

第9章 勸 告

- (1) 調査対象地区は約 654,000ha を有し、肥沃で多くの降雨量に恵まれている。そのうち、農業開発可能地は約 135,000ha で、灌漑可能地は約 55,000ha におよび、調査対象地区内に拡がっている。灌漑適地は重力式に出来る約 36,000ha とポンプ方式による約 19,000ha に分けられる。
- (2) マスタープランの総合開発計画に基づいて、全体計画の 135,000ha の開発は開発のスケールと農家や政府の実施能力を考慮して、段階的開発（短期、中期、長期）方式を提案する。従って、135,000ha の内、周囲の地区や同様の農業経営が効果的に、また、スムーズに普及出来る地区であり、且つ、各タイプの農業方式を持ち重力式灌漑のできる、16 地区、約 36,000ha をモデル開発地区として選定した。
- (3) モデル計画をスムーズに、且つ、持続的に実現するために、更に適当なスケールの代表的なスキームを早急に開発することが重要である。従って、農村農業開発において最も効果的に普及およびデモンストレーションができ、また、気候土壌条件から代表的な次の 5 地区を優先開発地区としてフィジビリティ調査をおこなった。

即ち、

- i) Upper Champi Area
- ii) Upper Tapoung Area
- iii) Upper Kaphcu Area
- iv) Lower Xe Set Area
- v) Upper Tay-Un Area

- (4) 優先開発地区の慎重な現地調査および計画検討の結果、本事業の技術的並びに経済的妥当性が明らかになり、また、住民の生活改善およびコミュニティの組織化に大いに役立つことが明らかになった。さらに、優先開発地区の開発は、自立可能な開発、および将来の開発地区の核として機能するとの状況に鑑み、早急に事業を実施するよう提言する。
- (5) 本農業農村総合開発計画は農産物の増産、農業、農村インフラの開発、農村住民生活改善の普及指導、農業社会支援サービス等のハードウェアおよびソフトウェア双方の部門を含み、多岐に亘る開発のコンポーネントとなっている。従って、実施に当たっては、農林省 (MAF) は本計画の効率的な実現のため各関係省庁と十分協議し、省内に調整機関を設ける必要がある。このため、各県農林部、保健、教育および通信運輸郵政建設 (CTPC) 部門や農業、水利組合等の協力を得て、Boloven 農業農村総合開発公団を設立するよう提言する。更に、灌漑および上水利用者の自治的な組合を設立して適切な水の分配および施設の維持運営をする必要がある。農業や農村生活改善は国の NIERP の政策に沿って普及活動する。
- (6) 本計画は持続可能な開発および受益者自身による施設の維持管理を目指している。この目的のため、受益者の参加を、本計画の計画策定から実施まで求める必要がある。更に、末端水利施設の実施は、政府の技術的、財政的援助を得て受益者自身で進めるよう提言する。
- (7) 農民や上水受益者は現在まで水管理に関して技術的にも何の経験もない。また、計画実現の暁には開発公団は所定の手続きに基づいて、施設の維持管理を組合に移管する事になる。従って、政府は灌漑、上水施設の維持管理に関して、受益者組合に対して適切な技術指導

を提供するよう提言する。

- (8) 農家財政解析の結果受益農民の経済はこの計画の実施後はかなり改善される。しかし、予想される維持管理費は小規模の農家にはかなり厳しい、特に Lower Xe Set の農民にとっては厳しい。従って、政府は特に技術的な問題について組合の維持管理を助けて用水料を軽減するよう提言する。
- (9) 本計画で提案している高原野菜実証展示場は野菜生産の啓発と普及、安定生産、および改良種子の配布等のため極めて重要である。また、展示場は茶の試験栽培と品質向上の製茶をもくろむ。本展示場は農林省の協力の下に Champasak 県の農林部が運営する。
- (10) 本計画を実施、推進し、持続的発展を遂げていくためには、政府実施機関、受益者組織の強化確立が不可欠である。本計画の持続的開発の成功と農村生活の改善のため、政府職員および組合設立運営のための先進的農家、上水受益者の教育、養成が必要である。

付 表

表 2.1 月間平均流量 (1/2)

H.Champ (tak 47)
Basin Area 16 km²

UNIT: m³/sec

YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	AVERAGE
1986	0.334	0.213	0.143	0.147	0.451	0.665	1.032	1.403	1.436	1.150	0.865	0.585	0.704
1987	0.334	0.209	0.134	0.195	0.341	0.691	1.316	1.553	1.380	1.150	0.813	0.506	0.702
1988	0.322	0.239	0.182	0.265	0.413	0.735	0.653	1.196	0.999	0.975	0.726	0.448	0.600
1989	0.267	0.161	0.103	0.130	0.471	0.726	0.929	1.179	1.205	1.018	0.803	0.530	0.631
1990	0.306	0.189	0.128	0.111	0.268	0.531	0.702	1.071	1.389	1.178	0.870	0.550	0.609
1991	0.331	0.209	0.135	0.130	0.379	0.624	1.209	2.164	1.912	1.512	1.015	0.649	0.856
1992	0.410	0.272	0.175	0.139	0.177	0.636	1.146	1.517	1.401	1.116	0.760	0.480	0.686
1993	0.306	0.189	0.113	0.115	0.230	0.311	0.612	1.153	1.144	0.863	0.613	0.400	0.504
1994	0.237	0.157	0.238	0.353	0.543	0.764	1.517	1.796	1.726	1.412	0.961	0.701	0.867
1995	0.589	0.255	0.184	0.227	0.362	0.425	0.716	0.543	0.978	0.792	0.574	0.368	0.523
AVERAGE	0.323	0.209	0.153	0.186	0.365	0.611	0.973	1.358	1.357	1.117	0.802	0.522	0.664

H.Champ (tak 43)
Basin Area 36 km²

UNIT: m³/sec

YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	AVERAGE
1986	0.751	0.478	0.322	0.330	1.015	1.496	2.323	3.157	3.231	2.588	1.958	1.316	1.584
1987	0.751	0.471	0.301	0.445	0.767	1.534	2.511	3.495	3.106	2.588	1.830	1.140	1.580
1988	0.724	0.539	0.409	0.597	0.978	1.654	1.559	2.692	2.249	2.194	1.634	1.008	1.349
1989	0.601	0.363	0.232	0.405	1.059	1.633	2.089	2.654	2.712	2.290	1.806	1.193	1.420
1990	0.688	0.425	0.288	0.250	0.648	1.195	1.379	2.410	3.125	2.650	1.957	1.237	1.371
1991	0.744	0.470	0.304	0.292	0.853	1.404	2.719	4.870	4.303	3.402	2.283	1.461	1.925
1992	0.921	0.611	0.393	0.313	0.398	1.431	2.578	3.412	3.153	2.510	1.710	1.080	1.542
1993	0.688	0.426	0.255	0.258	0.517	0.701	1.377	2.594	2.573	1.942	1.380	0.900	1.134
1994	0.533	0.353	0.535	0.795	1.221	1.719	3.413	4.041	3.882	3.178	2.162	1.577	1.951
1995	0.876	0.375	0.414	0.510	0.814	0.956	1.746	2.122	2.201	1.782	1.293	0.828	1.176
AVERAGE	0.728	0.471	0.345	0.420	0.822	1.374	2.189	3.145	3.053	2.513	1.805	1.174	1.501

H.Toupong
Basin Area 4 km²

UNIT: m³/sec

YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	AVERAGE
1986	0.083	0.053	0.036	0.037	0.113	0.166	0.258	0.351	0.359	0.288	0.222	0.146	0.176
1987	0.083	0.052	0.033	0.049	0.085	0.173	0.279	0.388	0.345	0.288	0.203	0.127	0.176
1988	0.080	0.060	0.045	0.066	0.103	0.184	0.173	0.299	0.250	0.244	0.182	0.112	0.150
1989	0.067	0.040	0.026	0.045	0.118	0.181	0.232	0.295	0.301	0.254	0.201	0.133	0.158
1990	0.076	0.047	0.032	0.028	0.072	0.133	0.175	0.268	0.347	0.294	0.217	0.137	0.152
1991	0.083	0.052	0.034	0.032	0.095	0.156	0.202	0.541	0.478	0.378	0.254	0.162	0.214
1992	0.102	0.064	0.044	0.055	0.084	0.159	0.246	0.379	0.350	0.279	0.190	0.120	0.171
1993	0.076	0.047	0.028	0.029	0.057	0.078	0.153	0.288	0.286	0.216	0.153	0.100	0.126
1994	0.059	0.039	0.059	0.088	0.136	0.191	0.379	0.449	0.431	0.353	0.240	0.175	0.217
1995	0.097	0.064	0.046	0.057	0.090	0.108	0.194	0.236	0.245	0.195	0.144	0.092	0.131
AVERAGE	0.081	0.052	0.038	0.047	0.091	0.152	0.243	0.349	0.339	0.279	0.201	0.130	0.167

H.Kaphea
Basin Area 24 km²

UNIT: m³/sec

YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	AVERAGE
1986	0.459	0.288	0.187	0.184	0.576	0.877	1.369	1.870	1.936	1.553	1.197	0.779	0.940
1987	0.459	0.284	0.177	0.251	0.439	0.899	1.480	2.069	1.864	1.554	1.090	0.671	0.936
1988	0.420	0.307	0.232	0.329	0.531	0.970	0.917	1.589	1.341	1.303	0.973	0.591	0.792
1989	0.369	0.219	0.136	0.211	0.628	0.982	1.224	1.557	1.537	1.323	1.023	0.656	0.822
1990	0.459	0.284	0.192	0.166	0.432	0.796	1.053	1.606	2.083	1.767	1.304	0.825	0.914
1991	0.405	0.245	0.148	0.126	0.406	0.719	1.479	2.684	2.447	1.999	1.352	0.854	1.072
1992	0.557	0.366	0.228	0.175	0.228	0.401	1.470	1.993	1.872	1.516	1.030	0.639	0.907
1993	0.400	0.242	0.138	0.123	0.262	0.380	0.739	1.394	1.505	1.152	0.798	0.506	0.637
1994	0.309	0.196	0.243	0.306	0.643	0.945	1.851	2.211	2.167	1.801	1.217	0.862	1.070
1995	0.501	0.321	0.218	0.237	0.398	0.516	0.945	1.199	1.274	1.053	0.754	0.467	0.656
AVERAGE	0.434	0.275	0.190	0.220	0.454	0.789	1.253	1.817	1.803	1.502	1.074	0.685	0.875

H.Thong
Basin Area 8 km²

UNIT: m³/sec

YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	AVERAGE
1986	0.124	0.099	0.079	0.075	0.185	0.290	0.432	0.587	0.615	0.437	0.297	0.162	0.282
1987	0.124	0.098	0.077	0.097	0.147	0.270	0.468	0.602	0.601	0.437	0.246	0.140	0.277
1988	0.116	0.099	0.045	0.115	0.182	0.323	0.279	0.479	0.407	0.374	0.240	0.127	0.237
1989	0.099	0.076	0.058	0.070	0.211	0.332	0.345	0.487	0.451	0.356	0.233	0.125	0.237
1990	0.098	0.074	0.059	0.051	0.116	0.202	0.258	0.391	0.544	0.459	0.272	0.131	0.225
1991	0.098	0.078	0.127	0.151	0.107	0.187	0.202	0.345	0.347	0.319	0.245	0.246	0.206
1992	0.112	0.091	0.078	0.073	0.095	0.127	0.175	0.258	0.324	0.297	0.194	0.130	0.163
1993	0.081	0.061	0.050	0.047	0.091	0.172	0.221	0.252	0.366	0.352	0.290	0.250	0.186
1994	0.098	0.074	0.055	0.052	0.064	0.161	0.281	0.387	0.443	0.336	0.154	0.095	0.183
1995	0.071	0.049	0.030	0.019	0.103	0.145	0.224	0.261	0.247	0.176	0.087	0.053	0.126
AVERAGE	0.102	0.080	0.070	0.075	0.130	0.219	0.300	0.407	0.434	0.354	0.230	0.146	0.212

表 2.1 月間平均流量 (2/2)

H.Toy-Uu
Besta Area
31 km²

UNIT: m³/Sec

YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	AVERAGE
1986	0.303	0.238	0.183	0.177	0.447	0.719	1.081	1.476	1.552	1.099	0.741	0.401	0.702
1987	0.303	0.236	0.183	0.231	0.355	0.669	1.226	1.519	1.524	1.100	0.611	0.348	0.692
1988	0.280	0.238	0.203	0.275	0.445	0.801	0.690	1.241	1.014	0.933	0.591	0.911	0.585
1989	0.239	0.178	0.134	0.152	0.546	0.887	0.859	1.193	1.028	0.832	0.490	0.285	0.569
1990	0.210	0.151	0.125	0.102	0.274	0.471	0.722	0.913	1.243	1.088	0.636	0.299	0.519
1991	0.244	0.189	0.188	0.179	0.192	0.359	0.591	1.050	1.123	1.037	0.744	0.489	0.532
1992	0.297	0.239	0.194	0.166	0.232	0.384	0.672	0.995	1.087	0.909	0.534	0.309	0.501
1993	0.235	0.177	0.139	0.118	0.196	0.374	0.478	0.612	0.997	0.847	0.570	0.337	0.427
1994	0.210	0.151	0.107	0.100	0.177	0.428	0.754	0.993	1.098	0.843	0.383	0.233	0.456
1995	0.163	0.109	0.063	0.030	0.166	0.292	0.376	0.615	0.672	0.507	0.238	0.130	0.297
AVERAGE	0.248	0.191	0.132	0.113	0.303	0.538	0.765	1.061	1.134	0.919	0.554	0.319	0.528

Xr Set
Besta Area
413 km²

UNIT: m³/Sec

YEAR	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	AVERAGE
1986	4.342	3.053	2.359	2.932	13.452	20.907	31.838	42.477	43.245	28.347	17.592	7.621	18.184
1987	4.700	3.356	2.375	5.227	10.117	19.964	36.460	43.495	43.119	28.616	13.797	6.286	18.126
1988	4.617	4.055	3.263	6.720	12.652	23.616	19.351	36.227	27.757	25.135	14.239	5.747	15.281
1989	4.165	2.908	2.067	3.950	16.249	25.600	24.947	35.910	30.890	22.948	13.289	5.907	15.736
1990	3.856	2.608	2.177	1.748	8.159	15.253	21.775	27.903	39.424	31.124	16.314	6.118	14.705
1991	4.186	3.174	3.036	3.145	6.090	11.287	32.820	41.872	41.718	37.258	17.599	9.791	17.668
1992	3.790	3.406	2.415	2.335	4.350	15.746	30.056	45.900	34.843	21.523	10.355	5.820	15.043
1993	4.020	2.972	2.540	2.562	6.687	5.680	14.550	26.724	34.571	17.182	7.985	4.616	10.791
1994	3.089	2.331	2.030	5.268	11.050	15.650	29.721	30.923	36.667	19.884	9.506	5.851	14.331
1995	3.952	2.872	2.370	2.290	5.561	5.850	13.036	21.574	25.043	17.586	9.378	5.226	9.562
AVERAGE	4.072	3.077	2.463	3.618	9.377	15.953	25.453	35.301	35.728	24.964	13.005	6.298	14.943

表 2.2 農村基礎整備計画

Priority Development Scheme	Target villages	No. of target villages (no.)	Households		Population			Water supply system			Rural road improvement			Primary school			Village community hall		
			in 1996 (no.)	in 1996 (no.)	in 1996 (no.)	Gravity flow system	Water supply system	with electric pump	Penetration macadam (km)	Gravel pavement (km)	Box culvert (no.)	Pipe culvert (no.)	Class-III (no.)	Class-V (no.)	type-A (no.)	type-B (no.)	type-C (no.)		
(1) Upper Champi	Lak 33	61	347																
	Lak 35	121	674																
	Lak 36	80	476																
	Lak 38	71	431																
	Lak 40	144	837																
(2) Upper Tapoung	Lak 42	56	263																
	Lak 43	206	1,146																
	Lak 45	89	557																
	Lak 45	828	4,731																
(3) Upper Kaphou	Phoulangkeo	45	283																
	Housisan	116	666																
	Xetoung	101	529																
	Phouak-noi	83	453																
	Souangmai	49	265																
(4) Lower Xe-Set	On-noi	97	490																
	Phouak-gnai	133	731																
	On-gnai	94	454																
	Natou	456	2,393																
	Natou	32	149																
(5) Upper Tayun	Sengvang-gnai	135	796																
	Houakhoua	58	290																
	Sengvang-noi	74	454																
	Khonleng	29	179																
	Natou	58	350																
(6) Upper Tayun	Natou	386	2,218																
	Chaikamlit	20	160																
	Khamsok	50	470																
(total)	Chaikam-mai	38	241																
	Chaikam-mai	108	871																
	(total)	25	2,040																

Note: 1/ comprising four (4) rooms, with a total floor area of 168 m²
 2/ comprising six (6) rooms, with a total floor area of 336 m²

3/ applied to the village with less than 100 of households, with a total floor area of 168 m²
 4/ applied to the village with more than 100 of households, with a total floor area of 252 m²
 5/ applied to the village, which is proposed to be a center of each scheme area, with a total floor area of 336 m²

表 2.3 農村道路改善計画

Scheme	Road section		Penetration macadam pavement (km)	Gravel pavement (km)	Pipe culvert (nos.)	Box culvert (nos.)
	(village)	to (village)				
(1) Champi						
		(sub-total)	0	0	0	0
(2) Tapoung						
(2)-1	Pakxong	- B.Xetapung	12.9	0	26	0
		(sub-total)	12.9	0	26	0
(3) Kaphéu						
(3)-1	Road No.20	- B.Sixiangmai	9.3	0	19	0
(3)-2	B.Sixiangmai	- B.Phouak-gnai	0	1.8	4	1
(3)-3	B.Phouak-noi	- B.Phouak-gnai	0	1.9	4	0
		(sub-total)	9.3	3.7	27	1
(4) Xeset						
(4)-1	Road No.20	- Xeset power station	3.2	0	6	0
(4)-2	Road No.20	- B. Natou	0	3.8	8	1
		(sub-total)	3.2	3.8	14	1
(5) Tay-Un						
(5)-1	Road No.16	- B. Chakanlit	0	1.7	3	2
		(sub-total)	0	1.7	3	2
		(Total)	25.4	9.2	70	4

表 2.4 給水施設開発計画

Water Supply System	Targer villages	No. of target villages	Households in		Population in		Demand of water (lit./sec)	Water source	Transmission main pipe-1/ (m)	Branch pipe-2/ (m)	Filter tank (no.)	Proposed Facilities		Pumping facility (no.)		
			1996	2010	1996	2010						Distribution tank (ground level) (no.)	Elevated tank (no.)		Communal tap (no.)	
(1) Gravity Flow Piped Water System, Upper Champi	Lak 33 Lak 35 Lak 36 Lak 38 Lak 40 Lak 42 Lak 43 Lak 45	8	828	4,731	5,990	5.41	H. Champi	35,860	4,280	1	8	0	0	138	0	0
(2) Water System with electric pump, Upper Tampuan No.1	Phouliangkeo	1	45	283	358	0.32 (1.29), 5/	H. Kaphou	1,010	90	1	1	0	0	9	0	1
(3) Water System with electric pump, Upper Tampuan No.2	Houaisan Xeapume	2	217	1,195	1,513	1.36 (5.46), 5/	H. Tampang	7,450	1,030	1	1	0	1	43	0	2
(4) Gravity Flow Piped Water System, Upper Kaphou	Phouak-noi Saxiangmai On-roi Phouak-mai On-Dal	5	456	2,393	3,926	3.54	H. Kaphou	14,300	3,620	1	5	0	0	92	0	0
(5) Gravity Flow Piped Water System, Lower Xeset	Natou Sengvong-ouai Houakhoua Sengvong-roi Khoulong Natou	6	386	2,218	3,221	2.91	Xeset	14,660	1,940	2	3	3	0	54	20	0
(6) Water System with electric pump, Upper Tampuan No.1	Chakamit	1	20	160	232	0.21 (0.84), 5/	H. Thon	100	0	1	0	1	0	0	5	1
(7) Water System with electric pump, Upper Tampuan No.2	Khantok	1	50	470	682	0.62 (2.46), 5/	H. Tin	150	0	1	0	1	0	0	10	1
(8) Water System with electric pump, Upper Tampuan No.3	Chakam-mai (1) 7/	0.5	20	118	171	0.15 (0.63), 5/	H. Tin	200	0	1	0	1	0	0	5	1
(9) Water System with electric pump, Upper Tampuan No.4	Chakam-mai (2) 7/	0.5	18	123	179	0.16 (0.63), 5/	H. Tin	300	0	1	0	1	0	0	5	1
	(Grand total)	24	2,040	11,691	16,272	14.68		74,030	10,960	10	18	7	1	336	45	7

Note : 1/ transmission / distribution main pipe (C1 pipe), including an intake pipe from a water source
 2/ distribution branch pipe (PVC pipe)
 3/ with a washing basin and communal tapstands
 4/ installed directly to the distribution tank
 5/ a half day's consumption with a 3 hours pump operation
 6/ including pumping to an elevated tank
 7/ for B.Chakam-mai, two (2) systems are required because the village comprising two (2) groups, is located at two points.

表 2.5 (1/8) 施設計画骨子 -Upper Champi-

General Description			
Scheme Name	Upper Champi		
Location and Altitude	Pakxong District, Champasak Province (EL. 900 to 1,200 m)		
No. of Target Villages	8 villages		
Village Name	Lak33, Lak35, Lak36, Lak38, Lak40, Lak42, Lak43, Lak45		
Households	828 households		
Population	4,731		
Development Plan			
Item	Description	Quantity	Remarks
(1) Agricultural Supporting Service			
- Extension Facility	Meeting room in village community hall(Lak 45)	1	
(2) Irrigation and Drainage Facilities			
- Water sources	H.Champi		
- Proposed cropping pattern and Irrigation area (net)	Coffee : 620 ha, Upland Crops - Vegetables : 110 ha	730 ha	
- Diversion weir	Concrete diversion weir. Width = 43.0 m	1 place	
- Earthfill dam	V = 34,000 m ³	1 no.	
- Reservoir	Effective storage capacity = 105,000 m ³		
- Design discharge		0.117 m ³ /sec.	
- Main irrigation canals	Concrete lining canal, 2 canals	4.7 km	
- Secondary irrigation canals	Concrete lining canal, 3 canals	13.0 km	
- Secondary drainage canals	Earth canal, 8 canals	3.0 km	
- Farm road	Effective width = 3.0m. Gravel pavement	21.2 km	
- Farm ponds	Cut and embankment pond	43 places	
(3) Rural Infrastructure Facilities			
- Water supply system :	Gravity flow piped water system	1 system	
Water source	Houay Champi		
Water demand		5.41 lit./sec	
Transmission / Distribution main pipe (GI Pipe)		35,860 m	
Distribution branch pipe (PVC Pipe)		4,280 m	
Filter tank		1 no.	
Distribution tank		8 nos.	
Communal tap		138 nos.	
- Village road :	Penetration macadam pavement	none	
	Gravel pavement	none	
- School :	Class-III primary school (4 rooms, 168 m ²)	3 nos.	
	Class-V primary school (6rooms, 336 m ²)	4 nos.	
- Village community hall :	Type-A (3rooms, 168 m ²)	4 nos.	
	Type-B (3rooms, 252 m ²)	3 nos.	
	Type-C (4rooms, 336m ²)	1 no.	

表 2.5 (2/8) 施設計画骨子 -Upper Tapoung-

General Description	
Scheme Name	Upper Tapoung
Location and Altitude	Pakxong District, Champasak Province (EL 900 to 1,300 m)
No. of Target Villages	3 villages
Village Name	Phoulangkeo, Houaisan, Xetapung
Households	262 households
Population	1,478

Development Plan			
Item	Description	Quantity	Remarks
(1) Agricultural Supporting Service			
- Extension Facility	Meeting room in village community hall(Houaisan)	1	
(2) Irrigation and Drainage Facilities			
- Water sources	H. Tapoung		
- Proposed cropping pattern and irrigation area (net)	Upland Crop - Vegetable : 80 ha	80 ha	
- Diversion weir	Concrete diversion weir. Width = 38.0 m	1 place	
- Reservoir	Effective storage capacity = 240,000 m ³		
- Design discharge		0.063 m ³ /sec.	
- Main irrigation canals	Concrete lining canal, 1 canal	1.6 km	
- Secondary irrigation canals	Concrete lining canal, 1 canal	0.8 km	
- Secondary drainage canals	Earth canal, 1 canal	0.2 km	
- Farm roads	Effective width = 3.0m, Gravel pavement	5.3 km	
- Farm ponds	Cut and embankment pond	5 places	
(3) Rural Infrastructure Facilities			
- Water supply system :	Water system with electric pump	2 systems	
Water source	Houay Kapheu and Houay Tapoung		
Water demand		1.68 lit./sec	
Pumping intake pipe / Transmission		8,460 m	
/ Distribution main pipe (GI Pipe)			
Distribution branch pipe (PVC Pipe)		1,120 m	
Filter tank		2 nos.	
Distribution tank		2 no.	
Elevated tank		1 no.	
Communal tap		52 nos.	
Electric pump		3 nos.	
- Village Road :	Penetration macadam pavement	12.9 km	
	Gravel pavement	none	
- School :	Class-III primary school (4 rooms, 168 m ²)	2 nos.	
	Class-V primary school (6 rooms, 336 m ²)	1 no.	
- Village community hall :	Type-A (3 rooms, 168 m ²)	1 no.	
	Type-B (3 rooms, 252 m ²)	1 no.	
	Type-C (4 rooms, 336 m ²)	1 no.	

表 2.5 (3/8) 施設計画骨子 -Upper Kapheu-

General Description	
Scheme Name	Upper Kapheu
Location and Altitude	Laongam District, Salavan Province (EL 600 to 800m)
No. of Target Villages	5 villages
Village Name	Phouak-noi, Sixiangmai, On-noi, Phouak-gnai, On-gnai
Households	456 households
Population	2,393

Development Plan			
Item	Description	Quantity	Remarks
(1) Agricultural Supporting Service			
- Extension Facility	Meeting room in village community hall(On-noi)	1	
(2) Irrigation and Drainage Facilities			
- Water sources	H Kapheu		
- Proposed cropping pattern and irrigation area (net)	Coffee : 900 ha, Paddy - Upland Crops : 100 ha	1,000 ha	
- Diversion weir	Concrete diversion weir. Width = 14.0 m	1 place	
- Earthfill dam	V1 = 20,000 m ³ , V2 = 16,000 m ³ , V3 = 18,000 m ³ , V4 = 18,000 m ³	4 nos.	
- Reservoir	Dam No.1: Effective storage capacity = 137,000 m ³ Dam No.2: Effective storage capacity = 64,000 m ³ Dam No.3: Effective storage capacity = 52,000 m ³ Dam No.4: Effective storage capacity = 142,000 m ³		
- Design discharge		0.272 m ³ /sec.	
- Main irrigation canals	Concrete lining canal, 2 canals	2.2 km	
- Secondary irrigation canals	Concrete lining canal, 3 canals	11.8 km	
- Secondary drainage canals	Earth canal, 6 canals	1.1 km	
- Farm roads	Effective width = 3.0m, Gravel pavement	15.3 km	
- Farm roads	Cut and embankment pond	35 places	
(3) Rural Infrastructure Facilities			
- Water supply system :	Gravity flow piped water system	1 system	
Water demand		3.54 lit /sec	
Water source	Houay Kapheu		
Transmission / Distribution main pipe (GI Pipe)		14,300 m	
Distribution branch pipe (PVC Pipe)		3,620 m	
Filter tank		1 no.	
Distribution tank		5 nos.	
Communal tap		92 nos.	
- Village Road :	Penetration macadam pavement	9.3 km	
	Gravel pavement	3.7 km	
- School :	Class-III primary school (4 rooms, 168 m ²)	3 nos.	
	Class-V primary school(6 rooms, 336 m ²)	1 no.	
- Village community hall :	Type-A (3 rooms, 168 m ²)	3 nos.	
	Type-B (3 rooms, 252 m ²)	1 no.	
	Type-C (4 rooms, 336 m ²)	1 no.	

表 2.5 (4/8) 施設計画骨子 -Lower Xe Set-

General Description	
Scheme Name	Lower Xe Set
Location and Altitude	Salavan District, Salavan Province (EL. 300 to 400m)
No. of Target Villages	6 villages
Village Name	Natteu, Sengvang-gnai, Houakhoua, Sengvang-noi, Khonleng, Natou
Households	386 households
Population	2,309

Development Plan			
Item	Description	Quantity	Remarks
(1) Agricultural Supporting Service			
- Extension Facility	Meeting room in village community hall(Sengvang-gnai)	1	
- Post-harvest Facility(Rice Bank)	Equipped with post-harvest facility of rice (drying yard, rice mill, paddy and rice storage, etc.):		
	(Natteu, Houakoua)	1	
	(Sengvang-gnai)	1	
	(Sengvang-noi)	1	
	(Khonleng)	1	
	(Natou)	1	
(2) Irrigation and Drainage Facilities			
- Water sources	H.Xeset		
- Proposed cropping pattern and Irrigation area (net)	Paddy - Paddy : 200 ha, Paddy - Upland Crops : 800 ha	1,000 ha	
- Diversion Weir	Concrete diversion weir, Width = 75.0 m	1 place	
- Regulation pond		1 place	
- Design discharge		9.030 m ³ /sec.	
- Main irrigation canals	Concrete lining canal, 3 canals	3.6 km	
- Secondary irrigation canals	Concrete lining canal, 5 canals	11.0 km	
- Secondary drainage canals	Earth canal, 4 canals	7.6 km	
- Farm roads	Effective width = 3.0 m, Gravel pavement	26.0 km	
- Farm ponds	Cut and embankment pond	35 places	
(3) Rural Infrastructure Facilities			
- Water supply system	Gravity flow piped water system	1 system	
Water source	Xe Set		
Water demand		2.91 lit./sec	
Transmission / Distribution main pipe (GI Pipe)		14,660 m	
Distribution branch pipe (PVC Pipe)		1,940 m	
Filter tank		2 nos.	
Distribution tank		6 nos.	
Communal tap		74 nos.	
- Village Road	Penetration macadam pavement	3.2 km	
	Gravel pavement	3.8 km	
- School	Class-III primary school (4 rooms, 168 m ²)	5 nos.	
	Class-V primary school (6 rooms, 336 m ²)	none	
- Village community hall	Type-A (3 rooms, 168 m ²)	5 nos.	
	Type-B (3 rooms, 252 m ²)	none	
	Type-C (4 rooms, 336 m ²)	1 no.	

表 2.5 (5/8) 施設計画骨子 - Upper Tay Un -

General Description			
Scheme Name	Upper Tay-Un		
Location and Altitude	Thateng District, Sekong Province (EL 500 to 600m)		
No. of Target Villages	3 villages		
Village Name	Chakamlit, Khamkok, Chakam-mai		
Households	108 households		
Population	871		
Development Plan			
Item	Description	Quantity	Remarks
(1) Agricultural Supporting Service			
- Extension Facility	Meeting room in village community hall(Chakamlit)	1	
- Post-harvest Facility(Rice Bank)	Equipped with post-harvest facility of rice (drying yard, rice mill, paddy and rice storage, etc.):		
(2) Irrigation and Drainage Facilities			
- Water sources	H.Tay-un, and H.Thon		
- Proposed cropping pattern and Irrigation area (net)	Paddy - Paddy : 70 ha, Paddy - Upland Crops : 80 ha Rainy Season Paddy : 160 ha	330 ha	
- Diversion weir	H.Tay-Un, Dam No.1 Earthfill dam H.Thon, Dam No.2 Earthfill dam Dam No.3 Earthfill dam	1 place 1 place 1 place	
- Earthfill dam	V1 = 21,000 m3, V2 = 49,000 m3, V3 = 10,000 m3	3 nos.	
- Reservoir	Effective storage capacity = m3 Effective storage capacity = 158,000 m3 Effective storage capacity = 65,000 m3		
- Regulation pond		1 place	
- Design discharge	Dam No.1 Dam No.2	0.489 m3/sec. 0.382 m3/sec.	
- Main irrigation canals	Concrete lining canal, 2 canals	2.5 km	
- Secondary irrigation canals	Concrete lining canal, 3 canals	2.3 km	
- Secondary drainage canals	Earth canal, 1 canal	0.1 km	
- Inspection roads	Effective width = 3.0 m, Gravel pavement	5.0 km	
- Farm ponds			
(3) Rural Infrastructure Facilities			
- Water supply system	Water system with electric pump	4 systems	
Water source	Houay Thon and Houay Tit		
Water demand		1.14 lit/sec	
Pumping intake pipe		750 m	
Filter tank		4 nos.	
Distribution tank		4 nos.	
Communal tap		25 nos.	
Electric pump		4 nos.	
- Village Road :	Penetration macadam pavement Gravel pavement	none 1.7 km	
- School	Class-III primary school (4 rooms, 168 m2) Class-V primary school (6 rooms, 336 m2)	2 nos. none	
- Village community hall	Type-A (3 rooms, 168 m2) Type-B (3 rooms, 252 m2) Type-C (4 rooms, 336 m2)	2 nos. 1 no. none	

表 2.5 (6/8) 施設計画骨子 - 野菜卸し売り市場施設 -

General Description			
Scheme Name	Establishment of Vegetable Wholesale Marketing Facility		
Location and Altitude	Center of Pakxong Town		
No. of Target Villages	Whole villages of vegetable production area around Pakxong in Boloven Plateau		
Development Plan			
Item	Description	Quantity	Remarks
Wholesale market facility		1	
- Working space	30 x 20 m of Concrete floor and plat form type about 80 cm higher	2	
- Storage	100m ² of concrete type	1	
- Loading space	along the working space, 30 x 10m of asphaltic pavement	4	
- Packing space	800m ² of gravel pavement	1	
- Office space	100m ² for marketing organization including conference room 40m ² for selling shop of farm inputs 6 rooms of 3 x 4m for buyers	1 2	
- Transportation	Ston -truck	1	
- Communication equipment	Radio communication system, facsimile machine (in Pakse)	1 set	
- Computer, Printer, Other office equipment		1 set	

表 2.5 (7/8) 施設計画骨子 - 高原野菜実証展示場 -

General Description			
Scheme Name	Establishment of Highland Vegetable Trial and Demonstration Station		
Location and Altitude	Ban Lak 45, 1200 m		
No. of Target Villages	Whole villages of vegetable production area around Pakxong in Boloven Plateau		
Development Plan			
Item	Description	Quantity	Remarks
Highland Vegetable Trial and Demonstration Station	Introduction, trial and demonstration of cultivation techniques of highland vegetables, trials for processing of tea, extension through training of officers and farmers	50 ha	
- Trial Farm			
- Office space			
- Office equipment			
- Storage			
- Farm machinery, equipment and tools			
- Simple Laboratory with equipment			

表 2.5 (8/8) 施設計画骨子 - 農業普及サービス -

General Description			
Scheme Name	Strengthening of Agricultural Extension Services		
Location and Altitude	Pakxong District, Salavan District, Laongam District and Thateng District		
No. of Target Villages			
Development Plan			
Item	Description	Quantity	Remarks
Agricultural Extension Services			4 Districts
- Office Equipment	Supply of copy machine,	4 No.	
- Extension materials and equipment	Audio visual aid and materials, training equipment	LS	
- Transportation	2WD-pickups, mortar cycles	LS	
- Office & Storage	Establishment of office space in provincial office		

表 2.6 事業費

Description	Unit: US\$		
	Foreign Currency	Local Currency	Total
1 Construction Cost			
(1) Preparatory Work	<u>240,000</u>	<u>103,000</u>	<u>343,000</u>
(2) Upper Champi Scheme			
a) Agricultural Development Works	2,830,000	1,213,000	4,043,000
b) Rural Infrastructure Works	1,186,000	509,000	1,695,000
(Sub-Total)	<u>4,016,000</u>	<u>1,722,000</u>	<u>5,738,000</u>
(3) Upper Tapoung Scheme			
a) Agricultural Development Works	798,000	342,000	1,140,000
b) Rural Infrastructure Works	1,249,000	536,000	1,785,000
(Sub-Total)	<u>2,047,000</u>	<u>878,000</u>	<u>2,925,000</u>
(4) Upper Kapheu Scheme			
a) Agricultural Development Works	2,604,000	1,116,000	3,720,000
b) Rural Infrastructure Works	1,085,000	465,000	1,550,000
(Sub-Total)	<u>3,689,000</u>	<u>1,581,000</u>	<u>5,270,000</u>
(5) Lower Xe Set Scheme			
a) Agricultural Development Works	6,157,000	2,639,000	8,796,000
b) Rural Infrastructure Works	1,005,000	432,000	1,437,000
(Sub-Total)	<u>7,163,000</u>	<u>3,070,000</u>	<u>10,233,000</u>
(6) Upper Tay-Un Scheme			
a) Agricultural Development Works	1,526,000	655,000	2,181,000
b) Rural Infrastructure Works	379,000	163,000	542,000
(Sub-Total)	<u>1,906,000</u>	<u>817,000</u>	<u>2,723,000</u>
Total [(1) to (6)]	<u>19,062,000</u>	<u>8,170,000</u>	<u>27,232,000</u>
2 On-farm Development Cost			
(1) Upper Champi Scheme	380,000	163,000	543,000
(2) Upper Tapoung Scheme	49,000	21,000	70,000
(3) Upper Kapheu Scheme	571,000	246,000	817,000
(4) Lower Xe Set Scheme	728,000	312,000	1,040,000
(5) Upper Tay-Un Scheme	229,000	99,000	328,000
Total	<u>1,957,000</u>	<u>841,000</u>	<u>2,798,000</u>
3 Sub-Total (1 - 2)	<u>21,021,000</u>	<u>9,009,000</u>	<u>30,030,000</u>
4 Land Acquisition and Compensation		<u>14,000</u>	<u>14,000</u>
5 Engineering and Administration cost (3x10%)	<u>2,102,000</u>	<u>900,000</u>	<u>3,002,000</u>
6 O & M Equipment	<u>960,000</u>		<u>960,000</u>
7 Highland Vegetable Trial and Demonstration Station	<u>1,320,000</u>	<u>304,000</u>	<u>1,624,000</u>
8 Marketing facilities	<u>777,000</u>	<u>205,000</u>	<u>982,000</u>
9 Physical Contingencies (3x10%)	<u>2,102,000</u>	<u>900,000</u>	<u>3,002,000</u>
10 Grand Total	<u>28,282,000</u>	<u>11,332,000</u>	<u>39,614,000</u>

表 2.7 経済費用と便益のキャッシュフロー (2/2)

(6) 全5計画地区

(Unit:US\$1000)

Year	Cost			Total	Irrigation Benefit	Balance
	Construction	O & M	Replacement			
1	2,821			2,821		-2,821
2	7,105			7,105	138	-6,968
3	8,708			8,708	343	-8,365
4	6,202			6,202	758	-5,445
5	3,441			3,441	1,234	-2,207
6		3		3	1,722	1,719
7		17		17	2,300	2,283
8		38		38	2,410	2,372
9		74		74	2,410	2,336
10		111		111	2,410	2,299
11		147		147	2,410	2,263
12		183		183	2,410	2,227
13		216		216	2,410	2,194
14		238		238	2,410	2,172
15		252		252	2,410	2,158
16		252		252	2,410	2,158
17		252		252	2,410	2,158
18		252		252	2,410	2,158
19		252		252	2,410	2,158
20		252		252	2,410	2,158
21		252		252	2,410	2,158
22		252	218	470	2,410	1,940
23		252	454	706	2,410	1,704
24		252	262	514	2,410	1,896
25		252	244	496	2,410	1,914
26		252		252	2,410	2,158
27		252	109	361	2,410	2,049
28		252	623	875	2,410	1,535
29		252	437	689	2,410	1,721
30		252	502	754	2,410	1,656
31		252		252	2,410	2,158
32		252		252	2,410	2,158
33		252		252	2,410	2,158
34		252		252	2,410	2,158
35		252		252	2,410	2,158
36		252		252	2,410	2,158
37		252		252	2,410	2,158
38		252		252	2,410	2,158
39		252		252	2,410	2,158
40		252		252	2,410	2,158
41		252		252	2,410	2,158
42		252	218	470	2,410	1,940
43		252	454	706	2,410	1,704
44		252	262	514	2,410	1,896
45		252	244	496	2,410	1,914
46		252		252	2,410	2,158
47		252		252	2,410	2,158
48		252		252	2,410	2,158
49		252		252	2,410	2,158
50		252		252	2,410	2,158
51		252		252	2,410	2,158
52		252	109	361	2,410	2,049
53		252	623	875	2,410	1,535
54		252	437	689	2,410	1,721
55		252		252	2,410	2,158
	28,277	11,368	5,196	44,841	122,174	77,333

ERR = 6.9%

表 2.8 事業を実施した場合の農家経済

Priority Area	Upper Champi		Upper Taroung			Upper Kaphou
	Coffee	Coffee+Tea	Coffee+Vegetables	Coffee+Vegetables	Coffee+Vegetables	Coffee+Vegetables
Farm Type						
Irrigated Field (Cropping Pattern)	Coffee : 2.7 ha	Coffee : 2.3 ha Tea : 1 ha	Vege.-Up.C: 0.3 ha	Vege.-Up.C: 0.3 ha	Vege.-Up.C: 0.3 ha	Coffee : 1.6 ha Low R.-Up.C. : 0 ha
Non-irrigated fields	-	-	Coffee 2 ha	Coffee 3 ha Vegetables 0 ha	Coffee 3 ha Upland rice 0 ha	-
No. of Household	40 HH.	186 HH.	76 HH.	160 HH.	26 HH.	431 HH.
1. Gross Income	(2,714)	(2,627)	(1,256)	(1,815)	(1,556)	(1,856)
1-1 Farm Income	2,714	2,627	1,256	1,815	1,556	1,856
1-2 Non-farm Income	0	0	0	0	0	0
2. Production Cost	600	594	179	351	276	308
3. Net Income	2,113	2,033	1,077	1,464	1,280	1,548
4. Living Expenses	(1,443)	(1,443)	(958)	(1,075)	(1,075)	(1,413)
4-1 Food Items	820	820	623	623	623	820
4-2 Non-food Items	623	623	335	452	452	623
5. Net Reserve	670	590	119	389	206	135

Remarks: Future living expense level is classified into three type as satisfy, average in national level, and average in rural level, based on the data from Agricultural Sector Memorandum Report (IBRD, 1994)
Future coffee price is applied for the estimation.

Priority Area	Lower Xe Set		Upper Tay-U			Lowland R
	Lowland Ric	Lowland Ric	Coffee+Lowland R	Coffee+Lowland R	Lowland R	Lowland R
Farm Type						
Irrigated Field (Cropping Pattern)	Low.R.-Low.R: 2.5 ha	Low.R.-Up.C.: 2.5 ha	Low.R.-Low.R: 1.2 ha	Low.R.-Up.C. 1.2 ha	Low.R.-Up.C. 2.5 ha	Low.R.-Fallow: 2.5 ha
Non-irrigated fields	-	-	Coffee 1.3 ha	Coffee 0.8 ha	- ha	- ha
No. of Household	80 HH.	320 HH.	17 HH.	48 HH.	29 HH.	71 HH.
1. Gross Income	(3,000)	(3,100)	(1,640)	(1,611)	(3,100)	(1,500)
1-1 Farm Income	3,000	3,100	1,640	1,611	3,100	1,500
1-2 Non-farm Income	0	0	0	0	0	0
2. Production Cost	1,105	1,030	411	451	925	448
3. Net Income	1,895	2,070	1,199	1,160	2,175	1,052
4. Living Expenses	(1,443)	(1,443)	(1,075)	(1,075)	(1,443)	(958)
4-1 Food Items	820	820	623	623	820	623
4-2 Non-food Items	623	623	452	452	623	335
5. Net Reserve	452	627	125	86	232	95

Remarks: Future living expense level is classified into three type as satisfy, average in national level, and average in rural level, based on the data from Agricultural Sector Memorandum Report (IBRD, 1994)
Future coffee price is applied for the estimation.

付 図

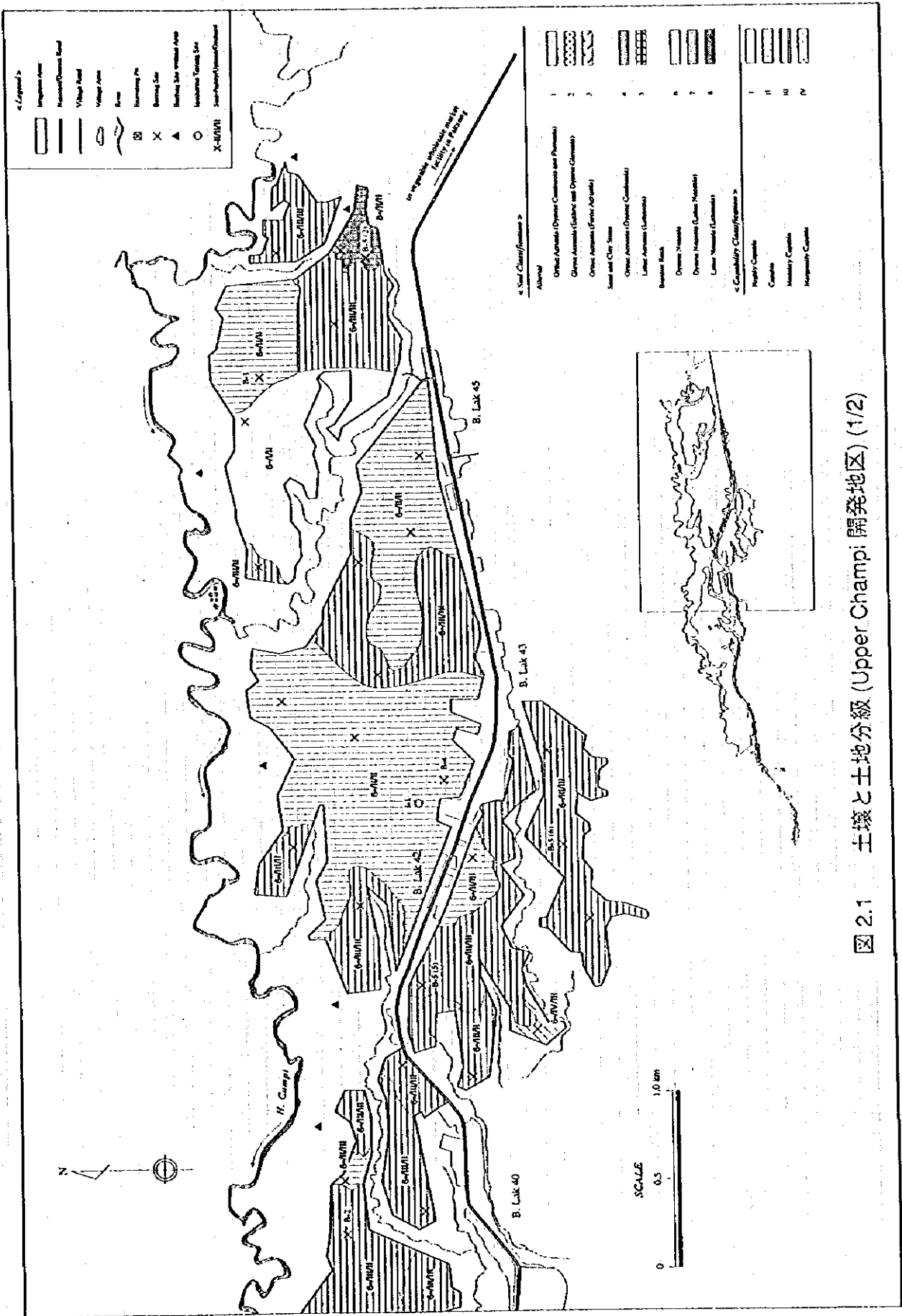


図 2.1 土壤と土地分級 (Upper Champi 開発地区) (1/2)

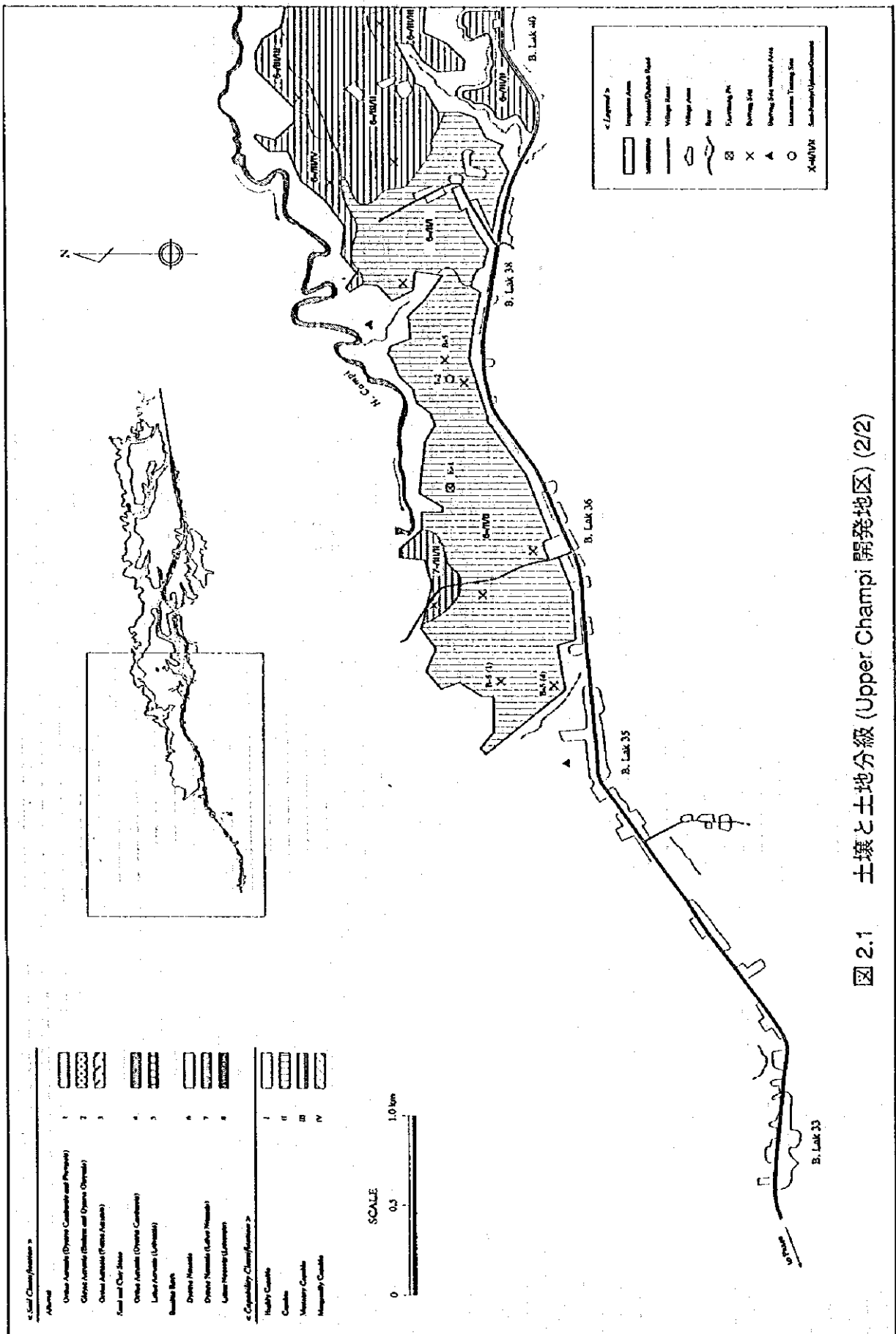
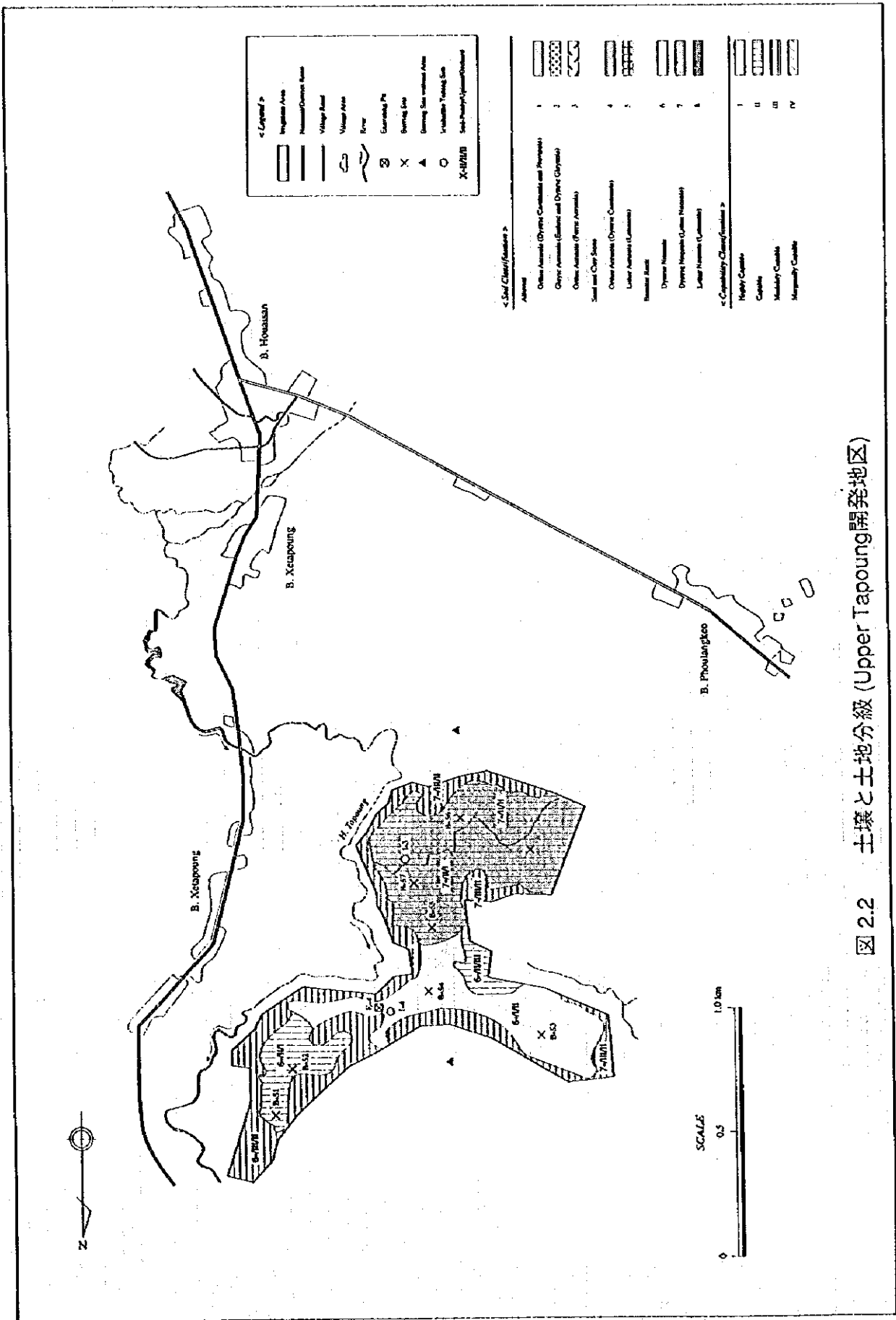


図 2.1 土壤と土地分級 (Upper Champi 開発地区) (2/2)



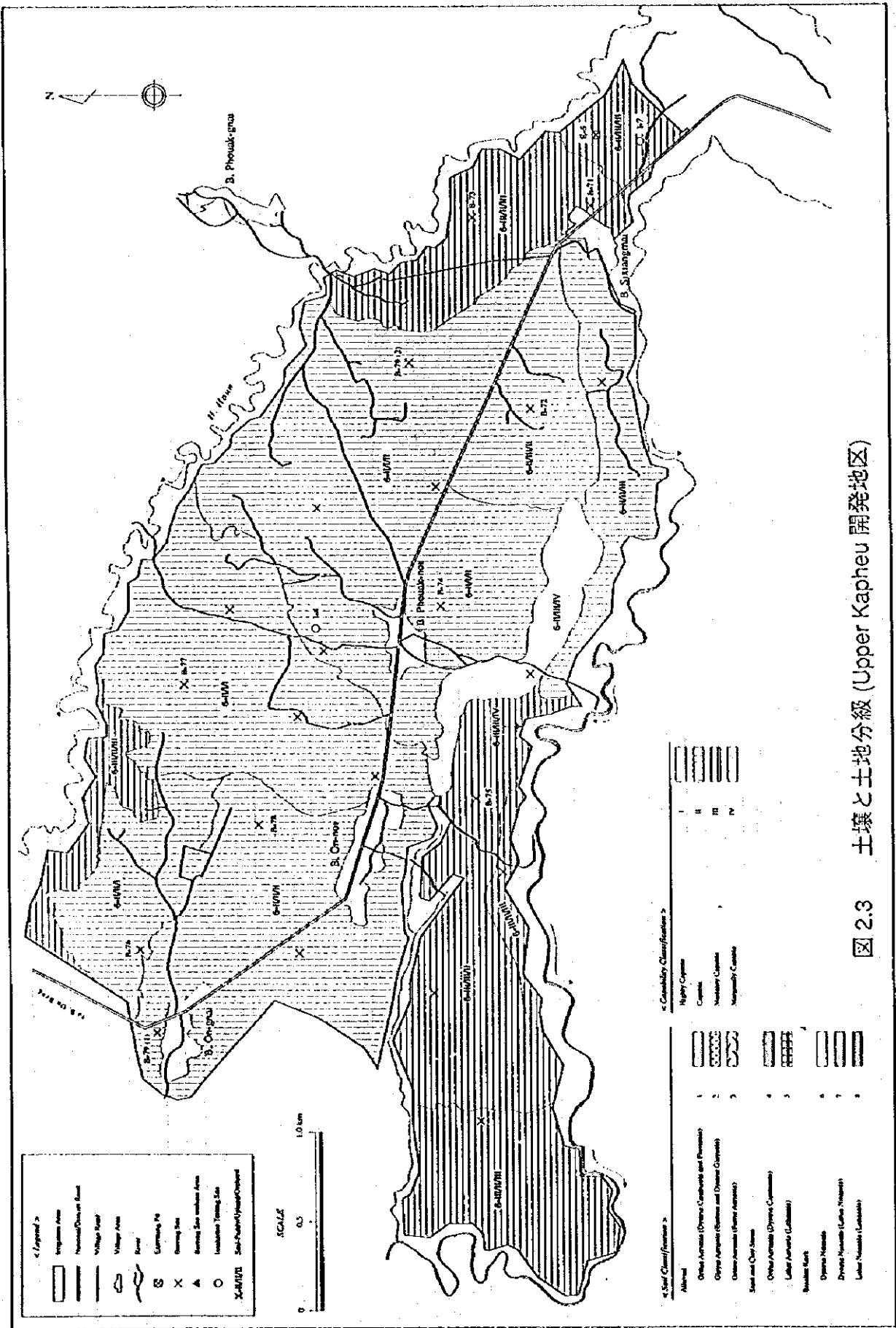
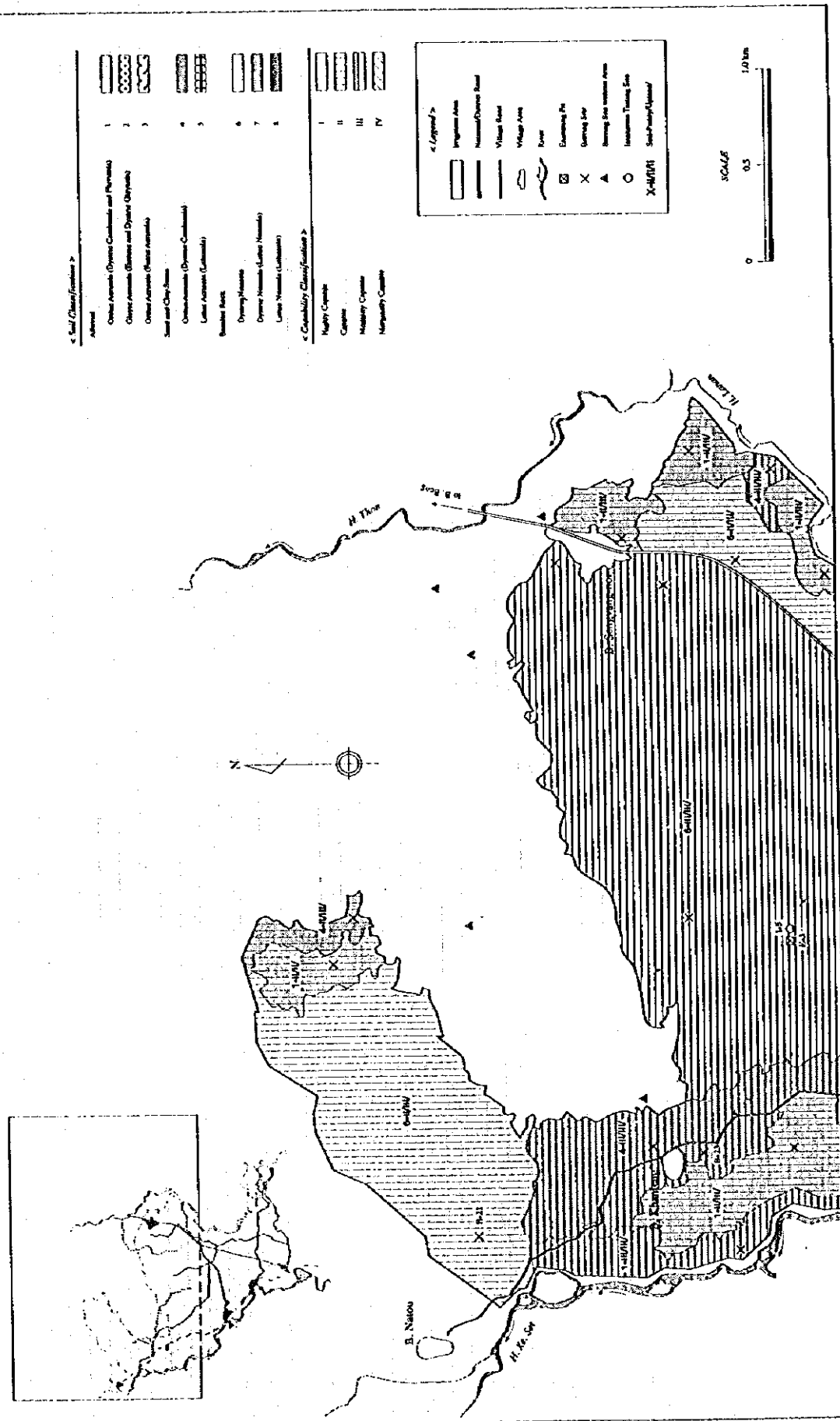


図 2.3 土壤と土地分級 (Upper Kapheu 開発地区)

図 2.4 土壌と土地分級 (Lower Xe Set 開発地区) (1/2)



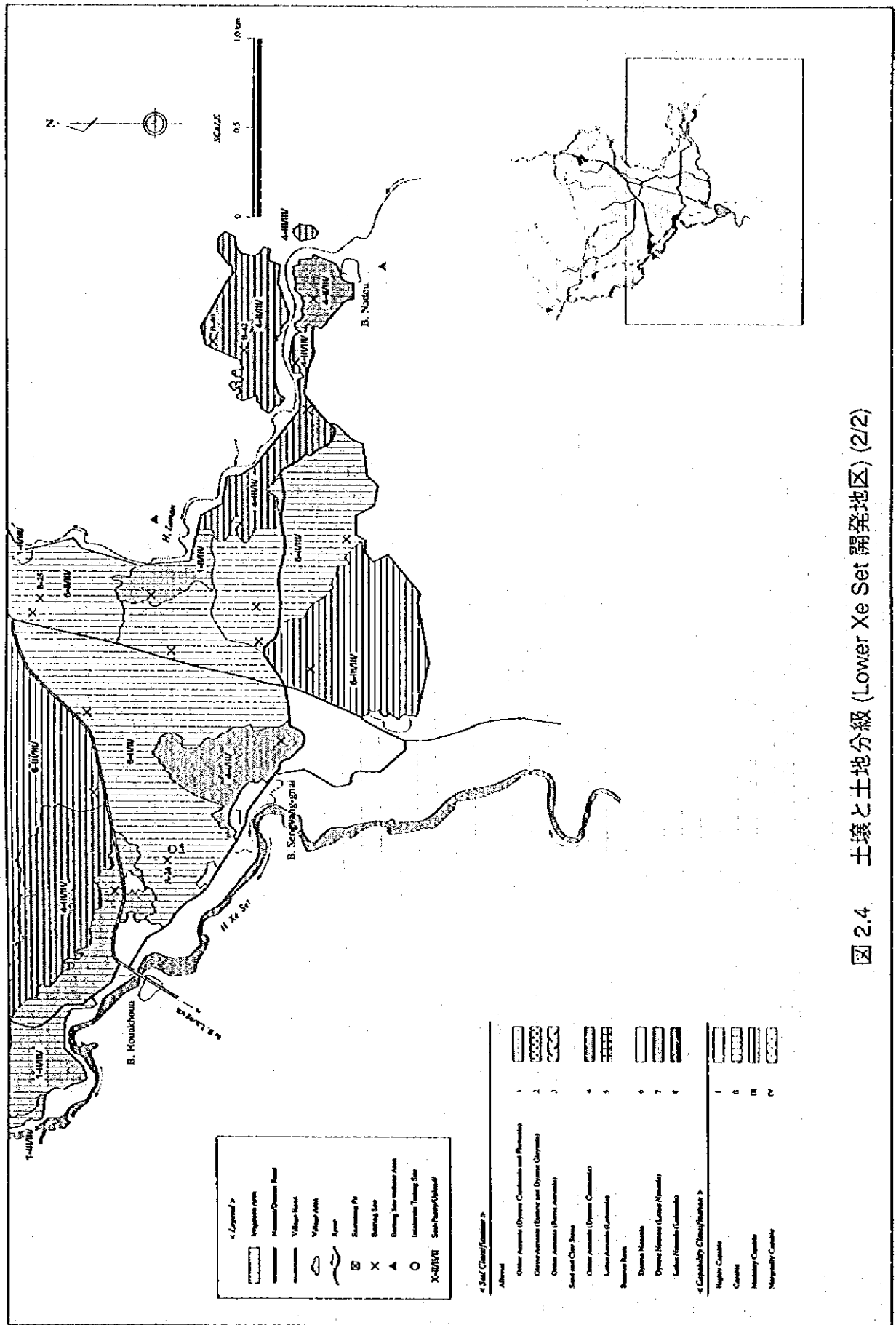


图 2.4 土壤与土地分級 (Lower Xe Set 開發地区) (2/2)

Legend

- Irrigation Area
- Forest/Quercus Forest
- Village Road
- Village Area
- River
- Settlement Pt.
- Barbed Wire
- Existing Area without ARA
- Irrigation Training Site
- X-ROAD (South-Pastor/Island)

Soil Classification

Other Systems (Dryer Conditions and Phosphorus)	1	
Other Systems (Soil and Dryer Conditions)	2	
Other Systems (Moisture Availability)	3	
Soil and Clay Shale	4	
Other Systems (Dryer Conditions)	5	
Other Systems (Soil)	6	
Dryer Systems	7	
Dryer Systems (Water Resources)	8	
Water Resources (Soil)	9	

Capability Class (Soil)

Highly Capable	I	
Capable	II	
Marginally Capable	III	
Not Capable	IV	

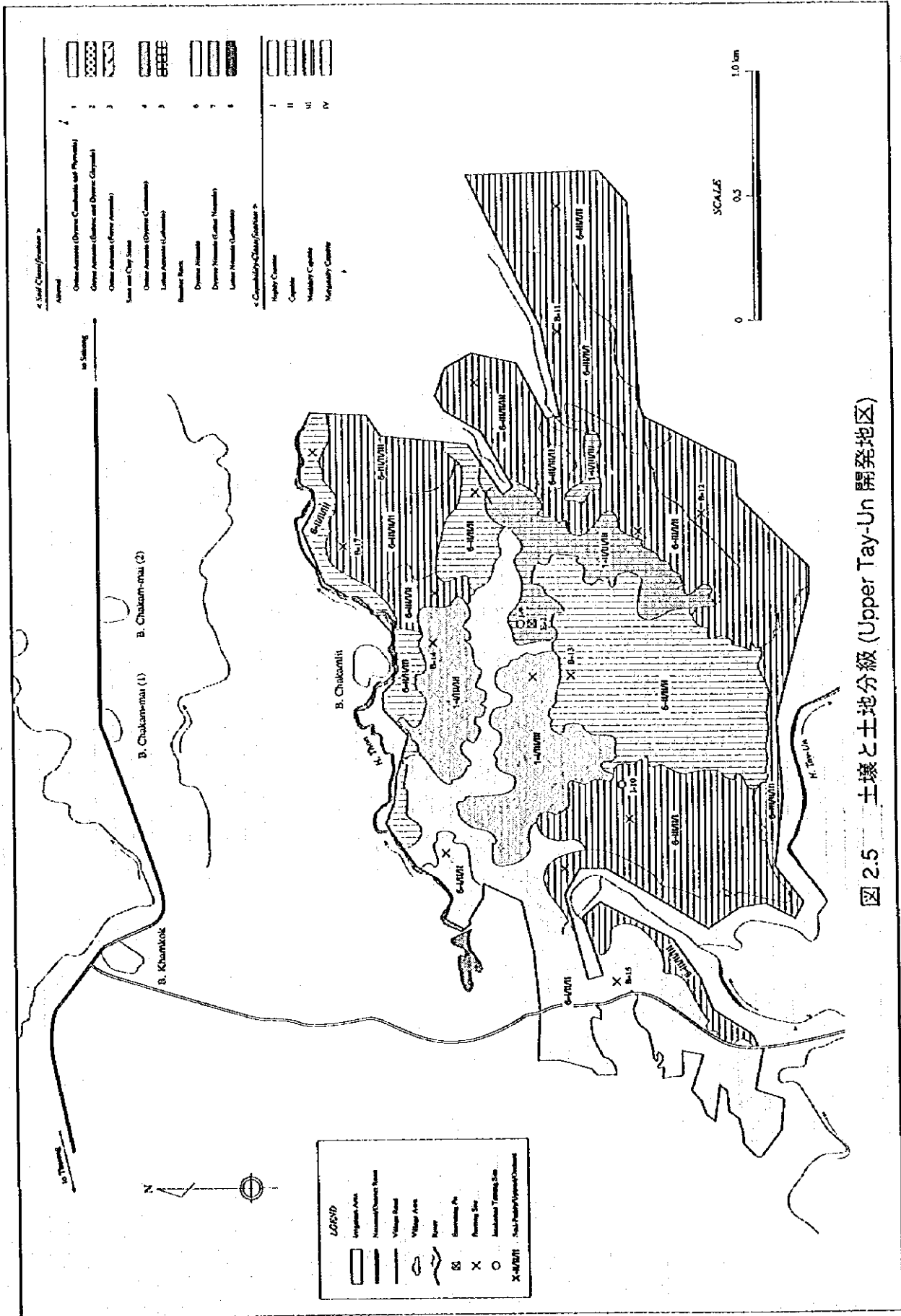
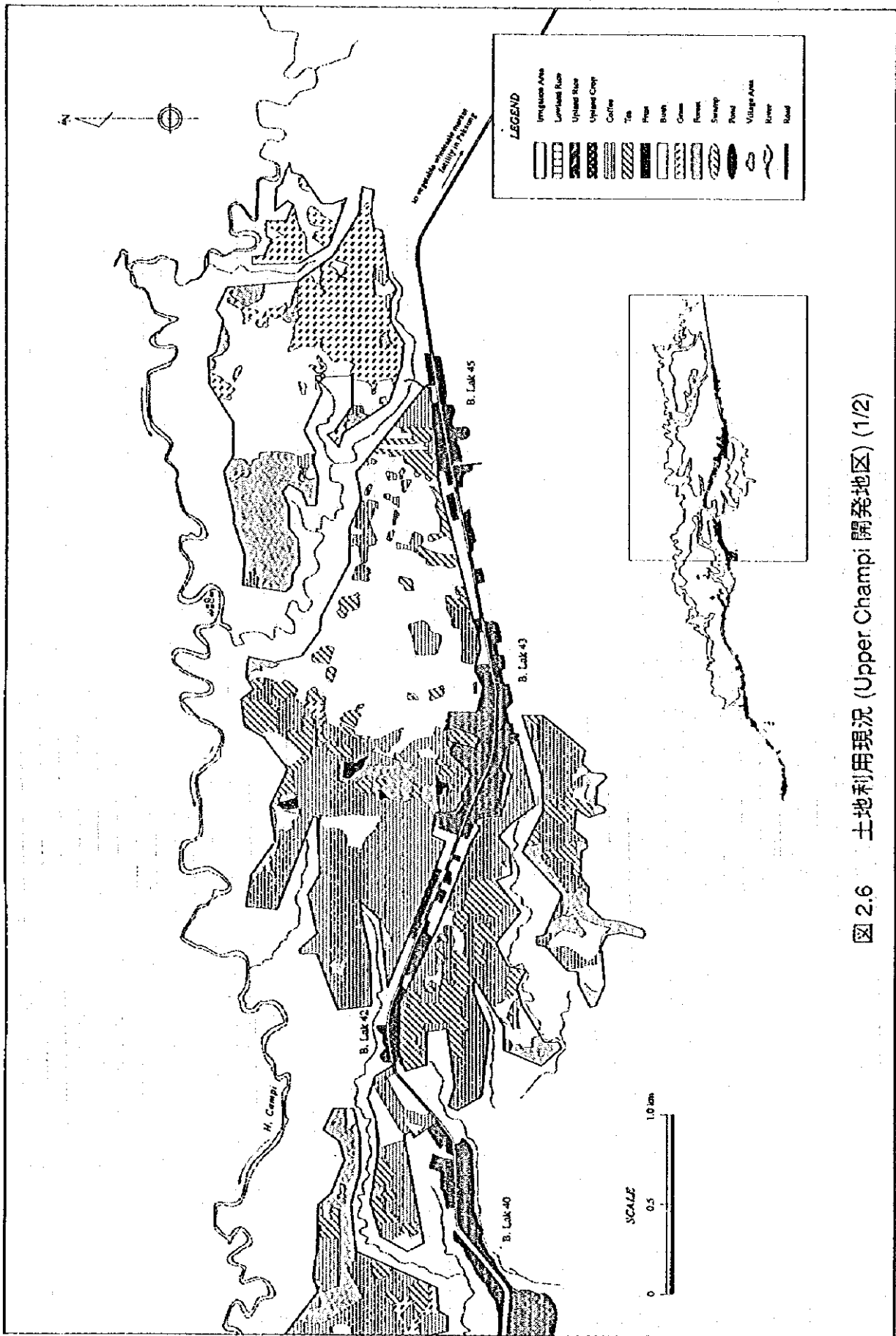
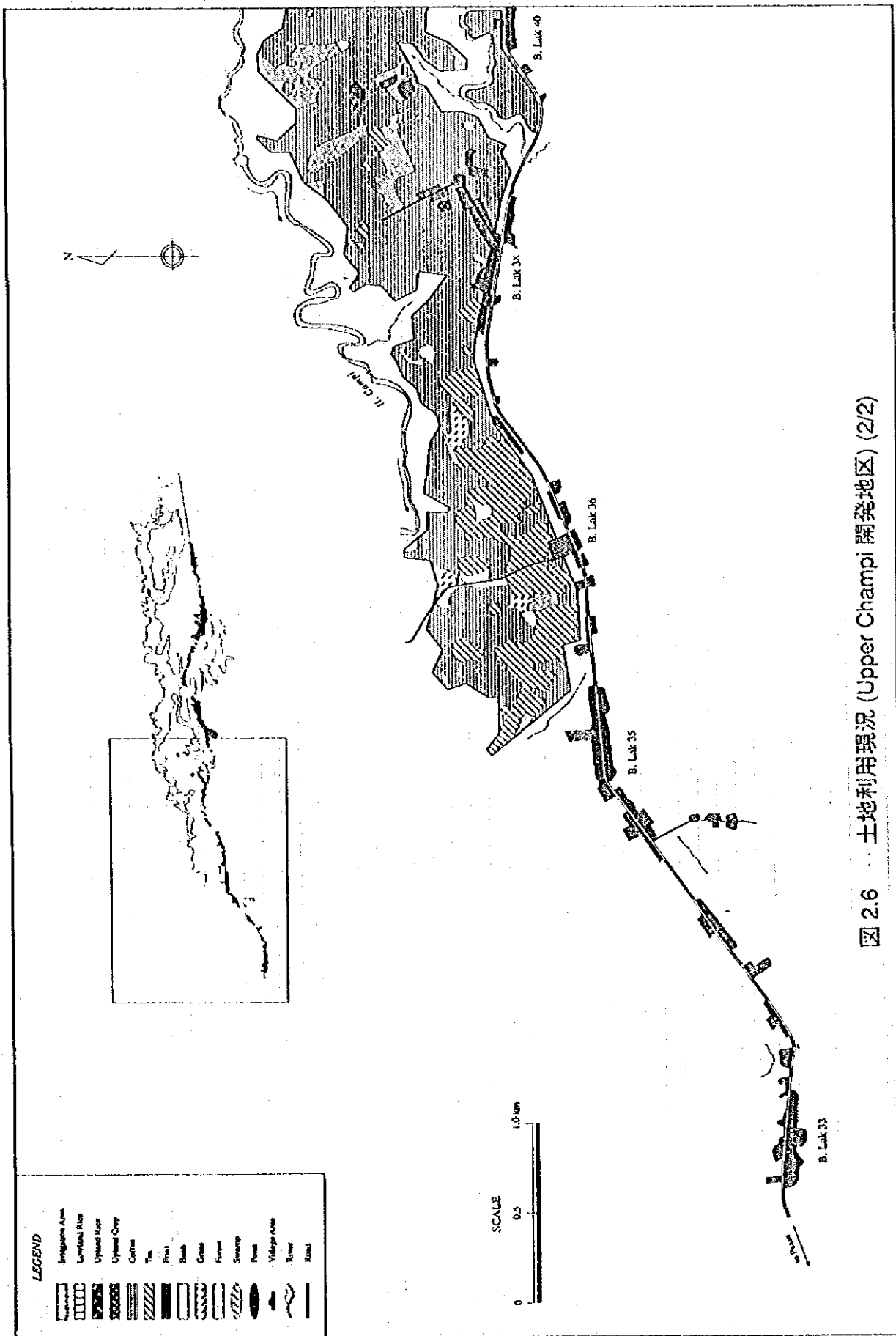


图 2.5 土壤と土地分級 (Upper Tay-Un 開発地区)





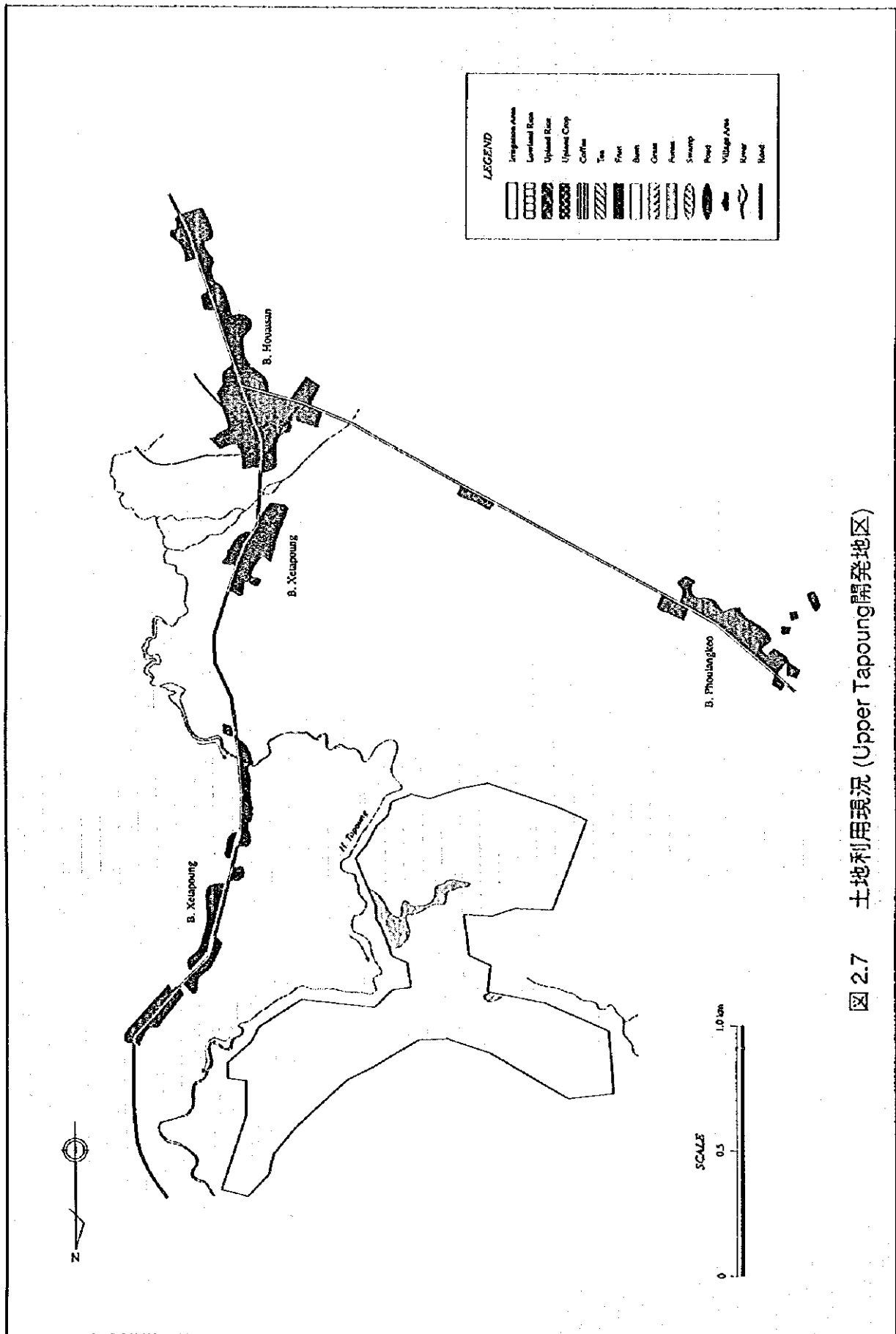


图 2.7 土地利用现状 (Upper Tapoung 开发地区)

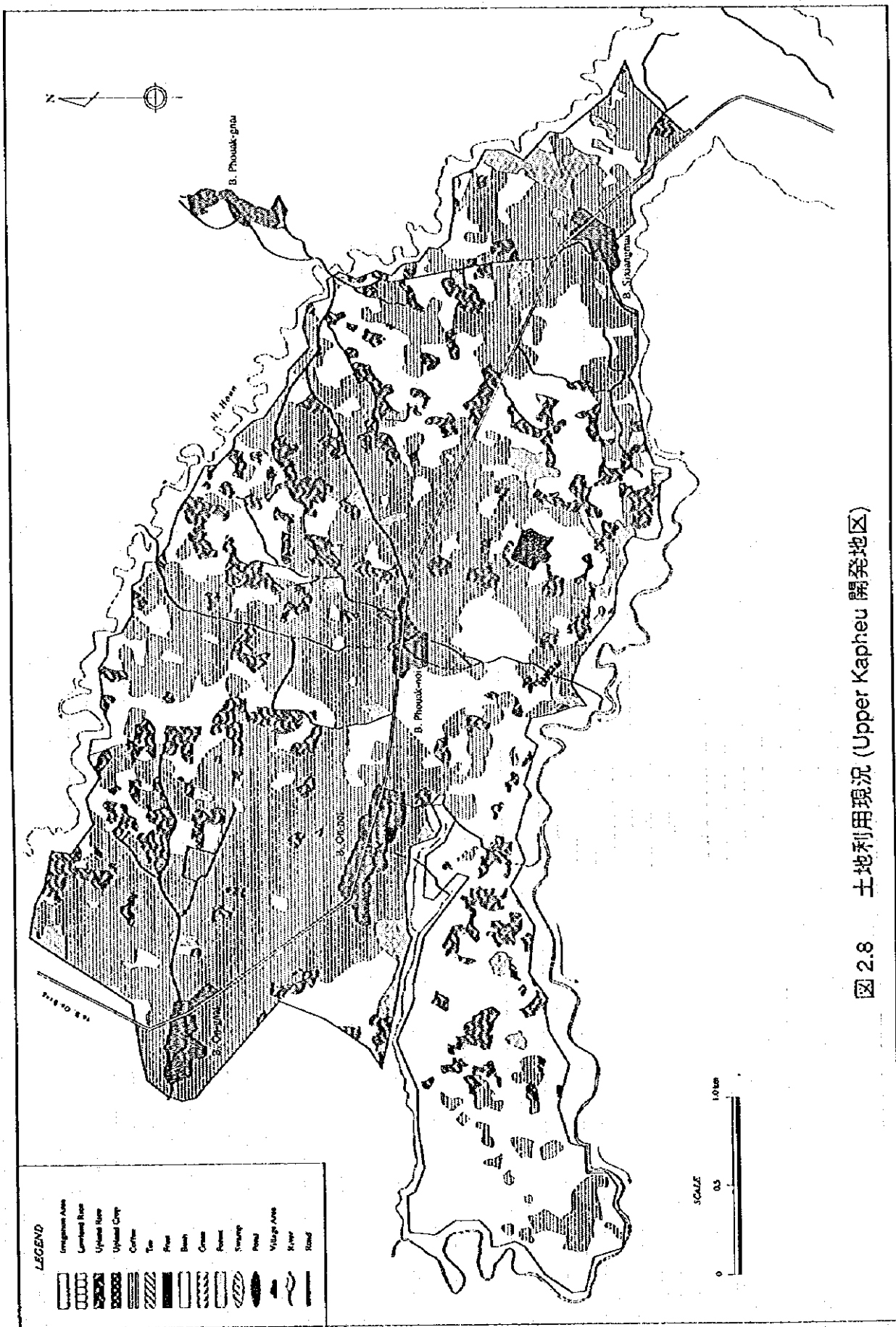
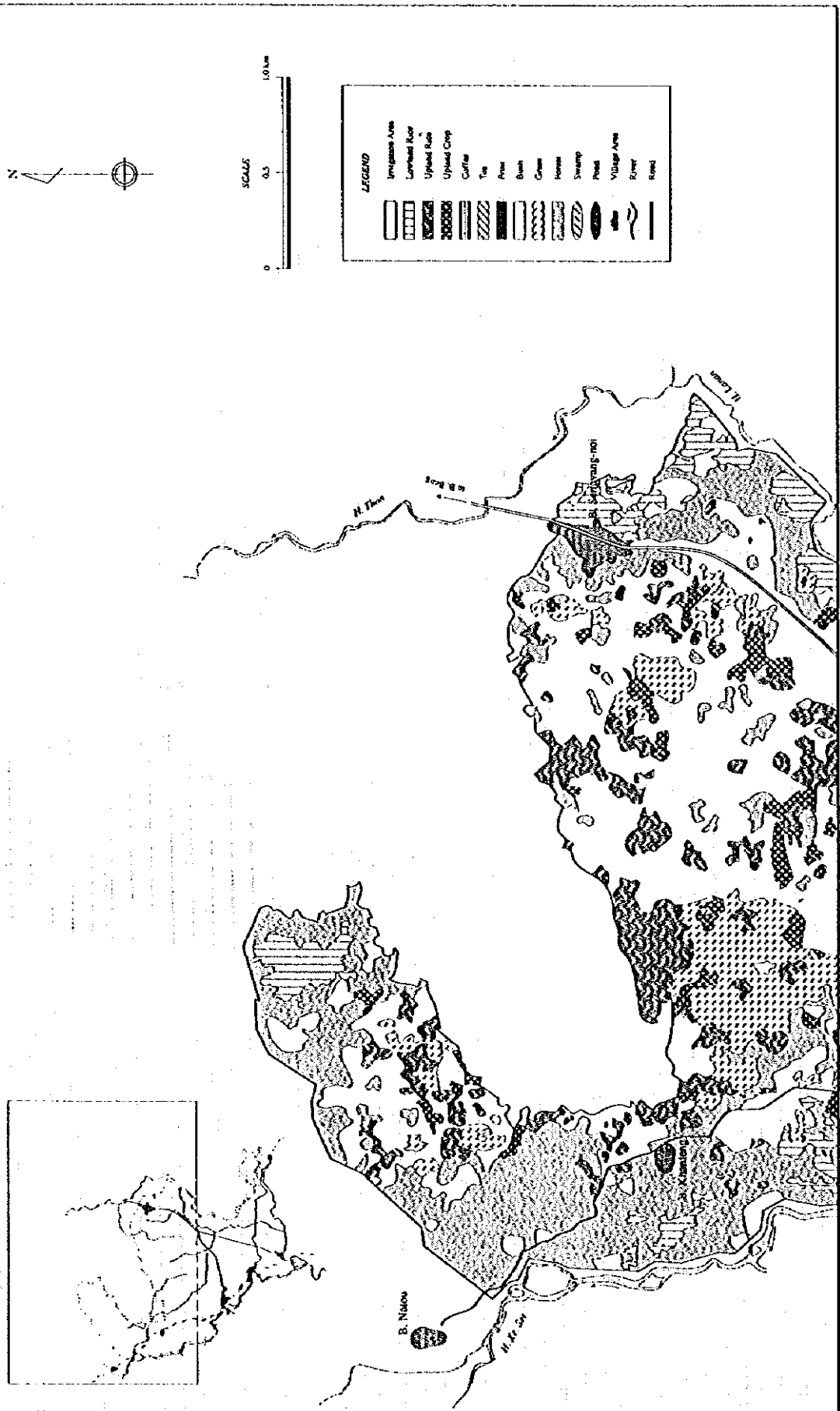


图 2.8 土地利用现状 (Upper Kapheu 開發地区)

图 2.9 土地利用现状 (Lower Xe Set 開發地区) (1/2)



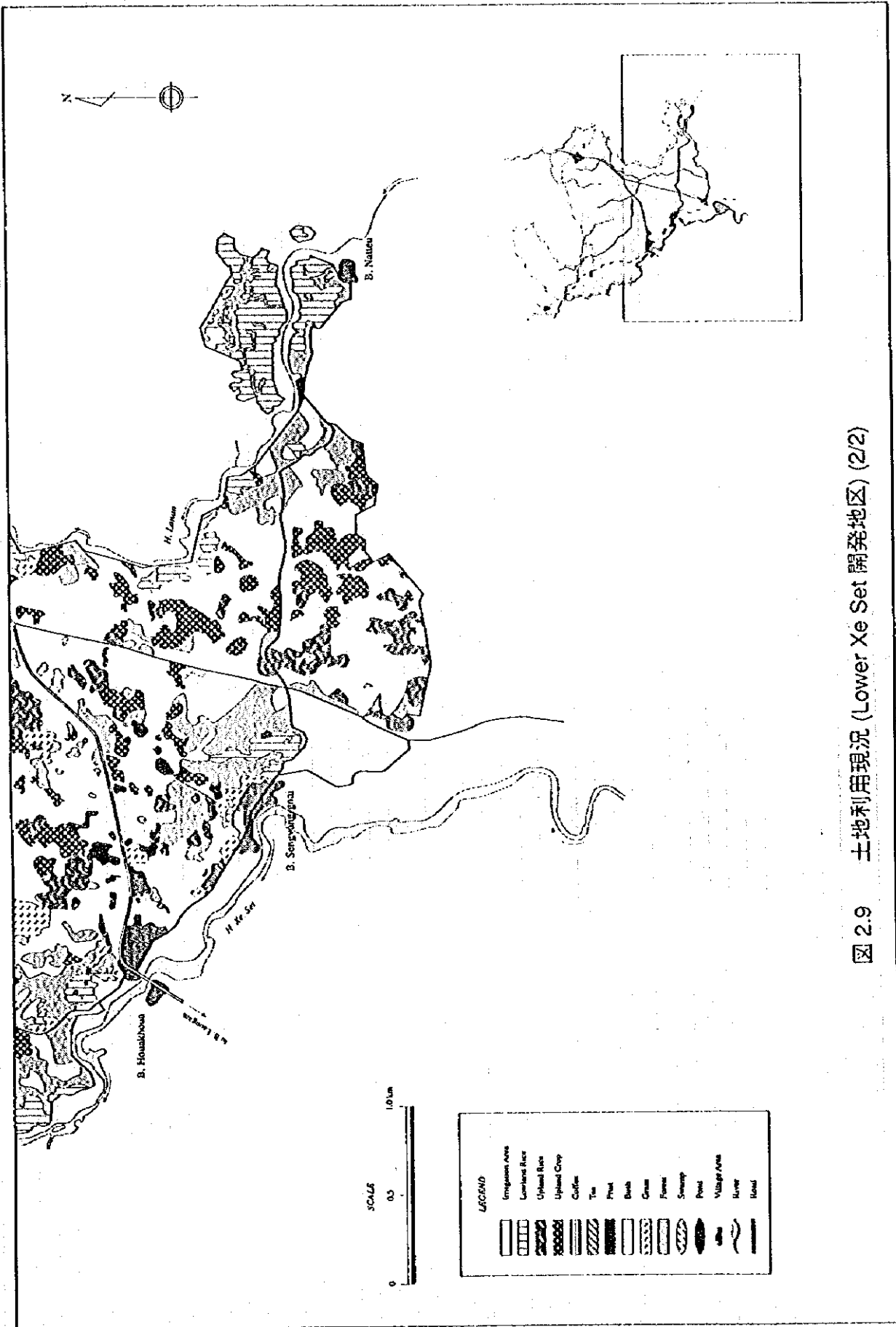


图 2.9 土地利用现状 (Lower Xe Set 开发地区) (2/2)

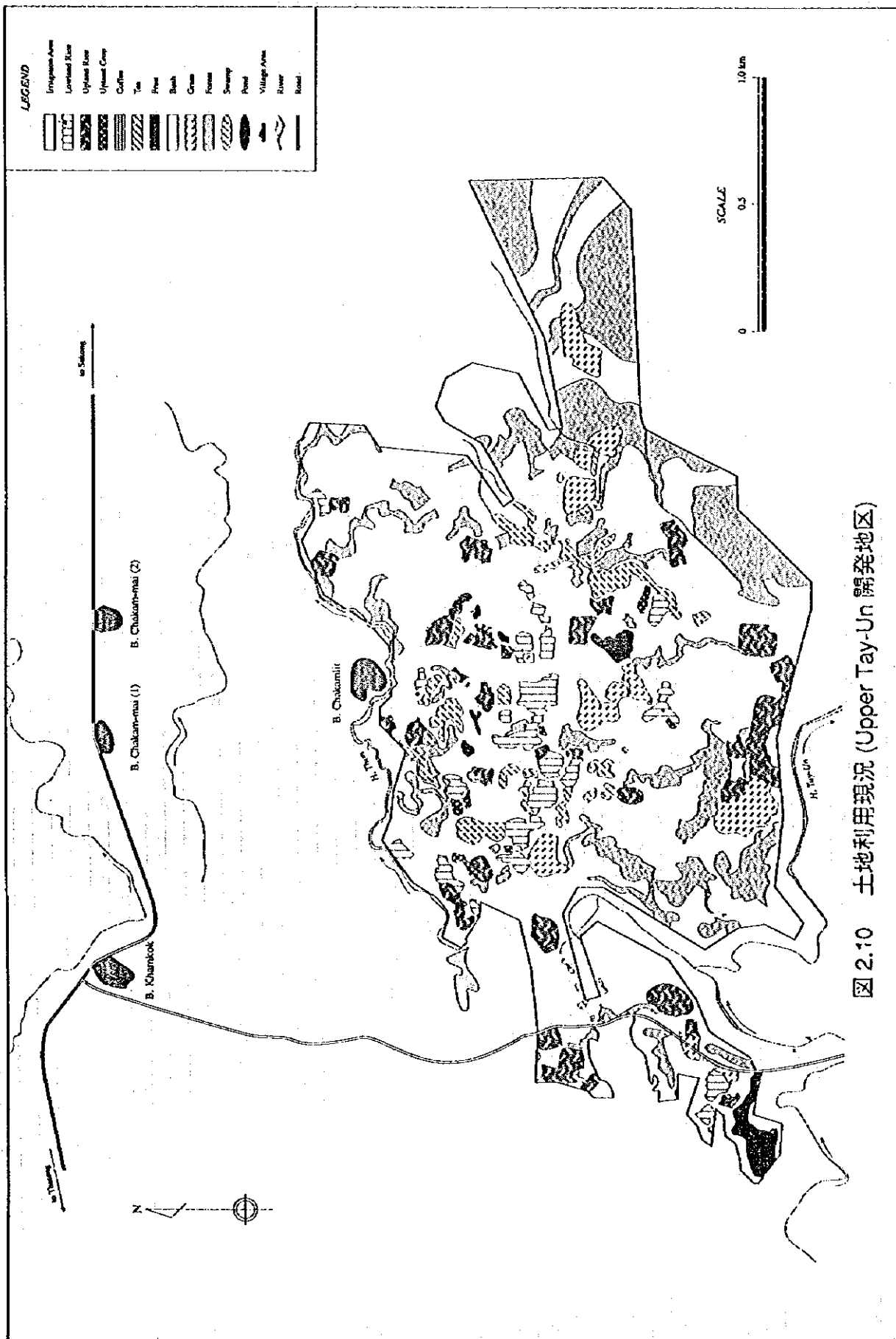


图 2.10 土地利用现状 (Upper Tay-Un 开发地区)

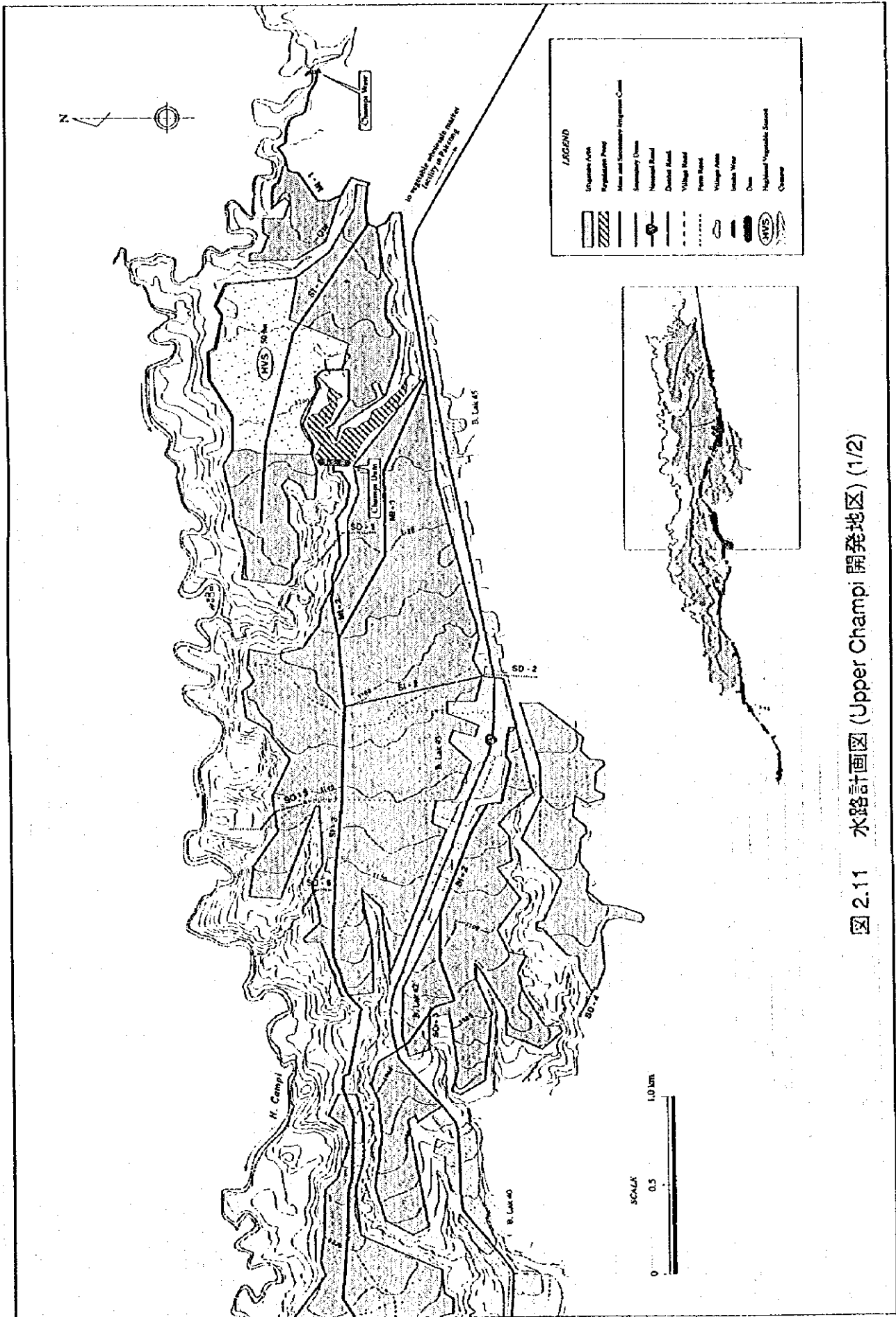


图 2.11 水路計画図 (Upper Champi 開発地区) (1/2)

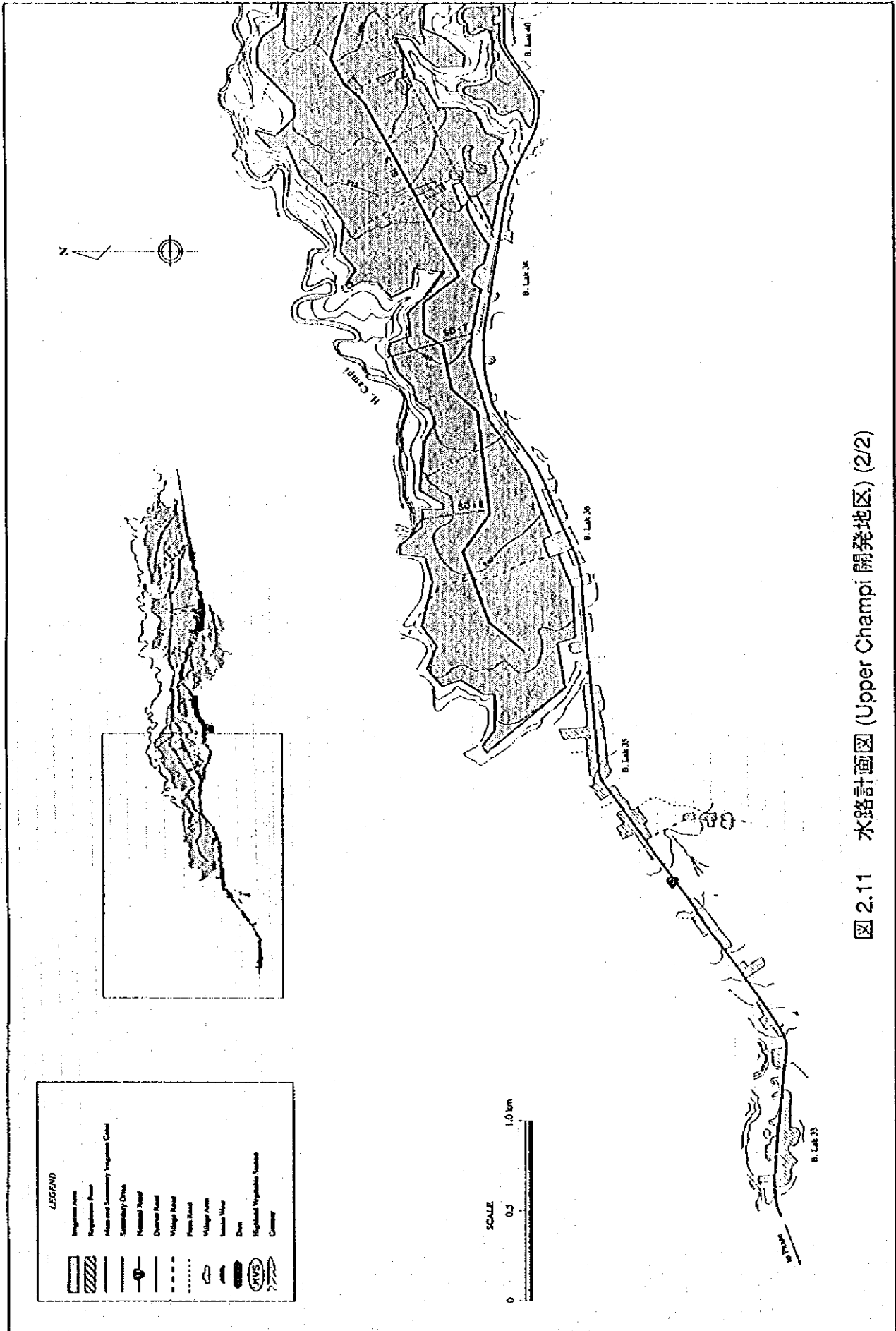


図 2.11 水路計画図 (Upper Champi 開発地区) (2/2)

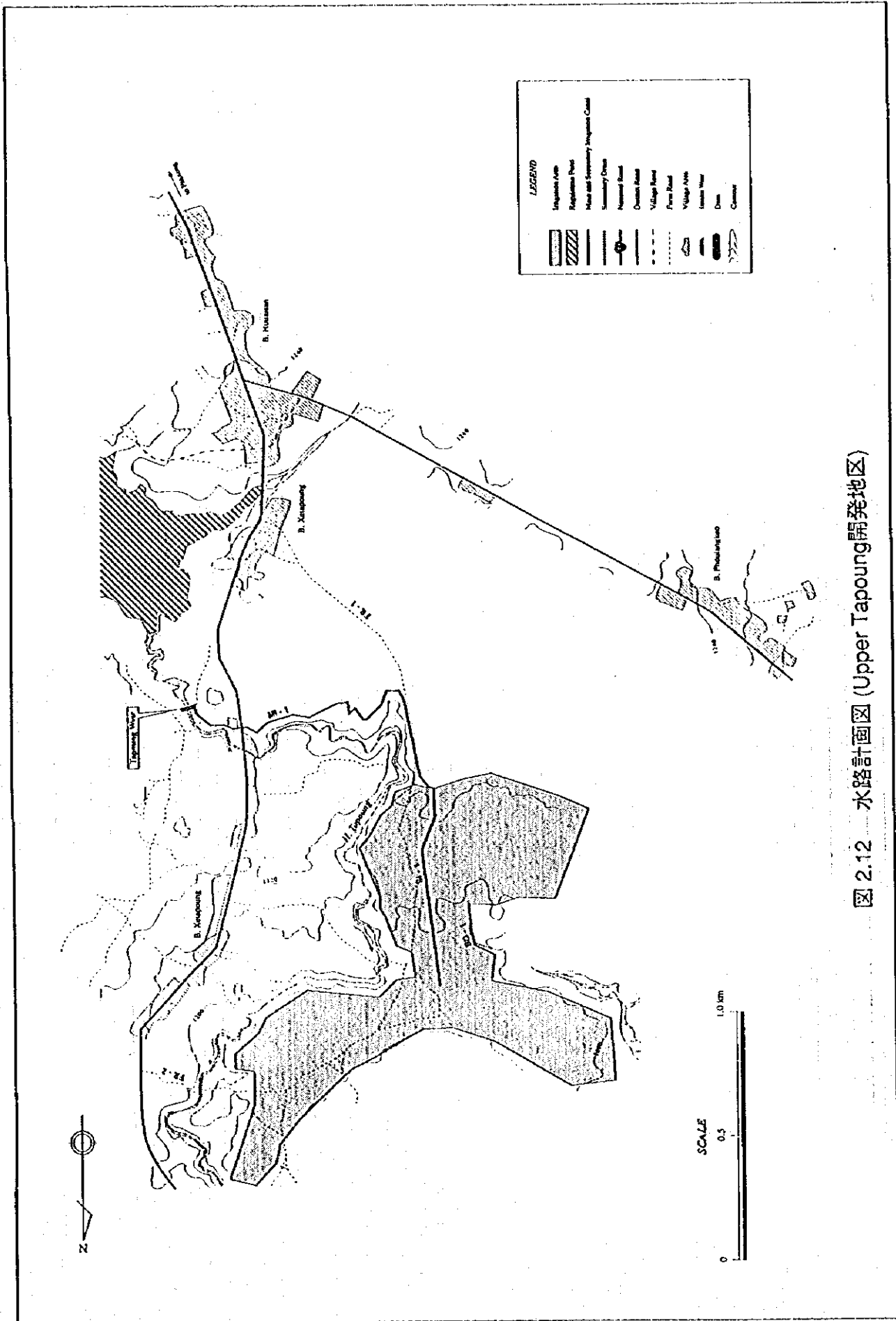


图 2.12 水路計画図 (Upper Tapoung 開発地区)

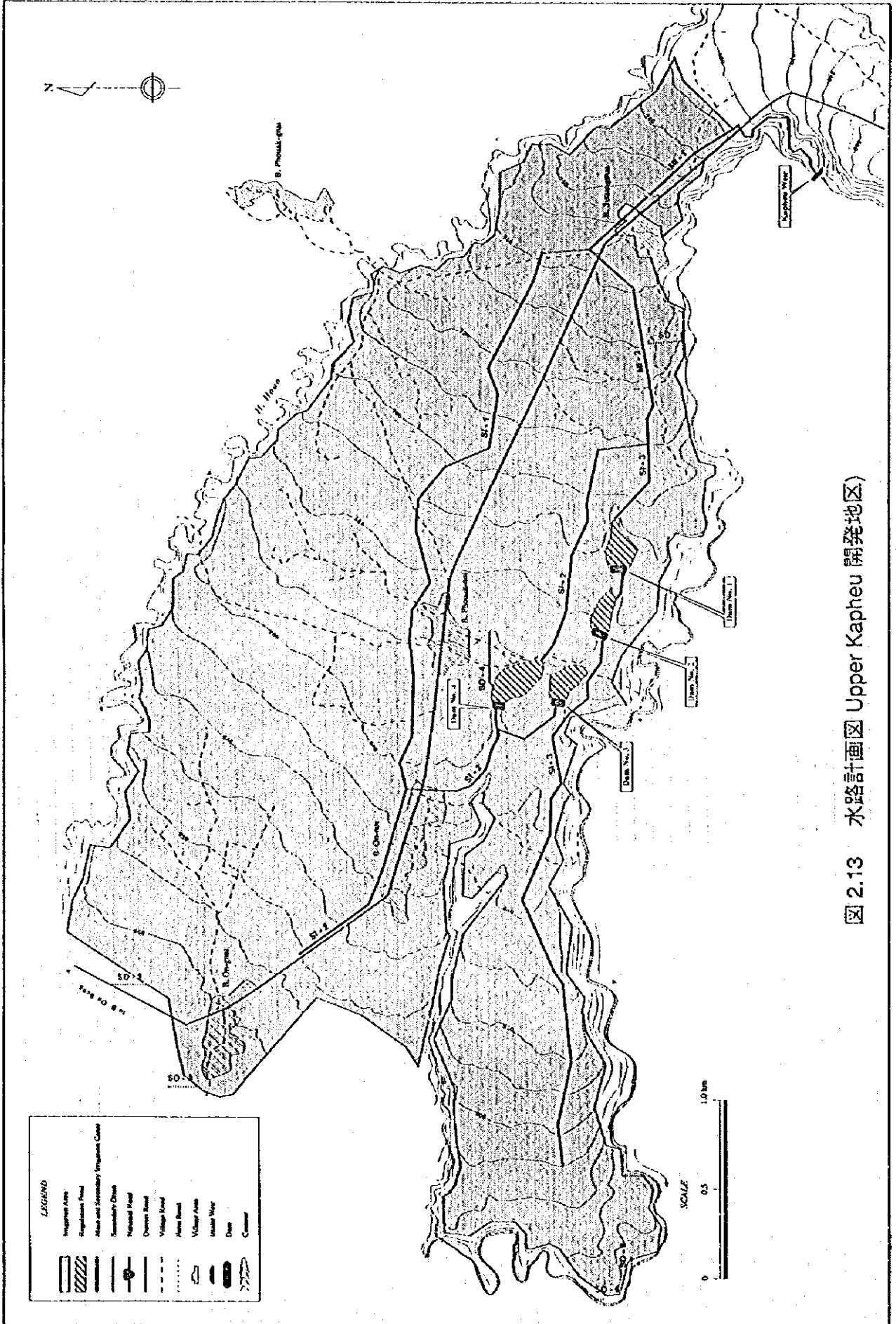
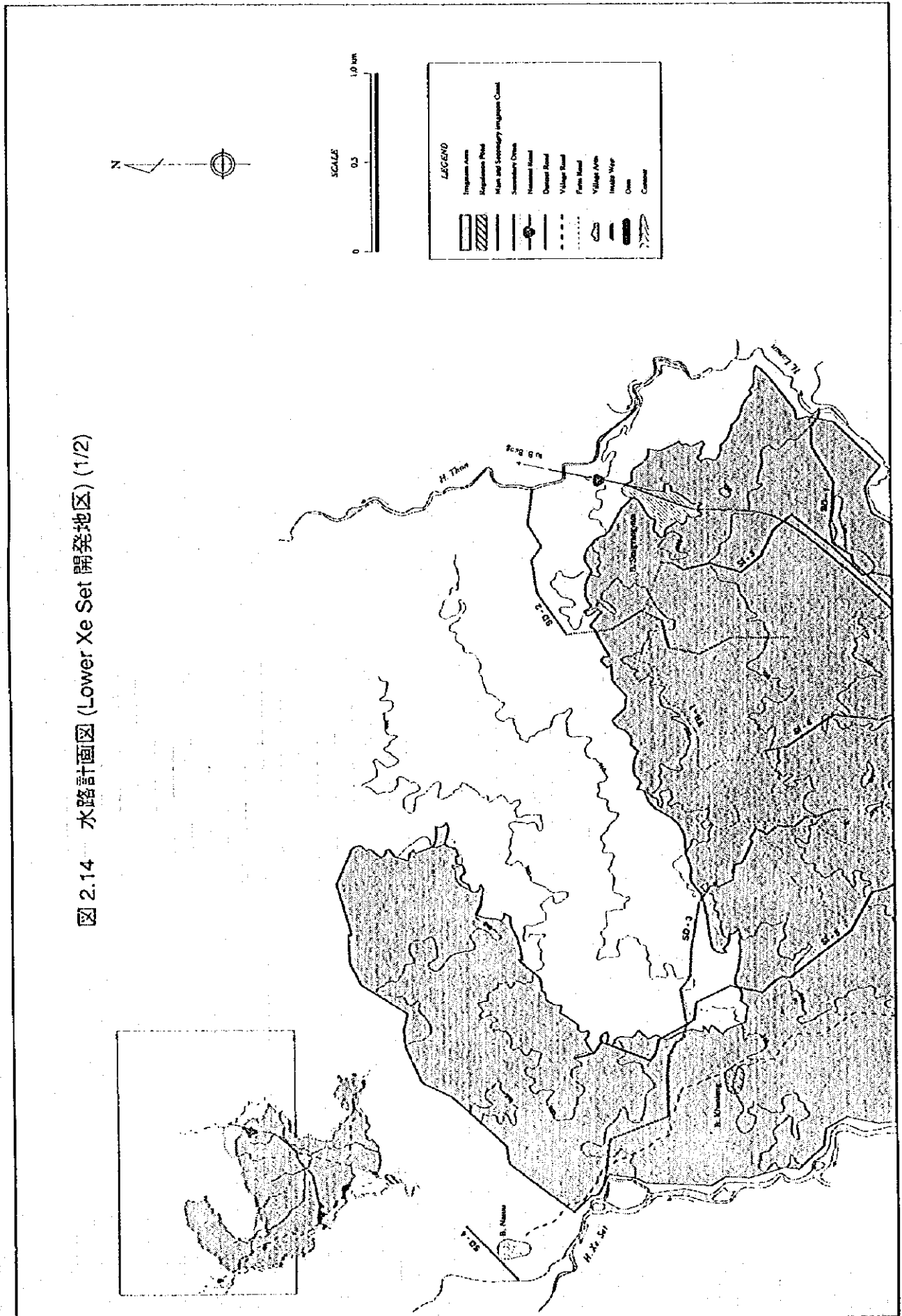


図 2.14 水路計画図 (Lower Xe Set 開発地区) (1/2)



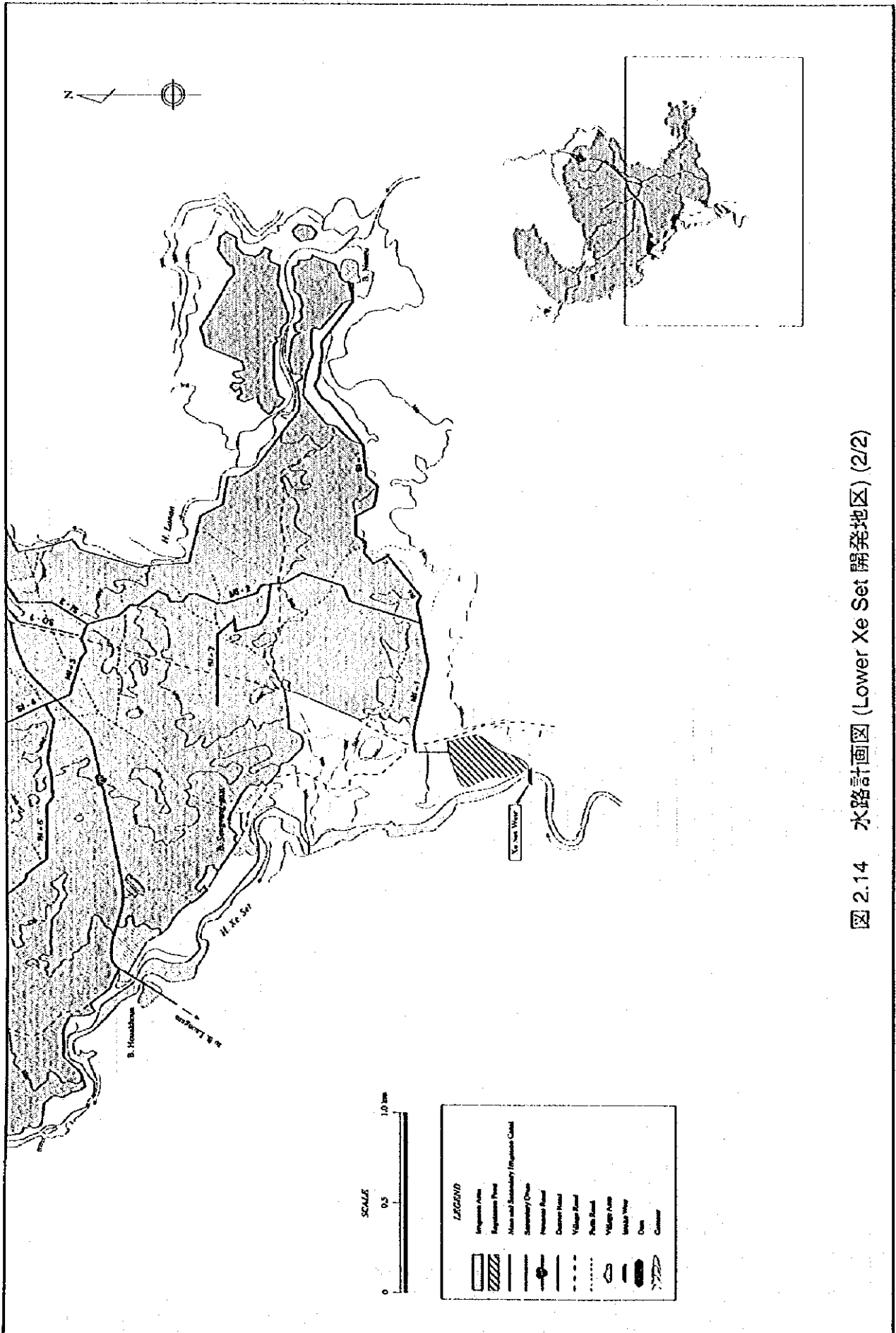


图 2.14 水路計画図 (Lower Xe Set 開発地区) (2/2)

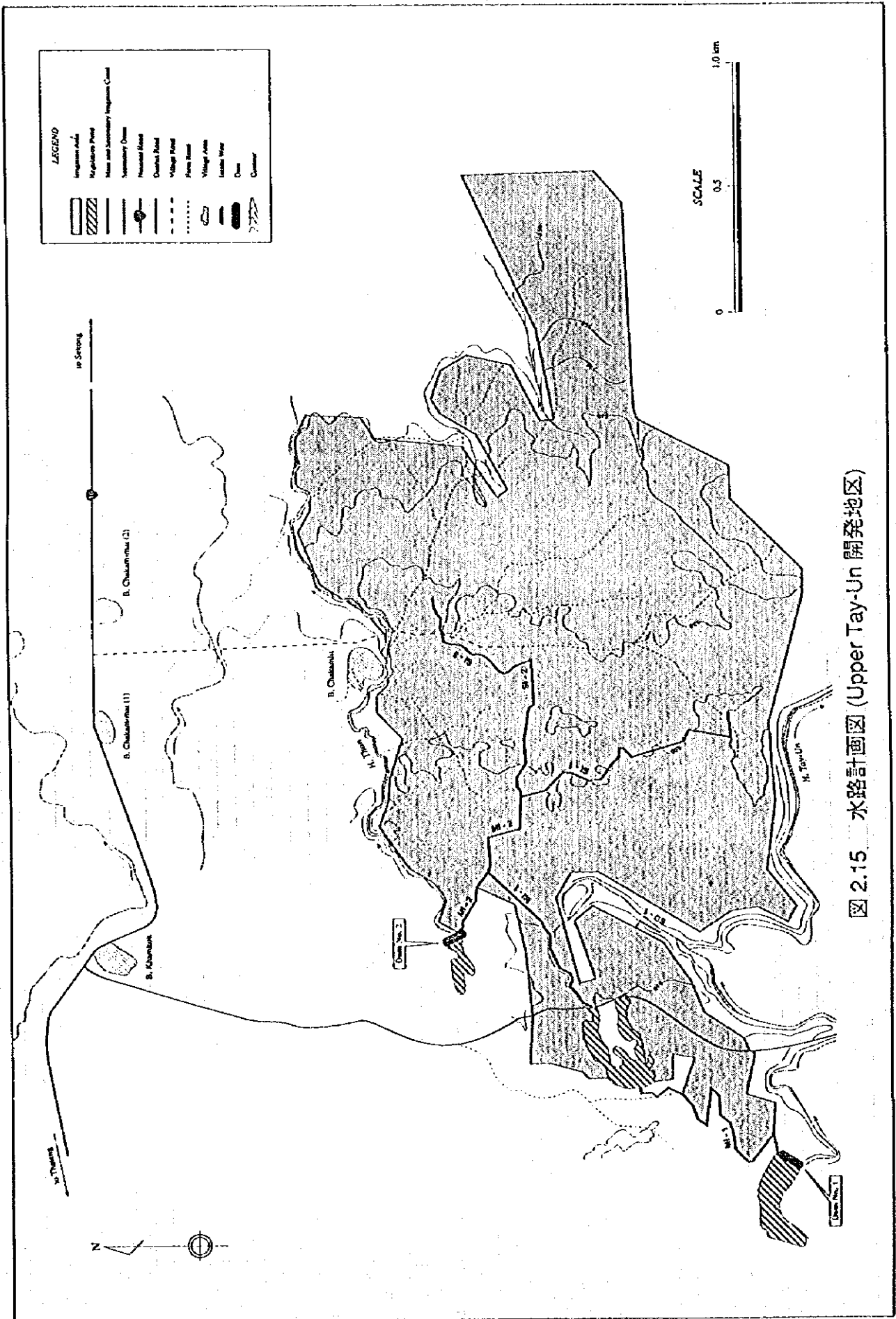
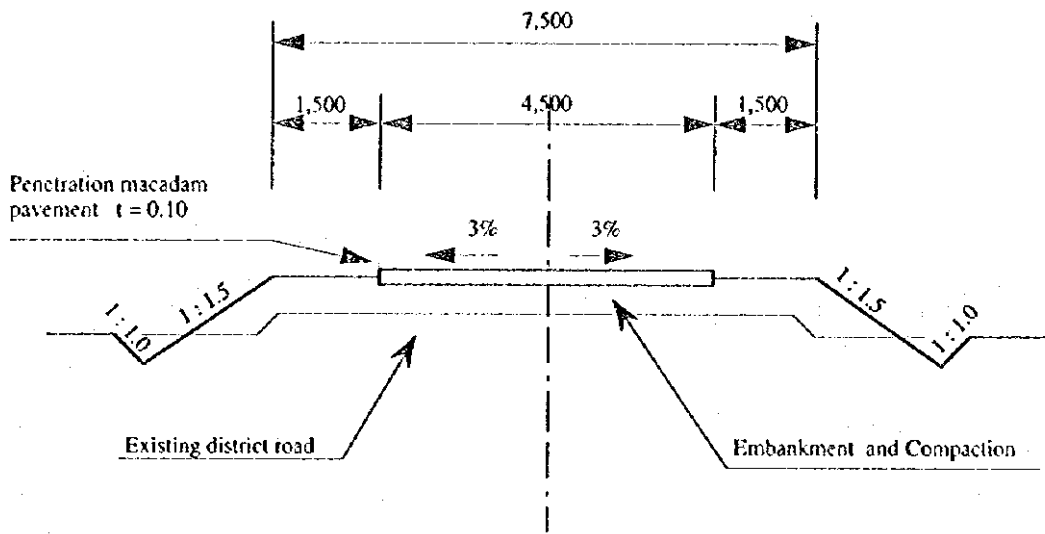
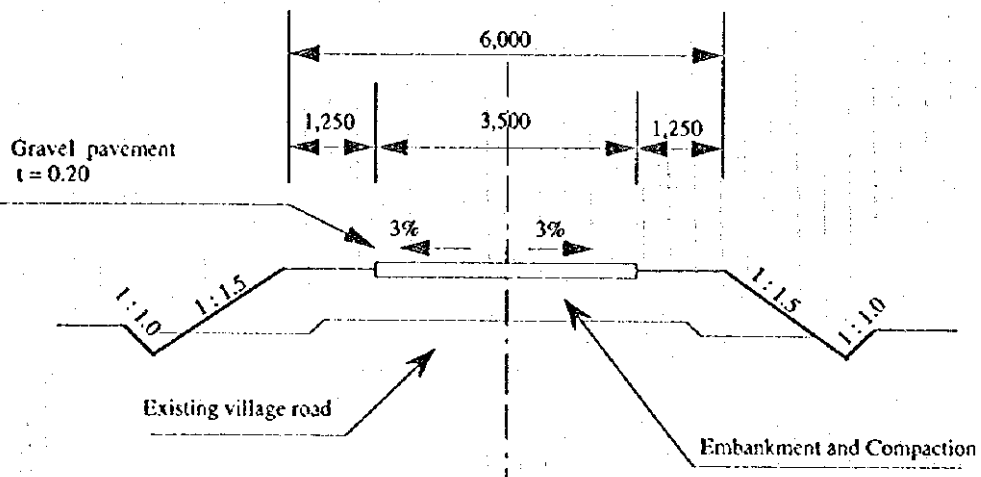


图 2.15 水路計画图 (Upper Tay-Un 開発地区)



Typical Cross Section of District Road Improvement



Typical Cross Section of Village Road Improvement

図-2.16 農村道路改善計画 (標準断面図)

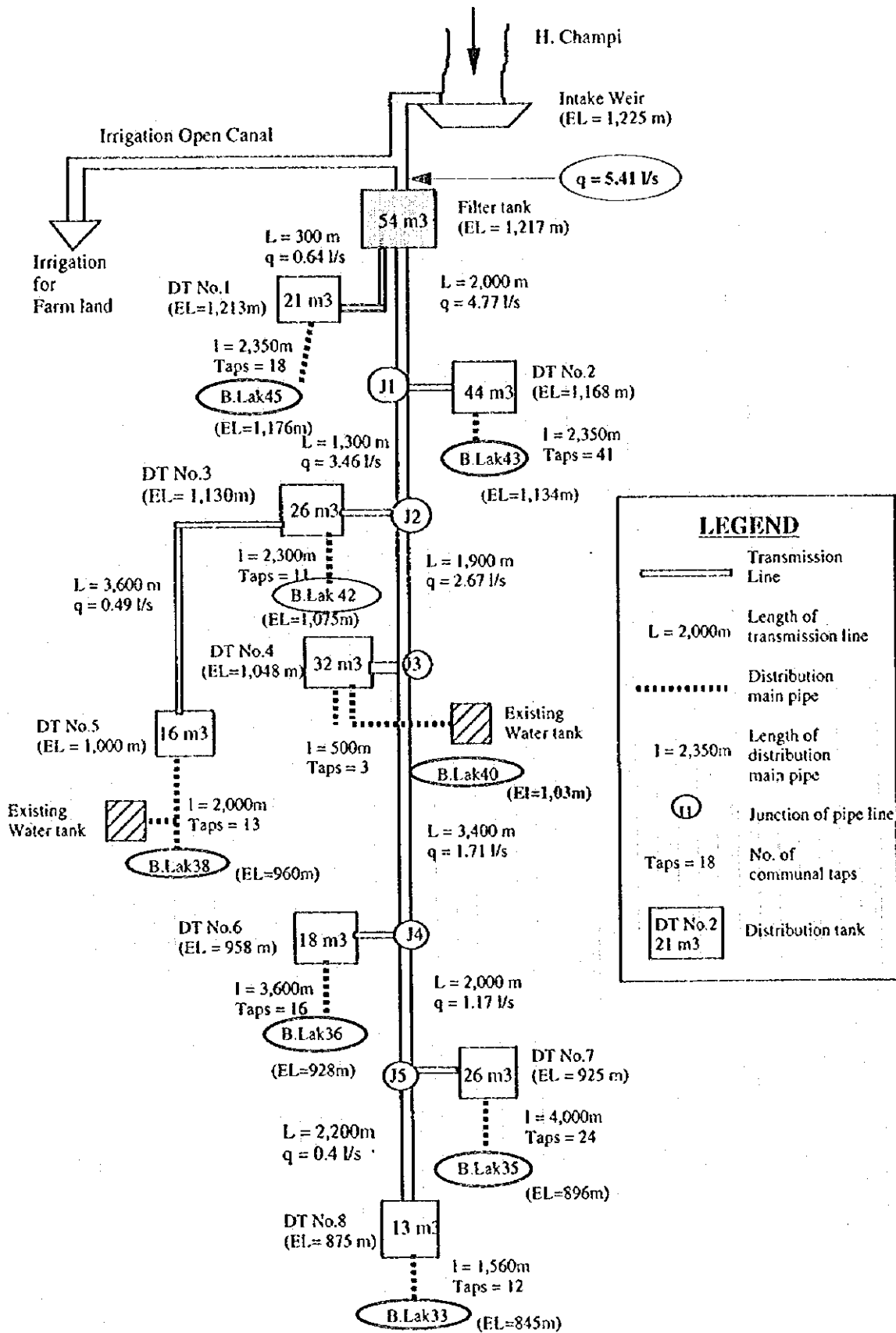
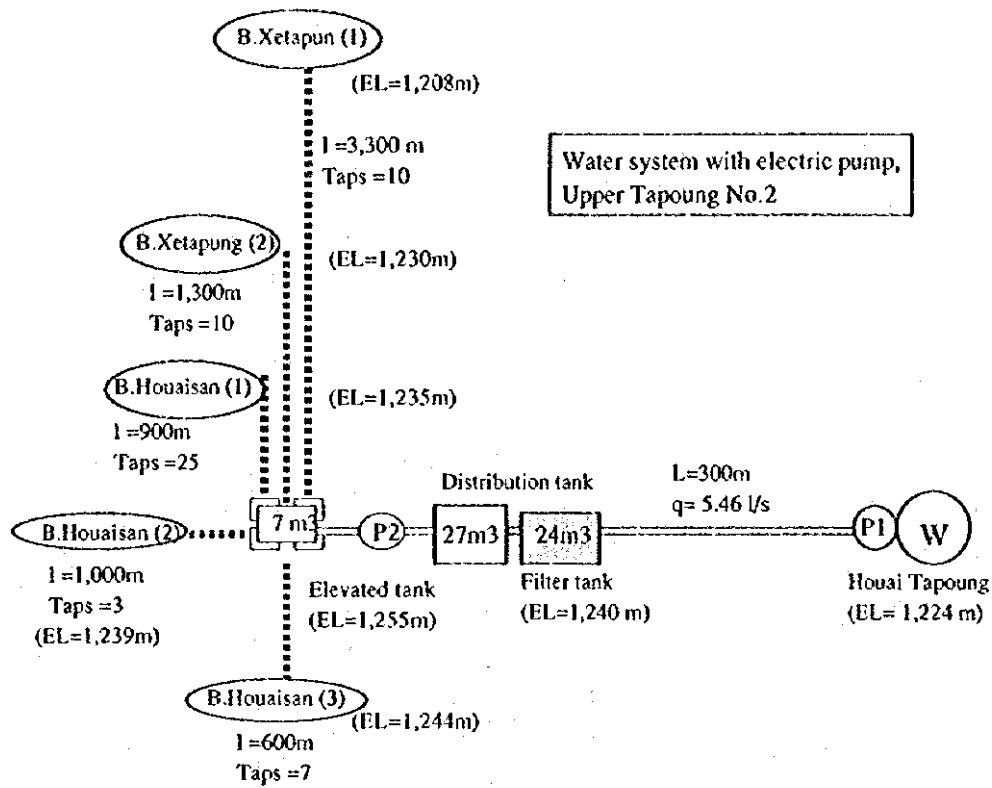


図-2.17 送水パイプライン-Upper Champi



LEGEND

- Intake pipe line
- $L = 300m$ Length of transmission line
- Distribution main pipe
- $L = 3,300m$ Length of distribution main pipe
- Taps = 10 No. of communal taps
- Electric pump
- Water source

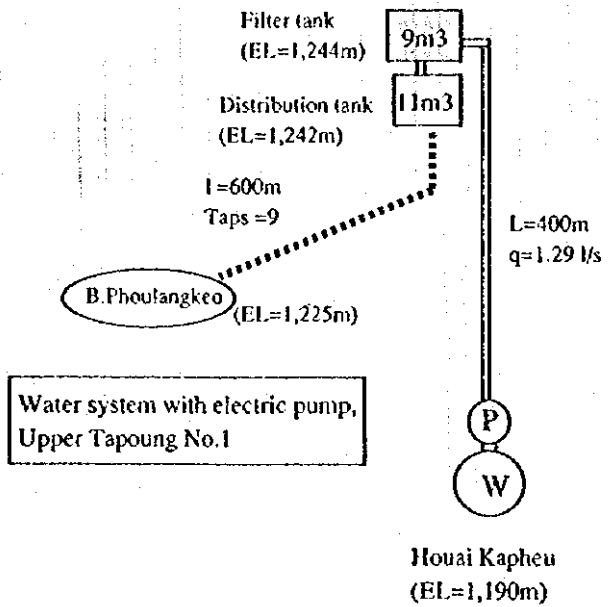
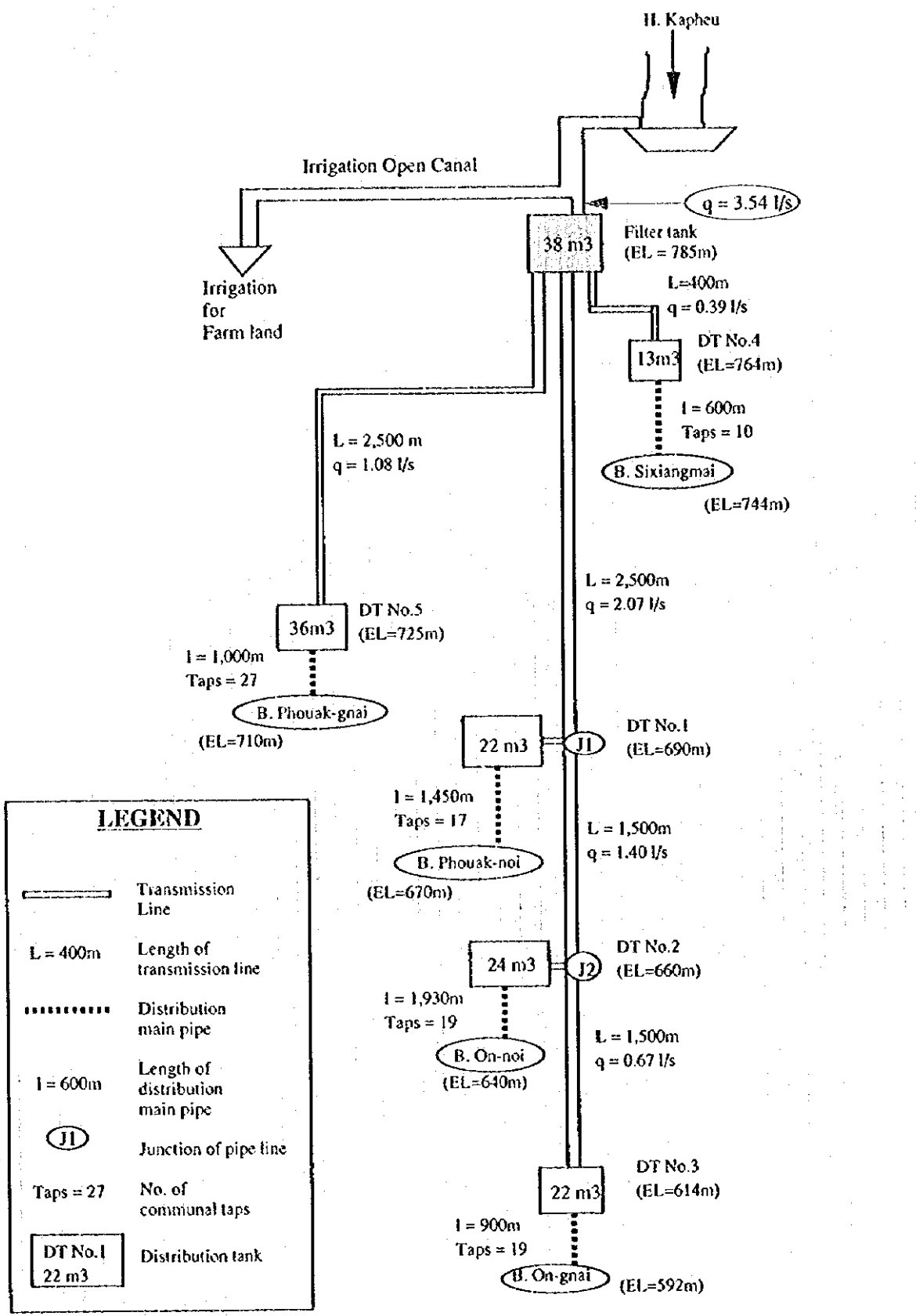


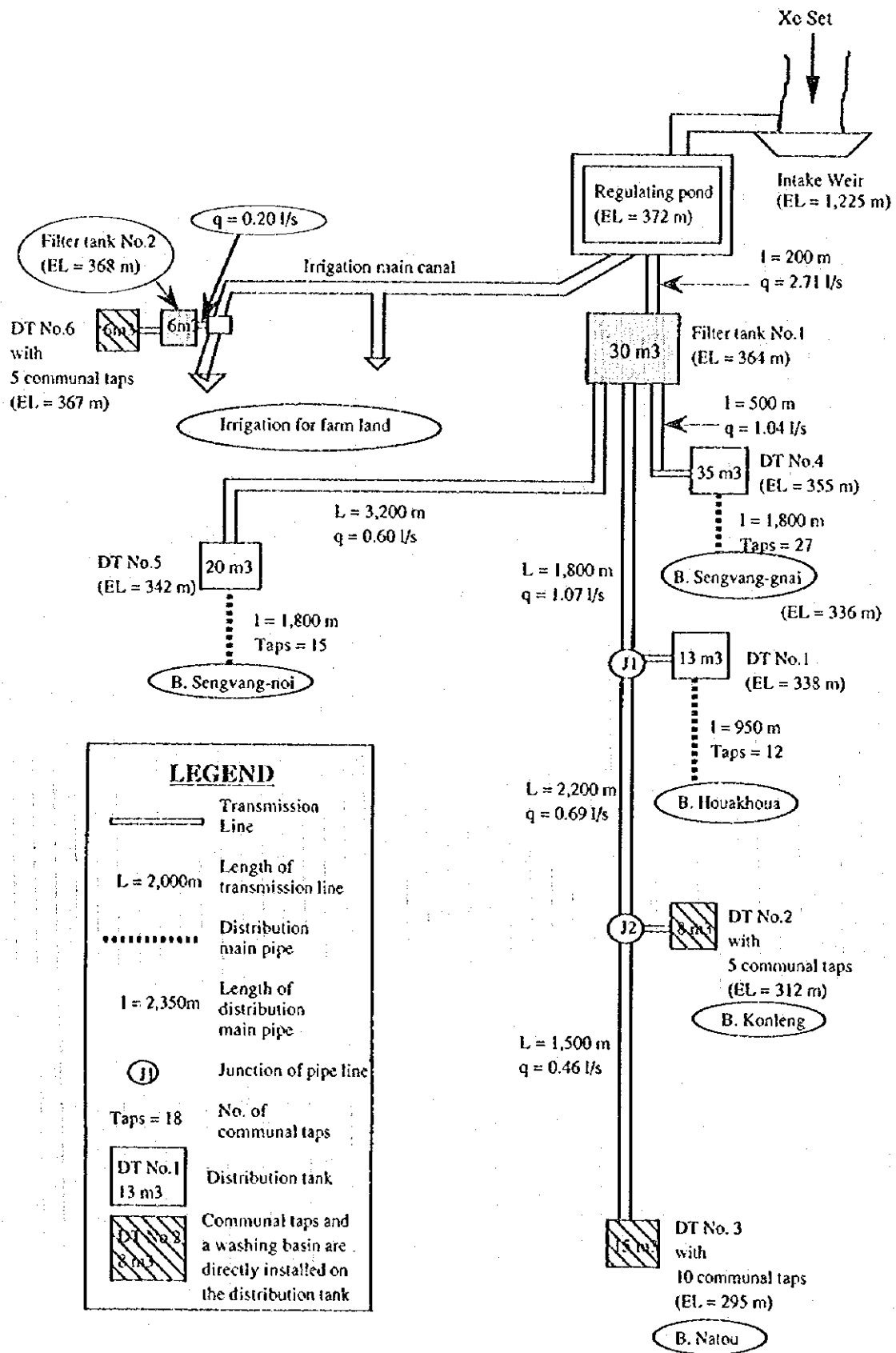
図-2.18 送水パイプライン- Upper Tapoung



LEGEND

- Transmission Line
- $L = 400m$ Length of transmission line
- Distribution main pipe
- $l = 600m$ Length of distribution main pipe
- Junction of pipe line
- Taps = 27 No. of communal taps
- Distribution tank

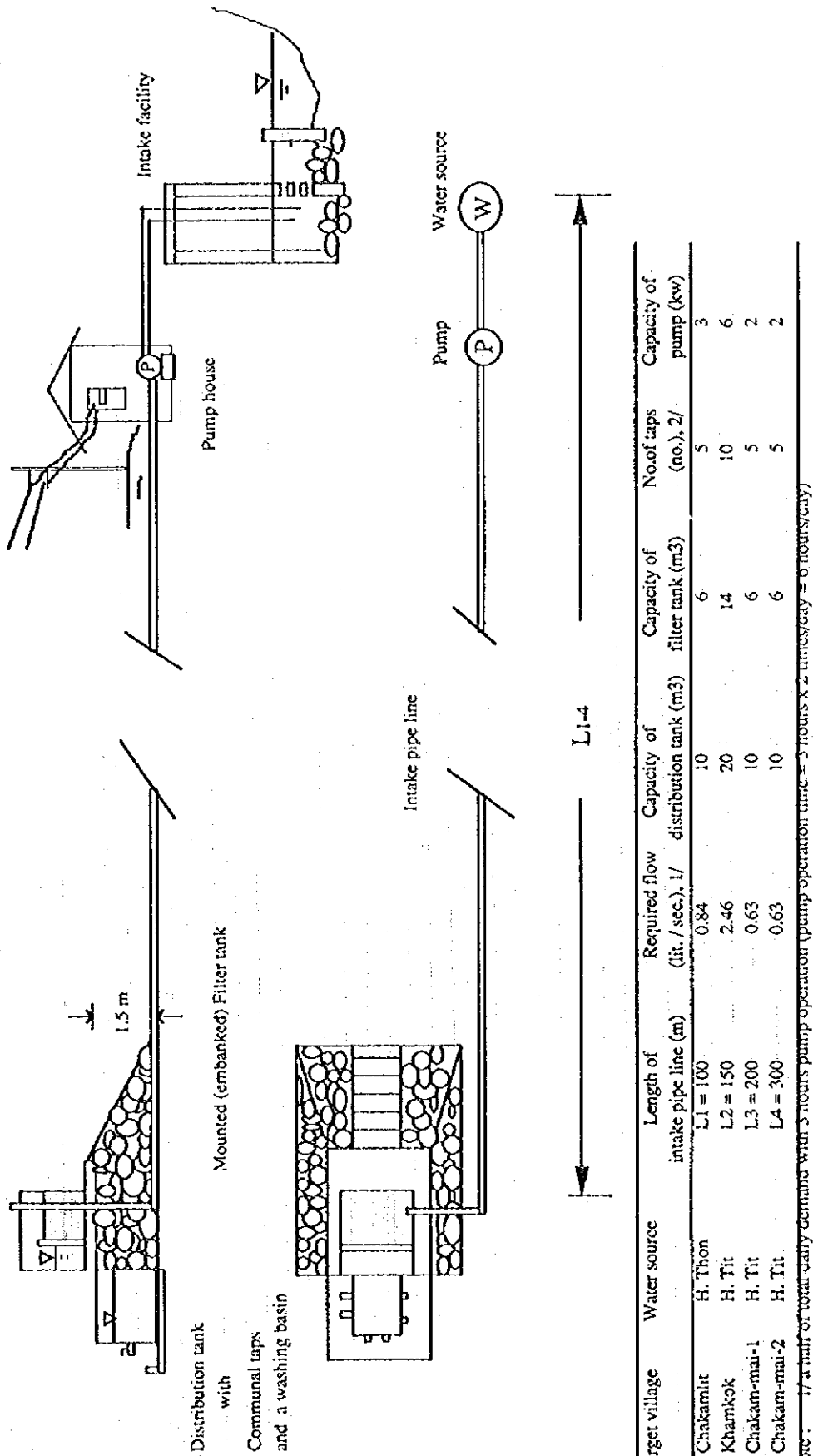
図-2.19 送水パイプライン-Upper Kapheu



LEGEND

- Transmission Line
- $L = 2,000m$ Length of transmission line
- Distribution main pipe
- $l = 2,350m$ Length of distribution main pipe
- Junction of pipe line
- Taps = 18 No. of communal taps
- Distribution tank
- Communal taps and a washing basin are directly installed on the distribution tank

図-2.20 送水パイプライン-Lower Xe Set



Target village	Water source	Length of intake pipe line (m)	Required flow (lit. / sec.)	Capacity of		No. of taps (no.)	Capacity of pump (kw)
				distribution tank (m ³)	filter tank (m ³)		
B. Chakamit	H. Thon	L1 = 100	0.84	10	6	5	3
B. Khamkok	H. Tit	L2 = 150	2.46	20	14	10	6
B. Chakam-mai-1	H. Tit	L3 = 200	0.63	10	6	5	2
B. Chakam-mai-2	H. Tit	L4 = 300	0.63	10	6	5	2

Note: 1/ a half of total daily demand with 3 hours pump operation (pump operation time = 3 hours x 2 times/day = 6 hours/day)
 2/ Communal taps and a washing basin are directly installed on the distribution tank

図-2.21 送水¹ 17² 上層タイウン

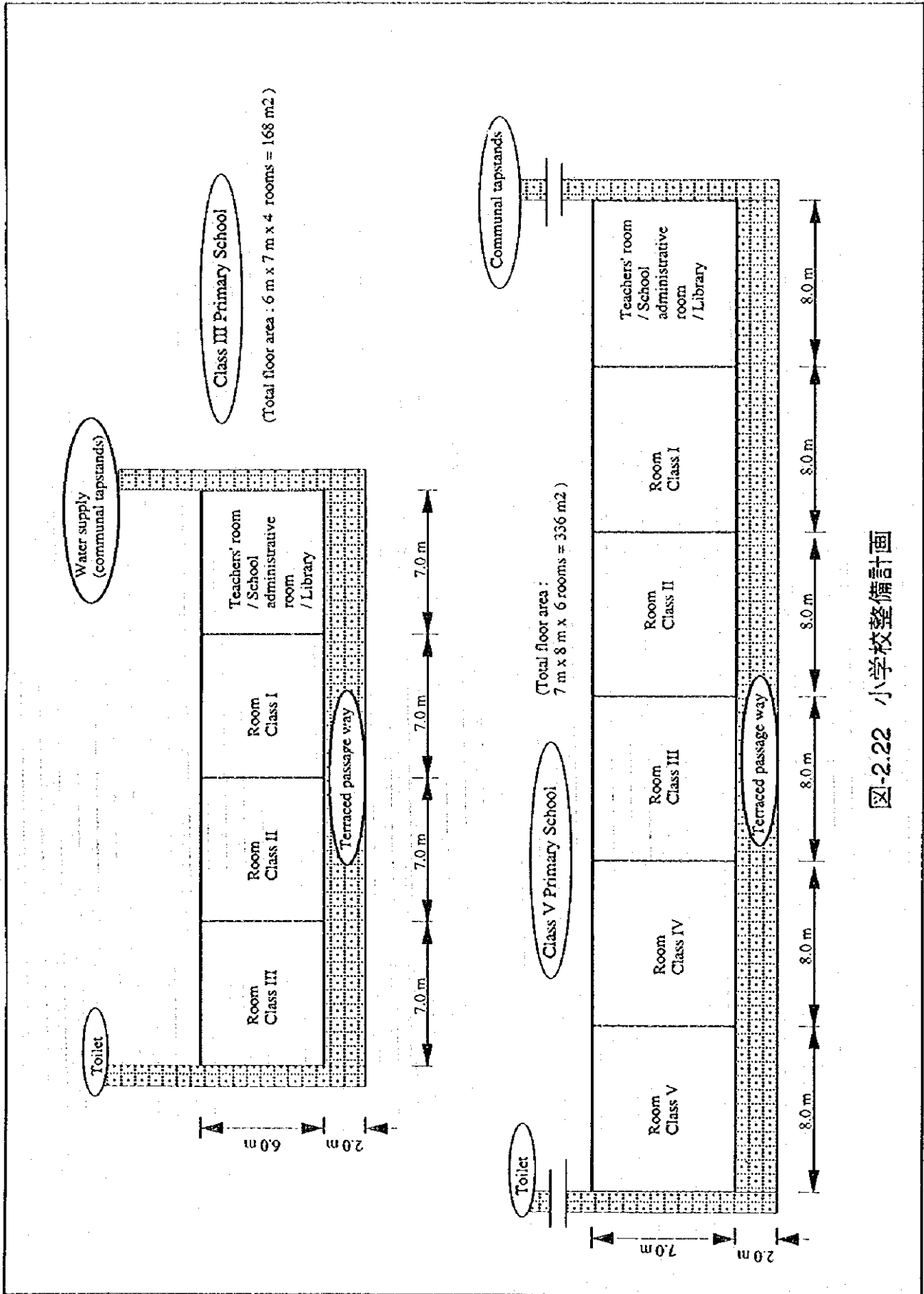


图-2.22 小学校整備計画

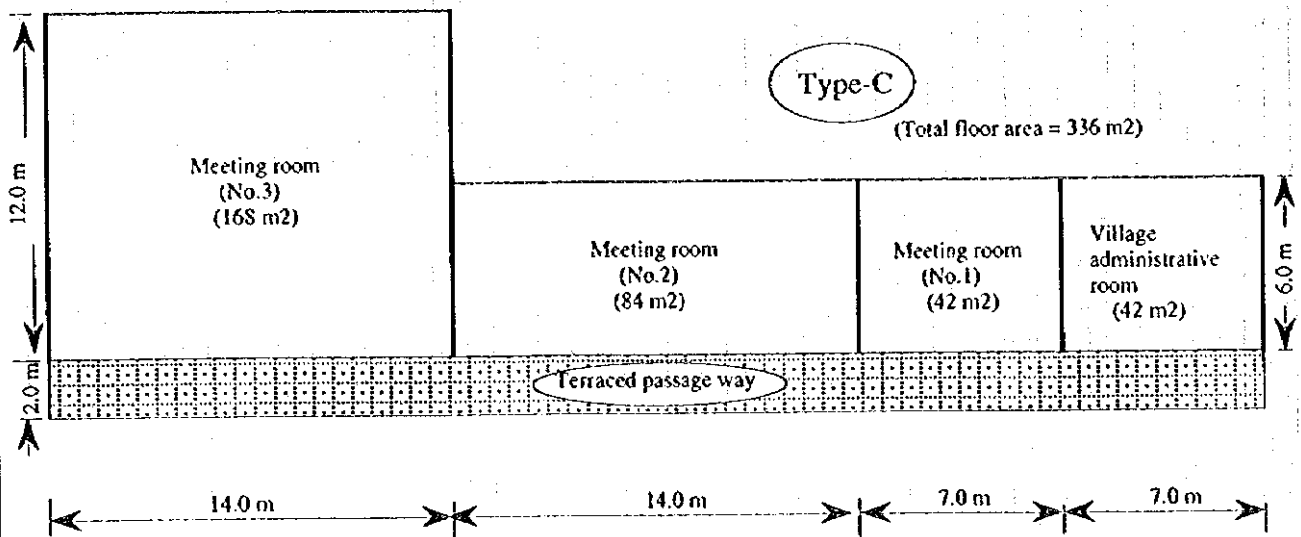
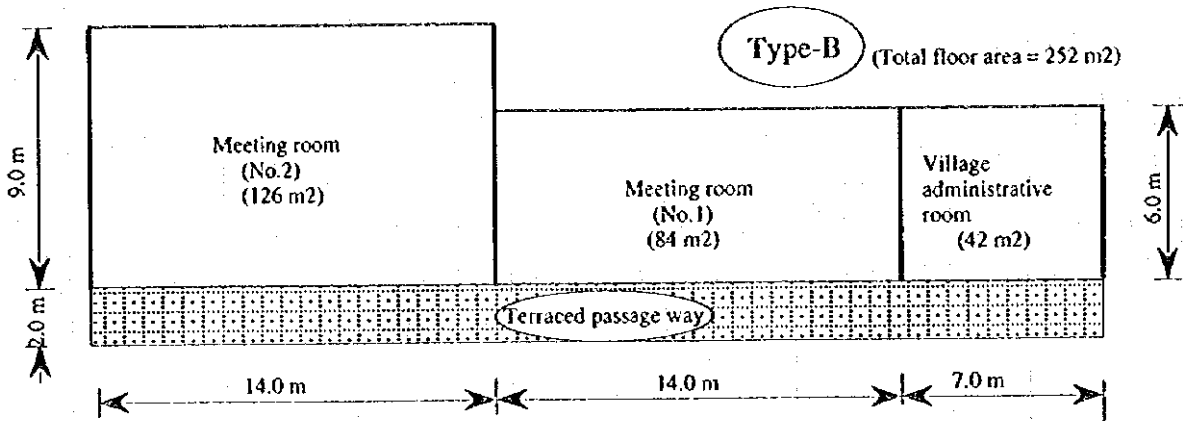
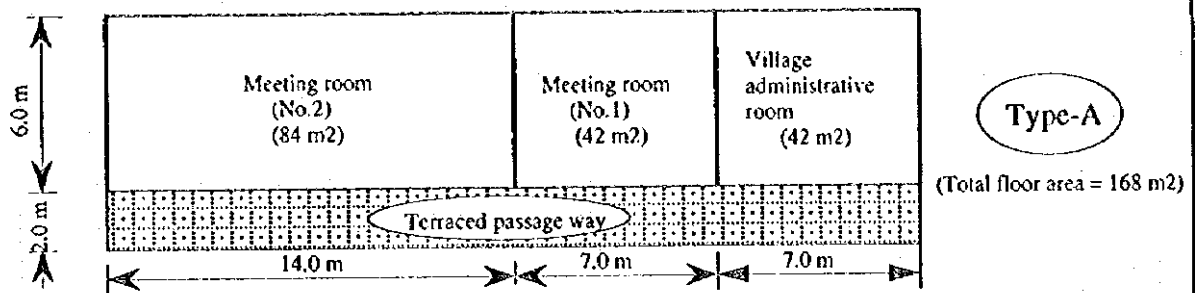


図-2.23 村落集会所整備計画

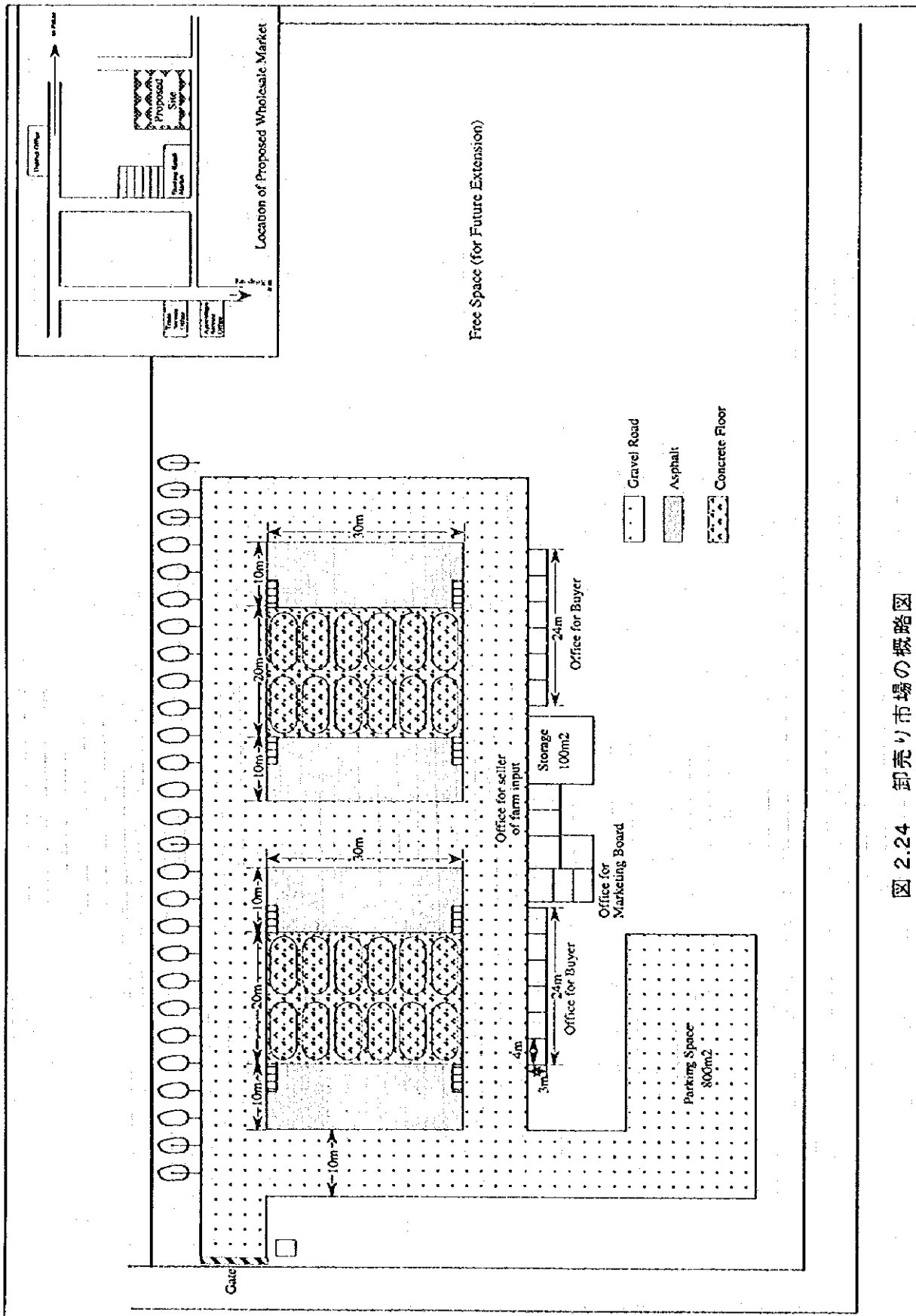


図 2.24 卸売り市場の概略図

村営農業組合のフロー

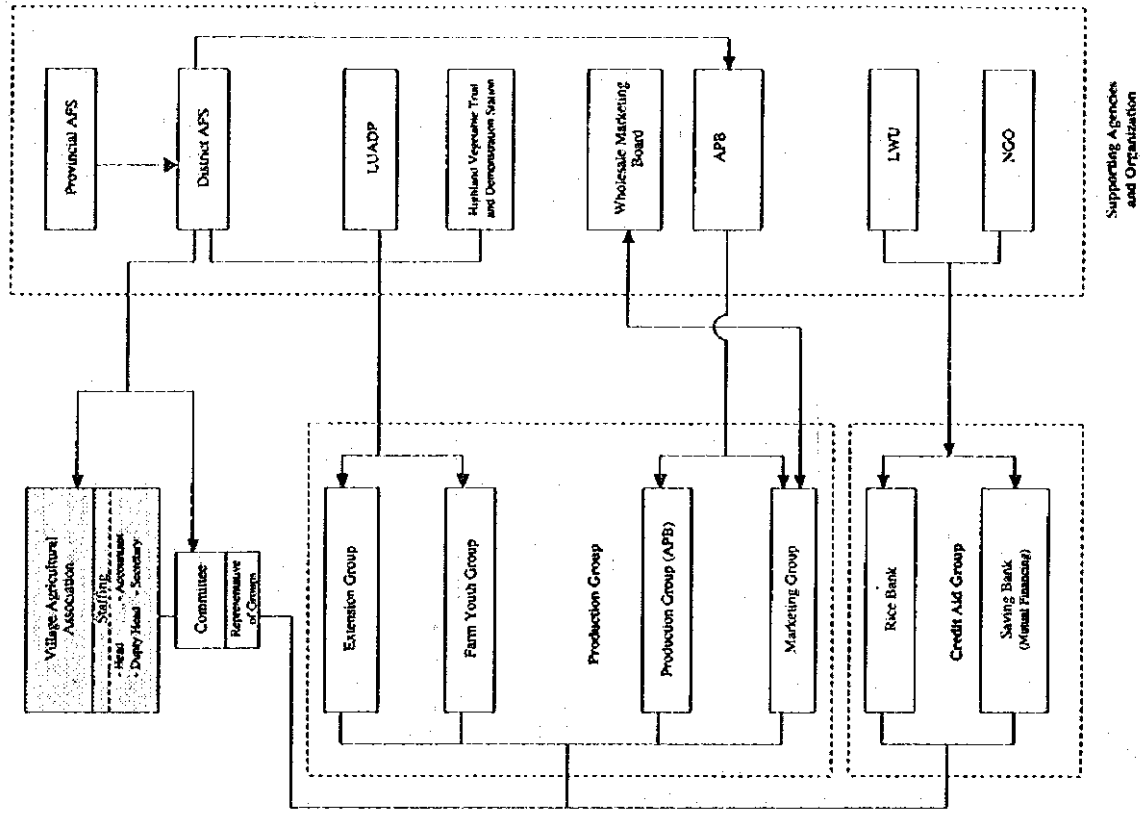
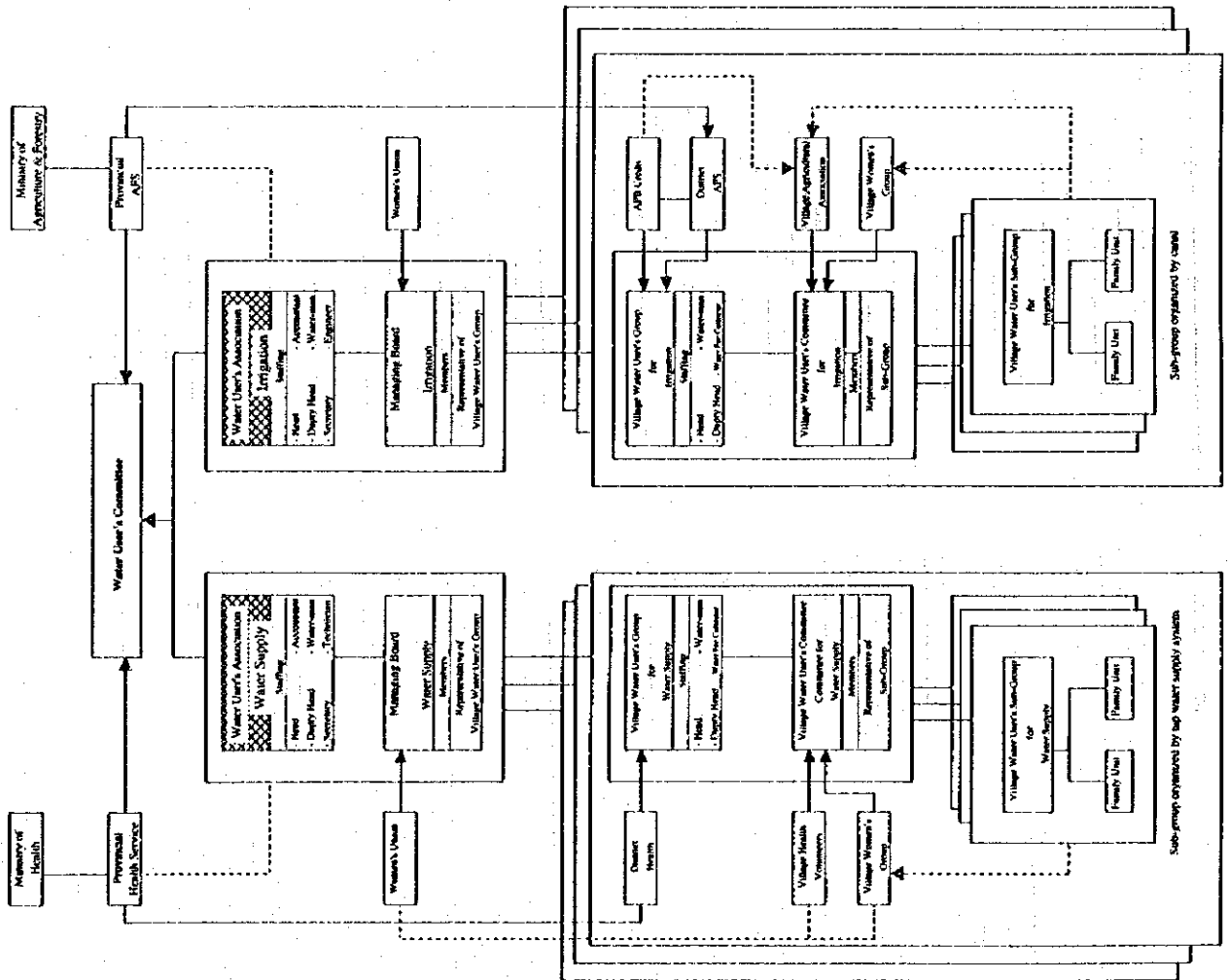


図 2.25 水利組合・農業組合活動のフロー

水利組合のフロー



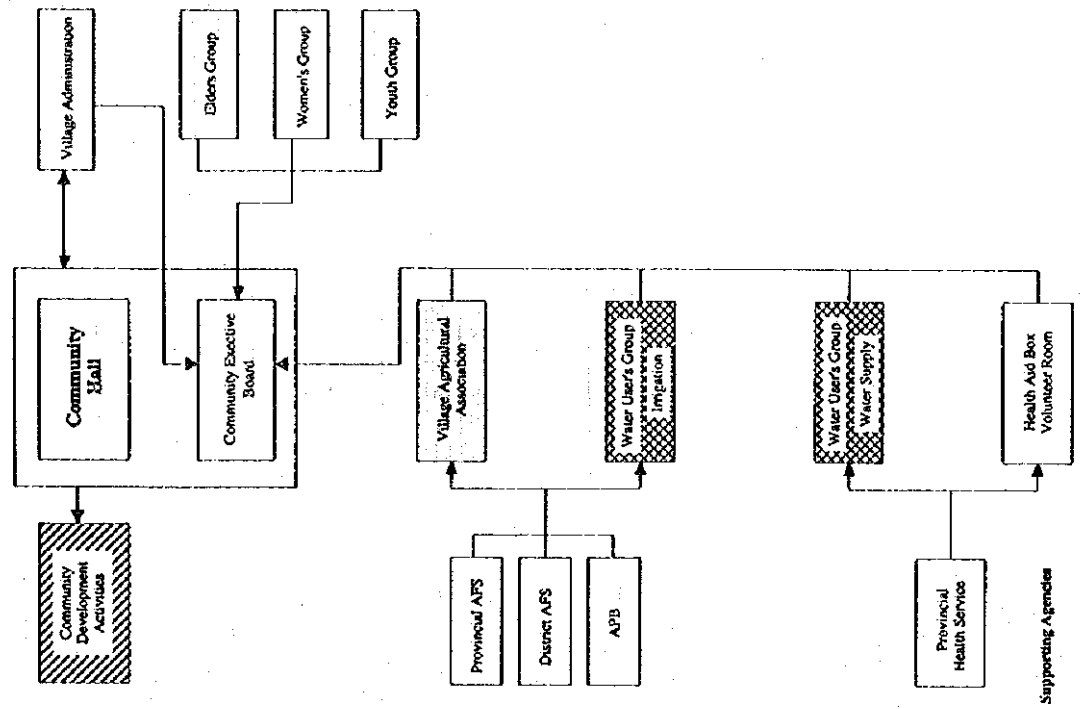
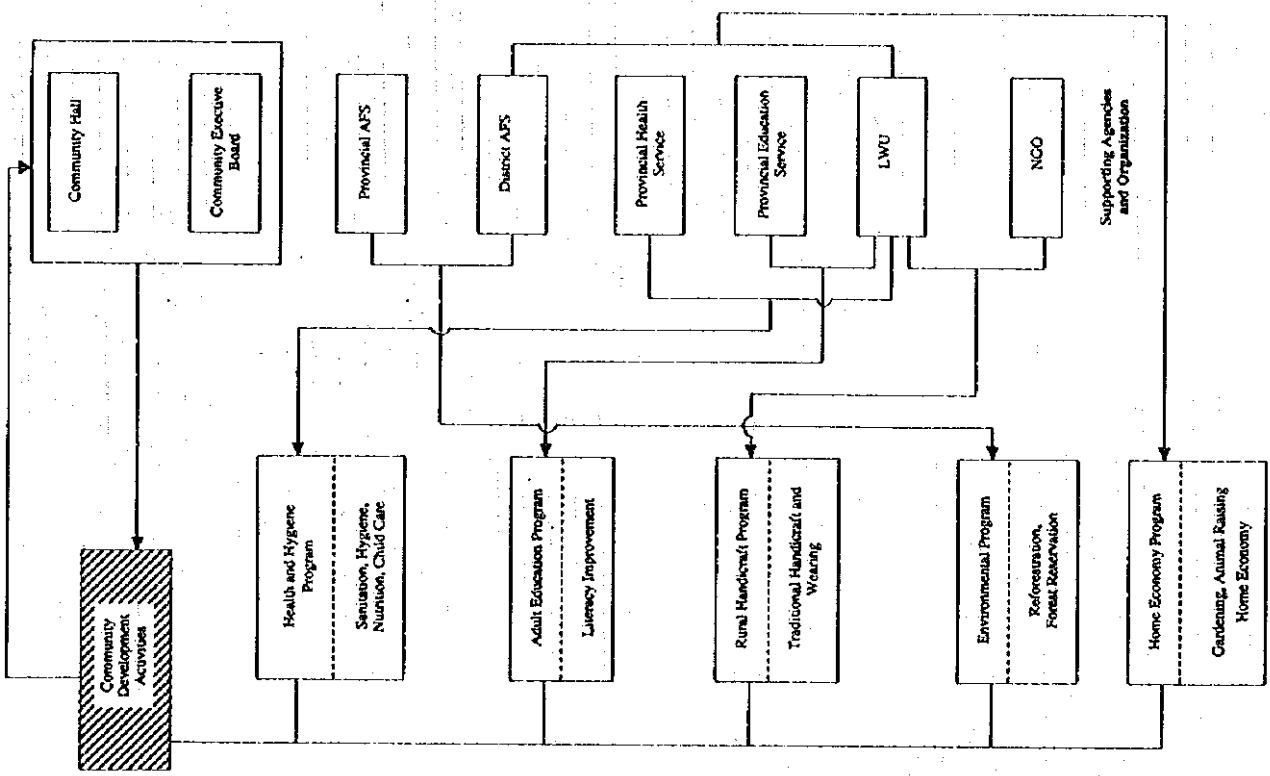
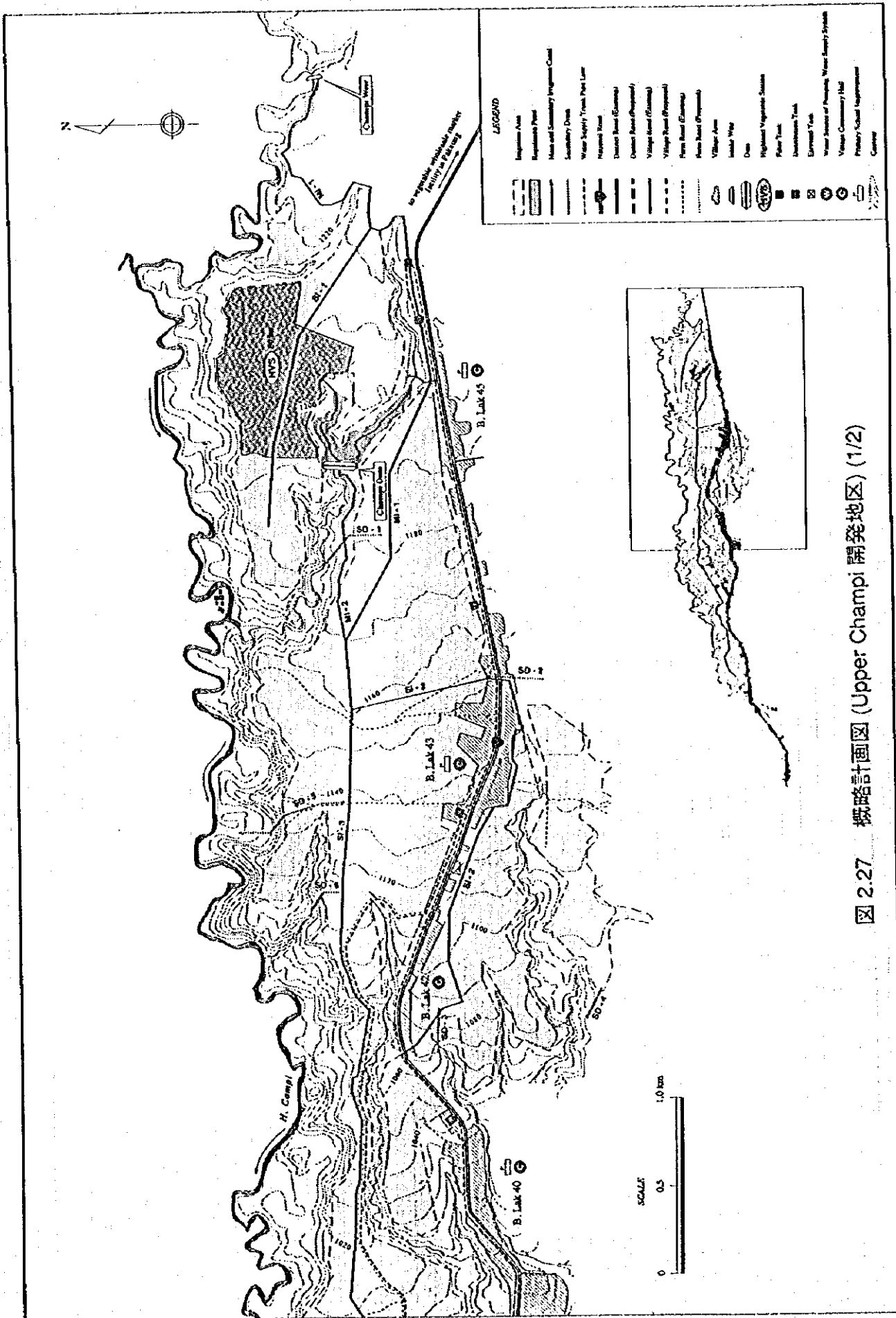


図 2.26 コミュニティ活動のフロー



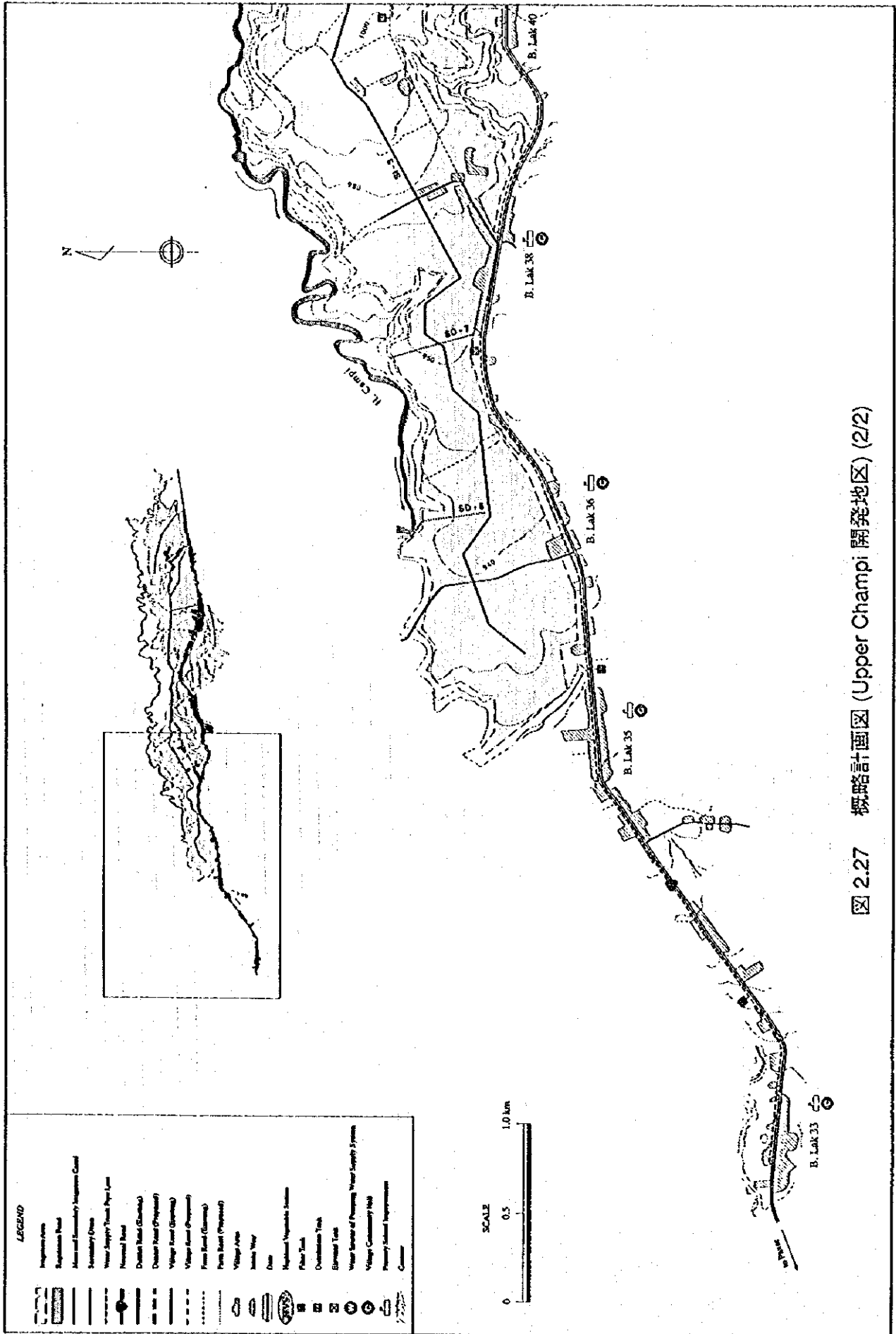


图 2.27 概略計画図 (Upper Champi 開発地区) (2/2)

LEGEND

	Irrigation Area
	Regulation Pond
	Main and Secondary Irrigation Canal
	Secondary Canal
	Water Supply Tank Pipe Line
	Normal Road
	District Road (Electric)
	District Road (Proposed)
	Village Road (Electric)
	Village Road (Proposed)
	Farm Road (Electric)
	Farm Road (Proposed)
	Village Site
	Tank Site
	Dam
	National Vegetable Scheme
	Paddy Field
	Distribution Tank
	Storage Tank
	Water Source of Pumping Water Supply System
	Village Community Hall
	Primary School Improvement
	Canal

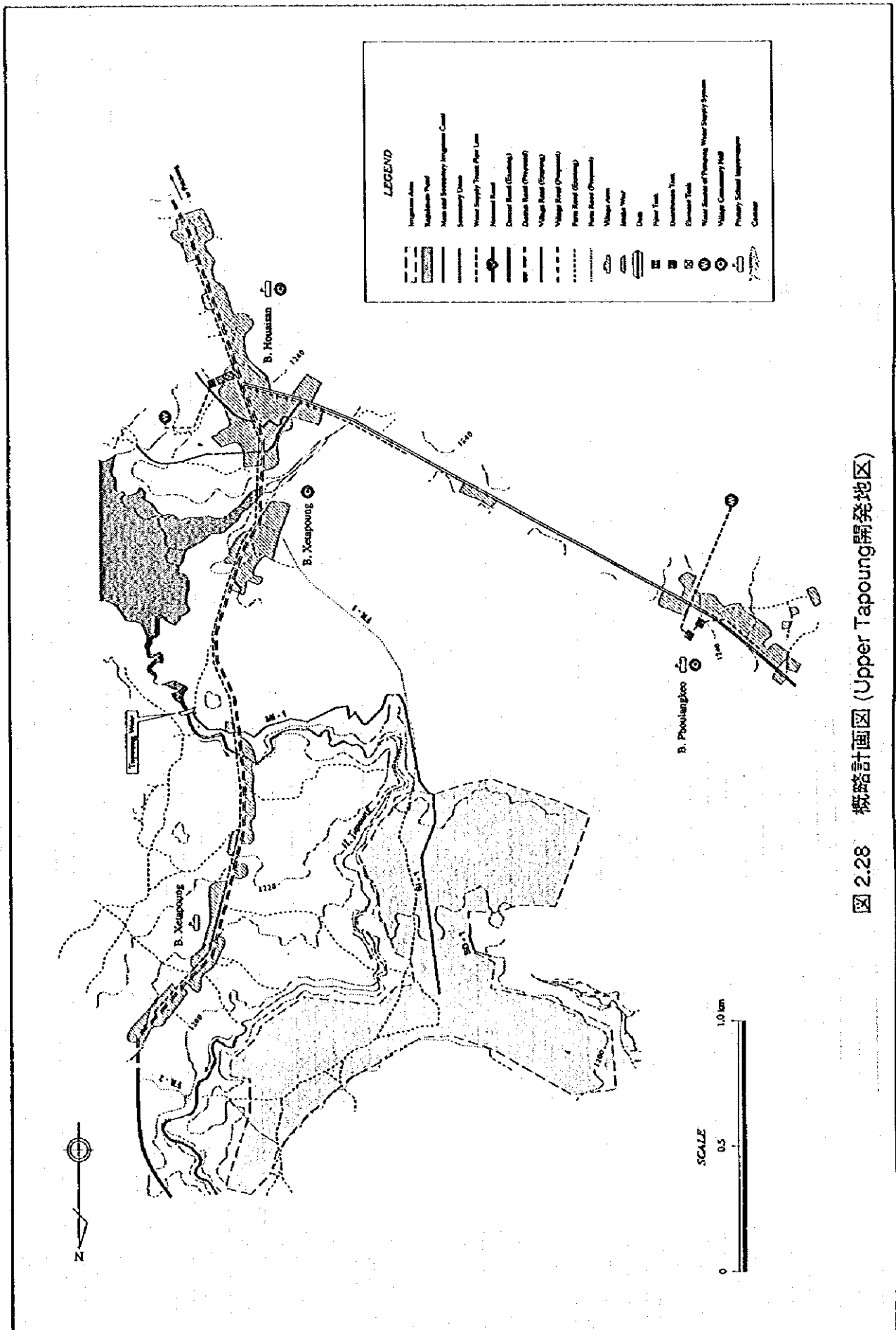


图 2.28 概略计画图 (Upper Tapoung 開發地区)

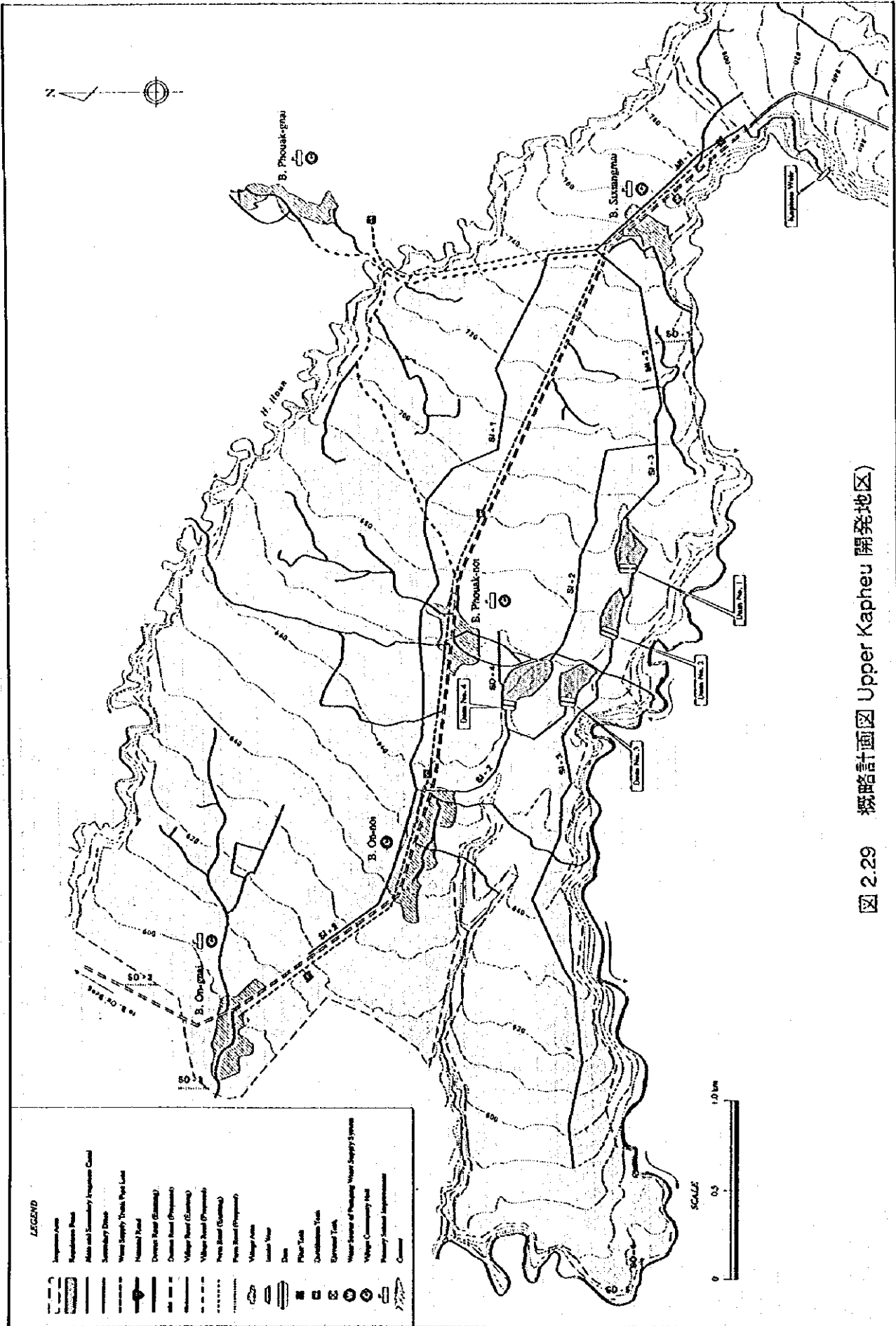
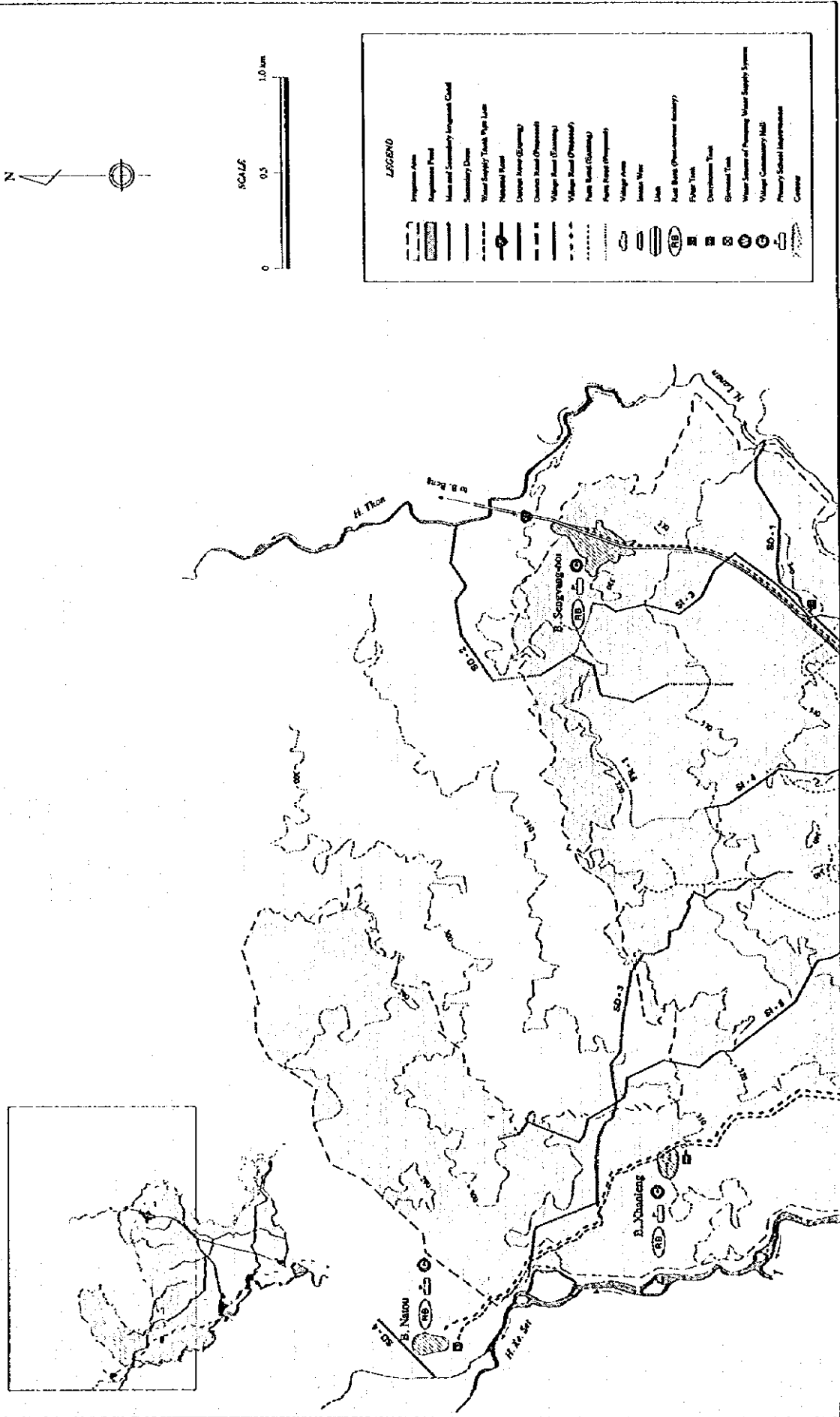


图 2.29 概略計画図 Upper Kapheu 開発地区)

図 2.30 概略計画図 (Lower Xe Set 開発地区) (1/2)



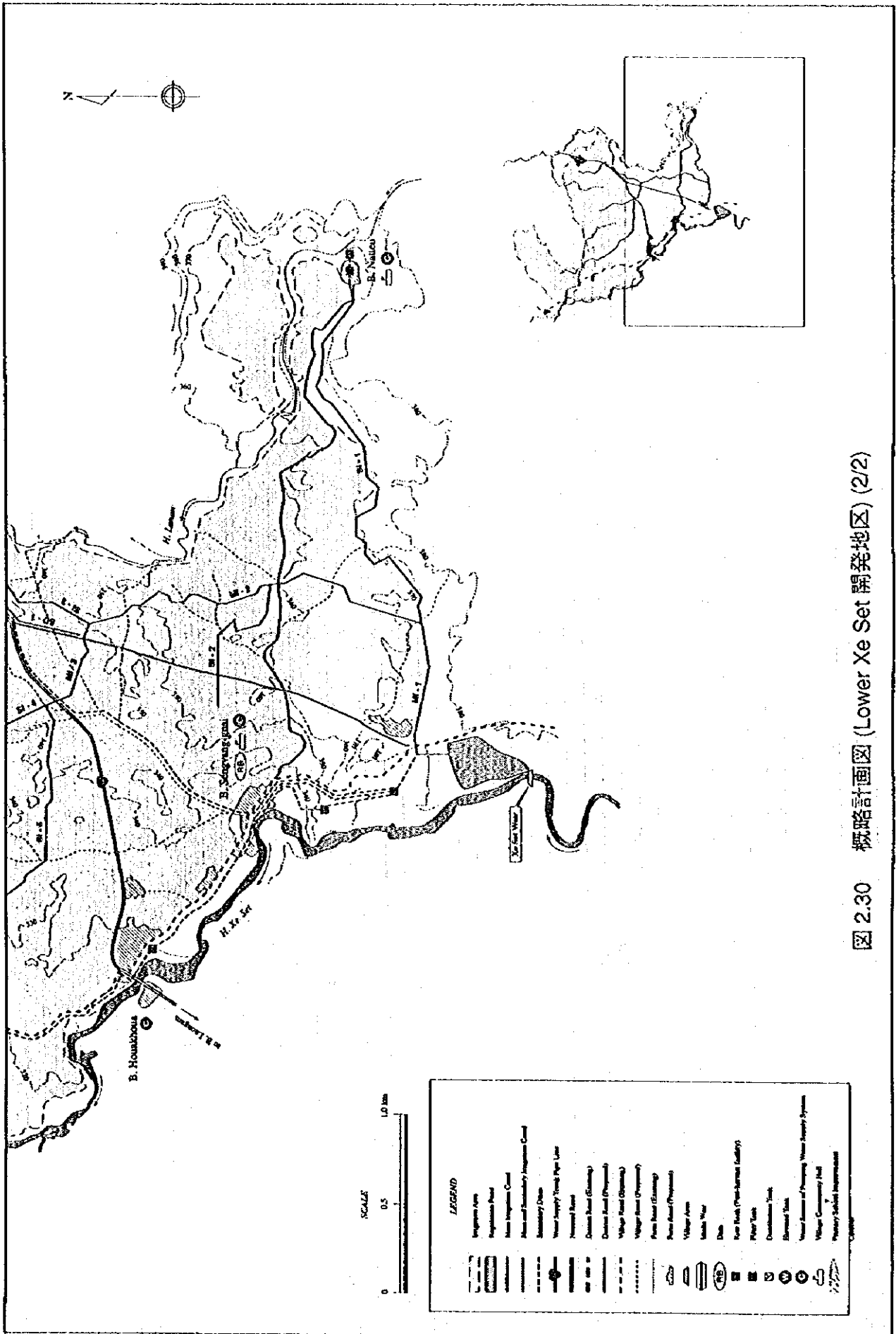


图 2.30 概略計画图 (Lower Xe Set 開発地区) (2/2)

LEGEND

	Progress Area
	Population Point
	Area Impervious Cover
	Main and Secondary Drainage Canal
	Boundary Line
	Water Supply Tank Pipe Line
	Normal Road
	District Road (Electric)
	District Road (Phone)
	Village Road (Electric)
	Village Road (Phone)
	Power Line (Electric)
	Power Line (Phone)
	Village Area
	Roadside Way
	Dam
	Dam (with Intake Gallery)
	Paper Mill
	Distribution Tank
	Elevated Tank
	Water Station of Pumping Water Supply System
	Village Community Hall
	Primary School (Impervious)

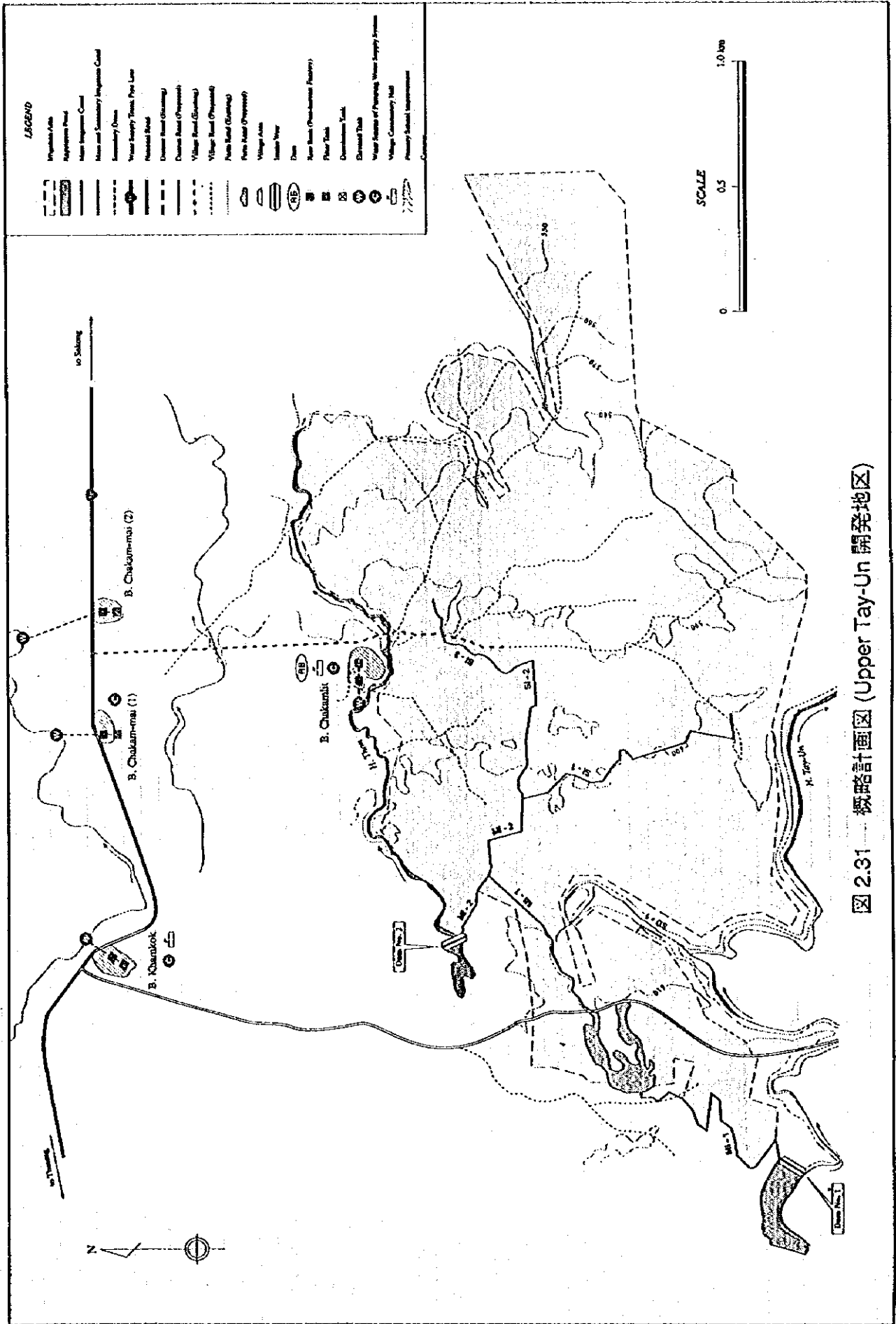


图 2.31 概略計画图 (Upper Tay-Un 開発地区)

O & M Stage

Governors of
3 Provinces

Construction Stage

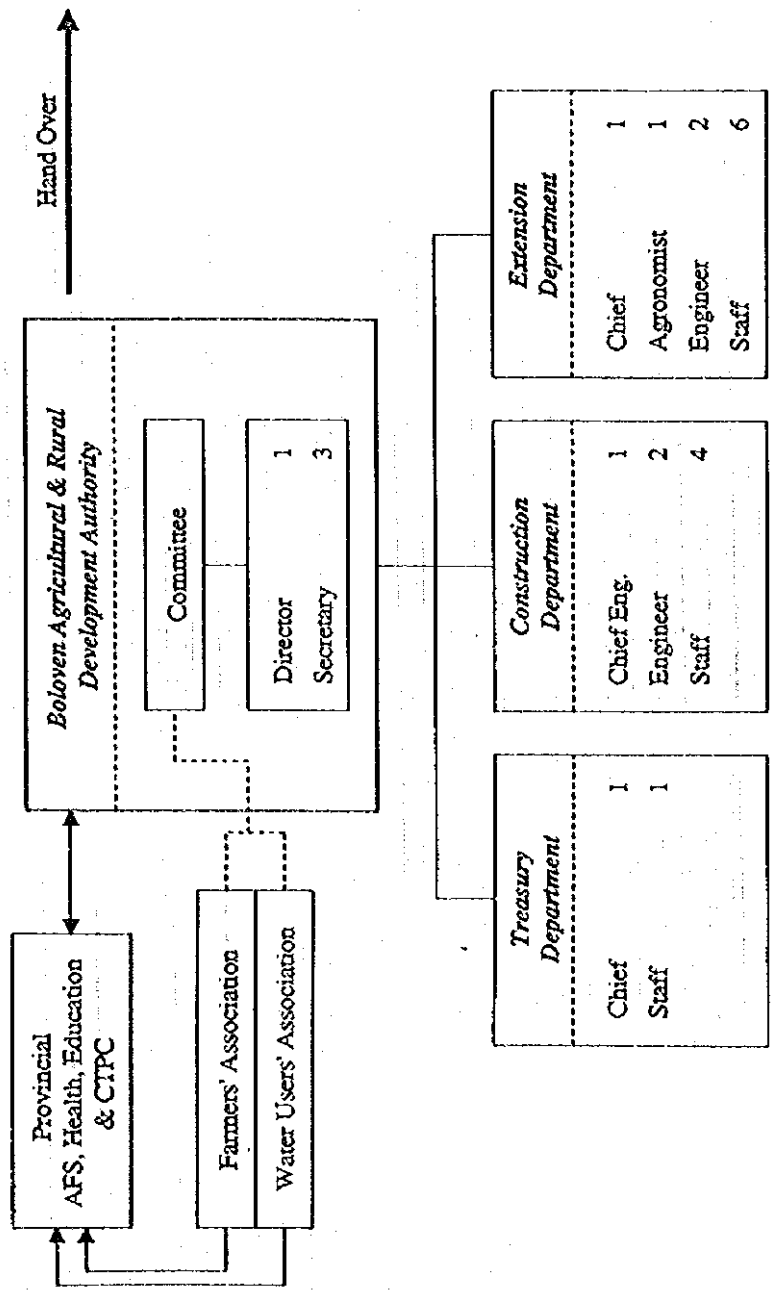


図 2.33 実施機関

図 2.34 住民参加型事業実施運営計画 (社会基盤開発)

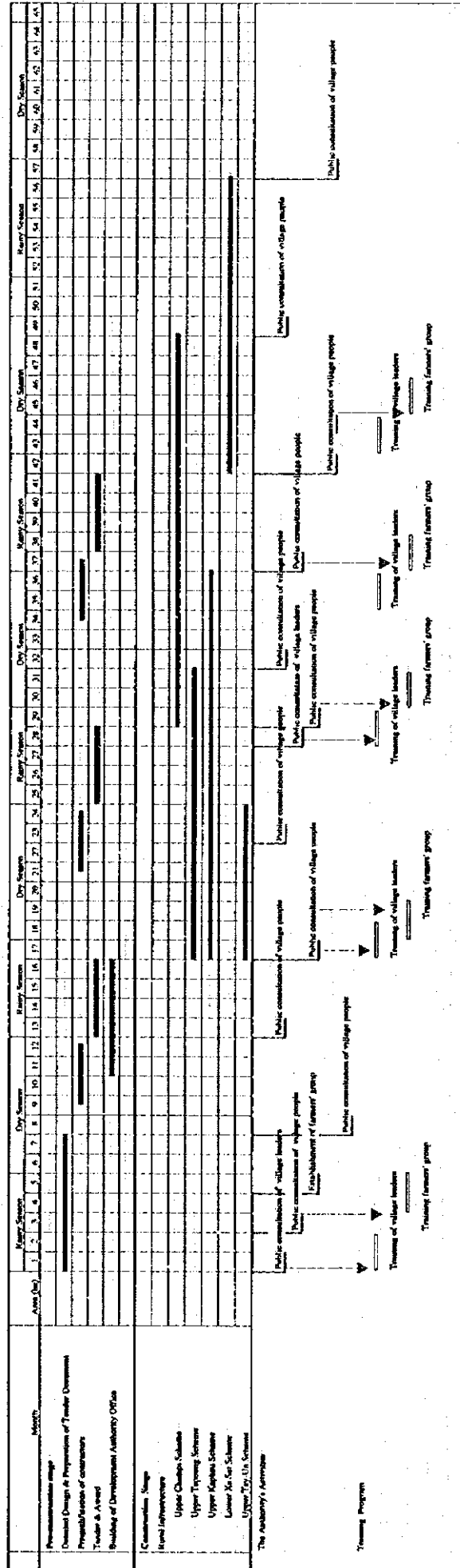
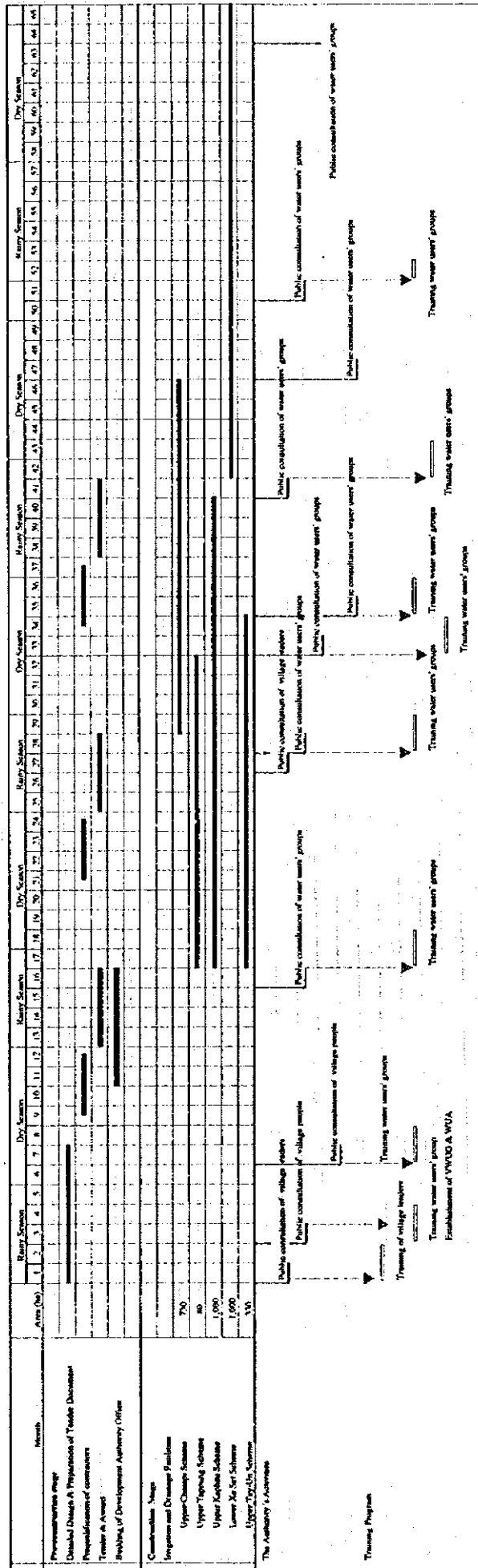


図 2.35 住民参加型事業実施運営計画 (農業生産基盤開発)



付 属 資 料

ドラフト・ファイナル・レポートに関する
ラオス政府側のコメントと調査団よりの返答

ラオス政府よりのコメント	調査団側返答
(a) 野菜（根菜を含む）の種子増殖について	野菜の種子増殖は、提案される高原野菜実証展示場において、長期的展望の基で実施する計画となっている。（主報告書 フィージビリティ調査 54ページを参照）
(b) 果物、茶、野菜の小規模加工施設の導入について	茶の加工施設は、試験研究を目的としているが、高原野菜実証展示場施設の一部として設置を計画している。（主報告書 フィージビリティ調査 54ページを参照）しかしながら、果物と野菜の加工施設導入については、その生産量、技術レベル、設置コストを考慮すると時期尚早と考える。従ってこれらの施設は、野菜及び果物の目標生産量を達成し、展示場の普及活動を通して、農民が農村加工に対する基本的技術及び知識を身に付けた上で考慮すべきと考える。
(c) 家畜飼料として大豆及びトウモロコシの生産拡大について	大豆及びトウモロコシは、将来の作付計画において導入作物の一部として提案している。しかしながら計画当初は、大豆及びトウモロコシの増産は主に食糧自給を目的とし、将来、自給を達成後、家畜飼料用として適用されるものと予想する。なお、開発優先地区5地区の開発終了後における、大豆及びトウモロコシの収穫面積は、約1,200haになると見込まれる。（主報告書 フィージビリティ調査 40ページを参照）

[The page contains extremely faint and illegible text, likely bleed-through from the reverse side of the document. The text is too light to transcribe accurately.]



