

## **2 PROFILE OF THE STUDY AREA**

### **2.1 Natural and Physical Conditions**

#### **Geography**

Vietnam is located in the Pacific Ocean Rim between 8°30'N and 23°22'N, with a total area of 331,041 km<sup>2</sup> stretching in an “S” shape. The country is delineated by 3,260 km of coastline from China in the north to the Gulf of Thailand in the south, and by 4,369 km of border facing Lao PDR and Cambodia in the west and China in the north. The narrowest part of the country is about 50 km in the east-west direction, located in Thua Thien Hue Province.

Vietnam stands on an ancient geological foundation at the edge of the Euro-Asia continent. Its soil consists of four main types: alluvial soil, eroded and poor soil, red and yellow soil, and humus on the high mountain. Vietnam has various mineral resources. Coal, mainly anthracite and half anthracite, is found in various regions with a concentration in Quang Ninh Province. Iron ore is mainly found in Thach Khe, Bao Ha and Thai Nguyen. There are currently about 2-3 billion tons of oil and gas reserves for commercial exploitation.

The topographic conditions can be summarized as follows (refer to Figure 2.1.1):

- Low flat lands are characteristic of the Red River delta, the eastern plain and the Mekong River delta which may allow dense habitation but is vulnerable to floods.
- Mountainous areas, stretching for kilometers along the border provinces with China and Lao PDR have always hampered smooth traffic and made transport development costly.
- The Central Highlands is a unique upland since it is part of the Mekong River watershed which runs rainfall off to the Cambodian territory. Route No. 14 runs along the dividing line at the top of the watershed, and thus does not require big bridges across rivers.

#### **Land Use**

Vietnam's population of 75 million is very densely settled and almost all cultivable land is in use. Pressure on natural resources and the environment is acute. About 30% of land is cultivated and 29% is classified as forest and woodland (refer to Figure 2.1.2).

Massive forested areas were damaged and burned during the long war from 1945 to 1975. Vietnam still bears severe scars: Millions of hectares of tropical forests were turned into denuded lands with 25 million bomb craters. Deforestation continued after the war, caused by agricultural clearings, forest fires and relentless collection of firewood and timber. The annual deforestation between 1986 and 1990 was estimated at 311,000, slowing down to 7,000 ha in 1997. During the recent half century, forest cover declined from 43% in 1943 to 29% in 1997.

Figure 2.1.1 Topography

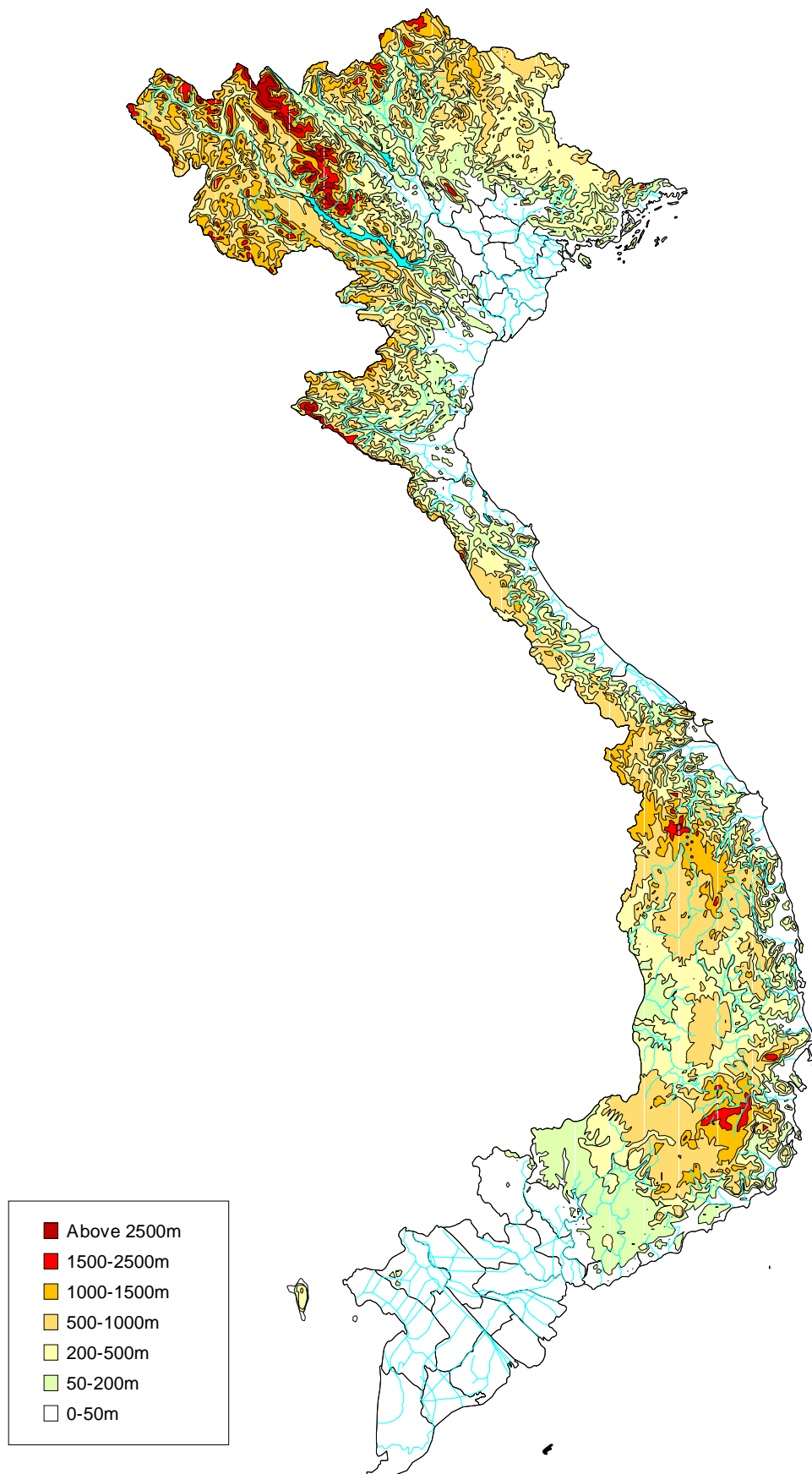
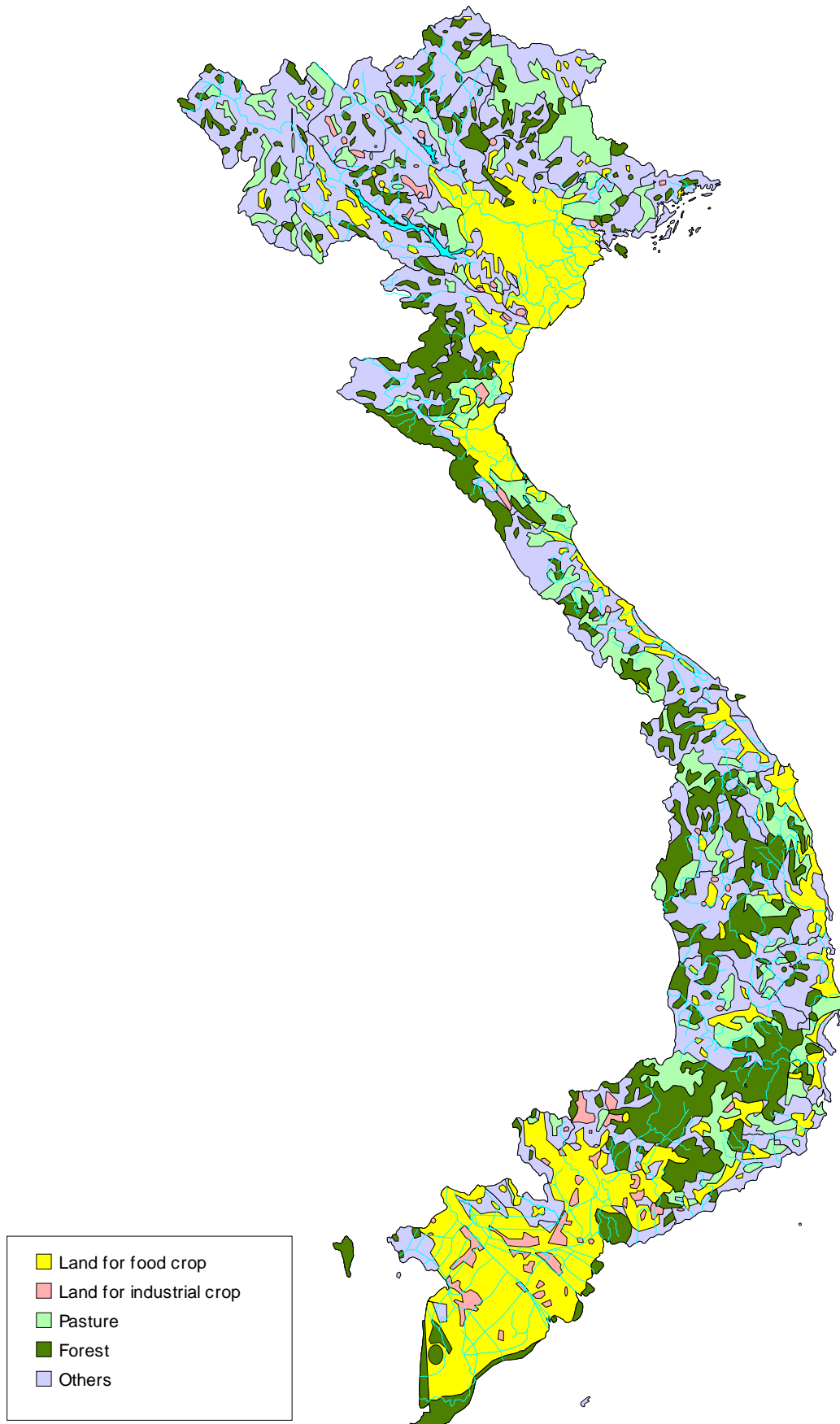


Figure 2.1.2 Present Land Use



Agricultural land is about 10-11 million ha, where paddy production dominates land use. Utilizing inland waterways and developing irrigation systems have increased the sown area for food crop from 5.2 million ha in 1940 to 8.3 million ha in 1997. At the same time, agricultural production has become increasingly diversified since the inception of Doi Moi. Various industrial crops, such as rubber, coffee, tea, and sugarcane, are significantly important in the domestic market as well as in foreign trade. Therefore, the lands for industrial and perennial crops are increasing in upland and midland areas, and even in the Mekong delta.

Vietnam has a large sea territory with an exclusive economic zone (EEZ) three times bigger than its land area (about 1 million km<sup>2</sup>). The sea territory includes more than 3,000 islands and islets. There are stretches of mangrove forests, lagoons and coral reefs along the coast. However, the degradation and pollution of the sea and coastal environment are becoming more critical. For example, it is reported that there were 400,000 ha of mangrove forests before 1940. However, 50% of the area had been destroyed by 1992.

Given the high population density and low economic condition in Vietnam, its natural resources cannot be preserved without adequate land management measures. It is therefore necessary to ensure a sustainable level of exploitation and promote a natural regeneration with the provision of more environmentally friendly technologies and conservation information. The United Nations Development Program (UNDP)-assisted Conservation Training and Biodiversity Action Plan selected biodiversity hotspots for preservation (refer to Figure 2.1.3).

## **Climate**

There are two seasons in Vietnam. However, these two seasons are different between north and south. In the north, one season is winter and the other is summer, while in the south, the two seasons are rainy and dry. The temperature is much higher in the south from November to March. At other times of the year the temperature difference between north and south is much less. In 1994, the average temperature in Ho Chi Minh City (HCMC) was over 25°C all year round, and the variation between the maximum and minimum temperatures was quite low. On the other hand, in Hanoi, it ranged from below 18°C to over 28°C.

Every year, six to seven typhoons pass through Vietnam, and 13 typhoons on average pass through Vietnamese waters. They come from the Philippines between June and November. Regardless of size, vessels must seek refuge from some of these typhoons. This consumes an anchorage time of at least one month a year. Floods in the form of either storm surges and river floods may occur during the rainy season due to the following reasons (refer to Figure 2.1.4):

- typhoon;
- heavy rain in the Central Highlands and northeast Cambodia caused by the southwest monsoon; and
- heavy rain along the upper reaches of the Mekong river.

Figure 2.1.3  
Biodiversity Hotspots

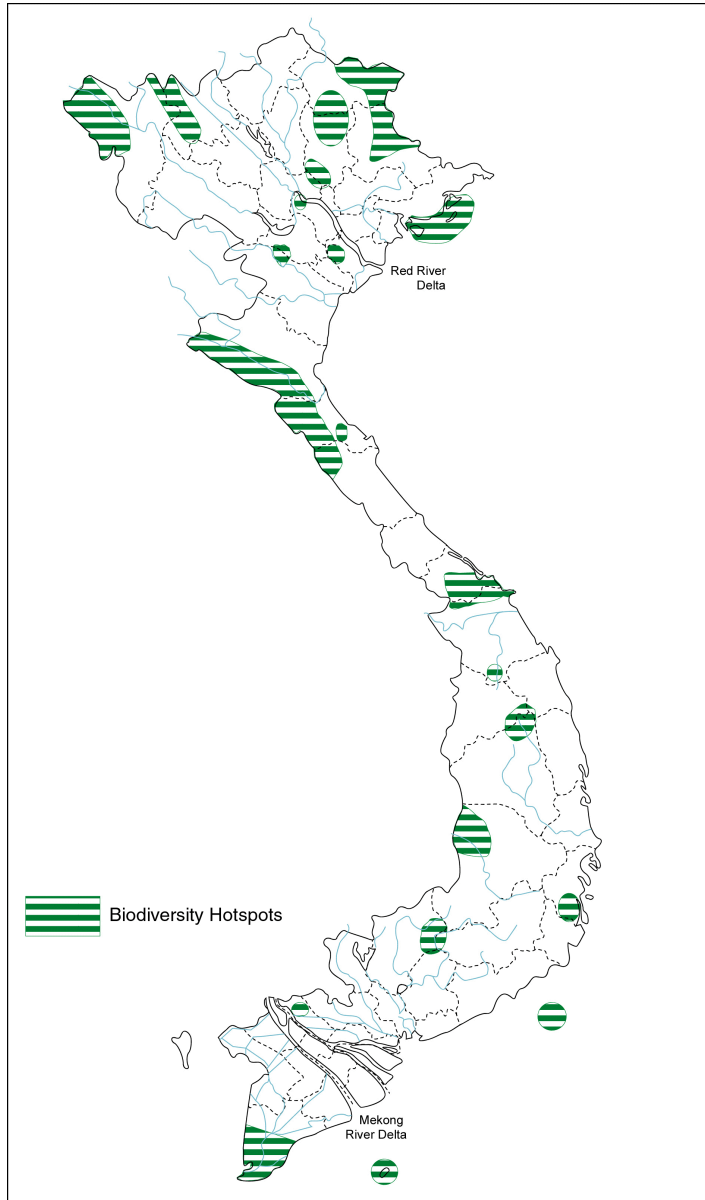
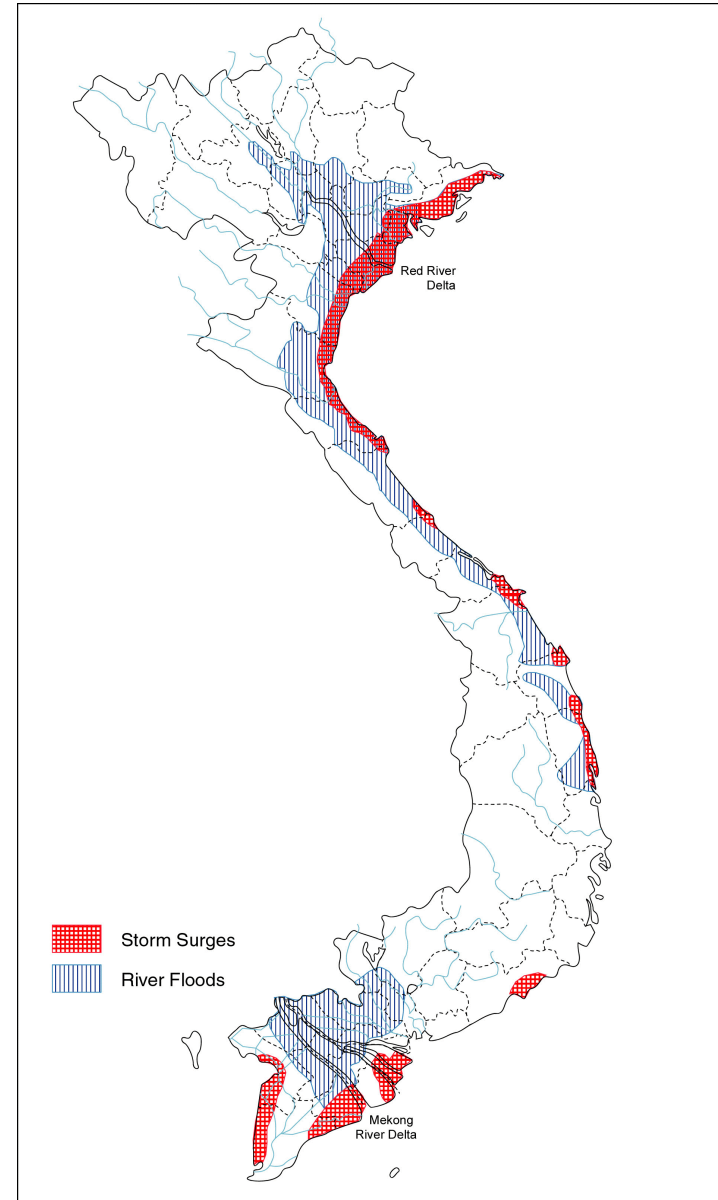


Figure 2.1.4  
Flood-prone Areas



Vietnam is still recovering from the impact of two natural disasters – Typhoon Linda in the Mekong delta in November 1997 and an intensive drought in the central region, especially in Ha Tinh and Quang Binh provinces in 1998 – when killer floods ravaged central Vietnam in November and December 1999, causing even more hardship and economic dislocation. Over the past fifty years, there has been no record of an earthquake.

## 2.2 Socio-economic Profile

### 2.2.1 Population

In the 1950s, Vietnam's population growth rate was 3.4%. As the government introduced the family planning policy or so-called "two-children policy" in the early 1960s, the growth fell to 3.1% in 1965, 2.2% in 1980 and less than 2% since 1996. In terms of gender, females are more numerous (51.3%) than males (48.7%), though the number of children under 15 shows that males are more numerous. This was caused by the war.

The proportion of people living in urban areas is not high and seems unchanged (20.8% of the total population in 1997 as compared with 20.6% in 1976). The northeastern south region, including HCMC, has a high share of urban population, at 44.5%. The growth in urban population is remarkable in the Central Highlands, at 5.5% while the entire country has 3.5%. The population density in Red River delta is extremely high (1,194 persons/km<sup>2</sup>) compared to the national average (231/km<sup>2</sup>) and even with Mekong River delta (421/km<sup>2</sup>). The least populated region is the Central Highlands (55/km<sup>2</sup>) followed by the northwest (61/km<sup>2</sup>).

Population density by district is illustrated in Figure 2.2.1, while urban population rate by province is shown in Figure 2.2.6.

Table 2.2.1 Historical Demographic Change

Year	Population (000)	Growth Rate (%)	By Sex		By Area	
			Male	Female	Urban	Rural
1975	48,030	-	-	-	-	-
1976	49,160	2.35	23,597	25,563	10,127	39,033
1977	50,237	2.19	24,197	26,040	10,116	40,121
1978	51,337	2.19	24,813	26,524	10,105	41,232
1979	52,462	2.19	25,444	27,018	10,094	42,368
1980	53,630	2.23	26,047	27,583	10,295	43,335
1981	54,824	2.23	26,665	28,159	10,499	44,325
1982	56,045	2.23	27,297	28,748	10,708	45,337
1983	57,292	2.22	27,944	29,348	10,921	46,371
1984	58,568	2.23	28,067	30,501	11,138	47,430
1985	59,872	2.23	29,285	30,587	11,360	48,512
1986	61,109	2.07	29,912	31,197	11,817	49,292
1987	62,452	2.20	30,611	31,841	12,271	50,181
1988	63,727	2.04	31,450	32,277	12,662	51,065
1989	64,774	1.64	31,589	33,185	12,919	51,855
1990	66,233	2.25	32,327	33,906	13,281	52,952
1991	67,774	2.33	32,994	34,780	13,619	54,155
1992	69,405	2.41	33,814	35,591	13,285	56,120
1993	71,026	2.34	34,671	36,355	13,663	57,363
1994	72,510	2.09	35,386	37,124	14,139	58,371
1995	73,962	2.00	36,095	37,867	14,575	59,387
1996	75,355	1.88	36,923	38,432	15,086	60,269
1997	75,665	0.41	36,880	38,785	15,707	59,958

Source: World Bank, "Viet Nam-Rising to the Challenge-", 1998  
General Statistical Office, "Statistical Yearbook", 1998

Figure 2.2.1  
Population Density by District, 1996

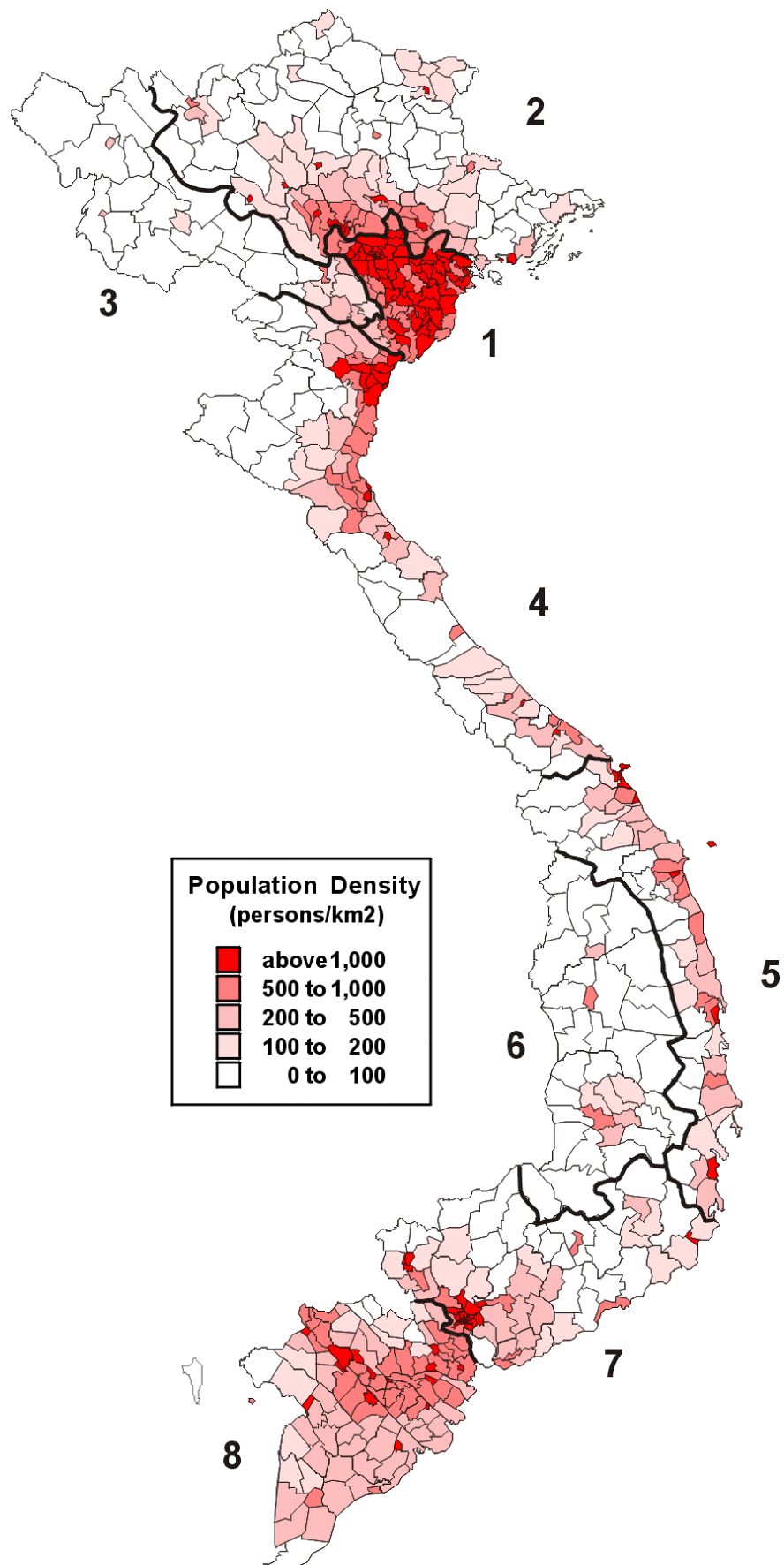


Table 2.2.2  
Population by Region, 1997

Region	Population ('000)		'89-'97 Growth Rate (%)		Density (pers/km <sup>2</sup> )
	Total	% Urban	Total	Urban	
1.Red River Delta	14,698	18.9	1.7	3.5	1,194
2.Northeast	10,846	13.9	2.7	3.7	161
3.Northwest	2,173	14.4	2.8	3.2	61
4.North Central Coast	10,196	10.9	2.4	3.6	199
5.South Central Coast	6,521	23.4	2.4	2.7	197
6.Central Highlands	2,461	19.1	4.1	5.5	55
7.Northeastern South	12,150	44.5	3.3	3.9	273
8.Mekong River Delta	16,619	15.6	2.2	2.9	421
Total	75,665	20.8	2.4	3.5	231

Source: GSO, "Statistical Yearbook", 1998

## 2.2.2 GDP

Still one of the poorest countries in the world with a per capita gross domestic product (GDP) of about US\$ 300, Vietnam is at the beginning of a long transition to a modern and open market economy.

Aggregate economic indicators have, until 1997, shown continued economic growth, over eight percent per annum over 1991-1997. A driving force was the industrial sector while the agricultural sector firmly supported the rapid economic expansion.

Vietnam's closed capital account protected it from the early impact of the Asian crisis, but with the deepening regional recession it is now quite clear to policy-makers that the impact will be more severe than expected.

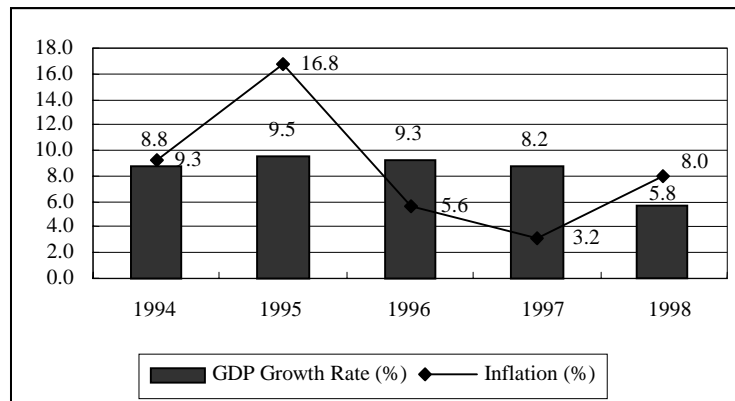
As to GDP by region, more than 50% of total GDP comes from the northeastern south and the Mekong River delta, and the south area plays the role of economic pillar, supporting Vietnam's economy.

GDP by sector is markedly different by region. In the case of the Mekong River delta, more than half of the GDP comes from agriculture. On the other hand, almost 90% of the GDP of the northeastern south region come from industrial and service sectors. That of Red River delta, however, is distributed equally in all the sectors.

Regarding per capita GDP, the northeastern south region has the highest value, at VND 7.8 million. Figure 2.2.7 shows the per capita GDP by province. Provinces having over VND 6 million are Hanoi, Ho Chi Minh City and Ba Ria-Vung Tau.



Figure 2.2.2  
Trend in GDP and Inflation



Source: MPI

Table 2.2.3  
GDP Growth Rates by Sector

Item	1991-96	1997	1998	1999
Total GDP	8.4	8.2	5.8	4.8
Agriculture/forestry/fishery	4.4	4.3	3.5	5.2
Industry	12.8	12.6	8.6	7.6
Services	9.0	7.1	4.9	2.3

Source: DSI

Table 2.2.4  
GDP and Its Sectoral Composition by Region, 1997

	GDP (bil. VND)	Per Capita (mil. VND)	% to Total	Share by Sector (%)		
				Agriculture	Industry	Services
1.Red River Delta	52,078	3.5	19.0	33.0	26.8	40.1
2.Northeast	22,905	2.1	8.4	46.0	24.9	29.1
3.Northwest	3,542	1.6	1.3	53.8	14.3	31.9
4.North Central Coast	21,788	2.1	8.0	46.3	18.2	35.5
5.South Central Coast	17,615	2.7	6.4	38.1	23.6	38.3
6.Central Highlands	6,751	2.7	2.5	64.3	12.9	22.7
7.Northeastern South	94,665	7.8	34.6	11.2	47.6	41.2
8.Mekong River Delta	54,622	3.3	19.9	56.6	16.7	26.7
Total	273,966	3.6	100.0	32.5	31.2	36.3

Source: GSO, "Statistical Yearbook", 1998

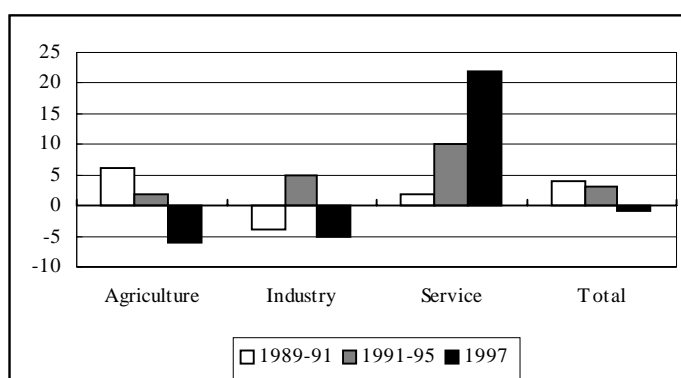
### 2.2.3 Employment

The 1997 census showed that 34.7 million people were of working age or about 46% of the country's population. It is estimated that the labor force increases by about 3% annually. The unemployment rate was 3.7% in cities, 7.3% at most in the Red River delta and 4.1% at least in the Central Highlands.

Until 1996 employment growth kept pace with labor force growth. In 1997, however, employment growth was negative, i.e., -0.6%, for the first time since Doi Moi reforms were initiated. Though service sector productivity remains low, more than half the labor shed by agriculture and industry was absorbed by the rural service sector and another third by the urban service sector.

Obviously, Vietnam is considered an agricultural country supported by numerous villages and farms where almost all arable land is under cultivation. The northeastern south region is exceptional since nearly two-thirds of the labor force is in industrial and service sectors. In Vietnam, state-owned enterprises (SOEs) generally have strong economic and social influence but its share in the employment structure is only 8.7%.

Figure 2.2.3  
Employment Growth by Sector (%)<sup>1/</sup>



Source: General Department of Statistics

1/ The 1989-1991 decline reflects the closedown of 2,000 or so state enterprises.

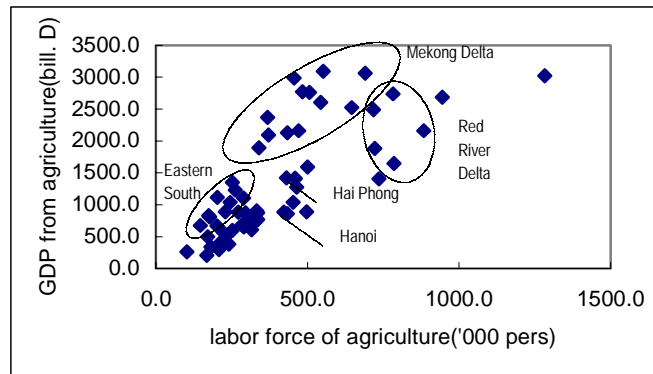
Table 2.2.5  
Employment by Region, 1998

Region	Number (million)	Share by Sector (%)			Share by Entity (%)			
		Agri- culture <sup>1/</sup>	Industry	Service	State	Non-State	Foreign	Mixed
1.Red River Delta	6.9	65.0	10.4	24.6	10.7	91.4	0.1	0.7
2.Northeast	5.3	81.7	5.1	12.2	7.4	92.6	0.0	0.3
3.Northwest	1.0	89.3	1.5	9.2	6.2	93.7	0.0	0.1
4.North Central Coast	4.5	76.4	7.1	16.5	5.8	94.0	0.0	0.2
5.South Central Coast	3.0	63.4	10.3	26.3	8.8	90.6	0.3	0.3
6.Central Highlands	1.0	79.8	3.6	16.6	7.2	92.6	0	0.2
7.Northeastern South	5.4	38.5	20.9	46.6	15.3	81.0	2.0	1.6
8.Mekong River Delta	7.6	63.9	9.0	27.1	5.3	94.0	0.1	0.5
Total	34.7	65.8	10.0	24.1	8.7	90.9	0.4	0.6

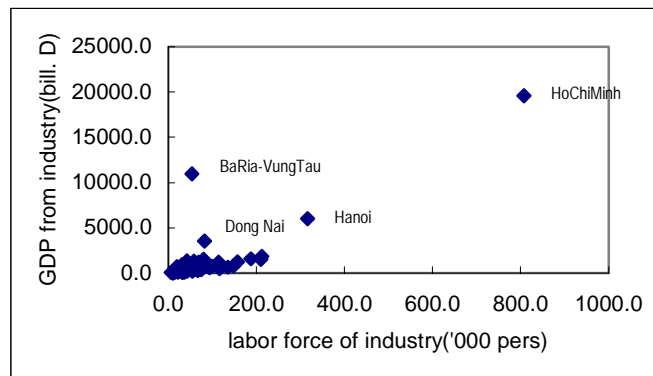
Source: GSO, "Statistical Yearbook", 1998

1/ Including forestry and fishery

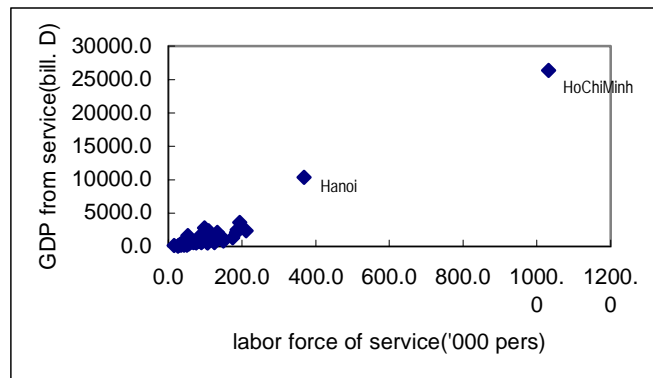
Figure 2.2.4  
Relation of Labor Force and GDP



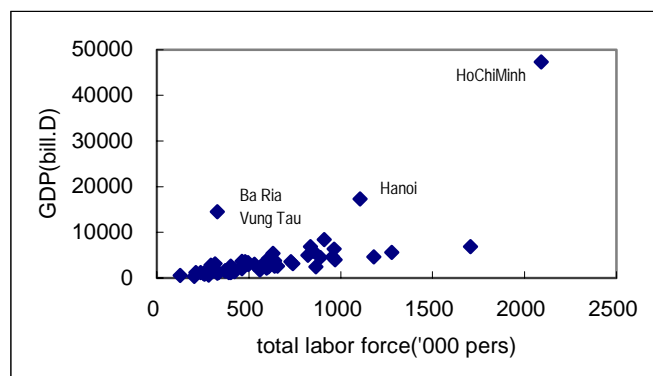
(a) Agriculture



(b) Industry & Construction



(c) Service



(d) Total

## 2.2.4 Agricultural Sector

The “rice basket” phenomenon, which means the cultivation of the crop is concentrated in an area, which in Vietnam's case is in the north and south, clearly shows in both the sown area density of food crop and crop product efficiency. The Red River delta region has a sown area density of 0.97 while the Mekong River delta region has 0.89. The sown area density of paddy is higher in the south than in the north. In addition, almost half the output of paddy comes from the Mekong River delta region. Figure 2.2.8 shows the paddy sown area density and gross output by province.

Other crops include other cereals, maize, sweet potatoes, cassava, cotton, jute, rush, sugarcane, peanut, soybean, and tobacco. Of these, sugarcane has a high gross output particularly in the Mekong River delta region.

Cattle breeding seems to be prevalent mainly in central Vietnam, buffalo raising in the north and hog raising equally distributed all over the country. Regarding marine products, about half of the total output comes from the Mekong River delta region which is endowed with rich marine and riverine environments. As to forest industry, the northeastern region recorded the largest outputs in both firewood and wood products.

Table 2.2.6  
Sown Area Density and Gross Output of Food by Region, 1997

Region	Area (000 ha)	Sown Area of Food crop (000 ha)	Gross Output of Food Converted to Paddy (000 tons)	Sown Area Density of Food Crop	Food Converted to Paddy Product Efficiency (ton/ha)
1.Red River Delta	1,231	1,195	5,524	0.97	4.62
2.Northeast	6,723	1,000	2,996	0.15	3.00
3.Northwest	3,572	255	566	0.07	2.22
4.North Central Coast	5,130	915	2,929	0.18	3.20
5.South Central Coast	3,306	521	1,792	0.16	3.44
6.Central Highlands	4,469	233	652	0.05	2.80
7.Northeastern South	4,450	691	2,175	0.16	3.15
8.Mekong River Delta	3,952	3,521	13,984	0.89	3.97
Total	32,833	8,331	30,618	0.25	3.68

Source: GSO, “Statistical Yearbook”, 1998

Table 2.2.7  
Other Products (Livestock, Fishery and Forestry) by Region, 1997

Region	Cattle (000 heads)	Buffalo (000 heads)	Pig (000 heads)	Sea Products (tons)	Exploited Wood (000 m <sup>3</sup> )	Exploited Fire- wood (000 m <sup>3</sup> )
1.Red River Delta	321	196	3,913	122,896	154	484
2.Northeast	584	1,300	3,748	49,184	487	9,165
3.Northwest	141	342	764	4,964	227	2,772
4.North Central Coast	871	670	2,764	126,050	291	7,354
5.South Central Coast	905	125	1,622	241,280	317	1,796
6.Central Highlands	437	50	728	4,472	297	1,745
7.Northeastern South	484	163	1,506	297,994	198	1,361
8.Mekong River Delta	160	99	2,592	883,592	528	2,680
Total	3,903	2,945	17,637	1,730,432	2,499	27,357

Source: GSO, “Statistical Yearbook”, 1998

## 2.2.5 Industrial Sector

There are more than 620,000 establishments engaged in various industrial production activities. Of this number, 1,880 SOEs and 587 foreign-invested enterprises account for small shares in terms of the number of establishments but take up considerable shares of 46.7% and 28.0%, respectively, of the entire industrial outputs.

The northeastern south region, encompassing HCM City, Dong Nai and Ba Ria-Vung Tau, produces 53.7% of the national industrial output, since 73% of foreign-invested enterprises are located there. The second-largest industrial region is Red River delta with a concentration of 33% of SOEs and 14% foreign-invested enterprises. Figure 2.2.9 illustrates the number of enterprises and their gross outputs by province.

Table 2.2.8  
Industrial Establishments by Region, 1997

Region	No. of Industrial Establishments	Share by Entity (%)		
		SOEs	Local Non-SOEs	Foreign-invested Enterprises
1.Red River Delta	241,857	0.26	99.71	0.03
2.Northeast	66,207	0.38	99.61	0.02
3.Northwest	7,371	0.53	99.46	0.01
4.North Central Coast	103,308	0.19	99.80	0.01
5.South Central Coast	47,611	0.31	99.64	0.05
6.Central Highlands	9,296	0.40	99.60	0.02
7.Northeastern South	65,259	0.67	98.67	0.66
8.Mekong River Delta.	85,266	0.17	99.79	0.04
Total	626,715	0.30	99.52	0.09

Source: GSO, "Statistical Yearbook", 1998

Table 2.2.9  
Industrial Gross Outputs by Region, 19961/

Region	Industrial Gross Outputs (VND bil)	Share by Entity (%)		
		SOEs	Local Non-SOEs	Foreign-invested Enterprises
1.Red River Delta	24,596	52.98	25.71	21.31
2.Northeast	10,766	78.40	13.47	8.14
3.Northwest	453	37.31	56.95	5.74
4.North Central Coast	4,764	60.54	34.47	5.00
5.South Central Coast	6,950	56.72	33.87	9.41
6.Central Highlands	1,128	40.25	58.07	1.77
7.Northeastern South	75,918	38.75	19.83	41.42
8.Mekong River Delta	16,707	45.91	47.55	6.54
Total	141,283	46.72	25.26	28.02

Source: GSO, "Statistical Yearbook", 1996

1/ 1997 data in the Statistical Yearbook shows discrepancy in some figures.