4,790**	**1,073**	**530**	**22,335**
Soc Son	306.51	247.8	-	-	-	-	-
Dong Anh	182.30	263.3	Dai Mach	161	48	15	720
			Vong La	108	40	15	600
			Hai Boi	202	73	15	1095
			Vinh Ngoc	194	29	15	435
			Tam Xa	447	20	15	300
Gia Lam	174.32	345.9	Ngoc Thuy	176	81	20	1620
			Gia Lam	5	5	20	100
			Bo De	108	24	20	480
			Long Bien	334	25	20	500
			Cu Khoi	362	72	20	1440
			Dong Du	135	30	20	600
			Bat Trang	112	74	20	1480
			Kim Lan	197	99	20	1980
			Van Duc	447	68	20	1360
Tu Liem	75.32	198	Thuong Cat	93	11	25	275
			Lien Mac	96	26	25	650
			Thuy Phuong	10	10	25	250
			Dong Ngac	24	23	25	575
Thanh Tri	98.22	227.3	Thanh Tri	67	67	25	1675
			Linh Nam	308	49	25	1225
			Tran Phu	114	0	25	0
			Yen So	235	0	25	0
			Yen My	317	41	25	1025
			Duyen Ha	308	48	25	1200
			Van Phuc	230	110	25	2750
Total	**920.97**	**2,756.6**	-	**5,359**	**1,485**	**2,075**	**79,015**

Note) a) (1), (2) The number taken from Hanoi Statistical Yearbook 2000 by Hanoi Statistical office.
b) (3), (4) Are calculated based on the topographical map surveyed by TEDIport in 1999
c) (5) Pers/ha are the round number calculated by (2) / (1)
d) (6) = (4) x (5)

Source) JICA Study Team

In the left bank of the Red River just downstream from Thang Long Bridge the Red River is winding to the right direction forming rather high flat land. By the calculation on the topographic map mentioned before these areas from Hai Boi, Vinh Ngoc and Tam Xa communes have been figured out **843 ha** (cf. **Photo 13.3.1**)

When the optimum alignment of the flow with groins proposed by the JICA Study will be realized and stabilizing the flowing route will succeed, It can be allowed to utilize these areas for urban development under certain protective measures against flood.

Then several land use plans can be made up because of the nearness from the center areas of Hanoi City and the north Red River urban development areas as well with the realization of Nhat Tan or Tu Lien Bridge.

Present land use situation at a glance by Photos are shown in **Photo 13.3.1**～**Photo 13.3.16.** (These photos were taken from 9th December 2001 till 3rd February.)

It seems that there are many subjects to be solved such as renovation of populated areas, improving traffic conditions, cleaning garbage dumping areas or improvement of sewage and rehabilitation or developing ports.

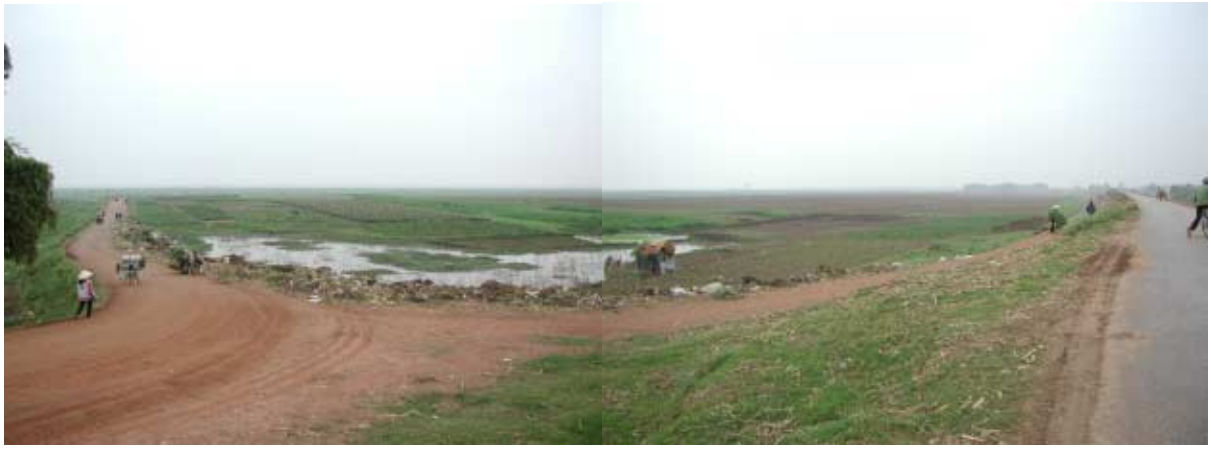


Photo 13.3.1 Overview of Farm Land inside the Left Bank of the Red River from Tam Xa Village

Photo 13.3.2 Outer Dyke Road around Long Bien Village on the Left Bank of the Red River

Photo 13.3.3 A Brick Factory, Road and Houses inside the Dyke near Long Bien Village

Photo 13.3.4 The Left Shore of the Red River at Ba Tran Pottery and Ceramic Factories Site


Photo 13.3.5 Land Use near Tang Long Bridge along the Right Side of the Red River


Photo 13.3.6 House and Farm Land in North To Lien Commune


Photo 13.3.7 House on the Waterfront of Red River near Chuong Duong Do


Photo 13.3.8 Approach Road to Passenger and Tourist Floating Berth at Chuong Duong Do

Photo 13.3.9 The houses along the Shore of the Red River near Chuong Duong Do

Photo 13.3.10 Approach Road to Passenger Berth and Bach Dang Road near Chuong Duong Do

Photo 13.3.11 Congested Bach Dang Road When HNPC is sweeping out Discharged

Photo 13.3.12 Cleaning Drain Ditch after taking out Mud & Storage Yard for Waste Rubber Tires


Photo 13.3.13 Garbage Stock Spot and Garbage on the Slope at Van Kiep Road


Photo 3.1.14 Present Slope Dumped with Garbage Just in Upstream Area of Van Kiep


Photo 13.3.15 Place where Construction Material handled in Van Kiep


Photo 13.3.16 Hanoi Port and Khuyen Luong Port


Photo 13.3.17 Scenery of the Right Bank from Long Bien Bridge


Photo 13.3.18 Submerged Areas on the Right and Left Bank of the Foot of Long Bien Bridge


Photo 13.3.19 Scene of Submerged Area at Chuon Duong Do


Photo 13.3.20 Near the Dyke at Long Bien Bridge & the Entrance Area of Ba Trang Ceramic Village

13.3.2 Hanoi City planning

Through an interview with Architect Office of HNPC (the name changed "Architecture Planning Department" on 15th August 2002), information was obtained that utilization of inside the Red River area is quite a large subject to be solved for a long time period.

The most difficult subject is how to control the Red River flow for stabilizing populated land asset. If the subject is solved, land asset inside the Red River in Hanoi area will be 12,000 ha (JICA Study Team calculation 9114ha cf. **Table 13.3.7**) in which 4,000 ha can be residential areas and 8,000 ha for agricultural or ecological use.

Residential area along the left bank of the Red River will be developed based on the existing communes. In the right bank of the Red River, residential areas will be maintained or partially removed to other places.

In order to enlarge the dyke for road construction along the riverside of Ba Dinh, Hoan Kiem and Hai Ba Trung, some communes are needed to remove.

HNPC Architect Office (at present Architecture Planning Department) is now studying accommodation capacity in Tu Lien area for relocating people.

The number of inhabitants who are needed to remove is not authorized by any upper organization. However, **Table 13.3.4** shows the number of people who will be needed to remove for enlarging dykes 30m wide for road by HNPC Architect Office (at present Architecture Planning Department).

Table 13.3.4 People Living near Dyke

Precinct	Length of dyke (m)	A (person/ha)	B (person/ha)	Total (person/ha)
Ba Dinh	1,300	950/3.9	1,045/3.9	1,995/7.8
Hoan Kiem	2,950	3,570/8.2	3,925/8.2	7,495/16.4
Hai Ba Trung	1,400	1,400/4.2	1,540/4.2	2,940/8.4
Total	5,450	5,920/16.3	6,510/16.3	12,430/32.6

Note) A means number of people per area to be removed to other place for enlarging dyke 30m wide.
B means number of people living in foot area of the dykes needing to be removed to other places for protection of the dyke.

Source) HNPC Architect Office (at present Architecture Planning Department)

Many plans are studied to develop Hanoi capital but government authorities have not approved them. The bases for study are to enlarge Hanoi City toward two sides of Red River, stabilize population, for supporting the economic development, environment protection and extraordinary creating housing and building spaces.

Figure 13.3.3 is the drawing by HNPC Architect Office (at present Architecture Planning Department) as the Master Plan up to the year 2020. The most populated areas are the inside of the right bank of the Red River belonging to Ba Dinh, Hoan Kiem and Hai Ba Trug Urban Districts.

Detail Plan is not issued by HNPC but these areas seem to be renovated and land areas are planned for public facilities, housing, business and green parks etc.

Figure 13.3.4 shows the concept development plan in the right-side bank of the Red River between Long Bien Bridge and Van Kiep issued in September 2002 by Dr. Tran Nhon who is the chairman of VIWARDA. (Vietnam Water Resources Development Association)

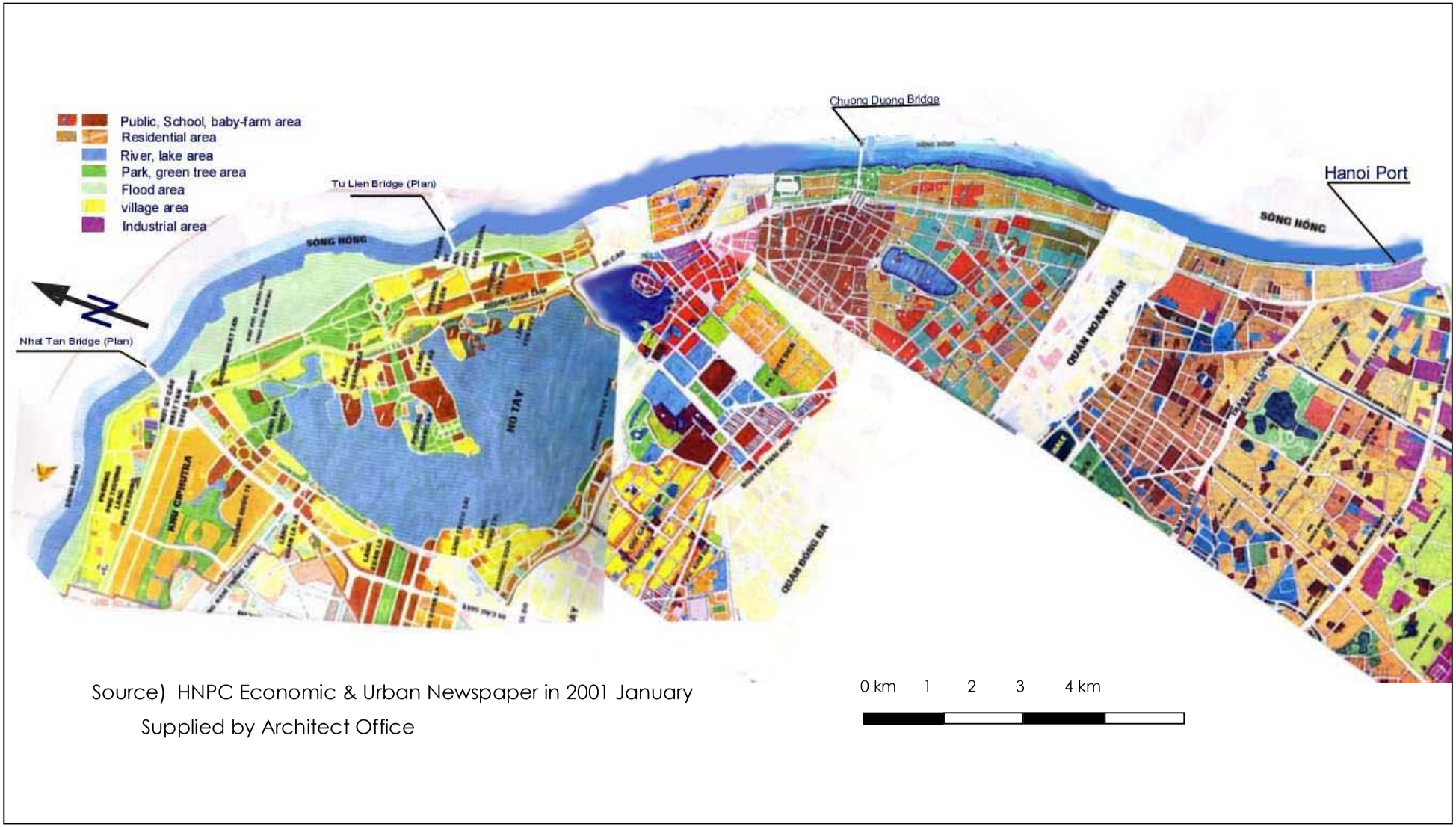
This Project is called as Red River City with 50 tall buildings of between 23 and 40 stories for apartment or residence and 10 buildings with 30 to 40 stories or 30 to 40 buildings of 23 to 25 stories for business use as trade plaza, sports, tourism etc. on a 50 ha area.

To this plan HNPC expressed an opinion that the plan was acceptable and further detail studies were needed. Then HNPC requested VIWARDA to cooperate with other organizations concerned to carry out detail planning.

Another small scale housing project comparing to the above mentioned Red River City Plan, is now progressing in the right bank Phuc Xa commune about 1km upstream area from Long Bien Bridge.

Urban Development Company and ANTRA KOM Development PTE Ltd (from Singapore) are jointly implementing this project and land (6 ha) clearance works have been already completed. **Photo 13.3.** shows the construction site and an advertisement of the project.

Anyway it is necessary that central as well as local government organizations should cooperate with each other more closely and deeply to promote and realize reasonable urban development.



Source) HNPC Economic & Urban Newspaper in 2001 January
Supplied by Architect Office

Figure 13.3.3 Red River Right Bank Area Plan in Central Hanoi City

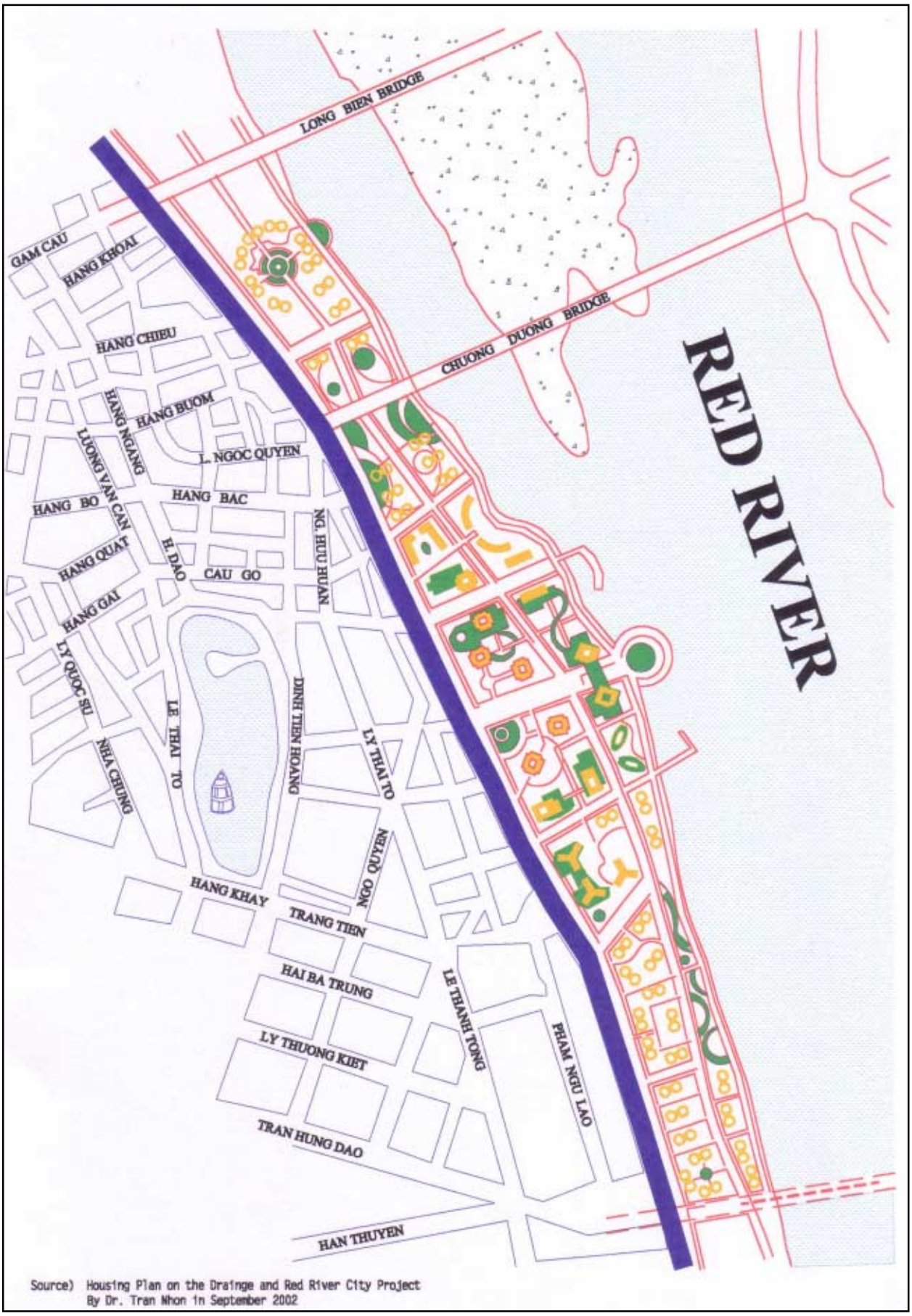


Figure 13.3.4 Red River City General Plan

13.4 Social consideration necessary to examine

13.4.1 Law on land

Land acquisition for every infrastructure development in Hanoi City is extremely difficult because of shortage of relocation area and high price of land. Basically all land properties belong to the people, namely the State. However, in actual fact land use right can be bought or sold in accordance with the regulation in market economic mechanism like the properties of individualities.

In July in 1993 Law on Land was promulgated. This law regulates 6 categories of land namely;

1. Firm Land
2. Forestry Land
3. Land for Residential Areas
4. Urban Land
5. Specialized Land
6. Unused Land

In Article 12 the state shall determine prices of land applicable to each category of land for the purpose of taxation, compensation, valuation of property etc. and the
Government shall also be in charge of national zoning and land use planning.

Land use planning includes the zoning, the use of each category of land in each planning period and adjusting the plans for land use in conformity with zoning. In actual fact provincial level of People's Committee shall have the responsibility to make initial zoning plans and Government (mainly task of Ministry of Construction) gives approval to the initial plans.

Article 47 of this law also regulates the use of inland water surface as follows.

1. Any ponds, lakes and marshlands can not be allocated to one household or one individual but several households individuals or economic organization for use.
2. People's Committee of provincial level has the responsibility to stipulate their use where water basins are located covering two more villages.
3. Use of the water surface of lakes, marshlands, river and canals shall be in accordance with the regulations relating to environment protection and not obstruct communication and transportation.
4. The use of inland water surfaces shall be in accordance with the provisions on technical criteria of relevant departments.

This is the basic law related with every land use matters, so it is essential to review this law on land especially when we make land use plan or considering compensation matter. Full articles are attached as **Appendix 13-2**.

13.4.2 Compensation criteria and land price

Current compensation systems for residents who are compelled to relocate are based on the ''Regulation on Land acquisition for security, defense purpose, national and public benefits in Hanoi City People's Committee'' dated 13 September, 1997. At the same time in the Decision No. 3528/OD-UB land price list was issued based on the decree of No. 87/CP by Government dated 17, August 1994.

As for land price this decree is the basic regulation and all People's Committee and Central City (Hanoi, Hai Phong, Da Nang, Ho Chi Minh) should define land prices for deciding land transfer tax, rental fee, estimation of property value and compensation etc. Compensation system consists of two items tabulated as in the **Table 13.4.3**.

The following **Table 13.4.1** shows an example of land price stipulated by the State.

Table 13.4.1 Land Price

(Issued with Decree No. 87/CP of Government dated 17, August 1994)

Urban lands Unit: 1,000 VND/m2

Urban Class	Street class	Standard prices following locations							
		Location No. 1		Location No. 2		Location No. 3		Location No. 4	
		Mini. price	Max. price	Mini. price	Max. price	Mini. price	Max. price	Mini. price	Max. price
I	1	4,600	11,500	2,760	6,900	1,380	3,450	460	1,150
	2	2,700	6,750	1,620	4,050	810	2,025	270	675
	3	1,800	4,500	1,080	2,700	540	1,350	180	450
	4	900	2,250	540	1,350	270	675	90	225

Urban Class 1 corresponds to Hanoi City and Ho Chi Minh City. Street class and location class are defined in detail.

Based on the prices shown in the above **Table 13.4.1** Hanoi city stipulated the following land prices shown in **Table 13.4.2**, which are much higher than that of the Government.

Table 13.4.2 Land Price in Hanoi City

(Unit: 1,000 VND/m2)

Road class	Price levels following allocation			
	1	2	3	4
Classed I				
A level	9,800	3,920	2,350	1,410
B level	7,800	3,120	1,870	1,150
Classed II				
A level	6,300	2,520	1,510	910
B level	5,050	2,020	1,210	730
Classed III				
A level	4,040	1,620	970	580
B level	3,230	1,300	780	470
Classed IV				
A level	2,200	880	530	320
B level	1,540	620	370	225

Source) HNPC

Prices by road class and level or level allocation are decided in detail. The above table in case of compensation occurring in the Project needs to be followed. However, it should be noticed that recently actual land price becomes higher.

When the Project needs to relocate inhabitants, careful examination should be made based on the above mentioned several regulations and consideration should be given to the relocated people so as not to cause them disadvantages.

Table 13.4.3 Summary of Items of Compensation and Subsidy

	Compensation		Subsidy
	Land	Asset	
Agriculture/ Aquaculture / Forestry	- Cash in accordance with the land price stipulated by People's Committee	- Annual Crop Land: Yield of crops according to average yield of 3 previous crops at present price. - Perennial Crop Land: Compensation according to stages of planting, harvesting and after harvesting.	- Annual Crop Land: Subsidy for 60 tons of harvested rice per 1 ha based on three criteria - Perennial Crop Land: Compensation according to stages of planting, harvesting and after harvesting.
Residential	- Cash in accordance with the price of handing over and leasing land by the Government. - Land of similar usage (need to pay land charge) -Even without legal documents, land owners who have permanent address in Hanoi City can be compensated	- Villa, House of levels I, II, III: House compensation in accordance with retained value by level within 60% of construction cost. - House of level IV Temporary-house: House compensation of construction cost	- Villa, House of level I, II, III: 50% of discount value specified in compensation alternative evaluated by Steering Committee. - House of level III: 35,000 VND/sq.m of building area. - House of level III: 25,000 VND/sq.m of building area. - Perennial Crop Land: Compensation according to stages of planting, harvesting and after harvesting. - Additional 450,000 VND/ person for arranging own accommodation.
Illegal House	- None	- None	- On legal land: Maximum 80% of remaining value. - On illegal land: Dismantling and removing labor costs.
State owned house	- None	-Rehabilitation and maintenance expenses - The cost to lease or buy new houses of appropriate area.	- If house user does not buy or quits leasing state owned house: Subsidy for new accommodation equal to 25% of construction cost. - 60% of land using value of leasing area (single or multi story house by 1 owner). - 90% of land using value of rental house by story (multi story houses by story (multi story houses occupied by multiple household)
Grave	- None	- Unit price in accordance with types of grave - Moving to new location in current condition	- None

Note) Three criteria
- Land area given by State for long term: 20 years
- Profit by production per hectare is equal to 30% of revenue
- Yield by paddy is 10 tons/ha. Therefore 10 tons/year x 30% x 20 years = 60 tons of paddy per hectare.
-

Source) Urban Infrastructure development Project in Hanoi Capital Region OECF in March 1998