国際協力事業団
ラオス国農林省

ラオス国
ヴァンヴィエン地域森林保全流域管理計画調査
ファイナルレポート
＜附属資料＞

平成10年9月

ラオス国ヴァンヴィエン地域
森林保全流域管理計画調査共同企業体
社団法人 日本林業技術協会
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ANNEX 1

NATURAL ENVIRONMENT IN THE MODEL AREA

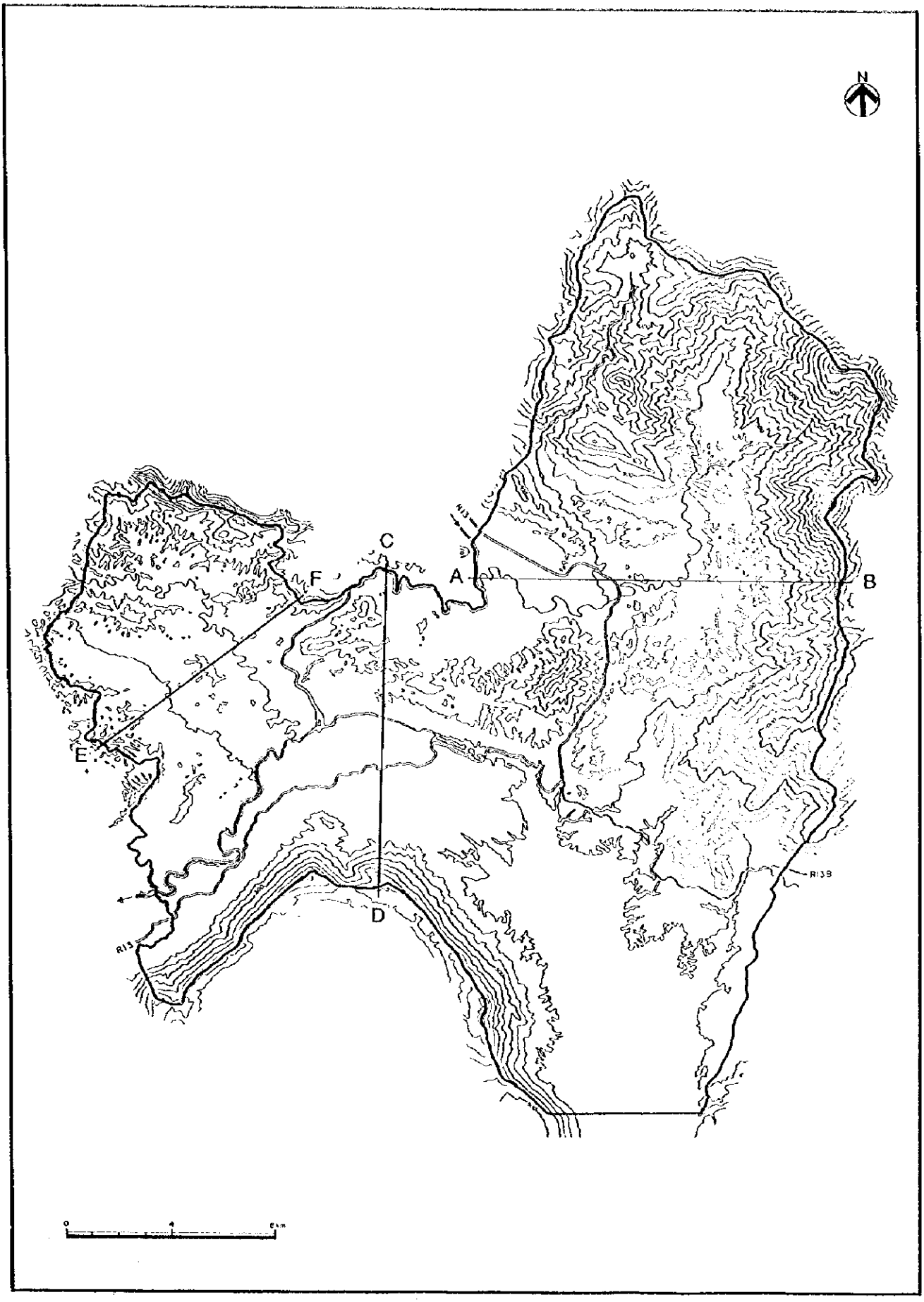


Fig. 1-1-1 Location of Cross-Sectional Lines

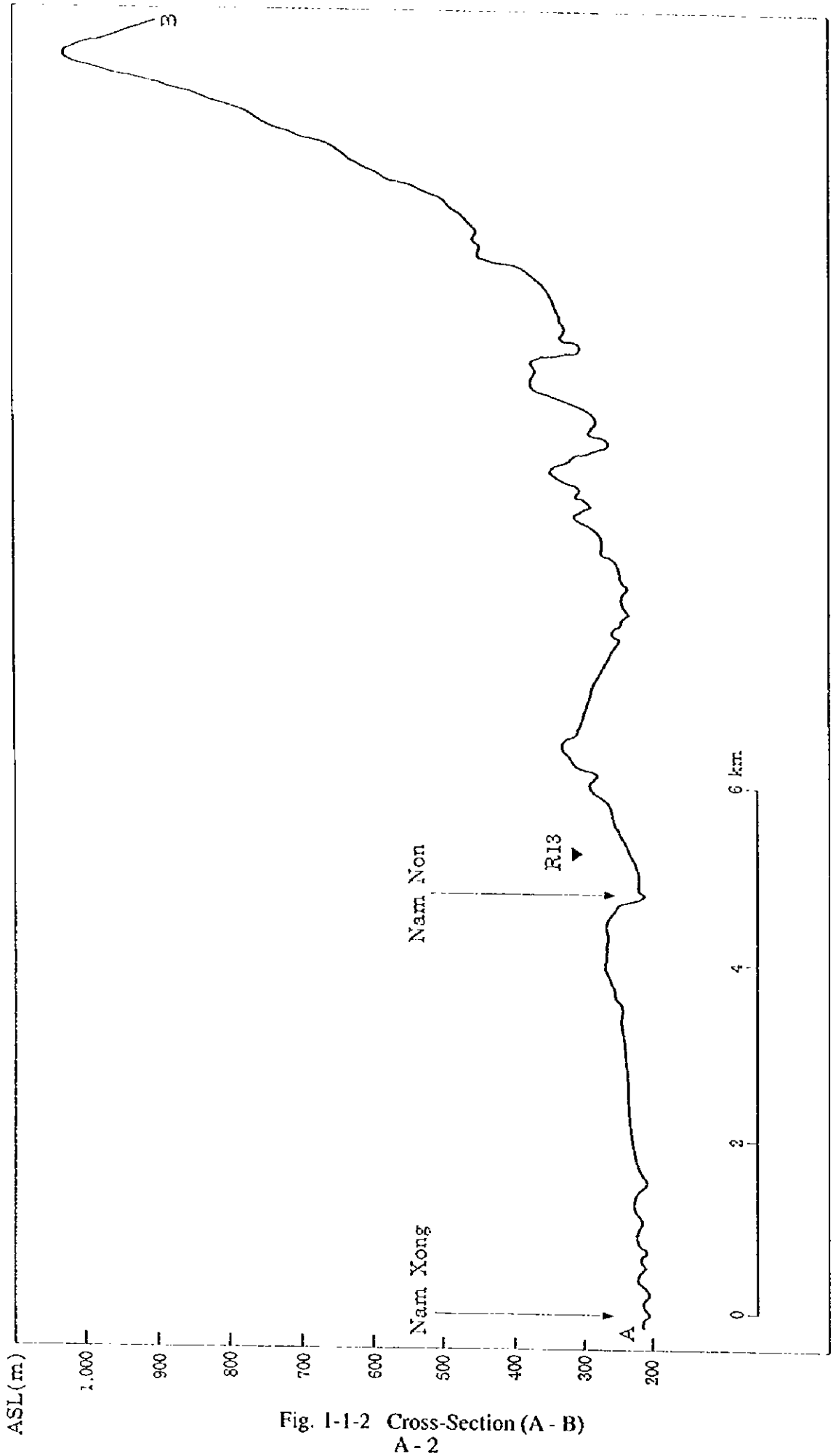


Fig. 1-1-2 Cross-Section (A - B)

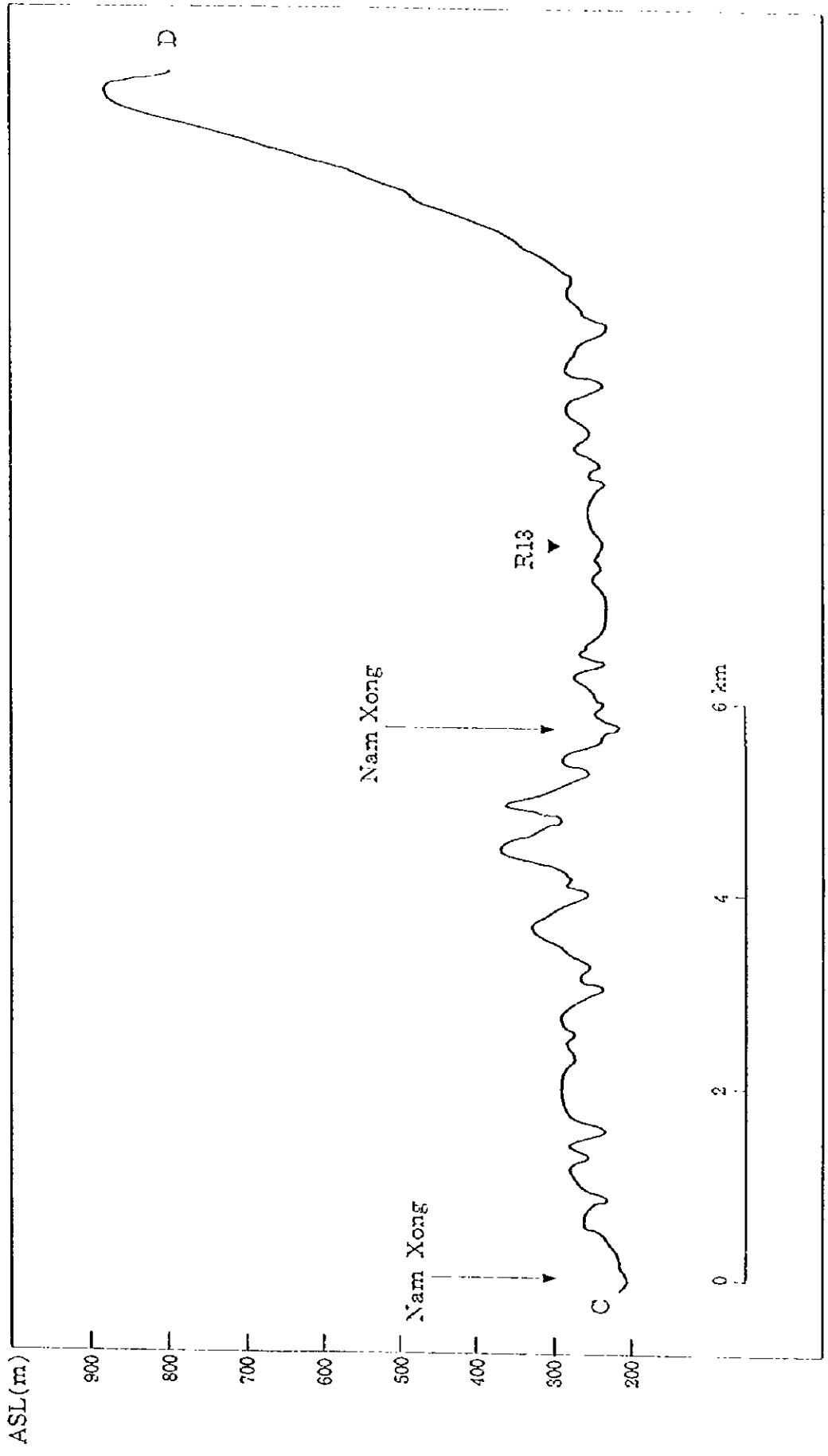


Fig. 1-1-3 Cross-Section (C - D)

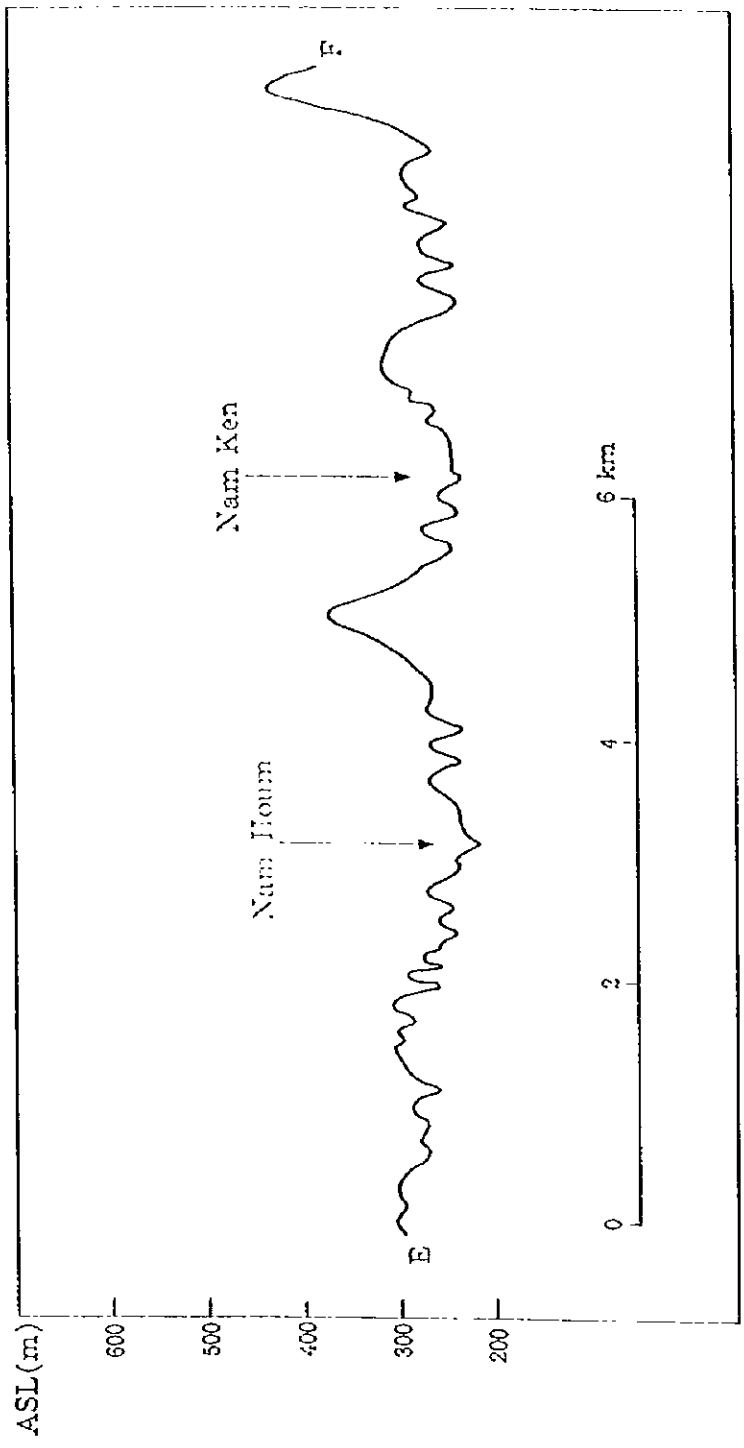


Fig. 1-1-4 Cross-Section (E - F)

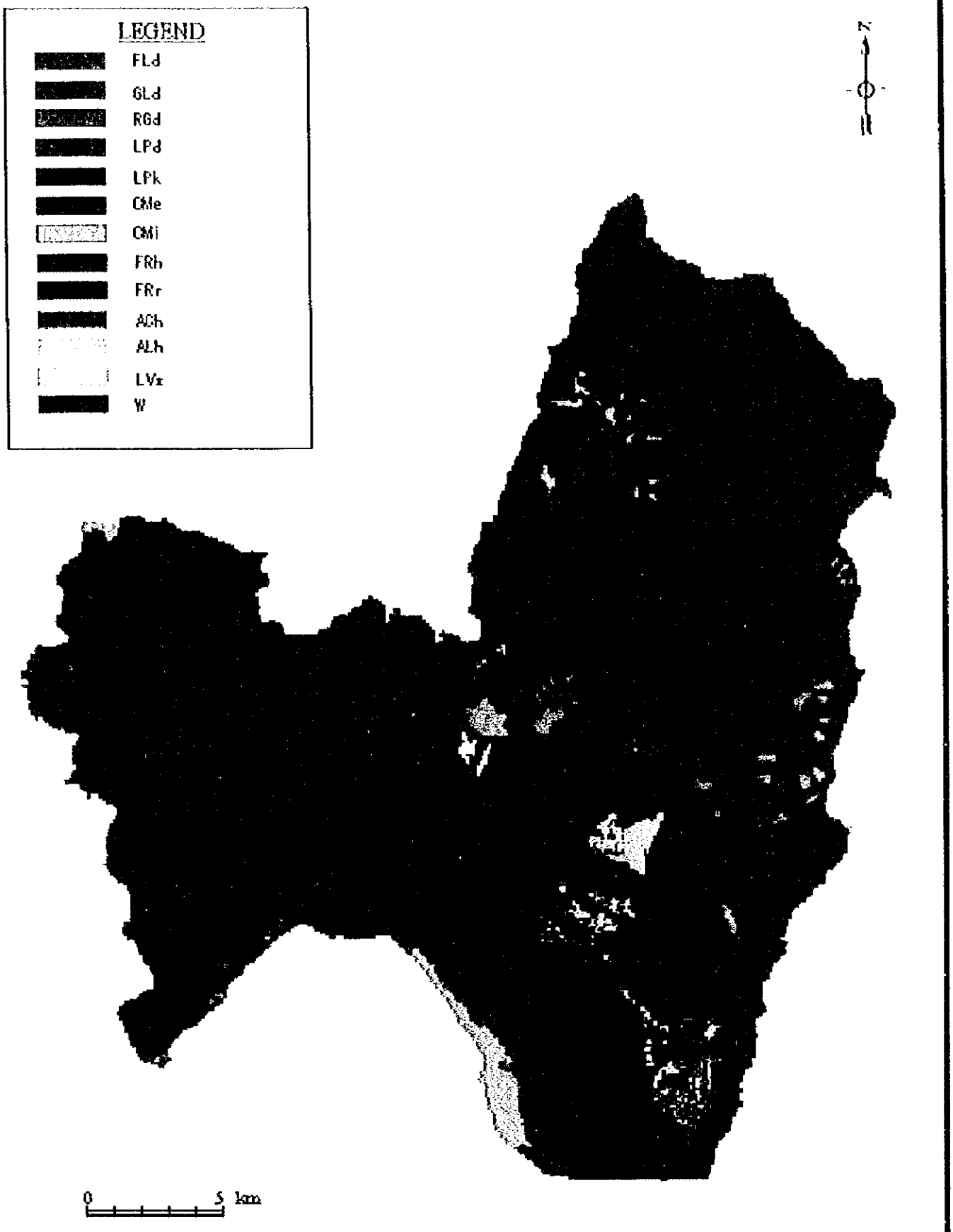


Fig. 1-2-1
Soil Map
The Study on Watershed Management Plan for Forest Conservation in Vangvieng District

Legende of records on the soiL profile research　　土壌断面調査結果表の凡例

1. Soil groupeing and soil unit　　土壌群と土壌単位

FL : Fluvisols
　FLd : Dystric Fluvisols

RG : Regosols
　RGd : Dystric Regosols

LP : Leptosols
　LPd : Dystric Leptosols
　LPk : Rendzic Leptosols

CM : Cambisols
　CMe : Eutric Cambisols
　CMd : Dystric Cambisols
　CMf : Ferralic Cambisols
　CMx : Chromic Cambisols

LV : Luvisols
　LVx : Chromic Luvisols

AC : Acrisols
　ACh : Haplic Acrisols

FR : Ferralisols
　FRh : Haplic Ferralisols

AL : Alisols
　ALh : Haplic Alisols

2. Topography　　地形
　1) Landform　　大地形
　　M : Mountainous　　山地
　　H : Hilly　　丘陵地
　　P : Plain　　平坦地

　2) Location　　中地形
　　T : Top slope　　頂部斜面
　　U : upper slope　　上部斜面
　　M : Middle slope　　中部斜面
　　L : Lower slope　　下部斜面
　　V : Valley bottom　　谷底面

　3) Form　　小地形
　　S : Straight　　平衡斜面
　　C : Concave　　凹形斜面
　　X : Convex　　凸形斜面
　　s : steep　　急傾斜
　　g : gentle　　緩傾斜
　　f : flat　　平坦

3. Vegetation / Land use　　植生／土地利用
　NF : Natural forest　　天然林
　NFS : Natural forest (secondary)　　天然生林（二次林）
　NFB : Natural forest (mixed bamboo)　　天然生林（二次林）竹類混生
　MF : Man made forest　　人工林
　BS : Bamboo stands　　竹林
　SH-1 : Shifting cultivation (last year)　　焼畑跡地 1 年目

SH-2 : Shifting cultivation (2 years before)	焼畑跡地２年目
GR : Grass land	草生地
IB : Border irrigation	畦溝灌
4. Parent material	母材
SS : Sand stone	砂岩
SH : Shist	片岩
CG : Comgromerate	礫岩
SH : Shale	頁石
LM ; Lime stone	石灰岩
AL : Aluvial deposite	冲積土
5. Mode of slope	堆積様式
Re : Residual	残積性
Cr : Creeping	歩行性
Co : Colluvial	崩積性
Se : Sedimental	定積性
6. Horizon	土壌層位
1) Master horizons and lyers	基本土層と堆積層
H : Organic material at the soil surface	H 層
O : Organic material, undecompoed litter as leaves, needles, twigs, moss and lichens	O 層
L : Fallen leaves, undecomposed	L層
F : Decomposed leaves, originals tissue is distinctly O 層	F層
H : Humus, organics decomposed completly	H層
A : A_1, A_2, A_3 ; mineral horizons, accumulation of organic matter (humus)	A層 : A_1, A_2, A_3
B : B_1, B_2, B_3 ; mineral horizons are formed below H, O or A horizon	B層 : B_1, B_2, B_3
C : C_1, C_2 ; mineral horizons, parent material of soils originated from bed rock or sediments	C層 : C_1, C_2
R : Bedrock	R層 :基岩層
2) Suffixes of symbolic letters of subordinate characteristics within master horizons	土層の２次的性質を示す付加記号
c : Concretions or nodules	c :固結
f : Frozen soil	f :凍結
g : Gleying	g :ｸﾞﾗｲ 化
h : Accumulation of organic matter	h :有機物集積
j : Jarosite mottles	j :ｼﾞｬﾛｻｲﾄの 斑紋
k : Accumulation of carbonates	k :炭酸塩集積
m : Cementation or induration	m :硬化
n : Accumulation of sodium	n :ﾅﾄﾘｳﾑ 集積
o : Residual accumulation of sesquioxides	o :残留性三二酸化物集積
q : Accumulation of silica	q :ｼﾘｶ 集積
r : Strong reduction	r :強度の還元
s : Illuvial accumulation of sesquioxides	s :移動性三二酸化物集積
t : Accumulation of silicate clay	t :珪酸粘土集積
v : Occurrence of plinthite	v :ﾌﾟﾘﾝﾀｲﾄ存在
w : Development of colour or structure	w :土色・ 構造発達

y : Accumulation of gypsum	y :石膏集積
z : Accumulation of salts more soluble than gypsum	z :易溶性塩集積
7. Distinctness of horizon boundary	層位界
A : Abrupt	明瞭
C : Clear	判然
G : Gradual	漸変
D : Diffuse	
8. Humus content	
V : Very rich	すこぶる富
R : Rich	富
C : Common	含
F : Few	乏
N : None	なし
9. Rock fragments (graveles)	石礫
1) Content	含有状態
A : Abundant	すこぶる多
M : Many	多
C : Common	中庸
F : Few	少
V : Very few	すこぶる少
N : None	なし
2) Size	サイズ
F : Fine < 2cm	小
C : Coarse 2 - 6cm	中
S : Stones 6 - 20cm	大
B : Boulders > 20cm	巨大
3) Shape	形状
A : Angular	角礫
S : Subangular	半角礫
R : Rounded	円礫
4) Weathering	風化状態
: Fresh (not recorded symbole letter)	新鮮な石礫には特に記号を付さない
W : Weathered	風化石礫
(W) : Including weathering gravels	風化石礫を含む
10. Texture	土性
C : Clay	粘土
CL : Clay loam	埴質壌土
L : Loam	壌土
SiC : Silty clay	微砂質埴土
SiCL : Silty clay loam	微砂質埴壌土
SiL : Silt loam	微砂質壌土
Si : Silt	微砂
SC : Sandy clay	砂質埴土
SCL : Sandy clay loam	砂質埴壌土
SL : Sandy loam	砂質壌土
LS : Loamy sand	壌土質砂土
S : Sand	砂土
11. Hardness	堅密度
H : Hard > 19mm	堅密
M : Medium 11～18mm	中庸

S : Soft < 10mm　　柔軟

12. Structure　　土壌構造
LG : Loose granular　　細粒状構造
GR : Granular　　粒状構造
SA : Subangular　　塊果状構造
N : None structure　　構造なし
NS : Nome, single graine　　構造なし・単粒
NM ; None, massive (compact)　　構造なし・カベ状
( ) : Development weakly　　構造発達弱い

13. Moisture condition　　水湿状態
D : Dry　　乾燥
sD : Slightly dry　　やや乾燥
M : Moderately moist　　適潤
W : Wet　　湿潤
O : Over wet　　過湿

14. Leaching and accumulation　　溶脱・集積
N : None　　なし
E : Leaching horizon　　溶脱
h : Accumulation of organic matter　　有機物集積
k : Accumulation of carbonates　　炭酸塩集積
n : Accumulation of sodium　　ﾅﾄﾘｳﾑ 集積
o : Residual accumulation of sesquioxides　　残積性三二酸化物集積
q : Accumulation of silica　　珪酸集積
s : Illuvial accumulation of sesquioxides　　移動性三二酸化物集積
t : Accumulation of silicate clay　　珪酸粘土集積
y : Accumulation of gypsum　　石膏集積
z : Accumulation of salts more soluble than gypsum　　易溶性塩集積

15. Mycorrhiza and Mycelium　　菌根・菌糸
1) My : Mycorrhiza　　菌根
Mm : Mycelium　　菌糸

2) Development level　　発達程度
N : Nome　　なし
+ : Very few　　すこぶる少
++ : Few　　少
+++ : Medium　　中庸
++++ : Many　　多

16. Root　　根系
1) Size　　サイズ
V : Very fine < 0.5mm　　細根
F : Fine 0.5～2mm　　小根
M : Medium 2～20mm　　中根
C : Coarse > 20mm　　大根

2) Development　　分布状態
N : None　　なし
V : Very few　　すこぶる少
F : Few　　少
C : Common　　中庸
M : Many　　多

Soil Profile (Study Area)

(1/2)

Profile No.	Soil group / Soil unit	Topography	Land use / Vegetation	Altitude (m)	Inclination (°)	Direction	Parent material	Mode of slope	Soil horizon	Depth of horizon (cm)	Horizon boundary	Soil color	Humus	Gravel	Texture	Hardness (mm)	Soil structure	Moisture	Leachi Accumulation	Mycorrhiza / Mycelium	Root	Acidity (pH:H$_2$O)	Remarks
S1	Eutric Cambisols (CMe)	M-L-S	NFB	385	38	N50_E	LM	CO	L A B_1 B_2	1 31 37 32+	- G G	- 7.5YR3/4 7.5YR4/3 7.5YR4/6	- C F F	- F-F-A F-C, C-S-A C-S-A	- SC C C	- 18M 20H 21H	- SA SA SA	- M M M	- N N N	N N N N	- F-M, C-F F-F F-C	- 7.01 6.65 7.26	
S2	Haplic Acrisols (ACh)	H-M-S	NFB	385	33	S30E	SS	Re	L AB B_1 B_2 C	2 25 28 31 7+	- G G C	- 7.5YR5/6 7.5YR5/6 7.5YR6/8 7.5YR6/6-8	- N N N N	- N N N C-FC-W	- C hC hC hC	- 21H 25H 23H 25H	- SA SA NM NM	- M M M M	- N N N N	N N N N N	- F-F, M-V, C-V F-F F-F N	- 4.15 4.12 4.78 4.70	
S3	Dystric Fluvisols (FLd)	H-A	NF	320	<2	N20_W	SS LM	Re	L AB B_1 B_2	2 20 31 34+	- G G	- 7.5YR4/4-3 5YR3/4 5YR4/4	- C C F	- N N N	- C SC SC	- 22H 24H 24H	- SA SA NM	- M M M	- N N N	Mm N N N	- F-V, C-F F-V, M-V, C-V F-V, C-V	- 5.55 5.37 5.66	
S4	Chromic Cambisols (CMx)	M-M-gS	NF	375	13	N20_E	LM	Ke	L A B_1 B_2	1 18 32 40+	- C G	- 10R3/3 7.5R3/3 7.5R3/4	- K C C	- N N N	- SC SC SC	- 7S 13M 18M	- SA, GR SA, GR NS	- M M M	- N N N	N N N N	- FM, C-V F-F F-V	- 7.00 6.31 5.91	
S5	Chromic Cambisols (CMx)	M-M-S	NF	420	33	N15_E	LM	Re	L A B_1 B_2 B_3	1 15 20 21 29+	- G G G	- 2.5YR3/3 2.5YR3/4 2.5YR3/4 2.5YR3/6	- K C C N	- N N N N	- C SC SC SC	- 21H 22H 18M 21H	- SA SA NS NS	- M M M M	- N N N N	N N N N N	- C-C, M-F-V M-V, F-V F-V M-V	- 4.87 4.79 5.02 5.59	
S6	Dystric Acrisols (ACd)	H-M-S	BS	390	24	S35_W	SS	Re	B_1(A) B_2 B_3 C	23 27 26 24+	C G G	7.5YR4/6 7.5YR5/6 7.5YR5/8 7.5YR5/6	N N N N	N N N N	hC hC hC hC	25H 24H 27H 27H	SA NM NM NM	M M M M	N N N N	N N N N	C-V, F-F F-V F-V N	4.16 4.10 4.18 4.75	
S7	Rendzic Leptosols	M-L-S (LPk)	NF	350	25	N75_E	LM	CO	B_1 B_2	37 25+	G	5YR4/4 5YR3/6	F N	N N	SC SC	18M 22R	SA NM	M M	N N	N N	F-V F-V	6.59 6.49	
S8	Haplic Acrisols (ACh)	H-M-S	BS	370	30	N70_W	SS	Re	L A B_1 B_2 C	1 17 18 29 41+	- C C G	- 10YR4/4 7.5YR4/6 5YR5/6 5YR6/8	- C N N N	- N F-F-W N N	- SC SC SC C	- 15M 21H 22H 18M	- SA SA NS NS	- M M M M	- N N N N	N N N N N	- F-M, M-V F-C F-F F-V	- 3.92 4.14 4.14 4.31	
S10	Dystric Fluvisols (FLd)	P-A/	NF	315	<2	N	SS	Al	L A B C	1 10 30 15+	- C G	- 7.5YR3/3 7.5YR4/4 7.5YR4/6	- K C N	- N N M-FC-Ru	- SL SC SC	- 21H 26H 25H	- GR, SA NS NM	- M M M	- N N N	N N N N	- F-C F-V F-V	- 3.85 4.08 4.26	

Profile No.	Soil group / Soil unit	Topography	Land use / Vegetation	Altitude (m)	Inclination (°)	Direction	Parent material	Mode of slope	Soil horizon	Depth of horizon (cm)	Horizon boundary	Soil color	Humus	Gravel	Texture	Hardness (mm)	Soil structure	Moisture	Leachi Accumulation	Mycorrhiza / Mycelium	Root	Acidity (pH:H_2O)	Remarks
S11	Rhodic Ferralsols (FRr)	H-M-S	NFB	350	20	S20_W	SS	CO	L B C_1 C_2	1 20 45 20+	- C C	- 2.5YR4/4 2.5YR4/6 10R4/6	- F N N	- F-F-S M-F-S M-F-A	- SC SC hC	- 14M 16M 24H	- SA NS NS	- M M M	- N Fe N	N N N N	- F-F F-V F-V	- 4.77 4.66 4.88	
S12	Rhodic Ferralsols (FRr)	H-T-gX	SH-2	325	15	W	SS	Re	B C K	20 20 45+	C A	2.5YR4/6 10R4/6	N N	M-FW V-F-W	hC hC	17M 20H	SA NS	SW SW	N N	N N	F-V F-V	4.16 4.39 4.12	
S13	Rhodic Ferralsols (FRr)	M-T-go	NFS	980	12	N45_E	SS	Re	L A B_1 B_2	2 20 36 34+	- C G	- 2.5YR3/3-4 2.5YR3/6 2.5YR4/6	- C N N	- N N C-F-K	- SC SC SC	- 9S 20H 16M	- GR-SA SA NS	- M M M	- N N N	N N N N	- F-C F-F F-V	- 4.08 4.51 4.66	
S14	Haplic Acrisols (ACb)	H-T-S	NFBS	460	24	N40_E	SS	Re	L A B_1 B_2 C	- 5 22 53 25+	- C G G	- 7.5YR3/3 7.5YR4/4 7.5YR4/6 7.5YR5/6	- K C N N	- C-F-W F-F-W F-F-W N	- SC SC SC SC	- 15M 17M 20H 22H	- GR, SA SA NS NS	- M M M M	- N N N N	N N N N N	- F-F F-V F-V F-V	- 5.38 4.29 4.47 4.62	
S15	Haplic Acrisols (ACh)	H-T-gX	NFS	450	24	S35_W	SH	Re	L A B C_1 C_2	3 12 22 13 53+	- C C C	- 10YR3/2 10YR3/4 7.5YR5/4 7.5YR7/6	- K C N N	- N C-F-S A-FC-W M-C-W	- C C hC hC	- 23H 15M 18M 22H	- SA SA NS NM	- M M M M	- N N N N	N Mn+ N N N	- F-V, C-V F-V N N	- 3.81 3.80 3.88 3.92	

Soil Profile (Model Area)

(1/5)

Profile No.	Soil group / Soil unit	Topo-graphy	Land use / Vegetation	Altitude (m)	Inclination (a_n)	Direction	Parent material	Mode of slope	Soil horizon	Depth of horizon (cm)	Horizon boundary	Soil color	Humus	Gravel	Texture	Hardness (mm)	Soil structure	Moisture	Leachi Accumula-tion	Mycorr-hiza / Mycelium	Root	Acidity (pH:H_2O)	Remarks
1	Haplic Acrisols (Ach)	M-U-S	SH-1	580	28	S45_E	SS	Re	B 2A $2B_1$ $2B_2$ C	3 3 19 35 40+	A C G G	7.5YR4/4 5YR4/3 5YR4/8 5YR4/8 2.5YR4/6	N F N N N	N N F-C-W F-C-W F-C-W	C SC C C hC	17M 19M 24H 25H 24H	NS SA SA SA NS	sD sD sD MM MM	N N N N N	N N N N N	V-F V-C N N N	5.03 5.39 4.96 5.27 5.33	
2	Dystric Cambisols (CMd)	M-T-gS	NFB	520	2	S35_E	SS	Re	L A B_1 BC	2 23 24 37+	C G	7.5YR3/3 7.5YR4/6 5YR4/6	R F F	M-C-W A-C-W A-CS-W	SL SL SL	12M 15M 18M	Gr. SA Gr. SA SA	sD sD sD	N N N	N Mn+ N N	- V-C, M-V V-C, M-V F-F	- 5.73 5.12 5.38	
3	Haplic Acrisols (Ach)	M-M-S	NFB	450	18	S20_W	SS	Re	L A B C	2 10 20 70+	C C	7.5YR3/4 7.5YR4/4 5YR4/6	C F N	N F-C-W F-C-W	CL C SC	17M 24H 27H	SA SA SA	sD sD sD	N N N	N Mn+ N N	N F-F F-C, V-V V-V	- 5.19 5.52 5.01	
4	Haplic Acrisols (Ach)	M-UgC	SH-1	380	12	N40_W	SS	Re	Ap B C_1 C_2	12 23 30 25+	C G G	7.5YR4/6 5YR5/6 5YK5/6-8 5YK5/8	N N N N	N N N N	CL C hC hC	21H 22H 25H 27H	SA SA SA SA	sD sD sD sD	N clay clay N	N N N N	F-C F-F F-V N	4.77 4.71 4.90 5.20	
5	Haplic Acrisols (Ach)	M-M-sS	GL	760	30	N70_W	SS	Re	B_1 B_2 C	20 30 35	G C	7.5YR4/6 5YR4/6 5YR4/8	N N N	C-S-W M-F-W M-S-W C-C-W M-S-W C-C-W	SL SC SC	20H 26H 26H	SA SA NM	sD sD sD	N N N	N N N	V-F V-F V-V	4.89 5.00 4.77	
6	Haplic Acrisols (Ach)	M-U-sS	SH-1	745	36	N20_W	SS	Re	L A B C	1 18 32 40+	G C	7.5YR3/3 7.5YR4/6 7.5YR5/8	C N N	N F-C-W B-R-W	SC C CL	22H 22H 24H	SA SA NM	MM MM MM	- clay clay	N N N	- F-F F-V F-V	- 5.65 5.16 4.98	
7	Haplic Ferralsol (FRh)	M-U-S	NFS	435	25	N40_W	SS	Re	L A B C_1 C_2	1 9 11 30 50+	G G G	7.5YR4/6 7.5YR5/6 5YK5/6 5YK5/6-8	F N N N N	N N N N	SL SL SL SC	24H 27H 28H 28H	SA SA SA NM	sD sD MM MM	N N N N	N N N N	C-F C-F F-V F-V	4.76 4.98 5.03 4.78	
8	Haplic Acrisols (Ach)	M-T-C	NFB	860	18	N40_W	SS	Re	L A B_1 B_2 Bc C	2 5 15 32 38 10+	C G G G	7.5YR3/3 7.5YR4/6 7.5YR4/3 5YR4/4 5YR4/6	R C F N N	N N N N N	L SC C SC SC	24H 25H 23H 27H 29H	SA SA SA NM NM	sD M M M M	N N N N N	N N N N N	F-V F-C F-F, C-V F-V N	4.89 4.99 4.64 4.36 4.76	

Profile Numbers are shown on the Soil Map(1/20,000).

Profile No.	Soil group / Soil unit	Topo-graphy	Land use / Vegetation	Altitude (m)	Inclination (a_n)	Direction	Parent material	Mode of slope	Soil horizon	Depth of horizon (cm)	Horizon boundary	Soil color	Humus	Gravel	Texture	Hardness (mm)	Soil structure	Moisture	Leachi Accumula-tion	Mycorr-hiza / Mycelium	Root	Acidity (pH:H_2O)	Remarks
9	Rhodic Ferralsols (FRr)	H•T•gC	NFS	235	12	W	SS	Re	L Ap Bt C_1t C_2t	3 18 28 24 30+	- C G G	- 5YR4/6 2.5YR4/4 2.5YR3/6 2.5YR4/6	- V N N N	- N N N N	- SC C hC hC	- 24H 29H 30V 30V	- SA SA SA NM	- M M M M	- N clay clay clay	N N N N N	- F•F V•V V•V V•V	- 4.66 4.72 4.96 5.37	
10	Haplic Acrisols (Ach)	H•U•S	GL	345	18	S80_W	SS	Re	A B C_1 C_2	6 34 25 20+	A C G	5YR4/3 5YR4/6 2.5YR4/4 2.5YR4/6	F N N N	N C•F•C•W M•B•W M•B•W	SL SC SC SC	23H 24H 25H 28H	SA SA SA NM	sD sD sD sD	N N N N	N N N N	F•C F•F F•V F•V	4.85 5.11 4.38 4.33	
11	Rhodic Ferralsols (FRr)	H•M•gS	NFB	240	15	S25_W	SS	Re	L Ap(B_1) B_2t C_1 C_2	1 18 14 20 33+	- G C G	- 2.5YR4/4 2.5YR4/6 10R4/6 10R4/8	- F N N N	- N F•C•W F•C•W F•C•W	- SC C C hC	- 26H 28H 28H 30V	- SA SA SA NM	- sD sD sD sD	- N N N N	N N N N N	- F•C F•F F•V F•V	- 4.61 4.66 4.77 4.98	
12	Dystric Cambisols (CMd)	H•T•X	NFB	340	30	N	SS comg	Re	L A B_1 B_2 C	2 20 29 31 30+	- C G G	- 10YR4/4 7.5YR4/6 7.5YR5/6 7.5YR5/4	- F F N N	- N F•F•W F•F•W F•C•W	- SC C C hC	- 22H 27H 29H 31V	- LG•SA SA SA NM	- D D D sD	- N N N N	N N N N N	- F•F F•V F•V N	- 4.40 4.53 4.35 4.28	
13	Dystric Cambisols (CMd)	M•T•aX	NFB	660	20	N55_W	SS	Re	L A_1 A_2 B_1 B_2	3 4 22 38 21+	- A C G	- 7.5YR3/2 7.5YR3/3 7.5YR3/4 5YR4/6	- V R C F	- N N N M•S•W	- SC SC C hC	- 17H 20H 29H 27H	- GR•SA SA SA SA	- sD sD sD sD	- N N N N	- Mn+ N N N	- F•V F•V F•V N	- 4.89 4.55 4.32 4.24	
14	Rhodic Ferralsols (FRr)	H•T•gS	NFS	240	5	S	SS	Re	L A_1 A_2 BC C	3 8 32 24 16+	- C A A	- 10YR3/3 7.5YR4/3 5YR4/4 2.5YR5/6	- R C F N	- F•F•W F•F•W M•F•W M•F•W	- SL SC SC C	- 22H 25H 27H 28H	- SA SA NM NM	- sD sD sD sD	- N N N N	N N N N N	- F•C F•F F•V F•V	- 4.52 4.57 4.29 4.45	
15	Haplic Acrisols (Ach)	H•M•aS	NFSB	260	41	N40_W	SS	Cr	L A B_1 B_2 C	2 6 30 42 22+	- A A A	- 10YR4/6 10YR6/4 10YR6/4 10YR6/6	- R F F N	- F•F F•F A•CS A•SB	- SL SC SL SC	- 10S 18M 18M 22H	- LG, SA SA SA NS	- D D D D	- N N N N	N N N N N	- F•M F•M F•F F•V	- 4.28 4.31 4.49 4.32	
16	Dystric Cambisols (CMd)	M•L•S	NFSB	505	24	S80_E	SS	Re	L A B_1 B_2 C	2 12 43 27 18+	- G G C	- 7.5YR4/3 7.5YR5/6 5YR5/6 5YR5/6	- F N N N	- N N F•F•W C•F•W	- SL SC SC C	- 24H 25H 27H 27H	- SA SA SA NM	- MM MM MM MM	- N N N N	N N N N N	- F•V F•V, C•V F•V N	- 4.40 4.38 4.47 4.77	

Profile Numbers are shown on the Soil Map(1/20,000).

Profile No.	Soil group / Soil unit	Topo-graphy	Land use / Vegetation	Altitude (m)	Inclination (°)	Direction	Parent material	Mode of slope	Soil horizon	Depth of horizon (cm)	Horizon boundary	Soil color	Humus	Gravel	Texture	Hardness (mm)	Soil structure	Moisture	Leachi Accumula-tion	Mycorr-hiza / Mycelium	Root	Acidity (pH:H_2O)	Remarks
17	Haplic Acrisols (ACh)	H·T·gX	SH-1	240	25	N30_W	SS	Re	Ap B BC C	17 16 22 30+	G G C	7.5YR4/6 7.5YR5/6 7.5YR5/6 7.5YR6/6	F N N N	N N N N	SC C C hC	24H 27H 28H 28H	LG, SA LG, SA SA N·M	sD MM MM MM	N N N N	N N N N	C·V, F·F C·V, F·F F·V N	4.71 4.30 4.26 4.31	
18	Haplic Acrisols (Ach)	H·T·gX	NFSB	255	14	N70_W	SS	Re	L A B_1 B_2 C	2 4 40 20 21+	- A C G	- 5YR5/4 5YR5/6 5YR5/6·8 2.5YR5/6	- F N N N	- N N F·CF·W F·CF·W	- SC C hC hC	- 20H 23H 27H 27H	- GK, SA SA SA N·M	- sD sD sD sD	- N N N N	N N N N N	- F·C, C·V F·F, C·V F·V N	- 4.21 4.22 4.23 4.17	
19	Haplic Acrisols (Ach)	H·M·S	SH-1	260	22	E	SS	Re	Ap B_1 B_2 C	5 17 20 20+	C G A	10YR5/2 7.5YR5/4 7.5YR5/6 5YR5/6	N N N N	F·F·W F·F·W F·F·W A·F·W	S SL SC SL	25H 30V 28H 32V	LG, SA SA SA N·M	D D D D	N N clay N	N N N N	F·F F·V F·V N	4.22 4.51 4.47 4.05	
20	Haplic Acrisols (Ach)	H·M·sS	NF	305	33	N75_W	SS	Re	HA A B_1 B_2 C_1 C_2	1·2 12 28 26 24 10+	A A G G A	- 7.5YR4/3 7.5YR4/6 7.5YR5/6 7.5YR5/8	V C N N N	N F·FC·W C·C·W M·C·W M·C·W	- SL SC SC SC	- 23H 22H 29H 26H	- SA SA SA NM	- D D D D D	- N N N N	N N N N N	N F·V, C·V F·V F·V F·V	- 5.22 4.74 4.78 4.90	
21	Dystric Leptosols (LPd)	M·M·S	NFB	580	19	S	SS	Re	L A B_1 B_2 C	1 5 10 45 40+	- C G G	- 10YR5/6 7.5YR5·6/4 7.5YR6/6 7.5YR5/6	- F N N N	- N N N N	- SL SL SL SL	- 22H 15M 26H 28H	- GK, SAN SAN SAN N·M	- D D D D	- N N N N	N N N N N	- F·F F·V F·V N	- 4.46 4.36 4.34 4.53	
22	Dystric Fluvisols (FLd)	P·Vf	NFB	230	< 2	S60_W	AL	Se	L A_1 A_2 B_1 B_2 BC	2 5 13 24 34 19+	A A C G G -	- 7.5YR2/1 10YR3/2 10YR4/4 10YR5/4 10YR5/6	- R C F N N	- N N N N N	- SL S S S SL	- 16M 14M 15M 18M 19H	- GR NS NS NS NS	- M M M M M	- N N N N N	N N N N N N	- FV·MV FF·MV FV·MV FV N	- 5.05 5.58 5.56 5.44 5.38	
23	Dystric Fluvisols (FLd)	Pf	GR	220	-	-	AL	Se	A B_1 B_2 C	8 33 20 18+	G C C -	10YR3/2 10YR4/4 7.5YR5/6 7.5YR4/6	C F N N	VFR(W) CFR(W) MFR(W) AFR(W)	SC SL SL SL	18M 23H 16M 18M	(GR) NM NM NS	M M M M	N N N N	N N N N	VV FV FV N	5.77 5.51 5.41 5.52	
24	Dystric Fluvisols (FLd)	P·Vf	GR	220	-	-	AL	Se	B 2A 2C 3A 3C	16 2 45 4 43+	A A A A -	10YR5/8 10YR3/4 10YR5/6 5YR3/2 10YR5/8	N R N R N	N N N N N	S S S S S	4S 13M 13M 13M 13M	NS NS NS NS NS	M M M M M	N N N N N	N N N N N	FV FV FF FV FV	5.65 5.58 5.73 5.61 5.56	

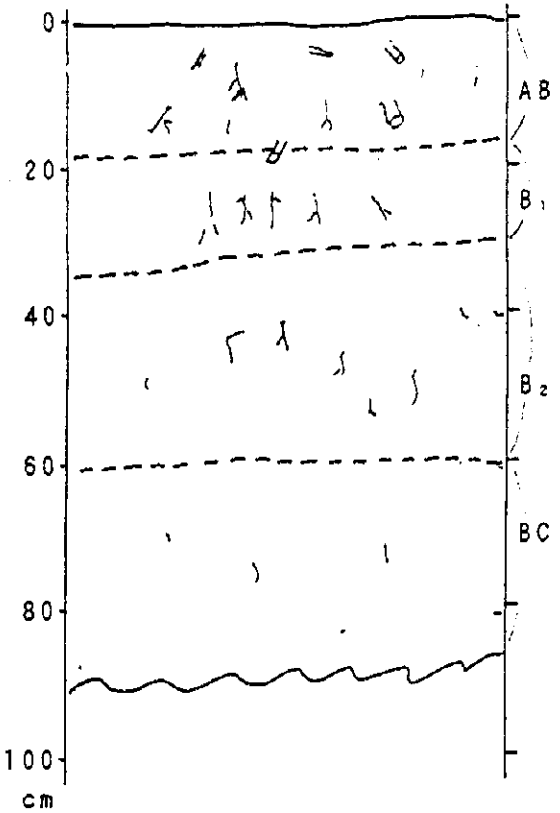
Profile Numbers are shown on the Soil Map(1/20,000).

Profile No.	Soil group / Soil unit	Topo-graphy	Land use / Vegetation	Altitude (m)	Inclination (°)	Direction	Parent material	Mode of slope	Soil horizon	Depth of horizon (cm)	Horizon boundary	Soil color	Humus	Gravel	Texture	Hardness (mm)	Soil structure	Moisture	Leuchi Accumula-tion	Mycorr-hiza / Mycelium	Root	Acidity (pH:H$_2$O)	Remarks
25	Dystric Fluvisols (FLd)	PVf	GR	220	-	-	AL	Se	A	5	A	10YR3/3	R	N	SC	17M	(GR-SA)	M	N	N	FV	5.71	
									B_1	10	C	10YR5/6	N	N	SC	16M	NM	M	N	N	FC	5.28	
									B_2	31	G	10YR4/6	N	N	S	14M	NS	M	N	N	FF	5.29	
									B_3	34	G	10YR5-4/6	N	N	S	10M	NS	W	N	N	FV	5.21	
									C	20+	-	10YR5/8	N	N	S	10M	NS	W	N	N	N	5.45	
26	Dystric Fluvisols (FLd)	Pf	NFS	240	-	-	AL	Se	L	1	A	-	-	-	-	-	-	-	-	N	-	-	
									A	11	C	10YR3/3	R	N	SL	19H	SA	M	N	N	FF	4.99	
									B_1	22	G	10YR4/4	F	VCA	SL	16M	NM	M	+	N	FF, MF	4.96	
									B_2t	42	G	10YR4/6	N	VCA	CL	21H	(SA)	M	+	N	FV	4.86	
									C	26+	-	10YR5/6	N	CCA	SC	22H	NM	M	N	N	N	4.35	
27	Dystric Fluvisols (FLd)	Pf	NFB	240	-	-	AL	Se	A	10	G	10YR4/2	F	N	SL	18M	SA	M	N	N	FV	5.31	
									B_1	34	G	10YR5/6	N	N	CL	18M	NM	M	+	N	FV	4.98	
									B_2	36	G	7.5YR5/6	N	N	L	21H	NM	M	N	N	FV	4.85	
									C	20+	-	7.5YR5/8	N	N	SC	20H	NM	M	N	N	N	4.81	
28	Dystric Fluvisols (FLd)	Pg	NFB	220	2	N60_E	AL	Se	L	+	-	-	-	-	-	-	-	-	-	N	-	-	
									F	1	-	-	-	-	-	-	-	-	-	N	-	-	
									A_1	9	A	7.5YR3/4	C	N	L	13M	SA	M	N	N	FC	4.47	
									A_2	18	C	10YR4/4	F	N	L	18M	(SA)	M	N	N	FC, MV	4.56	
									B_1	15	G	10YR5/4	N	AFR(W)	CL	24H	N	M	N	N	FV	4.70	
									B_2C	24	G	7.5YR5/6	N	AFR(W)	CL	28H	N	M	N	N	N	4.63	
									C	14+	-	5YR6/8	N	AFR(W)	CL	31H	N	M	N	N	N	-	
29	Dystric Fluvisols (FLd)	Pf	NFS	210	-	-	AL	Se	AB	17	G	10YR3/4	F	N	SL	17M	(SA)	M	N	N	FC, MV	4.46	
									B_1	15	G	10YR4/4	F	N	CL	17M	NS	M	N	N	FF	4.53	
									B_2	30	G	10YR4/6	N	N	CL	18M	NM	M	N	N	FF	4.63	
									BC	23+	-	7.5YR5/6	N	N	CL	21H	NM	M	N	N	N	4.65	
30	Haplic Ferralisols (FRh)	HLS	NFB	290	18	N70_E	SS	Ke	L	+	-	-	-	-	-	-	-	-	-	N	N	-	
									F	3	-	-	-	-	-	-	-	-	-	N	N	-	
									A	17	A	7.5YR3/3	R	N	CL	18M	(SA)	M	N	N	FF	4.61	
									B_1	29	C	7.5YR4/6	N	N	C	23H	(SA)	M	N	N	CV	4.65	
									B_2	14	C	7.5YR5/6	N	F,F,FC,W	C	26H	NM	M	N	N	N	4.43	
									C	50+	-	5YR6/5	N	FF, FCW	hC	26H	NM	M	N	N	N	4.55	
31	Dystric Fluvisols (FLd)	Pf	IB	260	-	-	AL	Se	A	4	A	7.5YR4/3	C	N	SC	16M	SA	M	N	N	FV	6.63	
									BC	18	A	7.5YR5/8	N	N	C	20H	SA	M	N	N	FV	7.09	
									2A	8	A	10YR4/6	N	N	SC	18M	NM	M	+	N	FV	7.17	
									2B	33	G	10YR4/6	N	N	C	18M	NM	M	N	N	FV	7.08	
									2C	27+	-	10YR5/4	N	N	SC	20H	NM	M	N	N	MV	6.96	
32	Haplic Acrisols (Ach)	Pf	NFS	240	-	-	AL	Se	A	13	G	10YR3/2	R	N	SL	21H	(SA)	M	N	N	FC	4.76	
									B_1	17	G	10YR4/6	N	N	SL	20H	NM	M	N	N	FC	4.53	
									B_2	22	G	10YR5-4/6	N	N	SL	18M	NM	M	N	N	FF	4.53	
									C	38+	-	7.5YR5/6	N	N	SL	20H	NM	M	N	N	N	4.66	

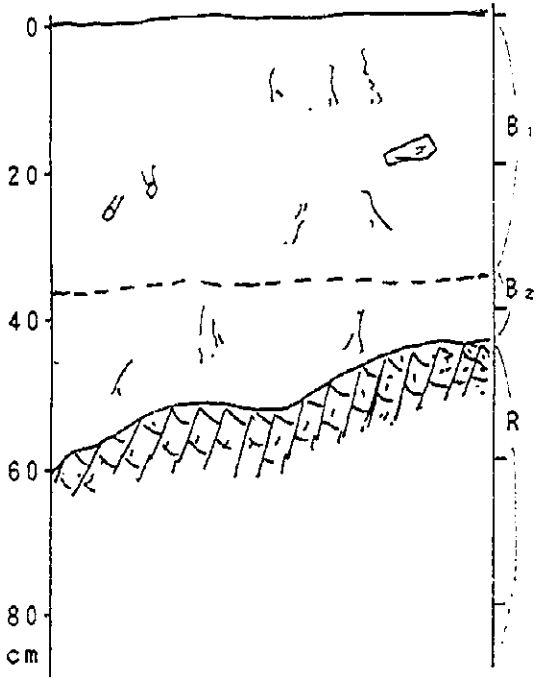
Profile Numbers are shown on the Soil Map(1/20,000).

Profile No.	Soil group / Soil unit	Topo-graphy	Land use / Vegetation	Altitude (m)	Inclination (a_)	Direction	Parent material	Mode of slope	Soil horizon	Depth of horizon (cm)	Horizon boundary	Soil color	Humus	Gravel	Texture	Hardness (mm)	Soil structure	Moisture	Leachi Accumula-tion	Mycorr-hiza / Mycelium	Root	Acidity (pH:H_2O)	Remarks
33	Rhodic Ferralisols (FRr)	HUSg	NFB	280	3	N	SS	Re	A	10	C	5YK3/3	R	FF	SC	19H	SA	M	N	N	FF, MV	4.81	
									BC	24	C	5YR4/6	N	MF	SC	25H	NM	M	N	N	FV, MV	4.68	
									C_1	44	G	5YK5/6	N	MF	CL	26H	NM	M	t	N	FV-MV	4.54	
									C_2	12+	-	2.5YR4/8	N	FF	SC	24H	NM	M	N	N	N	4.54	
34	Haplic Acrisols (Ach)	HMS	NFB	240	16	S18_W	SS	Re	B_1(g)	4	C	7.5YK5/3	N	N	L	12M	(SA)	M	N	N	FV	4.80	
									B_2(g)	22	C	7.5YR5/4	N	N	L	19H	(SA)	M	N	N	FV	4.53	
									B_3	39	C	5YK5/4	N	N	CL	17M	NM	M	t	N	FV	4.60	
									C_1	25	C	5YR4/6	N	N	SCL	23H	NM	M	N	N	N	4.38	
									C_2	14+		5YK5/6	N	FC	SCL	25H	NM	M	N	N	N	4.61	
35	Rhodic Ferralisols (FRr)	HMCs	NFS	260	33	S50_W	SS	Re	A	15	C	2.5YR3/6	F	N	L	19H	SA	sD	N	N	FM	4.58	
									B	21	A	2.5YR4/4	F	CCW	CL	18M	SA	M	N	N	FC, MV	4.60	
									C	29	A	2.5YR4/4	F	ASW	C	21H	SA	M	N	N	FV	4.70	
									R			10R3/3					-	-	-	+	-		
36	Rhodic Ferralisols (FRr)	HLS	NFB	280	20	S30_E	SH	Re	L	2	A	-	-	-	-	-	-	-	-	N	-	-	
									A_1	14	G	10YR4/3	C	N	C	22H	SA	M	N	N	FC	4.67	
									A_2	8	G	7.5YR4/4	C	N	C	22H	(SA)	M	N	N	FV, MV	4.72	
									B	15	C	7.5YR5/4	N	MFw	hC	24H	NM	M	t	N	FV-MV	4.78	
									C	53	C	5YR5/6	N	MF,ABw	C	22H	N	M	N	N	N	4.71	
37	Rhodic Ferralisols (FRr)	HLS	NFS	240	23	N35_W	SS	Re	A	10	G	2.5YR4/4	F	N	hC	23H	SA	M	N	N	FC, MV	4.67	
									B_1	15	G	2.5YR4/4	F	FS	hC	27H	SA	M	t	N	FV, MV	4.68	
									B_2	30	C	2.5YR3/6	N	MS	hC	27H	NM	M	t	N	FV	4.59	
									K	30	-	2.5YR2/4	N				-	-	-	-	-	4.41	
38	Chromic Luvisols (Lux)	HMS	GR-MF	320	20	W	SS	Re	A	2	C	5YK3/3	R	VF	SC	17M	SA	M	N	N	FC	5.30	
									B_1	24	G	5YR4/4	C	N	SC	24H	SA	M	N	N	FV	5.07	
									B_2	21	G	5YR4/8	N	FF, MC	C	21H	(SA)	M	t	N	FV	4.85	
									C	45+	-	5YR4/6	N	MC&SW	SC	21H	NM	M	N	N	FV	4.71	

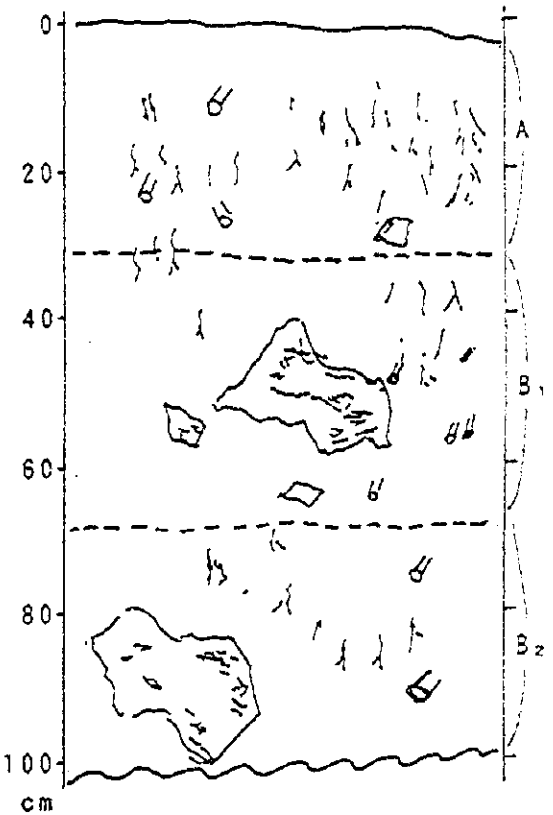
Profile Numbers are shown on the Soil Map(1/20,000).



No. 29 Dystric Fluvisols



No. S7 Rendzic Leptosols

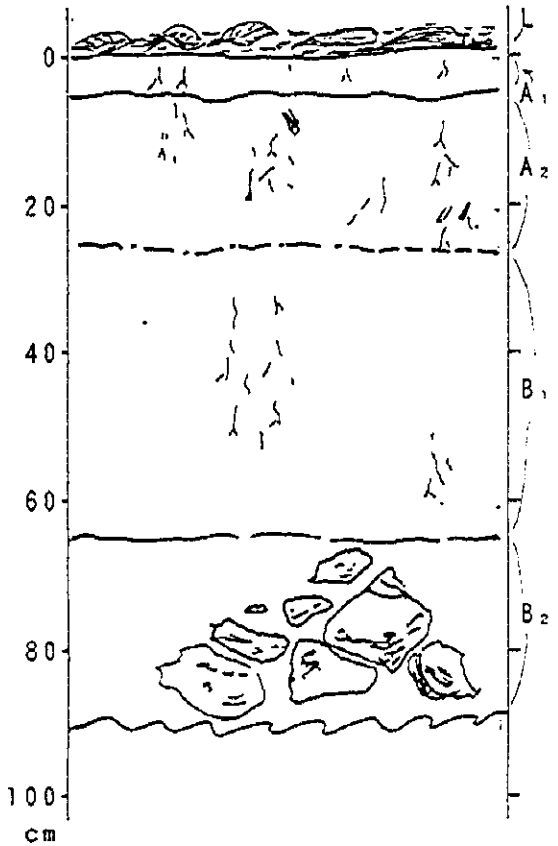


No. S1 Eutric Cambisols

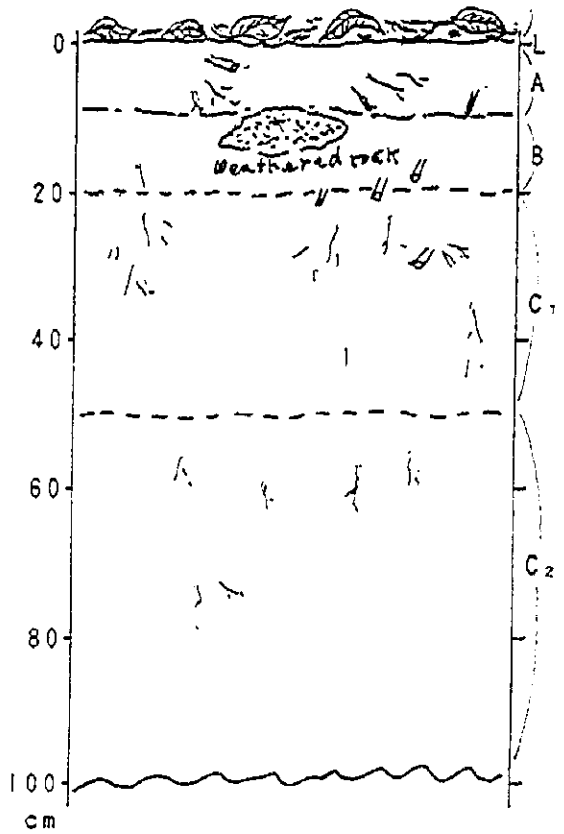
Index for Boundary Description

Symbol	Width of Boundary	
———	Less than 3 cm	Abrupt
-·-·-·-	3 – 5 cm wide	Clear
———	5 cm or more	Gradual

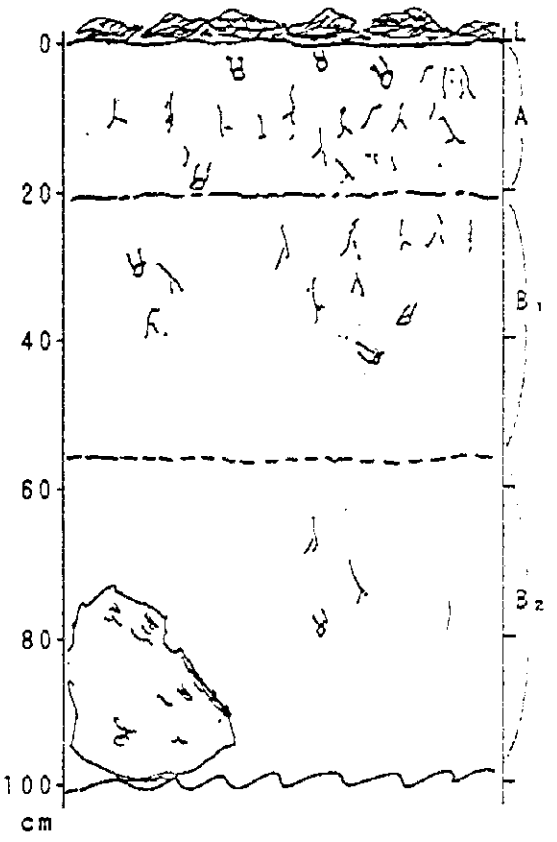
Soil Profiles 1



No. 13 Dystric Cambisols



No. 7 Haplic Ferralsols

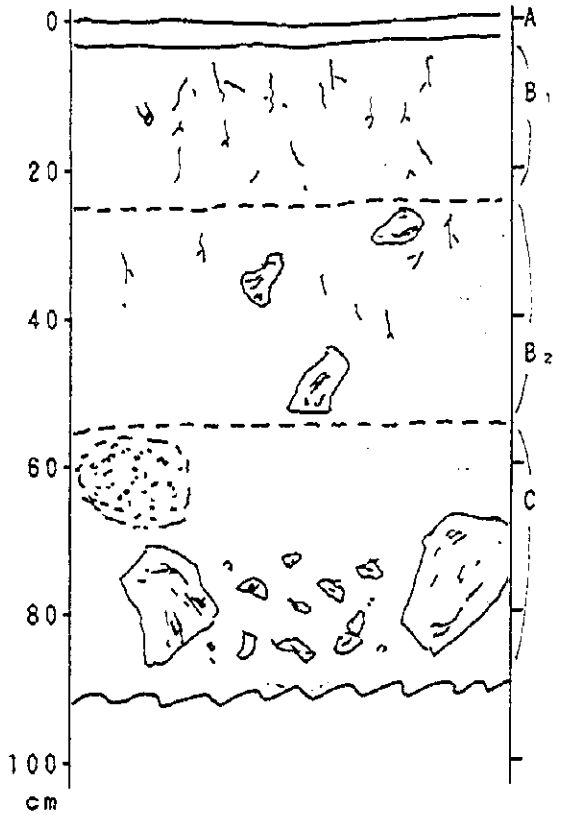


No. 37 Rhodic Ferralsols

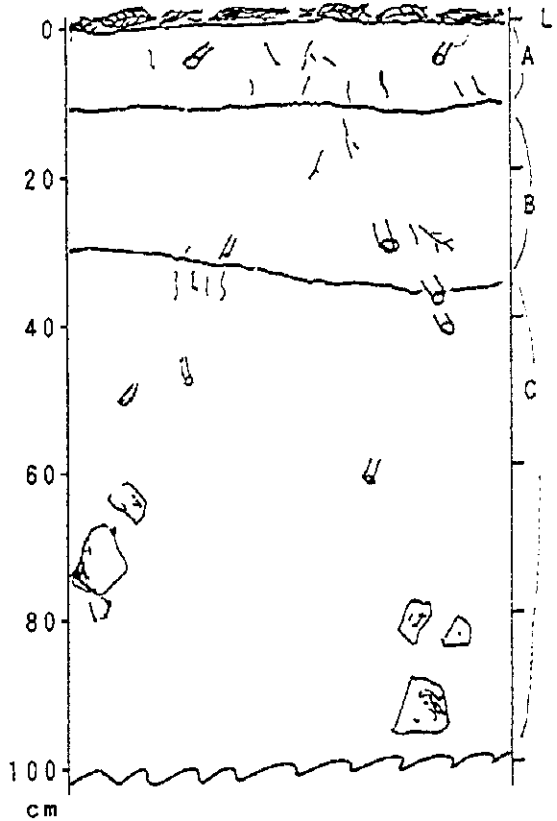
Index for Boundary Description

Symbol	Width of Boundary	
———	Less than 3 cm	Abrupt
-·-·-·-	3 – 5 cm wide	Clear
———	5 cm or more	Gradual

Soil Profiles 2



No 38 Chromic Luvisols



No 3 Haplic Acrisols

Index for Boundary Description

Symbol	Width of Boundary	
———	Less than 3 cm	Abrupt
- - - -	3 – 5 cm wide	Clear
———	5 cm or more	Gradual

Soil Profiles 3

1.3 Land Use and Vegetation in Model Area

The distribution of the land use and vegetation in the Model Area was determined by the field investigation and aerial photograph interpretation.

(1) Vegetation

Forests consisting of large diameter trees are found on steep hillsides and at summit areas with an elevation of approximately 800 m or more in mountainous areas in the north of the Model Area, in the upper reaches of Nam Ken River located in the western part of the Model Area and along the ridge lines of Ph. Kaykon in the southern part of the Model Area. In addition to these forests, secondary forests consisting of small diameter trees are observed near to settlements, while the Model Area predominantly consists of former slash and burn sites.

Apart from those sites recently converted to farmland or orchards, etc., most of the former slash and burn sites have become shrub land, bamboo forests or grassland. A large tract of grassland of Kok Lao (Pennisetum spp.), etc. is observed in a hilly area to the north of Houaypamon Village.

1) Species

The most typical species in the Model Area are listed below.

<Trees>

- May Si (Shorea vulgaris)
- May Bak (Anisoptera cochinchinensis)
- May Ten (Duabanga sonneratioides)
- May Kha (Afzelia xylocarpa)
- May Kimou (Ormosia cambodiana)
- May Tiou (Crataxylon polyanthum)

<Bamboo>

- May shoth (Oxytenanthera parvifolia)
- May Hia (Caphastachum virgatum)
- May Her (Thyrosostachys spp.)

< Grass >

- Kok Lao (Pennisetum spp.)

- Kok Khem (Thysanolaena maxinia)
- Nya Ka (Imperata cylindrica)

2) Crown Density Categories

The following crown density categories were adopted based on the area covered by the crown of dominant trees.

D1 : 20% or lower
D2 : 21% - 39%
D3 : 40% - 69%
D4 : 70% or higher

(2) Land Use

The actual conditions of land use were determined by confirming the distribution of forests, settlements and farmland, etc. based on the field investigation and aerial photograph interpretation results as well as the findings of the vegetation survey.

1) Interpretation Categories

The interpretation categories for the land use and vegetation map were decided as given below based on the field investigation results for the Model Area. Taking the scale of the aerial photographs to be used into consideration, the minimum unit area was decided to be 3 - 5 ha.

<Interpretation Categories>

Category			Symbol	Criteria
Forest	Man-Made Forest		Mf	teak forest; brown on photograph
	Natural Forest	Primary	Np	forest with high, large diameter trees
		Secondary	Ns	regenerated forest on former slash and burn site with tree height of 5 m or more
	Bamboo Forest (1)		Bl	mixed with primary natural forest or along river banks
	Shrub Land		S	mainly distributed along ridge lines
Slash and Burn Site and Former Slash and Burn Site	Slash and Burn Site (Hay)		Hy	exposed ground surface with dotted small cabins
	Bush		Bh	regenerated bush on former slash and burn site with a tree height of less than 5 m
	Bamboo Forest (2)		B2	bamboo forest on former slash and burn site; yellowy green on photograph
	Grassland		G	covers a fairly large area on a former slash and burn site; liver brown on photograph
Permanent Farmland	Lowland Paddy Field		Lp	spreads over a relatively large area compartmented by ridges
	Dry Farmland		Df	located near houses and encircled by fencing
	Orchard		Ol	located near houses with bananas and pineapples, etc.
Settlement			Co	group of houses
Bare Land			Br	
Road			Rd	
Water Body			W	

2) Transcription

The land use and vegetation categories established on the aerial photographs in accordance with the interpretation criteria were transferred to the topographical map to prepare the draft land use and vegetation map (scale: 1/20,000).

3) Field Verification

The correct correspondence of the entries on the draft land use and vegetation map transcribed onto the topographical map will be verified during the Third Field Survey period on site using the aerial photographs and also the draft map.

(3) Current Conditions of Each Land Use Category

1) Forest

- Man-Made Forest (Mf)

Several afforestation sites of teak (Tectona grandis) are found as man-made forests. Each forest is small and is less than one ha in size. In general, the planted trees are young and the maximum tree height at present is around 3 m.

- Natural Forest

i) Primary Forest (Np)

Primary natural forests are distributed on steep hillsides and at summit areas with an elevation of some 800 m in the north of the Model Area, in the upper reaches of Nam Ken River and along the ridge lines of Ph. Kaykon in the southern part of the Model Area. The height of the taller trees is some 25 - 30 m.

ii) Secondary Forest (Ns)

A secondary forest is defined as a regenerated stand on a former slash and burn site with a minimum tree height of 5 m after the passing of some years. Corresponding stands can be seen on grassland and in bamboo forests, though those near settlements tend to spread over a relatively large area with a tree height exceeding 10 m. There are many cases that secondary forests near settlements are protected from felling.

- Bamboo Forest (Bl)

This type of bamboo forest is observed within or in the surrounding area of a primary forest and consists of tall, large diameter bamboo. In some cases, the bamboo is used as a structural material for housing construction. This type of bamboo forest is distinguished from smaller bamboo forests emerging on former slash and burn sites.

- Shrub Land (S)

  Small areas of shrub land are found scattered along river banks and ridge lines.

2) Slash and Burn Site and Former Slash and Burn Site

- Slash and Burn Site (Hy)

  Slash and burn farming is employed throughout the Model Area. Crops such as upland rice, maize, cassava and green pepper are grown. The sites subject to this type of farming consist of either high tree forest land such as secondary forests or coppice forest land where the trees have not sufficiently regenerated due to the short period since their previous use as slash and burn sites. In the case of the latter, the repeated use of the land for slash and burn farming deteriorates the physicochemical properties of the soil, rapidly transforming the land to grassland.

- Bush (Bh)

  This is a stand with a tree height of less than 5 m which has regenerated on a former slash and burn site. Because of the short period following the site's use for slash and burn farming, it is on the path to restoration of a forest. Bush areas are observed scattered in the Model Area. If the frequency of use for slash and burn farming purposes is drastically reduced, such areas can regain their forest status and prevent the soil fertility from deterioration. As described in ¿ above, however, these areas are at risk of becoming grassland as repeated slash and burn farming worsens the growth conditions for trees.

- Bamboo Forest (B2)

  This type of bamboo forest consists of small bamboo trees which have regenerated on former slash and burn sites and is widely distributed in the Model Area. The seeds blown by the wind from nearby bamboo forests propagate at new former slash and burn sites. These seeds invade the slash and burn sites, creating a pioneering type of secondary forest. The bamboo is used for fencing, baskets and string.

- Grassland (G)

  Grassland appears to have emerged at sites where the natural regeneration of forests has become difficult due to deteriorated soil conditions, as a result of the frequent repetition of slash and burn farming at these sites. In general, grassland spreads over a wide area. A typical site is the hilly area to the north of Houay

Pamon Village. Other examples can be seen on the slope facing Namphao Village and on the western slope of Ph. Kout. The outcrop of rocks is also observed at some sites.

3) Permanent Farmland

- Lowland Paddy Field (Lp)

  Paddy fields are mainly observed in the basin at the centre of the Na Mon Sub-District. Smaller paddy fields are scattered on flat land in mountainous areas. Rice cropping is seen in those areas where water supply is available even during the dry season.

- Dry Farmland (Df)

  Dry farmland is mainly found near houses. The general size is rather small and the sites are encircled by bamboo or tree fencing to prevent the invasion of domestic animals. The cultivated crops are typically pulse and vegetables, presumably for family consumption. Some slopes along rivers or dam reservoirs are used as dry farmland during the dry season when the water level is low but these are not classified in the category of farmland for the present classification purposes.

- Orchard (Od)

  Small orchards growing bananas and pineapples, etc. are observed near houses.

4) Settlement (Co)

Villagers usually live in a settlement where their homes are concentrated and it is extremely rare for families to live in isolation from other villagers. An area with a concentration of houses surrounded by forests or paddy fields, etc. is classified in the category.

5) Bare Land (Br)

Treeless land along rivers and sites of exposed limestone near Ph. Thai Khan in the northwestern part of the Model Area, etc. are classified in the category of bare land.

6) Road (Rd) and Water Body (W)

Only such wide roads as Route 13 and Route 13B are classified in the category of road. The water body category consists of such major rivers as Nam Xong and Nam

Ngat with a clearly identifiable river channel area. Fish culture ponds are also classified in this category.

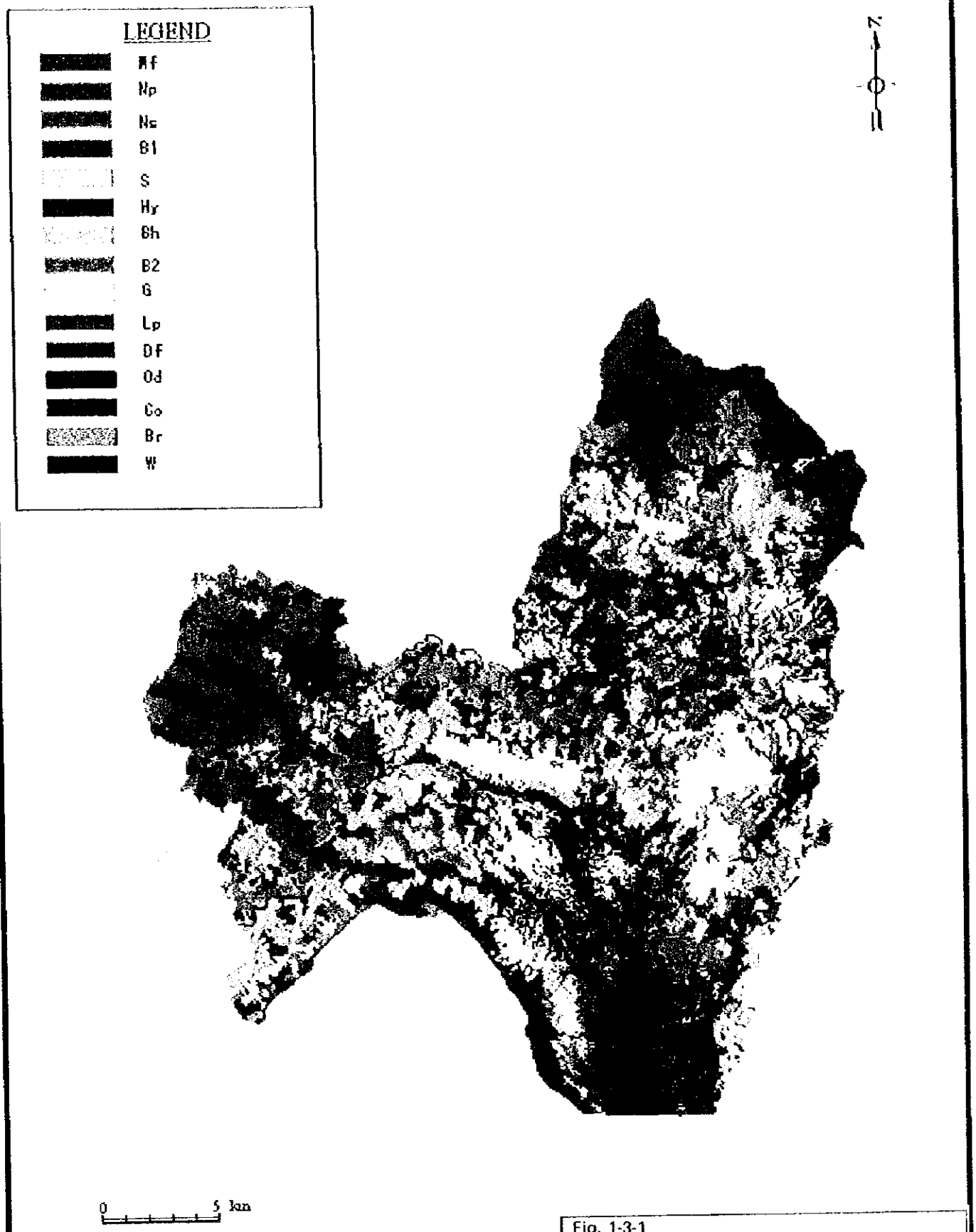


Fig. 1-3-1
Land Use & Vegetation Map Described by Interpretation of Aerial Photography(Taken in Nov.1996)
The Study on Watershed Management Plan for Forest Conservation in Vangvieng District

Fig. 4-1

Site Classification Map

The Study on Watershed Management Plan for Forest Conservation in Vangvieng District

Table1-4-1 Water Flow Check Points and Grade(1/2)

Land Use			Code	Grade	Water Flow Check Points										
					1	2	3	4	5	6	7	8	9	10	11
Forest	Man-Made Forest		Mf	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Natural Forest	Primary	Npd1	3	92.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Npd2	4	508.34	0.00	0.00	0.00	116.15	0.00	0.00	0.00	0.00	0.00	0.00
			Npd3	5	0.00	65.20	0.00	0.00	152.11	0.00	0.00	0.00	0.00	193.39	121.68
			Npd4	5	0.00	689.48	12.67	0.00	0.00	0.00	14.63	1.85	0.00	0.00	0.00
		Secondary	Nsd1	3	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.00	0.72	0.00
			Nsd2	4	74.95	14.46	17.72	0.00	0.00	15.41	0.00	0.00	0.00	38.68	5.48
			Nsd3	5	557.30	313.34	187.12	76.08	138.12	57.97	0.00	51.33	0.00	167.05	27.61
			Nsd4	5	438.84	148.43	72.07	17.29	15.61	0.00	0.00	0.00	23.09	37.57	0.00
	Bamboo Forest(1)		B1	3	574.51	214.70	0.19	38.13	40.16	0.00	0.00	0.00	0.00	34.77	0.08
	Shrub Land		S	3	0.00	5.80	1.12	8.23	20.23	0.00	0.00	4.46	0.00	23.37	3.78
S/B Site	Slash and Burn Site		Hy	1	135.10	23.40	42.62	10.26	82.10	0.00	0.00	6.76	5.96	37.32	0.44
and	Bush		Bh	3	156.83	436.44	43.96	132.44	87.51	11.59	3.09	0.00	4.92	57.89	58.27
Former S/B	Bamboo Forest(2)		B2	3	323.79	347.27	109.27	82.24	214.28	45.22	7.28	13.41	7.05	141.77	70.53
Site	Grassland		G	2	304.03	263.15	153.49	179.63	381.63	22.02	2.18	7.88	0.00	880.93	51.05
Peermanent	Lowland Paddy Field		Lp	3	0.00	0.00	15.15	3.32	1.13	0.00	0.00	0.00	0.00	1.11	0.00
Farmland	Dry Farmland		Df	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Orchard		Od	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Settlement			Co	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barre Land			Br	1	0.00	26.37	0.00	1.44	4.30	0.00	0.00	0.00	0.00	0.00	0.00
Water Body			W	1	0.02	1.52	0.84	0.45	2.43	0.00	0.00	0.00	0.00	1.70	0.00
Total(ha)					3166.35	2549.56	656.22	549.51	1255.76	152.21	27.83	85.69	41.02	1616.27	338.92
Mean Grading					3.63	3.82	3.49	2.97	3.13	3.72	3.97	3.99	3.84	2.92	3.74
Water Flow(lit/s)					535.7	473.8	90	99.8	216.3	20.6	10.3	28.3	15.8	359.6	104.7
Water Flow(lit/s/km²)					16.9	18.6	13.7	18.2	17.2	13.5	37.0	33.0	38.5	22.2	30.9

Table1-4-1 Water Flow Check Points and Grade(2/2)

Land Use			Code	Grade	Water Flow Check Points									
					12	13	14	15	16	17	18	19	20	21
Forest	Man-Made Forest		Mf	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Natural Forest	Primary	Npd1	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	356.26	0.00	0.00
			Npd2	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	386.00	0.00	0.00
			Npd3	5	2.72	0.00	334.63	0.00	0.00	0.00	0.00	578.93	0.00	0.00
			Npd4	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.73	0.00	0.00
		Secondary	Nsd1	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.00	0.00
			Nsd2	4	0.00	0.00	0.00	1.36	4.90	6.28	0.04	126.71	0.00	0.00
			Nsd3	5	14.01	0.00	22.26	0.00	1.16	15.89	12.35	554.31	2.78	42.80
			Nsd4	5	0.00	10.93	235.98	18.70	0.00	0.00	0.00	75.21	0.00	199.61
	Bamboo Forest(1)		B1	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Shrub Land		S	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S/B Site and Former S/B Site	Slash and Burn Site		Hy	1	0.00	14.70	135.47	0.00	0.84	0.00	0.00	17.53	4.15	5.94
	Bush		Bh	3	0.00	15.98	490.55	0.00	15.06	11.55	14.15	148.63	0.00	61.95
	Bamboo Forest(2)		B2	3	31.97	34.43	316.12	12.60	12.43	5.22	21.52	987.43	0.00	121.69
	Grassland		G	2	66.72	55.08	115.81	7.24	17.53	8.36	0.00	54.03	0.00	24.11
Peermanent Farmland	Lowland Paddy Field		Lp	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.68
	Dry Farmland		Df	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Orchard		Od	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Settlement			Co	1	0.00	0.00	3.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barre Land			Br	1	0.00	0.00	0.21	0.00	0.00	0.12	0.00	0.00	0.00	0.00
Water Body			W	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31
Total(ha)					115.42	131.12	1654.96	39.90	51.92	47.42	48.06	3292.68	6.93	466.09
Mean Grading					2.71	2.52	3.48	3.79	2.77	3.62	3.51	3.87	2.60	3.96
Water Flow(lit/s)					8.9	0.8	102.5	5.9	2.4	1.4	4.9	232.3	0.1	80.4
Water Flow(lit/s/km²)					7.7	0.6	6.2	14.8	4.6	3.0	10.2	7.1	1.4	17.2

ANNEX 2

SOCIO-ECONOMY IN THE STUDY AREA

The Study on Watershed Management Plan
for
Forest Conservation in Vangvieng District
in
Lao People's Democratic Republic

ANNEX 2

SOCIO-ECONOMY IN THE STUDY AREA

Contents

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1. INTRODUCTION

This Annex describes the present conditions of socio-economy in the Study Area in which the Model Area is included. For the Model Area, the watershed management plan is to be formulated taking, among others, natural and socio-economic conditions in the Study Area into account. Accordingly, the clarification of overall socio-economic conditions in the Study Area is one of important studies under the present study.

For the clarification of present socio-economic conditions in the Study Area, data and information have been collected from relevant offices located in Vangvieng district and Vientiane province. Field survey has also been carried out mainly for clarification of present conditions of infrastructure such as roads, electricity supply, irrigation, and education facilities. In addition, some important information related mainly to social infrastructure has been collected from village authorities scattered over the Study Area.

General socio-economic conditions are compiled in Chapter 2 covering some important information on administration, population, economic conditions and social services. In Chapter 3, present conditions of social and production infrastructure are described covering considerably wider fields, e.g. transportation and communication, water supply and sewerage, electricity supply, hospitals and health centers, schools, community facilities, irrigation facilities, etc.

2. SOCIO-ECONOMIC CONDITIONS

2.1 Administration

The Study Area is under the jurisdiction of the Vientiane province, and falls mostly in Vangvieng district. The Vangvieng district is located at the center of the eastern border of Vientiane province sharing boundaries with the Kasy district to the north, Mead and Fuang districts to the west to southwest. Keo Oudom district to the south and Xai Somboon Special Zone to the east. According to the administration boundary map prepared by the Vangvieng District Head Quarter, some land areas of the Study Area are also covered by these districts and special region (see Fig. 2-1-1).

However, the district boundary is unclear as far as the JICA Study Team has confirmed. The district boundaries drawn by the Vientiane Province Head Quarter and the Vangvieng District Head Quarter are not consistent, although the former office explained that district boundaries are usually decided among and by Governors and Chief of District Head Quarters concerned and authorized by the government (see Fig. 2-1-1).

The JICA Study Team has decided to carry out the socio-economic study in accordance with the district boundary drawn by the Vangvieng District Head Quarter, since sub-district boundaries are also available on its map and most of data have been collected from relevant offices in Vangvieng district. This decision was explained to the Lao PDR side in the meeting on the Field Report (I) held on February, 1997, and Lao side agreed to it.

Institutional arrangements in the district administration are similar to those at the central level. All such district offices are available covering the fields of agriculture and forestry; communications, transport, posts and construction; industry-handicrafts; commerce; information and culture; labor and social welfare; education; and health.

Under the jurisdiction of the Vangvieng district, there are five sub-districts and 76 villages. Although sub-districts are administratively non-functional at present, relevant district offices usually divide the district into five sub-districts, i.e. Phatang (with 13

villages), Vangvieng (21 villages), Namon (14 villages), Namouang (13 villages), and Somboun (15 villages). Out of the 76 villages in the Vangvieng District, each of 74 villages has a Village office, but not the remaining two villages (Hat Songkhon and Phoudindeng). Seven villages consisting of Houaysangao, Vangvieng, Sengsavang, Sisavang, Phonpheng, Veingkeo and Muongxong are practically called Vangvieng as a cluster of Vangvieng town.

A new district of Hinheup was established in January 1997, and six villages in Somboun sub-district administratively moved to this new district. These include Sivilai, Somsanouk, Nampat, Vangkhi, Phonethong, and Taothan. As a result, the number of villages in Somboun sub-district, the Model Area and the Study Area has become 9, 23 and 70, respectively. In the present study, however, the number of villages to be covered in the survey is 76 in the Study Area and 29 in the Model Area.

2.2 Population

The population in the Vangvieng district is 41,860 as of July 1996 according to the data from the statistics office in Vangvieng District Head Quarter. This population corresponds to about 0.9% of the total population in Lao PDR or 14.6% of that in the Vientiane province. On the other hand, the land area of the Vangvieng district (1,750 km^2) corresponds to about 0.7% of the total land of Lao PDR or 11% of that of Vientiane province, and accordingly the population density of the Vangvieng district (23.9 persons/km^2) is 27% higher than that of Lao PDR (19.4 persons/km^2) and 37% higher than that of Vientiane province (18.0 persons/km^2). Average size of household in Vangvieng district is 6.14 persons/household, showing similar figures with those in Lao PDR (6.09 persons/household) and Vientiane province (6.07 persons/household) (see Table 2-2-1).

The demographic characteristics of the Vangvieng district are presented in Tables from 2-2-2 to 2-2-4. Of the population in the district, about 35% live in the Vangvieng sub-district having the highest population density of 83 persons/km^2. On the other hand, the population density is the lowest in the Namon sub-district (12.9 persons/km^2) followed by the Namouang sub-district (15.5 persons/km^2), since the proportion of mountainous

land is considerably high in the land use of these sub-districts.

Assuming the demographic condition in the Model Area to be the same with that in two sub-districts of Namon and Somboun and that in the Study Area to be the same with that in Vangvieng district, the population in the Model Area is 16,158 persons or about 39% of that in the Study Area as shown in the table below. The population density in the Model Area is 16.9 persons/km^2, about 29% lower than that in the Study Area. In the Somboun sub-district, however, the population density is 22.2 persons/km^2 which is the second highest density in the Study Area. There is little difference in the sex ratio between the Model Area and the Study Area.

Population, Sex Ratio and Population Density
in the Study Area and Model Area

Sub-district	Total Population		Sex Ratio	Area	Population Density
	Total (pm)	SA=100% (%)	(M/F;%)	(km2)	(pm/km2)
Pha Tang	6,721	16.1	99.8	343	19.6
Vang Vieng	14,691	35.1	101.6	177	83.0
Na Muang	4,290	10.2	109.2	276	15.5
Na Mon	6,891	16.5	100.0	536	12.9
Som Boun a/	9,267	22.1	101.5	418	22.2
Model Area; Total or Ave.	16,158	38.6	100.9	954	16.9
Study Area; Total or Ave.	41,860	100.0	101.8	1,750	23.9

Note: a/; Water surface of Nam Ngum reservoir (70km2) is included. The population density excluding this area is 26.6 persons/km2 in Som Boun sub-district, 18.3 persons/km2 in the Model Area, and 24.9 persons/km2 in the Study Area.
Source: District Statistic Office, Vang Vieng (based on July 1996 survey)

The number of household in the Model Area is 2,640 as shown in the table below. While the average size of household in the Model Area is 6.12 persons/household showing similar figures with that in the Study Area. Workable population is 7,744 persons in the Model Area, and 20,962 persons in the Study Area. Based on these figures, workable population per household is calculated at 2.93 persons/household in the Model Area, and 3.07 persons/household in the Study Area. Average size of workable population per household in the Model Area is slightly lower than that in the Study Area. The workable population in Somboun sub-district alone is 2.81 persons/household on an average which is about 8.5% lower than that in the Study Area.

Population, Household Numbers and Workable Population
in the Study Area and Model Area

Sub-district	Total Population (prn)	Household Numbers		Workable Population a/	
		Total (No.)	Per H'hold (prn)	Total (prn)	Per H'hold (prn)
Pha Tang	6,721	1,079	6.23	3,460	3.21
Vang Vieng	14,691	2,442	6.02	7,623	3.12
Na Muang	4,290	661	6.49	2,135	3.23
Na Mon	6,891	1,072	6.43	3,336	3.11
Som Boun	9,267	1,568	5.91	4,408	2.81
Model Area; Total or Ave.	16,158	2,640	6.12	7,744	2.93
Study Area; Total or Ave.	41,860	6,822	6.14	20,962	3.07

Note: a/; As age group of 15-60 years old.
Source: District Statistic Office, Vang Vieng (based on July 1996 survey)

The population distribution by ethnic groups in the Study Area and Model Area is as shown in Table 2-2-4 together with their population increase rates. In the Study Area, the proportion of Lao Lum population is the highest at 70% of the total population, and proportion of other minority groups such as Lao Theung and Lao Sung is comparatively small at about 15.1% and 14.8%, respectively. Among the five sub-subdistricts, the proportion of Lao Theung population is the highest at 27.3% in the Somboun sub-district, and the lowest at 9.5% in the Vangvieng sub-district. The proportion of Lao Sung population is the highest at 28.5% in the Phatang sub-district, and the lowest at 3.0% in the Vangvieng sub-district. The population increase rate in the Study Area is estimated at 2.8% p.a. during the 1991-1996 period. During the same period, the increase of Lao Sung population is remarkable in the Phatang (26.5% p.a.) and the Vangvieng sub-districts (19.4% p.a.) as well as in the Study Area (13.0%) as a whole. In the Model Area, the proportion of Lao Lum, Lao Theung and Lao Sung population are 60%, 20.9%, and 19.1% of the total population, respectively. The Lao Lum population shows a decreasing trend (-0.1% p.a.), a small increase in Lao Theung (1.0% p.a.) and a large increase in Lao Sung (10.2% p.a.) during the 1991-1996 period in the Model Area.

2.3 Economic Conditions

2.3.1 Agriculture

Agriculture is the principal economic sector in the Study Area. Data from the statistic office in Vangvieng District Head Quarter show that about 88% of the working

population are engaged in agriculture which is broadly defined to include livestock, fisheries and forestry. In general, however, its productivity is low and vulnerable to the vagaries of the weather. Most of the crops are cultivated for home consumption and small amounts of surpluses are marketed. Livestock maybe are the second-most important sub-sector in terms of economic return to the villagers. Returns from fishery and forestry are considered to be smaller than those from crops and livestock. However, these sub-sectors also play an important role both in the economy and livelihood of the villagers.

(1) Crop production

The present condition of crop production in the Study Area is analyzed based on data from DAFO, Vangvieng at the preliminary level, although their reliabilities are somewhat low. The collected data is tabulated as shown in Table 2-3-1.

The most important crop grown in the Study Area and in the Model Area is paddy. This crop alone occupies about 90% of the total crop cultivation area in the district. Other crops cultivated are maize, cassava, and vegetables, but generally on a small scale. According to the information from DAFO, Vangvieng, cash crops such as cucumber, cabbage and watermelon have expanded in area and production in recent years for the Vientiane markets. Fruit trees grown in the district are banana, coconuts, papaya, mango, jackfruits, oranges, etc.

Paddy in the Study Area is cultivated in three production systems, i.e. wet season lowland paddy, dry season lowland paddy and slash and burn paddy. Among these, wet season lowland paddy is the major system. It produces about 89% of the total paddy in the district according to the data from DAFO, Vangvieng (see Table 2-3-2). Dry season lowland paddy is practiced in a limited area. It produces only 1% of total paddy in the district, indicating lower availability of water or fewer irrigation facilities for dry season cultivation. Slash and burn paddy is cultivated in a large area and produces 10% of the district's paddy.

(2) Livestock

The major livestock raised in the Study Area are cattle, buffalo, pig, goats and poultry. These animals are playing an important role in the economy of villagers as well as in the district. The official data obtained from the district office of commerce show that the district exported 386 heads of cattle/buffalo, 36 heads of pig and 7,000 kg of hides, and the total value of these exports was estimated at Kip 3.15 million in 1995. Since it is generally said that unofficial exports are 2.5 to 3 times as much as the official ones, this value of livestock exports could be around Kip 8.0 to 9.5 million.

According to the data from DAFO, Vangvieng, in 1995, livestock populations in the district are 8,207 buffaloes, 10,148 cattle, 8,058 pigs, 667 goats, 445 horses and 73,329 poultry, and the average head of livestock per household is 1.2 head for buffalo, 1.5 head for cattle, 1.2 head for pig, 0.1 head both for goat and horse, and 10.7 head for poultry (see Table 2-3-3). It is noteworthy that average heads of livestock per household in Somboun sub-district are considerably lower than that in the district average except for pig and goats as shown in the table below:

Average Numbers of Livestock by Sub-districts in Vangvieng District

(Unit: head/household)

Sub-district	Buffalo	Cattle	Pig	Goats	Horse	Poultry
Phatang	1.2	1.3	1.4	0.1	0.0	15.3
Vangvieng	1.1	1.6	0.9	0.1	0.0	8.2
Namouang	1.9	1.9	1.4	0.0	0.0	19.8
Namon	1.8	1.4	1.5	0.2	0.4	11.3
Somboun	0.7	1.3	1.2	0.1	0.0	7.4
Model Area	1.2	1.4	1.3	0.2	0.2	9.0
Study Area	1.2	1.5	1.2	0.1	0.1	10.7

Many villagers keep cattle and buffalo as their assets. They sell those animals when they need cash income for particular occasions, e.g. a marriage ceremony, or maybe for purchasing rice in case of need. Selling of pigs is done more regularly. Chicken, duck and turkeys raised are mainly for meat for home consumption. Eggs are kept as is to rear chicks for the next production of meat. As far as the JICA Study Team expert confirmed, all eggs handled by retailers in the district were imported from Vientiane

municipality.

Free grazing is a common practice for cattle, buffalo and goats, although some farmers feed them small amount of rice bran for cattle and buffalo. For pig, rice bran is fed twice a day. Poultry is practiced around home yards, and broken rice is generally fed twice a day.

(3) Fishery

Reliable data on present fishery in the district are not available. As a result of the field reconnaissance, however, findings on the present situation of fishery are summarized as follows:

- In general, fisheries are practiced on a small scale, both capture fisheries and fish culture.
- The main systems for capture fisheries are the rivers, reservoirs, swamps and paddy fields. Of these, the Nam Ngum reservoir is considered to be the most important system in the district. Fish sale is done on a comparatively large scale in Thahua-Nua market located just beside the reservoir. Fishing gears commonly utilized are several kinds of nets and bamboo baskets. According to the information from the market, fish catches in the reservoir have been decreasing in recent years.
- Pond fish culture is also practiced mostly under paddy field/pond systems. Fishes are usually cultivated for the six-month period during the wet season. Seeds are available from the Namsouang seed center operated by the Vientiane Municipality Livestock Society.

(4) Forestry

According to the forest map prepared by PAFSO, there is a protection forest extending over the northwest border of the district and a regenerated forest around the southwest border, although the area of these forests in the district is unknown.

Because of a ban on tree felling in the district, timber production in the forest is not commercially carried out. However, forests play an important role in the economy and livelihood of villagers. Nearly 100% of domestic energy depends on fuelwood, the collection of which is closely related with slash and burn cultivation (slashed trees are usually collected for fuelwood), about 31% of villagers are engaged in slash and burn cultivation (data from the district statistics office), which produce about 10% of total paddy in the district (data from DAFO). In addition, non-forest products such as bamboo, mushrooms, and cardamom are important cash income sources, particularly for the ethnic minority.

(5) Supporting agencies for the development of agriculture

The organizations of PAFSO in Vientiane province and DAFO in Vangvieng district are presented in Fig. 2-3-1 to 2-3-3, respectively. The staffing of these offices including other districts in the province are as shown in Table 2-3-4.

A total of 17 technical staff is assigned to DAFO, Vangvieng covering the fields of agriculture, forestry, irrigation, livestock and meteorology. This number of staff is insufficient to provide extension services effectively to the villagers. Related equipment and transportation means are also insufficient for their daily activities. Insufficient technical background of extension staff seems to be another constraint.

Aside from PAFSO and DAFO, Vangvieng, the data and information were collected from the Agricultural Promotion Bank (APB), Vangvieng. This APB was established by the end of 1993. APB, as the public financing institution, provides subsidized credit schemes to the villagers. APB promotes group-based loans. In general, recipients are requested to organize themselves into a group for a certain project for which aloan is needed. The loan amount varies from the minimum of Kip 50,000 to the maximum of Kip 500,000 both for short- and long-term loans. Interest rates also vary based on the type of project, i.e. 10% p.a. for agriculture and livestock, 12% p.a. for handicraft, and 18% p.a. for commerce. The amounts of loans disbursed from the district APB in 1995 and 1996 are presented in Table 2-3-5.

2.3.2 Other economic sectors

(1) Industry

According to the data from the district industry office, the total number of factories in the district is 35 of which one factory is categorized as large scale with more than 100 employees, eight factories are medium scale with 10 - 99 employees and 26 factories are small scale with 1 - 9 employees (see Table 2-3-6).

The one factory categorized as a large scale is Lao Vangvieng Cement Plant located in the Vangvieng sub-district. This factory was established in late 1994 with the maximum production capacity of 250 ton/day with 24 hours operation or 75,000 ton/year with 300 days operation. There are about 60 management staff including section chiefs and 180 permanent workers plus 150 temporary workers, who work in 3 shifts a day. Both coal and fuelwood are used as energy sources for cement production. In 1996, according to the factory, about 2,800 m^3 of fuelwood were consumed. Fuelwood is collected on a contract basis mainly from villagers in the Somboun sub-district. The price of fuelwood is Kip 4,000/ La (about 0.5 m^3) at the factory gate. Thus, it is estimated that about Kip 22.4 million of cash was paid for fuelwood by the factory in 1996.

In addition to the cement factory, there are eight limestone processing factories of which five are medium and the remaining three are small in scale. They mainly produce lime and marble. Other factories listed are drinking water bottling factories, ice plants, etc. (see Table 2-3-6).

As given in Table 2-3-7, the district industry office estimates that the value of industry and manufacturing production in the district was Kip 3,624 million in 1995/96, although this value does not include all the products. It is noteworthy that the cement factory alone produces 96% of this value. There are many cottage weaving industries in the district, but the district industry office does not know their actual production or the value at present.

(2) Services

According to the data from the district commerce office, a total of 112 establishments of traders/retailers are listed as shown in Table 2-3-8. By reading this table, it can be said that the major marketing centers in the district are Vangvieng town, Thahua-Nua/Thahua-Tai village area, and Phonsavang village.

The major commodities traded to other districts/ provinces are listed in Table 2-3-9. The total value traded was 92.2 million in 1995/96, although the value of cement is not included in the table. Live cattle/buffalo account for 59% of the total value, followed by limestone (27%) and lime (7%). Other important products traded are hide, tree fiber, paddy and cardamom.

2.3.3 Land Tenure and Holdings

Since the government decreed the regulation of land use (No. 117) in 1989, it is authorized that the land remains the national community's property and the people have the right to use the land. By the government Decree No. 99 in 1992, the land could be inherited, transferred, leased, or sold to Lao nationals, all of which are legitimately recognized by the state. Each village is to maintain a land registry book for individual holdings, and submit this to the authority concerned.

The land taxation system was also changed in 1993 (Decree No. 50). Before that, the tax on paddy land was imposed in kind on the basis of assessed potential yield. On the other crops an agricultural income tax was paid in cash. Under the new system, taxes are paid annually on all crops in cash, and the tax is applied to all categories of land. A different tax schedule is applied to each of four agricultural land types, i.e. paddy land (irrigated and rainfed), non-rice agricultural crops, slash and burn cultivation and other land uses (see Table 2-3-10).

For the district, the paddy land holding size per household is estimated at a preliminary level based on the data from the district statistic office and DAFO, Vangvieng as follows:

Operated Paddy Land per Household in Vangvieng District

(Unit: ha/household)

Sub-district	W.S. Lowland Paddy	D.S. Lowland Paddy	Slash & Burn Paddy
Phatang	0.76	0.02	0.03
Vangvieng	0.50	0.01	0.00
Namouang	1.28	0.00	0.15
Namon	0.41	0.00	0.05
Somboun	0.07	0.00	0.39
Total	0.50	0.01	0.12

Note: Average size of land is estimated based on the harvested area for each category of paddy land.
Source: District Statistic Office and DAFO, Vangvieng

As shown in the table, the land holding characteristics vary among sub-districts. The average size of wet season paddy land is the largest in the Namouang sub-district (1.28 ha/household), but is only 0.07 ha/household in the Somboun sub-district. On the other hand, the average size of slash and burn paddy land is the largest in the Somboun sub-district (0.39 ha/household).

2.3.4 Marketing and Prices

As already mentioned above, three major markets have been formed in the Study Area, i.e. Vangvieng town, Thahua-Nua/Thahua-Tai village area (Somboun sub-district), and Phonsavang village (Namon sub-distirict). Among these, Vangvieng town is the biggest market followed by Thahua-Nua/Thahua-Tai village area in terms of number of retailers. It can be roughly said that the Vangvieng market covers three sub-disticts located in the northern part of the district, i.e. Phatang, Vangvieng and Namouang sub-districts, while that of Thahua-Nua/Thahua-Tai market covers Somboun sub-district. The Phonsavang market is small and basically serves peoples in the Namon sub-distirict, but this market may function as a branch market of both the Vangvieng and Thahua-Nua/Thahua-Tai markets. More broadly, the district including these three markets is considered to be under the sphere of the markets of Vientiane municipality.

Agricultural commodities, which are major products in the villages, are generally sold to middlemen who visit farmers during the season, and in the case of livestock, middlemen periodically visit villages to collect live animals.

Retail prices of the district obtained from the district statistic office are as shown in Table 2-3-11. According to the statistic office, these prices are average prices of three markets in the district. As seen in the table, seasonal price fluctuation is considerably large in cash crops, particularly in vegetables.

2.4 Social Services

2.4.1 Education

According to the data from the district education office, there are 65 primary schools, 10 secondary schools, and one high school as of 1996. Out of 65 primary schools, 28 schools (43% of the total) are incomplete for only 2- or 3-year schooling (usually for ages from 6 to 7 or 6 to 8 years old). Accordingly, pupils in an incomplete primary school have to go to a complete primary school for higher classes of primary education up to class five. The distribution of primary and secondary schools in the district is as shown in Table 2-4-1. The district education office estimates that about 94% of school aged children attend primary school, and 80% go to a secondary school, although reliable data are not available. In addition, according to the district education office, the rate of absentee is considerably high during slash and burn, and harvesting seasons.

The number of teachers in the primary schools is 451 persons in the district, of which 170 or 38% are female as shown in Table 2-4-2. In terms of ethnic group composition, 93% of teachers are Lao Lum, 4% are Lao Theung, and 3% are Lao Sung. In primary education, the pupils per teacher ratio is 21.5 in the district. This figure is the highest in Somboun sub-district (27.7) and the lowest in the Namuang sub-district (17.9). School districts both for primary and secondary schools by villages are illustrated in Fig. 2-4-1.

2.4.2 Health

Institutional health services in the district are provided by the Vientiane Provincial Hospital and five health centers. The hospital has 30 beds for inpatients. As shown in

Table 2-4-3, the number of inpatients was about 1,680 in 1995 and 1,610 in 1996. Malaria, lung-disease and bladder-disease were major diseases of the inpatients. Some 20 kinds of basic drugs are kept in the hospital, but drags other than those have to be purchased at 31 pharmacies in the district, which are inspected every three months by the provincial health office.

The number of staff attached to the hospital is as follows:

Medical doctors	;	10
Medicine doctors	;	1
Nurses	;	3
Medical assistant	;	9
Dentist -technician	;	1
Ocpapedis	;	2
Assistant pharmacist	;	1
Laboratory staff	;	1
Others	;	46
Total	;	74

(as of December 1996)

The health center is placed in each sub-district except for the Vangvieng sub-district in which there is a Provincial Hospital. In each health center, three to five medical assistants are attached, who serve directly their command villages. At the village level, volunteers take an active part in medical care and birth control under the guidance of the hospital and health centers.

3. INFRASTRUCTURE

3.1 Transportation and Communication

3.1.1 Road Networks

Roads in this country are classified by their function into three categories: national road traversing provinces; provincial road running within a province; and local road

connecting villages in the local area.[4] From physical conditions, there are classified into: paved road, gravel road, unpaved earth road and cart road.

Two national roads run in the Study area. One is the Route 13 (R-13) and the other is Route 13B (R-13B). R-13 with a passable width of 8 m asphalt pavement road, starting from Vientiane, is in good condition and plays an important role in the country's economy as one of the trunk roads of the country. R-13B graveled for a passable width of 5 m, branching off from Route 13 at Houaymo-Tai village, runs about 18 km toward the south east and enters the Xai Somboun Special Zone. R-13B is well maintained by the Vangvieng District Bureau of the Ministry of Communication, Transport, Post and Construction (CTPC) with budgets allotted by the Ministry.

Construction and maintenance of the local road in the Study area is the responsibility of the CTPC Vangvieng District Bureau, according to which the following local roads have been constructed or were under construction as of November 1996 (See Fig. 3-1-1):

Existing and Under Construction Local Roads in the Study Area

Route	Length (km)	Width (m)	Current Conditions
(1) Vangvieng - Nadouang	8	5	Earth road
(2) Phonsavang - Ngiou - Nalao	8	6	Earth road; Bridges not constructed yet.
(3) Vangvieng - Namouang - Nampe	18	5	Graveled road under construction; Bridges not constructed yet
(4) Phatang - Keokoang	5	6	Under construction
(5) Namon Tai - Namon Nua	4	6	Under construction

Source: CTPC Vangvieng District Bureau

3.1.2 Public Transport

The Vangvieng area, the center of the Vangvieng District, is connected to Vientiane and Kasi by road (R-13). A state transportation company based in Vientiane, Vientiane Municipality Bus Company, runs buses connecting those cities and villages. In addition, private companies residing in Vientiane run buses between Vientiane and Vangvieng and

[4] : Road Design Manual (Provisional Use), Department of Communication Ministry of Communication, Transport and Construction, 1996

between Vientiane - Vangvieng - Kasi.

For local transportation, generally-used vehicles are small tricycle (Sam Lo) driven by motor cycle, tricycle (Tuk tuk) and mini-bus (Son Keo) which used to be made by remodeling pickup trucks into passenger cars.

3.1.3 Water Transport

The Nam Xong, forming a major river system in the Study area, originates from the northern most part of the Study area, flows down toward the south and joins the Nam Lik in the neighboring Mun Fuang District of Vientiane Province. Several tributaries such as Nam Pamon, Nam Noy, Nam Ka, Nam Koang and Nam Ngat rivers meet the Nam Xong in the Study area. Construction of the Nam Xong diversion dam in 1996 stopped navigation of the Nam Xong at the trans-diversion point.

This river system plays an important role in local transportation for canoes with a 5.5 Hp portable gasoline engine because no bridges have been constructed across the major rivers/streams except for R-13 and the road network has been scarcely established in the Study area. In the Nam Ngum reservoir, this kind of canoe is utilized mainly for transporting local people, the necessities of life and products from the area.

3.1.4 Telecommunication

In the Study area, there is one telecommunication office, the Vangvieng Telecommunication Office, at Sisavang village. This telecommunication office currently has a subscriber station with a capacity of 24 subscribers. Of the 24 subscribers, 6 were government agencies such as the District Head Quarter, District Bureau for Finance, District Bureau for Education, District Bureau for Agriculture and Forestry, Water Supply Project Office and a Hospital, 6 for the Telecommunication and Post Offices including 2 vacant lines, 4 for home use and 8 for private companies or factories as of November 1996. No public telephones are available in the Study area.

3.1.5 Post

In the Study area, there is only one post office in the same building as the Vangvieng Telecommunication Office mentioned above.

3.2 Water Supply and Sewerage

3.2.1 Rural Water Supply

In the Vangvieng District in 1996, according to the Vangvieng District Health Bureau, some 35 % of inhabitants utilized gravity fed pipe water supply systems (the rural water supply system) relying on small streams, 5 % utilized shallow dug wells lined with precut concrete pipes and 22 % utilized earthen shallow dug wells as a source of domestic water, while the rest depended entirely on nearby streams and rivers. Any of the above cases neither filtration nor chlorination is conducted.

The rural water supply system relying on stream flow was available for 19 villages in 1996, of which 14 systems have been constructed by the Ministry of Health with financial and technical assistance from the United Nation Children's Fund (UNICEF) under the Water Supply and Environmental Sanitation Program, 2 systems have been constructed with technical and financial assistance from NGO (CAA and UNSCR), while 3 systems have been constructed with financial assistance from the USA before the revolution in 1975.[a]

The rural water supply systems were constructed under the sanitation program of the Ministry of Health and are distinguished from the urban water supply system (Nam Papa) program being implemented by the Water Supply Project Office under the Ministry of Communication, Transports, Posts and Construction (CTPC).

The system consists generally of a small dam across a stream, an intake, conveyance and distribution PVC pipe or high density polyethylene pipe lines and 6 tapstand units. The

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[a]: Name of villages with the rural water supply system is given in the Progress Report of WATMAP, July 1997

resource streams generally have sufficient perennial flow except for the one for the system in Naxom village, the water source of which dries up during the dry season, and the other one in Phonsoung village, which used to suffer from water shortage in the dry season.

The equipment of the 14 rural water supply systems was provided by UNICEF. Construction of the systems was implemented by the Vientiane Provincial Health Service of the Ministry of Health by using local contractors.

Shallow tube wells equipped with a hand pump have been constructed with a boring machine provided by UNICEF at two sites in Sivilai and one each in Phonsoung, Phatao and Viengkeo (at nursing school) villages.

3.2.2 Urban Water Supply (Nam Papa)

In the Study area, one urban water supply system (Nam Papa), the so-called Vangvieng Water Supply system, was completed in 1996 by the Vangvieng Water Supply Project Office, which was one of the branch offices of the Water Supply Authority under management of the Ministry of CTPC.

The water source of the system relies on surface flow of the Nam Lao. Its intake site is 472 m above sea level and is located 6.1 km northeast of Vangvieng village. The system includes an intake structure, chlorination facilities before and after a filtration chamber, a concrete reservoir and a pipe line system consisting of a main pipeline 7 km long and distribution lines.

3.2.3 Sewerage

No sewerage systems have been installed in the Vangvieng District. According to a survey carried out by the Vangvieng District Health Bureau in October 1996, 31 % of inhabitants of the District were using either flushing type (UNICEF standard; Ø 0.8 m x 1.2 m depth tank without bottom) or dry type (using ash) toilet for excrement. Slops are generally drained to rivers/tributaries or only to backyards by individuals without any

treatment. Use of septic tanks is not widespread yet.

3.3 Electricity Supply

ELECTRICITE DU LAOS (EDL), a state electric company, is responsible for electricity supply in Lao PDR. EDL Service Center No.4 located at Phonhong is responsible for the electric supply in most of Vientiane province except for an area on the right bank of the Nam Lik and southern part of Phonhong District.

A 115 kV transmission line, starting at Thalat Sub-station near the Nam Gum Hydroelectric Power Station, traverses the Study area from south to north and reaches Luangprabang. In the Study area there is one sub-station at Vangvieng village (Vangvieng Sub-station) and a 22 kV feeder line has been erected between the sub-station and the Nam Xong diversion dam. Tapping from the 22 kV feeder line, 380/220 V distribution lines have been erected in six villages and, as of November 1996, were being erected with a schedule to be completed before the end of December 1996 for the other 16 villages. Those villages are tabulated below:

Villages with Electricity Supply

Village	Sub-district	Village	Sub-district
a) Constructed		b) Under construction	
Phonpheng	Vangvieng	Houaysangao	Vangvieng
Vangvieng	Vangvieng	Sengsavang	Vangvieng
Namon-Tai	Namon	Sisavang	Vangvieng
Vanghua	Namon	Viengkeo	Vangvieng
Houaymo-Tai	Somboun	Muongxong	Vangvieng
Somsanouk	Somboun	Khouanamlao	Vangvieng
		Viengxai	Vangvieng
		Houayngam	Vangvieng
		Hatsongkhon	Vangvieng
		Phonxou (Pakkouang)	Vangvieng
		Hinkhanmak	Vangvieng
		Phongsoung	Vangvieng
		Vangmiang	Namon
		Thahua Nua	Somboun
		Thahua-Tai (Phonhai)	Somboun
		Houaypamon	Somboun

Using the existing towers for the 115 kV transmission line, installation of two 25 kV feeder lines and 220 V distribution lines was planned as of November 1996. The 25 kV

feeder lines were of those between the Vangvieng Sub-station and Kasi (46.7 km long) and the Sub-station and Hinheup village (37.9 km long). The construction of the distribution lines was planned, as of November 1996, to cover the following 9 villages with more than 100 households in the District.

Villages with Electrification Schedule

Village	Sub-district	Village	Sub-district
Phahom	Phatang	Nampat	Somboun
Phadeng	Phatang	Vangkhi	Somboun
Phatang	Phatang	Phonthong	Somboun
Nadao	Phatang	Taothan	Somboun
Pakpo	Vangvieng		

3.4 Hospitals and Health Centers

There is one hospital having 30 beds for inpatients, Vientiane Provincial Hospital, and four Health Centers in the Vangvieng District. At the village level, medical volunteers render services to villagers for health and obstetrics. However, no health posts for those volunteers have been constructed yet. There are neither private hospitals nor clinics in the District.

The building of the Hospital including appurtenant offices was constructed in Vangvieng village in 1965 with financial assistance from the USA, and has now become considerably superannuated. Medical appliances and/or examination equipment and apparatus are also insufficient or out of order.

As of November 1996, a nurse school adjacent to the Hospital was scheduled to be opened in June 1997. The school was expected to accommodate 40 students at maximum for a 2-year course.

The four health centers are located in the following villages in the 4 Sub-districts except for the Vangvieng Sub-district where there is the Hospital.

Phatang Sub-district	Phatang
Namon Sub-district	Phonsavang

Namouang Sub-district	Nagnao
Somboun Sub-district	Houaymo-Nua

3.5 Schools

School buildings in the district are classified into permanent and temporary ones. The former ones, consisting of mortar surfaced brick walls and zinc roof, account for two primary schools, two secondary schools and one high school, while the latter ones are generally of bamboo walls and thatched roof. Writing desks and chairs are generally not uniform in size and shape, having been contributed by local people.

3.6 Community Facilities

There are no particular public facilities at the district level except for one gymnasium located in Vangvieng village.

At the village level, generally no community halls are available. Community meetings are held using either the residence of the village chief, school, or temple (35 temples in the District).

3.7 Irrigation Facilities

There are 77 small scale irrigation systems with a total area of 4,242 ha including possible extension area of 293 ha in the Study area. These systems are classified into three categories by the type of weir as follows:

i) System with permanent (concrete) diversion weir

- Number of systems:	16 systems
- Irrigable area in the wet season:	2,206 ha
- Irrigable area in the dry season:	246 ha
- Possible extension area:	120 ha

ii) System with semi-permanent (gabion) diversion weir

- Number of systems: 4 systems
- Irrigable area in the wet season: 143 ha
- Irrigable area in the dry season: 0 ha
- Possible extension area: 158 ha

iii) System with temporary (wooden) diversion weir

- Number of systems: 57 systems
- Irrigable area in the wet season: 1,600 ha
- Irrigable area in the dry season: 30 ha
- Possible extension area: 15 ha

Six systems in category (i), one system in category (ii) and 3 systems in category (iii) have a command area of over 100 ha. Those schemes are listed below:

Sizable Irrigation Systems in the Study Area

Name of System	Type of Weir	Irrigation area		Possible Extension Area
		Wet Season	Dry Season	
Nam Phamon II	Concrete	320	30	-
Houay Nampat	Concrete	327	10	-
Nam Po	Concrete	200	25	-
Nam Ka	Concrete	150	5	-
Namon	Concrete	350	50	-
Nam Koang I	Concrete	476	120	120
Nam Xang-Phatao	Gabion	101	0	158
Nam Lao I	Wood/cobble	158	0	-
Nam Koang 10	Wood/cobble	210	0	-
Nam Nga	Wood/cobble	113	5	-

A gated intake structure is attached to all the permanent (concrete) diversion weirs and one semi permanent (gabion) diversion weir. The irrigation system with semi permanent and temporary (wood/cobble) diversion weirs has no intake gate. Permanent discharge control structures such as diversion structures, turnouts and cross regulators (check) have not been constructed except only for those systems stated above and a few other systems.

According to a list of the existing irrigation systems provided by the Vangvieng District Bureau of the Ministry of Forestry and Agriculture, the irrigable area during the dry season is negligibly small. This is most probably attributed to: i) insufficient river discharges; ii) very low intake efficiency of the temporary type diversion weir (gabion and wood/cobble); and/or iii) low irrigation efficiency in the irrigation system due to lack of discharge regulating structures, lack of interest in cropping during the dry season, lack of the sense of water management both among beneficiary farmers and government staff and lack of agriculture extension workers.

Since the land suitable for irrigated agriculture in the Study area seems to have been mostly developed as paddy field and cannot be expanded to new paddy field, vertical development of the existing paddy land by increasing in cropping intensity and crop yield as well would be prerequisite to increase agriculture production in the Study area.

3.8 Land Conservation Facilities

Limestone outcrops in and on the Nam Xong course between the estuary of the Nam Ngat and Nam Po. Torrents appear in the upstream part of the Nam Xong from the junction of the Nam Po tributary. No river protection works were seen except for a very small part on the left bank at Vangvieng. At Houay Ngam and Hatsongkhon villages, the left bank of the river seems to be progressively eroded at high water stages.

TABLES

Table 2-2-1 Demography in Lao PDR, Vientiane Province, Vientiane Municipality and Vang Vieng District in 1995

	Unit	Lao PDR a/	Vientiane Province			Vientiane Municipality a/
			Province Total a/	Vangvieng District b/	Other Districts a/,b/	
Demography						
Total population	(prn)	4,581,258	286,089	41,860	244,229	528,109
Male	(prn)	2,265,327	145,171	21,115	124,056	266,128
Female	(prn)	2,315,931	140,918	20,745	120,173	261,981
Population distribution (Lao PDR = 100)	(%)	100.0	6.2	0.9	5.3	11.5
Population distribution (Vientiane pro.=100	(%)	-	100.0	14.6	85.4	-
Sex ratio (M/F)	(%)	97.8	103.0	101.8	103.2	101.6
Household	(No.)	752,102	47,167	6,822	40,345	88,863
Average size of H'hold	(prn)	6.09	6.07	6.14	6.05	5.94
Population density	(prn/km2)	19.35	17.96	23.92	17.23	134.72
Area	(km2)	236,800	15,927	1,750	14,177	3,920
Area distribution (Lao PDR = 100)	(%)	100.0	6.7	0.7	6.0	1.7
Area distribution (Vientiane pro. = 100)	(%)	-	100.0	11.0	89.0	-
Population increase (1985-1995)	(% p.a.)	2.48	n.a.	n.a.	n.a.	3.42
Administration in 1995						
No. of Districts	(No.)	133	7	1	6	9
No. of Villages	(No.)	11,640	496	76	420	486
Average households per village	(No.)	65	95	90	96	183
Average population per village	(prn)	394	577	551	581	1,087

Source: a/; Lao Census 1995, Preliminary Report 2 (based on the Lao Census 95 carried out in March 1995)
b/; District Statistic Office, Vang Vieng

Table 2-2-2 Demography of Vangvieng District by Villages in July, 1996

Sub-district No./Village	Total Population (pers)	Population by Sex: Male (pers)	Female (pers)	M : F (%)	(%)	Population Distribution by Age Group: 0-4 Yrs (%)	5-9 Yrs (%)	10-14Yrs (%)	15-60Yrs (%)	61 Over (%)	Total Hhold (No.)	Ave. Size of Hhold (pers)
Pha Tang												
1- 1 Pha Hom	503	248	254	(49.4)	(50.6)	(19.3)	(18.9)	(20.1)	(37.8)	(3.8)	86	5.8
1- 2 Pha Daeng	355	155	200	(43.7)	(56.3)	(14.1)	(6.8)	(3.4)	(69.6)	(6.7)	58	6.1
1- 3 Houay Namyen	177	98	79	(55.4)	(44.6)	(19.2)	(14.7)	(18.1)	(46.3)	(1.7)	21	8.4
1- 4 Keo Kwang	750	368	382	(49.1)	(50.9)	(20.7)	(14.3)	(12.8)	(50.1)	(2.1)	117	6.4
1- 5 Pha Tang	1,346	676	670	(50.2)	(49.8)	(8.1)	(11.9)	(12.9)	(58.6)	(8.5)	223	6.0
1- 6 Somsinxay	268	157	111	(58.6)	(41.4)	(11.2)	(13.8)	(18.7)	(47.4)	(9.0)	37	7.2
1- 7 Thang Xang	115	66	49	(57.4)	(42.6)	(13.0)	(8.7)	(7.8)	(60.9)	(9.6)	17	6.8
1- 8 Na Dao	539	297	242	(55.1)	(44.9)	(19.1)	(27.8)	(18.7)	(33.4)	(0.9)	83	6.3
1- 9 Nong Boua	177	82	95	(46.3)	(53.7)	(14.1)	(14.7)	(9.6)	(57.6)	(4.0)	29	6.1
1- 10 Phone Ngam Neua	469	232	237	(49.5)	(50.5)	(12.7)	(13.4)	(14.5)	(52.5)	(7.5)	79	5.9
1- 11 Phoxay	320	151	169	(47.2)	(52.8)	(26.6)	(12.5)	(21.9)	(35.0)	(4.1)	52	6.2
1- 12 Pha Thao	1,176	563	613	(47.9)	(52.1)	(8.3)	(11.1)	(12.4)	(60.4)	(7.8)	201	5.9
1- 13 Somsavad	527	264	263	(50.1)	(49.9)	(22.0)	(11.8)	(18.0)	(43.5)	(4.7)	74	7.1
Sub-total or Average	6,721	3,357	3,364	(49.9)	(50.1)	(14.5)	(13.8)	(14.4)	(51.5)	(5.7)	1,079	6.2
Vangvieng												
2- 1 Viengsavay	733	384	349	(52.4)	(47.6)	(16.2)	(17.2)	(16.8)	(45.6)	(4.4)	128	5.7
2- 2 Nakhae	236	115	121	(48.7)	(51.3)	(24.2)	(12.7)	(10.6)	(50.0)	(2.5)	35	6.7
2- 3 Pakpo	1,198	613	585	(51.2)	(48.8)	(14.2)	(12.9)	(11.9)	(50.9)	(10.0)	196	6.1
2- 4 Houay Sangao	1,181	576	605	(48.8)	(51.2)	(9.4)	(12.4)	(14.6)	(58.3)	(5.2)	208	5.7
2- 5 Naduang	665	293	372	(44.1)	(55.9)	(11.9)	(18.5)	(16.1)	(49.9)	(3.6)	103	6.5
2- 6 Vang Vieng	960	450	510	(46.9)	(53.1)	(9.7)	(10.2)	(12.0)	(62.0)	(6.1)	184	5.2
2- 7 Sengsavang	514	309	205	(60.1)	(39.9)	(2.3)	(8.0)	(13.2)	(69.1)	(7.4)	108	4.8
2- 8 Sisavang	695	340	355	(48.9)	(51.1)	(8.2)	(9.8)	(13.5)	(60.7)	(7.8)	118	5.9
2- 9 Phonepheng	1,070	539	531	(50.4)	(49.6)	(9.7)	(15.1)	(19.9)	(41.6)	(13.6)	175	6.1
2- 10 Viengkeo	1,179	598	581	(50.7)	(49.3)	(10.1)	(13.0)	(14.6)	(57.3)	(5.1)	189	6.2
2- 11 Muong Kong	1,152	618	534	(53.6)	(46.4)	(8.7)	(10.4)	(10.2)	(62.1)	(8.7)	172	6.7
2- 12 Viengxaisuhuang	1,008	497	511	(49.3)	(50.7)	(14.1)	(15.6)	(17.9)	(48.7)	(3.8)	160	6.3
2- 13 Houay Ngam	1,027	545	482	(53.1)	(46.9)	(22.4)	(19.7)	(22.1)	(27.8)	(8.0)	155	6.6
2- 14 Phone Xou	666	323	343	(48.5)	(51.5)	(15.3)	(15.2)	(15.6)	(49.2)	(4.7)	111	6.0
2- 15 Phonesong	375	197	178	(52.5)	(47.5)	(12.5)	(17.3)	(15.2)	(49.3)	(5.6)	57	6.6
2- 16 Na Khoun	502	254	248	(50.6)	(49.4)	(8.4)	(17.3)	(13.3)	(51.6)	(9.4)	82	6.1
2- 17 Phone Soung	428	203	225	(47.4)	(52.6)	(11.9)	(13.6)	(22.7)	(46.0)	(5.8)	64	6.7
2- 18 Khan Mak	883	433	450	(49.0)	(51.0)	(10.5)	(12.7)	(13.3)	(57.6)	(5.9)	158	5.6
2- 19 Vangxong	219	118	101	(53.9)	(46.1)	(24.2)	(19.2)	(14.2)	(36.1)	(6.4)	39	5.6
2- 20 Hat Songkhon a/												
2- 21 Phou Dindeng b/												
Sub total or Average	14,691	7,405	7,286	(50.4)	(49.6)	(12.1)	(13.9)	(15.2)	(51.9)	(6.9)	2,442	6.0
Namon												
3- 1 Vangmiang	600	300	300	(50.0)	(50.0)	(14.3)	(14.5)	(14.5)	(50.8)	(5.8)	101	5.9
3- 2 Namon Tai	846	425	421	(50.2)	(49.8)	(16.7)	(15.4)	(10.2)	(49.9)	(7.9)	145	5.8
3- 3 Namon Nua	757	369	388	(48.7)	(51.3)	(23.5)	(16.9)	(11.9)	(44.5)	(3.2)	113	6.7
3- 4 Phonsavang	640	300	340	(46.9)	(53.1)	(11.1)	(17.3)	(16.9)	(50.5)	(4.2)	111	5.8
3- 5 Phoukeo	996	486	510	(48.8)	(51.2)	(17.8)	(19.9)	(14.7)	(42.6)	(5.1)	130	7.7
3- 6 Ngiou	353	183	170	(51.8)	(48.2)	(15.0)	(19.3)	(12.7)	(49.0)	(4.0)	52	6.8
3- 7 Nalao	475	279	196	(58.7)	(41.3)	(10.7)	(14.1)	(16.4)	(54.7)	(4.0)	74	6.4
3- 8 Nakhome	168	85	83	(50.6)	(49.4)	(17.3)	(13.1)	(17.3)	(50.6)	(1.8)	24	7.0
3- 9 Phongnang	186	95	91	(51.1)	(48.9)	(12.9)	(21.5)	(11.3)	(43.0)	(11.3)	27	6.9
3- 10 Nangun Nua	183	91	92	(49.7)	(50.3)	(26.2)	(15.3)	(9.3)	(42.1)	(7.1)	28	6.5
3- 11 Nangun Tai	442	207	235	(46.8)	(53.2)	(19.5)	(15.6)	(13.6)	(48.6)	(2.7)	62	7.1
3- 12 Vanghua	853	427	426	(50.1)	(49.9)	(13.4)	(16.1)	(12.9)	(54.4)	(3.3)	141	6.0
3- 13 Houaysan	206	108	98	(52.4)	(47.6)	(21.8)	(15.5)	(10.2)	(45.1)	(7.3)	34	6.1
3- 14 Nampath Nua	186	91	95	(48.9)	(51.1)	(19.9)	(18.8)	(14.0)	(41.9)	(5.4)	30	6.2
Sub-total or Average	6,891	3,446	3,445	(50.0)	(50.0)	(16.5)	(16.7)	(13.4)	(48.4)	(4.9)	1,072	6.4
Na Muang												
4- 1 Nam Pae	494	271	223	(54.9)	(45.1)	(15.0)	(17.6)	(16.2)	(47.2)	(4.0)	78	6.3
4- 2 Naxay	210	108	102	(51.4)	(48.6)	(11.0)	(21.4)	(13.3)	(50.5)	(3.8)	33	6.4
4- 3 Phonexay	150	68	82	(45.3)	(54.7)	(17.3)	(18.0)	(20.0)	(42.0)	(2.7)	24	6.3
4- 4 Nady	244	124	120	(50.8)	(49.2)	(12.7)	(20.1)	(19.3)	(45.1)	(2.9)	48	5.1
4- 5 Napho	355	178	177	(50.1)	(49.9)	(16.3)	(17.7)	(14.6)	(46.5)	(4.8)	55	6.5
4- 6 Naxone	805	433	372	(53.8)	(46.2)	(22.0)	(16.8)	(15.0)	(41.5)	(4.7)	97	8.3
4- 7 Nathone	485	273	212	(56.3)	(43.7)	(10.1)	(14.4)	(18.6)	(55.3)	(1.6)	68	7.1
4- 8 Naboua	158	82	76	(51.9)	(48.1)	(19.0)	(15.2)	(12.7)	(48.7)	(4.4)	26	6.1
4- 9 Na Onao	195	84	111	(43.1)	(56.9)	(20.5)	(15.4)	(10.3)	(53.3)	(0.5)	39	5.0
4- 10 Nangjou	228	118	110	(51.8)	(48.2)	(12.7)	(10.5)	(17.1)	(54.4)	(5.3)	38	6.0
4- 11 Phone San	369	186	183	(50.4)	(49.6)	(4.6)	(11.9)	(9.2)	(72.9)	(1.4)	61	6.0
4- 12 Nanguang	348	179	169	(51.4)	(48.6)	(13.8)	(19.0)	(17.0)	(46.6)	(3.7)	54	6.4
4- 13 Phone Ngam Tay	249	135	114	(54.2)	(45.8)	(14.9)	(15.7)	(16.9)	(48.2)	(4.4)	40	6.2
Sub-total or Average	4,290	2,239	2,051	(52.2)	(47.8)	(14.9)	(16.4)	(15.4)	(49.8)	(3.5)	661	6.5
Somboun												
5- 1 Houaymo Nua	316	156	160	(49.4)	(50.6)	(19.6)	(14.9)	(14.6)	(46.2)	(4.7)	51	6.2
5- 2 Houaymo Tai	550	273	277	(49.6)	(50.4)	(15.6)	(13.3)	(10.4)	(58.4)	(2.4)	84	6.5
5- 3 Thahua Nua	1,058	523	535	(49.4)	(50.6)	(12.4)	(14.0)	(13.1)	(49.6)	(10.9)	165	6.4
5- 4 Thahua Tai	882	488	394	(55.3)	(44.7)	(13.0)	(14.9)	(17.0)	(51.9)	(3.2)	134	6.1
5- 5 Houaynamom	1,079	539	540	(50.0)	(50.0)	(18.2)	(16.2)	(15.7)	(45.6)	(4.4)	184	5.9
5- 6 Somsanouk	948	485	463	(51.2)	(48.8)	(21.2)	(16.4)	(11.5)	(41.4)	(9.6)	208	4.6
5- 7 Namgat	306	156	150	(51.0)	(49.0)	(9.8)	(19.6)	(27.1)	(27.8)	(15.7)	47	6.5
5- 8 Vangkhi	891	456	435	(51.2)	(48.8)	(15.3)	(13.2)	(15.0)	(51.6)	(4.8)	161	5.5
5- 9 Phonthong	158	77	81	(48.7)	(51.3)	(13.9)	(20.3)	(12.7)	(48.7)	(4.4)	32	4.9
5- 10 Taothao	438	226	212	(51.6)	(48.4)	(19.2)	(20.8)	(9.8)	(47.5)	(2.7)	74	5.9
5- 11 Nampath Tai	233	114	119	(48.9)	(51.1)	(20.6)	(17.2)	(14.2)	(42.1)	(6.0)	36	6.5
5- 12 Houayxi	343	148	195	(43.1)	(56.9)	(15.5)	(13.1)	(22.7)	(46.4)	(2.3)	65	5.3
5- 13 Namphao	1,434	702	732	(49.0)	(51.0)	(17.9)	(15.9)	(14.7)	(47.1)	(4.3)	204	7.0
5- 14 Phakoup	476	251	225	(52.7)	(47.3)	(19.5)	(13.4)	(12.6)	(51.3)	(3.2)	91	5.2
5- 15 Sivilai	155	74	81	(47.7)	(52.3)	(11.6)	(18.7)	(20.0)	(43.2)	(6.5)	22	7.0
Sub total or Average	9,267	4,668	4,599	(50.4)	(49.6)	(16.5)	(15.5)	(14.2)	(47.6)	(5.7)	1,568	5.9
Model Area, Total or Ave.	16,158	8,124	8,044	(50.2)	(49.8)	(16.5)	(16.0)	(14.2)	(47.9)	(5.4)	2,640	6.1
Study Area, Total or Ave.	41,869	21,115	20,745	(50.4)	(49.6)	(14.5)	(15.0)	(14.7)	(50.1)	(5.8)	6,822	6.1

Note: a/, Figures in 2-20 Had Song Khonh village are included in 2-13 Huay Ngam village.
b/, Figures in 2-21 Phou Din Daeng village are included in 2-3 Pak Po village.
Source: District Statistic Office, Vangvieng (based on July 1996 survey)

Table 2-2-3 Population Inflow & Outflow and Working Population in Vangvieng District by Villages in 1996

Sub-district No./Village		Total Population (prn) (1)	Population In & Out flow d/ Popul. In-flow (prn) (2)	Popul. Out-flow (prn) (3)	Balance (prn) 4=2-3	Balance/ Total Popu. (%) (5=4/1*100)	Working Population e/ Lowland Paddy Cultivat. (prn) (6)	Slash and Burn Cultivat. (prn) (7)	Other Occupation (prn) (8)	Total Working Popu. (prn) (10=6-9)	% of Work. Popul. in Total Popu. (%) (11=10/1)	Working Poulation Per H.H. (prn) (12=10/15)	Popu. in Age Group 15 -60 Yrs Old Population (prn) (13)	Per H.H. (prn) (14=13/15)	Total H'hold (No.) (15)
Pha Tang															
1- 1	Pha Hom	502	3	8	-5	(1.0)	279	0	8	287	(57.2)	3.34	190	2.21	86
1- 2	Pha Daeng	355	0	0	0	(0.0)	60	194	0	254	(71.5)	4.38	247	4.26	58
1- 3	Houay Namyeo	177	0	6	-6	(3.4)	0	113	0	113	(63.8)	5.38	82	3.90	21
1- 4	Keo Kwang	750	0	0	0	(0.0)	45	426	0	471	(62.8)	4.03	376	3.21	117
1- 5	Pha Tang	1,346	1	2	-1	(0.1)	825	84	4	913	(67.8)	4.09	789	3.54	223
1- 6	Somsinxay	268	4	0	4	(1.5)	154	10	12	176	(65.7)	4.76	127	3.43	37
1- 7	Tham Xang	115	0	0	0	(0.0)	79	0	0	79	(68.7)	4.65	70	4.12	17
1- 8	Na Dao	539	3	1	2	(0.4)	191	85	0	276	(51.2)	3.25	180	2.12	83
1- 9	Nong Boua	177	7	2	5	(2.8)	119	0	0	119	(67.2)	4.10	102	3.52	29
1- 10	Phone Ngam Neua	469	14	4	10	(2.1)	272	5	23	300	(64.0)	3.80	246	3.11	79
1- 11	Phoxay	330	0	9	-9	(2.8)	162	0	15	177	(55.3)	3.30	112	2.15	52
1- 12	Pha Thao	1,176	16	20	-4	(0.3)	0	669	165	834	(70.9)	4.15	710	3.53	201
1- 13	Songsavad	527	0	0	0	(0.0)	101	214	6	321	(60.9)	4.34	229	3.09	74
	Sub-total or Average	6,721	48	52	-4	(0.1)	2,287	1,800	233	4,320	(64.3)	4.00	3,460	3.21	1,079
Vangvieng															
2- 1	Viengsamay	733	8	2	6	(0.8)	147	307	2	456	(62.2)	3.56	333	2.60	128
2- 2	Nakhae	236	0	0	0	(0.0)	116	23	5	144	(61.0)	4.11	118	3.37	35
2- 3	Pakpo	1,198	9	3	6	(0.5)	384	230	128	742	(61.9)	3.79	610	3.11	196
2- 4	Houay Sangao	1,181	11	12	-1	(0.1)	510	265	76	851	(72.1)	4.09	689	3.31	208
2- 5	Naduang	665	22	0	22	(3.3)	165	202	65	432	(65.0)	4.19	332	3.22	103
2- 6	Vang Vieng	900	8	39	-31	(3.2)	670	0	33	703	(78.2)	3.82	595	3.23	184
2- 7	Sengsavang	514	18	1	17	(3.3)	355	0	60	415	(80.7)	3.84	355	3.29	108
2- 8	Sisavang	695	24	17	7	(1.0)	240	0	223	463	(66.6)	3.92	422	3.58	118
2- 9	Phonepheng	1,000	7	5	2	(0.2)	566	0	70	636	(59.6)	3.63	445	2.54	175
2- 10	Viengkeo	1,179	195	3	192	(16.3)	704	70	68	842	(71.4)	4.46	675	3.57	189
2- 11	Muong Xong	1,152	0	0	0	(0.0)	759	0	68	827	(71.8)	4.81	715	4.16	172
2- 12	Viengxaihaisang	1,008	36	9	27	(2.7)	578	0	88	666	(66.1)	4.16	491	3.07	160
2- 13	Houay Ngam	1,027	36	0	36	(3.5)	424	30	29	493	(48.0)	3.18	286	1.85	155
2- 14	Phone Xou	666	0	7	-7	(1.1)	224	331	70	425	(63.8)	3.83	328	2.95	111
2- 15	Phonesong	375	8	10	-2	(0.5)	156	0	79	235	(62.7)	4.12	185	3.25	57
2- 16	Na Khoun	502	0	6	-6	(1.2)	279	49	0	328	(65.3)	4.00	259	3.16	82
2- 17	Phone Soung	428	14	0	14	(3.3)	230	49	10	289	(67.5)	4.52	197	3.08	64
2- 18	Khan Mak	883	8	16	-8	(0.9)	330	211	78	619	(70.1)	3.92	509	3.22	158
2- 19	Vangkong	219	0	0	0	(0.0)	48	55	2	105	(47.9)	2.69	79	2.03	39
2- 20	Hat Songkhon a/														
2- 21	Phou Dindeng b/														
	Sub-total or Average	14,691	404	130	274	(1.9)	6,885	1,633	1,154	9,671	(65.8)	3.96	7,623	3.12	2,442
	Vangvieng Area c/	6,751	263	77	186	(2.8)	3,804	335	598	4,737	(70.2)	4.10	3,806	3.38	1,154
Namon															
3- 1	Vangmaiang	600	6	4	2	(0.3)	258	80	42	380	(63.3)	3.76	305	3.02	101
3- 2	Namon-Tai	845	0	0	0	(0.0)	316	0	192	508	(60.0)	3.50	422	2.91	145
3- 3	Namon Nua	757	18	62	-44	(5.8)	372	50	5	427	(56.4)	3.78	337	2.98	113
3- 4	Phonsavang	640	19	19	0	(0.0)	330	20	49	399	(62.3)	3.59	323	2.91	111
3- 5	Phonkeo	996	70	0	70	(7.0)	340	223	0	563	(56.5)	4.33	424	3.26	130
3- 6	Nglou	353	2	18	-16	(4.5)	141	49	28	218	(61.8)	4.19	173	3.33	52
3- 7	Nalao	475	0	0	0	(0.0)	176	160	2	338	(71.2)	4.57	260	3.51	74
3- 8	Nakhome	168	0	0	0	(0.0)	100	7	0	107	(63.7)	4.46	85	3.54	24
3- 9	Phoengang	185	0	0	0	(0.0)	65	36	0	101	(54.3)	3.74	80	2.96	27
3- 10	Nangeun-Nua	183	1	1	0	(0.0)	17	75	0	92	(50.3)	3.29	77	2.75	28
3- 11	Nangeun-Tai	442	0	0	0	(0.0)	190	83	0	273	(61.8)	4.40	215	3.47	62
3- 12	Vanghua	853	9	5	4	(0.5)	508	2	60	570	(66.8)	4.04	464	3.29	141
3- 13	Houaysan	206	0	1	-1	(0.5)	30	84	0	114	(55.3)	3.35	93	2.74	34
3- 14	Nampath-Nua	186	0	0	0	(0.0)	0	104	0	104	(55.9)	3.47	78	2.60	30
	Sub-total or Average	6,891	116	101	15	(0.2)	2,843	973	378	4,194	(60.9)	3.91	3,336	3.11	1,072
Na Muang															
4- 1	Nam Pae	494	8	0	8	(1.6)	285	22	0	308	(62.3)	3.95	233	2.99	78
4- 2	Naxay	210	0	5	-5	(2.4)	81	48	5	134	(63.8)	4.06	106	3.21	33
4- 3	Phonexay	150	0	0	0	(0.0)	88	0	5	93	(62.0)	3.88	63	2.63	24
4- 4	Nady	244	5	0	5	(2.0)	108	46	1	155	(63.5)	3.23	110	2.29	48
4- 5	Napho	355	0	0	0	(0.0)	203	0	9	212	(59.7)	3.85	165	3.00	55
4- 6	Naxome	865	0	0	0	(0.0)	435	0	0	435	(54.0)	4.48	334	3.44	97
4- 7	Nalbong	485	0	0	0	(0.0)	353	0	7	360	(74.2)	5.29	268	3.94	68
4- 8	Naboua	158	1	4	-3	(1.9)	80	12	4	96	(60.8)	3.69	77	2.96	26
4- 9	Na Gnao	195	1	0	1	(0.5)	120	0	0	120	(61.5)	3.08	104	2.67	39
4- 10	Nangiou	228	0	14	-14	(6.1)	147	11	0	158	(69.3)	4.16	124	3.26	38
4- 11	Phone San	369	0	0	0	(0.0)	45	256	0	301	(81.6)	4.93	269	4.41	61
4- 12	Namuang	348	15	8	7	(2.0)	220	0	0	220	(63.2)	4.07	162	3.00	54
4- 13	Phone Ngam Tay	249	0	0	0	(0.0)	137	12	13	162	(65.1)	4.05	120	3.00	40
	Sub total or Average	4,290	30	31	-1	(0.0)	2,273	437	44	2,754	(64.2)	4.12	2,135	3.23	661
Somboun															
5- 1	Houaymo-Nua	316	8	0	8	(2.5)	72	166	2	190	(60.1)	3.73	146	2.86	51
5- 2	Houaymo-Tai	550	40	30	10	(1.8)	37	119	220	376	(68.4)	4.48	321	3.82	84
5- 3	Thahua-Nua	1,058	7	6	1	(0.1)	90	317	209	616	(58.2)	3.73	525	3.18	165
5- 4	Thahua-Tai	882	4	3	1	(0.1)	13	64	525	602	(68.3)	4.18	458	3.18	144
5- 5	Houaypamoon	1,079	0	0	0	(0.0)	0	650	7	657	(60.9)	3.57	492	2.67	184
5- 6	Sonsanouk	948	0	22	-22	(2.3)	0	367	0	367	(38.7)	1.76	392	1.88	208
5- 7	Naxaat	300	0	0	0	(0.0)	0	164	0	164	(53.6)	3.49	85	1.81	47
5- 8	Vangkhi	891	9	10	-1	(0.1)	149	328	23	500	(56.1)	3.11	460	2.86	161
5- 9	Phonthong	158	1	4	-3	(1.9)	41	49	0	90	(57.0)	2.81	77	2.41	32
5- 10	Taothan	438	0	0	0	(0.0)	60	189	0	249	(56.8)	3.36	208	2.81	74
5- 11	Nampath-Tai	233	11	0	11	(4.7)	0	130	0	130	(55.8)	3.61	98	2.72	36
5- 12	Houayxi	343	0	2	-2	(0.6)	0	223	19	233	(67.9)	3.58	159	2.45	65
5- 13	Namphao	1,434	0	0	0	(0.0)	198	603	76	877	(61.2)	4.30	676	3.31	204
5- 14	Phakoup	476	6	8	-2	(0.4)	0	50	250	300	(63.0)	3.30	244	2.68	91
5- 15	Sivilai	155	4	0	4	(2.6)	0	91	0	91	(58.7)	4.14	67	3.05	22
	Sub-total or Average	9,267	90	85	5	(0.1)	610	3,510	1,332	5,452	(58.7)	3.47	4,408	2.81	1,568
Model Area, Total or Ave.		16,158	206	186	20	(0.1)	3,453	4,483	1,700	9,636	(59.6)	3.65	7,744	2.93	2,640
Study Area, Total or Ave.		43,860	688	399	289	(0.7)	14,898	8,352	3,131	26,381	(63.0)	3.87	20,962	3.07	6,822

Note: a/; Figures in 2-20 Had Song Khonh village are included in 2-13 Houay Ngam village.
b/; Figures in 2-21 Phou Din Daeng village are included in 2-3 Pakpo village.
c/; Total or average of 7 villages, i.e. Houay Sangao, Vang Vieng, Sengsavang, Sisavang, Phonepheng, Veingkeo, and Muong Xong.
d/; Population flow during June 1995 - July 1996 period.
e/; The district statistic office assumed that population belongs to age groups more than 10 years old are working population.

Source: District Statistic Office, Vang Vieng (based on July 1996 survey)

Table 2-2-4 Population by Ethnic Group in Vang Vieng District (1991-1996)

No./Sub district	1991	1992	1993	1994	1995	1996	Ave. Increase 1991-96 (% p.a.)
Population by ethnic group (pm)							
1 Pha Tang	4,559	4,451	4,559	5,219	5,062	6,373	6.93
- Lao Lum	3,189	3,098	3,222	3,826	2,469	3,722	3.14
- Lao Theung	808	897	816	785	841	830	0.54
- Lao Sung	562	486	521	608	1,752	1,819	26.48
- Others	0	0	0	0	0	2	-
2 Vangvieng	12,914	12,964	13,178	13,381	15,912	14,519	2.41
- Lao Lum	11,282	11,328	11,655	11,868	14,271	12,704	2.40
- Lao Theung	1,427	1,429	1,255	1,244	1,246	1,380	-0.67
- Lao Sung	179	207	268	269	395	435	19.43
- Others	26	13	18	18	58	30	2.90
3 Na Muang	3,683	3,844	4,384	4,020	4,215	4,237	2.84
- Lao Lum	2,418	2,581	3,050	2,807	2,782	2,801	2.98
- Lao Theung	572	569	564	465	633	641	2.30
- Lao Sung	693	694	770	748	800	795	2.78
- Others	0	0	0	0	0	0	-
4 Namon	5,465	5,607	5,736	5,951	6,599	6,813	4.51
- Lao Lum	3,445	3,161	3,238	3,379	3,735	3,582	0.78
- Lao Theung	565	493	522	467	519	844	8.36
- Lao Sung	1,453	1,953	1,976	2,105	2,345	2,387	10.44
- Others	2	0	0	0	0	0	-
5 Somboun	9,290	9,676	9,945	10,539	10,061	9,218	-0.16
- Lao Lum	6,222	6,555	6,997	7,200	7,063	6,029	-0.63
- Lao Theung	2,629	2,655	2,521	2,819	2,421	2,513	-0.90
- Lao Sung	432	465	426	516	577	672	9.24
- Others	7	1	1	4	0	4	-10.59
Model Area, Total or Average	14,755	15,283	15,681	16,490	16,660	16,031	1.67
- Lao Lum	9,667	9,716	10,235	10,579	10,798	9,611	-0.12
- Lao Theung	3,194	3,148	3,043	3,286	2,940	3,357	1.00
- Lao Sung	1,885	2,418	2,402	2,621	2,922	3,059	10.17
- Others	9	1	1	4	0	4	-14.97
Study Area, Total or Average	35,911	36,572	37,802	39,110	41,849	41,190	2.78
- Lao Lum	26,556	26,723	28,162	29,080	30,320	28,838	1.66
- Lao Theung	6,001	6,043	5,678	5,780	5,660	6,208	0.68
- Lao Sung	3,319	3,805	3,961	4,246	5,869	6,108	12.97
- Others	35	14	19	22	58	36	0.57
Population by ethnic group (%)							
1 Pha Tang	100.0	100.0	100.0	100.0	100.0	100.0	-
- Lao Lum	69.9	69.1	70.7	73.3	48.8	58.4	-
- Lao Theung	17.7	20.0	17.9	15.0	16.6	13.0	-
- Lao Sung	12.3	10.8	11.4	11.6	34.6	28.5	-
- Others	0.0	0.0	0.0	0.0	0.0	0.0	-
2 Vangvieng	100.0	100.0	100.0	100.0	100.0	100.0	-
- Lao Lum	87.4	87.4	88.4	88.7	89.7	87.3	-
- Lao Theung	11.1	11.0	9.5	9.3	7.8	9.5	-
- Lao Sung	1.4	1.6	2.0	2.0	2.5	3.0	-
- Others	0.2	0.1	0.1	0.1	0.4	0.2	-
3 Na Muang	100.0	100.0	100.0	100.0	100.0	100.0	-
- Lao Lum	65.7	67.1	69.6	69.8	66.0	66.1	-
- Lao Theung	15.5	14.8	12.9	11.6	15.0	15.1	-
- Lao Sung	18.8	18.1	17.6	18.6	19.0	18.8	-
- Others	0.0	0.0	0.0	0.0	0.0	0.0	-
4 Namon	100.0	100.0	100.0	100.0	100.0	100.0	-
- Lao Lum	63.0	56.4	56.5	56.8	56.6	52.6	-
- Lao Theung	10.3	8.8	9.1	7.8	7.9	12.4	-
- Lao Sung	26.6	34.8	34.4	35.4	35.5	35.0	-
- Others	0.0	0.0	0.0	0.0	0.0	0.0	-
5 Somboun	100.0	100.0	100.0	100.0	100.0	100.0	-
- Lao Lum	67.0	67.7	70.4	68.3	70.2	65.4	-
- Lao Theung	28.3	27.4	25.3	26.7	24.1	27.3	-
- Lao Sung	4.7	4.8	4.3	4.9	5.7	7.3	-
- Others	0.1	0.0	0.0	0.0	0.0	0.0	-
Model Area, Average	100.0	100.0	100.0	100.0	100.0	100.0	-
- Lao Lum	65.5	63.6	65.3	64.2	64.8	60.0	-
- Lao Theung	21.6	20.6	19.4	19.9	17.6	20.9	-
- Lao Sung	12.8	15.8	15.3	15.9	17.5	19.1	-
- Others	0.1	0.0	0.0	0.0	0.0	0.0	-
Study Area, Average	100.0	100.0	100.0	100.0	100.0	100.0	-
- Lao Lum	73.9	73.1	74.5	74.4	72.5	70.0	-
- Lao Theung	16.7	16.5	15.0	14.8	13.5	15.1	-
- Lao Sung	9.2	10.4	10.5	10.9	14.0	14.8	-
- Others	0.1	0.0	0.1	0.1	0.1	0.1	-

ource: District Statistic Office, Vang Vieng (based on January 1996 survey)

Table 2-3-1 Crop Production in Vangvieng District by Sub-districts (1995/96)

Crops	Unit	Sub-district					Total or Average
		Tha Tang	Vangvieng	Na Muang	Namon	Somboun	
Wet season lowland paddy							
Area	ha	822.3	1,235.8	867.8	564.0	106.6	3,596.5
Newly developed area	ha	25.0	15.0	28.0	3.0	19.0	90.0
Damaged area	ha	3.3	8.6	19.3	12.2	1.0	44.4
Harvested area	ha	818.9	1,227.2	848.7	441.8	104.6	3,441.2
Paddy production	ton	3,275.6	3,681.7	3,394.8	2,207.4	316.8	12,876.3
Produc. distribution	total=100	(25.4)	(28.6)	(26.4)	(17.1)	(2.5)	(100.0)
Yield	ton/ha	4.0	3.0	4.0	5.0	3.0	3.7
Dry season lowland paddy							
Harvested area	ha	16.9	21.0	5.0	2.5	0.0	45.4
Paddy production	ton	57.1	73.5	17.0	8.8	0.0	156.4
Produc. distribution	total=100	(36.5)	(47.0)	(10.9)	(5.6)	(0.0)	(100.0)
Yield	ton/ha	3.4	3.5	3.4	3.5	-	3.4
Shifting cultivation paddy							
Area	ha	34.0	6.0	97.0	56.0	608.0	801.0
Paddy production	ton	68.0	7.8	135.8	100.8	1,155.2	1,467.6
Produc. distribution	total=100	(4.6)	(0.5)	(9.3)	(6.9)	(78.7)	(100.0)
Yield	ton/ha	2.0	1.3	1.4	1.8	-	1.8
Total paddy production	ton	3,400.7	3,763.0	3,547.6	2,317.0	1,472.0	14,500.3
Produc. distribution	total=100	(23.5)	(26.0)	(24.5)	(16.0)	(10.2)	(100.0)
Water melon							
Area	ha	61.5	3.3	0.5	33.3	0.0	98.7
Production	ton	1,200.0	10.1	9.0	666.4	0.0	1,885.5
Produc. distribution	total=100	(63.6)	(0.5)	(0.5)	(35.3)	(0.0)	(100.0)
Yield	ton/ha	19.5	3.0	18.0	20.0	-	19.1
Cucumber							
Area	ha	13.3	53.0	8.2	25.4	0.3	100.1
Production	ton	172.4	386.6	71.1	310.2	3.0	943.2
Produc. distribution	total=100	(18.3)	(41.0)	(7.5)	(32.9)	(0.3)	(100.0)
Yield	ton/ha	13.0	7.3	8.7	12.2	10.0	9.4
Cabbage							
Area	ha	31.1	3.7	0.0	0.0	0.0	34.8
Production	ton	1,089.2	119.0	0.0	0.0	0.0	1,208.2
Produc. distribution	total=100	(90.1)	(9.9)	(0.0)	(0.0)	(0.0)	(100.0)
Yield	ton/ha	35.0	32.0	-	-	-	34.7
Groundnut							
Area	ha	12.8	4.2	9.4	48.8	0.7	75.9
Production	ton	18.8	6.6	11.9	72.8	0.7	110.9
Produc. distribution	total=100	(17.0)	(6.0)	(10.7)	(65.7)	(0.6)	(100.0)
Yield	ton/ha	1.5	1.6	1.3	1.5	1.0	1.5
Pumpkin							
Area	ha	0.7	2.9	0.0	0.0	0.0	3.6
Production	ton	14.8	51.6	0.0	0.0	0.0	66.4
Produc. distribution	total=100	(22.3)	(77.7)	(0.0)	(0.0)	(0.0)	(100.0)
Yield	ton/ha	20.0	18.1	-	-	-	18.5
Tobacco							
Area	ha	2.9	0.3	4.0	0.6	0.0	7.9
Production	ton	7.2	0.6	8.0	1.2	0.0	17.1
Produc. distribution	total=100	(42.4)	(3.7)	(47.1)	(6.7)	(0.0)	(100.0)
Yield	ton/ha	2.5	2.0	2.0	1.8	-	2.2
Green beans							
Area	ha	0.0	0.0	0.1	0.1	0.0	0.2
Production	ton	0.0	0.0	0.1	0.1	0.0	0.1
Produc. distribution	total=100	(0.0)	(0.0)	(50.0)	(50.0)	(0.0)	(100.0)
Yield	ton/ha	-	-	0.8	0.8	-	0.8
Chili							
Area	ha	5.3	3.2	6.8	4.5	1.0	20.8
Production	ton	14.9	6.7	16.1	12.8	2.0	52.4
Produc. distribution	total=100	(28.5)	(12.7)	(30.7)	(24.4)	(3.8)	(100.0)
Yield	ton/ha	2.8	2.1	2.4	2.8	2.0	2.5
Maize							
Area	ha	13.5	8.3	10.8	12.0	12.0	56.6
Production	ton	121.0	66.5	76.6	95.0	96.0	455.1
Produc. distribution	total=100	(26.6)	(14.6)	(16.8)	(20.9)	(21.1)	(100.0)
Yield	ton/ha	9.0	8.0	7.1	7.9	8.0	8.0
Ginger							
Area	ha	2.0	0.5	2.5	0.5	0.5	6.0
Production	ton	31.0	7.5	52.5	7.0	7.0	105.0
Produc. distribution	total=100	(29.5)	(7.1)	(50.0)	(6.7)	(6.7)	(100.0)
Yield	ton/ha	15.5	15.0	21.0	14.0	14.0	17.5
Cassava							
Area	ha	3.0	2.0	2.0	3.0	9.0	19.0
Production	ton	114.0	61.0	36.0	105.0	351.0	667.0
Produc. distribution	total=100	(17.1)	(9.1)	(5.4)	(15.7)	(52.6)	(100.0)
Yield	ton/ha	38.0	30.5	18.0	35.0	39.0	35.1
Other root crops							
Area	ha	4.0	2.0	3.0	2.0	1.0	12.0
Production	ton	92.0	40.0	66.0	40.0	20.0	258.0
Produc. distribution	total=100	(35.7)	(15.5)	(25.6)	(15.5)	(7.8)	(100.0)
Yield	ton/ha	23.0	20.0	22.0	20.0	20.0	21.5

Source: District Agriculture and Forestry Office, Vangvieng

Table 2-3-2 Production Characteristics of Paddy in Vangvieng District by Sub-district

	Unit	Pha Tang Sub-district	Vangvieng Subdistrict	Namon Sub district	Na Muang Sub-district	Somboun Sub-district	Total or Average
1. Annual paddy production (1995/96)	ton	3,401	3,764	3,548	2,317	1,472	14,502
1) Wet season lowland paddy	ton	3,276	3,682	3,395	2,207	317	12,877
2) Dry season lowland paddy	ton	57	74	17	9	0	157
3) Upland paddy	ton	68	8	136	101	1,155	1,468
2. Production % of each paddy							
1) Wet season lowland paddy	%	(96.3)	(97.8)	(95.7)	(95.3)	(21.5)	(88.8)
2) Dry season lowland paddy	%	(1.7)	(2.0)	(0.5)	(0.4)	(0.0)	(1.1)
3) Upland paddy	%	(2.0)	(0.2)	(3.8)	(4.4)	(78.5)	(10.1)
3. Harvested area							
1) Wet season lowland paddy	ha	819	1,227	849	442	105	3,441
2) Dry season lowland paddy	ha	17	21	5	3	0	45
3) Upland paddy	ha	34	6	97	56	608	801
4. Ave. harvested area per household							
1) Wet season lowland paddy	ha	0.76	0.50	0.79	0.67	0.07	0.50
2) Dry season lowland paddy	ha	0.02	0.01	0.00	0.00	0.00	0.01
3) Upland paddy	ha	0.03	0.00	0.09	0.08	0.39	0.12
5. Ave. harvested area per working population for paddy production							
1) Wet season lowland paddy	ha	0.36	0.18	0.30	0.19	0.17	0.23
2) Upland paddy	ha	0.02	0.00	0.10	0.13	0.17	0.10
Memo. item							
Household in 1996	No.	1,079	2,442	1,072	661	1,568	6,822
Working population in;							
1) Lowland paddy farming	prn	2,287	6,885	2,843	2,273	610	14,898
2) Upland paddy farming	prn	1,800	1,632	973	437	3,510	8,352

Source District Agriculture and Forestry Office, Vangvieng (for paddy production)
District Statistic Office, Vangvieng (for population)

Table 2-3-3 Livestock Population in Vangvieng District by Villages in 1996

Sub-district No./Village		Buffalo		Cattle		Pig		Goats		Horse		Poultry		
		Total Popul. (head)	Ave./ Hhold (head)	Total Popul. (head)	Ave./ Hhold (head)	Total Popul. (head)	Ave./ Hhold (head)	Total Popul. (head)	Ave./ Hhold (head)	Total Popul. (head)	Ave./ Hhold (head)	Total Popul. (head)	Ave./ Hhold (head)	Total Hhold (No.)
Pha Tang														
1- 1	Pha Hom	87	1.0	124	1.4	233	2.7	0	0.0	0	0.0	395	4.6	86
1- 2	Na Pha Daeng	75	1.3	120	2.1	133	2.3	2	0.0	0	0.0	1,395	24.1	58
1- 3	Huay Nam Yen	5	0.2	20	1.0	50	2.4	7	0.3	0	0.0	300	14.3	21
1- 4	Kwaeng Kwang	55	0.5	75	0.6	56	0.5	0	0.0	0	0.0	508	4.3	117
1- 5	Pha Tang	450	2.0	420	1.9	150	0.7	2	0.0	0	0.0	1,100	4.9	223
1- 6	Some Sin Xay	62	1.7	25	0.7	62	1.7	2	0.1	0	0.0	948	25.6	37
1- 7	Tham Xang	121	7.1	130	7.6	123	7.2	27	1.6	0	0.0	2,000	117.6	17
1- 8	Na Dao	84	1.0	165	1.9	248	2.9	0	0.0	0	0.0	2,352	27.7	85
1- 9	Nong Boua	94	3.2	69	2.4	129	4.4	0	0.0	0	0.0	1,927	66.4	29
1- 10	Phone Ngam (Neua)	57	0.7	67	0.8	36	0.5	22	0.3	0	0.0	759	9.6	79
1- 11	Pho Xay	79	1.5	89	1.7	139	2.7	0	0.0	0	0.0	1,834	35.3	52
1- 12	Pha Thau	29	0.1	2	0.0	55	0.3	0	0.0	0	0.0	2,000	10.0	201
1- 13	Som Sawad	67	0.9	73	1.0	63	0.9	0	0.0	0	0.0	1,000	13.5	71
	Sub-total or Average	1,265	1.2	1,379	1.3	1,477	1.4	62	0.1	0	0.0	16,518	15.3	1,079
Vangvieng														
2- 1	Vieng Samay	64	0.5	106	0.8	150	1.2	0	0.0	0	0.0	490	3.8	128
2- 2	Na Khae	250	7.1	149	4.3	140	4.0	0	0.0	19	0.5	1,600	45.7	35
2- 3	Pak Po	165	0.8	650	3.3	220	1.1	0	0.0	0	0.0	1,400	7.1	196
2- 4	Huay Sa Ngao	253	1.2	424	2.0	267	1.3	20	0.1	0	0.0	675	3.2	208
2- 5	Na Duang	181	1.8	272	2.6	68	0.7	0	0.0	0	0.0	276	2.7	103
2- 6	Vang Vieng	62	0.3	192	1.0	103	0.6	15	0.1	0	0.0	2,535	13.8	184
2- 7	Saeng Savang	51	0.5	400	3.7	97	0.9	2	0.0	0	0.0	559	5.2	108
2- 8	Sisavang	58	0.5	92	0.8	50	0.4	0	0.0	0	0.0	230	1.9	118
2- 9	Phone Pheng	132	0.8	275	1.6	60	0.3	0	0.0	0	0.0	1,252	7.2	175
2- 10	Veng Keo	161	0.9	132	0.7	159	0.8	27	0.1	0	0.0	2,713	14.4	189
2- 11	Muang Song	114	0.7	259	1.5	173	1.0	0	0.0	0	0.0	2,340	13.6	172
2- 12	Vieng Xai Na Luang	212	1.3	169	1.1	105	0.7	0	0.0	0	0.0	1,300	8.1	160
2- 13	Huay Ngam	240	1.5	200	1.3	105	0.7	0	0.0	0	0.0	150	1.0	155
2- 14	Phone Soo	50	0.5	28	0.3	55	0.5	18	0.2	0	0.0	1,210	10.9	111
2- 15	Na Ken	87	1.5	64	1.1	46	0.8	0	0.0	0	0.0	264	4.6	57
2- 16	Na Khoon	160	2.0	150	1.8	92	1.1	0	0.0	0	0.0	227	2.8	82
2- 17	Phone Soong	170	2.7	108	1.7	164	2.6	27	0.4	15	0.2	615	9.6	64
2- 18	Khan Mark	120	0.8	159	1.0	97	0.6	24	0.2	0	0.0	1,600	10.1	158
2- 19	Vang Song	51	1.3	75	1.9	38	1.0	0	0.0	0	0.0	510	13.1	39
2- 20	Had Song Khonh	(Figures in this village are included in 2-13 Huay Ngam village.)												
2- 21	Phou Din Daeng	(Figures in this village are included in 2-3 Pak Po village.)												
	Sub-total or Average	2,581	1.1	3,904	1.6	2,189	0.9	133	0.1	34	0.0	19,946	8.2	2,442
Namon														
3- 1	Vangmiang	239	2.4	220	2.2	649	6.4	0	0.0	0	0.0	810	8.0	101
3- 2	Namon-Tai	180	1.2	130	0.9	70	0.5	30	0.2	0	0.0	780	5.4	145
3- 3	Namon-Nua	277	2.5	72	0.6	57	0.5	73	0.6	4	0.0	792	7.0	113
3- 4	Phonsavang	92	0.8	95	0.9	173	1.6	12	0.1	0	0.0	3,440	31.0	111
3- 5	Phonkeo	178	1.4	151	1.2	55	0.4	53	0.4	212	1.6	1,200	9.2	130
3- 6	Ngiou	192	3.7	141	2.7	45	0.9	0	0.0	54	1.0	510	9.8	52
3- 7	Nako	219	3.0	46	0.6	112	1.5	50	0.7	25	0.3	506	6.8	74
3- 8	Nakhome	49	2.0	25	1.0	82	3.4	5	0.2	4	0.2	600	25.0	24
3- 9	Phongnang	132	4.9	134	5.0	35	1.3	6	0.2	0	0.0	445	16.5	27
3- 10	Nangeun-Nua	134	4.8	58	2.1	55	2.0	7	0.3	33	1.2	606	21.6	28
3- 11	Nangeun-Tai	59	1.0	72	1.2	73	1.2	20	0.3	73	1.2	693	11.2	62
3- 12	Vanghua	199	1.4	274	1.9	105	0.7	0	0.0	0	0.0	1,217	8.6	141
3- 13	Houaysan	24	0.7	49	1.4	34	1.0	3	0.1	6	0.2	230	6.8	34
3- 14	Nampath-Nua	8	0.3	29	1.0	21	0.7	5	0.2	0	0.0	279	9.3	30
	Sub-total or Average	1,982	1.8	1,496	1.4	1,566	1.5	264	0.2	411	0.4	12,108	11.3	1,072
Na Muang														
4- 1	Nam Pae	159	2.0	78	1.0	25	0.3	0	0.0	0	0.0	784	10.1	78
4- 2	Na Xay	59	1.8	60	1.8	50	1.5	0	0.0	0	0.0	350	10.6	33
4- 3	Phone Xay	29	1.2	27	1.1	70	2.9	0	0.0	0	0.0	298	12.4	24
4- 4	Na Di	78	1.6	19	0.4	138	2.9	0	0.0	0	0.0	898	18.7	48
4- 5	Na Pho	124	2.3	87	1.6	92	1.7	0	0.0	0	0.0	1,138	20.7	55
4- 6	Na Xom	246	2.5	150	1.5	161	1.7	0	0.0	0	0.0	3,650	37.6	97
4- 7	Na Thong	189	2.8	215	3.2	152	2.2	0	0.0	0	0.0	1,250	18.4	68
4- 8	Na Boua	33	1.3	78	3.0	30	1.2	0	0.0	0	0.0	148	5.7	26
4- 9	Na Nhao	83	2.1	97	2.5	26	0.7	0	0.0	0	0.0	350	9.0	39
4- 10	Na Ngiou	89	2.3	133	3.5	27	0.7	0	0.0	0	0.0	860	22.6	38
4- 11	Phone Sang	15	0.2	141	2.3	18	0.3	0	0.0	0	0.0	427	7.0	61
4- 12	Na Muang	99	1.8	83	1.5	55	1.0	0	0.0	0	0.0	1,966	36.4	54
4- 13	Phone Ngam Tay	47	1.2	112	2.8	99	2.5	0	0.0	0	0.0	989	24.7	40
	Sub-total or Average	1,250	1.9	1,280	1.9	943	1.4	0	0.0	0	0.0	13,108	19.8	661
Somboun														
5- 1	Houaymo-Nua	54	1.1	139	2.7	40	0.8	16	0.3	0	0.0	350	6.9	51
5- 2	Houaymo-Tai	36	0.4	50	0.6	60	0.7	0	0.0	0	0.0	800	9.5	84
5- 3	Thahua-Nua	57	0.3	140	0.8	16	0.1	20	0.1	0	0.0	1,500	9.1	165
5- 4	Thahua-Tai	86	0.6	101	0.7	62	0.4	28	0.2	0	0.0	290	2.0	144
5- 5	Houaypamom	116	0.6	126	0.7	350	1.9	20	0.1	0	0.0	690	3.8	184
5- 6	Somsanouk	119	0.5	210	0.9	162	0.7	40	0.2	0	0.0	1,650	7.2	230
5- 7	Nampat	16	0.3	78	1.7	51	1.1	14	0.3	0	0.0	167	3.6	47
5- 8	Vangkhi	191	1.2	191	1.2	130	0.8	12	0.1	0	0.0	1,584	9.8	161
5- 9	Phonthong	21	0.7	135	4.2	23	0.7	21	0.7	0	0.0	147	4.6	32
5- 10	Taothan	50	0.7	150	2.0	88	1.2	0	0.0	0	0.0	315	4.3	74
5- 11	Nampath-Tai	20	0.6	47	1.3	10	0.3	0	0.0	0	0.0	327	9.1	36
5- 12	Houayxi	85	1.3	160	2.5	350	5.4	0	0.0	0	0.0	1,200	18.5	65
5- 13	Namphao	116	0.6	405	2.0	453	2.2	16	0.1	0	0.0	2,314	11.3	204
5- 14	Phakoup	162	1.8	157	1.7	88	1.0	21	0.2	0	0.0	315	3.5	91
5- 15	Sivilai	(Figures in this village are included in 5-6 Som Sa Nook village.)												
	Sub-total or Average	1,129	0.7	2,089	1.3	1,883	1.2	208	0.1	0	0.0	11,649	7.4	1,568
	Total or Average	8,207	1.2	10,148	1.5	8,058	1.2	667	0.1	445	0.1	73,329	10.7	6,822

Source: District Agriculture and Forestry Office, Vangvieng
District Statistic Office, Vangvieng

Table 2-3-4 Staffing of Agriculture and Forestry Offices in Vientiane Province by Districts

Office / Section & project	High Level	Medium Level	Low Level	Others	Total
0. Provincial Office	46	85	15	8	154
1) Forestry Section	17	30	3	2	52
2) Agriculture Section	1	5	0	0	6
3) Irrigation Section	8	2	0	0	10
4) Livestock Section	3	4	0	0	7
5) Meteorology Section	1	1	2	0	4
6) Administration Section	4	9	5	0	18
7) Pack Chieng Promotion Division/ Center	1	11	0	1	13
8) Nam Ngum Development & Management Project	1	10	3	2	16
9) Upland Agriculture Project	6	8	0	3	17
10) PhoneSoog Project	2	0	2	0	4
11) Agriculture & Rural Development Project	2	5	0	0	7
1. Vangvieng District Office	5	11	9	1	26
1) Forestry Section	1	3	2	1	7
2) Agriculture Section	0	1	0	0	1
3) Irrigation Section	2	1	0	0	3
4) Livestock Section	0	2	2	0	4
5) Meteorology Section	0	1	1	0	2
6) Administration Section	2	3	4	0	9
2. Phon Hong District Office	6	15	6	1	28
1) Forestry Section	1	7	1	1	10
2) Agriculture Section	0	4	2	0	6
3) Irrigation Section	0	1	1	0	2
4) Livestock Section	1	2	0	0	3
5) Meteorology Section	0	0	0	0	0
6) Administration Section	4	1	2	0	7
3. Toulakhom District Office	5	15	5	0	25
1) Forestry Section	1	3	1	0	5
2) Agriculture Section	0	5	1	0	6
3) Irrigation Section	1	3	0	0	4
4) Livestock Section	1	3	0	0	4
5) Meteorology Section	0	0	2	0	2
6) Administration Section	2	1	1	0	4
4. Keo Oudom District Office	2	12	1	0	15
1) Forestry Section	2	3	0	0	5
2) Agriculture Section	0	2	0	0	2
3) Irrigation Section	0	1	0	0	1
4) Livestock Section	0	1	1	0	2
5) Meteorology Section	0	0	0	0	0
6) Administration Section	0	5	0	0	5
5. Kasi District Office	0	11	4	1	16
1) Forestry Section	0	2	1	0	3
2) Agriculture Section	0	2	0	0	2
3) Irrigation Section	0	3	0	0	3
4) Livestock Section	0	2	0	0	2
5) Meteorology Section	0	0	0	0	0
6) Administration Section	0	2	3	1	6
6. Feuang District Office	3	15	3	0	21
1) Forestry Section	2	9	0	0	11
2) Agriculture Section	0	2	1	0	3
3) Irrigation Section	1	0	0	0	1
4) Livestock Section	0	2	1	0	3
5) Meteorology Section	0	0	0	0	0
6) Administration Section	0	2	1	0	3
7. Sanakham District Office	3	17	3	0	23
1) Forestry Section	1	10	1	0	12
2) Agriculture Section	0	0	1	0	1
3) Irrigation Section	0	1	0	0	1
4) Livestock Section	0	2	0	0	2
5) Meteorology Section	0	0	0	0	0
6) Administration Section	2	4	1	0	7
8. Maed District Office	2	3	0	0	5
1) Forestry Section	0	1	0	0	1
2) Agriculture Section	0	1	0	0	1
3) Irrigation Section	1	0	0	0	1
4) Livestock Section	0	0	0	0	0
5) Meteorology Section	0	0	0	0	0
6) Administration Section	1	1	0	0	2
Total in the Province	72	184	46	11	313

Source: Provincial Agriculture and Forestry Office, Vientiane Province

Table 2-3-5 Loans Disbursed from APB Vangvieng (1995-1996)

	Achievement							Planned	Rate of
	Villages (No.)	Group (No.)	House-hold (No.)	Loan Amount (Kip)	Ave. Hhold per Group (No.)	Ave. Amount per Group (Kip)	Ave. Amount per Hhold (Kip)	Loan Amount (Kip)	Achievement (Ach/Plan) (%)
1995									
Short term loan									
1) Wet season paddy	38	56	563	76,341,000	6.5	887,686	135,597	80,000,000	95
2) Other crops	2	3	14	1,750,000	4.7	583,333	125,000	2,000,000	88
3) Poultry	14	21	144	36,240,000	6.9	1,725,714	251,667	40,000,000	91
4) Handicraft	1	5	36	7,900,000	7.2	1,580,000	219,444	0	-
Sub-total	55	115	757	122,231,000	6.6	1,062,878	161,465	122,000,000	100
Medium term loan									
1) New paddy land develo	1	2	7	950,000	3.5	475,000	135,714	83,000,000	1
2) Tractor purchasing	5	0	7	7,000,000	-	-	1,000,000	15,000,000	47
3) Cattle purchasing	7	7	51	20,300,000	7.3	2,900,000	398,039	65,000,000	31
Sub-total	13	9	65	28,250,000	7.2	3,138,889	434,615	163,000,000	17
Total	68	124	822	150,481,000	6.6	1,213,556	183,067	285,000,000	53
1996									
Short term loan									
1) Wet season paddy	20	40	243	41,491,000	6.1	1,037,275	170,745	57,220,000	73
2) Dry season paddy	1	6	33	1,234,000	5.5	205,667	37,394	2,549,000	48
3) Other crops	0	0	0	0	-	-	-	11,600,000	0
4) Poultry	10	16	90	28,000,000	5.6	1,750,000	311,111	77,950,000	36
5) Processing	1	3	18	7,400,000	6.0	2,466,667	411,111	20,000,000	37
6) Handicraft	1	4	30	8,600,000	7.5	2,150,000	286,667	15,000,000	57
Sub-total	33	69	414	86,725,000	6.0	1,256,884	209,481	184,319,000	47
Medium term loan									
1) New paddy land develo	15	43	282	61,280,000	6.6	1,425,116	217,305	66,660,000	92
2) Irrigation development	1	1	8	2,200,000	8.0	2,200,000	275,000	0	-
3) Tractor purchasing	6	-	6	6,000,000	-	-	1,000,000	6,000,000	100
4) Livestock development	0	0	0	0	-	-	-	176,200,000	0
Sub-total	22	44	296	69,480,000	6.7	1,579,091	234,730	248,860,000	28
Total	55	113	710	156,205,000	6.3	1,382,345	220,007	433,179,000	36

Source: APB, Vangvieng

Table 2-3-6 Factories in Vangvieng District by Scale and Villages in 1995

Sub-district/ No./ Village	Large Scale	Medium Scale		Small Scale				Total			
	Cement Factory	Lime Produc.	Drinking Water Produc.	Ice Plant	Lime/ Lime Stone	Tailor	Electricity Supply (Generator)	Large	Medium	Small	Total
Pha Tang											
1- 1 Pha Hom					1			0	0	1	1
1- 2 Na Pha Daeng								0	0	0	0
1- 3 Huay Nam Yen								0	0	0	0
1- 4 Kwaeng Kwang								0	0	0	0
1- 5 Pha Tang							1	0	0	1	1
1- 6 Some Sin Xay								0	0	0	0
1- 7 Thum Xang								0	0	0	0
1- 8 Na Dao								0	0	0	0
1- 9 Nong Boua								0	0	0	0
1- 10 Phone Ngam (Neua)								0	0	0	0
1- 11 Pho Xay								0	0	0	0
1- 12 Pha Thau								0	0	0	0
1- 13 Som Sawad								0	0	0	0
Sub-total	0	0	0	0	1	0	1	0	0	2	2
Vangvieng											
2- 1 Vieng Samay								0	0	0	0
2- 2 Na Khae								0	0	0	0
2- 3 Pak Po								0	0	0	0
2- 4 Huay Sa Ngao			1					0	1	0	1
2- 5 Na Duang								0	0	0	0
2- 6 Vang Vieng							2	0	0	2	2
2- 7 Saeng Savang			1			2		0	1	2	3
2- 8 Sisavang				3		3	2	0	0	8	8
2- 9 Phone Pheng								0	0	0	0
2- 10 Veng Keo				1			1	0	0	2	2
2- 11 Muang Song								0	0	0	0
2- 12 Vieng Xai Na Luang								0	0	0	0
2- 13 Huay Ngam		2						0	2	0	2
2- 14 Phone Soo	1							1	0	0	1
2- 15 Na Ken								0	0	0	0
2- 16 Na Khoon								0	0	0	0
2- 17 Phone Soong								0	0	0	0
2- 18 Khan Mark		1			1			0	1	1	2
2- 19 Vang Song								0	0	0	0
2- 20 Had Song Khonh								0	0	0	0
2- 21 Phou Din Daeng								0	0	0	0
Sub-total	1	3	2	4	1	5	5	1	5	15	21
Namon											
3- 1 Vangmiang								0	0	0	0
3- 2 Namon-Tai				1			1	0	0	2	2
3- 3 Namon-Nua								0	0	0	0
3- 4 Phonsavang								0	0	0	0
3- 5 Phonkeo								0	0	0	0
3- 6 Ngiou								0	0	0	0
3- 7 Nalao								0	0	0	0
3- 8 Nakhone								0	0	0	0
3- 9 Phonsmang								0	0	0	0
3- 10 Nangeun-Nua								0	0	0	0
3- 11 Nangeun-Tai								0	0	0	0
3- 12 Vanghua								0	0	0	0
3- 13 Houavsan								0	0	0	0
3- 14 Namoath-Nua								0	0	0	0
Sub-total	0	0	0	1	0	0	1	0	0	2	2
Na Muang											
4- 1 Nam Pae								0	0	0	0
4- 2 Na Xay								0	0	0	0
4- 3 Phone Xay								0	0	0	0
4- 4 Na Di								0	0	0	0
4- 5 Na Pho								0	0	0	0
4- 6 Na Xom								0	0	0	0
4- 7 Na Thong							1	0	0	1	1
4- 8 Na Boua								0	0	0	0
4- 9 Na Nhao								0	0	0	0
4- 10 Na Ngiou								0	0	0	0
4- 11 Phone Sang								0	0	0	0
4- 12 Na Muang					1			0	0	1	1
4- 13 Phone Ngam Tay								0	0	0	0
Sub-total	0	0	0	0	1	0	1	0	0	2	2
Somboun											
5- 1 Houaymo-Nua		1						0	1	0	1
5- 2 Houaymo-Tai								0	0	0	0
5- 3 Thahua-Nua				1			1	0	0	2	2
5- 4 Thahua-Tai								0	0	0	0
5- 5 Houaypamom		1						0	1	0	1
5- 6 Somsanouk								0	0	0	0
5- 7 Nampat								0	0	0	0
5- 8 Vangkhi							1	0	0	1	1
5- 9 Phoothong								0	0	0	0
5- 10 Taothan								0	0	0	0
5- 11 Namoath-Tai								0	0	0	0
5- 12 Houayxi								0	0	0	0
5- 13 Namphao								0	0	0	0
5- 14 Phakoup								0	0	0	0
5- 15 Sivilai								0	0	0	0
Sub-total	0	2	0	1	0	0	2	0	2	3	5
Total	1	5	2	6	3	5	10	1	7	24	32

Note: Large scale; more than 100 employees, Medium scale; 10 to 99 employees, Small scale; 1 to 9 employees
Source: District Industry Office, Vangvieng

Table 2-3-7 Major Industry and Manufacturing Products in Vangvieng District (Oct. 1995-Sep. 1996)

Factory	No.	Production	Unit	Value of Production		Ave. Value per Unit
				(kip)	(%)	(kip)
1. Cement	1	75,553	ton	3,493,365,000	(96.4)	46,237
2. Ice	6	260	ton	18,200,000	(0.5)	70,000
3. Drinking water	2	1,040	klit.	18,200,000	(0.5)	17,500
4. Rice mill	113			24,000,000	(0.7)	
5. Electricity supply	10			12,420,000	(0.3)	
6. Tailor	5			16,000,000	(0.4)	
7. Lime	5	490	ton	12,250,000	(0.3)	25,000
8. Lime stone	3	5,000	m3	30,000,000	(0.8)	6,000
9. Sing weaving a/	(225)	-		-	-	-
Total	145			3,624,435,000	(100.0)	

Note: a/; Only on Pha Tang sub-district (survey is ongoing for other sub-districts)
Source: District Office of Commerce, Vangvieng

Table 2-3-8 Traders/Retailers in Vangvieng District by Scale and Village in 1995

(Unit: Number)

Sub district/ No./ Village	Small Scale							Total
	Animal Trading	Retail Shop for Daily Consump.	Retail Shop for Wear Clothes	Filling (Gas) Station	Pharmacy	Restaurant/ Bar	Video Shop (Rental)	
Pha Tang								
1- 1 Pha Hom								0
1- 2 Na Pha Daeng								0
1- 3 Huay Nam Yen								0
1- 4 Kwaeng Kwang								0
1- 5 Pha Tang								0
1- 6 Some Sin Xay								0
1- 7 Tham Xang								0
1- 8 Na Duo								0
1- 9 Nong Boua								0
1- 10 Phone Ngam (Neua)								0
1- 11 Pho Xay								0
1- 12 Pha Thau								0
1- 13 Seen Sawad								0
Sub-total	0	0	0	0	0	0	0	0
Vangvieng								
2- 1 Vieng Samay								0
2- 2 Na Khae								0
2- 3 Pak Po								0
2- 4 Huay Sa Ngao								0
2- 5 Na Duang								0
2- 6 Vang Vieng		33	15		8		1	60
2- 7 Saeng Sawang	1	1			4	1		7
2- 8 Sisavang			1	2	3	5		11
2- 9 Phone Pheng								0
2- 10 Veng Keo								0
2- 11 Muang Song								0
2- 12 Vieng Xai Na Luang								0
2- 13 Huay Ngam								0
2- 14 Phone Soo								0
2- 15 Na Ken								0
2- 16 Na Kheon								0
2- 17 Phone Seong								0
2- 18 Khan Mark								0
2- 19 Vang Song								0
2- 20 Hod Song Khonh								0
2- 21 Phou Din Daeng								0
Sub-total	1	34	19	2	15	6	1	78
Namon								
3- 1 Vangmiang								0
3- 2 Namon-Tai								0
3- 3 Namon-Nua								0
3- 4 Phonsavang	2	4		1	2			9
3- 5 Phoukeo								0
3- 6 Ngiou								0
3- 7 Nalao								0
3- 8 Nakhong								0
3- 9 Phongnang								0
3- 10 Nangeun-Nua								0
3- 11 Nangeun-Tai								0
3- 12 Vanghua								0
3- 13 Houayyan								0
3- 14 Nampath-Nua								0
Sub-total	2	4	0	1	2	0	0	9
Na Muang								
4- 1 Nam Pae								0
4- 2 Na Xay								0
4- 3 Phone Xay								0
4- 4 Na Di								0
4- 5 Na Pho								0
4- 6 Na Xorn								0
4- 7 Na Thong								0
4- 8 Na Boua								0
4- 9 Na Nhao								0
4- 10 Na Ngiou								0
4- 11 Phone Sang								0
4- 12 Na Muang								0
4- 13 Phone Ngam Tay								0
Sub-total	0	0	0	0	0	0	0	0
Sonboun								
5- 1 Houaymo-Nua		3						3
5- 2 Houaymo-Tai								0
5- 3 Thahua-Nua		5	1	3	2	3	1	15
5- 4 Thahua-Tai		6				1		7
5- 5 Houaynamom								0
5- 6 Somsaneuk								0
5- 7 Namgot								0
5- 8 Vangkhi								0
5- 9 Phonthong								0
5- 10 Taothan								0
5- 11 Nampath-Tai								0
5- 12 Houayxi								0
5- 13 Namphao								0
5- 14 Phakuop								0
5- 15 Sivilai								0
Sub-total	0	14	1	3	2	4	1	25
Total	3	52	20	6	19	10	2	112

Note: Large scale; more than 100 employees, Medium scale; 10 to 99 employees, Small scale; 1 to 9 employees

Source: District Office of Commerce, Vangvieng

Table 2-3-9 Traded Goods from Vangvieng District (Oct.1995 - Sep.1996)

Item	Q'ty	Unit	Total Value		Ave. Value
			(kip)	(%)	(kip)
Agriculture			60,688,600	(65.8)	
1. Cattle/ buffalo	386	head	54,684,000	(59.3)	141,668
2. Pig	36	head	1,000,000	(1.1)	27,778
3. Hides	7,000	kg	2,100,000	(2.3)	300
4. Paddy	4,700	kg	977,600	(1.1)	208
5. Fiber from tree	6	ton	1,200,000	(1.3)	200,000
6. Cardamom	350	kg	727,000	(0.8)	2,077
Others			31,520,000	(34.2)	
7. Lime stone	3,079	m3	24,632,000	(26.7)	8,000
8. Lime	315	ton	6,300,000	(6.8)	20,000
9. Marble	75	ton	200,000	(0.2)	2,667
10. Byproducts of lime	10	ton	88,000	(0.1)	8,800
11. Steel scraps	20	ton	300,000	(0.3)	15,000
Total			92,208,600	(100.0)	

Source: District Office for Commerce, Vangvieng

Table 2-3-10 Agricultural Land Taxes in Lao PDR, 1990-1994

A. 1990 - 1993 Taxes on Paddy Land a/

Land/ Productivity Class	Yield per Season	Tax per hectare
Lowland Paddy		
low yield	<2,500 kg/ha	80 kg
medium yield	2,500 - 3,500 kg/ha	100 - 120 kg
high yield	>3,500 kg/ha	140 kg
Upland Field		
Fixed fields		30 kg
Rotation upland fields		50 kg

B. 1994 Taxes on Permanent Annual Crop Land b/

Productivity Class	Yield per Season	Double Season (Irrigated)		Single Season
		One Crop	Two Crops	
		(Kip per hectare)		
Plains				
low	<3,000 kg/ha	4,000	3,000	2,000
medium	3,000 - 3,500 kg/ha	5,000	4,000	3,000
high	>3,000 kg/ha	6,000	5,000	4,000
Mountains				
low	<2,500 kg/ha	3,000	2,000	1,000
medium	2,500 - 3,000 kg/ha	4,000	3,000	2,000
high	>3,000 kg/ha	5,000	4,000	3,000

C. 1994 Taxes on Tree Crop Land b/

	Industrial Tree Stands	Fruit Tree Orchards	Other Orchards
		(Kip per hectare)	
Plains			
in villages	5,000	4,000	3,000
beside roads	4,000	3,000	2,000
other	3,000	2,000	1,000
Mountains			
in villages	4,000	3,000	2,000
beside roads	3,000	2,000	1,000
other	2,000	1,000	500

D. 1994 Taxes on Upland Fields b/

Location	Type of Field	Tax Rate (Kip/ha)
Plains	Fixed field	3,000
	Rotation upland field	4,000
	Other types	5,000
Mountains	Fixed field	1,000
	Rotation upland field	1,500
	Other types	2,000

a/: Decree No. 47/CCM, June 1989

b/: Decree No. 50, March 13, 1993

Source: Lao PDR, Agricultural Sector Memorandum, An Agricultural Sector Strategy, 1995

Table 2-3-11 (1/2) Retail Prices of Major Commodities in Vangvieng District (May - December 1996)

	Unit	1996 May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	N	Ave.	Min.	Max.	Max/ Min
Foods														
I. Rice and rice products														
1. Sticky rice	kg	350	350	400	400	400	350	350	300	8	363	300	400	1.33
2. Ordinary rice	kg	500	500	500	500	500	450	400	350	8	463	350	500	1.43
3. Dry noodle	kg	900	900	900	850	950	850	850	850	8	881	850	950	1.12
4. Wet noodle	kg	400	400	400	450	400	400	400	400	8	406	400	450	1.13
II. Vegetables														
5. Tomato	kg	100	150	150	250	1,500	1,300	1,300	1,200	8	744	100	1,500	15.00
6. Lettuce	kg	400	700	700	750	800	750	700	500	8	663	400	800	2.00
7. Chili	kg	600	400	500	600	650	550	500	600	8	550	400	650	1.63
8. Cucumber	kg	200	250	250	250	250	250	250	250	8	244	200	250	1.25
9. Fresh bean	kg	600	700	650	700	700	650	650	600	8	656	600	700	1.17
10. Green papaya	kg	250	200	200	200	150	150	150	150	8	181	150	250	1.67
11. Bean sprouts	kg	400	400	400	350	400	400	400	300	8	381	300	400	1.33
12. Onion - dry	kg	1,100	1,100	1,200	1,200	1,200	1,200	1,200	1,100	8	1,163	1,100	1,200	1.09
13. Onion - fresh	kg	450	450	500	550	800	850	850	850	8	663	450	850	1.89
14. Garlic - dry	kg	1,400	1,400	1,400	1,450	1,500	1,450	1,400	1,200	8	1,400	1,200	1,500	1.25
15. Garlic - fresh	kg	400	400	450	450	n.a.	n.a.	700	700	6	517	400	700	1.75
16. Lemon	kg	500	250	300	300	400	350	350	350	8	350	250	500	2.00
17. Morning glory	kg	250	200	250	250	300	300	300	300	8	269	200	300	1.50
18. Bamboo shoot	kg	350	200	250	250	300	400	n.a.	n.a.	6	292	200	400	2.00
19. Cabbage	kg	33	150	250	300	1,500	1,400	1,200	900	8	717	33	1,500	45.45
20. Carrot	kg	600	600	600	600	700	650	600	600	8	619	600	700	1.17
II. Root crops, Beans and Grains														
21. Potato	kg	250	250	250	300	350	350	350	400	8	313	250	400	1.60
22. Groundnut - dry	kg	1,000	1,000	1,000	1,000	1,100	1,100	1,200	1,200	8	1,075	1,000	1,200	1.20
23. Coconut - dry	kg	300	400	400	450	500	500	450	450	8	431	300	500	1.67
24. Cassava	kg	100	100	150	150	200	200	150	150	8	150	100	200	2.00
25. Maize	kg	150	150	200	200	250	250	250	n.a.	7	207	150	250	1.67
26. Green bean - dry	kg	800	800	800	850	800	800	800	800	8	806	800	850	1.06
27. Soybean - dry	kg	800	800	800	850	850	850	800	800	8	819	800	850	1.06
IV Fruits														
28. Banana	hand	400	350	400	400	400	400	400	350	8	388	350	400	1.14
29. Orange	kg	1,000	1,000	1,000	1,000	1,200	1,200	1,200	1,000	8	1,075	1,000	1,200	1.20
30. Sapodilla	kg	400	400	450	450	650	650	650	600	8	531	400	650	1.63
31. Papaya	kg	100	100	100	100	150	150	150	150	8	125	100	150	1.50
32. Watermelon	kg	100	100	n.a.	n.a.	n.a.	n.a.	n.a.	150	3	117	100	150	1.50
33. Pineapple	kg	100	180	100	100	n.a.	n.a.	n.a.	n.a.	4	120	100	180	1.80
34. Mango	kg	200	200	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	2	200	200	200	1.00
V. Meat														
35. Pork - fresh	kg	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	8	2,200	2,200	2,200	1.00
36. Buffalo beef -fresh	kg	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	8	2,200	2,200	2,200	1.00
37. Cattle beef - fresh	kg	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	8	2,200	2,200	2,200	1.00
38. Offal of pig	kg	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	8	2,200	2,200	2,200	1.00
39. Sausage	kg	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	8	2,500	2,500	2,500	1.00
VI Poultry and eggs														
40. Chicken egg	peace	100	100	100	100	100	100	100	100	8	100	100	100	1.00
41. Duck egg	peace	100	100	100	100	100	100	100	150	8	106	100	150	1.50
42. Chicken broiler	peace	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	8	2,300	2,300	2,300	1.00
44. Duck broiler	kg	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	8	2,300	2,300	2,300	1.00
V Fish														
45. Fish - fresh	kg	2,300	2,300	2,300	2,300	2,500	2,500	2,500	2,500	8	2,400	2,300	2,500	1.09
46. Fish -dry	kg	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	8	2,800	2,800	2,800	1.00
V Sweets and oil														
47. Condensed milk (swe	can	600	600	600	650	650	650	690	600	8	619	600	650	1.08
48. Sugar	kg	600	550	600	600	550	550	550	550	8	569	550	600	1.09
49. Vegetable oil	bottle	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,100	8	1,013	1,000	1,100	1.10
IX Condiments and beverages														
50. Salt	kg	50	50	50	50	50	50	50	50	8	50	50	50	1.00
51. Nam pa Lao	bottle	200	200	250	250	250	250	300	350	8	256	200	350	1.75
52. Nam pa Thai	bottle	1,000	1,000	1,000	1,000	1,000	1,000	1,100	1,100	8	1,025	1,000	1,100	1.10
53. Fermented fish	kg	350	350	400	500	400	400	400	400	8	400	350	500	1.43
54. Chemical relishes	kg	2,600	2,600	3,000	2,600	2,600	2,600	2,600	2,600	8	2,650	2,600	3,000	1.15
55. Coffee	kg	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	8	2,300	2,300	2,300	1.00
56. Tea	kg	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	8	1,000	1,000	1,000	1.00
X Drinks														
57. Beer Lao	bottle	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	8	1,000	1,000	1,000	1.00
58. Imported beer	can	700	700	700	700	700	700	700	700	8	700	700	700	1.00
59. Carbonated drink	bottle	150	150	150	200	150	150	150	150	8	156	150	200	1.33
60. Drinking water	bottle	300	300	300	300	300	300	300	300	8	300	300	300	1.00
61. Rice wine	bottle	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	8	1,000	1,000	1,000	1.00
62. Whisky Lao	bottle	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	8	1,500	1,500	1,500	1.00
Garment														
I. Men's Wear														
63. Long trousers (tetoro	pair	8,000	8,000	8,000	8,500	8,500	8,500	8,000	8,000	8	8,188	8,000	8,500	1.06
64. Long sleeve shirts (P	pair	4,800	4,800	4,800	5,500	5,500	5,500	5,500	5,500	8	5,238	4,800	5,500	1.15
65. Short trousers (for sp	pair	1,800	1,800	2,000	2,200	4,000	4,000	4,000	4,000	8	2,975	1,800	4,000	2.22
II. Women's Wear														
66. Sinn Lao	peace	3,000	3,000	3,000	3,200	3,200	3,200	3,300	3,300	8	3,150	3,000	3,300	1.10
67. Long sleeve blouse	peace	5,000	5,000	5,000	5,500	5,500	5,500	5,500	5,500	8	5,313	5,000	5,500	1.10
68. Sinn (Thai silk)	peace	3,000	3,000	3,000	4,000	4,500	4,500	4,500	4,500	8	3,875	3,000	4,500	1.50
III Children's Wear														
69. Long trousers	pair	800	800	800	1,000	1,000	1,000	1,000	1,000	8	925	800	1,000	1.25
70. School uniform suit	pair	4,000	4,000	4,000	4,000	4,500	4,300	4,200	4,200	8	4,150	4,000	4,500	1.13

Table 2-3-11 (2/2) Retail Prices of Major Commodities in Vangvieng District (May - December 1996)

	Unit	1996 May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	N	Ave.	Min.	Max.	Max/ Min
71. Short sleeve shirts	peace	2,000	2,000	2,500	3,000	2,800	2,800	2,800	2,800	8	2,588	2,000	3,000	1.50
72. Short trousers	pair	800	800	850	1,000	1,200	1,200	1,200	1,200	8	1,031	800	1,200	1.50
IV Shoes														
73. Men's leather shoes	pair	9,000	9,000	10,000	11,000	11,000	11,000	11,000	12,000	8	10,500	9,000	12,000	1.33
74. Women's sandal	pair	5,000	5,000	6,000	7,000	7,000	7,000	7,000	7,000	8	6,375	5,000	7,000	1.40
75. Children's sandal	pair	2,500	2,500	3,000	3,500	3,500	3,500	3,500	3,500	8	3,188	2,500	3,500	1.40
76. Soft sandal	pair	1,400	1,400	1,400	1,500	1,300	1,300	1,300	1,300	8	1,363	1,300	1,500	1.15
V. Clothes and tailoring														
77. Polyester clothes	m	4,800	4,800	5,000	5,000	5,000	5,000	5,500	5,600	8	5,088	4,800	5,600	1.17
78. Textron clothes	m	4,500	4,500	4,500	5,000	5,000	5,000	5,500	5,600	8	4,950	4,500	5,600	1.24
79. Tailoring of trousers	weir	3,500	3,500	3,500	3,500	3,000	3,000	3,000	4,000	8	3,375	3,000	4,000	1.33
80. Tailoring shirts	weir	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,500	8	3,063	3,000	3,500	1.17
81. Tailoring of Sinn Lao	weir	2,000	2,000	2,000	2,500	2,500	2,500	2,500	2,800	8	2,350	2,000	2,800	1.40
Staff Lodging														
82. Rent a house (apartm	house	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	8	5,000	5,000	5,000	1.00
83. Rent a house	house	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	8	30,000	30,000	30,000	1.00
84. Domestic water suppl	m3	300	300	300	300	300	300	300	300	8	300	300	300	1.00
85. Electricity	1 light	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	8	1,800	1,800	1,800	1.00
86. Charcoal	kg	300	300	300	300	300	300	300	300	8	300	300	300	1.00
87. Fuel wood	t.a	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	8	4,000	4,000	4,000	1.00
House Furniture														
88. Chair	Unit	1,000	1,000	2,500	2,500	2,500	2,500	2,500	2,500	8	2,125	1,000	2,500	2.50
89. Wardrobe	Unit	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	8	45,000	45,000	45,000	1.00
90. Floor sheet	sheet	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	8	5,000	5,000	5,000	1.00
91. Refrigerator	Unit	170,000	170,000	170,000	170,000	170,000	170,000	170,000	170,000	8	170,000	170,000	170,000	1.00
92. Table fan	Unit	14,000	14,000	14,000	14,000	15,000	15,000	15,000	15,000	8	14,500	14,000	15,000	1.07
93. Elect. iron	Unit	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	8	10,000	10,000	10,000	1.00
94. Lump	unit	400	400	400	400	400	400	400	400	8	400	400	400	1.00
95. Long lump	unit	800	800	800	800	800	800	800	800	8	800	800	800	1.00
Sanitary and Health														
96. Soup	peace	400	350	400	450	450	400	400	400	8	406	350	450	1.29
97. Laundry soup	kg	1,000	950	1,000	1,000	1,100	1,100	1,100	1,100	8	1,044	950	1,100	1.16
98. Tooth paste (medium	peace	400	400	500	500	500	500	500	500	8	475	400	500	1.25
99. Hear cut	head	600	600	700	700	700	700	700	700	8	675	600	700	1.17
100. Quinine	tablet	100	100	100	100	100	100	100	100	8	100	100	100	1.00
101. Vitamin C	tablet	30	30	30	30	30	30	30	30	8	30	30	30	1.00
102. Ganidan	tablet	10	10	10	10	10	10	10	10	8	10	10	10	1.00
103. Aspirin	tablet	10	10	10	10	10	10	10	10	8	10	10	10	1.00
104. Streptomycin	peace	50	50	50	50	50	50	50	50	8	50	50	50	1.00
105. Penicillin	tablet	50	50	50	50	50	50	50	50	8	50	50	50	1.00
Transport and communication														
106. Sedan type car	unit	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	-	-	-	-
107. Motor cycle	unit	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	-	-	-	-
108. Bicycle	unit	95,000	95,000	95,000	95,000	110,000	110,000	110,000	115,000	8	103,125	95,000	115,000	1.21
109. Gasoline	litter	320	320	320	320	320	320	320	345	8	323	320	345	1.08
110. Diesel	litter	305	305	305	305	305	305	305	320	8	307	305	320	1.05
111. Oil	litter	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	8	1,500	1,500	1,500	1.00
112. Battery (small)	unit	4,000	4,000	4,500	5,000	5,000	5,000	5,000	5,000	8	4,688	4,000	5,000	1.25
113. Bicycle tire	unit	2,800	2,800	2,800	3,000	3,200	3,200	3,200	3,300	8	3,038	2,800	3,300	1.18
114. Taxi	person	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0	-	-	-	-
115. Pick up	person	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	8	1,300	1,300	1,300	1.00
116. Bus	person	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	8	1,300	1,300	1,300	1.00
117. Tuk Tuk	person	400	400	400	400	400	400	400	400	8	400	400	400	1.00
Culture - Recreation														
118. Color TV	unit	350,000	350,000	350,000	350,000	360,000	360,000	360,000	360,000	8	355,000	350,000	360,000	1.03
119. Black and white TV	unit	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	8	200,000	200,000	200,000	1.00
120. Radio	unit	9,000	9,000	10,000	10,000	15,000	15,000	15,000	15,000	8	12,250	9,000	15,000	1.67
121. Tape recorder (mediu	unit	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	8	70,000	70,000	70,000	1.00
122. Wall clock	unit	38,000	38,000	38,000	38,000	38,000	38,000	38,000	38,500	8	38,063	38,000	38,500	1.01
123. Tobacco	kg	2,500	2,500	2,500	3,000	3,000	3,000	3,200	3,200	8	2,863	2,500	3,200	1.28
124. Cigarette Lao	box	350	350	400	400	400	400	400	400	8	388	350	400	1.14
125. Cinema / video ticket	ticket	100	100	400	400	100	100	100	200	8	188	100	400	4.00
126. Sport ticket	ticket	100	100	100	100	100	100	100	100	8	100	100	100	1.00
127. Note book	peace	200	200	200	200	200	200	200	200	8	200	200	200	1.00
128. Note book (fish)	peace	900	900	1,000	1,000	1,000	1,000	1,000	1,000	8	975	900	1,000	1.11
129. Ball point pen (Bic)	peace	150	150	150	150	150	150	150	150	8	150	150	150	1.00
130. Pencil	peace	100	100	100	100	100	100	100	150	8	106	100	150	1.50
Others														
131. Metal bucket	peace	1,300	1,300	1,300	1,300	1,400	1,400	1,400	1,400	8	1,350	1,300	1,400	1.08
132. Sweeper	peace	400	350	400	450	500	500	500	500	8	450	350	500	1.43
133. Hoe	peace	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	8	3,500	3,500	3,500	1.00
134. Sowing machine	unit	98,000	98,000	98,000	98,000	98,000	98,000	98,000	98,000	8	98,000	98,000	98,000	1.00
135. Nail	kg	800	800	800	800	900	850	850	850	8	831	800	900	1.13
136. Cement	bag	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	8	3,800	3,800	3,800	1.00
137. Zinc for roof	sheet	3,550	3,550	3,550	3,550	3,550	3,550	3,550	3,550	8	3,550	3,550	3,550	1.00
138. Soft wood	m3	180,000	180,000	180,000	180,000	185,000	185,000	190,000	190,000	8	183,750	180,000	190,000	1.06
139. Strong wood	m3	250,000	250,000	250,000	250,000	250,000	265,000	270,000	270,000	8	256,875	250,000	270,000	1.08
140. Steel for construction	ton	540,000	540,000	540,000	540,000	540,000	540,000	540,000	540,000	8	540,000	540,000	540,000	1.00
141. Iron wires	m3	10,000	10,000	10,000	10,000	12,000	15,000	16,000	16,000	8	12,375	10,000	16,000	1.60
142. Sand	m3	14,000	14,000	14,000	14,000	14,000	17,000	17,000	17,000	8	15,125	14,000	17,000	1.21

Source: District Statistics Office, Vangvieng (Average prices of Vangvieng, Tha Heua Neua and Phone Savang markets)

Table 2-4-1 (1/2) Number of Primary and Secondary Schools with Teachers and Students in Vangvieng District by Villages in 1996

Sub-district/ No.	Village	Primary School (Incomplete grades)						Primary School (Complete grades)						Total Primary School								Secondary School							
		School	Teacher	Student			Student/ Teacher	School	Teacher	Student			Student/ Teacher	School	Teacher	Student					Student/ Teacher	School	Teacher	Student					Student/ Teacher
				Male	Female	Total				Male	Female	Total				Male		Female		Total					Male		Female		Total	
		(No.)	(Prn)	(Prn)	(Prn)	(Prn)	(Prn)	(No.)	(Prn)	(Prn)	(Prn)	(Prn)	(Prn)	(No.)	(Prn)	(Prn)	(%)	(Prn)	(%)	(Prn)	(%)	(Prn)	(No.)	(Prn)	(Prn)	(%)	(Prn)	(%)	(Prn)	(%)	(Prn)
Pha Tang																														
1- 1	Pha Hom							1	101	100	83	183	18.3	1	10	100	(54.6)	83	(45.4)	183	(100)	18.3									
1- 2	Na Pha Daeng	1	3	25	19	44	14.7							1	3	25	(56.8)	19	(43.2)	44	(100)	14.7									
1- 3	Huay Nam Yen	1	1	13	11	24	24.0							1	1	13	(54.2)	11	(45.8)	24	(100)	24.0									
1- 4	Kwaeng Kwang	1	4	73	66	139	34.8							1	4	73	(52.5)	66	(47.5)	139	(100)	34.8									
1- 5	Pha Tang							1	12	129	135	264	22.0	1	12	129	(48.9)	135	(51.1)	264	(100)	22.0	1	12	82	(57.7)	60	(42.3)	142	(100)	11.8
1- 6	Some Sin Xay	1	1	10	15	25	25.0							1	1	10	(40.0)	15	(60.0)	25	(100)	25.0									
1- 7	Tham Xang	1	1	8	7	15	15.0							1	1	8	(53.3)	7	(46.7)	15	(100)	15.0									
1- 8	Na Dao							1	9	79	62	141	15.7	1	9	79	(56.0)	62	(44.0)	141	(100)	15.7									
1- 9	Nong Boua													0	0	0	-	0	-	0	-	-									
1-10	Phone Ngam (Neua)							1	8	78	60	138	17.3	1	8	78	(56.5)	60	(43.5)	138	(100)	17.3	1	11	98	(62.4)	59	(37.6)	157	(100)	14.3
1-11	Pho Xay							1	6	44	38	82	13.7	1	6	44	(53.7)	38	(46.3)	82	(100)	13.7									
1-12	Pha Thau							1	10	142	87	229	22.9	1	10	142	(62.0)	87	(38.0)	229	(100)	22.9									
1-13	Som Sawad	1	3	44	34	78	26.0							1	3	44	(56.4)	34	(43.6)	78	(100)	26.0									
	Sub-total or Average	6	13	173	152	325	25.0	6	55	572	465	1037	18.9	12	68	745	(54.7)	617	(45.3)	1362	(100)	20.0	2	23	180	(60.2)	119	(39.8)	299	(100)	13.0
Vangvieng																														
2- 1	Vieng Samay	1	3	62	32	94	31.3							1	3	62	(66.0)	32	(34.0)	94	(100)	31.3									
2- 2	Na Khae	1	2	14	13	27	13.5							1	2	14	(51.9)	13	(48.1)	27	(100)	13.5									
2- 3	Pak Po							1	13	189	127	316	24.3	1	13	189	(59.8)	127	(40.2)	316	(100)	24.3									
2- 4	Huay Sa Ngao							1	16	126	148	274	17.1	1	16	126	(46.0)	148	(54.0)	274	(100)	17.1									
2- 5	Na Duang							1	7	56	54	110	15.7	1	7	56	(50.9)	54	(49.1)	110	(100)	15.7									
2- 6	Vang Vieng													0	0	0	-	0	-	0	-	-									
2- 7	Saeng Savang													0	0	0	-	0	-	0	-	-									
2- 8	Sisavang													0	0	0	-	0	-	0	-	-									
2- 9	Phone Pheng							1	16	207	204	411	25.7	1	16	207	(50.4)	204	(49.6)	411	(100)	25.7	1	44	442	(56.1)	346	(43.9)	788	(100)	17.9
2-10	Veng Keo	1	2	28	29	57	28.5	1	23	239	240	479	20.8	2	25	267	(49.8)	269	(50.2)	536	(100)	21.4									
2-11	Muang Song							1	16	121	93	214	13.4	1	16	121	(56.5)	93	(43.5)	214	(100)	13.4									
2-12	Vieng Xai Na Luang							1	11	114	100	214	19.5	1	11	114	(53.3)	100	(46.7)	214	(100)	19.5									
2-13	Huay Ngam							1	10	129	100	229	22.9	1	10	129	(56.3)	100	(43.7)	229	(100)	22.9	1	16	142	(57.5)	105	(42.5)	247	(100)	15.4
2-14	Phone Soo							1	8	71	68	139	17.4	1	8	71	(51.1)	68	(48.9)	139	(100)	17.4									
2-15	Na Ken							1	9	53	42	95	15.8	1	6	53	(55.8)	42	(44.2)	95	(100)	15.8									
2-16	Na Khoon							1	8	47	58	105	13.1	1	8	47	(44.8)	58	(55.2)	105	(100)	13.1									
2-17	Phone Soong							1	6	57	62	119	19.8	1	6	57	(47.9)	62	(52.1)	119	(100)	19.8									
2-18	Khan Mark							1	10	112	108	220	22.0	1	10	112	(50.9)	108	(49.1)	220	(100)	22.0									
2-19	Vang Song	1	2	16	28	44	22.0							1	2	16	(36.4)	28	(63.6)	44	(100)	22.0									
2-20	Had Song Khonh	(Students in this village go to school in 2-13 Huay Ngam village)												-	0	0	-	0	-	0	-	-									
2-21	Phou Din Daeng	(Students in this village go to school in 2-3 Pak Po village)												-	0	0	-	0	-	0	-	-									
	Sub-total or Average	4	9	120	102	222	24.7	13	150	1521	1404	2925	19.5	17	159	1641	(52.1)	1506	(47.9)	3147	(100)	19.8	2	60	584	(56.4)	451	(43.6)	1035	(100)	17.3
Namon																														
3- 1	Vangmiang							1	8	102	73	175	21.9	1	8	102	(58.3)	73	(41.7)	175	(100)	21.9									
3- 2	Namon-Tai							1	12	125	107	232	19.3	1	12	125	(53.9)	107	(46.1)	232	(100)	19.3	1	14	189	(63.9)	107	(36.1)	296	(100)	21.1
3- 3	Namon-Nua							1	9	97	64	161	17.9	1	9	97	(60.2)	64	(39.8)	161	(100)	17.9									
3- 4	Phonsavang	1	4	59	73	132	33.0							1	4	59	(44.7)	73	(55.3)	132	(100)	33.0									
3- 5	Phonkeo	1	6	113	74	187	31.2							1	6	113	(60.4)	74	(39.6)	187	(100)	31.2									
3- 6	Ngiou							1	9	82	63	145	16.1	1	9	82	(56.6)	63	(43.4)	145	(100)	16.1									
3- 7	Nalao	1	2	N.A	N.A	N.A	-							-	-	N.A	-	N.A	-	N.A	-	-									
3- 8	Nakhome	1	1	11	10	21	21.0							1	1	11	(52.4)	10	(47.6)	21	(100)	21.0									
3- 9	Phongnang	1	2	25	18	43	21.5							1	2	25	(58.1)	18	(41.9)	43	(100)	21.5									
3-10	Nangeun-Nua													0	0	0	-	0	-	0	-	-									
3-11	Nangeun-Tai	1	2	27	28	55	27.5							1	2	27	(49.1)	28	(50.9)	55	(100)	27.5									
3-12	Vanghua							1	9	145	113	258	28.7	1	9	145	(56.2)	113	(43.8)	258	(100)	28.7									
3-13	Houaysan	1	1	20	6	26	26.0							1	1	20	(76.9)	6	(23.1)	26	(100)	26.0									
3-14	Nampath-Nua	1	1	16	22	38	38.0							1	1	16	(42.1)	22	(57.9)	38	(100)	38.0									
	Sub-total or Ave. a/	7	17	271	231	502	29.5	5	47	551	420	971	20.7	12	64	822	(55.8)	651	(44.2)	1473	(100)	23.0	1	14	189	(63.9)	107	(36.1)	296	(100)	21.1

Table 2-4-1 (2/2) Number of Primary and Secondary Schools with Teachers and Students in Vangvieng District by Villages in 1996

Sub-district/ No./ Village	Primary School (Incomplete grades)						Primary School (Complete grades)						Total Primary School									Secondary School								
	School	Teacher	Student			Student/ Teacher	School	Teacher	Student			Student/ Teacher	School	Teacher	Student						Student/ Teacher	School	Teacher	Student						Student/ Teacher
			Male	Female	Total				Male	Female	Total				Male		Female		Total					Male		Female		Total		
	(No.)	(Prn)	(Prn)	(Prn)	(Prn)	(Prn)	(No.)	(Prn)	(Prn)	(Prn)	(Prn)	(Prn)	(No.)	(Prn)	(Prn)	(%)	(Prn)	(%)	(Prn)	(%)	(Prn)	(No.)	(Prn)	(Prn)	(%)	(Prn)	(%)	(Prn)	(%)	(Prn)
Na Muang																														
4- 1 Nam Pae							1	8	74	54	128	16.0	1	8	74	(57.8)	54	(42.2)	128	(100)	16.0									
4- 2 Na Xay	1	2	22	20	42	21.0							1	2	22	(52.4)	20	(47.6)	42	(100)	21.0									
4- 3 Phone Xay							1	7	52	45	97	13.9	1	7	52	(53.6)	45	(46.4)	97	(100)	13.9	1	8	59	(60.2)	39	(39.8)	98	(100)	12.3
4- 4 Na Di	1	2	18	20	38	19.0							1	2	18	(47.4)	20	(52.6)	38	(100)	19.0									
4- 5 Na Pho													0	0	0	-	0	-	0	-	-									
4- 6 Na Xom							1	10	93	45	138	13.8	1	10	93	(67.4)	45	(32.6)	138	(100)	13.8									
4- 7 Na Thong							1	7	71	61	132	18.9	1	7	71	(53.8)	61	(46.2)	132	(100)	18.9									
4- 8 Na Boua													0	0	0	-	0	-	0	-	-									
4- 9 Na Nhao							1	8	84	82	166	20.8	1	8	84	(50.6)	82	(49.4)	166	(100)	20.8									
4-10 Na Ngiou													0	0	0	-	0	-	0	-	-									
4-11 Phone Sang	1	3	62	39	101	33.7							1	3	62	(61.4)	39	(38.6)	101	(100)	33.7									
4-12 Na Muang							1	8	51	44	95	11.9	1	8	51	(53.7)	44	(46.3)	95	(100)	11.9	1	9	73	(65.2)	39	(34.8)	112	(100)	12.4
4-13 Phone Ngam Tay	1	4	60	61	121	30.3							1	4	60	(49.6)	61	(50.4)	121	(100)	30.3									
Sub-total or Average	4	11	162	140	302	27.5	6	48	425	331	756	15.8	10	59	587	(55.5)	471	(44.5)	1058	(100)	17.9	2	17	132	(62.9)	78	(37.1)	210	(100)	12.4
Somboun																														
5- 1 Houaymo-Nua													0	0	0	-	0	-	0	-	-									
5- 2 Houaymo-Thi							1	8	128	122	250	31.3	1	8	128	(51.2)	122	(48.8)	250	(100)	31.3									
5- 3 Thahua-Nua	1	9	121	124	245	27.2							1	9	121	(49.4)	124	(50.6)	245	(100)	27.2	1	10	147	(73.5)	53	(26.5)	200	(100)	20.0
5- 4 Thahua-Tai							1	6	104	103	207	34.5	1	6	104	(50.2)	103	(49.8)	207	(100)	34.5									
5- 5 Houayparnom							1	9	144	128	272	30.2	1	9	144	(52.9)	128	(47.1)	272	(100)	30.2									
5- 6 Somsanouk							1	7	98	51	149	21.3	1	7	98	(65.8)	51	(34.2)	149	(100)	21.3									
5- 7 Nampat	1	2	32	19	51	25.5							1	2	32	(62.7)	19	(37.3)	51	(100)	25.5									
5- 8 Vangkhi							1	11	153	119	272	24.7	1	11	153	(56.3)	119	(43.8)	272	(100)	24.7	1	7	52	(66.7)	26	(33.3)	78	(100)	11.1
5- 9 Phonthong	1	1	5	11	16	16.0							1	1	5	(31.3)	11	(68.8)	16	(100)	16.0									
5-10 Taothan	1	2	55	43	98	49.0							1	2	55	(56.1)	43	(43.9)	98	(100)	49.0									
5-11 Nampath-Tai	1	1	19	21	40	40.0							1	1	19	(47.5)	21	(52.5)	40	(100)	40.0									
5-12 Houayxi	1	2	36	36	72	36.0							1	2	36	(50.0)	36	(50.0)	72	(100)	36.0									
5-13 Namphao							1	13	213	188	401	30.8	1	13	213	(53.1)	188	(46.9)	401	(100)	30.8	1	7	102	(69.9)	44	(30.1)	146	(100)	20.9
5-14 Phakoup							1	7	57	53	110	15.7	1	7	57	(51.8)	53	(48.2)	110	(100)	15.7									
5-15 Sivilai	1	3	27	30	57	19.0							1	3	27	(47.4)	30	(52.6)	57	(100)	19.0									
Sub-total or Average	7	20	295	284	579	29.0	7	61	897	764	1661	27.2	14	81	1192	(53.2)	1048	(46.8)	2240	(100)	27.7	5	24	301	(71.0)	123	(29.0)	424	(100)	17.7
Total	28	70	1021	909	1930	27.6	37	361	3966	3384	7350	20.4	65	431	4987	(53.7)	4293	(46.3)	9280	(100)	21.5	10	138	2386	(61.2)	878	(38.8)	2264	(100)	16.4

Note: a/; Figures in Na Lao village are not included in sub-total and total.
Source: District Education Office, Vangvieng

Table 2-4-2 Number of Teachers in Primary Schools in Vangvieng District by Sex, Ethnic Groups, Education and Villages in 1995

Sub-district/ No./ Village		Total Teacher	Sex				Ethnic Group						Educational Status					
			Male		Female		Lao Lum		Lao Theung		Lao Sung		Primary Level		Secondary Level		Higher Second.	
		(Pers)	(Pers)	(%)	(Pers)	(%)	(Pers)	(%)	(Pers)	(%)	(Pers)	(%)	(Pers)	(%)	(Pers)	(%)	(Pers)	(%)
Pha Tang																		
1- 1	Pha Hom	17	15	(88.2)	2	(11.8)	17	(100.0)	0	(0.0)	0	(0.0)	8	(47.1)	8	(47.1)	1	(5.9)
1- 2	Na Pha Daeng																	
1- 3	Huay Nam Yen																	
1- 4	Kwaeng Kwang																	
1- 5	Pha Tang	23	12	(52.2)	11	(47.8)	23	(100.0)	0	(0.0)	0	(0.0)	13	(56.5)	10	(43.5)	0	(0.0)
1- 6	Some Sin Xay																	
1- 7	Thang Xang																	
1- 8	Na Deo	10	4	(40.0)	6	(60.0)	10	(100.0)	0	(0.0)	0	(0.0)	7	(70.0)	2	(20.0)	1	(10.0)
1- 9	Nong Boua																	
1- 10	Phone Ngam (Nev	8	3	(37.5)	5	(62.5)	8	(100.0)	0	(0.0)	0	(0.0)	2	(25.0)	6	(75.0)	0	(0.0)
1- 11	Pho Xay	6	3	(50.0)	3	(50.0)	6	(100.0)	0	(0.0)	0	(0.0)	1	(16.7)	5	(83.3)	0	(0.0)
1- 12	Pha Thau	15	11	(73.3)	4	(26.7)	13	(86.7)	1	(6.7)	1	(6.7)	4	(26.7)	10	(66.7)	1	(6.7)
1- 13	Som Sawad																	
	Sub-total or Aver	79	48	(60.8)	31	(39.2)	77	(97.5)	1	(1.3)	1	(1.3)	35	(44.3)	41	(51.9)	3	(3.8)
Vangvieng																		
2- 1	Vieng Samay																	
2- 2	Na Khae																	
2- 3	Pak Po	16	12	(75.0)	4	(25.0)	14	(87.5)	2	(12.5)	0	(0.0)	4	(25.0)	12	(75.0)	0	(0.0)
2- 4	Huay Sa Ngao	15	7	(46.7)	8	(53.3)	15	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	13	(86.7)	2	(13.3)
2- 5	Na Duang	7	4	(57.1)	3	(42.9)	7	(100.0)	0	(0.0)	0	(0.0)	4	(57.1)	2	(28.6)	1	(14.3)
2- 6	Vang Vieng																	
2- 7	Saeng Savang																	
2- 8	Sisavang																	
2- 9	Phone Pheng	18	5	(27.8)	13	(72.2)	18	(100.0)	0	(0.0)	0	(0.0)	7	(38.9)	11	(61.1)	0	(0.0)
2- 10	Veng Keo	23	9	(39.1)	14	(60.9)	23	(100.0)	0	(0.0)	0	(0.0)	3	(13.0)	19	(82.6)	1	(4.3)
2- 11	Muang Song	16	6	(37.5)	10	(62.5)	16	(100.0)	0	(0.0)	0	(0.0)	7	(43.8)	9	(56.3)	0	(0.0)
2- 12	Vieng Xai Na Lua	13	6	(46.2)	7	(53.8)	13	(100.0)	0	(0.0)	0	(0.0)	2	(15.4)	11	(84.6)	0	(0.0)
2- 13	Huay Ngam	8	4	(50.0)	4	(50.0)	8	(100.0)	0	(0.0)	0	(0.0)	1	(12.5)	6	(75.0)	1	(12.5)
2- 14	Phone Soo	9	6	(66.7)	3	(33.3)	9	(100.0)	0	(0.0)	0	(0.0)	1	(11.1)	8	(88.9)	0	(0.0)
2- 15	Na Ken	8	4	(50.0)	4	(50.0)	8	(100.0)	0	(0.0)	0	(0.0)	3	(37.5)	5	(62.5)	0	(0.0)
2- 16	Na Khoon	8	5	(62.5)	3	(37.5)	8	(100.0)	0	(0.0)	0	(0.0)	7	(87.5)	1	(12.5)	0	(0.0)
2- 17	Phone Soong	6	4	(66.7)	2	(33.3)	6	(100.0)	0	(0.0)	0	(0.0)	1	(16.7)	5	(83.3)	0	(0.0)
2- 18	Khan Mark	14	6	(42.9)	8	(57.1)	14	(100.0)	0	(0.0)	0	(0.0)	1	(7.1)	10	(71.4)	3	(21.4)
2- 19	Vang Song																	
2- 20	Had Song Khonh																	
2- 21	Phou Din Daeng																	
	Sub-total or Aver	161	78	(48.4)	83	(51.6)	159	(98.8)	2	(1.2)	0	(0.0)	41	(25.5)	112	(69.6)	8	(5.0)
Namon																		
3- 1	Vangmilang	8	4	(50.0)	4	(50.0)	8	(100.0)	0	(0.0)	0	(0.0)	0	(0.0)	8	(100.0)	0	(0.0)
3- 2	Namon-Tai	18	9	(50.0)	9	(50.0)	18	(100.0)	0	(0.0)	0	(0.0)	4	(22.2)	14	(77.8)	0	(0.0)
3- 3	Namon-Nua	8	7	(87.5)	1	(12.5)	3	(37.5)	0	(0.0)	5	(62.5)	2	(25.0)	3	(37.5)	3	(37.5)
3- 4	Phonsavang																	
3- 5	Phonkeo																	
3- 6	Nglou	20	17	(85.0)	3	(15.0)	19	(95.0)	0	(0.0)	0	(0.0)	11	(55.0)	9	(45.0)	0	(0.0)
3- 7	Nalao																	
3- 8	Nakhome																	
3- 9	Phongnang																	
3- 10	Nangeun-Nua																	
3- 11	Nangeun-Tai																	
3- 12	Vanghua	11	10	(90.9)	1	(9.1)	10	(90.9)	1	(9.1)	0	(0.0)	3	(27.3)	8	(72.7)	0	(0.0)
3- 13	Houaysan																	
3- 14	Nampath-Nua																	
	Sub-total or Aver	65	47	(72.3)	18	(27.7)	58	(89.2)	1	(1.5)	5	(7.7)	20	(30.8)	42	(64.6)	3	(4.6)
Na Muang																		
4- 1	Nam Pae	8	7	(87.5)	1	(12.5)	8	(100.0)	0	(0.0)	0	(0.0)	7	(87.5)	1	(12.5)	0	(0.0)
4- 2	Na Xay																	
4- 3	Phone Xay	13	12	(92.3)	1	(7.7)	12	(92.3)	1	(7.7)	0	(0.0)	4	(30.8)	9	(69.2)	0	(0.0)
4- 4	Na Di																	
4- 5	Na Pho																	
4- 6	Na Xom	10	7	(70.0)	3	(30.0)	3	(30.0)	0	(0.0)	7	(70.0)	7	(70.0)	3	(30.0)	0	(0.0)
4- 7	Na Thong	9	5	(55.6)	4	(44.4)	9	(100.0)	0	(0.0)	0	(0.0)	6	(66.7)	2	(22.2)	1	(11.1)
4- 8	Na Boua																	
4- 9	Na Nhao	17	10	(58.8)	7	(41.2)	17	(100.0)	0	(0.0)	0	(0.0)	8	(47.1)	9	(52.9)	0	(0.0)
4- 10	Na Nglou																	
4- 11	Phone Sang																	
4- 12	Na Muang	10	4	(40.0)	6	(60.0)	10	(100.0)	0	(0.0)	0	(0.0)	4	(40.0)	6	(60.0)	0	(0.0)
4- 13	Phone Ngam Tay																	
	Sub-total or Aver	67	45	(67.2)	22	(32.8)	59	(88.1)	1	(1.5)	7	(10.4)	36	(53.7)	30	(44.8)	1	(1.5)
Somboun																		
5- 1	Houaymo-Nua																	
5- 2	Houaymo-Tai	12	11	(91.7)	1	(8.3)	7	(58.3)	5	(41.7)	0	(0.0)	9	(75.0)	3	(25.0)	0	(0.0)
5- 3	Thahua-Nua																	
5- 4	Thahua-Tai	15	10	(66.7)	5	(33.3)	11	(73.3)	4	(26.7)	0	(0.0)	8	(53.3)	5	(33.3)	2	(13.3)
5- 5	Houaypamom	9	7	(77.8)	2	(22.2)	9	(100.0)	0	(0.0)	0	(0.0)	8	(88.9)	1	(11.1)	0	(0.0)
5- 6	Somsanouk	6	5	(83.3)	1	(16.7)	5	(83.3)	0	(0.0)	1	(16.7)	5	(83.3)	1	(16.7)	0	(0.0)
5- 7	Nampat																	
5- 8	Vangkhi	18	14	(77.8)	4	(22.2)	18	(100.0)	0	(0.0)	0	(0.0)	5	(27.8)	12	(66.7)	1	(5.6)
5- 9	Phonthong																	
5- 10	Taothan																	
5- 11	Nampath-Tai																	
5- 12	Houayxi																	
5- 13	Namphao	13	10	(76.9)	3	(23.1)	11	(84.6)	2	(15.4)	0	(0.0)	10	(76.9)	3	(23.1)	0	(0.0)
5- 14	Phakoup	6	6	(100.0)	0	(0.0)	6	(100.0)	0	(0.0)	0	(0.0)	2	(33.3)	4	(66.7)	0	(0.0)
5- 15	Sivilai																	
	Sub-total or Aver	79	63	(79.7)	16	(20.3)	67	(84.8)	11	(13.9)	1	(1.3)	47	(59.5)	29	(36.7)	3	(3.8)
	Total	451	281	(62.3)	170	(37.7)	420	(93.1)	16	(3.5)	14	(3.1)	179	(39.7)	254	(56.3)	18	(4.0)

Source: District Education Office, Vangvieng

Table 2-4-3 Number of Inpatients of Vientiane Provincial Hospital, 1995-1996

	1995		1996		Average	
	Patient (prn)	n (%)	Patient (prn)	n (%)	Patient (prn)	Distribution (%)
1. Malaria	520	(31.0)	370	(23.0)	445	(27.1)
2. Lung-disease	252	(15.0)	171	(10.7)	211	(12.9)
3. Bladder-disease	239	(14.3)	188	(11.7)	213	(13.0)
4. Delivery (birth)	183	(10.9)	192	(12.0)	187	(11.4)
5. Gynecological disease	127	(7.6)	98	(6.1)	112	(6.8)
6. Gastrointestinal disease	69	(4.1)	21	(1.3)	45	(2.7)
7. Otological disease	40	(2.4)	74	(4.6)	57	(3.5)
8. Heart disease	38	(2.3)	36	(2.3)	37	(2.3)
9. Others	210	(12.5)	457	(28.4)	333	(20.3)
Total	1,677	(100.0)	1,607	(100.0)	1,642	(100.0)

Source: District Health Office, Vangvieng

FIGURES

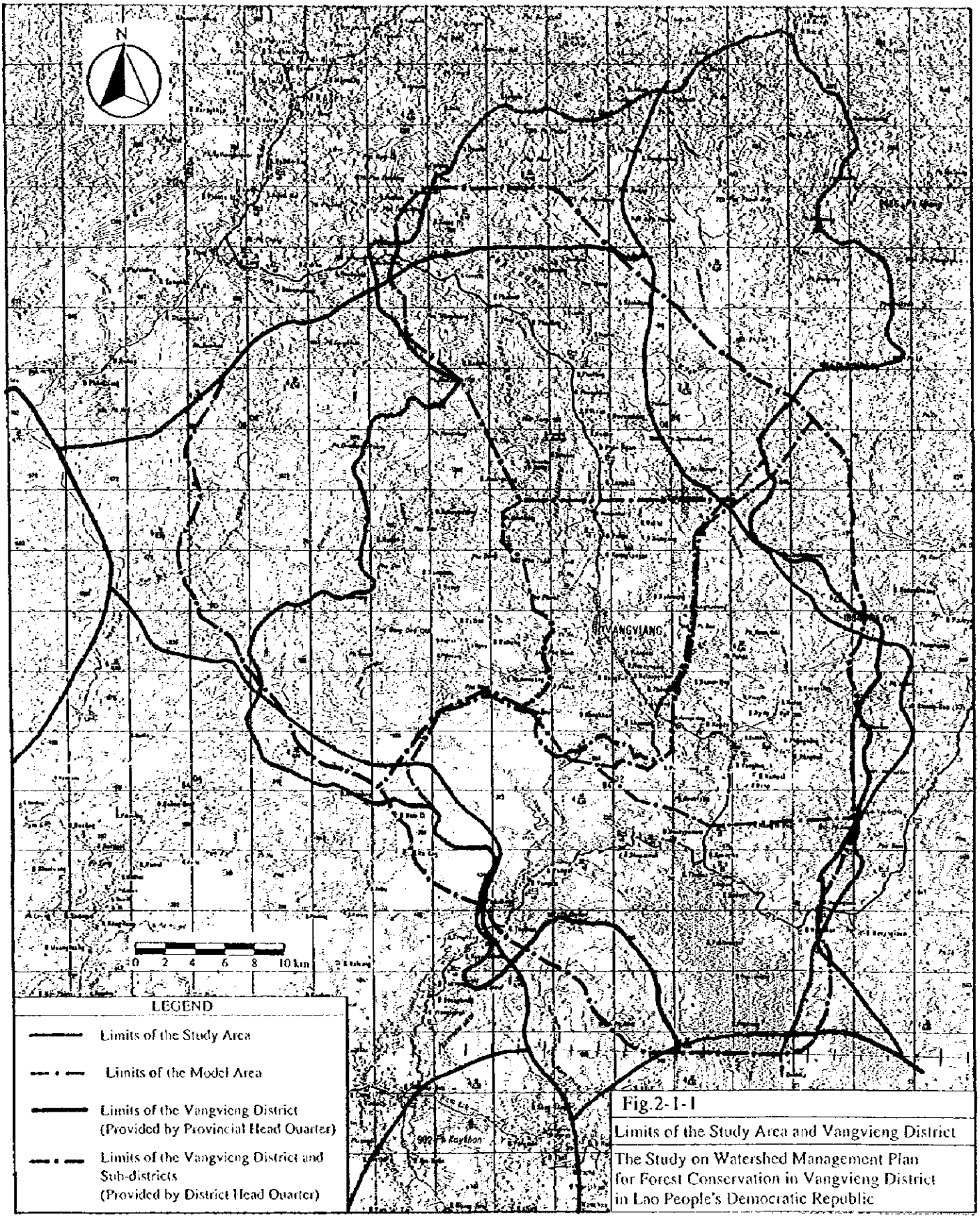

Fig.2-1-1

Limits of the Study Area and Vangvieng District

The Study on Watershed Management Plan
for Forest Conservation in Vangvieng District
in Lao People's Democratic Republic

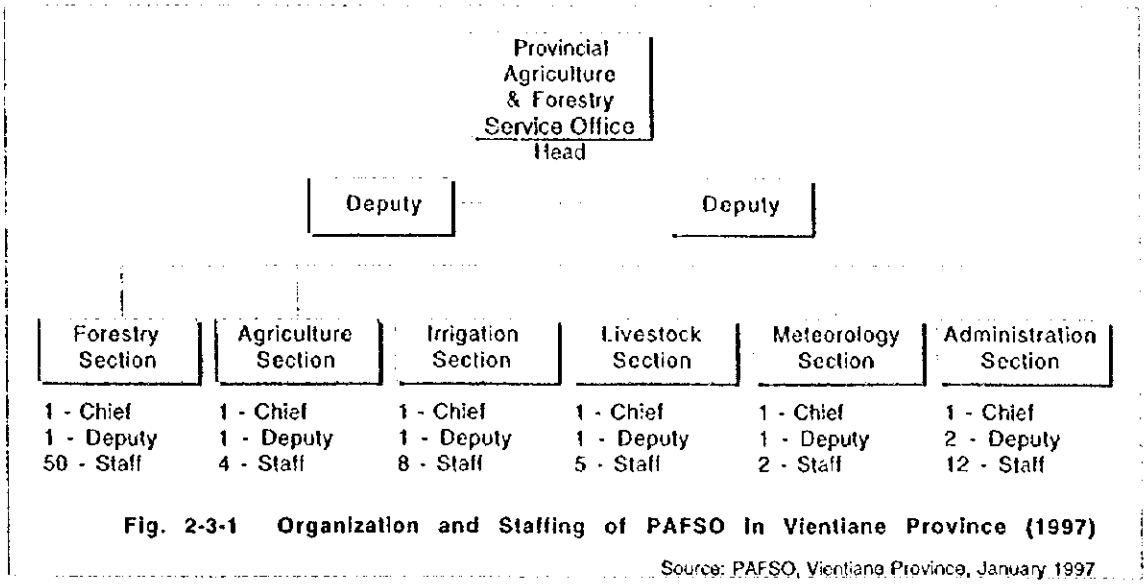

Fig. 2-3-1 Organization and Staffing of PAFSO in Vientiane Province (1997)

Source: PAFSO, Vientiane Province, January 1997

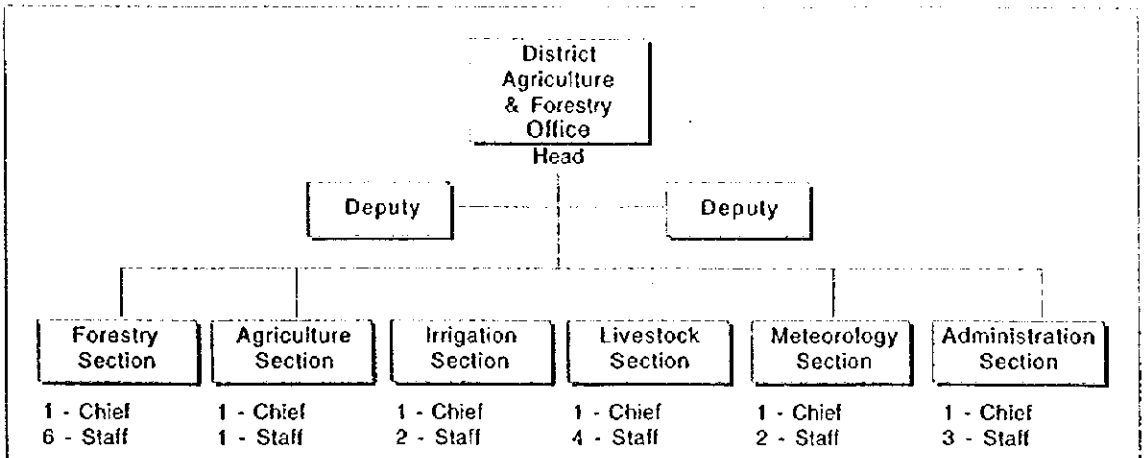

Fig. 2-3-2 Organization and Staffing of DAFO in Vangvieng District (1998)

Source: DAFO, Vangvieng District, March 1998

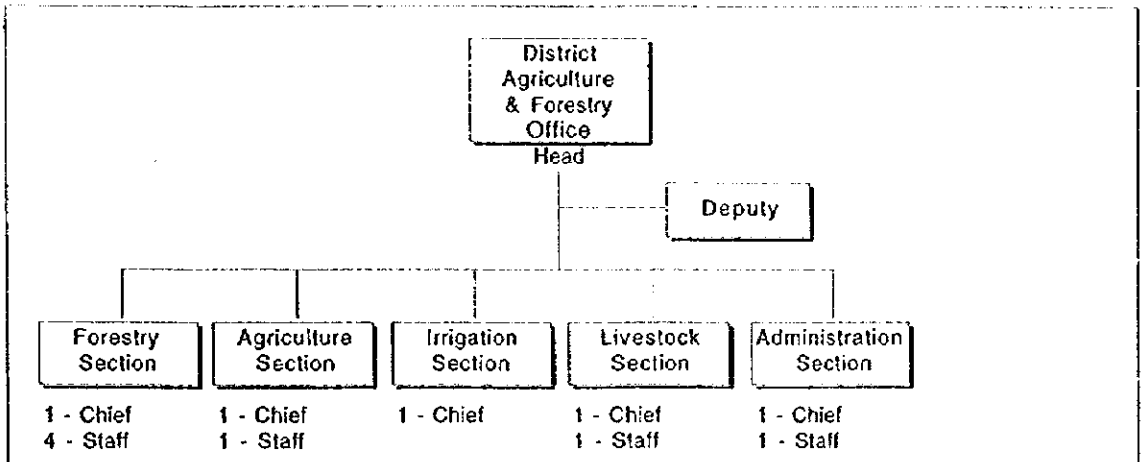

Fig. 2-3-3 Organization and Staffing of DAFO in Hinheup District (1998)

Source: DAFO, Hinheup District, March 1998

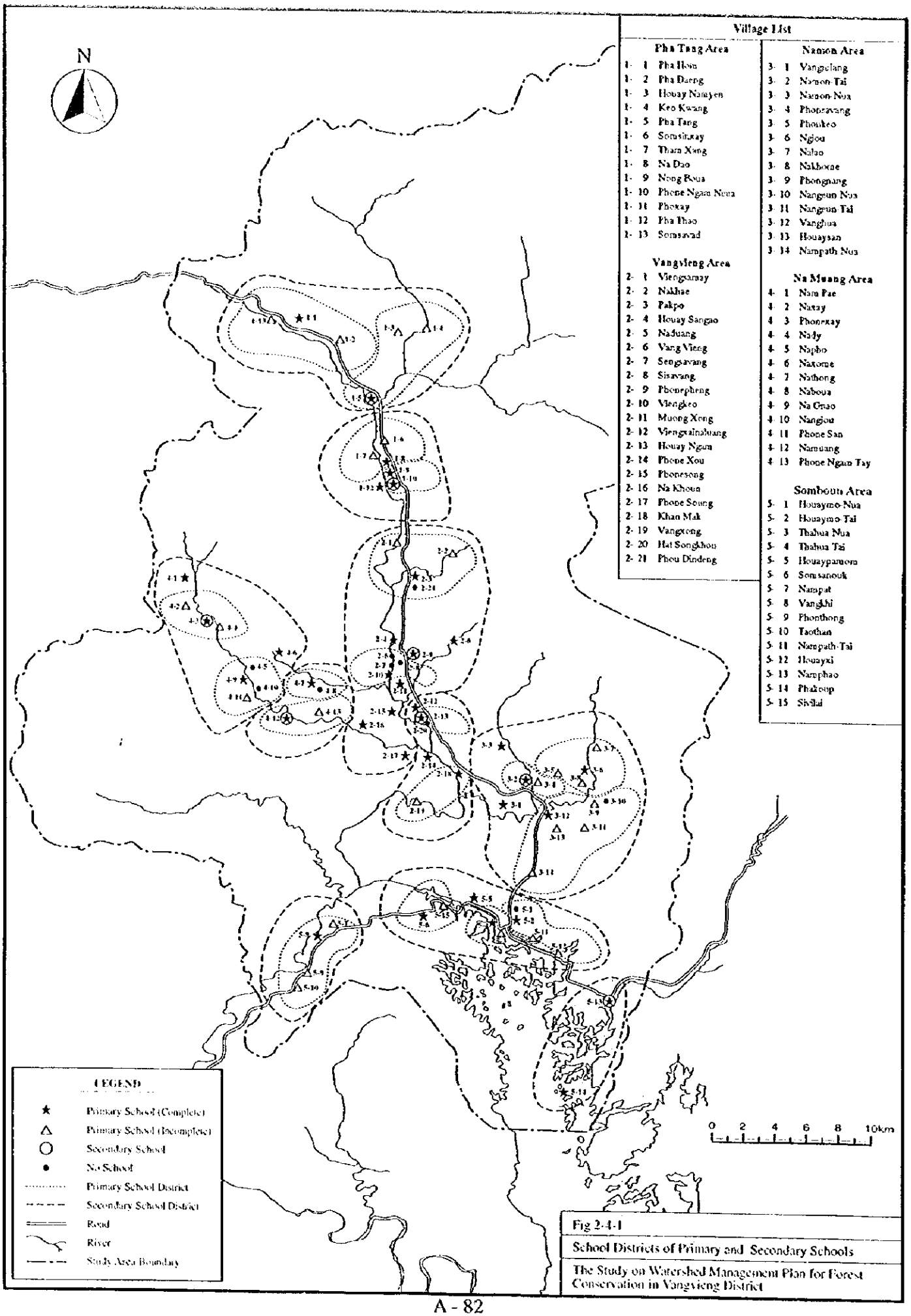

Fig 2-4-1

School Districts of Primary and Secondary Schools

The Study on Watershed Management Plan for Forest Conservation in Vangvieng District

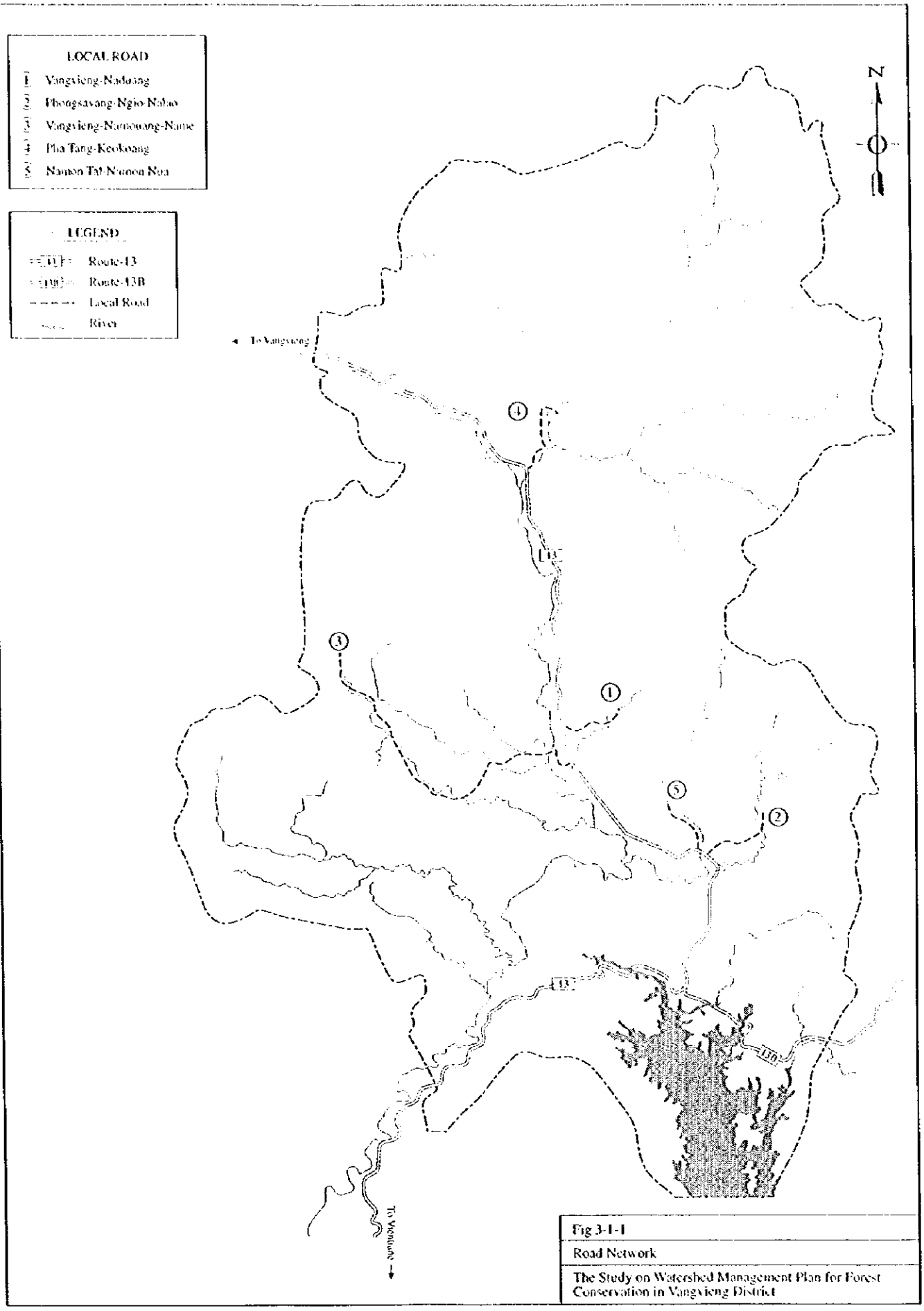

Fig 3-1-1
Road Network
The Study on Watershed Management Plan for Forest Conservation in Vangvieng District