

The productive population of the Lao PDR ranges from people aged 15 through 64 years. In the 1985 census, the percentage of people aged 15-64 was 51.7%. From the data surveyed in the area, the productive population, i.e., economically active population, age group 15-64 are 50%. This figure shows almost the same with the national level.

From the CPC's data, it appears that the average size of households by the district in the study area are as follows: 5.4 in Pakxong, 4.7 in Bachiang, 6.1 in Salavan, 5.2 in Laongam and 5.3 in Thateng. The average number in the area is 5.3 and which is relatively smaller than that of the country (6.0). The farm households in the area account for 94 percent of the total households. However, the 6 percent of these farm households are also engaged in agricultural activities in addition to their principal and the data from the survey reflects this situation.

3.1.4 Socio-economic Conditions

As mentioned above, agriculture is the economic foundation in the study area. The socio-economic profile by district related to the area is summarized as follows:

(1) Pakxong District, Champasak Province

All of the Pakxong district, which is situated in the southern part of the study area, is included in the area. It extends at Boloven Plateau for 4,010.6 km² and is the largest district in the province. According to the preliminary report 2 of the 1995 census, the total population of the district is 44,648 with 7,509 households (figure used in section 2.3 is originated from the CPC's data in 1994), and the annual growth rate of population is 1.7 percent. The population density is 11.1 persons per square kilometer. From the CPC's data, the economically active population is 15,279 (36.6% of the total population). About 95% of the total households are engaged in agriculture. The population is from the Lao Loum and the Lao Theung ethnic origins, and accounts for 27% and 73% respectively.

The main crops in the district are industrial crops such as coffee, cardamom, tea and maize, and cabbage and potatoes are cash crops. Lowland and upland rice and vegetables are grown for self-consumption. However, due to the limited availability of land conducive rice growing, rice production is extremely small in comparison to the population. According to a report by the district office, the shortage of rice in 1994 was about 12.2 tons in the district.

As the production area of coffee, the predominant crop in the district, accounts for about 77% of the total production area in Champasak province. In 1995, earnings from the production have contributed remarkably to the agricultural sector of the economy on account of an increase in the market price.

The livestock is an important industry in the district, and 17,900 head of cattle are raising by small holders. Fish production in ponds is promoted by the provincial AFS.

There are two agricultural enterprises: ASIA TECH (forest industry using 16,000 ha) and Agro Plantation (coffee seedling production using 5 ha).

According to district statistics in 1994, forest production such as logs collected and timber, was about 92,000 m³ and 390 m³ respectively. A small sawmill exists in the district with an operating capacity of 400 to 600 m³ annually.

(2) Bachiang District, Champasak Province

The Bachiang district is situated in the western part of the study area, and extends

over 828 km² (the study area: 669.1 km²) at the foot of the Boloven Plateau. The total population of the district, by the 1995 census, is 34,249 with 5,915 households (the study area: 22,275 with 4,695 households, by the CPC's data in 1994), and the annual growth rate of population is 4.2 percent (2.7% by the CPC's data). The population density is 41.4 persons per square kilometer (the study area: 33.3 persons/km² by the CPC's data). From the CPC's data, the economically active population is 13,489 (60.5% of the total population). About 89 percent of the total population is engaged in agriculture. The population consists of the Lao Loum (47%) and the Lao Theung (53%). Most of the Lao Theung ethnic groups are refugees.

Lowland and upland rice as food crops are widely cultivated in the district. Upland rice is grown by traditional farming methods as slash and burn system. Other important crops are industrial crops such as coffee, cardamom, groundnuts and soybean. Banana and pineapple are cash crops. Perennial fruit tree crops such as durian, rambutan, tamarind, mango and papaya are grown in the garden. The coffee production in the district is relatively small within the Boloven Plateau.

There are three agricultural enterprises: Patanahgasicam (upland crops, fruit-trees and forest development using 1,500 ha), ASIA TECH (sugar cane using 300 ha), and DAFI (upland crops, fruit-trees and forest development using 7,000 ha).

(3) Salavan District, Salavan Province

The Salavan district is situated in the northern part of the study area and extends at the foot of the Boloven Plateau over 1,982.5 km² (the study area: 436.3 km²). The area belonging to the Study Area is a part of the zone 1, 2, 3, 4, 6, 9 and 10. The total population of the district, by the 1995 census, is 65,512 with 10,167 households (the study area: 20,623 with 3,377 households, no inhabitants are in zones 6, 9 and 10, by the CPC's data), and the annual growth rate of population is 2.7 percent. The population density is 33.0 persons per square kilometer (the study area: 47.3 persons/km², by the CPCs data). From the CPCs data, the economically active population in the area is 11,837 persons (57.4% of the total population). About 92% of the total households are engaged in agriculture. Although no data is available on the ethnical population of the district, there are settled both the ethnic groups of

Important crops in the district are lowland rice, groundnuts, chilli and cotton. The lowland rice is cultivated by irrigation.

(4) Laongam District, Salavan Province

The Laongam district is situated in the northwestern part of the study area, and extends from the elevated land to the foot of the Boloven Plateau with 980.6 km² (the study area covers the entire district). The total population of the 1995 census is 43,510 with 7,789 households (41,122 with 7,914 households, by the CPC's data), and the annual growth rate of population is 3.6 percent. The population density is 44.4 persons (41.9% by the CPC's data) per square kilometer. The economically active population is 22,206 persons based on the CPC's data. About 95% of the total households are engaged in agriculture and the rest are engaged in the commercial sectors and public services. Most of the population in the district are the Lao Thueng ethnic groups, but the district office had not an accurate information on the ethnical population.

The main crops in the district are coffee, cardamom, soybean, groundnuts, cotton and banana as industrial and cash crops, and lowland rice as staple food. Lowland and upland rice are widely cultivated, and the upland rice is grown using traditional farming methods by rainfed. The production area of coffee in the district is second to the Pakxong district. Cattle raising is also popular in the district.

(5) Thateng District, Sekong Province

The Thateng district is over 398 km² (the study area covers the entire district) and is situated in the northeastern part of the study area. The total population of the 1995 census is 15,275 with 2,448 households (14,342 with 1,985 households, by the CPC's data). Due to the resettlement of people from outside the Thateng district, the annual growth rate of population has risen to 6.7 percent for the past three years. However, due to this district was belonged to Salavan province until the year 1992, it seems that the annual growth rate of population is similar to that of Salavan province (2.7%). The population density is 38.4 persons per square kilometer (36.0 persons/km² by the CPC's data). From the CPC's data, the economically active population is 10,403 (72% of the total population). About 97 percent of the total households are engaged in agriculture. Almost all the population is the Lao Theung.

The main crops are coffee, cardamom, upland and lowland rice. Coffee growing started at the beginning of the century in the district and in the Boloven Plateau. For staple food, upland rice is not only widely cultivated using traditional farming methods as slash and burn systems but also lowland rice is produced by mainly rainfed, and some small areas are irrigated. However, the production of lowland and upland rice could not sufficiently meet the demand of the population.

In the district, there is a small sawmill, but its operations have ceased due to broken the milling machine.

3.1.5 Health Services

The provision of health services is the responsibility of the Ministry of Health and the provincial health authorities. At the district level, there are district hospitals supported administratively by district public services. District hospitals are supposed to be staffed by nurses and physician assistants able to give technical support to commune dispensaries and village clinics (health post). However, most of the district hospitals are poorly operated due to lack of money, vehicles, medical supplies and essential drugs.

In the Study Area, district hospitals are already established in each district, and village clinics are provided in every district: 9 (Pakxong), 11 (Bachiang), 3 (Salavan), 1 (Laongam) and 2 (Thateng). Details of these health facilities and staffing are as follows:

Province/District	Champasak		Salavan		Sekong
	Pakxong	Bachiang	Laongam	Salavan	Thateng
District Hospital	1	1	1	1	1
Doctors	0	0	0	0	0
Physician	2	1	3	3	0
Physician-assistants	12	9	13	15	8
Dentists	0	0	2	0	0
Nurses	40	39	37	17	14
Midwives	3	*	*	136	*
No. of Bed	50	20	25	24	10
No. of Pharmacy	13	*	13	25	5
Village Clinic	9	4	1	8	2
No. of Bed	6	12	5	0	6

Data Source: Health Services, Champasak, Salavan and Sekong provinces.

Note: In Pakxong district, there are two Zone Health Care Centers with 10 beds.

* no data.

The services break down to 2,696 persons per one physician, and 1,054 patients per nurse. Health services in the area are generally poor in terms of availability, accessibility and quality. The physical conditions of all the health facilities and equipment are poor. Medicines are in short supply and restocking is irregular. Lack of equipment, instruments, medical supplies and pharmaceuticals, limit effectiveness of health workers and restricts the provision of health services to the majority of the population.

According to the provincial health authorities related to the study area, malaria and diarrhea are major diseases throughout the area. Malaria is the most serious public health problem and is responsible for about 80 percent of morbidity in many communities where it is hyperendemic. In particular, malaria is the worst single threat to children's health, accounting for some 20 percent of all deaths in children under one year. Acute respiratory infections and diarrhea related diseases are the two next highest causes of death.

In the provinces related to the area, as a strategy against malaria, the government has carried out elimination of mosquito breeding sites by drainage, larviciding applications to breeding sites and selective insecticides house-spraying. Also, the government promoted individual protection such as installing mosquito nets over beds, using insect repellents (smoke or liquid) and covering exposed skin.

3.1.6 Educational Services

Educational services are the responsibility of the Ministry of Education and the provincial educational services. In the study area, there are a large number of primary schools and several secondary schools, and some high schools, as follows:

Province/District	Champasak		Salavan		Sekong
	Pakxong	Bachiang	Laongam	Salavan	Thateng
No. of Kindergarten	2	5	1	1	0
Nurses	8	8	2	8	0
Children	157	115	44	148	0
No. of Primary School	91	66	43	103	26
Class III schools	57	42	36	86	25
Class V schools	34	24	7	17	1
Teachers	238	217	86	236	37
Pupils	7,354	5,865	3,808	8,142	1,685
No. of Secondary School	9	5	1	5	1
Teachers	54	51	7	40	8
Students	788	647	156	584	83
No. of High School	1	1	1	1	0
Teachers	11	11	10	15	0
Students	162	77	24	170	0

Data Source: Educational Services, Champasak, Salavan and Sekong provinces.

The provincial educational services related to the area reported that about 73 percent of primary schools provide the Class III (three years schooling). Primary school education consists of a five year program (five years schooling). However, most the pupils complete only three years of schooling. There are a total of 241 primary schools. (Class III: 175, Class V: 66) in the area. A coverage of 60 percent in the total village. The pupil per teacher ratio is relatively high (33:1) compared with the national level (27:1).

The majority of the population in the area are ethnic minorities. They live primarily in less accessible and sparsely populated hilly and remote areas. Access to schooling facilities is the first obstacle to be overcome. The household activities, including child care and drinking water fetching, are given to girls as traditionally and these are a major force precluding from

having the same opportunities as boys. The proportion of girls relative to boys enrolled in primary schools is remained at the lower level.

The number of class rooms per school in the ethnic group villages is usually no more than one or two, and the buildings are often made of bamboo and a thatched roof. In order to improve the education of the children of various ethnic groups, teacher training course for students selected from the ethnic minorities in Pakxong collage (high school) are carried out by the government. Attendance for this training is 24 students at present.

From the data surveyed in the area, the literacy rate is 61.3 percent (male: 72.4%, female: 51.1%). The literacy rate for females exceeds males because of the higher drop-out from primary schools, which is primarily related to their mother's heavy taskload. In the case of the ethnic group village surveyed, the literacy rate (27.7%) of the village is higher than that of the average in the area. According to the provincial education services related to the area, the literacy rate is less than 50 percent among the ethnic groups. Therefore, the government aims to improve the education standards and literacy of ethnic minorities.

3.1.7 Rural Society and Living Conditions

(1) Rural Society

The population of the Lao PDR is essentially confined to the first three groups which are usually referred to under the official national designation of Lao Soung (highland ethnic groups), Lao Theung (midland ethnic groups) and Lao Loum (lowland ethnic groups), respectively. The Study Area is an ethnically diverse societies composed of main two ethnic groups: Lao Loum and Lao Theung. In the area, there are no Lao Soung who mainly live in the northern region of the country.

(i) Ethnic Groups

According to the 1985 census, the ethnic population composition officially classified as Lao Loum, Lao Theung and Lao Soung was 68 percent, 22 percent and 10 percent, respectively. In the study area, the Lao Theung (the Mon-Khmer ethno-linguistic groups) which is composed of 10 tribal units such as Suay, Laven, Lave, Taoi, Yahuen, Alak, Ngae, Katang, Talieng and Katu dominates. The Lao Loum (the Tai-Lao ethno-linguistic groups) consists of 2 ethnic sub-groups: Lao and Phouthai. According to the CPC, Champasak province, the ethnic population of the Pakxong and Bachiang districts is 72 percent, 28 percent (LT:LL) and 53 percent, 47 percent (LT:LL), respectively. There is no data for the ethnic population in other provinces related to the study area. (see Table VI-2 and Figure VI-3)

a. Lao Loum

This group speaks the Tai language, which is closely related to Siamese and Shan, with remnants from Sanskrit and Pali. They settle in the lowlands and along the river basins where there are favorable conditions for rice farming, their main vocation. Their religious orientation is primarily Theravada Buddhism and a strong underpinning of indigenous animism (the world of the spirits, or phi).

b. Lao Theung

The people of this group belonging to the Austro-asiatic or the Mon-Khmer ethno-linguistic group are thought to have been the first inhabitants of Laos in pre-historic times. Lao Theung groups are represented by many dialects and sub-cultures. The Lao Theung's religion centers on spirits called hrooy (the phi of the Lao Loum). The two most important and powerful hrooy exist in the house and in the forest. In the Study Area, some Lao Theung have been evangelized by Christian missionaries. Some groups of the Lao Theung have been considerably acculturated, or assimilated to the Lao Loum. They are scattered in the area in both

the lowland and upland areas, but they generally live at a 600 m elevation and over on hilly terrain and on the plateau. They practice slash and burn cultivation. Some lowland inhabitants practice upland farming. Farming and the collection of forest products are the main economic activities of these groups.

c. Lao Soung

The majority of this group is dispersed throughout the northern region and some inhabit portions of the central highland areas. Lao Soung groups are not in the study area, except for the refugee village (only 0.02% of the district) in the Bachiang district, Champasak province.

(ii) Characteristics of the Lao Theung Ethnic Sub-Groups

a. Laven

The people of the Laven settle in the plateau, particularly in the Pakxong district. A name of the Boloven Plateau originates from this group. There are some villages of this group in Bachiang, Laongam and Thateng districts in the Study Area. The family system is matrilineal kinship as well as the Lao Loum. However, the social organization and culture is based on male dominance in the ownership of means of production, patrilocal residence patterns and patrilineal descent and inheritance patterns. Compared with the Lao Loum, this group have a strong sense of identity. The religious orientation is animism and ancestor worship. Most the Laven's people perform coffee cultivation in the plateau although some people practice traditional farming as slash and burn cultivation.

b. Yahuen

This group settle mainly in the south of Xe Namnoy (zone 9), Pakxong district, and formed a scattered type of the village around the villages of the Laven. The village is formed by 10 to 50 houses, and settled in the altitude between 800 and 1,000 m. The family system is neither matrilineal or patrilineal as sex-based, and the inheritance pattern is equitable between son and daughter. Religion is traditional animistic shamanism (the spirits of ancestors, house, paddy, forest and water). The ceremonies of this group center on the rice farming cycle. Farming consists of traditional shifting cultivation and small livestock raising such as cattle, pig and poultry. Outside of zone 9, they cultivate mainly coffee.

c. Suay

Most the Suay group settle in the Salavan and Laongam districts, and some people in this group live in ethnically mixed villages (Lao, Laven, Taoi, Katang, etc.) in the Pakxong, Bachiang and Thateng districts. The family system is matrilineal kinship. The way of life and thought of this group is relatively different from the other groups due to comparatively assimilate the Lao Loum. The village of this group is formed by 35 to 80 families, and settled in the mid-land between 200 and 700 m. The religious orientation is primarily traditional animistic shamanism, but some villages practice Buddhism or Christianity in the Study Area. The farming is basically slash and burn cultivation with rotation cycle between 4 to 10 years, and most the people grow coffee, bananas, legumes and cotton.

d. Taoi

Peoples of this group settle mainly in the Salavan and Thateng districts, but some people live in the Pakxong and Bachiang districts. They migrated recently from the mountainous areas of Salavan province to the plateau (from 1989 to 1993), and live in the forest areas which are the altitude between 300 and 1,000 m. The family system is patrilineal kinship within a tribal societal system. The village organizations are based on their traditional social system and religion. The religious orientation is traditional animistic shamanism. Some

villages of this group are mixed ethnically with Suay, Katang, Alak, Katu and Laven. The farming method is traditional slash and burn cultivation, but some people grow coffee, legumes and tuber crops. They perform hunting and gathering in the forest.

e. Alak

The Alak group lives mainly in the Salavan, Laongan and Thateng districts. They live in the forest and split the territory with Katu, Ngae, Taoi and Talieng. The family system is patrilineal kinship as well as the Taoi, and the family, together with one to four families, lives in the same house. Religion is traditional animism and ancestor worship. Farming is traditional slash and burn cultivation producing upland rice, maize, cotton and chilli. Hunting and gathering in the forest are their living habits. Some villages are organized groups for rice production in order to improve the farming.

f. Ngae

This group settles mainly in the Thateng, Laongan and Bachiang districts. Some villages are formed by the mixed ethnically groups with Suay, Alak, Laven and Taoi. In general, the family system is an indifferent lineal kinship, but the social organization is based on male dominance in the ownership of means of patrilocal residence patterns and patrilinear descent and inheritance patterns. The living style of this group is similar to the Alak. The religious orientation is traditional animistic shamanism. The farming method is traditional slash and burn cultivation producing upland rice, tobacco and soybean. In some villages, lowland rice is cultivated by irrigation, and coffee, cardamom and fruit are grown. Hunting and gathering in the forest are their behavior patterns.

g. Katu

Peoples of the Katu group settle mainly in the Laongan and Thateng districts in the Study Area. They live near the forest and split the territory with Alak, Ngae, Taoi and Talieng. The family system is patrilineal kinship. Religion is traditional animism and ancestor worship. They have a strong sense of identity and their own culture, and have close relationship with the mentioned tribes by means of intimate dialect and cultural backgrounds. Farming is basically slash and burn cultivation, and upland rice, tobacco and legumes are grown. Hunting and gathering in the forest and handicraft are an important part of their living.

(iii) Village Size by Ethnic Group

There are 399 villages in the study area: 105 in the Pakxong district, 76 in the Bachiang district, 58 in the Salavan district, 110 in the Laongan district, and 50 in the Thateng district. The size of the village in terms of number of households by ethnic group is shown in the following table:

	Number of Households (Unit: number)				Total
	< 49	50 - 99	100 - 149	150 <	
Pakxong District					
Lao Loum	6	5	0	0	11
Lao Theung	36	11	6	0	53
Ethnic Mix	15	13	10	3	41
Sub-Total	57	29	16	3	105
Bachiang District					
Lao Loum	13	10	0	0	23
Lao Theung	27	14	0	0	41
Ethnic Mix	0	6	4	2	12
Sub-Total	40	30	4	2	76
Laongam District					
Lao Loum	13	17	2	1	33
Lao Theung	19	24	5	4	52
Ethnic Mix	9	11	1	4	25
Sub-Total	41	52	8	9	110
Thateng District					
Lao Loum	0	0	0	0	0
Lao Theung	29	13	2	2	46
Ethnic Mix	1	0	3	0	4
Sub-Total	30	13	5	2	50
Salavan District					
Sub-Total*	32	18	4	4	58
Total	200	142	37	20	399

Note: * No data is ethnic groups by village.

Date Source: CPCs, District Offices.

In the study area, most of the villages are formed into one ethnic group, particularly, in the Lao Theung's villages. There are some ethnically mixed villages in the Pakxong and Laongam districts because of immigration are composed of two or three ethnic groups. The Lao Theung's villages form one half (about 56%) of the total villages in each district except for the Thateng district. Most of these villages consist of less than 49 households. Large villages of the Lao Theung exist in the Laongam and Thateng districts.

(iv) Supporting Activities for Ethnic Groups

In the Pakxong district, a resettlement project for twelve villages of the Lao Theung in zone 9 is being carried out by the government. The aim is to improve the living conditions of these groups who live in remote mountainous areas in the Boloven Plateau. The new area to be resettled is located in the zone 8, and the project provides houses, well and new farmland to the resettlers. On the other hand, the ethnic teacher training course in Pakxon College is being undertaken by the provincial authorities to improve the educational standards of ethnic groups, namely, the improvement of low literacy and educational equality.

Recently, the Thateng district which dominates the ethnic groups, has been planning a training course in community development for village leaders of ethnic groups. The program will be initiated with the support of the provincial and district authorities.

(2) Living Conditions

Lao society is changing under the impact of economic reform (New Economic Mechanism-NEM). However, the living conditions in rural areas remain weak due to social welfare concerns such as money, property, health, schooling and work. The living conditions in the study area are summarized as follows:

(i) Occupations and Labors

As stated in 2.3, most of the families in the study area engage in agriculture, such as coffee and upland crop productions. Several members of the family perform household maintenance as well as agriculture. Most the activities related to capital acquisition and maintenance, such as land marking and preparation, buffalo and cattle rearing and tasks involving danker or heavy material, are the responsibility of men. The number of women performing both agriculture and home tasks is generally higher than that of men.

In coffee production, weeding and harvesting are performed by the hired laborers who come from the lowland areas of the related provinces. From the data surveyed, 40 percent of coffee farmers are needed the hired laborers at the each stages. On the other hand, the help of group labor for farming, i.e., exchange of labor between families, is common in both the Lao Loum and Lao Theung ethnic groups. Other productive activities such as vegetable gardening, fruit-tree cultivation and pigs and poultry raising are predominantly performed by female members of the family. Domestic activities such as food preparation, rice hulling, water fetching, and firewood collection are also the tasks of mothers and girls.

(ii) Income and Home Economy

The cash income of the family is mainly derived from selling farm products such as coffee, cardamom, tea, beans, potatoes, cabbages and bananas. Additional sources of income come from sale of pigs and poultry followed by vegetables and fruits. However, some farmers earn additional money to maintain their living by working in other labor markets during the off-season for farming. According to the socio-economic survey, 5 percent of the farmers earn the additional income derived from non-farm labor markets and small business.

Expenditure figures reveal that the average family spends about 593 thousand kip per year on food and 586 thousand kip per year on other items including farm inputs and hired laborers (251 thousand kip). Although there are numerous epidemic diseases in the area, the small amount (less than 5 percent) of family income is spent on health because of access to the hospital is generally difficult and depend on traditional herbal medicines.

As mentioned in the farm economy, typical farmers are classified into three types: coffee farmers, upland rice farmers practicing the slash and burn cultivation and lowland rice farmers. (i) Coffee farmers (average farm size: 2.5 ha), earn about 1 million kip and can afford to manage farming sufficiently and to maintain his living only producing coffee. (ii) Upland farmers (average farm size: 1.2 ha), cannot produce a surplus income. Only lowest living standards can be maintained through their farm income. The farmers are mostly from the Lao Theung ethnic groups and lives in remote hilly and mountainous areas. (iii) Lowland rice farmers (average farm size: 0.5 ha), is unable to meet living expenses using farm income. Therefore, the farmers depend on non farm income from working in other labor markets during off-season for farming. Viewing the above, it seems that the income gap of farmers greatly influenced by type of farming and the area of farmland.

The results of socio-economic survey show that there is a real need for credit for farming. About 15 percent of the farmers are obtained the loan from the APB, by organize the production groups. For buying food and medical expenses, some families has borrowed

money from neighbors and siblings. The interest rate varies from 5 percent to 20 percent annually. Recently, the savings and mutual aid funds systems are introduced in some villages in the Study Area. On the other hand, the rice banks are established supported by the NGOs, particularly, in the villages which occur the shortage of rice.

(iii) Living environments

In order to grasp the living conditions in the study area, the housing conditions, access to drinking water, illumination and firewood, and owned assets are surveyed. The results of the survey are summarized as follows:

a. Houses

In terms of housing conditions, practically, all houses in the study area are owned and used by individual households. Housing is important in both a social and economic context. Based on the survey, the condition of housing materials, even in the ethnic group villages, are shown as below:

- Roof : Thatch 38.5%, Iron sheet 59.5% and Wood 2.0%
- Wall : Bamboo 52.0%, and Wood 48.0%
- Floor : Bamboo 20.5%, and Wood 79.5%

From the data surveyed, the Laongam and Salavan districts have the most poor housing conditions among the districts related to the area: roof: thatch 43 percent, wall: bamboo 46 percent, and floor: bamboo 39 percent. According to the report "Living Conditions in Lao PDR" surveyed by the CPC of the central government, 73 percent of houses were made of wood, and 17 percent were made of bamboo in the national level. Viewing these figures, it seems that the housing conditions in the area are considerably lower than that of the national level, owing to most of the houses are built by traditional style of ethnic groups.

Almost no houses in the area have a latrine (95%). The low population density of the rural areas has permitted the population to continue using surrounding forested areas for this purpose.

b. Access to drinking water

From the data surveyed, the main source of drinking water during the dry season are rivers/streams (84%), wells (11%) and springs (5%) while during the rainy season all households report to harvest rain water in addition to the wells. However, 60 percent of the drinking water have a problem on the quality such as muddy and contamination, and the villages which have sever this problem are in the Laongam and Bachiang districts. More than 70 percent of the families surveyed claim to boil water for drinking purposes. Women and girls spend inordinate amounts of time fetching and carrying water during the rainy season. The distance to the sources varies from less than 100 m for the families in the Pakxong and Bachiang districts to the families having more than 500 m in the Laongam and Thateng districts. In the area, only the urban area of the Laongam district has a water supply system (untreated gravity-fed system).

c. Electricity, illumination and fuels

Electricity is limited to very few places in the area, and primarily exists in parts of the centers of the Pakxong and Laongam districts. The electric power supply in these areas is restricted to certain hours. Currently, a power transmission line is being wired from Pakse to Pakxong, along the national road No. 23. According to the survey, more than 90 percent of households have no electricity. Most households in the villages of the Lao Loum use kerosene lamps for illuminating their home. Meanwhile, the illumination of home makes use of resinous

torchs in the villages of Lao Theung ethnic groups.

In terms of fuels, firewood is collected from the common forest surrounding the villages, which is used for cooking. Collection of firewood is done twice a week by women and girls. In case of coffee farmers, cutted branches of pruning the coffee trees are used for cooking as fuels. However, they also collect firewood from the forests.

d. Household Assets

As a result of the survey on the household assets, it appears that most of the families surveyed owned a bicycle while 25 motorcycles, 11 cars and 6 hand tractors were identified. Furthermore, about half of the total families own a radio cassette recorders as small luxury item, and this proves to apread the acculturation in the young generation of the ethnic groups. The distribution of the items is shown below:

<u>Assets owned</u>	<u>Percentage of Families</u>
Radio cassette recorder	44.0
Television set	20.5
Bicycle	72.0
Motorcycle	12.5
Car	5.5
Cart	1.0
Hand tractor	3.0
Water pump	1.5
Rice mill	1.0

From the data surveyed, the high diffusion of bicycles and motorcycles appears in the Pakxong, Laongam and Thateng districts because of high income derived from coffee or vegetable (cabbage) productions. The television set as luxury item is also wide-spread in the same districts, even no electricity is supplied in the areas. Moreover, hand tractors and water pumps are being introduced in the coffee areas. However, mordern goods, available in Pakse, have not yet made their way in substantial numbers and quantities into the area. As mentioned in 5.2, it is clear that the area is a relatively poor area.

e. Health

As mentioned in section 4.1, malaria and diarrhea are most serious diseases in the Study Area. Natural conditions in the Boloven Plateau favor the year-round transmission of malaria in most parts of the area. According to the survey, morbidity of diarrhea is not age-specific. This disease is an importance of hygine and sanitation in relation to the water cycle. In the area, the rainy season increases contamination of drinking water sources as rain washes wastes from forest latrines downhill. Moreover, fresh and raw vegetables are not washed under hygienic conditions.

On the other hand, goiter as one of the iodine deficiency disorders coincides among females, and this also is a significant health problem in the area. Accordig to the health services, there is a 30 percent incidence of goiter in the plateau belonging to Champasak and Salavan provinces.

More than half of the patients did not contact the public health institutions for advise and/or treatment due to difficult of access to such institutions as district hospital. Among the ethnic groups, traditional treatment by herbal medicines and a religious charm are popular.

f. Education

In the rural areas of the Study Area, primary schools covers a 60 percent of the total

villages (399), and a lack of school materials and, in several cases, a low quality of school buildings are reported. As mentioned in section 4.2, a 75 percent of primary schools are the Class III schools, consequently, most children can not receive the complete formal primary education. It also appears that there is a problem on the low enrollment of girls to school because of help to mother's household tasks such as child care, drinking water fetching and firewood collection. Most households in the area claim to spend money on education of their children, but there is only 3 percent occupied in the household expenditure, from the data surveyed.

A few educational initiatives have been undertaken by UNICEF and several NGOs in the fields of mother and child health, domestic animal raising and handicrafts. Many of these projects tend to be integrated and involve the Lao Women's Union.

3.2 Development Constraints

There are many socio-economic constraints for agricultural and rural development in the study area due to the weaknesses in the public institutions, lack of farmers' organizations, low literacy, and insufficient basic health services. Major constraints to further development for rural development are summarized as follows:

(1) Weakness of Public Institutions

The weakness of the public institutions in the area is mainly derived from insufficient governmental officers and staff, lack of training for human resource development, inadequate and prejudiced posting of staff, and shortage of funds for operating, etc. Further the deteriorated physical infrastructure and lack of transporting facilities constrain the public services for people.

(2) Lack of Farmers' Organization

Although some farmers' organizations are established for the purpose of agricultural extension and agricultural credit supported by specific projects such as LUADP and APB, in the area, there is no agricultural-based farmers' organization supported by the public institutions such as the provincial and district agricultural services. The disadvantages on farm management for farmers prevent the stability of livelihood with sustainable agriculture and the progress of the rural economy.

(3) Insufficient Support Programs for Ethnic Minorities

The majority of farmers in the area are diverse ethnic groups which consist of diversified traditional cultures which observe their own customs. These groups are left behind in the socio-economic development. Disparities of living conditions between urban and rural (especially in the plateau) are enlarged. In the ethnic minorities villages, community development to solve such disparities supported by the public and grassroots organizations is presently insufficient.

(4) Low Quality of Education and Low Literacy

Low quality of education and low literacy in the area are partly the result of unqualified teachers, poor instructional materials and school facilities as well as geographically remote locations. Further, the low quality of education is caused by the low stability of teachers in the ethnic villages and low salary. Low literacy of the ethnic minorities bring about a strong ethnic identity and the difference of education standards constrains the progress of development in the area.

(5) Weakness in Basic Health Services

The low level of health services in the area are the result of a shortage of medical and health staff, poor health facilities and equipment and limited medical supplies and pharmaceuticals. Moreover, lack of education on basic disease prevention methods in the villages causes high morbidity in case of malaria and diarrhea related diseases. These circumstances constrain the living conditions of rural areas.

3.3 Rural Life Improvement Plan

3.3.1 Food and Nutrition

Rice produced in the study area is substantially insufficient for the self-consumption of the farmer. From the results of the rural socio-economic survey, the self-supply rate of rice in the study area is about seven months a year on average, and only around three months in Pakxong and Thateng districts. An unstable supply of rice in the area reflects the chronic malnutrition status of the people in this area.

In order to secure a stable food supply throughout a year, increase in rice production is essential. The rice bank as community-based credit scheme which is promoted by women's union and the LUADP, is being introduced to every villages to ease the shortage. The establishment of rice bank has been proposed as one of the activities of the farmers' organization.

3.3.2 Living Environment

The living environment, such as health, education and other aspect of life, in the study area is considerably inferior compared with that of surrounding urban area. In order to cope with these problems, comprehensive social development, including the improvement of basic health conditions, literacy, and community development are needed. In connection with this, improving the family income in a sustainable way is generally perceived as the most practical way of improving living conditions and health status. The following are the essential elements of a conceivable improvement plan.

(1) Improving the Family Income

In order to increase the farm income as a means of improving the living standard of the people, the following methods are being considered.

- (i) Increase in agricultural productivity through introduction of improved varieties of crops to increase the yield,**
- (ii) Diversification for profitable crops, and**
- (iii) Introduction of appropriate technology for animal husbandry.**

(2) Improvement of Health Status

The health service in the village level will be improved through the establishment of a village clinic and basic health education for the villagers. In addition, community health workers will be assigned and trained for a community-based approach.

Emphasis is placed on education about health, hygiene, nutrition, child care, as well as birth spacing for rural women who are responsible for the food, nutrition and health of her family. This activity will be carried out in collaboration with the authorities concerned, the LWU, international organizations and NGOs.

(3) Water and Sanitation

Women and girls spend inordinate amounts of time fetching water from rivers and springs during the dry season, as the main source of drinking and domestic water. In order to solve the problems caused by this type of heavy labor, a piped water supply system is the most suitable solution. However, well and hand pumps should be installed in every village at least. Increased environmental health awareness programs will be promoted.

According to the survey, most rural households have no latrines. Therefore, an appropriate human waste disposal system will be introduced and diffused in the village, and hygienic training for villagers will be implemented.

(4) Strengthening of Primary Education

In order to attain equality in the educational standard in the area, the strengthening of primary education should be carried out by the appropriate authorities collaborating with international organizations and NGOs. The followings are major activities for strengthening primary education.

- (i) Reorganization of primary school network to create more favorable conditions for access,
 - (ii) Intensive teacher training, and improved facilities and teaching materials,
 - (iii) Support to parent's associations and other community in encouraging increased enrollment, and
 - (iv) Introduction of health care and nutrition services.
- (5) Others

Mini-hydropower plant will be installed in the villages located in the remote rural areas where appropriate power sites are located, and to promote rural electrification.

In the village level, there are no telecommunication facilities, resulting in lack of an information and communication network in the rural area, to address this problem, public telephone will be installed in every village.

3.3.3 Community Development

In general, it is said that the ethnic groups in the area are easily assimilable to other cultures and customs in comparison with the Lao Soung ethnic groups. However, it often brings about a difficulty to community work, specially in the mixed ethnic village, owing to lack of cooperativeness and social solidarity arising from strong identification and low literacy. In order to improve rural life in the area, community development to enlighten cooperativeness and social solidarity in the village are essential. Community development programs are composed of the improvement of living environment, such as food and nutrition, hygiene, etc., increase in cash income, and securement of water resources for domestic use and irrigation. Accordingly, it is desirable to implement development programs and construction of facilities in collaboration with the provincial and district agricultural, health and education services, LWU, international organizations and NGOs. The following procedure is considered for implementation.

- (i) Organization of groups with the same interest,
- (ii) Development of cooperativeness through the group activities,
- (iii) Motivation of awareness of problems and attempts towards solution,
- (iv) Motivation of community activities through the raising of a sense of solidarity with

other groups,

- (v) Planning of community development program in the initial stage of organization of the group, which consists of agricultural extension, adult education for the farmer, women and youth including practical life-skills, health care, nutrition, sanitation, family planning, and literacy education by supporting teacher volunteer, and installation of well and hand pump in village,
- (vi) Implementing of community development program, and
- (vii) Construction of a village community hall for village administration and these community activities.

3.3.4 Life Improvement Extension Work

In order to improve living conditions in rural area, adaptation of women's extension workers for living improvement in the provincial and district agricultural services is proposed. The extension activities of rural life improvement will be carried out in collaboration with LWU and NGOs. The role of women's extension worker consists of consultation and guidance regarding food and nutrition, health care, farming, agricultural and domestic bookkeeping, vegetable gardening, small livestock raising and handicrafts.

4 THE FEASIBILITY STUDY

4.1 Present Conditions

4.1.1 General

The priority scheme selected by the Master Plan Study, consist of five schemes: the Upper Champi and the Tapoung in the Pakxong district, Champasak province; the Upper Kapheu in the Laongam district and the Lower Xe Set in the Salavan district, Salavan province; and the Upper Tay-Un in the Thateng district, Sekong province. The total net area, except for housing areas and roads, of these schemes is approximately 3,140 ha, and the area of each scheme extends over 730 ha in the Upper Champi, 80 ha in the Upper Tapoung, 1,000 ha in the Upper Kapheu, 1,000 ha in the Lower Xe Set and 330 ha in the Upper Tay-Un.

Agriculture in the scheme are characterized by cropping system such as coffee growing in the Upper Champi, vegetable farming in the Upper Tapoung, coffee growing in the Upper Kapheu, upland crop farming in the Lower Xe Set and lowland rice farming and coffee growing in the Upper Tay-Un. In almost all the scheme, upland rice production practices by the slash and burn cultivation as traditional farming.

Three schemes selected, the Upper Champi, the Lower Xe Set and the Upper Tay-Un, are located along the National roads No. 16, 20 and 23, and good accessibility. The Upper Tapoung and the Upper Kapheu are connected with the road No. 23 and No. 20 respectively through the Coffee feeder roads which are constructed by the LUADP. All of the roads which run through the scheme are passable and transportable throughout a year.

4.1.2 Administrative Jurisdiction

Administrative division of the five schemes selected is divided into three provinces; Champasak, Salavan and Sekong, and five districts; the Upper Champi and the Upper Tapoung in the Pakxong district, the Upper Kapheu in the Laongam district, the Lower Xe Set in the Salavan district and the Upper Tay-Un in the Thateng district, as follows:

Scheme Area	Province	District	Zone	Village
Upper Champi	Champasak	Pakxong	2	8
Upper Tapoung		Pakxong	1	3
Upper Kapheu	Salavan	Laongam	3	5
Lower Xe Set		Salavan	4	6
Upper Tay-Un	Sekong	Thateng	3	3

4.1.3 Population

The population distribution, as of February, 1996, of each priority scheme area is obtained from village committees for administraton relating to the scheme, and is tabulated as follows:

Priority Scheme Area	No. of Households	Total Population	Female	Size of Households	Farm Households (%)
Upper Champi	828	4,731	2,376	5.7	93
Upper Tapoung	268	1,478	739	5.8	91
Upper Kapheu	456	2,393	1,103	5.2	97
Lower Xe Set	386	2,218	1,066	5.6	92
Upper Tay-Un	108	871	423	7.9	98

Data Source: Village administrative committees related to the scheme areas

Viewing from the above data, a ratio of males to females in each scheme is around 50

percent each other, but female's ratio is relatively higher than that of males. The ratio of males to females (15-24) shows that there are more men than women in the same age group. The male:female ratio of population in the scheme is ; 46.5:53.5 in the Upper Champi, 51.4:48.6 in the Upper Tapoung, 48.9:51.1 in the Upper Kapheu, 43.4:56.6 in the Lower Xe Set, and 45.3:54.6 in the Upper Tay-Un. Economically active population, age of 15 to 64, ranges from 42 percent in Upper Tay-Un scheme to 56 percent in Upper Kapheu scheme, among the total populations. Farm households in the scheme areas occupies from 91 percent in Upper Tapoung scheme to 98 percent in Upper Tay-Un scheme. However, the rest of these farm households are also engaged in agricultural activities in addition to their principal. (see Table VI-2-1 to -2-3, and Figure 6-2-1)

4.1.4 Socio-economic Conditions

A characteristic of five schemes on the socio-economic conditions is presented by agriculture. Coffee and vegetables are greatly contributed to regional economy. The socio-economic conditions in five priority schemes are summarized as follows:

(1) Upper Champi scheme

The scheme is situated in gently sloping halfway up the Boloven Plateau of the southwest part in the Pakxong district, Champasak province. Villages of the scheme are formed along the national road No. 23 which run through the area, and extends over coffee gardens surrounding the housing area. Tea plantation also exists in a part of this scheme. Economy in the scheme is represented by coffee, as dominant crop. Coffee production area relating to villages within this scheme account for about 9.8 percent of the total production area in the Pakxong district, i.e., 9.4 percent of Champasak province. The national road No. 23 is transportable and passable throughout a year with asphalt paved, and the area is convenience to transport for Pakse and Pakxong.

(2) Upper Tapoung scheme

The scheme extends over the elevated land of the plateau, and is located at about 10 kilometers north from the urban area of the Pakxong district. The coffee feeder road linked with Pakxong and Laongam run through the area, and villages form the grouping type facing to the road, but scattered housing type of Phoulangkeo village. The base of economy in the scheme is vegetable and coffee. The vegetable production is performing by traditional farming method as slash and burn cultivation. Though an access to the urban area of Pakxong is convenient, the road is not maintained well.

(3) Upper Kapheu scheme

The location of the scheme is at the south of the Laongam district, Salavan province, and in halfway of the plateau. Villages in the scheme were settled several hundred years ago. All villages form the grouping type, and along the coffee feeder road excepting Phouak-gnai. Economy of the scheme centers at coffee. The coffee feeder road which run through the area is well-maintained. Besides, Phouak-gnai village is inconveniently accessible to the coffee feeder road by narrow path and poor maintained.

(4) Lower Xe Set scheme

The scheme extends over the right bank of the Xe Set river, and is situated in the south of the Salavan district, Salavan province. Two villages of the scheme are located along the national road No. 20, and the rest is scattered and isolated in the scheme. Economic base of this scheme is upland crops such as groundnut, soybean, cotton, lowland rice, etc. Traditional farming as slash and burn cultivation prevails in the scheme. The roads connected with the national road No. 20 and villages are not well-maintained and inconveniently accessible. The income level in the scheme shows the lowest within the five schemes. A drinking water and ice

manufacturing factory which produces drinking water of 216,000 lits. and 3,600 tons of ice annually, exists in the scheme.

(5) Upper Tay-Un scheme

The scheme is situated in the east of the Thateng district, Sekong province, where is in the northern part of the plateau. Villages forms in small number of households from villager's cultural background. Main crops in the area are lowland and upland rice, upland crops and coffee, and villagers practice traditional farming as slash and burn system. Economy is based on these crops. The National road No. 16 passes by villages of this scheme, and transportable and passable throughout a year, even earth road.

4.1.5 Ethnic Groups

The priority scheme exhibits ethnically diverse societies which are composed of two main ethnic groups; Lao Loum and Lao Thueng. The ethnic groups distributed in five schemes consist of the numerous tribes; Lao-Tai and Phouthai of Lao Loum, and Laven, Yahuen, Suay, Tai, Alak, Ngæ and Katu of Lao Thueng. Some vietnamese families live in Upper Champi scheme. The distribution of ethnic groups in each scheme is shown as below.

Unit: percent

Priority Scheme Area	Lao Loum	Lao Thueng	Vietnamese
Upper Champi	53	45	2
Upper Tapoung	6	94	0
Upper Kapheu	38	62	0
Lower Xe Set	73	27	0
Upper Tay-Un	3	97	0

Data Source: Village administrative committees

Details of the distribution of ethnic groups are tabulated in Table VI-2-4.

The cultural patterns of ethnic groups in the scheme are divided into two patterns; matrilocal and matrilinear in Lao Loum's social organization and patrilocal and patrilinear in Lao Thueng's social organization. Some sub-groups (Laven and Suay) of Lao Thueng acculturate to the Lao Loum's pattern, but their thought and behaviors are still under traditional animistic shamanism. The characteristics of ethnic groups in the scheme areas are indicated as below.

Upper Champi scheme

- Major ethnic groups: Lao Loum (Lao-Tai) and Lao Thueng (Laven)
- Village formation: Grouping type with mixed ethnic groups
- Religion: Buddhist, animist (some small ethnic sub-groups)
- Agricultural system: Coffee and tea growings in hilly area
- Organizations: Village administrative organizations, religious groups

Upper Tapoung scheme

- Major ethnic groups: Lao Thueng (Laven)
- Village formation: Grouping type and scattered type with single ethnic group
- Religion: Buddhist with traditional animistic mind
- Agricultural system: Vegetable cultivation with slash and burn system and coffee growing in the plateau
- Organizations: Village administrative organizations, religious groups, traditional

community groups

Upper Kapheu scheme

- Major ethnic groups: Lao Loum (Phouthai) and Lao Thueng (Laven)
- Village formation: Grouping type with single ethnic group
- Religion: Buddhist (Lao Loum), animist (Lao Thueng)
- Agricultural system: Coffee growing and upland rice cultivation with slash and burn system
- Organizations: Village administrative organizations, religious groups, traditional community groups

Lower Xe Set scheme

- Major ethnic groups: Lao Loum (Phouthai and Lao-Tai) and Lao Thueng (Taoi, Suay and Ngae)
- Village formation: Grouping type with single ethnic group
- Religion: Buddhist (Lao Loum and Lao Thueng-Suay), animist (Lao Thueng)
- Agricultural system: Upland rice and field crop cultivation with slash and burn system and lowland rice cultivation
- Organizations: Village administrative organizations, religious groups, traditional community groups

Upper Tay-Un scheme

- Major ethnic groups: Lao Theung (Ngae, Alak and Katu)
- Village formation: Grouping type with single ethnic group (Nge) and mixed ethnic groups (Alak and Katu)
- Religion: Animist
- Agricultural system: Upland rice and field crop cultivation with slash and burn system and irrigated lowland rice (some families)
- Organizations: Village administrative organizations, traditional community groups

There is no supporting services by the local government for ethnic groups in the scheme, except for Khonleng village in Lower Xe Set scheme. In this village, the provincial women's union is carried out the supporting programs such as handicraft and weaving for village women's group to improve family life, in collaboration with NGO.

4.1.6 Living Conditions

(1) Occupation and labor

As mention in 4.1.3 Population, almost the households in the scheme engage in agriculture such as coffee, upland and lowland rice and upland field crop production with several members of the family performing household work as well.

According to the village interview survey, daily farm labor hour of males and females is 7.1 to 7.8 hours of males and 5.3 to 6.7 hours of females. It shows that farm working hour of females in Upper Tay-Un scheme is higher than that of another scheme, because of slash and burn farming and customary behaviors. In all the scheme, the labor exchange system for farming prevails common in both the Lao Loum and Lao Thueng. However, it revealed that weeding and harvesting for coffee production are performed by hired labor, particularly in the Upper Champi and Upper Kapheu schemes. Other productive activities such as vegetable gardening, pig and poultry raising are predominantly performed by female members of the family. (see Table VI-2-5 and -2-6)

(2) Income and home economy

Family income as cash, of villagers in the scheme area is mainly derived from selling farm products such as coffee, tea, cardamom, vegetables, groundnut, chilli and cotton, as main sources of income. An additional source of income is the sale of pig and poultry. On the other hand, barter dealings of farm products (groundnut and white rice, coffee bean and white rice or

living commodities) are going on. According to the farm household economy survey, farmers who practice upland rice and crops in the Lower Xe Set scheme, and who practice coffee and upland rice in the Upper Tay-Un scheme, earn the additional income derived from non-farm labor markets.

Expenditure figures show that the average family in the Upper Champi and the Upper Tapoung spends about 58 thousand kip to 115 thousand kip per year on their living and 55 thousand kip to 314 thousand kip per year on other items including farm input and hired labor. However, the expenditure of the average family in the other schemes is small amount compared with more that of the above mentioned scheme, particularly, production costs show very low. Judging from the living expenses of typical farmers, it appears that farmers in Upper Champi and Upper Tapoung schemes have a tendency to improve living conditions by spending more on non-food items than that on food. In the Upper Kapheu and Upper Tay-Un schemes, the non-food expenses within the total living expenses, is slightly less because of traditional behavior of the ethnic minorities.

As mentioned in the farm household economy, household income of farmers in the scheme varies depending on crop production. As the results of the data analyzed of typical farmer reveal the following characteristics in each scheme, as below.

Upper Champi scheme

- Case A: Coffee farmer (average farm size: 2.7 ha)
The farmer earns about 802 thousand kip from only coffee production and can afford to managing farming and to maintain his living.
- Case B: Coffee and tea farmer (average farm size: 3.0 ha)
The farmer can produce a surplus income about 106 thousand kip from farming and maintain his living by coffee and tea production.

Upper Tapoung scheme

- Case A: Coffee farmer (average farm size: 1.5 ha)
Though the farm size is small, the farmer earn 677 thousand kip per year and produce a surplus (41 thousand kip) only from producing coffee.
- Case B: Coffee and vegetable (cabbage) farmer (average farm size: 2.9 ha)
The farmer earns over 1 million kip from coffee and vegetables and can afford to managing farming sufficiently and to maintain his living in affluence.
- Case C: Coffee and upland rice farmer (average farm size: 2.8 ha)
The farmer cans about 1 million kip from coffee and upland rice and produce a surplus (153 thousand kip) by low input to the production.

Upper Kapheu scheme

- Case A: Coffee farmer (average farm size: 1.6 ha)
The farmer earns about 563 thousand kip from coffee only and produce a surplus (91 thousand kip) by low input for the production and low living expenses.
- Case B: Coffee and upland rice farmer (1.7 ha)
The farmer earns 522 thousand kip from coffee and upland rice. It shows that his income and expenditure tend similar to Case A of this scheme.

Lower Xe Set scheme

- Case A: Lowland rice and upland crop farmer (average farm size: 1.5 ha)
The farmer earns about 465 thousand kip per year from lowland rice and upland crops and produce a surplus only 6 thousand kip per year, as subsistence level.
- Case B: Upland rice and crop farmer (average farm size: 1.3 ha)
The farmer can not maintain his living by farm income (429 thousand kip). Therefore, he earns additional income from non-farm labor markets.

Upper Tay-Un scheme

- Case A: Coffee and lowland crop farmer (average farm size: 2.4 ha)

The farmer earns about 612 thousand kip per year from coffee and lowland rice. The circumstances of this farmer are similar to Case B of the Upper Kapheu.
- Case B: Coffee and upland rice farmer (average farm size: 1.7 ha)
The farmer also cannot maintain his living by farm income (435 thousand kip), so that he earns additional income from other labor markets.

In order to grasp the villager's income level in each scheme, the present income distribution has been studied based on the village interview survey. As a result, it is clarified that most the scheme areas show relatively moderate level, except for Lower Xe Set and Upper Kapheu scheme areas. Particularly, 79 percent of the total households in Lower Xe Set scheme area belong to the poverty group because of an unfavorable physical conditions for farming, and Upper Kapheu scheme area follows as 39 percent. The other scheme areas are revealed that the total households, 80 percent and over, compose moderate and better-off groups due to high income derived from coffee and/or vegetable productions. (see Table VI-2-7)

(3) Health condition

Among the priority scheme, only one village clinic exists in Lak 35 village of the Upper Champi scheme. The clinic is actually poorly operated due to lack of sources, medical supplies and essential drugs, and the function of clinic concentrates to public health care for villagers. There are one to five pharmacies in the scheme areas, excepting in Upper Kapheu and Upper Tay-Un schemes. Some serious patients in the priority scheme go to the provincial and/or district hospitals for treatment. However, most people in the villages use traditional herbal medicine with some medical drugs purchased from pharmacies. In villages of ethnic groups, ghost (phii) master and fortune teller are the way of illness treatment.

According to the village interview survey, diarrhea, dysentery and malaria are major diseases in all the scheme. In the Upper Kapheu scheme, goiter (iodine deficiency disease) prevails among girls and women, and some women suffered from this disease can be seen in the Lower Xe Set and Upper Tay-Un scheme.

(4) Educational condition

Most of primary schools in the priority scheme provide a three year schooling (Class III) and/or two year schooling (Class II). Most pupils complete only about three year schooling. School facilities show that number of village having no primary school is one or two in each scheme, excepting Upper Tapoung scheme. The number of class room per school (Class III) is usually no more than one or two, and the buildings are often made of thatched roof, bamboo wall and earth floor. The pupil per teacher ratio in the areas is relatively high (28 to 40) compared with national level (27.4). (see Table VI-2-8 to -2-11)

The data surveyed on the literacy rate in the areas shows extremely low rate in the villages of ethnic group, from 56 percent to 2 percent. In general, women's rate is lower than that of men, because of drop out and poor attendance by household activities and a discrimination against the girls. (see Table VI-2-12 and -2-13)

(5) Living environments

In all the scheme, the main sources of drinking and domestic water during dry season are streams and springs while during rainy season are rainwater. But this does not include some villages in Upper Kapheu and Upper Tay-Un schemes which have a well in village. Fetching and carrying water are responsibility of girls and women, and they have to make two trips (morning and evening) a day for fetching drinking water. About 85 percent of households in the scheme drink boiled water. (see Table VI-2-14)

Electricity supply is limited to very few places in the scheme, and primarily exists in a part of Upper Champi and Lower Xe Set schemes due to sharing 30 percent of installation cost for distribution line. However, most village farmers are using oil lamps and/or resin for illuminating the houses. Firewood collected from village common forest surrounding the housing area is generally used for fuel for cooking, except for coffee growers who use cut branches of coffee trees. (see Table VI-2-15)

According to the data obtained on household assets in the schemes, nearly half of the total household have radio cassette recorder and bicycle, and 7 percent to 30 percent of the households also have a TV set. In the Upper Champi, Upper Tapoung and Upper Kapheu schemes, coffee growers and vegetable farmers tend to buy motor-cycle and hand tractor because of high income derived from coffee and vegetables. (see Table VI-2-16)

Viewing from the housing material survey, the scheme which has the lowest housing conditions among the schemes, is Lower Xe Set scheme. However, in the villages of ethnic group, it cannot assume that the difference of living standards among villagers observed from their housing conditions despite the houses are being reconstructed to wooden house. No houses in three schemes such as the Upper Tapoung, the Upper Kapheu and the Lower Xe Set, have latrine because of traditional behaviors. In Upper Tay-Un scheme, about 10% of houses have latrines through health activities of women's group supported by the LWU, for the purpose of improving health conditions of this area which has high incidence of epidemic diseases such as dysentery and cholera. (see Table VI-2-17 and -2-18)

4.2 Development Constraints

Major constraints to the socio-economic development common to five priority schemes are pointed out as below.

- Low literacy rate of women and ethnic groups
- Poor educational services and insufficient sources for education
- Lack of cooperativeness among ethnic groups
- High incidence of malaria and diarrheal diseases
- Poor health services and insufficient sources for health
- Inferior status of women
- Low income from traditional farming system
- No available water supply system
- No available rural electrification
- Inadequacy of technical and financial support to community development

4.3 Development Plan

4.3.1 Development Concept

The rural development aims to improve the quality of rural life of people and to raise the living standard through provision of rural infrastructure as well as agricultural infrastructure. In order to implement successfully, strengthening of support services in agriculture and social aspects with voluntary participation of beneficiaries are essential. These services are to be carried out in close cooperation with AFSs and involvement of beneficiaries. The proposed socio-economic development comprises the participation of beneficiaries and community development.

4.3.2 Participation of Beneficiaries

The most important work in the scheme is the improvement of water situation in the areas, through construction of the irrigation system, and the improvement of rural living and society through construction and improvement of rural infrastructure such as community halls,

a build up of a grass roots organizational structure. The participation of beneficiaries to effective and sustainable irrigation development and rural development, will be proposed as the following procedures. Concerning irrigation and water supply, organization of the groups of beneficiaries follows the procedure along the regulations mentioned in Annex 5, section 3.4.5.

- (1) At the initial construction stage, the village water user's groups for irrigation and domestic water supply (VWUG-irrigation, and -water supply) and the water users' associations for irrigation and water supply (WUA-irrigation, and -water supply) will be organized by beneficiaries under the guidance of the provincial and district AFSs.
- (2) The groups for irrigation are the responsibilities for the implementation of construction works for tertiary and quaternary canals. Hence, the sub-groups which organize by canal, will be held discussions and negotiations on the design of the tertiary and quaternary canals in collaboration with the design engineers of the scheme, and will be made the determination of the final design and construction period. On the other hand, the groups for water supply will be made the same procedure as the case of irrigation on the final tap place in the village in collaboration with the engineers of the scheme. All the activities will be done by determination of the groups based on the family unit.
- (3) The operation and maintenance including water distribution will be determined by discussions and negotiations on these issues among beneficiaries in collaboration with engineers and/or technicians in charged of these systems, and the water fee required to these works will be set at reasonable and affordable level resulting from discussions and negotiations based on a function of plot sized, and level and number of yields, for irrigation, and as consumption of numbers of family, for domestic water supply, among the beneficiaries.
- (4) In addition, the supporting organization established (mentioned in Annex 5, section 3.4.5) for beneficiaries which is composed of the FIAT's officers and staff, volunteers of international organization and NGOs, will be cooperated to promote these activities.

In order to hasten these procedures smoothly and effectively, a considerable amount of time of staff of the provincial agricultural and health authorities should be spent on training and extension work for the beneficiaries. On the other hand, rural infrastructure constructed by the scheme consists of community halls (as the center of the activities of rural society), school facilities (for improving the educational environments), water supply (for improving rural life), and road improvement (for contribute regional economy by promoting the interchange of the area). From the social development perspective, it is important that the beneficiaries are involved in the implementation of the scheme and the proposed activities. It is recommended that the water users' organizations established are to be engaged as labor units for unskilled work during the implementation stage. Concerning the provision of domestic water, it will be important that neighbourhood sharing a tap are fully engaged in the location and construction of those so as to feel a sense of ownership/responsibility for its proper maintenance.

4.3.3 Community Development

It is assumed that the rural infrastructure will become a foundation of the integrated rural development by effective use for community activities. Community development will be performed its role to accelerate the rural development. The objectives of this plan will include the following items:

- (i) Improvement of health and hygiene
- (ii) Increase in the literacy and educational standard
- (iii) Generation of non farm income
- (iv) Positive participation to environmental issues

(iv) Positive participation to environmental issues

This development will be carried out gradually being attention toward people's concerns for using the facilities provided. Particularly, the people in the scheme area belongs to ethnic groups. They are low educational level and have traditional customs and cultural backgrounds. Therefore, the development program based on the people's needs will be conducted. As a field of these activities, the community hall will be used effectively. Management, operation and practical use of the community hall constructed will be proposed as follows:

- (i) At the initial development stage, the construction plan and its purposes of the community hall will be explained to village leaders from the personnel in charge of social development of the provincial and district authorities.
- (ii) The training seminars on rural community development will be held regularly for village leaders including leaders of existing village groups, under the sponsorship of social development units of the provincial and district authorities and the Lao Women's Union. Through the training, the village leaders will recognize the importance of community development.
- (iii) This hall will manage and operate autonomously by villagers themselves and will have a role of the core of village community activities for rural society development. On this account, the village leaders will be explained and made the objectives of the hall known every villagers without exception, by opening of village meeting.
- (iv) In order to effectively and smoothly management and operation of the hall, the community executive board comprising representatives of village administration, elder, women's and youth groups, and village agricultural association, both water user's groups for irrigation and water supply, and health volunteers, will be established. A chairman of the board will take a responsibility of management and operation of the community hall and will be set up a secretary, an accountant and a manager.
- (v) The community activities will be carried out by the whole villager's participation at the community hall as a center of the activities. The relevant authorities to these activities such as health, education, and agricultural services, will be cooperated with these activities. Further voluntary active member for community development will be brought up through the activities.
- (vi) The fund for operation will contribute by each group, and will collect rental fee from user's groups when they use. The collected fees will fill a deficit.

As the aims to activation of rural community and rural life improvement, the programs which make a practical use of the community hall will be proposed as follows:

(1) Health and hygiene program

Owing to easily obtain clean water by water supply system, the health and hygiene program including environmental cleanliness, drinking water handling, hygienic cooking, etc., will be arranged and implemented in collaboration with the LWU, the provincial health services and NGOs. By implementing this program, health within the family in order to increase working capabilities will be improved and healthy family life will be realized.

(2) Adult education program

In order to accelerate improvement of the literacy which will bring about affluent local

women for educational opportunity, adult education program will be arranged and implemented in cooperation with the provincial education services and the LWU. Particularly, improvement of the literacy will be encouraged to improve the living conditions and to make easily communication with the outside world.

(3) Rural handicraft program

The people in the rural area have a traditional handicraft and weaving techniques. In order to make development attempt on traditional handicraft and weavings based on their own culture, the program will be arranged. This will be given the opportunity to introduce their precious culture to the world and to succeed to next generation. This program will be implemented supporting by the LWU. It seems that this could be produced additional income and contribute to home economy.

(4) Home economics program

The aims of this program are to develop skill in home management, especially to farm women and youth. Emphasis is on food and nutrition, food production, home management, income generation, and child care. This program will be arranged and implemented in collaboration with the LWU, and extension staff for life improvement. It seems that it could be improved the quality of family life and family decisions.

(5) Environmental program

The program which encourages well-off rural environments by reduce slash and burn cultivation, reforestation and forest reservation, will be arranged and implemented in collaboration with the provincial and district AFSs. Through raising the awareness for an environment problem among the people, a base of rural society will be strengthened.

Besides, the extension activities of the proposed women's extension staff will be center on vegetable gardening, pig and poultry raising, and home economics. The extension staff will be promoted the improvement program of home life in cooperation with women's volunteer of the village women's group and/or the LWU's staff.

Through implementing the community activities, the quality of rural life will be improved. Furthermore, development of rural community will bring about activation of rural socio-economic conditions. (see Figure VI-2-2)

4.3.4 Women's Participation to Social Development

Rural society in the scheme area consists of ethnic groups. The women's participation to the social activities is limited. However, it can be observed that its situation is a difference among ethnic sub-groups due to cultural backgrounds. Under these circumstances, the involvement of women to the scheme and operation of the facilities of irrigation and water supply, will be considered. It will contribute in the long term to enhance the awareness on the women's role in irrigation and water supply. Encouraging an incentive to community development through participating the social activities, improvement of the social status of rural women will be promoted. In addition, provision of clean water by water supply system constructed, will be greatly contributed to women and girls by reduction of home tasks such as water fetching. It also improves their health. As a result, it seems that it could be made to participate social activities and to improve the literacy without difficulty and to enhance women's decisions in family and community by obtain working hour for supplemental income. It is expect that women's participation to social activities go a long way toward improving the rural society in the scheme.

Tables

Table VI-1-1 Total Population by Sex and Number of Households by Province

Province	Population		Total	Households Number	Average Size	Population Density
	Men	Women				
Champasak	244,356	256,638	500,994	84,230	5.9	32.5
Salavan	124,059	132,491	256,550	42,381	6.1	24
Sekong	31,480	32,356	63,836	9,520	6.7	8.3

Data Source: Census 1995, Preliminary Report 2

Table VI-1-2 Total Population by Sex and Number of Households by District

District	Population		Total	Households Number	Average Size	Growth Rate 1985-1995
	Men	Women				
Champasak province						
Pakxong	22,502	22,146	44,648	7,509	5.9	1.7
Bachiang	16,858	17,391	34,249	5,915	5.8	-
Salavan province						
Salavan	31,488	34,024	65,512	10,167	6.4	2.7
Laongam	21,388	22,122	43,510	7,789	5.6	3.6
Sekong province						
Thateng	7,500	7,775	15,275	2,448	6.2	2.7

Data Source: Census 1995, Preliminary Report 2

Table VI-1-3 Population and Households in the Study Area

Province	District	Zone	No. of Village	Number of Households	Total Population	Female	Population Density
Champasak	Pakxong	1	15	1,016	5,884	2,930	25.0
		2	12	1,215	6,688	3,345	29.6
		3	12	1,143	6,443	3,220	47.9
		4	10	948	4,820	2,386	34.8
		5	8	645	3,760	1,679	13.8
		6	11	834	4,640	2,348	7.5
		7	12	662	3,481	1,758	9.6
		8	13	814	3,820	1,958	6.4
		9	12	469	2,222	1,157	1.6
	Total		105	7,746	41,758	20,781	10.4
Champasak	Bachiang	1	14	906	4,308	2,073	44.7
		2	8	693	3,380	1,700	15.7
		3	20	1,183	5,843	2,971	41.9
		4	18	1,010	4,765	2,509	66.3
		5	10	430	2,038	1,069	112.0
		6	6	473	1,941	1,024	15.2
	Total		76	4,695	22,275	11,346	33.3
Salavan	Salavan	1	7	503	3,230	1,738	33.4
		2	14	1,030	6,305	3,248	46.6
		3	21	833	5,110	2,636	57.2
		4	16	1,011	5,978	3,087	52.0
	Total		58	3,377	20,623	10,709	47.3
Salavan	Laongam	1	16	1,623	8,435	4,077	143.5
		2	13	748	3,672	1,820	99.5
		3	11	835	4,285	2,266	51.3
		4	11	797	4,342	2,246	50.4
		5	10	582	3,095	1,570	14.8
		6	12	892	4,625	2,320	26.9
		7	9	573	3,138	1,644	20.4
		8	11	461	2,349	1,171	66.5
		9	8	426	2,128	1,124	64.5
		10	9	977	5,053	2,608	45.2
	Total		110	7,914	41,122	20,816	41.9
Sekong	Thateng	1	4	294	1,628	772	29.9
		2	17	1,057	5,687	2,705	39.9
		3	14	695	3,643	1,733	26.7
		4	15	656	3,445	1,638	53.7
	Total		50	2,702	14,403	6,848	36.2
	Grand Total		399	26,434	140,181	70,530	21.6

Note: * Population density = Person/square kilometer

Data Source: CPCs, Champasak, Salavan and Sekong Provinces.

Table VI-1-4 Distribution of Ethnic Groups in the Study Area

Province	District	Zone	No. of Village	Main Ethnic Group
Champasak	Pakxong	1	15	Lao-Tai, Laven, Yahuen, Taoi
		2	12	Laven, Lao-Tai, Yahuen, Taoi, Alak
		3	12	Laven, Lao-Tai, Taoi, Yahuen, Alak
		4	10	Laven, Taoi, Yahuen, Lao-Tai
		5	8	Laven, Taoi, Lao-Tai, Yahuen
		6	11	Laven
		7	12	Laven, Taoi, Suay, Lao-Tai
		8	13	Yahuen, Laven, Lao-Tai
		9	12	Laven, Yahuen
Champasak	Bachiang	1	14	Lao-Tai, Phouthai, Laven, Taoi, Alak
		2	8	Suay, Ong, Laven, Phouthai, Lao-Tai
		3	20	Lao-Tai, Phouthai, Laven, Alak, Ong
		4	18	Laven, Lave, Ngae, Taoi, Katang
		5	10	Lao-Tai, Suay, Yahuen, Alak
		6	6	Lao-Tai, Alak, Ngae, Yahuen
Salavan	Salavan	1	7	Lao-Tai, Suay, Taoi, Phouthai
		2	14	Suay, Phouthai, Taoi, Lao-Tai
		3	21	Suay, Taoi, Phouthai, Lao-Tai
		4	16	Suay, Laven, Taoi, Phouthai, Lao-Tai
Salavan	Laongam	1	16	Suay, Laven, Lao-Tai, Taoi
		2	13	Laven, Suay, Lao-Tai
		3	11	Laven, Suay
		4	11	Laven, Phouthai, Taoi, Katu
		5	10	Lao-Tai
		6	12	Lao-Tai, Suay, Phouthai, Taoi
		7	9	Suay, Katang, Lao-Tai
		8	11	Suay, Ngae, Lao-Tai, Taoi
		9	8	Laven, Suay, Katang
		10	9	Suay, Laven, Taoi, Lao-Tai
Sekong	Thateng	1	4	Katu
		2	17	Alak, Taoi, Laven, Talieng, Suay
		3	14	Alak, Ngae, Suay, Talieng
		4	15	Katu, Alak, Ngae, Talieng, Suay

Data Source: CPCs, District Offices concerned.

Table VI-1-5 Present Condition of Education

Province/District	Champasak		Salavan		Sekong
	Bachiang	Pakxong	Salavan	Laongam	Thateng
No. of Kindergarten	5	2	1	1	0
Nurse	8	8	8	2	0
Child	115	157	148	44	0
No. of Primary					
School	66(42)	91(57)	103	43	26(25)
Teacher	217	238	236	86	37
Pupil	5,865	7,354	8,142	3,808	1,685
No. of Lower					
Secondary School	5	9	5	1	1
Teacher	51	54	40	7	8
Student	647	788	584	156	83
No. of Upper					
Secondary School	1	1	1	1	0
Teacher	11	11	15	10	0
Student	77	162	170	24	0

Data Source: Education Service, Champasak, Saravane and Sekong Provinces.

Note: Figure in the parenthesis shows number of primary school(3 year schooling).

Table VI-1-6 Present Condition of Public Health

Province/District	Champasak		Salavan		Sekong
	Bachiang	Pakxong	Salavan	Laongam	Thateng
District Hospital	1	1	1	1	1
Doctor	0	0	0	0	0
Physician	1	2	3	3	0
Physician-assistant	9	12	15	13	8
Dentist	0	0	0	2	0
Nurse	39	40	17	37	14
Midwives	*	3	136	*	*
No. of Bed	20	50	24	25	10
No. of Pharmacy	*	13	25	13	5
Village Clinic	4	9	8	1	2
No. of Bed	12	6	0	5	6

Data Source: Education Service, Champasak, Saravane and Sekong Provinces.

Note: In Pakxong District, there are 2 Zone Health Care Centers with 10 beds.

* No data.

Table VI-2-1 Population and Number of Households in the Priority Scheme

1. Upper Champi Priority Scheme

Name of Village	Number of Households	Number of Families	Total Population	Females	Size of Households
Lak 33	61	69	347	176	5.7
Lak 35	121	125	674	323	5.6
Lak 36	80	94	476	251	6.0
Lak 38	71	81	431	214	6.1
Lak 40	144	151	837	417	5.8
Lak 42	56	46	263	131	4.7
Lak 43	206	206	1,146	575	5.6
Lak 45	89	97	557	289	6.3
Total	828	869	4,731	2,376	5.7

2. Upper Tapoung Priority Scheme

Name of Village	Number of Households	Number of Families	Total Population	Female	Size of Households
Phoulangkeo	45	47	283	138	6.3
Houaisan	116	120	666	325	5.7
Xetapung	101	101	529	276	5.2
Total	262	268	1,478	739	5.8

c. Upper Kapheu Priority Scheme

Name of Village	Number of Households	Number of Families	Total Population	Female	Size of Households
Phouak-noi	83	84	453	225	5.5
Sixiangmai	49	53	265	113	5.4
On-noi	97	98	490	236	5.1
Phouak-gnai	133	149	731	314	5.5
On-gnai	94	108	454	215	4.8
Total	456	492	2,393	1,103	5.2

4. Lower Xe Set Priority Scheme

Name of Village	Number of Households	Number of Families	Total Population	Female	Size of Households
Natteu	32	33	149	75	4.7
Senvang-gnai	135	151	796	378	5.9
Houakhoua	58	58	290	134	5.0
Senvang-noi	74	84	454	210	6.1
Khonleng	29	29	179	88	6.2
Natou	58	68	350	181	6.0
Total	386	423	2,218	1,066	5.6

5. Upper Tay-Un Priority Scheme

Name of Village	Number of Households	Number of Families	Total Population	Female	Size of Households
Chakamlit	20	28	160	78	8.0
Khamkok	50	50	470	226	9.4
Chakam-mai	38	44	241	119	6.3
Total	108	122	871	423	7.9

Data Source: Village Committees

Table VI-2-2 Economically Active Population in the Priority Scheme

1. Upper Champi Priority Scheme						
Name of Village	Male	Female	Total	Total Population	Percent (%)	
Lak 33	96	103	199	347	57.3	
Lak 35	168	192	360	674	53.4	
Lak 36	56	68	124	476	26.1	
Lak 38	142	145	287	431	66.6	
Lak 40	195	202	397	837	47.4	
Lak 42	67	73	140	263	53.2	
Lak 43	223	268	491	1,146	42.8	
Lak 45	136	143	279	557	50.1	
Total	1,083	1,194	2,277	4,731	48	
Total Population	2,355	2,376	4,731			
Percent (%)	46	50	48			
2. Upper Tapoung Priority Scheme						
Name of Village	Male	Female	Total	Total Population	Percent (%)	
Phoulangkeo	56	66	122	283	43.1	
Houaisan	222	235	457	666	68.6	
Xetapung	110	103	213	529	40.3	
Total	431	454	885	1,478	53.6	
Total Population	739	739	1,478			
Percent (%)	53	55	54			
3. Upper Kapheu Priority Scheme						
Name of Village	Male	Female	Total	Total Population	Percent (%)	
Phouak noi	161	162	323	453	71.3	
Sixiangmai	57	66	123	265	46.4	
On noi	111	125	236	490	48.2	
Phouak gnai	161	228	389	731	53.2	
On gnai	132	135	267	454	58.8	
Total	622	716	1,338	2,393	56	
Total Population	1,103	1,290	2,393			
Percent (%)	56	56	56			
4. Lower Xe Set Priority Scheme						
Name of Village	Male	Female	Total	Total Population	Percent (%)	
Natteu	33	38	71	149	47.7	
Sevang gnai	159	196	355	796	44.6	
Houakhoua	70	61	131	290	45.2	
Sevang noi	91	118	209	454	46	
Khonleng	49	38	87	179	48.6	
Natou	76	72	148	350	42.3	
Total	478	523	1,001	2,218	45.1	
Total Population	1,066	1,152	2,218			
Percent (%)	45	45	45			
5. Upper Tay-Un Priority Scheme						
Name of Village	Male	Female	Total	Total Population	Percent (%)	
Chakamlit	25	55	80	160	50	
Khankok	100	75	175	470	37.2	
Chakam mai	59	54	113	241	46.9	
Total	229	229	413	871	42.3	
Total Population	419	448	871			
Percent (%)	41	41	42			

Table VI-2-3 Number of Farm and Small Business Households

1. Upper Champi Priority Scheme

Name of Village	Number of Households	Number of Farm Households	Percent of Farm Households	Number of Small Business H.H.	Percent of Small Business H.H.
Lak 33	61	58	95	3	5
Lak 35	121	104	86	17	14
Lak 36	80	75	94	5	6
Lak 38	71	70	99	1	1
Lak 40	144	131	91	13	9
Lak 42	56	46	82	10	18
Lak 43	206	199	97	7	3
Lak 45	89	87	98	2	2
Total	828	770	93%	58	7%

2. Upper Tapoung Priority Scheme

Name of Village	Number of Households	Number of Farm Households	Percent of Farm Households	Number of Small Business H.H.	Percent of Small Business H.H.
Phoulangkeo	45	41	91	4	9
Houaisan	116	102	88	14	12
Xetapung	101	95	94	6	6
Total	262	238	91%	24	9%

3. Upper Kaphou Priority Scheme

Name of Village	Number of Households	Number of Farm Households	Percent of Farm Households	Number of Small Business H.H.	Percent of Small Business H.H.
Phouak-noi	83	83	100	0	0
Sixiangmai	49	48	98	1	2
On-noi	97	87	90	10	10
Phouak-gnai	133	131	98	2	2
On-gnai	94	94	100	0	0
Total	456	443	97%	13	3%

4. Lower Xe Set Priority Scheme

Name of Village	Number of Households	Number of Farm Households	Percent of Farm Households	Number of Small Business H.H.	Percent of Small Business H.H.
Natteu	32	31	97	1	3
Senvang-gnai	135	126	93	9	7
Houakhoua	58	39	67	11	33
Senvang-noi	74	73	99	1	1
Khonleng	29	29	100	0	0
Natou	58	58	100	0	0
Total	386	356	92%	22	8%

5. Upper Tay Un Priority Scheme

Name of Village	Number of Households	Number of Farm Households	Percent of Farm Households	Number of Small Business H.H.	Percent of Small Business H.H.
Chakanhit	20	20	100	0	0
Khamkok	50	49	98	1	2
Chakam-mai	38	37	97	1	3
Total	108	106	98%	2	2%

Table VI-2-4 Distribution of Ethnic Groups in the Priority Scheme

1. Upper Champi Scheme							
Total	Lao Loum			Lao Theung			Other
Population	Lao-Tai	Phouthai	Laven	Suay	Taoi	Alak	Vietnamese
4,731	2,516	14	1,517	319	109	212	82
	53.2%	0.3%	32.1%	6.7%	2.3%	4.5%	1.7%
2. Upper Tapoung Scheme							
Total	Lao Loum			Lao Theung			
Population	Lao-Tai	Phouthai	Laven	Suay	Taoi	Alak	Khmu
1,478	91	0	1,387	0	0	0	0
	6.2%	0.0%	93.8%	0.0%	0.0%	0.0%	0.0%
3. Upper Kapheu Scheme							
Total	Lao Loum			Lao Theung			
Population	Lao-Tai	Phouthai	Laven	Suay	Taoi	Alak	Khmu
2,393	78	1,092	1,734	2	175	45	1
	3.3%	45.6%	72.5%	0.1%	7.3%	1.9%	0.0%
4. Lower Xe Set Scheme							
Total	Lao Loum			Lao Theung			
Population	Lao-Tai	Phouthai	Laven	Suay	Taoi	Alak	Khmu
2,218	701	903	7	216	125	40	0
	31.6%	40.7%	0.3%	9.7%	5.6%	1.8%	0.0%
5. Upper Tay-Un Scheme							
Total	Lao Loum			Lao Theung			
Population	Lao-Tai	Phouthai	Katu	Suay	Alak	Ngae	Khmu
871	24	0	114	19	365	349	0
	2.8%	0.0%	13.1%	2.2%	41.9%	40.1%	0.0%

Data Source: Village Interview Survey

Table VI-2-5 Distribution of Daily Labor by Sex

Priority Scheme Area	Males			Females			Unit: Avg. hr
	Farmwork	Homework	Community	Farmwork	Homework	Community	
Upper Champi	7.1	2.5	2	5.4	6.4	0.5	
Upper Tapoung	6.7	4.3	2	5.3	6.7	1	
Upper Kapheu	7.2	1.9	1.5	5.4	6.4	1	
Lower Xe Set	7.8	3	2	5.5	6.2	1.8	
Upper Tay-Un	7.3	4.3	2	6.7	6.3	1	

Data Source: Village Interview Survey

Table VI-2-6 Distribution of Daily Women's Homework

Priority Scheme Area	Homework	Unit: Avg. Hr		
		Fetching Water	Vegetable Gardening	Animal Rearing
Upper Champi	3	1.5	1.1	0.8
Upper Tapoung	3.6	0.8	1.3	1
Upper Kapheu	2.7	1.5	1.2	1
Lower Xe Set	2.6	1.3	1.3	1
Upper Tay-U	3.2	0.8	1.3	1

Data Source: Village Interview Survey

Table VI-2-7 Distribution of Annual Family Income

Priority Scheme Area	Unit: Percent		
	Poverty	Moderate	Better-off
Upper Champi	9	69	22
Upper Tapoung	20	67	13
Upper Kapheu	39	49	12
Lower Xe Set	79	21	0
Upper Tay-Un	19	63	18

Data Source: Village Interview Survey

Note: Poverty : 350,000kip or less

Moderate: 351,000kip to 999,000kip

Better-off: 1,000,000kip and more

Table VI-2-8 Number of Primary School

Priority Scheme Area	Total Primary School	Number of Class-I P.S.	Number of Class-II P.S.	Number of Class-III P.S.	Number of Class-V P.S.
Upper Champi	7	0	1	2	4
Upper Tapoung	3	1	1	0	1
Upper Kapheu	5	0	2	2	1
Lower Xe Set	4	1	2	1	0
Upper Tay-Un	1	0	0	1	0

Data Source: Village Interview Survey

Table VI-2-9 Number of Teachers and Pupils at Primary School

Priority Scheme Area	Number of Village	Total Primary School	Teachers	Pupils (boy)	Pupils (girl)
Upper Champi	8	7	29	551	472
Upper Tapoung	3	3	8	174	93
Upper Kapheu	5	4	11	172	140
Lower Xe Set	6	4	5	111	51
Upper Tay-Un	3	1	1	20	20

Data Source: Village Interview Survey

Note: Pupils of Upper Champi, Upper Tapoung and Upper Kapheu are included pupils who come from surrounding villages.

Table VI-2-10 Enrollment of Primary School Pupils

Priority Scheme Area	Number of Village	School-aged Children	Enrolled 6-10 y.o. pupils	Net Enrollment Ratio (%)	
				Boy	Girl
Upper Champi	8	728	728	100	100
Upper Tapoung	3	226	226	100	100
Upper Kapheu	5	304	262	89	82
Lower Xe Set	6	442	172	48	24
Upper Tay-Un	3	159	40	24	27

Data Source: Village Interview Survey

Table VI-2-11 Number of Teachers and Students at Secondary Schools

Priority Scheme Area	Secondary Schools	Teachers	Total Students	Students (boy)	Students (girl)
Upper Champi					
Lak 35	1	6	95	64	31
Lak 43	1	5	93	57	56

Data Source: Village Interview Survey

Table VI-2-12 Educational Levels

Priority Scheme Area/Sex	Under Class-III P.S.	Graduated Class-V P.S.	Graduated Secd. School	Graduated High School	Graduated University
Upper Champi	955	1,158	229	111	0
Males	215	729	141	86	0
Females	740	429	88	25	0
Upper Tapoung	820	32	6	0	0
Males	391	24	6	0	0
Females	429	8	0	0	0
Upper Kaphou	1,089	276	135	8	0
Males	433	164	89	8	0
Females	656	112	46	0	0
Lower Xe Set	996	51	12	0	0
Males	451	44	11	0	0
Females	545	7	1	0	0
Upper Tay-Un	312	58	13	11	0
Males	118	58	11	11	0
Females	194	0	2	0	0

Data Source: Village Interview Survey

Note: Figures are educational levels more than 15 years old.

Table VI-2-13 Literacy Rates

Priority Scheme Area	Unit: Percent				
	No Read Lao		No Write Lao		No Speak Lao
	Males	Females	Males	Females	
Upper Champi	3.4	5.8	3.4	5.8	0
Upper Tapoung	22.9	33.3	22.9	33.3	0
Upper Kaphou	19.9	9.5	19.9	9.5	0
Lower Xe Set	32.7	38.4	32.7	38.7	0
Upper Tay-Un	34.2	46.0	34.2	46.0	0

Data Source: Village Interview Survey

Table VI-2-14 Water Resources for Drinking and Domestic Uses

Priority Scheme Area	Drinking Water			Domestic Water		
	Streams	Springs	Wells	Streams	Springs	Wells
Upper Champi	3	4	3	6	2	0
Upper Tapoung	1	2	0	2	1	0
Upper Kapheu	2	1	2	5	0	0
Lower Xe Set	4	1	0	6	0	0
Upper Tay-Un	1	2	0	3	0	0

Data Source: Village Interview Survey

Note: All villagers use rain water for drinking and domestic uses in rainy season.

Table VI-2-15 Fuels and Lightings

Priority Scheme Area	Fuels			Lightings	
	Forest	Wood	Coffee Branch	Oil/Resin	Electricity
Upper Champi	3	5		90	10
Upper Tapou	2	1		100	0
Upper Kaphe	1	4		97	2
Lower Xe Se	6	0		72	28
Upper Tay-U	1	2		94	6

Data Source: Village Interview Survey

Note: Fuels show number of village.

Lightings show percentage of households.

Table VI-2-16 Households Assets

Priority Area	House	Unit: Percent							
		Radio/Tape	TV set	Bicycle	Motorcycle	Car	Elec. Fan	Refrig.	
Upper Champi	828	53	30	35	13	2	0	5	
Upper Tapoung	262	55	13	34	11	1	0	0	
Upper Kapheu	456	47	14	28	4	0	0	0	
Lower Xe Set	386	50	8	50	1	0	20	4	
Upper Tay-Un	108	69	7	58	0	0	0	0	

Data Source: Village Interview Survey

Note: No sawing machine has villagers in the areas.

Table VI-2-17 Housing Conditions (Materials)

Priority Scheme Area	Number of House	Unit: Percent							
		Roof		Wall			Floor		
		Thatch	Iron Sheet	Bamboo	Wood	Bamboo	Wood	Concrete	
Upper Champi	817	15	85	16	82	6	91	1	
Upper Tapoung	262	45	55	55	45	12	88	0	
Upper Kapheu	456	52	48	63	38	40	38	1	
Lower Xe Set	386	69	31	77	23	12	86	1	
Upper Tay-Un	108	39	61	50	50	18	82	0	

Data Source: Village Interview Survey

Note: Upper Champi: 2% of houses have earth floor.

Table VI-2-18 Sanitary Facilities (Latrines)

Priority Scheme Area	Number of House	Unit: No. of House	
		Exist	No Exist
Upper Champi	817	31	797
Upper Tapoung	262	0	262
Upper Kapheu	456	1	460
Lower Xe Set	386	1	382
Upper Tay-Un	108	11	97

Figures

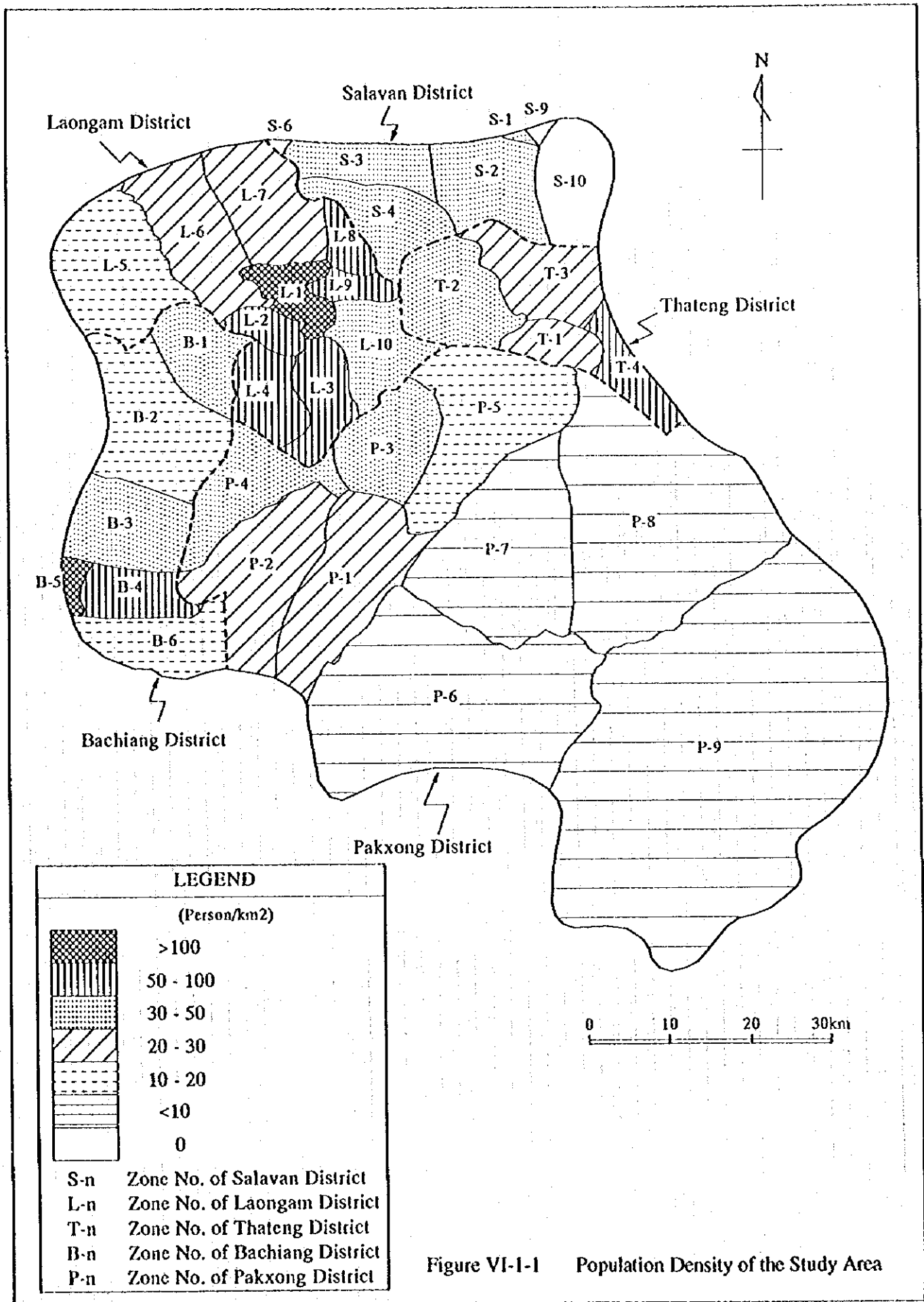


Figure VI-1-1 Population Density of the Study Area

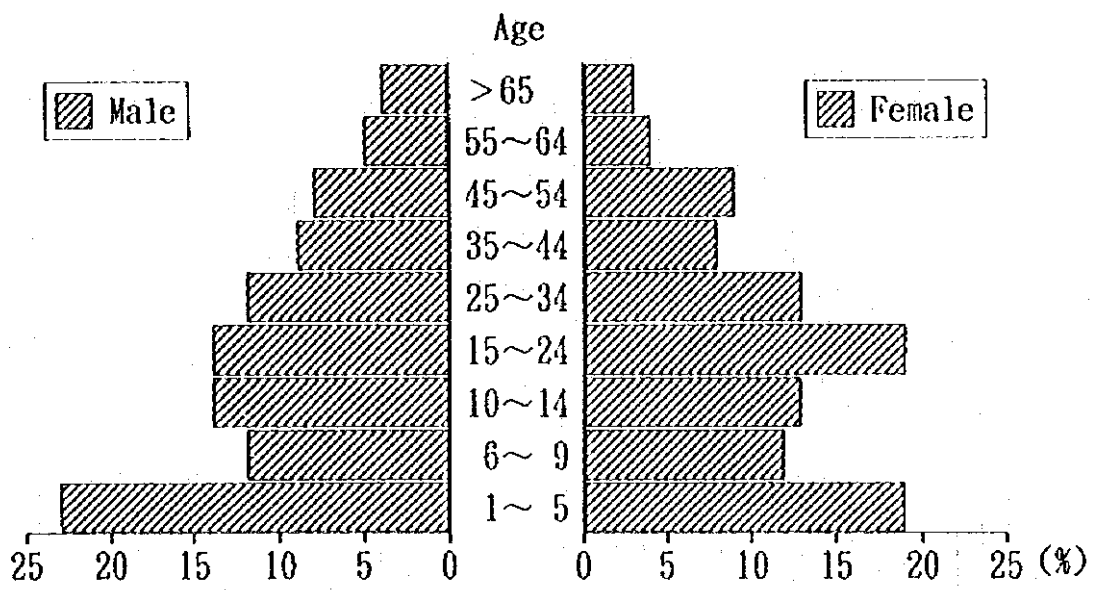


Figure VI-1-2 Population Structure (Age Groups) in the Study Area

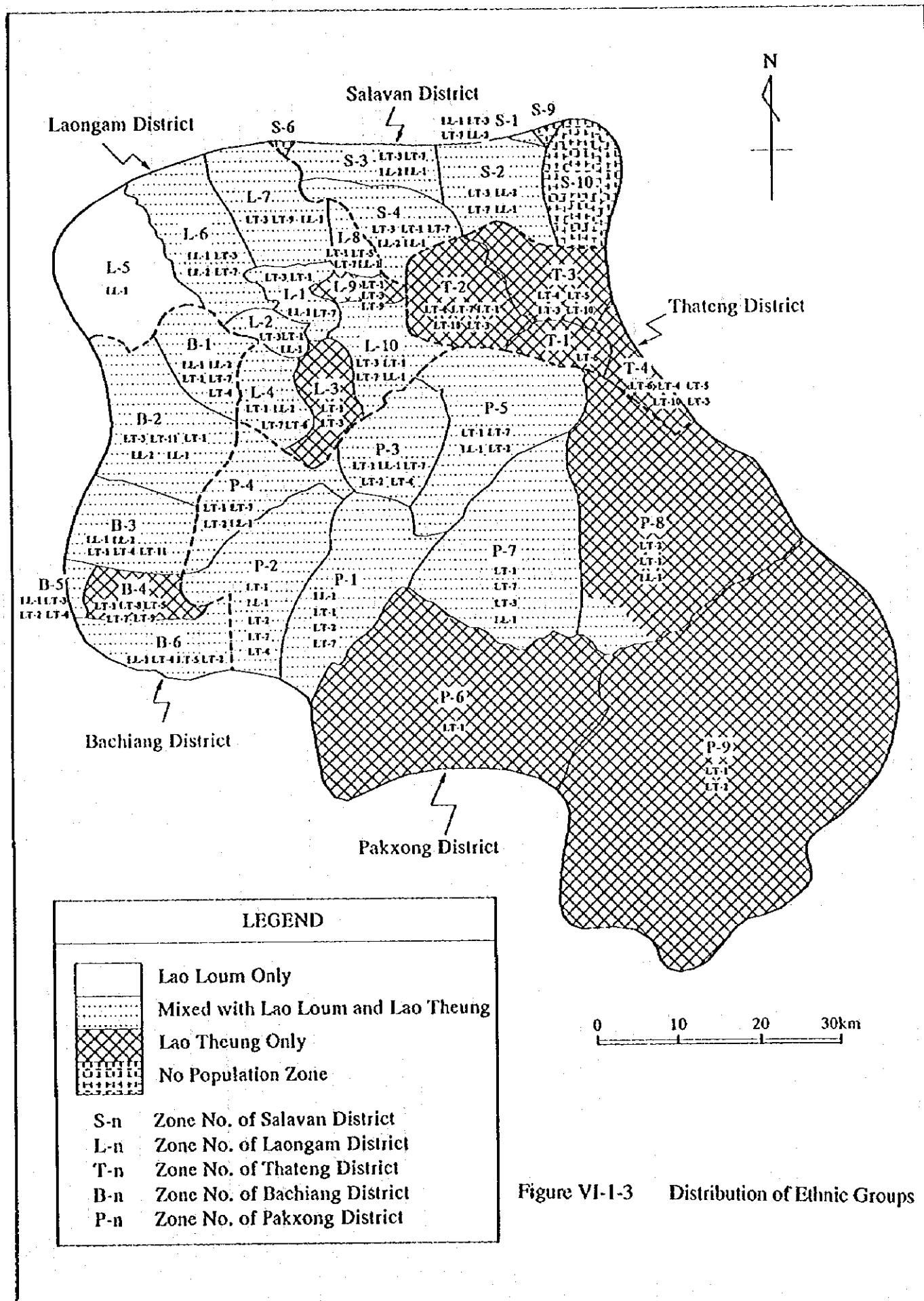


Figure VI-1-3 Distribution of Ethnic Groups

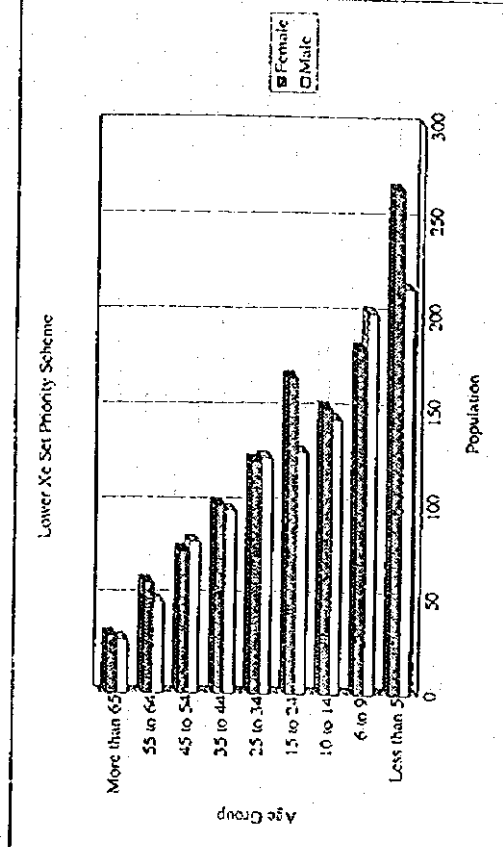
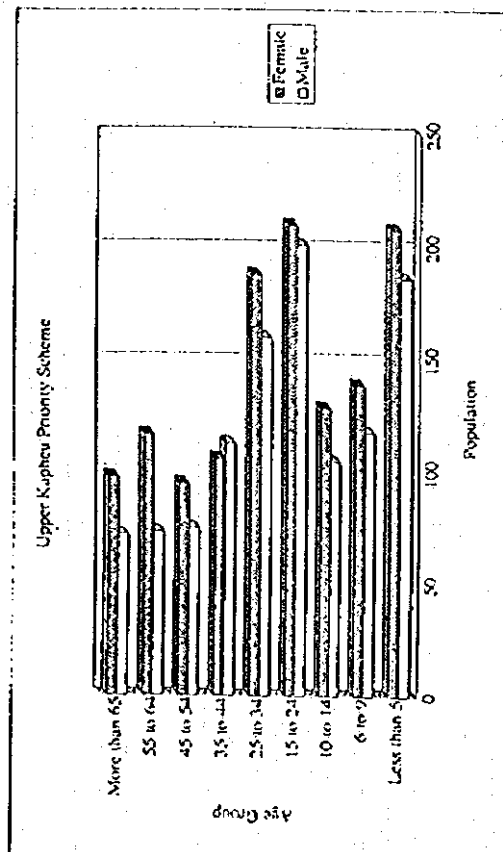
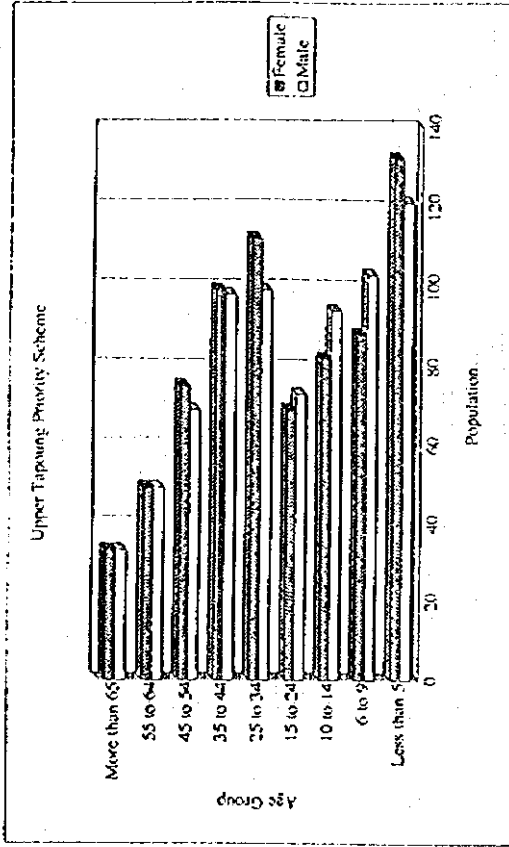
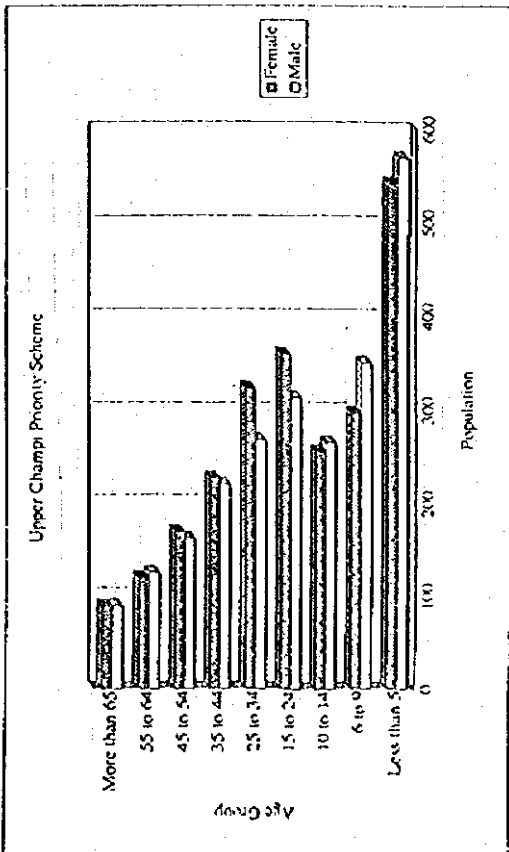


Figure VI-2-1(1) Population Structure (Age Groups) in the Priority Scheme

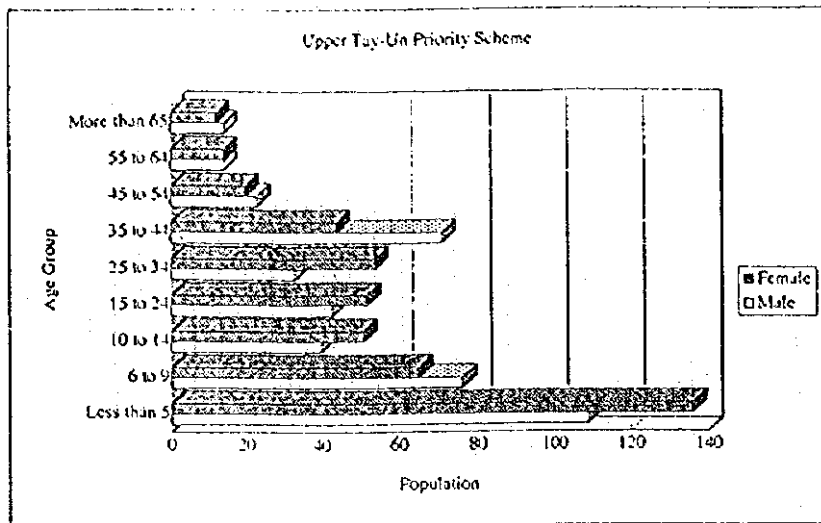


Figure VI-2-1(2) Population Structure (Age Groups) in the Priority Scheme

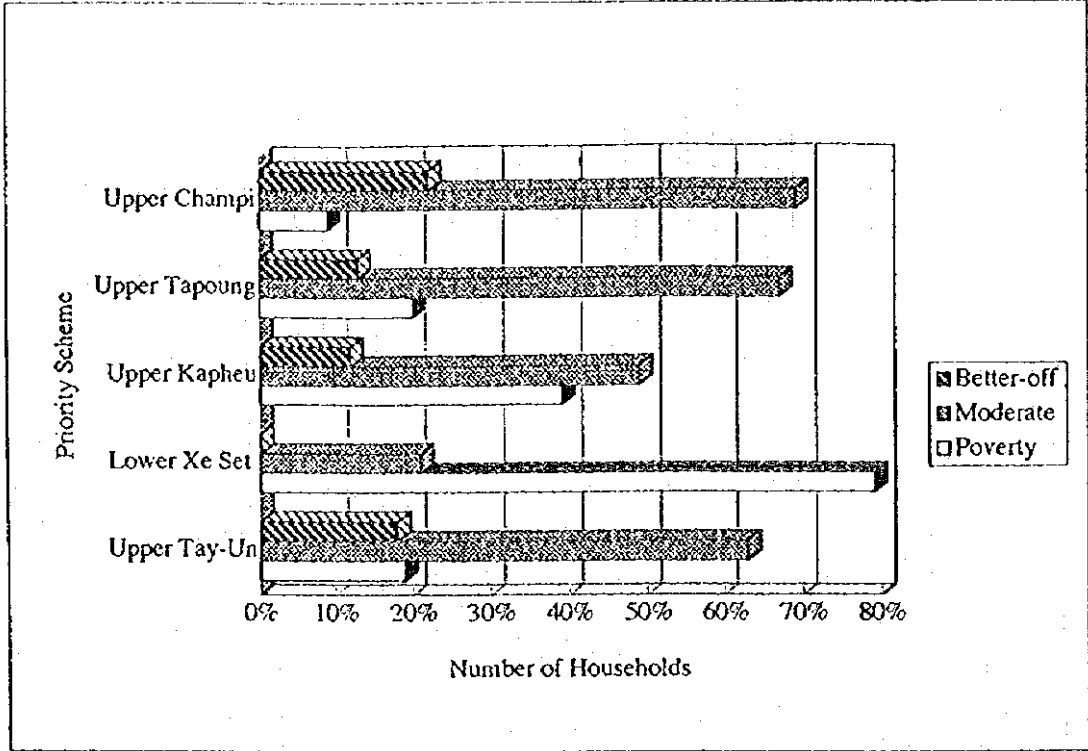


Figure VI-2-2 Distribution of Family Income Group

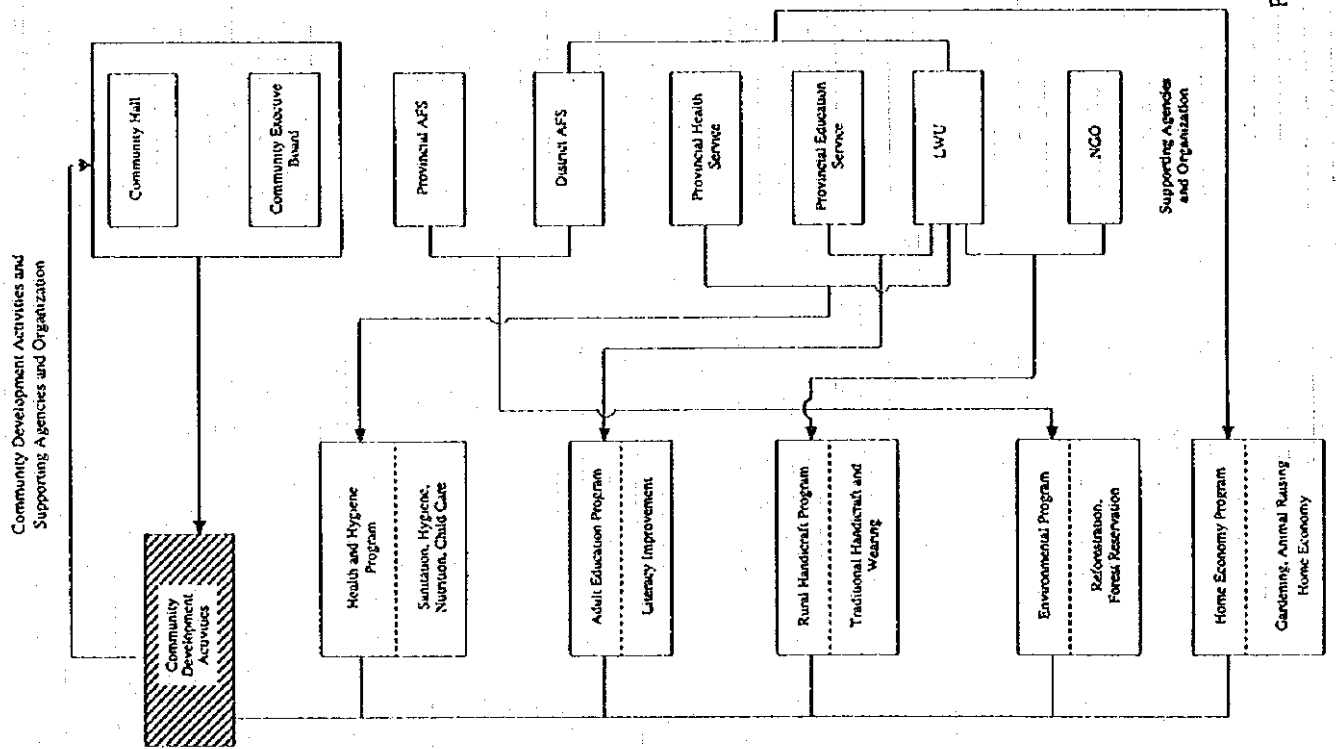
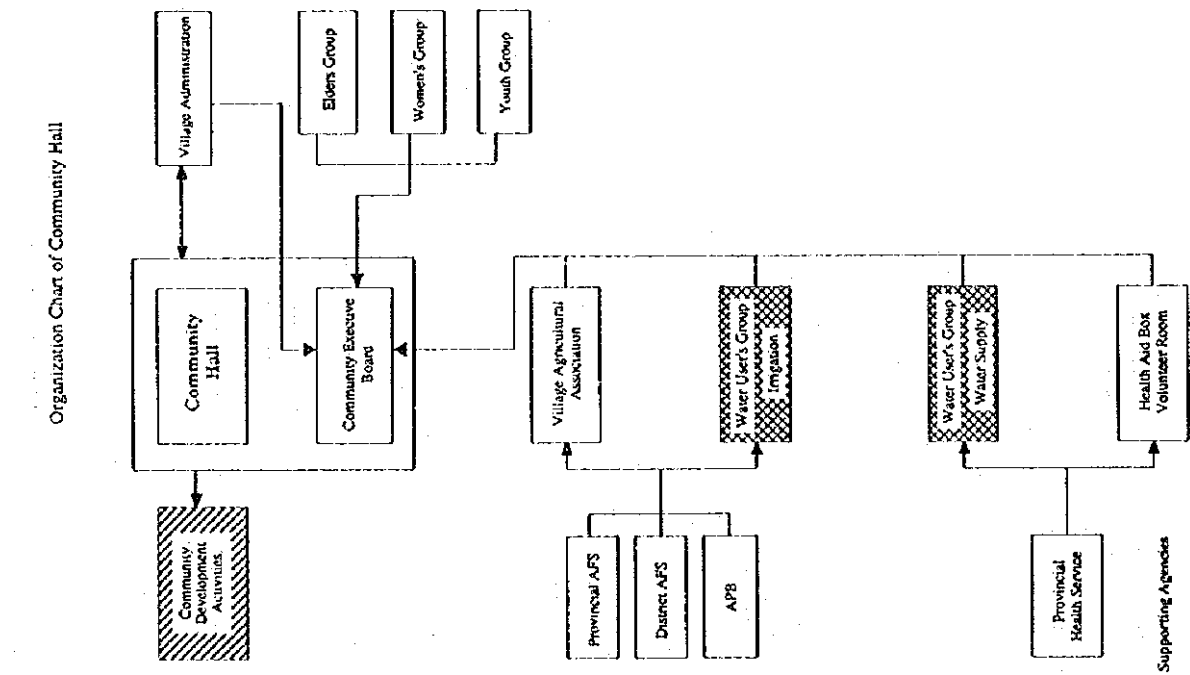


Figure VI-2-3 Organization Chart of Community Hall





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