

CHAPTER 2

GENERAL CONDITION OF THE STUDY AREA

CHAPTER 2 GENERAL CONDITION OF THE STUDY AREA

2.1 Natural Conditions

The Lao People's Democratic Republic (Lao PDR or Laos) is a landlocked country bordered in the north by China and Myanmar, in the east by Vietnam, in the south by Cambodia, and in the west by Thailand. The capital city of Lao PDR is Vientiane located on a plain just northeast of the Mekong River, which is the major economic centre of Laos. The area of the whole nation is 236,800 km².

2.1.1 Climate

Vientiane Capital City is located in the southwest part of Lao PDR. The climate of the city is categorised as tropical monsoon characterised by two seasons, the dry and rainy seasons. In the dry season, usually from November until March, the average temperature is 24.1 deg. C and ,rain rarely falls. In the rainy season, usually from April until October, the average temperature is 27.9 deg. C and more than 90 % of the annual precipitation falls in this season. The average annual precipitation is 1700 mm.

2.1.2 Topography

The entire land area of Lao PDR, is 236,800 km². 80 % of the country is mountainous and 20 % is plain area extending along the Mekong River and its tributaries. The cultivated land area is 986,000 ha, or 4 % of the total area of the country. The ratio of paddy fields to the total cultivated land area is 75 %.

The northern area of the country is mountainous with an average elevation of 1,000 to 1,500 m above sea level, and the central and southern mountainous areas have an average elevation of 600 to 1,000 m above sea level.

Vientiane Capital City is situated on an alluvial plain extending along the left bank of Mekong River east to west. The administrative area of Vientiane is about 3,920 km² and the ground elevation ranges from 160 m to 170 m above sea level. The area designated for urbanization extends along the left bank of Mekong River and occupies an area of 210 km². The urban area of Vientiane is an old city area with a dense population, and is located between the Mekong River and a hinterland of

swamps and ponds.

2.1.3 Geology

The geological features of the capital city area are talus, terrace, and alluvial deposits from the Mesozoic Cretaceous period. Alluvial deposits are mostly unconsolidated clay, transported by the Mekong River flooding. The urban area is covered with alluvial soil, but the area further from the river is mostly covered with laterite.

2.2 Institutional Situation

2.2.1 Central Administrative Institutes

The central administrative institutions are the National Assembly (Parliament) (a legislative institution) led by the President, (administrative institution) and the Judicial institution (Peoples' Supreme Court and Supreme Public Prosecutor's Office) under which each grade court and prosecutor's office are.

There is a Central Government which operates under the President who is appointed as the Head of State of the Lao PDR, and who is elected by the National Assembly. The Prime Minister is appointed by the President. The Prime Minister bears overall responsibility for the implementation of administration as the head of Central Government.

The Central Government, led by the Prime Minister and Vice Prime Minister, consists of 13 ministries, a committee, a Prime Minister's Office and the Central Bank. The organizational structure of the the Central Government is shown on Figure 21-1.

(1) MCTPC

The Ministry of Communication, Transport, Post and Construction (MCTPC) holds the jurisdiction of the water supply and wastewater services. The organizational chart of the MCTPC is shown on Figure 21-2.

Figure 21-1 Organization structure of the Central Government

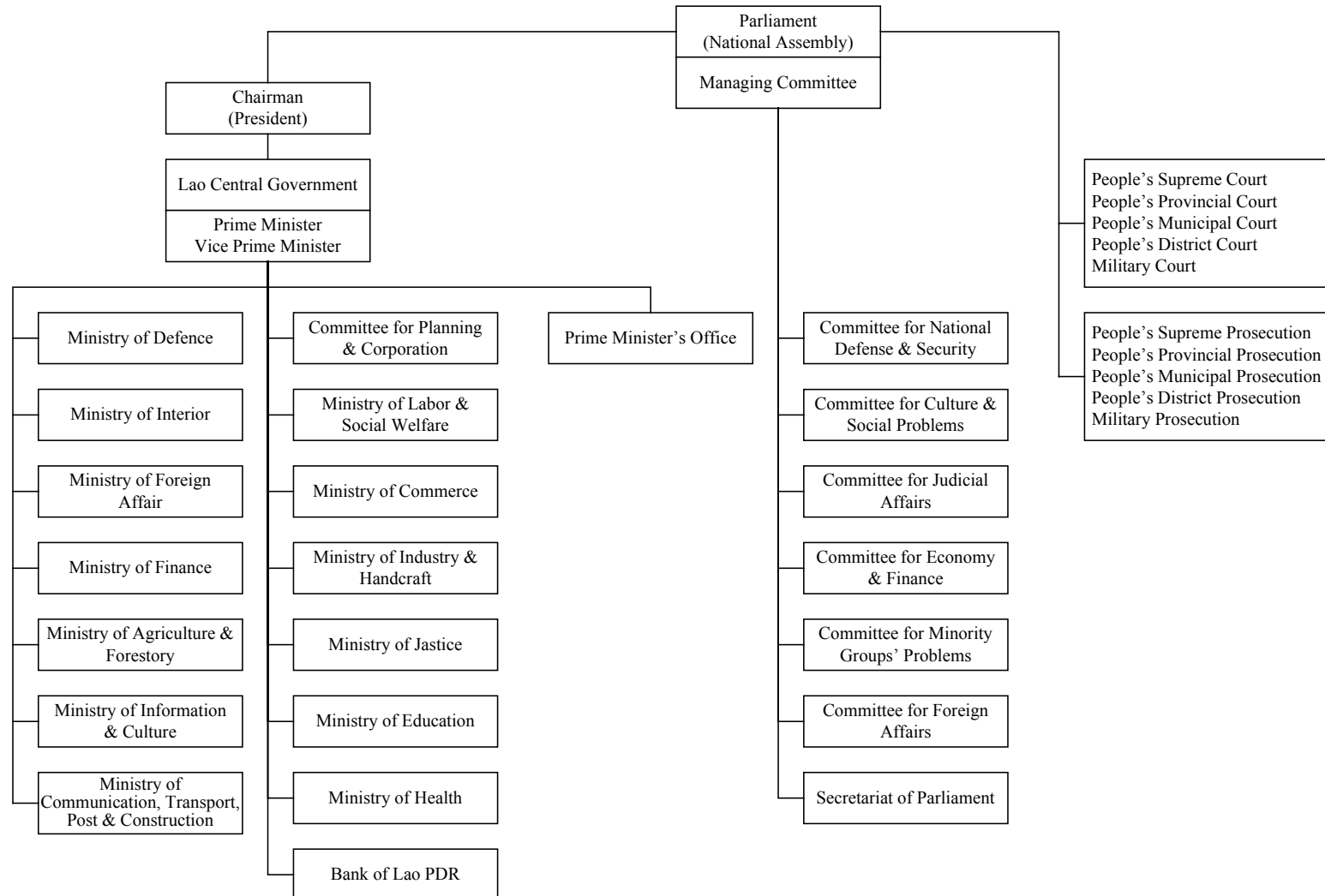
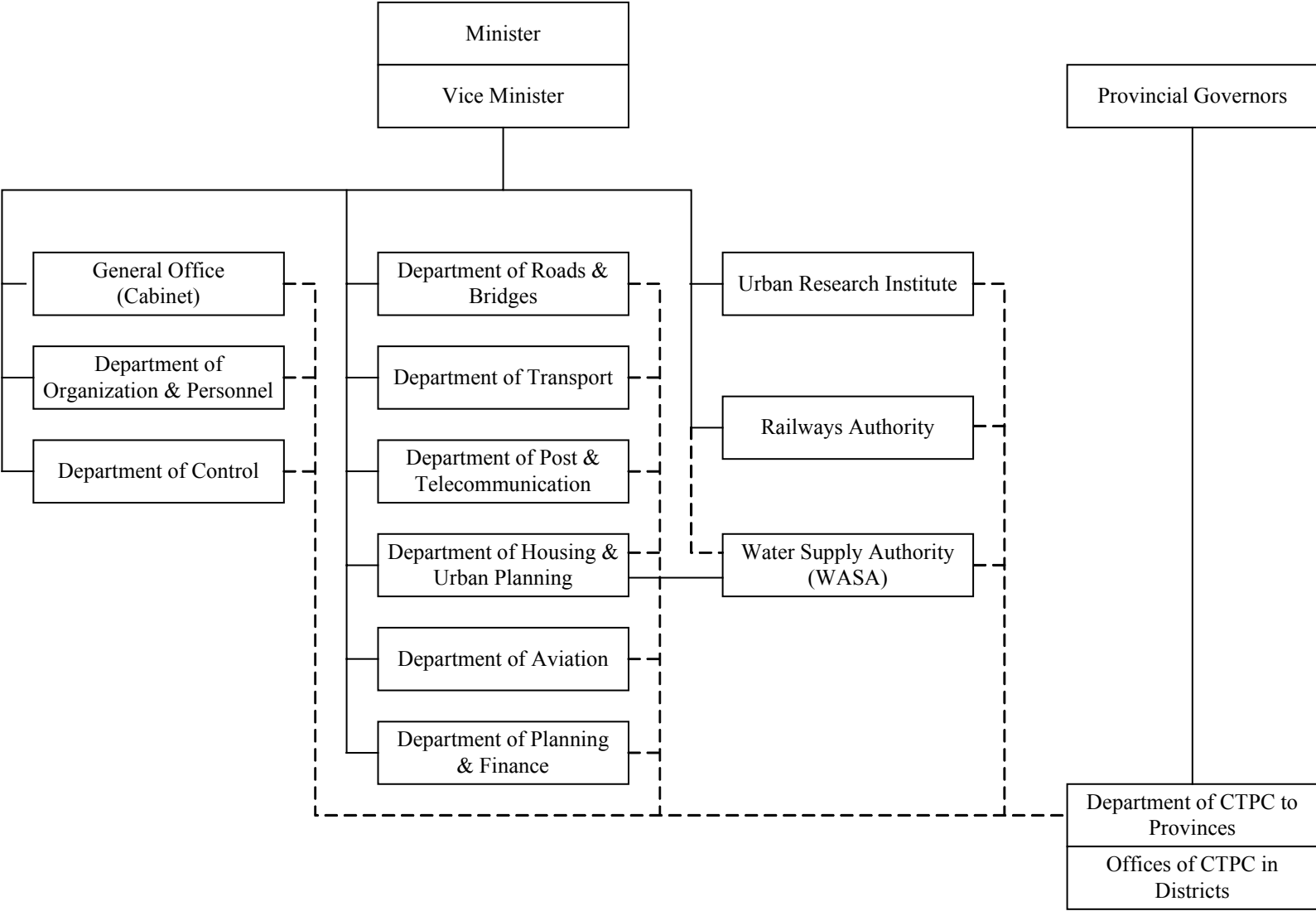


Figure 21-2 Organization chart of the MCTPC



The functions of the MCTPC are as follows,

- a) To facilitate and coordinate the development process for the water supply and wastewater management systems in urban and rural areas throughout the country.
- b) To promote and mobilize all available resources toward achieving the set goals and objectives.

The Minister is responsible for the drafting, promoting and mobilizing of the water supply and wastewater management system.

The management and development of water supply and wastewater management systems, is governed by a proclamation (Prime Minister Decision on Management and Development of Water Supply Sector, 37/PM) decided on in September, 1999, and it is this basic policy (A National Water Policy) that governs water supply and wastewater management systems of this country.

(2) The Bureaus Related to Water Supply Sector under the MCTPC

The institutions carrying out functions relating to water supply and wastewater management systems for which MCTPC is responsible, are as follows:

- 1) Department of Housing & Urban Planning, DHUP
- 2) Water Supply Authority, WASA

Other related Ministries and offices, which are partly responsible for the water supply and wastewater services, are as follows:

- 1) Ministry of Public Health, MPH
- 2) National Center of Environmental Health & Water Supply, NEW
- 3) Ministry of Finance, MOF
- 4) Water Resources Coordination Committee, WRCC

1) DHUP

The function of DHUP is to assist the MCTPC in the administration of the water supply sector as follows:

- a) To set out short, medium and long term strategies on water supply development.
- b) To plan and organize staff training relating to the planning and management of water supply systems.
- c) To study the relevant regulations, standards, technical specifications and performance indicators of water supply systems operation, in collaboration with the WASA

2) WASA

The functions of WASA are as follows:

- a) To assist the Minister of MCTPC on technical issues relating to the water supply sector. This includes the redevelopment of the MCTPC's strategic plan on water supply and wastewater management systems, which sets out in detail, the planning, action plan and detailed projects to be implemented in the urban and rural areas throughout the country.
- b) To set norms, regulations, technical standards and techno-economic specifications on water supply and wastewater management systems.
- c) To direct on behalf of the MCTPC the management and monitoring of the implementation of the water supply sector policy.

3) WASA's Regulatory Board

The functions of WASA's Regulatory Board are to make and direct key decisions and to consider the regulatory matters and complaints or grievances from consumers or water supply enterprises.

The WASA's Regulatory Board has a Secretariat and is comprised of nine members.

2.2.2 Local Administrative Institutions

(1) Provincial Governments

1) Areas

The Lao PDR consists of one capital city (Vientiane Capital City), 16 provinces and one special region (Xaysomboon Special Region). The 16 provinces are composed of Phongsaly, Luangnamtha, Oudomxay, Bokeo, Luangprabang, Huaphanh, Xayaburi, Xiengkhuang, Vientiane, Borikhamxay, Khammuane, Savannakhet, Saravane, Sekong, Champasack and Attapeu. The country is generally divided into four regions. The metropolitan region consists of Vientiane Capital City, Vientiane Province and Xaysomboon Special Region. The northern region is comprised of eight provinces, Phongsaly, Luangnamtha, Oudomxay, Bokeo, Luangprabang, Huaphanh, Xayaburi, and Xiengkhuang. The central region is comprised of two provinces, Borikhamxay and Khammuane. The southern region is comprised of five provinces, Savannakhet, Saravane, Sekong, Champasack, and Attapeu. However, this regional classification is not always fixed officially, because some reports use different classifications.

2) Functions of Water supply

The water supply sector of each province is responsible for the following matters.

- a) To coordinate, facilitate investment support for the development of water supply and wastewater management systems, and environmental hygiene.
- b) To collaborate with the Department of Communication, Transport, Post and Construction (DCTPC) of the province to establish suitable solutions to assist low-income households who cannot afford the cost of sanitary facilities.
- c) To set by-laws for the water supply sector within the province concerned.
- d) To direct water supply and sanitation project implementation in the province concerned.
- e) To collaborate with the WASA on proposals for water sources development. This is done through the WRCC in accordance with the Prime Minister's Decree No 09/PM dated 08 February 1999 on the establishment and mandate of the WRCC.
- f) To make institutional arrangements for the implementation and management of centralized wastewater management systems for water supply, when these systems become economically and financially viable. Until the time that those systems are implemented, on site treatment will be pursued, and the implementation and management of the facilities shall be the responsibility of the individual owner of the property.
- g) Rural water supply and urban and rural environmental hygiene in the province concerned.

(2) Community

According to Sec.4 and 5 of the Law on Water and Water Resources, water and water resources are the property of the national community represented by the State in their management and distribution for widespread and reasonable consumption. All communities throughout the country are responsible for the protection of the water supply and wastewater management systems and environmental hygiene within the areas they live. All the beneficiary communities participate in the development of water supply wastewater management systems from the beginning stage until during the period of operation and maintenance. At the project preparation stage, all beneficiary communities will be consulted on their needs, expectations, affordability, and willingness to pay for improved facilities. Feedback is incorporated into project design.

(3) Nam Papa State-Owned Enterprises (NPSE)

1) Responsibilities of the NPSE

Under the WASA, NPSEs are responsible for the following water supply and waste management enterprises. The businesses are run on the basis of commercial principles which are prescribed in the Prime Ministerial Decision on Management and Development of Water Sector (37/PM). The responsibilities of the NPSEs are as follows:

- a) To manage and operate all water supply and wastewater management systems and to develop raw water in urban areas within their respective provincial boundaries. The operations are based on commercial principles and are run in accordance with three-year rolling corporate plans.
- b) To carry out the management of sanitary facilities in compliance with sanitation regulations...
- c) When NPSE's fail to readily achieve commercial targets, they will receive financial and technical support from central government as well as from provincial governments concerned.

2) Standards of Operation

- a) NPSEs are responsible for the management and operation of all metered water supplies within their respective provincial boundaries. They operate on the commercial principles and in accordance with 3 year rolling corporate plans, which are reported to WASA.
- b) NPSEs maintain NRW (Non Revenue Water) levels of no more than 30% as recommended by WASA
- c) NPSEs adopt and maintain full commercial accounting systems, and prepare annual financial accounts, which are reported to WASA.
- d) Accounts receivable for NPSEs, does not exceed 3 months after billing; NPSEs adopt a strict disconnection policy for consumers whose bills are more than 3 months overdue. All NPSEs adopt a target of 90% collection efficiency for water bills as a standard policy.
- e) NPSEs operate and maintain their systems in accordance with performance indicators such as water use efficiency, water quality, reliability of supply, staff utilization and the level of consumer complaints.
- f) NPSEs make provision for depreciation of capital in accordance with the norms, regulation and laws issued by the State. All depreciation provision are maintained in a dedicated account for such purposes and constitute an expense item in the PNP budget, and qualifies as a tax-deductible item.

2.3 Socio-economic Conditions

2.3.1 Social Conditions

(1) Administration

There are 142 Districts, in the provinces throughout the Lao PDR, which contain 10,873 villages, as of 2001. The village is the smallest administration unit of the country. The study area in Vientiane Capital City has an administrative area of 3,920 km² or 1.7% of the national territory. Among the nine districts in Vientiane Capital City, the study area extends to six districts, i.e., Chanthabuly, Sikhottabong, Xaysetha, Sisattanak, Xaythany, and Hadxaifong Districts. In the Nam Papa Vientiane Capital City (NPVC) Master Plan, the area served by the NPVC covers 152 villages in six districts of the 486 villages in nine districts of the capital city. In this current study, the study area covers 200 villages in seven districts of the 486 villages in the capital city. This structure is tabulated in the table below.

Code	District Name	Number of Villages		
		Existing	In Service Area	In Study Area
0101	Chanthabuly	37	24	25
0102	Sikhottabong	59	38	43
0103	Xaysetha	51	17	22
0104	Sisattanak	40	38	43
0105	Naxaithong	55	0	6
0106	Xaytany	99	20	34
0107	Hadxaifong	57	15	27
0108	Sangthong	35	0	0
0109	Mayparkngum	53	0	0
	Total	486*	152	200

Note: * As of 2001, the number of villages increased to 491.

(2) Population

According to the 1995 census, Laos had a population of 4.57 million people. This population increased by 0.99 million from the 1985 census. During the ten years between these censuses, the average growth rate was 2.5% per annum.

The population of Vientiane Capital City in the 1995 census was 524,000, accounting for 11% of the national population. It has grown at an annual rate of 3.3% on average between the two censuses. The population density of Vientiane Capital City was 134 persons/km² as shown in Table 23-1, which was much higher than the national density of 19 persons/km².

The urban population in Vientiane Capital City was 331,000 or 63% of the capital city population in

1995. Vientiane Capital City is heavily urbanized. The urban population in the country was 17%, and the second largest urbanized province was Vientiane Province having an urban population of 17.5%. Furthermore, since 44% of Vientiane Capital City was not born in the capital city, they immigrated into the capital city from other provinces. Thus, Vientiane Capital City has a population of people drifting in from the rural areas.

In the census, an urban area is defined as an area which satisfies at least three of the five conditions below. A village is considered as a minimum unit for the urban area. Then, any village which does not satisfy at least three of the conditions below is defined as rural area.

- (a) There is a market in the village.
- (b) There is a road for motor vehicle access to the village.
- (c) The village must lie in the vicinity of the capital city where the district or provincial authority is located.
- (d) The majority of households in the village area are electrified.
- (e) There is a tap water supply in service to the majority of households.

The number of households in Vientiane Capital City was 90,000 in the 1995 census. Then, an average family size was calculated at 5.8 persons per household, as shown in Table 23-1. Among the nine districts, Xaysetha District recorded the largest family size of 6.0 persons per household. On the other hand, Hadxaifong District had the smallest family size of 5.4 persons per household.

Table 23-1 Population Density and Average Family Size at 1995 Census

Country/Province Capital City/District	Census Population	Land Area (km ²)	Density (Persons/ha)	Household Population	Number of Households	Family Size Persons/Family
Lao PDR	4,574,848	236,800	19.3	4,506,205 *1	748,529	6.0
(1) Urban	781,753	-	-	753,871 *1	128,519	5.9
(2) Rural	3,793,095	-	-	3,752,334 *1	620,010	6.1
Vientiane Capital City	524,107	3,920	133.7	508,884 *1	89,413	5.7
(1) Urban	330,798	-	-	319,136 *1	55,984	5.7
(2) Rural	193,309	-	-	189,748 *1	33,429	5.7
Vientiane Capital City (including Collective Households)				524,107 *2	90,133	5.8
1. Chathabuly	58,855	-	-	58,855 *2	10,203	5.8
2. Sikhottabong	74,251	-	-	74,251 *2	12,612	5.9
3. Xaysetha	75,255	-	-	75,255 *2	12,562	6.0
4. Sisattanak	58,178	-	-	58,178 *2	9,850	5.9
5. Naxaithong	44,104	-	-	44,104 *2	7,600	5.8
6. Xaythany	97,829	-	-	97,829 *2	16,512	5.9
7. Hadxaifong	64,962	-	-	64,962 *2	11,933	5.4
8. Sangthong	16,728	-	-	16,728 *2	2,928	5.7
9. Mayparkngum	33,945	-	-	33,945 *2	5,933	5.7

Source: Results from the Population Census 1995, April 1997, National Statistical Centre, State Planning Committee
Population in Vientiane 1995

Note: *1 Population in private households excluding collective households.

*2 Population including collective households

(3) Labour Force

In the Lao PDR, the population of 10 years old and over was 3.16 million in the 1995 census year, accounting for 69% of the total population of the country. Of this total population, 2.22 million people participated in the labour market, accounting for 70%. 98% of the labour force was employed so, according to these statistics, the unemployment rate was only 2% in 1995. In Vientiane Capital City, the population was 524,000 in the 1995 census. Since the population of 10 years old and over was 394,000 in the same year, it accounted for 75% of the total population. Of this population, 60% participated in the labour market as economically active people. 93% of the labour force was employed in the labour market, and thus 7% was unemployed.

The agriculture sector, also called the primary sector, absorbs the greatest portion of manpower resources in the country. In the 1995 census, the sector accounted for 1.85 million or 85% of the total employed workers (2.17 million) in the country. Since this sector absorbed 89% of the labour market in the 1985 census, it has recorded a slight decrease of 4% between the two censuses, as shown in the figure below.

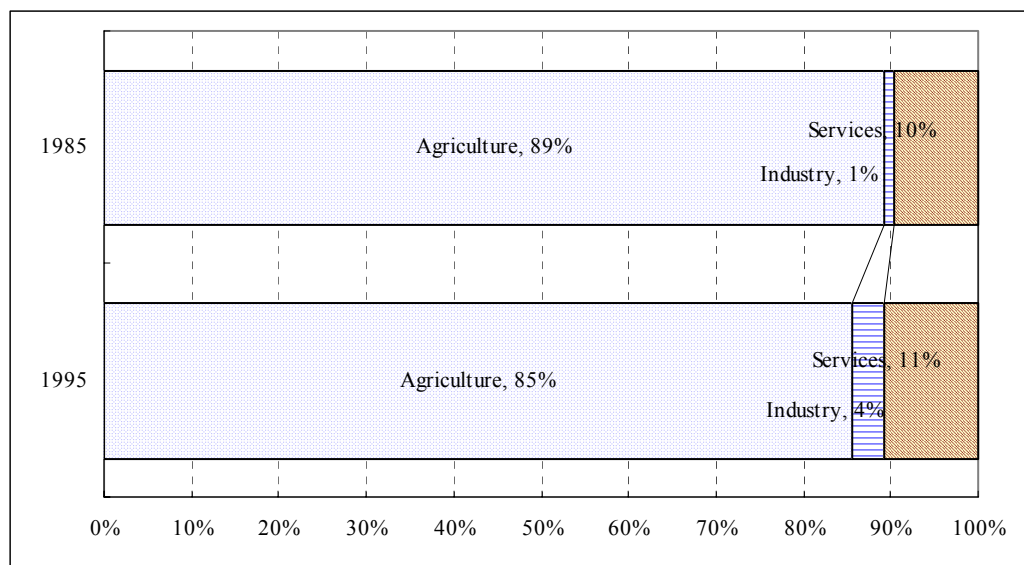


Figure 23-1 Distribution of Labour Force by Major Economic Sector in Lao PDR

On the other hand, the services sector accounted for 300,000 or 11% of the total employed workers in the 1995 census. Since the sector employed 10% of the labour market in the 1985 census, it recorded a 1% increase between the two censuses. The industry sector utilised 83,000 or 4% of the total employed workers in the 1995 census. Since the number of people employed in the industry sector was only 1% in the 1985 census, this sector has grown at a considerably high rate but its share of the labour market was still small compared with the other sectors.

In Vientiane Capital City, the labour force distribution in urban areas was different from the national average. The total labour force in the urban areas of the capital city was 130,400 in the 1995 census year, accounting for 60% of the total labour force in the capital city. Of this total labour force, 31,600 workers were employed in the agriculture sector, accounting for 25% and 61,800 workers, or 47%, of the total labour force were in the services sector. The industry sector employed 37,000 workers or 28% of the labour market. The structure of this distribution of the labour market is illustrated in the figure below.

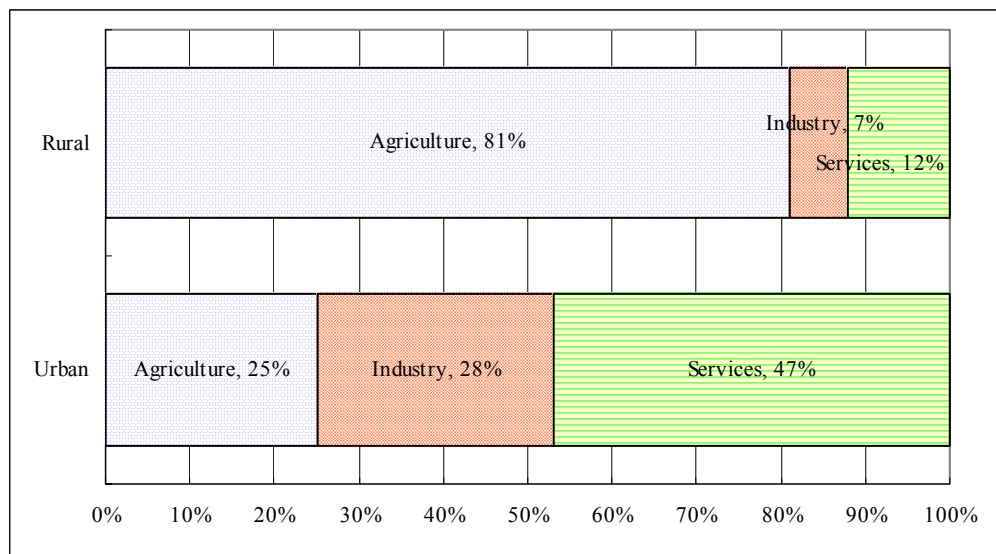


Figure 23-2 Distribution of Labour Force by Major Economic Sector in Vientiane Capital City: 1995

On the other hand, the labour force distribution in rural areas of Vientiane Capital City was similar to the national average, although the labour force of the industry and services sectors were slightly larger than the national average. The total labour force in the rural areas accounted for 87,700 workers, which represented 40% of the total labour force of the capital city.

As of 2003, the average labour wage in the Lao PDR is said to be the lowest in Asian countries. The Ministry of Labour and Social Welfare is revising the minimum wage to 140,000 kip per month in new regulations.

(4) Poverty Condition

The incidence of poverty in the Lao PDR was presented as 46% of the national population in 1992/93, according to “Poverty in the Lao PDR during the 1990’s, Nanak Kakwani and others, 2002, National Statistical Centre (NSC)”. However, the incidence of poverty improved to 39% by 1997/98.

The annual rate of poverty reduction was calculated at 3.3%. Since the GDP grew at 4.6% per annum on average during the same period, the incidence of poverty has been improved at modest pace.

The incidence of poverty in Vientiane Capital City recorded the lowest among the 18 provinces in the country. The incidence of poverty was 34% in 1992/93 and improved to 14% in 1997/98. Thus, the annual reduction rate of poverty was calculated at 18.2%. As can clearly be seen, the incidence of poverty in Vientiane Capital City has considerably improved at a high rate.

Nationally, the infrastructure services to the poor are generally worse than those to the non-poor as a whole. Poor households are concentrated in areas where infrastructures are more underdeveloped. In fact, about only 39% of the poor has access to piped water or protected wells in the country, but 57% of the non-poor has access to the safe water sources in 1997/98. In the same manner, only 17% of the poor are linked to electricity networks, but about 40% of the non-poor can access the electrical networks.

The degree of inequality is measured with a Gini index. The Gini index is stated as a uni-dimensional measure of inequality, i.e., the lower the index, the more equal people are said to be. Inequality in the Lao PDR is said to be low, as compared to other Asian countries. According to 1993 information, the Gini index of the Lao PDR was 36% against Indonesia with 37%, Thailand with 41%, Malaysia with 44% and Philippines with 46%. According to the analysis of household surveys in 1992/93 and 1997/98 by the NSC, however, the Gini index increased from 33% in 1992/93 to 37% in 1997/98. Accordingly, it can be seen that inequality in the Lao PDR has worsened gradually.

(5) Ethnic Groups and Religion

In the 1995 census, the NSC confirmed that there are 48 ethnic groups in the country. The census report shows the top three ethnic groups as 53% Lao, 11% Ihmu and 10% Phutai. Around 7% belonged to the Hmong ethnic group. Following them, the ethnic groups accounting for more than 1% of the total population were as follows: Leu of 2.6%, Katang of 2.1%, Makong of 2.0%, Kor of 1.4% and Xuay of 1.0%.

The NSC reported the distribution of religious groups in the country in the 1995 census. The predominant religions were Buddhism accounting for 65% of the total population and Animism who constituted 33% of the population. Following them, Christianity accounted for only 1.3% of the population. Other religions occupied less than 1%.

(6) Public Health and Medical Conditions

In the Lao PDR, around 315,000 patients suffering from water-borne diseases were cared for in hospitals in 2001. The number of patients was segregated to 257,300 outpatients to 3.03 million population of selected provinces and 57,700 inpatients to 2.90 million populations of selected provinces. Then, their disease incidence rates were 8.5% and 2.0%, respectively. According to the records of patients with water-borne diseases for the three years between 1999 and 2001, the average days of hospital treatment for inpatients for the three years were as follows: 2.9 days for diarrhoea, 5.8 days for typhoid fever, 4.3 days for dysentery, 5.3 days for cholera, and 3.0 days for conjunctivitis.

In Vientiane Capital City, there are ten hospitals, comprising one central hospital at Setthathirath and nine district hospitals located in the respective districts of the capital city. According to Department of Health in Vientiane Capital City, there were 2,826 patients suffering from major water-borne diseases such as diarrhoea, typhoid fever and dysentery in 2002. The number of patients was composed of 2,165 outpatients and 661 inpatients. The average data of these diseases for the five years between 1998 and 2002 are summarised in the table below.

	Out-patient	In-patient	Morbidity Rate (Persons/100,000)	Average Days of Hospital Treatment (days)
Diarrhoea	1,506	406	342	3
Typhoid Fever	6	120	21	6
Dysentery	178	74	30	3

2.3.2 Macro Economic Features

(1) National Accounts

The gross domestic product (GDP) in the Lao PDR was 15.7 trillion kip (equivalent to approximately US\$1.8 billion) in 2001 at current prices. The GDP was broken down into the gross value added (GVA) of the main economic sectors as follows: 7.97 trillion kip in the agriculture sector, 2.77 trillion kip in the industry sector, and 3.88 trillion kip in the services sector. These sectors respectively accounted for 51%, 24% and 25% of the economy.

In 2001, the GDP, at 1990 constant prices was counted as 1.19 trillion kip. Since the GDP in 1990 was 0.62 trillion kip at 1990 constant prices, its real growth rate was calculated at 6.5% per annum

on average for the 12 years. Among the major economic sectors, the industry sector recorded the highest growth rate of 10.2% per annum for the same period. On the other hand, the agriculture sector has grown at 5.2% per annum, lower than the national average rate of 6.5%. For the past 12 years, the GDP growth rate dropped to 4.0% due to Asian financial crisis in 1998, but the government regained its economic stability after 1999.

Per capita GDP was 2,910 kip at current prices, equivalent to approximately US\$ 330 in 2001. That has grown at 4.0% per annum on average since 1990. The Lao PDR is still ranked together with Cambodia and Myanmar in the LLDC level because of the less than US\$400 of GDP per capita. That is considerably behind in a comparison in the per capita GDP of other ASEAN countries, such as, Thailand of US\$ 2,500, Philippines of US\$ 1,100, Indonesia of US\$ 1,000 and Malaysia of US\$ 4,500.

The gross regional domestic product (GRDP) in the respective provinces is not available. In the report of “State of the Environment, Lao PDR 2001, August 2001, UNEP and NORAD”, GRDP index for the respective provinces was presented together with other socio-economic indicators, which was quoted originally from “The Dynamics of Regional Disparities in Laos, Asian Survey, July 1998, BOURDET, I.”. The summary of this report is shown in the table below.

Item	Unit	Lao PDR	Vientiane Capital City	Remark
GDP per Capita	Mean=100	100	142	1992/93
Access to Safe Water of All Households	%	15.1	48.0	1995
Use of Electricity of All Households	%	25.4	84.0	1995

According to the table above, the GRDP per capita of Vientiane Capital City was estimated as 142% of the national average. Since the basic data are based on 1992/93 information from 10 years ago, the present regional disparity of GRDP per capita now might be more than that (142%) in the table above.

(2) Economic Sector Profile

The Lao PDR's economy has been heavily dependent on the natural resource base. After introducing economic reforms in 1986 however, the government started to develop a market-oriented economy. Thus, the GVA of the agriculture sector accounted for around 70% of GDP in 1985, but in 2001 its share dropped down to 51%. In terms of labour force, the agriculture sector employed 89% of the total workforce in 1985, but around 85% of the total in the 1995 census. On the other hand, the GVA of the industry sector accounted for only 11% in 1985, but in 2001 its GDP share rose to 23%.

1) Agriculture Sector

The agriculture sector generally composes of three sub-sectors, that is, crops, livestock and fishery, and forestry, in the Lao PDR. In 2001, the GVA of this sector was 7.97 trillion kip at current prices. The respective sub-sectors recorded that their GVAs were 4.75 trillion kip for the crop production sub-sector, 2.73 trillion kip for livestock and fishery, and 0.50 trillion kip for forestry. The percentage distribution in the agriculture sector was calculated as 60% for crop production, 34% for livestock and fishery, and 6% for forestry.

In 2001, around 990,000ha of land in Laos was under cultivation. Of the total cultivated area, 747,000 ha or 76% was devoted to rice production. In 2001, the total rice production amounted to 2.3 million tons for the entire country. In Vientiane Capital City, on the other hand, the amount of rice produced was 0.28 million tons or 12% of the national production, grown in 70,000 ha of harvested fields. Following rice, Vientiane Capital City produced 91,000 tons of vegetables and beans, 4,500 tons of tobacco and 45,000 tons of sugarcane, accounting for 15%, 15% and 22% of the national production, respectively. In terms of other crops, however, its crop production was limited except sugar cane.

Livestock production also contributed to the national economy. Its value added was 2.73 trillion kip including fishery in 2001. In Vientiane Capital City, thus, livestock production is a limited part of the national total production.

2) Industry Sector

The industry sector accounted for around 23% of the GDP in 2001. This sector consists of manufacturing, mining & quarrying, construction and electricity, gas & water sub-sectors. In 2001, the manufacturing sub-sector accounted for more than 75% of industry's value added. Thus, the manufacturing sub-sector is regarded as a leading sub-sector of the industry sector.

In 2001, there were 24,309 manufacturing establishments in the country. They were composed of 112 large scale establishments, 542 middle scale establishments and 23,651 small scale establishments, as shown in Table 23-2. The scale of an establishment is defined as follows: (a) large scale, employing more than 100 workers, (b) middle scale, employing between 10 to 99 workers, and (c) small scale, employing less than 9 workers. In Vientiane Capital City, there were 1,969 manufacturing establishments in 2001, accounting for 8% of the national total. In terms of large scale establishments, 62 establishments or 53% of the national total were located in Vientiane Capital City. In the same manner, 157 establishments of middle scale or 29% and 1,750 of small

scale or 7% were located in Vientiane Capital City.

Table 23-2 Number of Manufacturing Establishments by Size in Lao PDR and Vientiane Capital City: 1999 – 2001

Scale of Establishment	Lao PDR.			Vientiane Capital City		
	1999	2000	2001	1999	2000	2001
1. Large Scale	108	95	116	52	58	62
2. Middle Scale	532	512	542	137	133	157
3. Small Scale	21,232	20,962	23,651	1,129	1,525	1,750
Total	21,872	21,569	24,309	1,318	1,716	1,969

Source: (1) 2000 Basic Statistics of the Lao PDR., July 2001, National Statistical Centre, State Planning Committee

(2) Statistical Yearbook 2001, May 2002, National Statistical Centre, State Planning Committee

Note: Scale of establishment was defined as follows.

(1) Small scale: the number of employees is less than 9 persons.

(2) Middle scale: the number of employees is between 10 to 99 persons.

(3) Large scale: the number of employees is more than 100 persons.

In 1999, the United Nation Industrial Development Organisation (UNIDO) conducted the “Survey of Industrial Establishments, 1999” covering all provinces in the Lao PDR. Among manufacturing establishments, the types of businesses where the ratio of water cost to gross output was comparatively large were: (a) paper and paper products accounting for 0.44%, (b) manufacture of textiles, 0.19%, (c) manufacture of food and beverages, 0.17%, (d) chemical and chemical products, 0.16% and (e) machinery and equipment, 0.13%. However, the water cost includes the procurement cost of water supplied by Nam Papa (water supply company), but does not include the cost of groundwater which the factory procured through its own wells.

(3) External Trade and Balance of Payment

Lao’s external trade balance has recorded a normal condition of deficit. The trade balance for the recent five years is summarised in the table below.

(Unit: US\$ million)					
Item	1998	1999	2000	2001	2002
Export (FOB)	337	301	330	320	312
Import (CIF)	553	554	535	510	522
Balance	-216	-253	-205	-190	-210

The major traditional commodity exports like wood products have contributed to the national trading performance for an extended period of time. In recent years, the leading positions were held by manufacturers of garments and electricity. The top three exports in 2002 were recorded as follows: (1) garments, accounting for US\$105 million or 34% of total exports, (2) electricity, US\$104 million or 33%, and (3) wood products, US\$64 billion or 21%. The total of these three articles accounted

for US\$273 million or 87% of the total exports of US\$313 million in 2002.

The country's top three imports comprised the following articles: (1) consumption goods, which accounted for US\$256 million or 49% of total imports; (2) investment goods, US\$181 million or 35%; (3) materials for garments industry, US\$68 million or 13%. Investment goods were furthermore broken down to (a) construction/electrical equipment, US\$66 million or 36% of the total investment goods, (b) machinery and equipment, US\$47 million or 26%, (c) vehicles, US\$35 million or 19% and (d) fuel, US\$33 million or 18%. The total of these three major import items accounted for US\$504 million or 87% of the total exports of US\$522 million in 2002.

In terms of balance of payments, the Lao PDR has traditionally run a deficit on its current account balance. As mentioned above, it has consecutively recorded a deficit in trade balance figures. In 1998, the current account recorded a deficit of US\$33 million. In 1999, the worsening in the merchandise trade balance pushed up the current account deficit to US\$76 million. In 2000, however, the improvement of the trade gap resulted in a deficit of US\$9 million. Nevertheless, this worsening trend has continued to 2002, and the current account reached a deficit of US\$39 million in 2002.

The current deficit is said to be partly offset by tourism, i.e., transportation and travel. The deficit was mainly financed by borrowing from overseas, from official and private sources. This activity may accelerate the worsening current deficit in the future. The Lao PDR has continued to procure financial sources heavily from international markets. As a result, financial-account balance was US\$125 million in 1998, and even in 2002 recorded US\$78 million. Accordingly, the overall balance has recorded a surplus in 1998, and reached US\$58 million in 2002.

(4) Government Finance

The total budgetary expenditure of the national government has nominally increased from 0.42 trillion kip in 1996/97 to 4.25 trillion kip in 2002/03. In total expenditure, the capital expenditure for investment has relied generally on foreign grants. On the other hand, the total revenue has increased from 0.29 trillion kip in 1996/97 to 2.98 trillion kip in 2002/03. The revenues account for nearly 70% of the total expenditures in 2002/03. Thus, the national finance has reported a net loss for a long time. The deficit was 0.13 trillion kip in 1996/97 and increased to 1.27 trillion kip in 2002/03. These deficits were covered mostly by foreign support. The ratio of the expenditure to GDP has been kept at almost the same level of 20% since 1996, except 1999 as shown in the table below.

(Unit: Trillion Kip)

Item	1996	1997	1998	1999	2000	2001
GDP	1.73	2.20	4.24	10.33	13.67	15.67
Expenditure	0.36	0.42	0.85	1.72	2.75	3.14
Percentage	20.8	19.1	20.0	16.7	20.1	20.0

Note: In this table, the fiscal year 1995/96 is indicated as 1996. The fiscal year starts from October 1995 and ends in September 1996.

(5) Taxation

Among the national taxes in Lao PDR, the following three taxes are levied to water supply companies: turnover tax, income tax, and profit tax or minimum tax. Turnover tax will be transferred to value added tax (VAT) in 2006.

Turnover tax is set at 5% of sales' amount. For the NPVC, the turnover tax is collected as a part of water sales. The NPVC keeps the tax amounts as turnover tax withholding, and pay the funds later to the tax office. Income tax is levied on the salary of employees as well as company officials. A worker earning a salary of less than 200,000 kip/month enjoys tax relief. Tax rates are between 5% and 40%. The NPVC keeps the tax to salaried as income tax withholding and pay the outstanding amounts the following month to the tax office.

The profit tax rate is presently assessed at 35% of net profit. On the other hand, a minimum tax rate is set as 1% of total sales. A tax payer has to pay the larger tax amount of the two taxes. For example, in a case where the total sales were 20 billion kip and a net profit was 800 million kip, the profit tax is calculated at 280 million kip and the minimum tax is calculated at 200 million kip. In this case, then, the taxpayer has to pay 280 million kip to the national tax office.

(6) Foreign Assistance and External Debt

1) Foreign Assistance

Gross receipts of official development assistance (ODA) from OECD countries and multilateral agencies aggregated to US\$1.52 billion for the past five years and averaged US\$0.30 billion per year between 1996 and 2000.

An annual receipt of the ODA accounted for approximately 16.5% of the GDP in 2000. The percentage of this rate was around 20% until 1999, but it abruptly decreased to 16.5% in 2000. The receipt accounted for 100% of an annual expenditure of the central government on average in the same period. For the past five years, the average rate was around 110%. The rate ranged from a minimum 90% in 2000 to a maximum of more than 120% in 1999, as shown in the table below.

(Unit: US\$ million)

Item	1996	1997	1998	1999	2000
Receipt of ODA	333	329	283	296	281
GDP	1,868	1,741	1,284	1,445	1,700
Expenditure of Central Government		326	256	239	312
Share of ODA (%)					
To GDP	17.8	18.7	22.0	20.5	16.5
To Expenditure of Central Government		100.9	110.5	123.8	90.0

2) External Debt and Outstanding

In 2000, the total external debt in the Lao PDR was US\$2.50 billion, accounting for 147% of the GDP. Since the outstanding of long-term debt was US\$2.53 billion or 175% of the GDP in 1999, conditions were improved on those of 2000. The total debt-service in 2000 was US\$42 million, comprising US\$32 million of principal repayments and US\$9 billion of interest payments. The table below shows the trend of total debt service between 1996 and 2000.

The debt-service ratio (DSR), a kind of country risk assessment factors, has been at almost the same condition, i.e., from 6.3% in 1998 to 8.1% in 2000. Thus, the DSR has kept a sound position in terms of the external debt problem so far, because the DSR has been kept lower than the level of 20%, the critical level of the DSR.

(Unit: US\$ million)

Item	1996	1997	1998	1999	2000
Debt Outstanding of Long-Term Debt	2,264	2,320	2,436	2,527	2,498
Total Debt Service	29	28	31	37	42
Principal Repayment	22	20	23	28	32
Interest Payment	7	7	8	9	9
Exports of Goods and Services	436	435	494	479	516
Debt Service Ratio (DSR)*1	6.7	6.4	6.3	7.7	8.1

Note: *1 A ratio of total debt service over exports of goods and services

(7) Price Indices and Exchange Rates

The NSC presents the consumer price index (CPI) in the Vientiane Capital City from the year 1988 to 2003. After 1995, the CPI increased from 79.6 (base: December 1995=100) in January 1995 to 1,251.1 in January 2003, up by about 1,570% in eight years. In 1998 and 1999 after Asian financial crisis, inflation in the capital city was serious, being calculated at 95% and 140% respectively. Since then, the inflation has stabilised to 10%.

The foreign exchange rate was around 719 kip per US dollar at the end of April 1995. It went up to 10,650 kip per US dollar at the end of April 2003, so the value of kip in 1995 went down to only 6.8% of kip in April 2003 for seven years.

(8) Household Economy

Living conditions can be derived sketchily from family income and expenditure. The average household expenditure was reported as 189,300 kip in 1998, according to “The Households of Lao PDR, Social & Economic Indicators, Lao Expenditure and Consumption Survey 1997/98 (LECS2), December 1999, NSC”. In urban areas, the average household expenditure was calculated as 295,500 kip per month, accounting for 1.56 times of the national average.

The Engel coefficient, which is a rate of food expenditure to total income, is said to characterize destitute living condition. The lower income family shows the higher coefficient. The coefficient of the national average was calculated at 61%, according to the same report. This coefficient had improved from the previous survey in 1992/93, 64%. Thus, the living condition may be more improved than that in 1992/93.

Housing expenses accounted for 7.1% of the total family expenditure. These expenses include housing costs and other utility costs. Of the total percentage of 7.1%, utility charges including water, electricity, etc. accounted for 1.3% of the total expenditure. This amounted to 2,460 kip (equivalent to US\$ 1.63) per month in 1997/98. In urban areas, housing expenses accounted for 10.3% of the total family expenditure. Utility charges accounted for 2.2% of the total expenditure or 6,560 kip (equivalent to US\$4.35) per month in 1997/98.

The national average for medical care expenses was 4,250 kip or 2.2% of the total family expenditure. In urban areas, medical care expenses accounted for only 1.9% of total family expenditure, although the actual recorded expenditure of 5,580 kip was larger than the national average.

Household expenditure in the urban population of Vientiane Capital City was calculated at 284,587 kip/month in 1997/98 according to LECS2, as shown in Table 23-3. This statistic accounted for 138% of the national average. An average household in urban areas expended 22,377 kip for housing and 5,631 kip for medical care. Among housing expenses, utilities accounted for 9,477 kip. In terms water expense, a family expended 2,861 kip in urban areas on average, accounting for 13% of housing expenses, and 1.0% of the total expenditure in urban areas of Vientiane Capital City.

Table 23-3 Household Consumption by Item Group in Vientiane Capital City: 1997/98

Item	Urban (Kip)	Rural (Kip)	Capital City Average (Kip)
1. Foods	169,347	134,536	160,993
(1) Food Expenditure	149,103	82,467	133,111
(2) Food Own Produced	20,244	52,069	27,882
2. Clothing, Footwear, Tailoring	10,230	1,314	8,090
3. Housing	22,377	5,827	18,405
(1) Rent of Houses	0	0	0
(2) Imputed Rent	12,270	136	9,358
(3) Fetched Firewood	629	2,128	989
(4) Water, Electricity, etc.	9,477	3,563	8,058
1) Water	2,861	0	2,174
2) Electricity	3,930	1,109	3,253
3) Kerosene	66	3	51
4) Charcoal	1,306	1,718	1,405
5) Firewood (purchased)	720	485	664
6) Others	595	248	511
4. Household Utensils and Operations	10,958	5,405	9,625
5. Medical Care	5,631	6,656	5,877
(1) Medicines	4,366	5,263	4,581
(2) Expenses for Medical Care	813	1,173	900
(3) Medical Goods	121	35	101
(4) Others	330	185	295
6. Transport & Communications	21,977	11,251	19,402
7. Recreation	12,765	9,130	11,893
8. Education	5,473	3,278	4,946
9. Personal Care	3,885	1,803	3,385
10. Alcohol & Tobacco	15,825	8,699	14,115
11. Others	6,120	1,378	4,982
Total	284,587	189,277	261,713

Source: The Households of Lao PDR, Social & Economic Indicators, Lao Expenditure and Consumption Survey 1997/98 (LECS2), December 1999, NSC, State Planning Committee

Among the medical care expenses of 5,633 kip in urban areas, the expense for medicines accounted for 4,366 kip or 78%, and expenses for medical treatment accounted for 813 kip or 14%. These shares were smaller than those recorded in rural areas, as shown in Table 23-3.

2.4 Population of Vientiane Capital City

2.4.1 Past Trends of the Capital City Population

Population data for Vientiane Capital City is available in many publications from the National Statistical Centre. The Centre provided population data in 1995 and 2000 broken down to a village level. Table 24-1 and Figure 24-1 show the past population trends in Vientiane Capital City. The population statistics for 1985 and 1995 are data obtained from the national census, and the data for 2000 is obtained from population counting. Population data in other years is either estimated, or calculated data based on the results of the national census in 1985 and 1995.

The population growth rate from 1995 to 2000 is about 2.5 %. The data of “NSC 2” in 2000 was derived from a summation of the populations of each village in the capital city. Since there are discrepancies and differences between village populations and capital city populations, the population data of “NSC 2” has a slight difference from other population data.

Table 24-1 Past Trend of Capital City Population

	Year	1985	1990	1995	1996	1997	1999	2000
NSC 1	Population	381,000	464,000	532,000	-	-	583,000	598,000
	Increase Ratio	%/annum	-	4.02%	2.77%	-	2.31%	2.57%
NSC 2	Population	-	-	524,107	-	-	-	568,779
	Increase Ratio	%/annum	-	-	-	-	-	1.65%
NSC 3	Population	-	-	528,400	541,600	555,100	-	-
	Increase Ratio	%/annum	-	-	2.50%	2.49%	-	-
NSC 4	Population	377,409	-	528,109	-	-	-	-
	Increase Ratio	%/annum	-	-	3.42%	-	-	-
NSC 5	Population	-	-	-	-	-	583,200	597,800
	Increase Ratio	%/annum	-	-	-	-	-	2.50%
NPVC M/P	Population	377,409	464,131	528,109	-	-	-	597,507
	Increase Ratio	%/annum	-	4.22%	2.62%	-	-	2.50%

(Note)

NSC 1 : Basic Statistics of the Lao PDR, 1975 - 2000, National Statistical Centre

NSC 2 : Data provided by National Statistical Centre in April, 2003

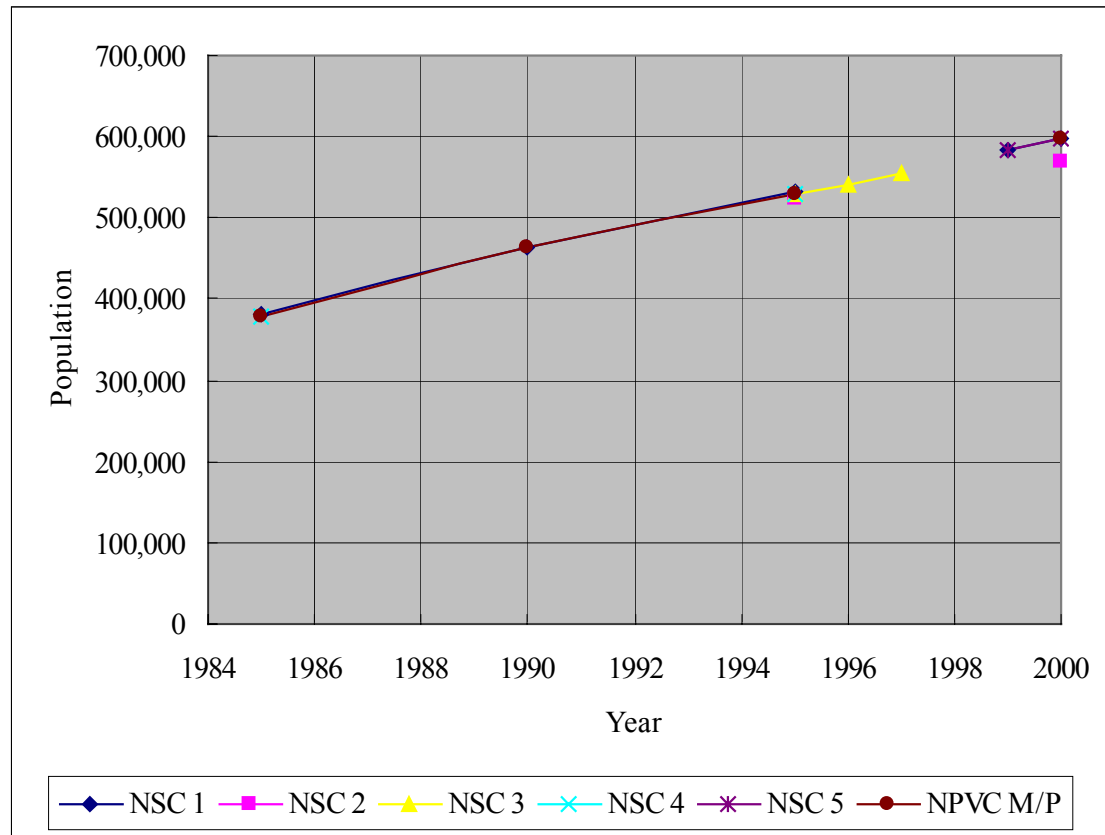
NSC 3 : Basic Statistics about the Socio-Economic Development, National Statistical Centre

NSC 4 : Lao Census 1995, Preliminary Report 2, National Statistical Centre

NSC 5 : Basic Statistics of the Lao PDR, 2000, National Statistical Centre

NPVC M/P : Master Plan, Vientiane Water Supply Development Project, November 1999, NPVC

Figure 24-1 Past Trend of Capital City Population



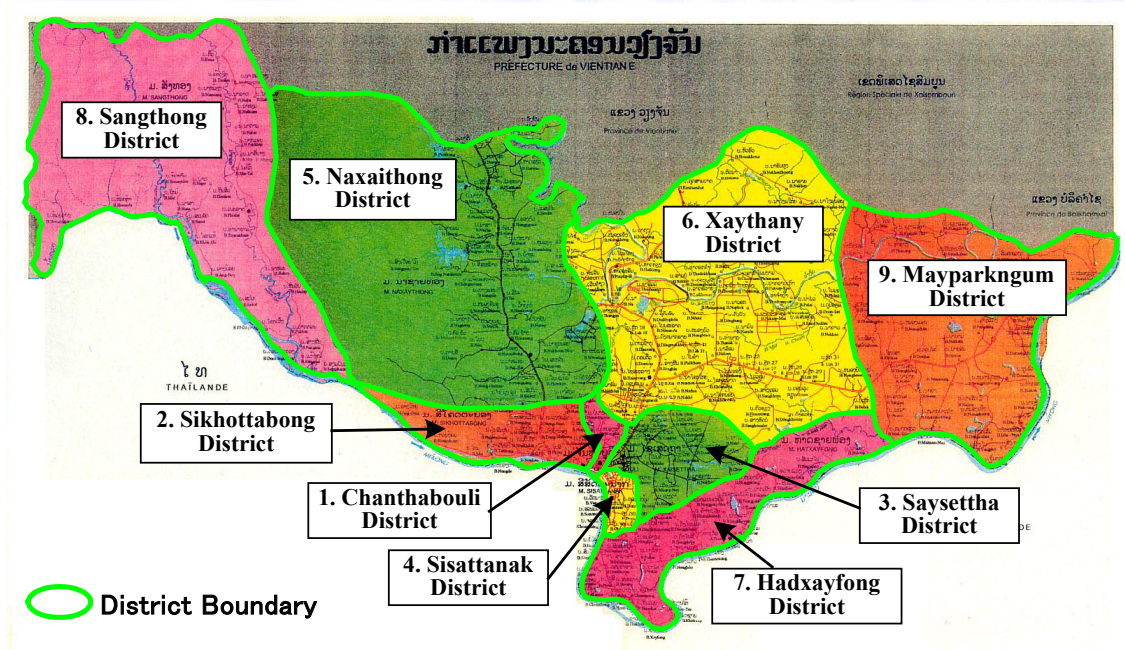
2.4.2 Past Trends of District Population

Vientiane Capital City consist of nine Districts as follows:

1. Chanthabouli
2. Sikhottabong
3. Saysettha
4. Sisattanak
5. Naxaithong
6. Xaythany
7. Hadxaifong
8. Sangthong
9. Mayparkngum

The location of each district is shown on Figure 24-2.

Figure 24-2 Districts in Vientiane Capital City



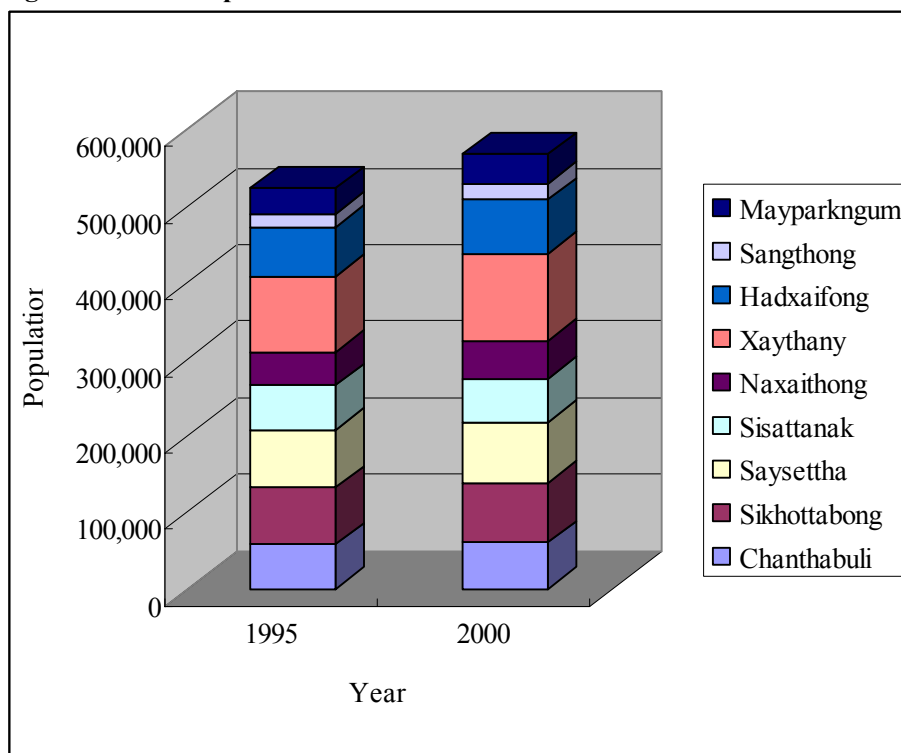
The population records for each district are shown in Table 24-2 and Figure 24-3. As can be seen in the table, in areas such as Sisattanak District, in the central part of the capital city the population has shown a decrease from 1995 to 2000. Neighbouring Sisattanak District's, low population growth rates can also be observed in Chanthabouli and Sikhottabong Districts. A high population growth rate is observed in the northern central part of the capital city, such as in Xaythany District. This may be an indication that the urban central area is expanding to the northern part of the capital city. In the more remote rural districts such as Sangthong and Mayparkngum, the figures show a high population growth rate, but the overall population numbers are still small.

Table 24-2 Population Record of Each District in Vientiane Capital City

	District Name	1995 people	2000 people	Increase Ratio %/annum
01	Chanthabouli	58,855	61,253	0.80%
02	Sikhottabong	74,251	77,255	0.80%
03	Saysettha	75,255	79,205	1.03%
04	Sisattanak	58,178	57,822	-0.12%
05	Naxaithong	44,104	49,604	2.38%
06	Xaythany	97,829	113,699	3.05%
07	Hadxaifong	64,962	70,351	1.61%
08	Sangthong	16,728	20,728	4.38%
09	Mayparkngum	33,945	38,862	2.74%
	Total	524,107	568,779	1.65%

Source : Data provided by National Statistical Centre in April, 2003

Figure 24-3 Population in Each District in 1995 and 2000



2.4.3 Past Trend of Village Population

The administrative area of a district is divided into villages. The number of villages per district, is shown on Table 24-3. The population of each village in 1995 and 2000 is included in Annex 6, together with population growth rates.

Table 24-3 Number of Villages in Each District

	District Name	Number of Village
01	Chanthabuli	37
02	Sikhottabong	59
03	Saysettha	51
04	Sisattanak	40
05	Naxaithong	56
06	Xaythany	101
07	Hadxaifong	58
08	Sangthong	36
09	Mayparkngum	53
	Total	491

Source: Data provided by National Statistical Centre in April, 2003

Figure 24-4 shows the location of villages by population increase ratio. As shown in this figure, it is apparent that population in the central part of the capital city along the Mekong River is reaching its saturation point; therefore, the growth rate is minus (decreasing) or remaining at a low level. On the other hand, populations in villages in peripheral areas are rapidly increasing, especially those villages in the north/north-east and southern areas.