5.6 Parks, Nature Resources, and Cultural and Historical Sites

Vietnam classifies protected areas into three categories: national parks, nature reserves, and culturally and environmentally protected areas, all under the responsibility of the Ministry of Forestry. National Parks are protected areas that possess profound value in nature conservation, research, preservation of cultural relic, and tourism. Nature reserves are the protected areas characterized by its importance to science and plant and animal-genetic conservation. In nature reserves, research is acceptable, while tourism and recreational purpose are not encouraged. Culturally and environmentally protected areas contain historical and cultural relics and scenes with aesthetic or environmental value, and tourist and recreation attraction. Within the project area of Ha Tay Province, there is one national park, namely Ba Vi National Park with an area of 2,144 ha.

The outline of the Ba Vi National Parks provided below is source from the "Environment and Bioresources of Vietnam," published in 1995.

(a) Park Location: 20°01' – 21° 07'N, 105° 18' – 105° 25'E,

(b) Natural conditions: Three parks : 1,226, 1,296, and 1,200 meters

(c) Average temperature: 23°4'C

(d) Average humidity: 84 %,

(e) Annual rainfall: 1,660 mm.

Ba Vi is famous for the legend of Son Tinh – Thuy Tinh (the legend of the Spirit of the Mountain and the Water) and is considered as the shelter for Muong and Dao tribal groupings. In the vicinity of the National Parks, there are a series of scenic spots, namely Suoi Hai Lake (900 ha), Dong Mo - Ngai Son Lake (1,300 ha), Ngoc Nhi Stork Colony and Bang Ta Forest. These remarkable places together create an attractive tourist destination while the primary forest left therein serves as the Capital's park and is admired by the people throughout the country.

Ba Vi National Park is mainly extended in a semi-mountainous area including 3 peaks: Tan Vien (1,226 m), Dinh Vua (1,296 m) and Ngoc Hoa (1,200 m). Under 400 meter high, the slope may reach a gradient of 25°, above 400 meters, and gradient is 35°.

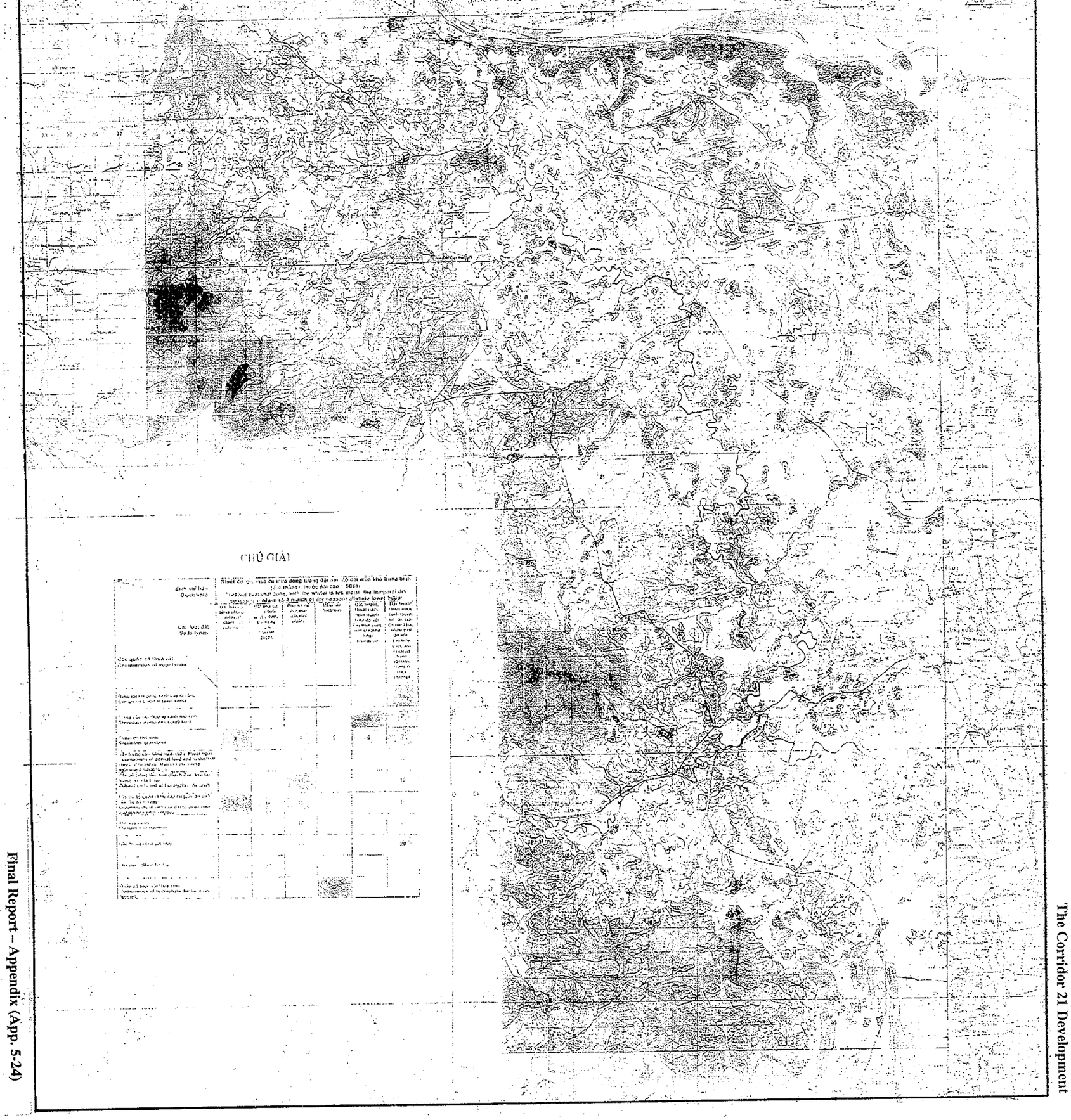
Generally, the western slope of the Parks down to the Da River is steeper than the east and north. The area below 100 to 500 meters is composed of stone, tight sand and clay sediment; above 600 meters is yellow ferrolites.

Ba Vi National Parks are seen as a greenery gem that have emerged from vast paddy fields. The forest extended therein plays an important role in regulating water current and supplying oxygen for Hanoi. The existence of the National Park substantially contributes to conserve the environmental resources and provide recreation to people. It is also a showcase of beautiful sub-tropical forest to be enjoyed by visitors from Hanoi.

LAND USE AND VEGETATION MAP

MIẾU MÔN - XUÂN MAI - HOÀ LẠC - SƠN TÂY

TỶ LỆ 1:50.000



CHÚ GIẢI

HYDROLOGICAL MAP

SON TAY HOA LAC XUAN MAI MIEU MON

Pumping Station to Irrigate
Pumping Station to Drain
Pumping Station to Irrigate and Drain Mix
Dyke III Level
Dyke IV Level
Culvert under Dyke
Stone Embankment
Lakes
Dams
One Season be Irrigate
Two Season be Irrigate

Culvert under Dyke IV Level

Symbol	River	Name
C	Day	Tich Giang
C	-	Cam Yen
C	-	Banh Kim
C	-	Kim Quan
C	-	Can Kiem
C	-	Ngoc Liep
C	-	Liep Tuyet
C	-	Quang Bi
C	-	Nguom
C	-	Hoa Chinh
C	-	Phu Nam An
C	-	Coc Thuong
C	-	Truc Son
C	-	Lai Tao

Culvert under Dyke III Level

Symbol	River	Name
C_1	Hong	Phu Sa
C_2	Hong	Van Coc

Stone Embankment

Symbol	River	Name
K_1	Hong	Hong Han
K_2	Hong	Phuong Do
K_3	Day	Tu Duong
K_4	Day	Vinh Loc

BẢN ĐỒ ĐẤT

VÙNG SƠN TÂY - HOÀ LẠC - XUÂN MAI - MIẾU MÔN

SOIL MAP OF SƠN TÂY - HOÀ LẠC - XUÂN MAI - MIẾU MÔN AREA

T. VĨNH PHÚC

H. BA VÌ

H. HOÀI ĐỨC

T. HÒA BÌNH

HÒA LẠC

XUÂN MAI

MIẾU MÔN

CHÚ DẪN - LEGEND

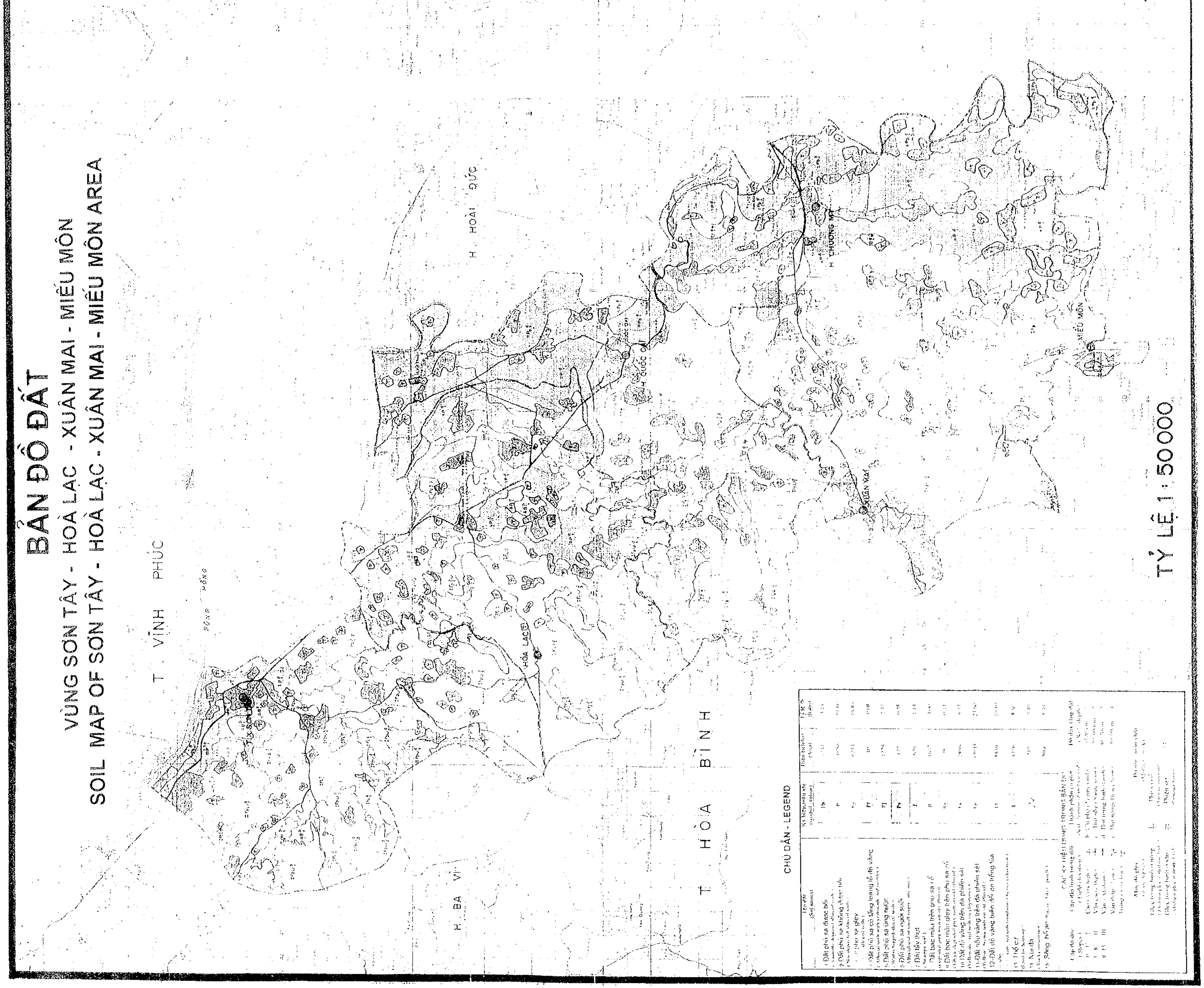
Tên đất (Soil names)	Ký hiệu, màu sắc (symbol, colour)	Diện tích(ha) (Area)	Tỷ lệ % (Ratio)
1-Đất phù sa được bồi (Annually deposited alluvial soils)		1731	3,15
2-Đất phù sa không được bồi (Non deposited alluvial soils)		10766	19,60
3-Đất phù sa gley : (Gleyic alluvial soils)		9264	16,85
4-Đất phù sa có tầng loang lổ đỏ vàng : (Alluvial soils with yellowish -red mottles)		40	0,08
5-Đất phù sa úng nước : (Water logged alluvial soils)		1279	2,33
6-Đất phù sa ngòi suối : (Alluvial soil of small rivers , streams)		177	0,35
7-Đất lầy thụt : (Swampy soil)		629	1,14
8-Đất bạc màu trên phù sa cổ (Degraded grey soils on old alluvial)		1647	3,01
9-Đất bạc màu gley trên phù sa cổ (Gleyic degraded grey soils on old alluvial)		75	0,14
10-Đất đỏ vàng trên đá phiến sét (Yellowish - red soils on chystones)		2896	5,27
11-Đất nâu vàng trên đá phiến sét (Yellow - brown soils on old alluvial)		12945	23,60
12-Đất đỏ vàng biến đổi do trồng lúa nước (Yellowish - red soils transformed by rice cultivation)		5539	10,10
13- Thổ cư : (Land for housing)		4726	8,60
14- Núi đá (Rocky mountains)		219	0,40
15- Sông ,hồ ao (Rivers , lakes , ponds)		2966	5,39

CÁC KÝ HIỆU DÙNG TRONG BẢN ĐỒ

Cấp độ dốc (Slopes)	Cấp địa hình tương đối (Field elevation)	Thành phần cơ giới (Soil texture of surface soil)	Độ dày tầng đất (Soil depth)
0 - 3° : I	Cao (Very high) : ⊥	b :Cát pha (Loamy sand)	>100 cm : 1
3 - 8° : II	Vàn cao (High) : ⊥	c : Thịt nhẹ (Sandy loam)	70-100cm : 2
8 -15° : III	Vàn (Medium) : =	d :Thịt trung bình (Loam)	50-70cm : 3
	Vàn thấp (Low) : ⊤	e :Thịt nặng (Heavy loam)	30-50cm : 4
	Trũng (very low) : ⊤		

Mức độ gley (Gleyic degrees)		Đá mẹ , mẫu chất (Mother rock)	
Gley trung bình ở nông : (Medium gley at shallow level)		Phù sa cổ : (Ancient alluvium)	
Gley trung bình ở sâu : (Medium gley at depth level)		Phiến sét : (Fibrous loam)	

TỶ LỆ 1: 50 000


BẢN ĐỒ ĐẤT
VÙNG SƠN TÂY - HOÀ LẠC - XUÂN MAI - MIẾU MÔN
SOIL MAP OF SƠN TÂY - HOÀ LẠC - XUÂN MAI - MIẾU MÔN AREA
T. VĨNH PHÚC
H. HOÀI ĐỨC
T. HÒA BÌNH
H. BA VÌ
HOÀ LẠC
XUÂN MAI
MIẾU MÔN
H. CHƯƠNG MỸ
CHỦ DẪN - LEGEND
TỶ LỆ 1 : 50000

BẢN ĐỒ ĐỊA CHẤT - GEOLOGICAL MAP

CHUỖI ĐÔ THỊ MIẾU MÔN - XUÂN MAI - HOÀ LẠC - SƠN TÂY – URBAN SERIES OF MIẾU MÔN - XUÂN MAI - HOÀ LẠC - SƠN TÂY

TỶ LỆ - SCALE: 1: 25000

ECOLOGICAL-DISTRIBUTIVE MAP OF ANIMAL OF XUAN MAI-HOA LAC AREA

LEGEND:

I- ECOLOGICAL AREA OF EVERGREEN AND LARGE-LEAVED FOREST

II- ECOLOGICAL AREA OF REGENERATIVE SHRUB FOREST

III- ECOLOGICAL AREA OF HILLS AND HILL- FIELDS

IV- ECOLOGICAL AREA OF SETTLEMENTS

V- ECOLOGICAL AREA OF SPONE, LAKE AND WETLAND

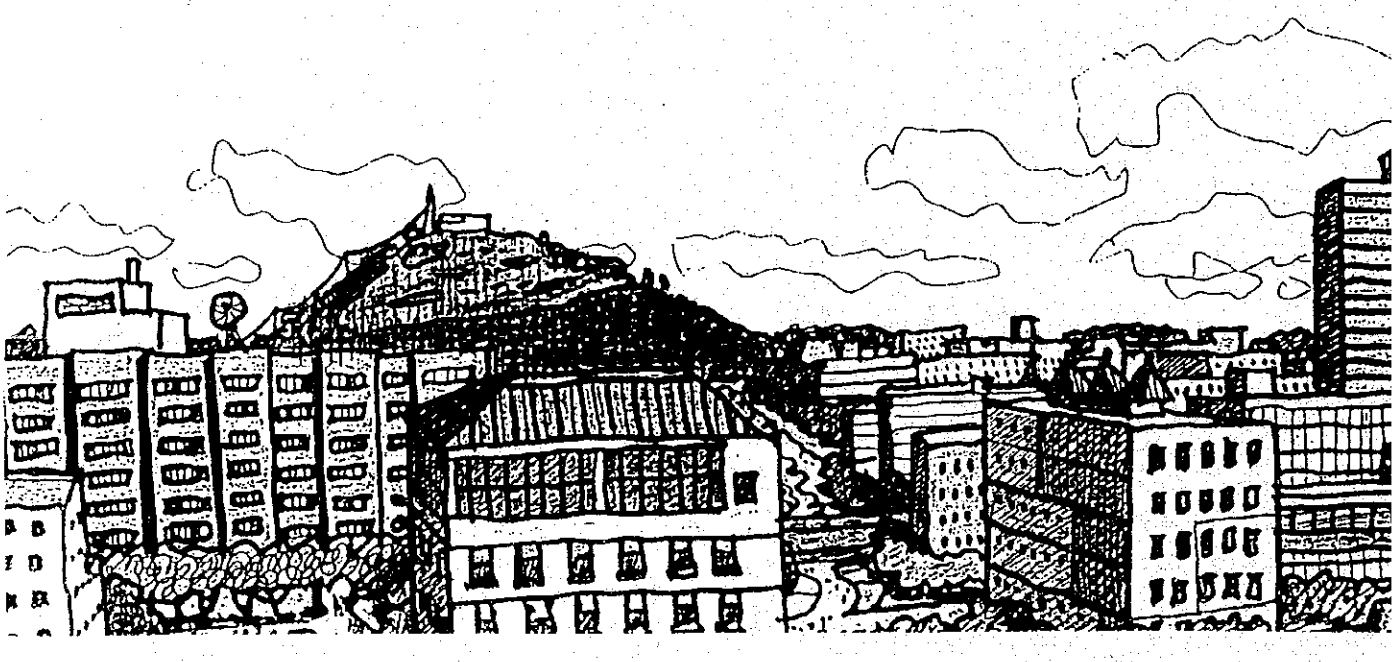
DISTRIBUTION OF ANIMAL:

MAMALLS: ○	BIRDS: □	REPTILES-AMPHIBIANS: △
Rhesus macaque (1)	*Green billed Malkoha* [1]	*Gecko*
Common wild pig (2)	*Winged flycatcher shrike* [2]	*Mountain Pit Viper*
Common barking deer (3)	*Black shoudered kite* [3]	*Oriental Rat snake*
Masked palm civet (4)	*Lesser coucal* [4]	*Agama*
Palm civet (5)	*Grey wagtail* [5]	*Copperhead race*
Large indian civet (6)	*Spotted necked dove* [6]	*Banded Krait*
Leopard cat (7)	*Barn swallow* [7]	*Copper head*
Chinese pangolin (8)	*Richard's pipit* [8]	*Indochinese Rat Snake*
Small indian civet (9)	*Olivaceus haired bulbul* [9]	*Field frog*
Javan mongoose (10)	*Red whiskered bulbul* [10]	*Trionychid turtle*
Ferret badger (11)	*Magpie robin* [11]	*Big-Trionychid turtle*
Crab eating mongoose (12)	*Eurasiantree sparrow* [12]	
Roof rat (13)	*Little grebe* [13]	RIVER, LAKE :
Roundleaf bat (14)	*Little egret* [14]	HIGH WAY :
Common otter (15)	*River kingfisher* [15]	FISH:
	Lesser pied kingfisher [16]	*Barouins catfish* *Dwarf catfish* *Catfish*

The Corridor 21 Development

APPENDIX 6

Agriculture



APPENDIX 6 Agriculture

6.1 Position of the Agriculture Sector in the Regional Economy

The significance of the agriculture sector in the regional economy decreases year by year because the non-agriculture sectors such as service sector and the industry sector expand more than the agriculture sector. The economic growth rate of agriculture between 1995 and 1996 was only 1 % while during that period the whole economy grew at 9.3 %. In 1996 the share of the agriculture in the total economy was 28.9 % as shown in the following figure. Per-capita annual income in 1996 was US$ 238 expressed in 1994 prices.

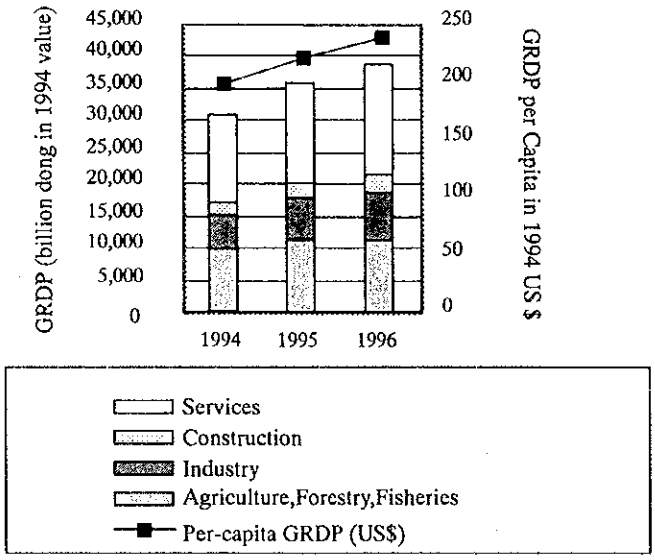
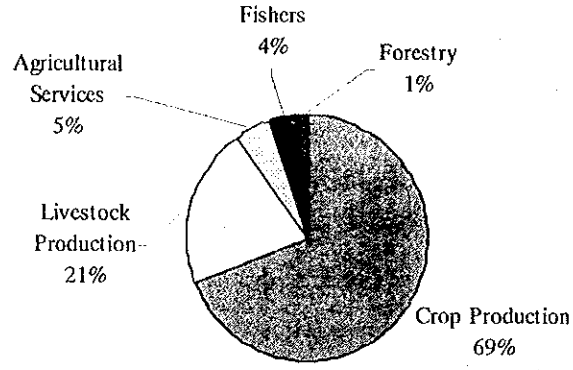


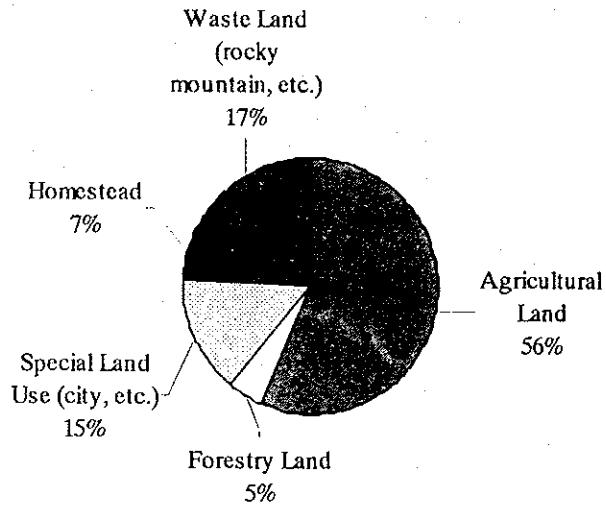
Figure A-6.1.1 GRDP by Economic Sector and GRDP Per Capita in the Red River Delta

Crop and livestock productions are the main producers in the agriculture sector covering 69 % and 21 % of the agricultural GRDP in 1995 as shown in the next table. Forestry production is negligibly small in the Delta.



Source: Red River Delta Master Plan Office, 1997.

Figure A-6.1.2 Composition of Agricultural GRDP in the Red River Delta in 1995



Source: General Statistical Office, 1996.

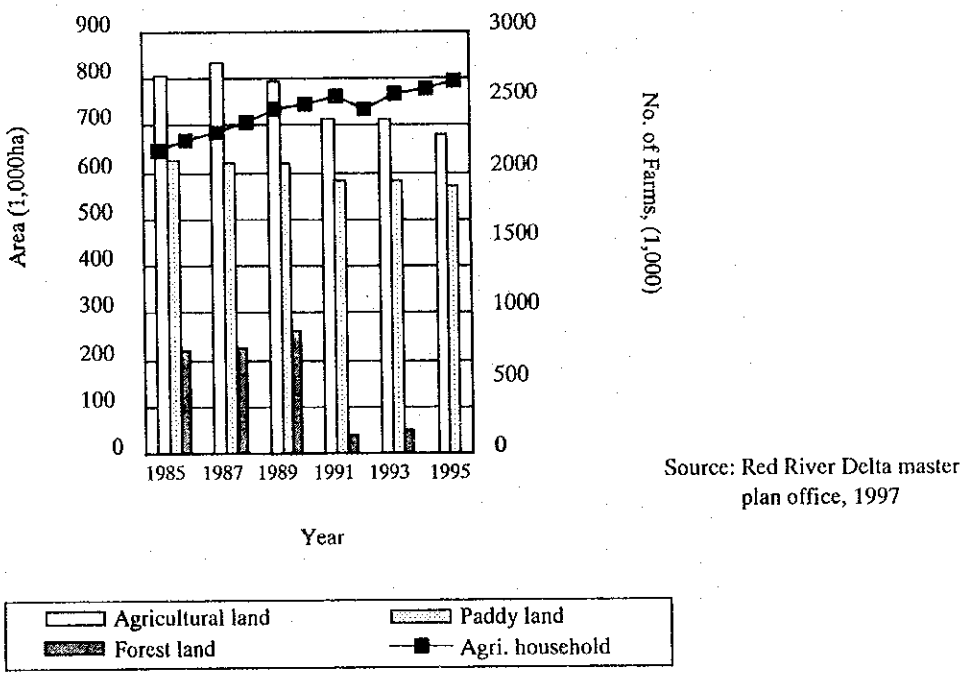
Figure A-6.1.3 Land Use in the Red River Delta in 1994

6.2 Land Use in the Delta

The Red River Delta has an area of 1.26 million ha. The main land uses are agricultural land and waste use occupying 56.5 % and 17.2 % respectively, as shown in Figure A-6.1.3. Forest

area is no more than 4.5 % of the total area in 1994. There is no readily available idle land for agriculture.

Agricultural land is decreasing at a rate of 14,700 ha per year. On the contrary, the number of agricultural household is increasing at a rate of 45,000 units annually, as shown in the following figure. According to the data from the general statistical office, the average land area of a rural household is 2,567 square meters including 318 square meters for homestead land and 2,129 square meters for agricultural land. High population pressure and the limited arable land area are the principal features of agriculture in the Red River Delta.



Source: Red River Delta master plan office, 1997

Figure A-6.2.1 Trends in Agricultural Land Use and Number of Agricultural Households in the Red River Delta

6.3 Agricultural Productivity

Paddy rice is the most suitable crop for poor drainage areas, such as the Red River Delta, and an important crop in terms of aerial coverage and nutrient intake in the Delta. Agricultural land use has been maximized to the full extent. In fact, the annual total planted area of paddy rice has stood at a stable 1 million ha for a long time, as depicted in the figure below.

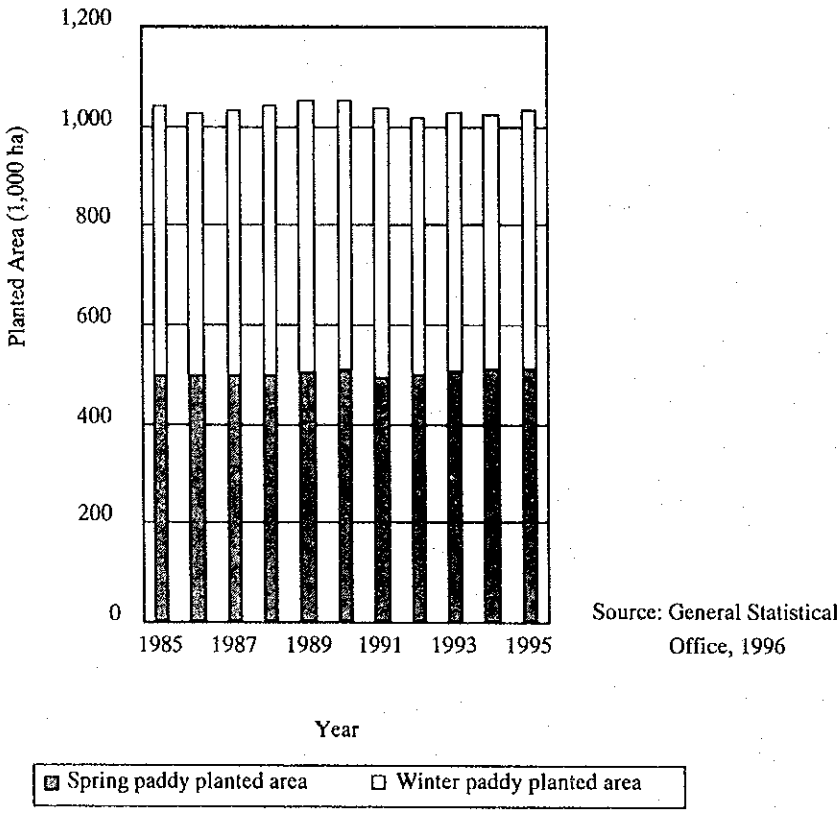


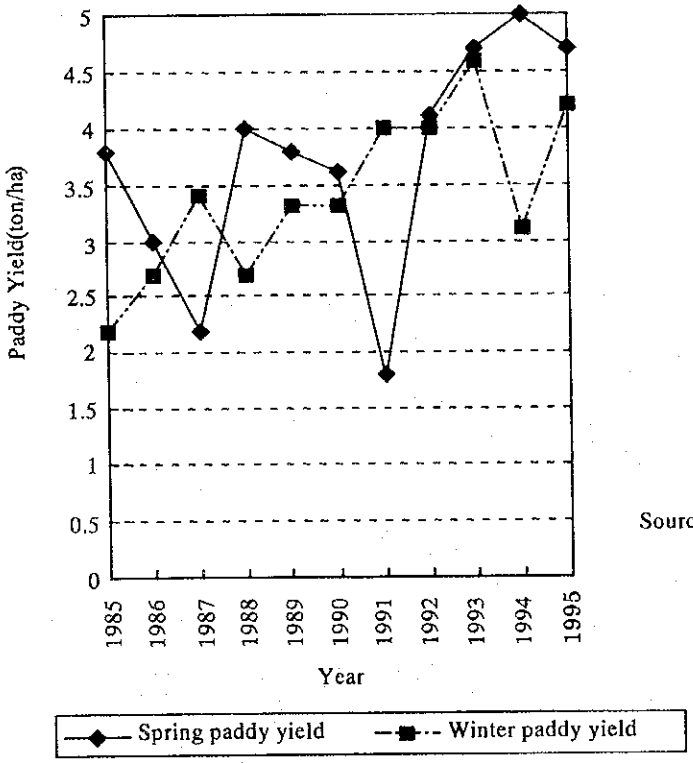
Figure A-6.3.1 Trends in Paddy Planted Area in the Red River Delta

Winter paddy yield has been steadily increasing and is seemed to reach the maximum of 4.5 tons/ha in 1993. Further increase may be possible but to a small extent. Spring paddy yield has been fluctuating but came to the physical limit of around of 5 tons/ha in 1994, as shown in

Figure A-6.3.2. Therefore, the potentiality of the further development of paddy production is small due to the physical yield limits of paddy, flooding or poor drainage, damage, etc.

The trend in the paddy production in the Delta is given in the next figure. Paddy production plateau seems to be around 5 to 6 million tons.

The labor return of the crop production in the Delta varies significantly among crops, ranging from US$ 1.65 per man-day for summer soybeans to US$ 0.03 per man-day for mulberry, as shown in the following table. The highest net return before labor is US$ 579 per ha by winter cabbage and the lowest is US$ 75 per ha by mulberry.



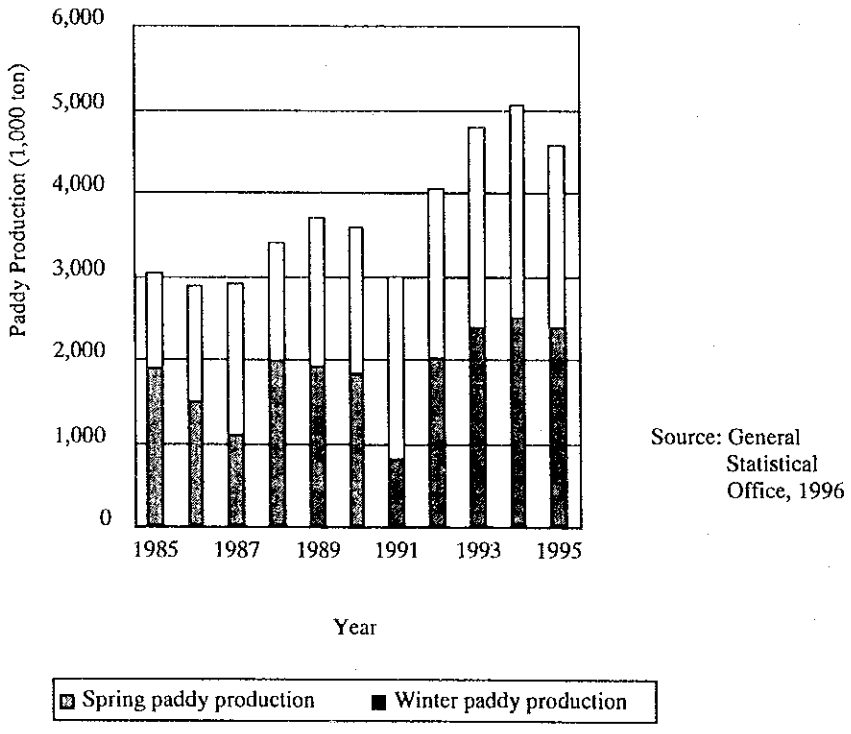
Source: General statistical office, 1996.

Figure A-6.3.2 Trend in Paddy Yields in the Red River Delta

Table A-6.3.1 Net Benefit and Labor Return by Crop in Red River Delta in 1993 - 1994

Crop	Net benefit before labor (US$/ha)	Labor return (US$/man-day)
Summer soybean	444	1.65
Winter potato	383	1.48
Winter soybean	507	1.14
Monsoon paddy	269	0.84
Winter maize	224	0.79
Spring paddy	267	0.77
Spring maize	209	0.65
Winter sweet potato	147	0.62
Winter cabbage	579	0.62
Mulberry	75	0.03

Source: Red River Master Plan

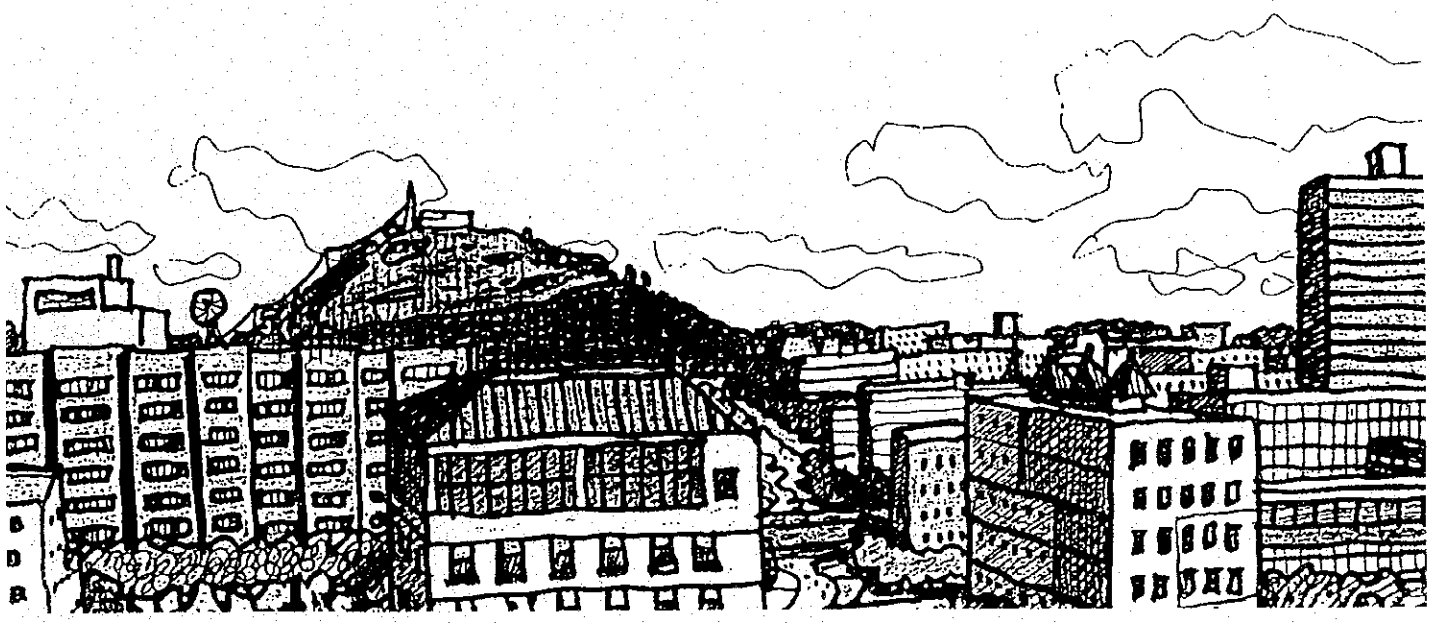


Source: General Statistical Office, 1996

Figure A-6.3.3 Trend in Paddy Production in the Red River Delta

APPENDIX 7

Institutional Building



APPENDIX 7 Institutional Building

7.1 Finance and Administration

7.1.1 Profound Impact to be Expected

The project will not only generate big changes in the present condition of the regional economy but also will contribute to the transformation of the whole national and the regional economy. In the short-term, the construction works related to the project will certainly produce employment opportunity, business opportunity, and income generation, which will boom the regional economy. In the long-term, the project will generate more strengthened foundation geared to the development in the future towards the 21st century. Then, the national economy and the regional economy will be formed on the firm foundation.

The following will be witnessed in the broader term.

(a) Production, employment, income, consumption, export of merchandise goods and services, foreign capital inflow

(b) Establishment of business entities such as a private proprietorship company, limited liability company, joint stock company, and co-operative, which both are domestic and foreign origins. Birth of new industries including high-tech industry. Formation of broader foundation directed to industrial development.

(c) Human resource development in terms of education, R&D, vocational skill-up, which are most suitable for both the immediate and future economic development of the country.

(d) Strengthening of science and technology foundation which is expected to contribute to form the country as the one based on science and technology toward the 21st century.

(e) Establishment of better urban infrastructures in the atmosphere of convenience, comfortability, humanity and culture.

7.1.2 Characteristics of Effects of the Project

Characteristics particular to this project are pointed as follows.

Firstly, most effects of this project are not to be measured in quantitative-term. They are evaluated in quality-term. Within the framework of IZ and EPZ development strategy, it is purposed to gain gauged results and in fact it is sure to generate tangible gains such as expanded GDP, more employment opportunity, increased income, enriched consumption, ballooning exports, enhanced availability of tax revenues and other public revenues. These tangibles have contributed to the remarkable economic growth realized in the last ten years since the introduction of the Doi Moi policy.

Secondly, in most cases effects are not expected to be realized in the immediate future. The IZ and EPZ strategies have brought about big tangible immediate gains, taking a very good opportunity of globalization of the world economy and the Asian economy over the last ten years. The strategies were very successful. The success is attributable to matured production technology, relatively enormous amount of labor forces adapted to the production technology and preferential treatment in terms of land use leasing, tax provision and procedure policy such as licensing to the foreign direct investment. However, the condition of the project is different from the one that promotes the IZ and EPZ strategies.

In general, effects of this project are thought to be long lasting ones except for a couple of effects. In the case of effects of production, employment, income, consumption, export of merchandise goods and services and foreign capital inflow, they are explicitly realized in short time. Production, employment, income, and consumption are generated by public works such as construction of ground clearance and treatment road, water supply, and shelters attributable to public capital expenditure. Compensation cash payment will increase purchasing power of the project area. On the contrary, in almost all cases, effects are recognized in the vintage period in the neighborhood of ten years after investment. As an example, in the case of human resource development, it may take more than ten years for its effect to be realized and to make substantial contribution to the economic development of the country.

Finally, there is high probability of witnessing none of effects related to the project in the worst case. There are two causes for these unproductive results. One is the external factor, and another is the internal factor. With regards to the former, the recent economic turmoil in the entire world as well as the Asian region can be listed. Encountering this difficulty, the

country has been weak in mobilizing its initiatives over the situation. The country can reduce impact as little as possible if counter-measures are prepared for the economic turbulence of such a magnitude, even if they are on small scale. In the latter regard, the country itself has to bear responsibility for controlling the situation by all means. Generally speaking, in the phase of the recession, any country will have to have less public revenues and a smaller number of public counter-measures. It is of great importance that in pursuing the completion of the project, the country should prepare preventive buffer measures built in this project scheme.

7.1.3 Nation-Wide Impact

Wide-ranging and far-reaching effects do not stay within the project area. They reach over the Hanoi area, the Red River area, the northern part of the country and the nation as a whole. They are evaluated as immense.

In the recent years, the heavy pressure is mounting on the Hanoi area in terms of socio-economic concentrations proceeding at a speeding-up pace. The Hanoi area has an increasing number of problems such as too much population increase, overcrowded shelters, traffic congestion, polluted air, expanding volume of various pollutants and wastes, sewage, less education and less health care. In the near future, the condition is expected to be beyond its capacity to absorb these concentrations, to provide better living urban condition to the people and to maintain productive environments to business activities.

The Hanoi cannot accept this condition as status quo, because for a long time the Hanoi area has made a great deal of contribution to keeping integrity, independence and honor of this great nation as a whole, bearing all kinds of burdens which should have had to be shared by other regions.

The project is expected to reduce the burden presently born by the Hanoi area. By virtue of successful implementation, the project will provide the environment in which the Hanoi area will run in tandem with the project area in pursuing the goal of the overall economic development of respective areas and becoming catalyst which leads the economic development of other areas and the nation as a whole.

This recognition does not fail to lead people to have the conclusion that the project should be supported in full fledge, in terms of mobilization of political and administrative capacity, financial resources at home and overseas, providing expeditions working in various fields such

as planning and engineering, and involving people with different backgrounds including overseas Vietnamese. In this regards the project is to be dealt with as a "National Project" into which the support mentioned previously should be assured. Available resources on a national scale have to be put into the project in a concentrated manner.

Contrary to this view, it must be accepted that even a small amount of economic resources is very precious to the country and is equally of importance among various regions in the country. It seems that the country cannot afford to provide preferential treatments to a specific area.

Therefore, to the end of sustainable development of the project at various phases such as planning, programming, budgeting, implementation, consensus building and people's participation are of primary importance.

It is generally recognized that legal foundation is indispensable to the purpose of consensus building. Once the decision is made, it should not be reversed with ease. If planning and budgeting are settled, they should not be changed and continued to be pursued to the final end although small changes are acceptable. Otherwise the project might face an inefficient one in terms of effective allocation of economic resources and initiatives on the side of participants to complete the project. It might also result in a high additional cost on the people as a whole.

7.1.4 Features Particular to the Project

The project has particular features different from many other past projects.

Firstly, investment is immense in terms of cost and period. The period extends over twenty years, which cannot be seen in past projects of such a magnitude. This feature requires the project to be well structured, so that it should not enter into failure.

Secondly, the project comprises many components with different objectives and functions. You cannot find any difficulty in recognizing big differences among components such as infrastructure fixing, new location of Hoa Lac High-Tec Industrial Park, relocation of Vietnam National University, housing complexes and establishment of Phu Cat Industrial Zone accommodating traditional artisanship & skill-oriented industries, construction and housing material industries and the like. However, there is one risk to be witnessed. The project is purposed to create a new economic area, in which work components hold mutually their organic interdependent relationship. Even if some components are completed, it does not

make much sense. Without other components being finished, the former will not contribute to realization of high-value added activities in this area, thus resulting in the completed parts being in idled condition. This is thought as a sort of waste of resources.

In the past, Vietnam has a lot of experiences in completing projects one by one. The country has fixed roads, bridges, ports, airports, power system, irrigation and reclamation and so on.

Even in the case of the IZ and EPZ system that has been contributory to the economic development gained in the past, projects are established individually. Preferential treatment for the purpose of motivating the side of business entities looking for appropriate location sites over the world, should be provided in the forms of tax exemption, tax reduction, tax deferment, licensing, pricing of land lease rate, "one -stop services" and the like. Many business entities have located their factories or plants in the IZs and EPZs. Within IZs and EPZs, each business entity can start business without taking account of others. Previously, production or export activity is connected directly to the outer world both at home and abroad, and therefore, interrelation among entities located is not necessarily required.

In recent years, however, IZs and EPZs have had a strong tendency to become larger in size, to enjoy merits of scale-economy. In accordance with expanding size, new components are required to be included. Infrastructure, living facilities and production-related facilities as well as production facilities are asked to be well provided. The present IZ and EPZ system cannot afford to accept this demand under the present legal framework. It is pointed out that the legal framework related to the IZ and EPZ system has not responded to the newly emerging conditions.

In the present targeted project, sustainable establishment of interrelation among components is a strong prerequisite. In this regard a key for success is how to coordinate many components in various phases in terms of planning, programming, budgeting, implementation, operation and maintenance, disposal, promotion. To cope with the development of the project of this type, new strategic development formula are expected to be developed.

Thirdly, it is noted that each component has different level of return on investment and that the project is expected lower return on investment than other commercial-based projects in the past. This feature will make the inter-linkage among components more difficult thus generating a strong tendency for disintegration, appropriate coordination and well-structured development formula are ensured.