－　この事業は、記述したような水需要の逼迫性が高い村落住民の生活基盤となる水供給を行うものであり、事業実施により、住民の健康状態の改善、取水に要する労働時間の節約、買水に要する経費の節減、地域の活性化等々直接及び間接的に多くの投資効果が期待でき、長期的に地域の社会・経済の発展に寄与する効果は大きい。また、事業の運営体制・維持管理面からも本事業の実施は充分な妥当性を持つものとして評価され得る。

10．2　勧　　告

10．2．1　基本的方針

1）提案した事業は、地域住民の基本的生存要求に応える公共、公益事業であり、本来的には所要投資額を受益者の負担によって償還すると言った考え方になじまない事業であると考えられる。また、用水不足の深刻な現況，地域住民の社会経済的生活水準，国家の安全保障上民生安定の必要等々を考慮して、経済的評価の結果にかかわらず、実施されるべき事業である。

2）提案する用水開発・用水供給計画事業は、実施主体をＩＮＡＰＡとし、次の様な基本的方針に基づいて、実施されるべきである。

－　水資源開発，開発水資源の生産，供給施設・機器類の建設，設置に要する初期投資は全額ＩＮＡＰＡの負担とする。

－　定期または臨時点検整備、巡回サービス、研修、施設機器の更新等に要する諸経費（所要要員の人件費・交通費を含む）はＩＮＡＰＡが負担すべきである。

－　ＩＮＡＰＡは適正かつ効率的運営管理を遂行するため、組織の強化、要員の確保等について、関係機関と協議して財政的基盤を確立すべきである。

3）本開発事業の実施計画対象村落外の地域における用水不足現況を考慮して、僻地山村あるいは上水道サービス域内にありながら用水供給が途絶している地区などについても、同様の事業が実施可能となる様に、本開発事業の実施と平行して、必要な詳細調査を急ぐべきである。

10．2．2　開発計画に関して

1）掘削計画

－　計画井戸の設置個所は、５万分の１地形図及び村落実態調査によって作成した村落構成図によって概定した。従って、詳細実施設計時に詳細な現地測量に基いて、再検討し修正決定すべきである。

－　また、計画地域の水文地質条件は複雑な地質構造によって局地的に変化する事が考えられるので、井戸掘削に当っては、同辺の綿密な水文地質調査、物理探査を実施し、あるいは必要に応じてボーリング調査等の実施を検討すべきである。

2）地下水位観測・雨量観測

－　地下水モニタリングは本開発事業計画施設の適正な効率的管理のためだけでなく、地域の中・長期的地下水動向を把握して、将来の地下水開発計画のための必要かつ有効な資料とするためにも、地下水位観測を継続的に実施すべきである。

－　ＪＩＣＡが設置した降雨量計についても、その配置条件、観測条件を再検討して、継続的観測を続行すべきである。

－　地下水位・雨量観測等長期間にわたるモニタリング業務は、用水生産管理業務の一環として、ＩＮＡＰＡの責任において実施すべきである。

3）オンザジョブトレーニング

地下水の開発は総合技術であり、しかもそれぞれの要素技術について広い知識と経験が必要である。従って地下水技術者は地下水探査、井戸掘削、揚水試験、定量化評価、開発、モニタリングの全過程について、それぞれの専門領域に対応した技術の取得が必須条件である。今後、ＩＮＡＰＡでは、計画の詳細設計段階、実施段階で計画的かつ適切な人員配置を行い、オンザジョブトレーニングにより、技術者のレベルを向上させることが必要である。

4）貯水池

－　Monte Cristi県北部地区については、地下水開発ポテンシャルが低いため、貯水池による用水供給を提案した。

－　貯水池計画に際しては、計画村落の古老から表層流出についての歴史的伝承を聞くと共に、余剰流出水の制御、流路変更等について、詳細な調査を実施して、危険防止対策を検討すべきである。

－　乾季に家畜類の自由往来による水質汚染を防止するための対策を検討し、受益住民の疾病予防に努めるべきである。

－　貯水池計画地域の特殊性を考慮して、用水の貯留あるいは本計画目的外用途に利用する事等についても、地域共同体と協議して決定すべきである。

10．2．3　給水計画の実施に関して

1）地下水資源の自主管理

地下水は特にその土地の自然を構成する要素であり、その土地に住む人々が自らの経験と知識により開発・管理して行くべき資源である。ＩＮＡＰＡは本事業を実施する過程で、地下水資源の利用と管理のありかたについて受益住民を啓蒙・指導し、自主管理組織の組織・運営等についてさらに議論し、より良い方策を検討していくことが望ましい。

2）施設の維持管理

給水施設については、モデル施工と同様に、村落住民に管理組合を結成させて自らの費用で運転管理を行うよう提案する。

10．2．4　給水施設と婦女子の参加

1）水汲み労働時間の節約

現在、対象地域における水汲み労働はほぼ婦人と子供に依って担われており、１日のうちかなりの時間を要しているものと考えられる。

本計画において新しい給水施設が設置されれば、この水汲み労働時間が削減されることにより、婦人が社会・経済活動へ参加することが可能となり、ひいては社会的地位の向上を促すことが期待される。

2）教育・訓練プログラム

ＩＮＡＰＡが地域の政府もしくは地域振興に関わる民間組織と共同して全受益村落を対象とした教育・訓練プログラムを実施するよう提言する。

プログラムはプロジェクトの実施により可能となった余剰時間を利用し、婦人の社会参加を促進するものである。内容は、今後の衛生普及へのリーダーシップ、地域特性を生かした家内工業の展開等が考えられ、地域共同体の今後の活性化に大きく貢献するものと考えられる。

10．2．5　公衆衛生

1）衛生に関る現況

事業の実施にあたって、特に公衆衛生に関る事項として、以下の点について継続的なモニタリングと対処を行っていく必要がある。

- 新規水源の使用
- 井戸周辺の排水
- 使用量が増加した時の戸別排水処理

- 現在のハンドポンプ施設周辺は、使用後の排水が溜り、非衛生的な状態となっていることが多い。これは、ポンプ利用の非能率化のみならず、汲み上げた水や、長期的には帯水層の汚染をもたらすものと考えられる。また、将来的に各戸別の消費量が増大した場合、生活排水の処理が不十分であると同様の問題が家屋の回りで起こることも考えられる。基本的には安全な水に対する衛生教育の普及が必要である。

2）衛生状態の向上

実施計画の中では、ハンドポンプや給水栓には排水用プラットホームを設けることとなっているが、それに加えて、自主管理組織や管理人が周辺排水に注意を払うことが必要である。しかし、最も肝要なことは、村落全体において給水と公衆衛生についての意識を向上させることであり、このため、学校児童、保険所の患者、主婦等を中心として、一般への衛生教育を広く進めていく必要がある。この教育は、衛生的な水を利用することの大切さ、排水の処理方法等を主な内容としている。この普及のためには、ＩＮＡＰＡのみならず関係する各省庁が一体となってあたらねばならない。

10. 2.6 ＩＮＡＰＡの責任

1）本開発事業の実施によって完成した諸施設、機器類は全てＩＮＡＰＡに帰属する公共施設である。従って、その管理、保全責任はＩＮＡＰＡが負うものである。

ＩＮＡＰＡは適性な運営管理の実施により、諸施設・機器の効率的利用・有効寿命の延長に努めなければならない。

くり返して述べるならば、ＩＮＡＰＡは次の各項の実施に積極的に対応すべきである。

- 諸施設・機械等のおかれる自然地理的条件、社会基盤・特に交通通信施設の貧困等に対応可能な機動性をもった管理体制の確立
- 農山村地域における用水施設の管理方針の変更・修正
- 管理要員の技術的レベルの向上と社会意識の培養

さらに、地域住民に対して

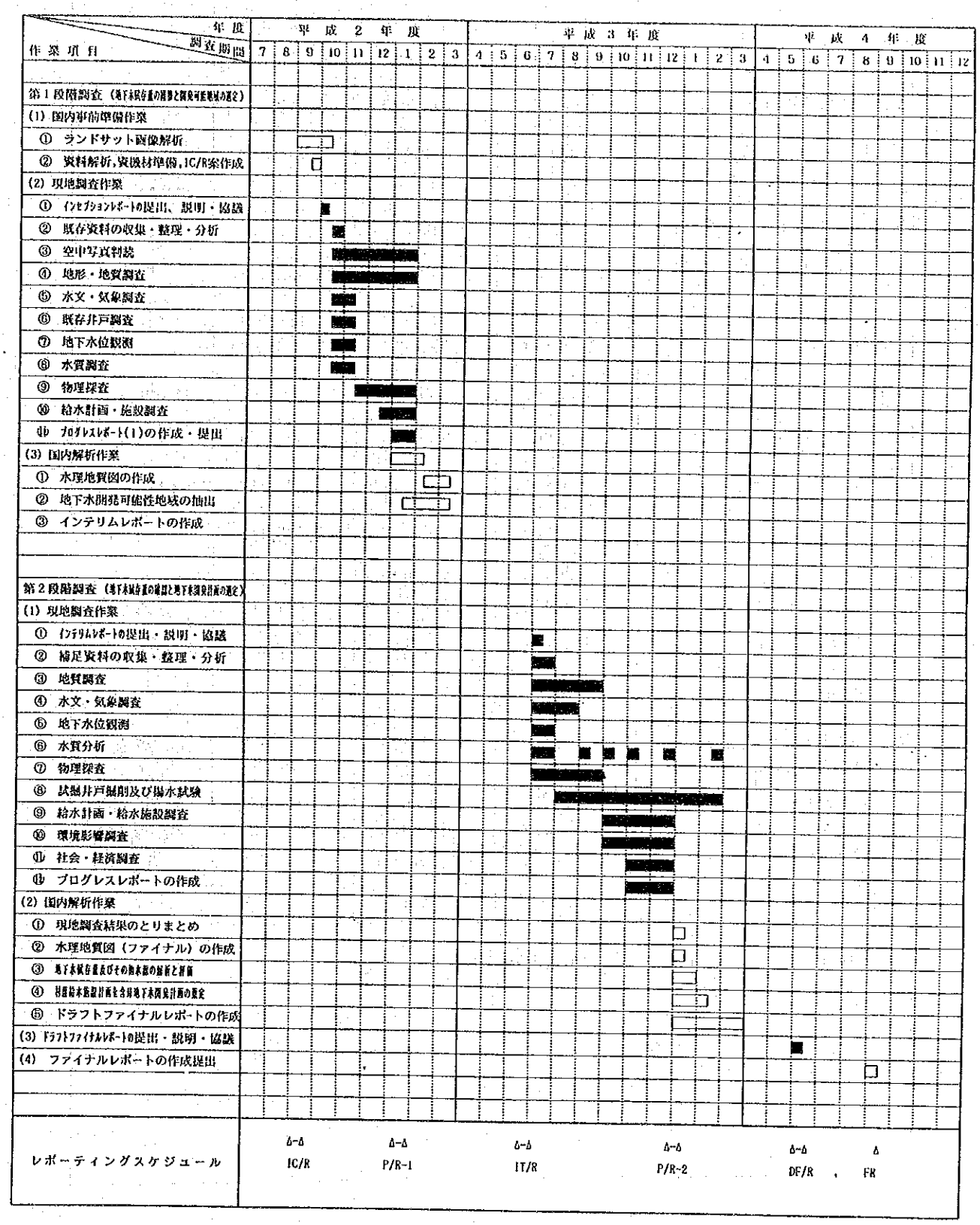
- 日常点検整備、適正管理の必要性を認識せしめ、管理要領の徹底を図る。
- 用水費用の負担責任意識の向上を図る。
- 保健衛生、水質保全にかかる教育を実施する。

2）本開発事業の実施は、計画地域住民の要求を充足するとともに、彼等の民生安定と社会経済活動的水準向上にとって極めて大きく効果することが期待される。

ＩＮＡＰＡは、本事業の早急な実施を促進するために、必要な資金の調達について関係上級機関と協議すべきである。

付　　表

表1.1 調査工程表



凡例 ： —— 事前準備期間　　現地作業期間　　国内作業期間　　Δ 報告書等の説明　　…… その他の作業

表2.1　社会生活基盤整備状況

Item	National District	Santiago Province	Rest of the Country	Total
Population	1,524,491	530,928	3,468,710	5,524,129
With Piped Water Supply	1,189,431	320,820	1,649,933	3,160,184
Indoors	703,660	218,418	758,907	1,680,985
Outdoors <100m	485,771	102,402	891,026	1,479,199
Without Piped Water Supply	335,060	210,108	1,818,777	2,363,945
With Toilet	1,387,045	497,202	2,639,349	4,523,596
Flush	813,227	144,392	478,462	1,436,081
Latrine	573,818	352,810	2,160,887	3,087,515
Without Toilet	137,446	33,726	829,361	1,000,533
With Electricity	1,454,257	337,586	1,593,790	3,385,633
Without Electricity	70,234	193,342	1,874,920	2,138,496
With Kitchen	1,278,124	492,298	2,985,210	4,755,632
Indoors	1,107,708	276,041	1,078,194	2,460,943
Outdoors	170,416	216,257	1,907,016	2,263,689
Without Kitchen	246,367	38,630	483,500	768,497
Cooking Fuel				
Electricity	14,602	1,363	6,933	22,898
Gas, Propane	955,979	186,297	486,562	1,628,838
Charcoal	452,239	147,444	1,158,561	1,785,250
Firewood	68,163	184,975	1,736,105	2,989,243
Others	2,539	1,417	9,710	13,666
No Cooking	30,969	9,432	70,833	111,234

Source: Population & Housing Census 1981

表３．１　地質層序表

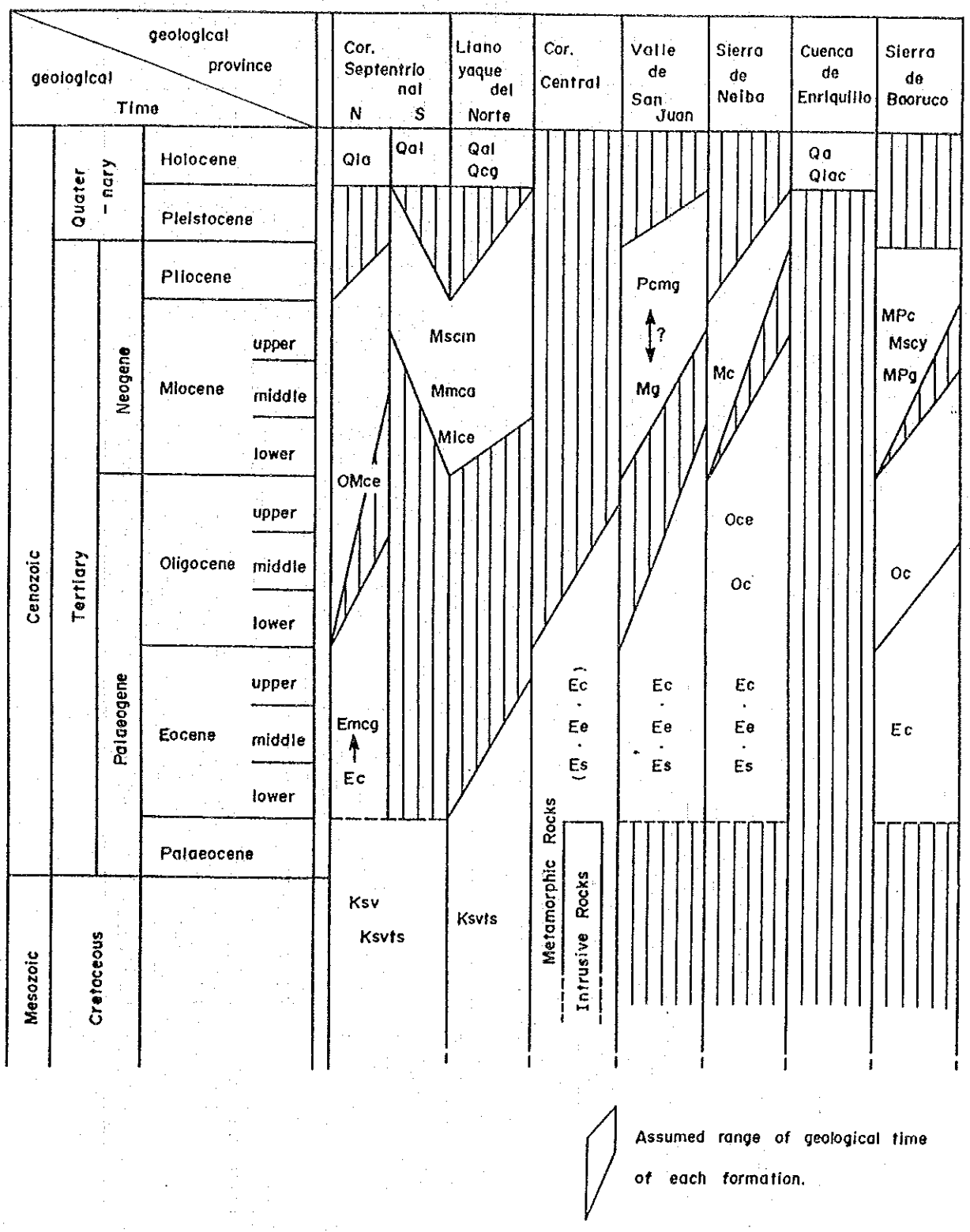

geological province
geological Time
Cor. Septentrional N
Cor. Septentrional S
Llano yaque del Norte
Cor. Central
Valle de San Juan
Sierra de Neiba
Cuenca de Enriquillo
Sierra de Baoruco
Cenozoic
Mesozoic
Quater - nary
Tertiary
Cretaceous
Neogene
Palaeogene
Holocene
Pleistocene
Pliocene
Miocene
Oligocene
Eocene
Palaeocene
upper
middle
lower
Qla
Qal
Qal
Qcg
Qa
Qlac
Mscln
Mmca
Mlce
OMce
Emcg
Ec
Ksv
Ksvts
Ksvts
Ec
Ee
Es
Pcmg
Mg
Mc
Oce
Oc
MPc
Mscy
MPg
Metamorphic Rocks
Intrusive Rocks
Assumed range of geological time of each formation.

表３．２(１)　河川流量観測所・観測期間

CATCHMENT RIVER	STATION		RIVER	UBICATION			CATCHMENT AREA (km²)	DAY OF RECORD	QUANTITY OF WATER RECORD (m³/S)	MAXIMUM INSTANTANEOUS QUANTITY OF WATER RECORD (m³/S)
	NUMBER	NAME		LATITUDE	LONGITUDE	ALTITUDE (m)				
Artibonito	541002	El Corte	Joca	19°08′24″	71°38′02″	281	257	55-84	5.7	140
	542001	Cajuilitos	Tocino	19°04′15″	71°36′00″	430	56.5	78-88	1.00	81
	543001	Puertecito	Macasia	18°48′00″	71°30′40″	574	44	55-83	0.35	30
	543002	Ranchitos	Macasía	18°55′50″	71°36′44″	328	1231	56-86	5.86	1046
	543003	Las dos Bocas	Macasía	18°58′38″	71°52′05″	156	1542	61-65	5.75	72
	543004	Rinconcito	Macasia	18°57′28″	71°46′03″	268	1506	55-65	5.83	144
	543201	Guineos	Caña	18°43′00″	71°38′21″	780	73	55-64	1.81	65
	543202	Olivero	Caña	18°53′42″	71°36′03″	371	414	55-65	2.09	27
	543101	Pozo Hondo	Yacahueque	18°59′30″	71°29′45″	484	77	64-83	1.23	527
	543401	Sonador	Sonador	18°41′55″	71°34′50″	760	10	73-83	0.57	10
	543501	Olivero	Arroyo Alonzo	18°52′22″	71°38′03″	400	66	64-67	1.14	34
Nizaito	510001	Villa Nizao	Nizaito	18°01′22″	71°11′23″	122	116	55-81	3.55	66
Lago Enriquillo	531001	Cerro del Medio	Don Juan	18°28′34″	71°23′57″	-8	N/d	N/d	N/d	N/d
	532001	Puerto Escondido	Las Damas	18°19′15″	71°34′20″	400	117	N/d	N/d	N/d
	533001	Olivero	Barrero	18°31′46″	71°35′10″	60	N/d	N/d	N/d	N/d
	534001	Conuquitos	Guayabal	18°34′26″	71°37′49″	118	N/d	N/d	N/d	N/d

表３．２（２） 河川流量観測所・観測期間

CATCHMENT RIVER	STATION		RIVER	UBICATION			CATCHMENT AREA (㎢)	DAY OF RECORD	QUANTITY OF WATER RECORD (㎥/S)	MAXIMUM INSTANTANEOUS QUANTITY OF WATER RECORD (㎥/S)
	NUMBER	NAME		LATITUDE	LONGITUDE	ALTITUDE (m)				
Yaque del Norte	040007	Jinamagao	Yaque del Norte	19°32′46″	70°59′39″	65	2653	60-75	31.99	974
	040008	Puente San Rafael	Yaque del Norte	19°35′25″	71°03′33″	50	4254	58-84	67.15	1080
	040010	Palo Verde	Yaque del Norte	19°45′29″	71°33′48″	11	6718	59-75	59.27	1156
	040020	Ranchadero	Yaque del Norte	19°39′09″	71°20′48″	28	5230	77-83	65.21	384
	043001	Inoa	Amina	19°21′10″	70°58′52″	322	330	67-86	10.08	1412
	043002	Potrero (2)	Amina	19°28′10″	70°57′36″	115	1	56-67	6.82	135
	044001	Bulla	Mao	19°25′11″	71°04′43″	145	625	67-85	20.81	732
	044002	Chorrera	Mao	19°27′50″	71°05′05″	108	672	58-67	20.27	242
	045001	Rincón	Guayubín	19°31′18″	71°23′21″	57	520	64-88	10.54	741
	045002	La Antona	Guayubín	19°37′48″	71°24′10″	38	739	55-66	9.68	473
	047002	Paso de la Palma	Maguaca	19°35′17″	71°30′56″	60	89	79-85	1.28	181
Chacuey	020001	La Espensa	Chacuey	19°34′40″	71°33′15″	80	81	77-84	1.27	335
	020002	La Pinta	Chacuey	19°38′38″	71°33′05″	35	123	65-77	1.21	51
Dajabón	010001	Don Miguel	Masacre	19°30′10″	71°40′42″	45	162	55-88	4.09	1776
Artibonito	540001	El Corte (1)	Artibonito	19°08′27″	71°38′05″	279	707	56-72	11.2	200
	540002	Pedro Santana	Artibonito	19°06′10″	71°41′30″	253	1029	56-86	16.8	798
	540003	Las dos Bocas	Artibonito	18°56′45″	71°53′00″	155	4143	61-64	51.6	978

表３．３(１)　試掘井・揚水試験結果一覧表

Well № & Location		Results of Drilling Test						Result of Pumping Test			Transmissibility (m^2/min)			Water Quality		
		Drilling Rig	Started Completed	Drilled Depth(m)	S.W.L (GLm)	Screen Position (GLm)	Lithofacies of Aquifer	P/Discharge (Q) ℓ/min	Drawdown (S)m	Specific Capacity (ℓ/min/m)	Theis	Jacob	Recovery	Electric Conductivity (μs/cm)	Cl mg/ℓ	pH
1	El Manantial	KANO KT-300WT	9/10/91 14/10/91	152.35	21.00	99.0-115.0 131.0-135.0	fine grained Sand in Mudstone	3.85	77.90	0.05	9.26×10^{-6}	1.00×10^{-5}	4.98×10^{-6}	3550-11840	> 1600	7.3
2	El Guayo	KANO KT-300WT	26/ 9/91 7/10/91	150.00	13.38	100.0-116.0	fine grained Sand in Mudstone	11.02	55.62	0.20	5.77×10^{-5}	2.33×10^{-5}	6.79×10^{-5}	7690-12060	> 2500	7.9
3	Las Aguas	Speed Star	6/10/91 17/10/91	71.40	2.20	48.0- 64.0	medium~coarse grained Sand	265.63	5.26	50.50	1.14×10^{-1}	1.11×10^{-1}	4.70×10^{-2}	2240- 2450	110	8.1~8.5
4	Jobo Corcobado	Speed Star	16/ 9/91 4/10/91	61.00	4.10	14.0- 16.0 26.0- 30.0	fine Sand to pebble	178.84	19.19	9.32	5.84×10^{-3}	6.35×10^{-3}	2.70×10^{-2}	1480- 1660	70	7.7~8.5
5	La Pinta	KANO KT-300WT	11/11/91 17/11/91	151.00	17.33	61.0- 77.0 123.0-141.0	calcareous Sandstone	337.1	1.60	210.69	—	3.08×10^{-9}	2.50×10^{-9}	1700- 1920	70~80	8.5~9.0
6	Ranchadero	Speed Star	18/ 9/91 23/10/91	80.00	2.05	50.0- 54.0 58.0- 66.0	fine grained Sand	108.89	7.22	15.08	2.90×10^{-2}	2.75×10^{-2}	4.45×10^{-3}	≒ > 2000	101	8.3
7	Cunyubincito	Speed Star	25/ 9/91 4/10/91	62.48	1.54	30.0- 34.0 42.0- 54.0	fine grained sandy Silt/ calcareous sandstone	34.11	47.03	0.73	2.78×10^{-4}	1.12×10^{-3}	7.98×10^{-4}	838- 901	30	8.7~9.1
8	Cabeza de Toro	KANO KT-300WT	18/12/91 28/12/91	134.30	58.75	58.0- 67.0 71.0- 87.0 107.0-111.0	calcareous Sandstone	23.64	30.62	0.77	1.95×10^{-4}	1.62×10^{-4}	2.75×10^{-4}	1800-1870	90	7.4~8.7
9	Palo Blanco	KANO KT-300WT	31/ 8/91 11/ 9/91	150.80	50.80	79.6- 83.6 91.6- 95.6 103.6-107.6 123.6-127.6 135.6-139.6	granule sized Sand in Mudstone/Siltstone	132.87	10.64	18.14	1.43×10^{-2}	1.33×10^{-2}	1.90×10^{-2}	≒ > 2200	128	8.2
10	La Virie	KANO KT-300WT	15/ 8/91 28/ 8/91	72.00	13.24	34- 46	alternation of fine grained Sandstone/Shale	204.12	3.56	57.34	—	1.25×10^{-1}	1.15×10^{-1}	≒ > 1500	56	7.9
11	Esperon	KANO KT-300WT	15/ 9/91 23/ 9/91	151.00	9.53	40.0- 46.0 64.0- 68.0 80.0-100.0 116.0-128.0	granule to pebble sized arkosic/lithic Sand	204.20	8.62	23.69	3.27×10^{-2}	2.20×10^{-2}	2.69×10^{-2}	≒ > 2200	107	7.7
12	Chacuey	KANO KT-300WT	5/12/91 16/12/91	151.00	14.95	32.0- 44.0 52.0- 60.0 68.0- 72.0 136.0-140.0	Weathered metamolphosed Sandstone	321.99	6.60	37.44	3.58×10^{-2}	3.27×10^{-2}	4.48×10^{-2}	424-450	10	8.3~9.3
13	Los Arroyos	KANO KT-300WT	19/10/91 10/11/91	135.20	8.77	28.3- 41.3 53.3- 61.3 85.3- 93.3	Weathered metamolphosed Sandstone arkosic /lithicsand	17.90	71.43	0.25	9.71×10^{-3}	9.93×10^{-3}	8.08×10^{-3}	810-2310	30~ 140	7.8~8.4
14	La Gorra	Speed Star	4/10/91 15/10/91	75.20	8.03	33.4- 61.4	Weathered metamolphosed Sandstone	19.25	33.66	0.57	2.06×10^{-4}	2.23×10^{-4}	2.18×10^{-4}	1241	143	7.7

表３．３(２) 試掘井・揚水試験結果一覧表

Well No. & Location		Results of Drilling						Result of Pumping Test			Transmissibility (m^2/min)			Water Quality		
		Drilling Rig	Started / Completed	Drilled Depth(m)	S.W.L (GL.m)	Screen Position (GL.m)	Lithofacies of Aquifer	P/Discharge (Q) ℓ/min	Drawdown (S)m	Specific Capacity (ℓ/min/m)	Theis	Jacob	Recovery	Electric Conductivity (μs/cm)	Cl mg/ℓ	pH
15	Buen Gusto	KANO KT-300WT	25/11/91 28/11/91	44.40	5.83	8.3- 29.3	Weathered Granodyorite	19.25	12.83	1.48	8.75×10^{-4}	8.81×10^{-4}	1.39×10^{-3}	278-308	10	8.8～9.0
16	La Penita Abajo	KANO KT-300WT	1/12/91 4/12/91	66.40	7.75	7.8- 19.8 23.8- 31.8	Weathered Granite	26.88	3.97	6.77	2.79×10^{-3}	3.39×10^{-3}	4.08×10^{-3}	478-585	20	8.2～8.0
17	La Penita Arriba	KANO KT-300WT	20/11/91 *23/11/91	88.00	14.71	27.7- 35.7 38.7- 43.7 71.7- 75.7 78.7- 83.7	Weathered Granite	10.08	55.49	0.18	2.49×10^{-5}	3.84×10^{-5}	6.04×10^{-5}	310-330	10	8.4～8.9
18	Curce de Mariano Castero	Speed Star	18/10/91 2/11/91	58.38	14.04	14.7- 46.7	Weathered/altered tuffaceous Sandstone	10.96	8.10	1.11	7.66×10^{-4}	7.14×10^{-4}	9.17×10^{-4}	150-200	Tr	7.5～8.5
19	El Mamoncito	Speed Star	16/11/91 5/12/91	94.50	14.11	16.97- 23.77 66.87- 82.27	Calcareous Conglomerate gravelly fine sand-silt	27.00	14.03	1.92	7.18×10^{-5}	9.12×10^{-5}	1.02×10^{-4}	1200	1.25	7.6
20	Las Rosas	KANO KT-300WT	11/ 1/92 18/ 1/92	150.80	19.07	27.5- 35.5 43.5- 51.5 71.5- 75.5 87.5- 91.5 127.5-131.5	alternation of Gravel and Silt	337.10	9.41	35.82	4.36×10^{-2}	4.78×10^{-2}	4.45×10^{-2}	770-800	90	7.5～9.0
21	Lamesdero	Speed Star	16/11/91 1/12/91	110.00	12.35	24.0- 32.0 40.0- 48.0	Clayly Course sand/ gravel fine sand or gravelly Mud	8.28	26.36	0.28	9.92×10^{-4}	1.12×10^{-3}	8.17×10^{-4}	2600	310	8.4
22	El Corbano	Speed Star	18/11/91 14/12/91	120.00	—	—	Dry hole	—	—	—	—	—	—	—	—	—
23	Palo Seco	Speed Star	10/12/91 17/12/91	100.00	—	—	Dry hole	—	—	—	—	—	—	—	—	—
24	Asiento Nigel	Speed Star	18/12/91 22/12/91	85.00	19.22	12.28- 23.98 31.78- 43.48	Calcareous Conglomerate or gravel-sarly gravel	27.00	12.82	2.11	6.58×10^{-3}	7.05×10^{-3}	5.81×10^{-4}	600	150	7.8
25	Angustoria	Speed Star	26/12/91 7/ 1/92	50.00	15.00	—	Silt/Claystone	—	—	—	—	—	—	70040	>3500	7.8
26	LA Balton	Speed Star	8/ 1/92 18/ 1/92	50.00	19.53	18.8- 47.1	Siltstone/Coral Reef	176.94	0.61	290.07	$>1.77\times10^{-1}$	$>1.24\times10^{-1}$	$>8.74\times10^{-1}$	1300	850	8.5
27	Mariano Castero	KANO KT-300WT	3/ 1/92 6/ 1/92	81.00	14.41	34.5- 64.0	Weathered/altered tuffaceous Sandstone	11.02	8.21	1.34	9.05×10^{-4}	8.20×10^{-4}	8.85×10^{-4}	158-204	Tr	7.5～8.9

表３．４（１） 水文区別地下水の水理特性

Hydrogeological Province		Hydrogeological Condition										Yield Capacity	Recommendable Drilling Depth with part for Deposit
No.	Hydrogeological and Province Name	Test Drilling No. and Village Name	Aquifer Lithofacies	Thickness (m)	Type of Groundwater	Water Level S.W.L.(GL-m)	Water Level D.D. (m)	Yield (ℓ/min)	Specific Capacity (ℓ/min/m)	Water Quality EC; μs/cm, SO_4^{2-}; ppm	Characteristic	(ℓ/min)	(m)
I	Cordillera Septentrio	1.EL Manatial	Calcareous sand-gravel	<15	Unconfined	21.0	77.30	3.85	0.05	EC = 3,550～11,940 SO_4^{2-} = 850 pH = 7.3	Chiefly composed of sediments of Tertiary age. Generally consists of mudstone beds with low permeability, ranging in figures of 10^{-5} to 10^{-6}. Partly associated with sandy facies. Electric conductivity values of ground water are shown in left column, while, those correspond to the chlorine ion concentration values of 1500 to 2500 ppm.	0	—
		2.EL Cunyo			Unconfined		55.82	11.02	0.20	EC = 7,880～12,080 SO_4^{2-} = 4,750 pH = 7.9		0	—
II	Llano de Rio Yaque del Norte	3.Las Aquas	Fine sand	20～30	Unconfined	2.20	5.26	265.83	50.50	EC = 2,240～2,450 SO_4^{2-} = 698 pH = 8.1～8.8	Ground water occur in significantly permeable beds of fine- to medium-grained sand, transmissibility coefficient values of which range in figures of 10^{-3} to 10^{-1}. Observed along Yaque del Norte River bank. In-flow of fine sand grains into screen meshes and organic solid suspensions in ground water in some places are to be carefully examined.	>500	80～90
		4.Jabo Corcobado	Fine sand	20～30	Unconfined	4.10	18.19	176.84	9.22	EC = 1,480～1,680 SO_4^{2-} = 500 pH = 7.7～8.6		100	60～70
III$_1$	Sur del Yaque del Norte	6.Ranchadero	Very fine-grained sand	20	Weakly confined	2.05	7.22	108.89	15.08	EC ≒> 2,000 SO_4^{2-} = 340 pH = 8.3	Ground water is observed in alternations of fine sand and silt beds of Tertiary age. In-flow of silt grains into screen meshes is to be carefully examined.	100	70～80
III$_2$	Sur del Yaque del Norte	8.La Pinta	Calcareous sandstone	20～30	Confined	17.33	1.80	327.10	210.89	EC = 1,700～1,920 SO_4^{2-} = 2,171 pH = 8.6～9.0	Ground water is observed in calcareous sandstone beds of Tertiary age. Water yield is estimated to be very high, however, a very high content of sulphate ion concentration is carried. Water well drill depth is to be made some 60 meters deep. Highly permeable with transmissibility coefficient values in range of 10^{-3} to 10^{-2}.	>1000	70～80
III$_3$	Sur del Yaque del Norte	9.Palo Blanco	Silty sandstone	50～60	Confined	50.60	10.64	182.97	18.14	EC ≒> 2,200 SO_4^{2-} = 115 pH = 8.2	Aquifers are comprised of several calcareous sandstone beds, intercalated in thick siltstone beds. Highly permeable with transmissibility coefficient values in range of 10^{-3} to 10^{-2}.	150～200	140～150
		10.La Vigia	Alternations of sandstone as Siltstone	10～15	Confined	13.24	3.56	204.12	57.34	EC ≒> 1,500 SO_4^{2-} = 205 pH = 7.9	Aquifers show the similar character to the above, III$_3$-9. Highly permeable with transmissibility coefficient values in range of 10^{-1}.	>500	80
		11.Esperon	Sandstone	20～30	Confined	9.53	6.82	204.20	23.83	EC ≒> 2,200 SO_4^{2-} = 68 pH = 7.7	Aquifers are comprised of conglomeratic sandstone beds of Tertiary age, which underlie arkose sandstone beds of Tertiary age. Occur about 80 to 100 meters deep underground. Highly permeable with transmissibility coefficient values in range of 10^{-1}.	200～300	120
		12.Chacuey	Sandstone	28	Confined	14.95	8.80	321.99	37.44	EC = 424～450 SO_4^{2-} = 8 pH = 8.8～9.6	Aquifers are comprised of conglomeratic sandstone and arkose sandstone beds, which overlie weathered metamorphic rocks of Cretaceous age. Transmissibility coefficient values show about 10^{-2}. Water quality is good.	300～500	120～140

S.W.L. : Static Water Level
D.D. : Draw Down

表３．４(2)　水文区別地下水の水理特性

Hydrogeological Province		Hydrogeological Condition												
No.	Hydro-geological and Province Name	Test Drilling No. and Village Name	Aquifer Lithofacies	Thick-ness (m)	Type of Groundwater	Water Level S.W.L.(GL-m)	Water Level D.D. (m)	Yield (ℓ/min)	Specific Capacity (ℓ/min/m)	Water Quality EC; μs/cm. SO_4^{2-};ppm	Characteristic	Yield Capacity (ℓ/min)	Recommend-able Drilling Depth with part for Deposit (m)
Ⅲ4	Sur del Yaque del Norte	7.Guayubincito	Sandygrild	5～10	Weakly Confined	1.54	47.03	34.11	0.73	EC = 838～ 901 SO_4^{2-} = 255 pH = 8.7～9.1	Confining layers of Tertiary age.	5～10	70～80
			Calcareous Sandstone	10～20							Aquifers are comprised of sandy sediment parts, intercoleted in alternations of calcarous shale and sandstone beds of Pliocene - Tertiary age. Transmissibility coefficient values show about 10^{-4}. Water quality is good.		
Ⅳ1	Cordillera Central	15.Buen Cueto	Weathered Granodyorite	20	Unconfined	5.83	12.98	19.25	1.48	EC = 273～ 308 SO_4^{2-} = 5 pH = 8.6～9.0	Weathered zones of granitoid of Mesozoic age form aquifer beds. Aquifers are, consequently, located close to the ground surface to inevitably cause a seasonal fluctuation of water table level. Transmissibility coefficient values show in range of 10^{-4} to 10^{-3}, while, apperently about as low as 10^{-5} in the occasion, when research drill had been made in the site location close to mountainous ridge, due to that lowering of water level has been large in comparison with water yield quantity in the above site, where ground water recharge had been hardly made. Superior quality of ground water.	10～15	60
		16.La Penita Abajo	Weathered Tonalite	30	Unconfined	7.75	3.97	28.88	6.77	EC = 478～ 585 SO_4^{2-} = 13 pH = 8.2～8.8		50～60	80
		17.La Penita Arriba	Weathered Tonalite	40	Unconfined	14.71	55.48	10.06	0.18	EC = 310～ 330 SO_4^{2-} = 10 pH = 8.4～8.8		2～3	80
Ⅳ2	Cordillera Central	8.Cabeza de Toro	Calcareous Sandstone		Confined	53.75	30.62	23.84	0.77	EC = 1,900～ 1,970 SO_4^{2-} = 2,400 pH = 7.4～8.7	Aquifers are comprised of weathered phillitic metamorphosed rocks of Cretaceous age with transmissibility coefficient values of about 10^{-4}. Less permeable. A possible high content value of sulphate ion contration should be cautiously examined.	5～10	140～150
Ⅳ2	Cordillera Central	19.Los Arroyos	Gravelly Sandstone	12～15	Unconfined	8.77	71.43	17.90	0.25	EC = 810～ 2,910 SO_4^{2-} = 1,400 pH = 7.6～8.4	Conglomeratic sandstone beds of Tertiary age, which overlie metamorphic rocks of Cretaceous age, are estimated to possibly form aquifers with possibly low water yield quantity.	5	70～80
			Coarse grained Sandstone	8～15	Weakly Confined						Aquifers are comprised of weathered zones of metamorphic rocks of Cretaceous age. Less water yield quantity with transmissibility coefficient values in range of 10^{-5} to 10^{-4}.	—	—
		14.La Corra	Weathered Sandstone	30～40	Unconfined	8.03	33.88	19.25	0.57	EC = 1,241 SO_4^{2-} = 33 pH = 7.7	Aquifers in Curce de Mariano Cestero and Mariano Cestero are observed in argillaceously altered parts by granitic rock intrusion. Superior quality of ground water.	5～10	30～30
		18.Curce de Mariano Cestero	Weathered Sandstone	32	Unconfined	14.04	9.10	10.06	1.11	EC = 150～ 200 SO_4^{2-} = 13 pH = 7.5～8.9		10～15	70～80
		27.Mariano Cestero	Weathered Sandstone	20	Unconfined	14.41	8.21	11.02	1.34	EC = 159～ 204 SO_4^{2-} = Tr pH = 7.5～8.9		10～15	70～80
Ⅳ3	Cordillera Central		Limestone	<nx100	Confined	—	—	—	—		Ground water mobilises through sinkholes in limestone beds. Water is abundantly yielded when sinkholes are open to ground surface. Ground water quality is good.		

S.W.L. : Static Water Level
D.D. : Draw Down

表３．４(３)　水文区別地下水の水理特性

Hydrogeological Province		Hydrogeological Condition										Yield Capacity	Recommendable Drilling Depth with part for Deposit
No.	Hydrogeological and Province Name	Test Drilling No. and Village Name	Aquifer Lithofacies	Thickness (m)	Type of Groundwater	Water Level S.W.L.(GL-m)	Water Level D.D. (m)	Yield (ℓ/min)	Specific Capacity (ℓ/min/m)	Water Quality EC; μs/cm, SO_4^{2-}; ppm	Characteristic	(ℓ/min)	(m)
V_1	Valle de San Juan	19.EL Manantio	Calcareous Conglomerate	25	Unconfined	14.11	14.03	27.00	1.92	EC = 1,200 SO_4^{2-} = xx pH = 7.6	Lower part of the alternations of calcareous conglomerate, mudstone and conglomerate beds of Tertiary, which are observed on ground surface, forms aquifers. General depths toward aquifers are shallow in dissected valley areas, inversely are relatively deep in hilly areas. Ground water level in hilly areas shows a seasonal remarkable fluctuation. General transmissibility coefficient values show in range of 10^{-3} to 10^{-5}, while, about 10^{-2} in Las Rosas. Salinity values of ground water are also varied.	15～20	50～70
		20.Las Rosas	Calcareous Conglomerate	20～30	Confined	19.07	9.41	337.10	35.82	EC = 770～ 800 SO_4^{2-} = Tr? pH = 7.5～9.0		300～500	50～70
		21.Lamesdero	Calcareous muddy sandstone	20～30	Unconfined	12.36	26.38	6.28	0.29	EC = 2,800 SO_4^{2-} = xx pH = 7.7		3～5	50～70
V_2	Valle de San Juan	22.EL Corbano	Calcareous sand-gravel	—	Dry	Dry	Dry	—	—	—	The areas are geologically located in anticlinal part of the beds. Chiefly consists of siltstone beds, which are correlated to the above layers shown in V1. Thick-bedded and aquiclude. Occurrences of ground water in shallow depth in the Province are evaluated to be unlikely potential. Utilization of spring water from weathered zones, close to ground surface, is to be examined.	—	—
		23.Palo Seco	Calcareous sand-gravel	—	Dry	Dry	Dry	—	—	—		—	—
VI	Sierra de Neiba	24.Asiento Miguil	Calcareous sandstone	20～30	Unconfined	18.22	12.82	27.00	2.11	EC = 800 SO_4^{2-} = 185 pH = 7.8	Unconfined ground water of quantitative insignificance is observed in calcareous sandstone beds, intercalated in shale beds of marine sedimentation in Tertiary age.	20	50～70
			Limestone	>50	Confined						Confined water of good quality is observed associated with limestone beds of Oligocene-Tertiary age. The ground water springingly flows into streams in low ground. Selections of drill site are to be cautiously studied.	—	—
VII_1	Cuenca de Enriquillo		Sand-gravel Coral sand		Unconfined	—	—	—	—		Occurrences of ground water are evaluated to be unlikely potential in the Province, geologically covered by such sediments as calcareous clay, sand, gravel and etc. on ex-sea-floor and with less vegetation.		
VII_2	Cuenca de Enriquillo	25.Angostora	Marly limestone	30	Unconfined	15.00	—	—	—	EC =70,400 SO_4^{2-} =18,500 pH = 7.6	Marly limestone beds are of aquiclude, therefore, are evaluated to unlikely fors aquifers.	—	—
			Alternations of conglomerate-sandstone	750		—	—	—	—		Ground water is remarkably saline due to local extensions of rock salt beds of tertiary age. Run-off and spring water from Baoruco Mountains are to be reasonably collectively utilized.	100～200	80
		26.LA Baiton	Coral reef, Alternations of conglomerate-sandstone	750	Confined in fissure system cavities	19.53	0.81	178.34	290.07	EC = 1,300 SO_4^{2-} = xx? pH = 7.8	Spring water from Baoruco Mountains are to be abundantly collected as shown by the current drill operation.	>3,000	80
VII	Sierra de Baoruco		Limestone	>nx100	—	—	—	—	—		Sinkholes in limestone beds are well-developed to cause a downward mobilization of rain water. A part of ground water is observed in northern hillfoot.		

S.W.L. : Static Water Level
D.D. : Draw Down

表3.5　水文地質区別地下水開発可能量総括表

Hydrogeological Province		Hydrogeological Condition			
No.	Hydrogeological and Province Name	Aquifer Clasifi-cation	Yield Capacity	Drilling Depth	Quality
Ⅰ	Cordillera Septentrio	L1/D11	Lack of available aquifer within 150 m in depth	–	d
Ⅱ	Llano de Rio Yaque del Norte	L2/D4	Q＝100 l/min, partly Q≧500	＜60 m	b
Ⅲ1	Sur del Yaque del Norte	L3/D5	Q＝100 l/min	60~90 m	b
Ⅲ2	Sur del Yaque del Norte	L4/D3	Q≧100 l/min, partly Q≧1000	60~90 m	b
Ⅲ3	Sur del Yaque del Norte	L5/D1	Q＝300 l/min, partly Q≧500	60~120 m	b/a
Ⅲ4	Sur del Yaque del Norte	L6/D7	20＞Q≧5 partly Q≧300~500	30~60 m	b
Ⅳ1	Cordillera Central	L7/D6	60＞Q≧10	30~60 m	a
Ⅳ2	Cordillera Central	L8/D9	Lack of high available aquifer up to the basement situated at 90 m in depth	–	a
Ⅳ2	Cordillera Central	L8/D8	Lack of high available aquifer up to the basement situated at 60 m in depth	–	a
Ⅳ3	Cordillera Central	L9/D12	no datum	–	–
Ⅴ1	Valle de San Juan	L10/D7	20＞Q≧5 partly Q≧300~500	50 - 70	c
Ⅴ2	Valle de San Juan	L11/D10	Lack of availaboe aquifer within 120 m in depth	–	c
Ⅵ	Sierra de Neiba	L12/D7	20＞Q≧5 partly Q≧300~500	50 - 70	b
Ⅶ1	Cuenca de Enriquillo	L13/D12	no datum	–	–
Ⅶ2	Cuenca de Enriquillo	L14/D2	200＞Q≧100 partly Q≧3000	80	b
Ⅷ	Sierra de Baoruco	L15/D12	no datum	–	–

表３．６　　水文地質区別水収表

Hydro-geologic Province	Area (km2)	Annual mean Rainfall ($\times 10^9$m3)	Annual Evapo-transpiration ($\times 10^9$ m3)	Annual Run-of ($\times 10^9$ m3)	Annual Recharge ($\times 10^9$ m3)	Yield Capacity (m^3/d/km^2)
Ⅰ	305					
	462	64.42	32.75	17.488	14.182	50658
Ⅱ	422	36.93	21.6	8.118	7.212	46822
Ⅲ1	120					
	120					
	86	32.73	20.16	7.182	5.388	45281
Ⅲ2	124	16.92	11.22	2.901	2.799	61843
Ⅲ3	130	19.78	11.7	5.157	2.923	61602
Ⅲ4						
Ⅳ1	346	60.55	34.06	15.134	11.356	89920
Ⅳ2	124					
	44					
	782	186.28	101.03	54.213	31.037	89508
Ⅳ3	115	22.08	11.55	6.687	3.843	91554
Ⅴ1	98					
Ⅴ2	461					
Ⅵ	327					
	419	228.77	138.54	47.206	35.024	73530
Ⅶ1	779	50.63	30.77	17.66	2.2	7737
Ⅶ2	429	47.19	24.64	20.586	1.964	12543
Ⅷ	523	101.99	52.98	35.675	13.335	69855
	6216	860.27	491.00	238.007	131.263	700853

表3.7(1)　主要河川の80%確率年流量

River	Station			Mean Annual Discharge	Probable Discharge		50 % Probability		80 % Probability	
	No.	Name	Area		50 %	80 %	Annual Discharge	ℓ/s/km²	Annual Discharge	ℓ/s/km²
Yaque del Norte River System			(km²)		(m³/s)	(m³/s)	(10 m³)		(10 m³)	
Yaque del Norte	040007	Jinamagao	2653	31.99	28.673	18.000	904,232	10.81	567,648	6.79
	040008	Puente San Rafael	4254	67.15	60.155	24.850	1,897,048	14.14	783,670	5.84
	040010	Palo Verde	6718	59.27	56.302	30.943	1,775,540	8.38	975,818	4.61
	040020	Ranchadero	5230	65.21	60.273	33.732	1,900,769	11.53	1,063,772	6.45
Amina	043001	Inoa	322	10.08	9.412	5.815	296,817	28.52	183,382	17.62
	043002	Potrero	207	6.82	5.007	2.361	157,901	24.19	74,457	11.45
Mao	044001	bulla	625	20.81	19.290	14.093	608,330	30.87	444,437	22.55
	044002	Chorrera	672	20.27	12.823	7.876	404,386	19.08	248,378	11.72
Guayubin	045001	Rincon	520	10.54	9.500	5.681	299,592	18.27	179,156	10.93
	045002	La Antona	739	9.68	9.694	4.033	305,710	13.12	127,185	5.46
Maguaca	047002	Paso de laPalma	89	1.28	0.775	0.607	244,404	8.71	19,143	6.82
(Gurabo)		(Confluence)	102	(1.06)						(10.4)
(Cana)		(Confluence)	199	(2.31)						(11.6)
(Guayubin)		(Confluence)	786	(13.38)						(17.0)
(Maguaca)		(Confluence)	146	(1.00)						(6.9)
Chauey River System										
Cahuey	020001	La Expense	81	1.27	1.172	0.477	369,602	14.47	150,427	5.89
	020002	La Pinta	123	1.21	0.832	0.433	262,380	6.77	136,551	3.52
Dajabon River System	010001	Don Miguel	162	4.09	2.902	1.141	915,175	17.92	359,826	7.05
	(010002)	(Dam Site)	322							

表3.7(2)　主要河川の80%確率年流量

River	Station			Mean Annual Discharge	Probable Discharge		50 % Probability		80 % Probability	
	No.	Name	Area		50 %	80 %	Annual Discharge	ℓ/s/km²	Annual Discharge	ℓ/s/km²
Artibonito River System			(km²)		(m³/s)	(m³/s)	(10 m³)		(10 m³)	
Artibonito	540001	El Corte	707	(11.2)						
	540002	Pedro Santana	1029	16.8	15.981	11.839	503.977	15.53	373,355	11.51
	540003	Las Dos Bocas	4143	(51.6)						
Joca	541002	El Corte	257	5.7	5.574	4.001	175,782	21.69	126,176	15.57
Tocino	542001	Cojuilitos	66.5	1.0	0.909	0.317	28,666	13.67	9,997	4.77
Macasia	543001	Puertecito	44	(0.35)	—	—				
-do-	543002	Ranchitos	1231	5.86	5.72	3.535	180,286	4.55	111,480	2.95
-do-	543002	Las Dos Bocas	1542	(5.75)	—	—	—			
-do-	543004	Rinconcito	1506	5.83	5.429	3.402	171,209	3.61	107,286	2.26
Cana	543201	Guines	73	1.81	1.737	1.248	54,778	23.80	39,357	17.10
-do-	543202	Olivero	414	2.09	1.917	0.775	62,126	4.63	24,441	1.88
Yacahueque	543101	Pozo Hondo	77	(1.23)						
Sonador	401	Sonador	10	(0.57)						
Arroyo Alonzo	501	Olivero	66	(1.14)						

表 3.8 (1) 計画対象村落の現況

Monte Cristi		Present Condition 1990		Basic Projection (2000)				Existing Water Supply		
No.	Village	Population	Household	Household	Population	Consumption	Demand	Source	System	Condition
1	El Duro	480	80	80	480	60 ℓ/c/d	72 ℓ/min	Canal	S-V-1)	Very poor
2	Esabel de Torres	272	63	72	311	15	4	Rainfall	S-I-1)	Very poor
3	Hato Viejo	150	32	32	150	40	15	River	S-III-1)	Very poor
4	Las Aquitas	522	115	153	692	40	23	Rainfall	S-I-1)	Very poor
5	Paladero	15	3				Village		Dispersion	
6	Las Clavellinas	–	–				Village		Dispersion	
7	La Pinta	441	101	156	680	60	102	Hand P.×4	G-I-2)	Poor
8	Batey Higuero	743	169	501	2,253	100	187	River Canal	S-III/V-1)	Very poor
9	Las Penás	277	63	63	277	100	23	River	S-III-3)	Good
10	Batey Juliana	240	60	60	340	60	17	River	S-III-3)	Good
11	Los Conucos	348	78	98	483	40	16	Rainfall	S-I-1)	Very poor
12	Paso Real	–	–				Village		Dispersion	
13	Cerro Gordo Arriba	404	92	98	431	100	36	River	S-III-1)	Very poor
14	Penà Ranchaderos	391	89	97	432	100	36	River	S-III-1)	Very poor
15	Los Gorilas	–	–				Village		Dispersion	
16	El Papayo	277	63	63	277	100	23	Spring	S-II-3)	Good
17	Estero Balsa	233	53	53	233	40	8	Spring	S-II-1)	Very poor
18	Cabeza de Toro	399	75	80	560	60	28	River	S-III-1)	Poor
19	Guayubincito	352	75	94	429	60	21	River	S-III-1)	Poor
20	El Mangal	233	54	55	241	100	17	River	S-III-3)	Good
21	El Cayal	391	89	97	424	40	14	Reservoir	S-VI-1)	Very poor
22	Hato al Medio Arriba	273	62	68	300	150	37	River	S-III-3)	Good
23	Los Amaceyes	218	50	50	218	40	18	River	S-III-1)	Very poor

表3.8 (2) 計画対象村落の現況

Monte Cristi		Present Condition 1990		Basic Projection				Existing Water Supply		
No.	Village	Population	Household	Household	Population	Consumption	Demand	Source	System	Condition
						ℓ/c/d	ℓ/min			
24	Jobo Corcobado			471	2,068	60	103	Canal	S-V-1)	Very Poor
25	Gozuela			200	1,500	100	125	Borehole	G-I-2)	Poor
26	Baitoa	143	30				Village		Dispersion	
27	Sanita	762	95	95	760	40	76	Spring Canal	$G-\frac{II}{V}-1)$	Poor
28	Marmoleja	–	–				Village		Dispersion	
29	La Cabuya	–	–				Village		Dispersion	
30	Buen Hombre	410	86	89	423	40	14	Rainfall	S-I-1)	Very Poor
31	Las Canas	245	70	70	245	40	8	Rainfall	S-I-1)	Very Poor
32	Las Brigidas	95	19	19	95	40	3	Rainfall	S-I-1)	Very Poor
33	Loma Atravezada	280	67	67	280	40	12	Rainfall	S-I-1)	Very Poor
34	Sabana Cruz	548	126	148	647	40	21	Rainfall	S-I-1)	Very Poor
35	El Cacao	–	–				Village		Dispersion	
36	La Horca	205	50	63	263	40	26	River Borehole	S-III-1) G-III-2)	Poor
37	El Mansutia	336	92	92	336	40	11	Rainfall	S-I-1)	Very Poor
	Total			3,248	15,828		ℓ/min 1,089			

表3.8(3)　計画対象村落の現況

Dajabon		Present Condition 1990		Basic Projection (2000)				Existing Water Supply		
No.	Village	Population	Household	Household	Population	Consumption	Demand	Source	System	Condition
						ℓ/c/d	ℓ/min			
1	Palo Blanco	354	80	93	366	60	18	Borehole	G-Ⅰ-1)	Good
2	Cayaco	377	94	94	377	40	56	Hand Pump×4	G-Ⅰ-2)	Poor
3	Laja	400	50	50	400	40	40	Hand Pump×4	G-Ⅰ-2)	Poor
4	La Cienage	516	100	138	712	40	70	Hand Pump×4	G-Ⅰ-3)	Good
5	Clavellina	336	83	102	418	40	62	Hand Pump×1	G-Ⅰ-1)	Poor
6	Sabana Santiago	396	92	92	396	40	40	Hand Pump×	G-Ⅰ-3)	Good
7	El Rodeo	693	134	328	1,697	60	84	Hand Pump×4 River	G-Ⅰ-3)	Good
8	La Gorra	470	96	131	642	60	32	Hand Pump×5	G-Ⅰ-2)	Very poor
9	La Barrera	198	42	42	198	40	20	Hand Pump×1	G-Ⅰ-2)	Poor
10	El Estrecho	200	25	25	200	40	20	Hand Pump×1	G-Ⅰ-1)	Very poor
11	El Llano	276	65	65	276	40	27	Hand Pump×1 River	G-Ⅰ-1) S-Ⅲ-1)	Very poor
12	Tamarindo	186	32	32	186	40	19	River	S-Ⅲ-1)	Poor
13	La Peñita	343	79	89	388	40	39	Hand Pump×1 Reservoir	G-Ⅰ-1) S-Ⅵ-1)	Poor
14	Pueblo Nuevo	225	62	65	243	40	24	Stream	S-Ⅳ-1)	Poor
15	La Ceiha	2,400	300	300	2,400	60	120	River	S-Ⅲ-3)	Good
16	Castellar	344	43	43	344	60	17	River	S-Ⅲ-3)	Poor
17	Masaquito	93	19				Village		Dispersion	
18	El Cajuil	360	72	78	390	40	39	Hand Pump River	G-Ⅰ-1) S-Ⅲ-1)	Poor
19	Arroyo Azul	128	16	16	128	40	13	River	S-Ⅲ-1)	Poor
20	El Aguacate	276	50	57	312	40	31	River Hand P.×1	S-Ⅲ-1) G-Ⅰ-1)	Poor
21	La Peñita	316	59	69	374	40	37	River Hand P.×1	S-Ⅲ-1) G-Ⅰ-1)	Poor
22	Los Pozos	120	24	20	120	40	4	River	FUDECO'S Constructing at present	
23	La Avanzada	210	35	35	210	40	21	Spring	S-Ⅱ-2	Poor

表3.8(4)　計画対象村落の現況

Dajabon		Present Condition 1990		Basic Projection (2000)				Existing Water Supply		
No.	Village	Population	Household	Household	Population	Consumption	Demand	Source	System	Condition
						ℓ/c/d	ℓ/min			
24	Palo Blanco	296	50	50	296	40	40			
25	Arroyo de la Jagua	360	60	60	360	40		River	FUDECO's constructing at present for household connection	
26	La Jagua	540	90	90	540	40				
27	La Luisa	377	77	83	407	60	20	River	FUDECO construction	
28	Los Cacaos	34	7	7	34	40	1	River	S-Ⅲ-1)	Poor
29	Sabana Gurabo	273	1,638	273	1,638	60	82	River	INAPA construction	
30	Los Sosias	59	20	5	120	40	4	River	S-Ⅲ-1)	Poor
31	Pinal Claro	270	43	71	347	40	34	Hand pump×2	G-Ⅰ-2)	Poor
32	Paso de Jacinto	120	25	25	120	60	6	Stream	S-Ⅳ-3)	Good
33	Piedra Blanca	400	49	49	400	40	40	River Hand pump×4	S-Ⅲ-1) G-Ⅰ-2)	Good
34	La Hoya	228	88	38	228	40	23	Hand pump×1 River	G-Ⅰ-1) S-Ⅲ-1)	Poor
35	Los Indios	265	54	70	349	60	17	Partido River	S-Ⅲ-1)	Good
36	La Piña	266	62	81	377	60	18	Partido River	S-Ⅲ-1)	Poor
37	Partido	329	67	68	334	60	17	River	S-Ⅲ-2)	Good
38	Sangre Linda	363	72	87	439	60	22	Partido Hand pump×2	G-Ⅰ-2)	Good
39	Buen Gusto	288	70	79	328	40	33	Hand pump×1 River	G-Ⅰ-1) S-Ⅲ-1)	Poor
40	La Culata	378	63	63	378	60	19	Partido	S-Ⅲ-2)	Good
41	La Huasima			825	4,950	60	247	River	S-Ⅲ-1)	Poor
42	Vaca Gorda									
43	Aminilla	443	87	133	677	47	68	Hand pump×6	G-Ⅰ-2)	Poor
44	Carrizal	432	72	72	432	60	21	Stream	S-Ⅳ-2	Good
45	Mariano Cestero	570	95	95	570	40	56	Hand pump×1 River	G-Ⅰ-2) S-Ⅲ-1)	Very poor
46	Jimenez Abaja	312	52	52	312	40	31	River	S-Ⅲ-1)	Poor

表3.8(5)　計画対象村落の現況

Dajabon		Present Condition 1990		Basic Projection (2000)				Existing Water Supply		
No.	Village	Population	Household	Household	Population	Consumption	Demand	Source	System	Condition
47	La Pocilga	138	23	20	138	40 ℓ/c/d	14 ℓ/min	Spring	S-Ⅱ-1)	Poor
48	Agua Blanca	300	50	50	300	40	30	Spring	S-Ⅱ-1)	Poor
49	Valle Nuevo	312	52	52	312	40	21	River	S-Ⅲ-1)	Poor
50	Neyta	192	32	32	192	40	19	River	S-Ⅲ-1)	Poor
51	Los Cerezoso Quita	108	18	18	108	40	10	River	S-Ⅲ-2)	Good
52	Manpaque	60	10	10	60	40	1	Spring	S-Ⅱ-1)	Poor
53	Monte Grande	594	99	99	594	60	30	Plain treatment plant from river by FUDECO		
54	Manuel Bueno	1,032	172	172	1,032	60	52	Plain treatment plant from river by FUDECO with No.24, 25, 26		
55	Las Lagunas	5224	97	87	522	40	52	River	S-Ⅲ-1)	Poor
	Total			4,870	27,671		1,861 ℓ/min			

表3.8(6)　計画対象村落の現況

Elias Pina		Present Condition 1990		Basic Projection (2000)				Existing Water Supply		
No.	Village	Population	Household	Household	Population	Consumption	Demand	Source	System	Condition
1	Guazumal Arriba	192	24	24	192	60 ℓ/c/d	10 ℓ/min	River	S-Ⅲ-1)	Poor
2	Sabacón Abajo	162	27	27	162	40	16	River	S-Ⅲ-1)	Poor
3	El Cedro	175	41	41	175	40	17	Spring	S-Ⅱ-1)	Poor
4	Los Corocitos	340	59	84	484	40	48	River	S-Ⅲ-1)	Poor
5	La Cabra-El Cerro	210	35	35	210	40	21	River	S-Ⅲ-1)	Poor
6	Sabana Campo	180	30	30	180	40	18	River	S-Ⅲ-1)	Poor
7	Potroso	552	92	92	552	60	28	River	S-Ⅲ-1)	Poor
8	Macasia	690	115	115	690	40	69	Hand pump×6	G-Ⅰ-2)	Very poor
9	Carrera Verde	270	35	35	210	40	21	River	S-Ⅲ-1)	Poor
10	Lamedero	210	35	35	210	40	21	River	S-Ⅲ-1)	Poor
11	La Margarita	1,128	188	188	1,128	60	56	Hand pump×2	G-Ⅰ-1)	Poor
12	Pozo Hondo	276	46	46	276	40	27	River	S-Ⅲ-1)	Poor
13	Hato Nuevo	138	33	33	198	40	20	River	S-Ⅲ-1)	Poor
14	El Hueso	346	63	63	346	40	34	Spring	S-Ⅱ-1)	Poor
15	El Duan	237	43	43	237	40	43	Spring	S-Ⅱ-1)	Poor
16	El Cañita	138	25	25	138	40	14	Spring	S-Ⅱ-1)	Poor
17	Los Memisos	180	30	30	180	40	18	Spring	S-Ⅱ-1)	Poor
18	Mata Bonita	126	21	21	126	40	13	River	S-Ⅲ-1)	Poor
19	El Mamoncito	255	45	55	313	40	32	Hand pump×1 River	G-Ⅰ-2) S-Ⅲ-1)	Very poor
20	El Fondo	281	51	60	329	40	33	From Pedro Santana water supply		
21	San Andrés	114	19	19	114	40	11	Canal	S-Ⅴ-1)	
22	Guayabal	435	79	114	629	40	44	Hand pump×2	G-Ⅰ-2)	Poor
23	Hato Viejo	259	47	47	259	40	26	Hand pump×3	G-Ⅰ-1)	Very poor

表3.8(7)　計画対象村落の現況

Elias Pina		Present Condition 1990		Basic Projection (2000)				Existing Water Supply		
No.	Village	Population	Household	Household	Population	Consumption	Demand	Source	System	Condition
						ℓ/c/d	ℓ/min			
24	Pilón	300	50	50	300	40	30	Hand Pump×1	G-Ⅰ-1)	Very poor
25	Guaroa	216	36	36	216	40	21	Hand Pump×2	G-Ⅰ-1)	Very poor
26	Los Yareyes	314	57	60	332	40	33	Wind Pump Hand Pump	G-Ⅰ-3) G-Ⅰ-1)	Very poor
27	El Cantón	234	39	39	234	40	8	FUDECO construction water supply		
28	Benancio	445	70	128	808	40	81	Hand pump×9 River	G-Ⅰ-2) S-Ⅲ-1)	Poor
29	Bruno	252	42	42	252	40	25	Canal	S-Ⅴ-1)	Poor
30	La Joya	420	70	70	420	60	21	River	S-Ⅲ-1)	Poor
31	Palo Seco	350	64	64	350	40	35	Spring	S-Ⅱ-1)	Poor
32	Juan Cano	234	39	39	234	40	23	Spring	S-Ⅱ-1)	Very poor
33	La Lajita	414	69	69	414	40	41	Spring	S-Ⅱ-1)	Poor
34	Las Lagunas	275	48	77	365	40	36	Spring	S-Ⅱ-2)	Very poor
35	Yerba Buena	225	49	49	225	40	22	Stream	S-Ⅳ-1)	Poor
36	Cañada del Barrero	225	42	42	225	40	22	River	S-Ⅲ-1)	Poor
37	Sonador	1,500	250	250	1,500					
38	La Sajonada	420	70	70	420	2154 40	72	From Sonador water supply by INAPA		
39	Los Ranchitos	234	39	39	234					
40	Los Mesas	240	40	40	240	40	8	River	S-Ⅲ-1)	Poor
41	Los Caños	178	33	33	198	40	7	River	S-Ⅲ-1)	Poor
42	Los Pajaritos	180	30	30	180	250 40	12	FUDECO construction water supply		
43	Boca del Botads	170	42	42	170					
44	Los Jaquelles	120	20	20	120	40	4	River	S-Ⅲ-1)	Poor
45	Los Botados de Victorino	30	5	5	30	40	1	River	S-Ⅲ-1)	Poor

表3.8(8)　計画対象村落の現況

Elias Pina		Present Condition 1990		Basic Projection (2000)				Existing Water Supply		
No.	Village	Population	Household	Household	Population	Consumption	Demand	Source	System	Condition
						ℓ/c/d	ℓ/min			
46	Sabana de la Lomo	708	118	118	708	906 40	30	River	S-Ⅲ-1)	Poor
47	Juan García	198	33	33	198					
48	Madre Vieja	324	54	54	324	40	11	River	S-Ⅲ-1)	Poor
49	El Corbano	162	27	27	102	40	3	Hand pump×1 River	S-Ⅰ-2) S-Ⅲ-1)	Poor
50	Arroyo Grande	144	24	24	144	40	5	Stream	S-Ⅳ-1)	Poor
51	El Pomito	84	14	14	84	40	3	Stream	S-Ⅳ-1)	Poor
52	Robinzar	390	65	65	390	40	13	Stream	S-Ⅳ-1)	Poor
53	Musu	42	7						Santiago Rodoriguez Province	
54	Guayajayuco	180	30	30	180	40	6	Spring	S-Ⅳ-1)	Poor
55	Villain	240	40	40	240	40	8	Spring	S-Ⅳ-1)	Good
	Total			2,961	17,175		ℓ/min 1.22			

表3.8(9)　計画対象村落の現況

Independencia		Present Condition 1990		Basic Projection (2000)				Existing Water Supply		
No.	Village	Population	Household	Household	Population	Consumption	Demand	Source	System	Condition
1	Palma Dulce	-	-				Village		Dispersion	
2	Angel Felix	495	95	141	738	40	25	Spring	S-Ⅱ-1)	Good
3	Sabana Real	270	50	50	270	40	9	Spring	S-Ⅱ-1)	Good
4	Los Pinos del Eden	390	59	117	745	40	25	Spring	S-Ⅱ-1)	Good
5	Bartolome	350	53	61	391	40	13	Spring	S-Ⅱ-2)	Good
6	Angostura	601	91	176	1,078	40	36	Spring	S-Ⅱ-2)	Good
7	Paso de los Novillos	230	46	46	230	40	8	Spring	S-Ⅱ-1)	Good
8	El Maniel	204	33	33	204	40	7	Spring	S-Ⅱ-1)	Good
9	Barreras	202	61	61	202	40	7	Spring	S-Ⅱ-1)	Good
10	Gajo del Rancho	-	-				Village		Dispersion	
11	Batey 9	541	82	181	1,175	40	39	Spring	S-Ⅱ-1)	Good
	Total			866	5,033					

表4.1 水質基準

	Drinking Water Quality Standard				
	Japan	INAPA		W.H.O.	
	Level	Desirable Level	Maximum Permissible Level	Desirable Level	Maximum Permissible Level
Acid-Carbonate HCO_3 (mg/ℓ)					
Chlorine $C\ell$ (mg/ℓ)	<200	200	600	200	600
Sulfate SO_4 (mg/ℓ)		200	400	200	400
Potassium K (mg/ℓ)		–	–	–	–
Sodium Na (mg/ℓ)		–	–	–	–
Calcium Ca (mg/ℓ)		187.5	500	75	200
Magnesium Mg (mg/ℓ)		125	600	30	150
Nitrogen-Nitrate NO_3-N (mg/ℓ)	<10	45		10	
Nitrogen-Nitrite NO_2-N (mg/ℓ)	Not simultaneously with NH4-N				
Nitrogen-Ammonium NH_4-N (mg/ℓ)	Not simultaneously with NO_2-N				
Fluorine F (mg/ℓ)	<0.8	0.6	107	0.6	
Phosphorus P_2O_5 (mg/ℓ)	–	–	–	–	–
Hexavalent Chromium Cr^6 (mg/ℓ)	<0.05	–	–	0.05	
Total Iron Fe (mg/ℓ)	<0.3	0.1	1.0	0.1	10.
Copper Cu (mg/ℓ)	<1.0	–	–	0.05	1.5
Zinc Zn (mg/ℓ)	<1.0	–	–	–	–
Manganese Mn (mg/ℓ)	<0.3	0.05	0.5	0.05	0.5
Lead Pb (mg/ℓ)	<0.1	–	–	0.1	
Total-Hardness	<300	100	500	100	500
pH	5.8~8.6	6.5	9.2	6.5	9.2
Turbidity Color	<2	5	25	5	25
Color	<5	5	50	15	50
Odor		not offensive		not offensive	
Temperature (°C)					
Total Solids	<500	500	1500	500	1500
Alcalinity	–	400		–	–
$KMnO_4$ (mg/ℓ)				–	–
Bacillus (general)	100			–	–
Colon bacillus	None				

表4.2.(1)　計画対象村落別開発実施必要性の評価

Monte Cristi		Basic Projection				Existing Water Supply			Development Plan					Implementation Plan
No.	Village	Household	Population	Consumption	Demand	Source	System	Condition	Source	Potential	Quality	Access	System	Priority
1	El Duro	80	480	60 ℓ/c/d	72 ℓ/min	Canal	S-V-1)	Very poor	From Monte Cristi City Water Supply				S-Ⅲ-3)	C (S)
2	Isabel de Torres	72	311	15	4	Rainfall	S-Ⅰ-1)	Very poor	Tank Lorry Supply				S-Ⅰ-1)	B (S)
3	Hato Viejo	32	150	40	15	River	S-Ⅲ-1)	Very poor	G	High	Good	Good	G-Ⅰ-1)	A (G)
4	Las Aquitas	153	692	40	23	Rainfall	S-Ⅰ-1)	Very poor	Surface Water Treatment Supply				S-Ⅵ-3)	A (G)
7	La Pinta	156	680	60	102	Hand P.×4	G-Ⅰ-2)	Poor	G	High	Poor	Good	G-Ⅰ-2)	A (G)
8	Batey Higuero	501	2,253	100	187	River Canal	S-Ⅲ/Ⅴ-1)	Very poor	G	High	Good	Good	G-Ⅰ-2)	A (G)
11	Los Conucos	98	483	40	16	Rainfall	S-Ⅰ-1)	Very poor	Surface Water Treatment Supply				S-Ⅵ-3)	A (S)
13	Cerro Gordo Arriba	98	431	100	36	River	S-Ⅲ-1)	Very poor	G	High	Good	Good	G-Ⅰ-2)	A (G)
14	Peña Ranchaderos	97	432	100	36	River	S-Ⅲ-1)	Very poor	G	High	Good	Good	G-Ⅰ-2)	A (G)
17	Estero Balsa	53	233	40	8	Spring	S-Ⅱ-1)	Very poor	Tank Lorry Supply				S-Ⅰ-1)	B (S)
18	Cabeza de Toro	80	560	60	28	River	S-Ⅲ-1)	Poor	G	Water level -60m Very low	Poor	Good	S-Ⅲ-1)	C (S)
19	Guayubincito	94	429	60	21	River	S-Ⅲ-1)	Poor	G	Very low	Poor	Good	S-Ⅲ-1)	C (S)
21	El Cayal	97	424	40	14	Reservoir	S-Ⅵ-1)	Very poor	Surface Water Treatment Plant Supply				S-Ⅵ-3)	A (S)
23	Los Amaceyes	50	218	40	18	River	S-Ⅲ-1)	Very poor	G	Water level -60m Very low	Poor	Good	S-Ⅲ-1)	C (S)
24	Jobo Corcobado	471	2,068	60	103	Canal	S-V-1)	Very Poor	G	High	Good	Good	G-Ⅰ-2)	A (G)
25	Gozuela	200	1,500	100	125	Borehole	G-Ⅰ-2)	Poor	G	High	Good	Good	G-Ⅰ-2)	A (G)
27	Sanita	95	760	40	76	Spring Canal	G-Ⅱ/Ⅴ-1)	Poor	G	Low	Low	Good	G-Ⅰ-1)	B (G)
30	Buen Hombre	89	423	40	14	Rainfall	S-Ⅰ-1)	Very Poor	Surface Water Treatment Supply				S-Ⅵ-3)	A (S)
31	Las Canas	70	245	40	8	Rainfall	S-Ⅰ-1)	Very Poor	Surface Water Treatment Supply				S-Ⅵ-3)	A (S)
32	Las Brigidas	19	95	40	3	Rainfall	S-Ⅰ-1)	Very Poor	Surface Water Treatment Supply				S-Ⅵ-3)	A (S)
33	Loma Atravezada	67	280	40	12	Rainfall	S-Ⅰ-1)	Very Poor	Tank Lorry Supply				S-Ⅰ-1)	B (S)

表4.2.(2) 計画対象村落別開発実施必要性の評価

Monte Cristi		Basic Projection				Existing Water Supply			Development Plan					Implementation Plan
No.	Village	Household	Population	Consumption	Demand	Source	System	Condition	Source	Potential	Quality	Access	System	Priority
34	Sabana Cruz	148	647	40 ℓ/c/d	21 ℓ/min	Rainfall	S-Ⅰ-1)	Very Poor	Surface Water Treatment Supply				S-Ⅵ-3)	A (S)
36	La Horca	63	263	40	26	River Borehole	S-Ⅲ-1) G-Ⅲ-2)	Poor	G	Very Low	Poor	Good	S-Ⅲ-3)	C (S)
37	El Mansutia	92	336	40	11	Rainfall	S-Ⅰ-1)	Very Poor	Tank Lorry Supply				S-Ⅰ-1)	B (S)
	Total	2,975	14,393		907 ℓ/min									

表4.2.(3)　計画対象村落別開発実施必要性の評価

Dajabon		Basic Projection				Existing Water Supply			Development Plan					Implementation Plan
No.	Village	Household	Population	Consumption	Demand	Source	System	Condition	Source	Potential	Quality	Access	System	Priority
2	Cayaco	94	377	40 ℓ/c/d	56 ℓ/min	Hand Pump×4	G-Ⅰ-2)	Poor	G	High	Good	Good	G-Ⅰ-2)	A (G)
3	Laja	50	400	40	40	Hand Pump×4	G-Ⅰ-2)	Poor	G	High	Good	Good	G-Ⅰ-1)	B (G)
5	Clavellina	102	418	40	62	Hand Pump×1	G-Ⅰ-1)	Poor	G	High	Good	Good	G-Ⅰ-1)	B (G)
8	La Gorra	131	642	60	32	Hand Pump×5	G-Ⅰ-2)	Very poor	G	Low	Poor	Good	G-Ⅰ-1)	A (G)
9	La Barrera	42	198	40	20	Hand Pump×1	G-Ⅰ-2)	Poor	G	Low	Poor	Good	G-Ⅰ-1)	B (G)
10	El Estrecho	25	200	40	20	Hand Pump×1	G-Ⅰ-1)	Very poor	G	Low	Poor	Good	G-Ⅰ-1)	A (G)
11	El Llano	65	276	40	27	Hand Pump×1 River	G-Ⅰ-1) S-Ⅲ-1)	Very poor	G	Low	Poor	Good	G-Ⅰ-1)	A (G)
12	Tamarindo	32	186	40	19	River	S-Ⅲ-1)	Poor	G	Low	Poor	Very poor	S-Ⅲ-1)	C (S)
13	La Peñita	89	388	40	39	Hand Pump×1 Reservoir	G-Ⅰ-1) S-Ⅵ-1)	Poor	G	Low	Good	Good	G-Ⅰ-1)	B (G)
14	Pueblo Nuevo	65	243	40	24	Stream	S-Ⅳ-1)	Poor	G	Low	Good	Good	G-Ⅰ-1)	B (G)
16	Castellar	43	344	60	17	River	S-Ⅲ-3)	Poor	S	Expantion	D-5 La Ceiba. INAPA			C (S)
18	El Cajuil	78	390	40	39	Hand Pump River	G-Ⅰ-1) S-Ⅲ-1)	Poor	G	Low	Good	Good	G-Ⅰ-1)	B (G)
19	Arroyo Azul	16	128	40	13	River	S-Ⅲ-1)	Poor	G	Low	Good	Very poor	S-Ⅲ-1)	C (S)
20	El Aguacate	57	312	40	31	River Hand P.×1	S-Ⅲ-1) G-Ⅰ-1)	Poor	G	Low	Good	Good	G-Ⅰ-1)	B (G)
21	La Peñita	69	374	40	37	River Hand P.×1	S-Ⅲ-1) G-Ⅰ-1)	Poor	G	Low	Good	Good	G-Ⅰ-1)	B (G)
23	La Avanzada	35	210	40	21	Spring	S-Ⅱ-2	Poor	G	Low	Good	Good	G-Ⅰ-1)	B (G)
31	Pinal Claro	71	347	40	34	Hand pump×2	G-Ⅰ-2)	Poor	G	Low	Good	Good	G-Ⅰ-1)	B (G)
34	La Hoya	38	228	40	23	Hand pump×1 River	G-Ⅰ-1) S-Ⅲ-1)	Poor	G	Low	Good	Good	G-Ⅰ-1)	B (G)
39	Buen Gusto	79	328	40	33	Hand pump×1 River	G-Ⅰ-1) S-Ⅲ-1)	Poor	G	Low	Good	Good	G-Ⅰ-1)	B (G)
40	La Culata	63	378	60	19	Partido	S-Ⅲ-2)	Good	From Restaracion Water Supply					C (S)
43	Aminilla	133	677	47	68	Hand pump×6	G-Ⅰ-2)	Poor	G	Low	Good	Good	G-Ⅰ-1)	A (G)
45	Mariano Cestero	95	570	40	56	Hand pump×1 River	G-Ⅰ-2) S-Ⅲ-1)	Very poor	G	Low	Good	Good	G-Ⅰ-1)	A (G)
46	Jimenez Abaja	52	312	40	31	River	S-Ⅲ-1)	Poor	From Partido Water Supply					C (S)

表4.2.(4)　計画対象村落別開発実施必要性の評価

Dajabon		Basic Projection				Existing Water Supply			Development Plan					Implementation Plan
No.	Village	Household	Population	Consumption	Demand	Source	System	Condition	Source	Potential	Quality	Access	System	Priority
48	Agua Blanca	50	300	40 ℓ/c/d	30 ℓ/min	Spring	S-Ⅱ-1)	Poor	G	Very low	Good	Very poor	S-Ⅱ-1)	C (S)
49	Valle Nuevo	52	312	40	21	River	S-Ⅲ-1)	Poor	G	Low	Good	Good	G-Ⅰ-1)	B (G)
50	Neyta	32	192	40	19	River	S-Ⅲ-1)	Poor	G	Low	Good	Good	G-Ⅰ-1)	B (G)
55	Las Lagunas	87	522	40	52	River	S-Ⅲ-1)	Poor	G	Low	Good	Good	G-Ⅰ-1)	B (G)
	Total	1,745	9,252		883 ℓ/min									

表4.2.(5)　計画対象村落別開発実施必要性の評価

Elias Pina		Basic Projection				Existing Water Supply			Development Plan					Implementation Plan
No.	Village	Household	Population	Consumption	Demand	Source	System	Condition	Source	Potential	Quality	Access	System	Priority
2	Sabacón Abajo	27	162	40 ℓ/c/d	16 ℓ/min	River	S-Ⅲ-1)	Poor	G	Low	Good	Very poor	S-Ⅲ-1)	C (S)
3	El Cedro	41	175	40	17	Spring	S-Ⅱ-1)	Poor	G	Very low	Good	Poor	S-Ⅲ-1)	C (S)
4	Los Corocitos	84	484	40	48	River	S-Ⅲ-1)	Poor	G	Very low	Good	Poor	S-Ⅲ-1)	C (S)
5	La Cabra-El Cerro	35	210	40	21	River	S-Ⅲ-1)	Poor	G	Very low	Good	Very poor	S-Ⅲ-1)	C (S)
6	Sabana Campo	30	180	40	18	River	S-Ⅲ-1)	Poor	G	Low	Good	Poor	G-Ⅰ-1)	B (G)
8	Macasia	115	690	40	69	Hand pump×6	G-Ⅰ-2)	Very poor	G	Low	Good	Poor	G-Ⅰ-1)	A (G)
9	Carrera Verde	35	210	40	21	River	S-Ⅲ-1)	Poor	G	Low	Good	Poor	G-Ⅰ-1)	B (G)
10	Lamedero	35	210	40	21	River	S-Ⅲ-1)	Poor	G	Low	Good	Poor	G-Ⅰ-1)	B (G)
11	La Margarita	188	1,128	60	56	Hand pump×2	G-Ⅰ-1)	Poor	G	Very low	Good	Good	S-Ⅲ-1)	C (S)
12	Pozo Hondo	46	276	40	27	River	S-Ⅲ-1)	Poor	G	Low	Good	Very poor	S-Ⅲ-1)	C (S)
13	Hato Nuevo	33	198	40	20	River	S-Ⅲ-1)	Poor	G	Low	Good	Very poor	S-Ⅲ-1)	C (S)
16	El Cañita	25	138	40	14	Spring	S-Ⅱ-1)	Poor	G	Low	Good	Very poor	S-Ⅱ-1)	C (S)
17	Los Memisos	30	180	40	18	Spring	S-Ⅱ-1)	Poor	G	Low	Good	Very poor	S-Ⅱ-1)	C (S)
18	Mata Bonita	21	126	40	13	River	S-Ⅲ-1)	Poor	G	Very low	Good	Poor	S-Ⅲ-1)	C (S)
19	El Mamoncito	55	313	40	32	Hand pump×1 River	G-Ⅰ-2) S-Ⅲ-1)	Very poor	G	Low	Good	Good	G-Ⅰ-1)	A (G)
21	San Andrés	19	114	40	11	Canal	S-Ⅴ-1)		G	Low	Good	Poor	G-Ⅰ-1)	B (G)
22	Guayabal	114	629	40	44	Hand pump×2	G-Ⅰ-2)	Poor	G	Low	Good	Good	G-Ⅰ-1)	A (G)
23	Hato Viejo	47	259	40	26	Hand pump×3	G-Ⅰ-1)	Very poor	G	Low	Good	Good	G-Ⅰ-1)	A (G)
24	Pilón	50	300	40	30	Hand pump×1	G-Ⅰ-1)	Very poor	G	Low	Good	Poor	G-Ⅰ-1)	A (G)
25	Guaroa	36	216	40	21	Hand pump×2	G-Ⅰ-1)	Very poor	G	Low	Good	Good	G-Ⅰ-1)	A (G)
26	Los Yareyes	60	332	40	33	Wind Pump Hand Pump	G-Ⅰ-3) G-Ⅰ-1)	Very poor	G	Low	Good	Good	G-Ⅰ-1)	A (G)
28	Benancio	128	808	40	81	Hand pump×9 River	G-Ⅰ-2) S-Ⅲ-1)	Poor	G	Low	Very poor	Good	S-Ⅲ-1)	C (S)
29	Bruno	42	252	40	25	Canal	S-Ⅴ-1)	Poor	G	Very low	Poor	Good	S-Ⅴ-1)	C (S)

表4.2.(6) 計画対象村落別開発実施必要性の評価

Elias Pina		Basic Projection				Existing Water Supply			Development Plan					Implementation Plan
No.	Village	Household	Population	Consumption	Demand	Source	System	Condition	Source	Potential	Quality	Access	System	Priority
31	Palo Seco	64	350	40 ℓ/c/d	35 ℓ/min	Spring	S-Ⅱ-1)	Poor	G	Very low	Poor	Good	S-Ⅱ-1)	C (S)
32	Juan Cano	39	234	40	23	Spring	S-Ⅱ-1)	Very poor	G	Low	Poor	Good	G-Ⅰ-1)	A (G)
33	La Lajita	69	414	40	41	Spring	S-Ⅱ-1)	Poor	G	Very low	Poor	Good	S-Ⅱ-1)	C (S)
34	Las Lagunas	77	365	40	36	Spring	S-Ⅱ-2)	Very poor	G	Very low	Good	Very poor	S-Ⅱ-1)	C (S)
35	Yerba Buena	49	225	40	22	Stream	S-Ⅳ-1)	Poor	G	Good	Good	Very poor	S-Ⅳ-1)	C (S)
36	Cañada del Barrero	42	225	40	22	River	S-Ⅲ-1)	Poor	G	Low	Good	Good	G-Ⅰ-1)	A (G)
40	Los Mesas	40	240	40	8	River	S-Ⅲ-1)	Poor	G	Low	Good	Poor	G-Ⅰ-1)	B (G)
41	Los Caños	33	198	40	7	River	S-Ⅲ-1)	Poor	G	Low	Good	Poor	G-Ⅰ-1)	B (G)
46	Sabana de la Lomo	118	708	906 40	30	River	S-Ⅲ-1)	Poor	G	Low	Good	Poor	G-Ⅰ-1)	A (G)
47	Juan García	33	198						G	Low	Good	Poor	G-Ⅰ-1)	A (G)
48	Madre Vieja	54	324	40	11	River	S-Ⅲ-1)	Poor	G	Low	Good	Poor	G-Ⅰ-1)	A (G)
49	El Corbano	27	102	40	3	Hand pump×1 River	S-Ⅰ-2) S-Ⅲ-1)	Poor	G	Very low	Good	Poor	S-Ⅲ-1)	C (S)
50	Arroyo Grande	24	144	40	5	Stream	S-Ⅳ-1)	Poor	G	Low	Good	Very poor	S-Ⅳ-1)	C (S)
51	El Pomito	14	84	40	3	Stream	S-Ⅳ-1)	Poor	G	Low	Good	Very poor	S-Ⅳ-1)	C (S)
54	Guayajayuco	30	180	40	6	Spring	S-Ⅳ-1)	Poor	G	Low	Good	Very poor	S-Ⅱ-1)	C (S)
55	Villain	40	240	40	8	Spring	S-Ⅳ-1)	Good	G	High	Good	Very poor	S-Ⅱ-1)	C (S)
	Total	2,049	11,821		942 ℓ/min									

表 4.2 (7)　計画対象村落別開発実施必要性の評価

Independencia		Basic Projection				Existing Water Supply			Development Plan					Implementation Plan
No.	Village	Household	Population	Consumption	Demand	Source	System	Condition	Source	Potential	Quality	Access	System	Priority
2	Angel Felix	141	738	40	25	Spring	S-Ⅱ-1)	Good	S	Low	Good	Poor	S-Ⅱ-1)	C (S)
3	Sabana Real	50	270	40	9	Spring	S-Ⅱ-1)	Good	S	Low	Good	Poor	S-Ⅱ-1)	C (S)
7	Paso de los Novillos	46	230	40	8	Spring	S-Ⅱ-1)	Good	S	Low	Good	Good	S-Ⅱ-1)	C (S)
8	El Maniel	33	204	40	7	Spring	S-Ⅱ-1)	Good	S	Low	Good	Good	S-Ⅱ-1)	C (S)
9	Barreras	61	202	40	7	Spring	S-Ⅱ-1)	Good	S	Low	Good	Very poor	S-Ⅱ-1)	C (S)
	Total	331	1,644											

表４．３(1)

計画実施対象外村落の開発計画総括表

Monte Cristi		Village Condition			Recommendation of Water Supply Development Plan			
No.	Village	Household	Population	Water Supply	Grpoundwater Development	Existing Water Serviced	Future Plan	System
1	El Duro	80	480	Very poor	Impossible, very poor quality	none	From Monte Cristi T.P. INAPA	S-Ⅲ-3)
18	Cabeza de Toro	80	560	Poor	Impossible, very low potential	none	From Guajubin T.P. INAPA	S-Ⅲ-3)
19	Guayubincito	94	429	Poor	Impossible, very low potential	none	From Guajubin T.P. INAPA	S-Ⅲ-3)
22	Hato al Medio Arriba	68	300	Very poor	Impossible, very low potential	none	From River	S-Ⅲ-1)
23	Los Amaceyes	50	218	Poor	Impossible, very low potential	none	From River	S-Ⅲ-1)
	Sub-total 5 villages	372	1,987					
Dajabon								
12	Tamarindo	32	186	Poor	Impossible, very poor access	none	From River	S-Ⅲ-1)
16	Castellar	43	344	Poor	Poor	none	From La Ceiba by INAPA	S-Ⅲ-2)
19	Arroyo Azul	16	128	Poor	Impossible, very poor access	none	From River	S-Ⅲ-1)
40	La Culata	63	378	Good	Poor	none	From Partido INAPA	S-Ⅲ-2)
46	Jimenez Abajo	52	312	Poor	Poor	none	From Restauracion INAPA	S-Ⅱ-1)
48	Agua Blanca	50	300	Poor	Poor, Very poor access	none	From Spring	S-Ⅲ-2)
	Sub-total 6 villages	256	1,648					
Independencia								
2	Angel Felix	141	738	Poor	Very poor access	none	From mountain stream	S-Ⅱ-1)
3	Sabana Red	50	270	Poor	Very poor access	none	From mountain stream	S-Ⅱ-1)
7	Paso de los Ivovillos	46	230	Poor	Very low potential	none	From mountain stream	S-Ⅱ-1)
8	El Maniel	33	204	Poor	Very low potential	none	From mountain stream	S-Ⅱ-1)
9	Barreras	61	202	Poor	Very poor access	none	From mountain stream	S-Ⅱ-1)
	Sub-total 5 villages	331	1,644					

表４．３(2)

計画実施対象外村落の開発計画総括表

Elias Piña		Basic Projection			Recommendation of Water Supply Development Plan			
No.	Village	Household	Population	Water Supply	Grpoundwater Development	Existing Water Served	Future Plan	System
2	Sabacón Abajo	27	162	Poor	Impossible, very poor access	none	From River	S-Ⅲ-1)
3	El Cedro	41	175	Poor	Impossible, very low potential	none	From River	S-Ⅲ-1)
4	Las Corocitos	84	484	Poor	Impossible, very low potential	none	From River	S-Ⅲ-1)
5	La Cabra-El Cerro	35	210	Poor	Impossible, potential and access very poor	none	From River	S-Ⅲ-1)
11	La Margarita	188	1,128	Poor	Impossible, very low potential	none	From River	S-Ⅲ-1)
12	Pozo Hondo	46	276	Poor	Impossible, very poor access	none	From River	S-Ⅲ-1)
13	Hato Nuevo	33	198	Poor	Impossible, very poor access	none	From River	S-Ⅲ-1)
16	El Cañita	25	138	Poor	Impossible, very poor access	none	From Spring	S-Ⅱ-1)
17	Los Memisos	30	180	Poor	Impossible, very poor access	none	From Spring	S-Ⅱ-1)
18	Mata Bonita	21	126	Poor	Impossible, very low potential	none	From River	S-Ⅲ-1)
28	Benancio	128	808	Poor	Impossible, very poor quality	none	From River	S-Ⅲ-1)
29	Bruno	42	252	Poor	Impossible, very low potential	none	From Canal	S-Ⅴ-1)
31	Palo Seco	64	350	Poor	Impossible, very low potential	none	From Spring	S-Ⅱ-1)
33	La Lajita	69	414	Poor	Impossible, very low potential	none	From Spring	S-Ⅱ-1)
34	Las Lagunas	77	365	Poor	Impossible, very poor access	none	From Spring	S-Ⅱ-1)
35	Yerba Buena	49	225	Poor	Impossible, very poor access	none	From Stream	S-Ⅳ-1)
49	El Corbano	27	102	Poor	Impossible, very low potential	none	From River	S-Ⅲ-1)
50	Arroyo Grande	24	144	Poor	Impossible, very poor access	none	From Stream	S-Ⅳ-1)
51	El Pomito	14	84	Poor	Impossible, very poor access	none	From Stream	S-Ⅳ-1)
54	Guayajayuco	30	180	Poor	Impossible, very poor access	none	From Spring	S-Ⅱ-1)
55	Villain	40	240	Poor	Impossible, very poor access	none	From Spring	S-Ⅱ-1)
	Subtotal 21 villages	1,094	6,241					

表5.1(1)　計画対象村落別施設計画

1. Type Ⅰ　　: Hand pumps system　　G-Ⅰ-1)

Flow Chart　:

Borehole 1) Underground water level : over 40m
2) Household : over 20 → Hand pump → Inhabitant water supply

Monte Cristi														
		Basic Projection				Drilling						Situation		
No.	Village	Household	Population	Consumption	Demand	Depth	Diameter	Rig	Waterlevel	Wateryield	Number	Access	Test Drilling	Hydrogeol. Zone
3	Hato Viejo	32	150	40 ℓ/c/d	15 ℓ/min	70	10-5/8"	Percussion	20 m	100 ℓ/min	2	Good	3 Las Aquas	Ⅱ
27	Sanita	95	760	40	76	70	〃	〃	〃	〃	3	Good	3 Las Aquas	Ⅱ
	Sub total: 2 villages	127	910		91						5			
Dajabon														
3	Laja	50	400	40	40	120	10-5/8"	Rotary & Percussion	40	100~200	4	Good	11 Esperon 12 Chacuey	Ⅲ3
5	Clarellina	102	418	40	42	100	〃	R&P	40	100~200	4	Good	11 Esperon	Ⅲ3
8	La Gorra	131	642	60	32	100	〃	〃	40	10	6	Good	14 La Borra	Ⅳ2
9	La Barrera	42	198	40	20	100	〃	〃	40	10	2	Good	14 La Borra	Ⅳ2
10	El Estrecho	25	200	40	20	100	〃	〃	40	10	2	Good	14 La Borra	Ⅳ2
11	El Clano	65	276	40	27	100	〃	〃	40	10	3	Good	14 La Borra	Ⅳ2
13	La Peñita	89	388	40	39	80	〃	〃	20	10~15	4	Good	16 La Penita Abajo	Ⅳ1
14	Pueblo Nuevo	65	243	40	24	80	〃	〃	20	10	2	Good	16 La Penita Abajo	Ⅳ1
18	El Cajuil	78	390	40	39	80	〃	〃	20	10~20	4	Good	17 La Penita Arriba	Ⅳ1
20	El Aquacate	57	312	40	31	80	〃	〃	20	10~20	3	Good	〃	Ⅳ1
21	La Peñita	69	374	40	37	80	〃	〃	20	10~20	4	Good	〃	Ⅳ1
23	La Avanzada	35	210	40	21	80	〃	〃	20	10~20	2	Good	〃	Ⅳ1
31	Pinal Claro	71	347	40	34	80	〃	〃	20	10~15	4	Good	15 Buen Cristo 16 Penita Abajo	Ⅳ2
34	La Hoya	38	228	40	23	80	〃	〃	20	10~15	2	Good	16 Penita Abajo	Ⅳ1
39	Buen Gusto	79	328	40	33	100	〃	〃	40	10	3	Good	14 La Gorra	Ⅳ1
43	Aminilla	133	677	40	68	100	〃	〃	40	10	7	Good	18 Mariano 27 Cestero	Ⅳ2
45	Mariano Cestero	95	570	40	56	80	〃	〃	40	10	6	Good	18 Mariano 27 Cestero	Ⅳ2
49	Valle Nuevo	52	312	40	21	80	〃	〃	40	10	3	Good	18 Mariano 27 Cestero	Ⅳ2
50	Neyta	32	192	40	19	80	〃	〃	40	10	2	Good	17 Penito Abajo	Ⅳ2
55	Las Lagunas	87	522	40	52	80	〃	〃	40	10	5	Good	14 La Borra	Ⅳ1
	Sub total: 20 villages	1,395	7,227		678						72			

表5.1(2) 計画対象村落別施設計画

Elias Pina														
		Basic Projection				Drilling						Situation		
No.	Village	Household	Population	Consumption	Demand	Depth	Diameter	Rig	Waterlevel	Water Yield	Number	Access	Test Drilling	Hydrogeol. Zone
6	Sabana Campo	30	180	40 ℓ/c/d	18 ℓ/min	80	10-5/8"	Percussion	40-m	10 ℓ/min	2	Poor	21 Lamesdero	V 1
8	Macasia	115	690	40	69	80	〃	〃	40	10	7	Poor	21 Lamesdero	V 1
9	Carrera Verde	35	210	40	21	80	〃	〃	40	10	2	Poor	21 Lamesdero	V 1
10	Lamedero	35	210	15	8	80	〃	〃	40	10	2	Good	21 Lamesdero	V 1
19	El Mamoncito	55	313	40	32	80	〃	〃	40	10~20	2	Good	19 El Mamoncito	V 1
21	San Andrés	19	114	40	11	60	〃	〃	40	10~20	2	Poor	〃	
22	Guayabal	114	629	40	44	80	〃	〃	40	10~20	6	Good	〃	V 1
23	Hato Viejo	47	259	40	26	80	〃	〃	40	10~20	3	Good	〃	V 1
24	Pilón	50	300	40	30	80	〃	〃	40	10~20	3	Good	〃	V 1
25	Guaroa	36	216	40	21	80	〃	〃	40	10~20	2	Good	〃	V 1
26	Los Yareyes	60	332	40	33	80	〃	〃	40	10~20	3	Good	〃	V 1
32	Juan Cano	39	234	40	23	60	〃	〃	40	20	2	Good	24 Asiento Miguel	V 1
36	Cañada del Banero	42	225	40	22	60	〃	〃	40	20	2	Good	〃	V 1
40	Los Mesas	40	240	40	8	60	〃	〃	40	20	2	Poor	〃	V 1
41	Los Caños	33	198	40	7	60	〃	〃	40	20	2	Poor	〃	V 1
46	Sabana dela Lomo	118	708	40	30	60	〃	〃	40	20	7	Poor	〃	V 1
47	Juan Garcia	33	198				〃	〃	40	20	2	Poor	〃	V 1
48	Madre Vieja	54	324	40	11	60	〃	〃	40	20	3	Poor	〃	V 1
Sub total:	18 villages	955	5,580		414						54			
Total:	40 villages	2,477	13,717		1,055						131			

表 5.1.(3)　計画対象村落別施設計画

2. Type Ⅱ　: Motorized Pump System　G-Ⅰ-2)

Flowchart :

Borehold 1) Household: over 50
2) Water Yield: over 100 ℓ/min → Submersible Pump → Elevated Tank → Communal Faucet → Inhabitant

No.	Village	Basic Projection: Household	Population	Consumption ℓ/c/d	Demand ℓ/min	Drilling: Depth m	Diameter	Rig	Waterlevel -m	Water Yield ℓ/min	Facilities: Pump kw KVA	Elevated Tank m3	Faucet	Pipeline	Situation: Test Drilling	Hydrogeol. Zone
Monte Cristi																
7	La Pinra	156	680	100	56	80	10-5/8"	Percussion	20	100	1.5 . 10	30	3	φ50 500 φ75 100	5 La Pinta	Ⅲ2
8	Batey Higuero	501	2,253	100	187	80	〃	〃	20	300	2.2 . 10	100	5	φ75 200 φ100 600	3 Las Aquas	Ⅱ
13	Cerro Gorob Arriba	98	431	100	36	80	〃	〃	20	100	1.5 . 10	20	3	φ50 1000	6 Ranchaduo	Ⅲ1
14	Penã Ranchaderas	97	432	100	36	80	〃	〃	20	100	1.5 . 10	20	3	φ50 500 φ75 100	6 Ranchaduo	Ⅲ1
24	Jabo Corcobado	471	2,068	60	86	80	〃	〃	30	100	2.2 . 10	50	5	φ50 500 φ75 1500 φ100 600	4 Jobo Corcobado	Ⅱ
25	Gozuela	200	1,500	60	75	80	〃	〃	20	100	1.5 . 10	40	4	φ50 200 φ75 1100	3 Las Aquas	Ⅲ2
Sub Total: 6 villages		1,523	7,364		476							260	23	φ50 2700 φ75 3,000 φ100 1,200		
Dajabon																
2	Cayuco	94	377	60	16	80	10-5/8"	Rotary & percussion	40	100~200	1.5, 10	10	2	φ50 200	10 La Vigia	Ⅲ3
Sub Total: 1 village		94	377		16											
Total: 7 villages		1,617	7,741		492			Rotary & Percussion Percussion 6								

Table 5.1 (4) 表 5.1.(4) 計画対象村落別施設計画 Facility Plan 4/4

3. Type Ⅲ : Surface Water Treatment System for Reservoir S-Ⅰ-2)

Flowchart : Rainfall → Reservoir → Intake pump → Slow Sand Filter → Clear Water Reservoir → Distribution Pump → Transportation Pipeline → Elevated Tank → Distribution Pipeline → Communal Faucet → Inhabitant

Chlorination → Clear Water Reservoir

Monte Cristi		Basic Projection				Intake Facilities			Treatment Plant				Distribution Facilities			
No.	Village	Household	Population	Consumption	Demand	Reservoir Volume			Capacity	Slow Sand Filter	Chlorinator	Clear Water Reservoir	Pump	Elevated tank	Faucet	Pipeline
4	Las Aquitas	153	692	40 ℓ/c/d	23 ℓ/min							4×4×2.5 m		– m³	4	φ100 1.0 km
30	Buen Hombre	89	423	"	14	50,000 m³	72 ℓ/min	0.4×2 kw	100 m³/d	8.0×3.2×2 m Basin	2 unit	40m³	3.7kw×2	24	3	φ75 1.0
31	Las Canas	70	245	"	8					Flow Velocity 4.0 m/d		R.T=9.6 Hour		–	1	φ50 2.2
32	Las Brigidas	19	95	"	3									4	1	
North Central: 4 villages		331	1,455		48 (69.0m³/d)										9	4.2 km
11	Las Canucos	98	483	40	16	50,000 m³	72 ℓ/min	0.4×2 kw	100 m³/d	3.0×3.2×2		40×40×2.5		10	3	φ100 4.5
21	El Cayal	97	424	"	14					Flow Velocity 4.0 m/d	2 unit	V = 40m³	5.5kw×2	10	2	475 1.0 φ50 3.4
34	Sabana Cruz	148	647	"	21							R.T=9.6 Hour		–	3	–
North East: 3 villages		343	1,554		51 (73.0m³/d)										8	
															km	
Total: 7 villages		674	3,009		99 (142m³/d)										φ100 5.5 φ75 2.0 φ50 5.6	13.1 km

4. Type Ⅳ : Tank Lorry Supply System S-Ⅰ-1)

Flowchart : Rainfall Collect and City Water Supply by Tank Lorry → Drinking Water Tank → Inhabitant

Chlorination → Drinking Water Tank

Monte Cristi		Basic Projection				Transportation System		
No.	Village	Household	Population	Consumption	Demand	Tank Vol.	Distance from Treatment Plant	Tank Lorry Unit
2	Isabel de Torres	72	311	15 ℓ/c/d	3.8, (5.6) ℓ/min m³/d	24 m³	Average 20 Kar	
17	Estero Balsa	53	233	15	2.9, (4.2)	16	"	8 ton × 2 unit with pump
33	Loma Afravezada	67	280	15	3.5, (5.0)	24	"	
37	El Mansutia	92	336	15	4.2, (6.0)	30	"	
Total; 4 villages		223	1,160		14.4, (20.8)	94		

付　　図

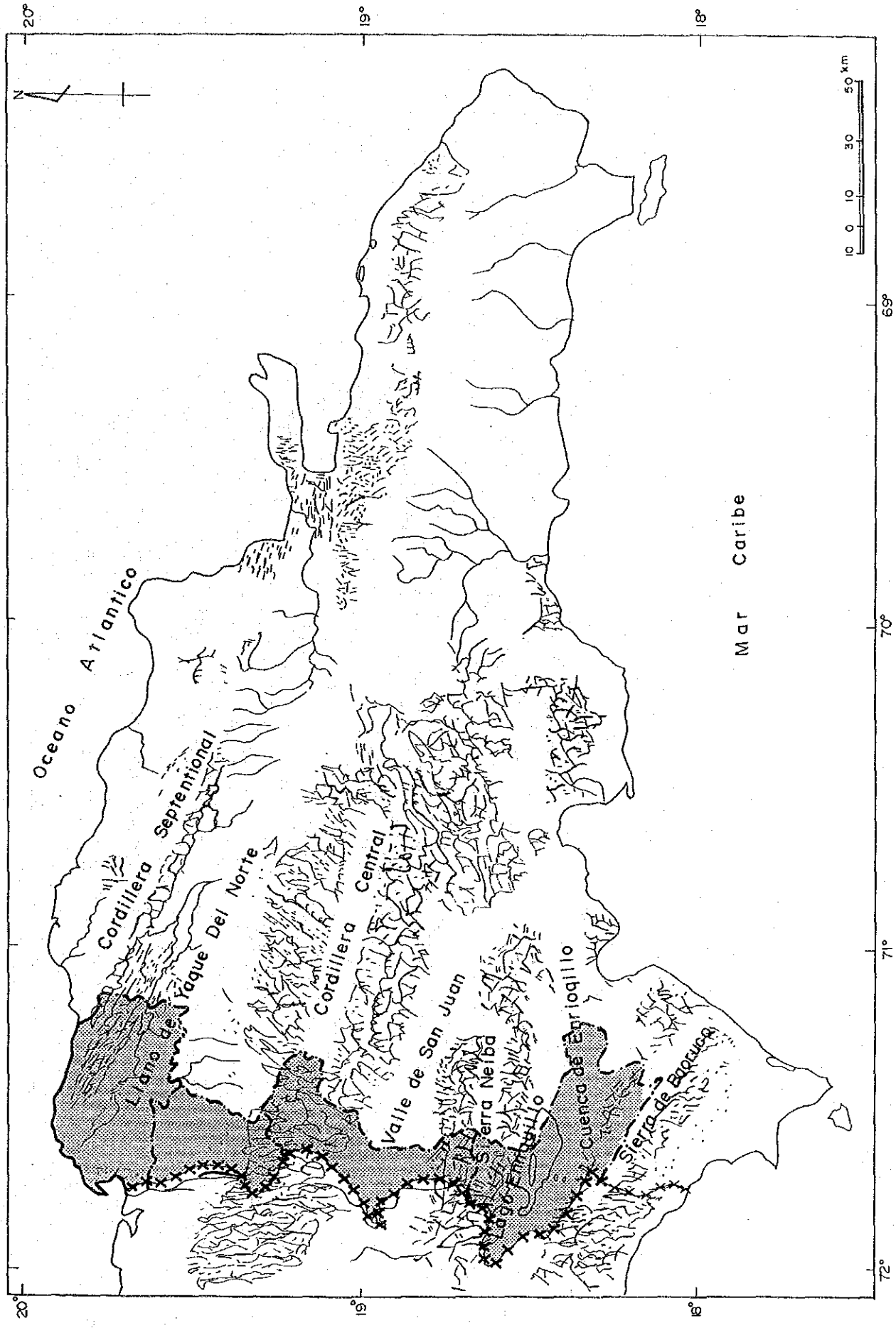


図２．１　ドミニカ共和国の地勢

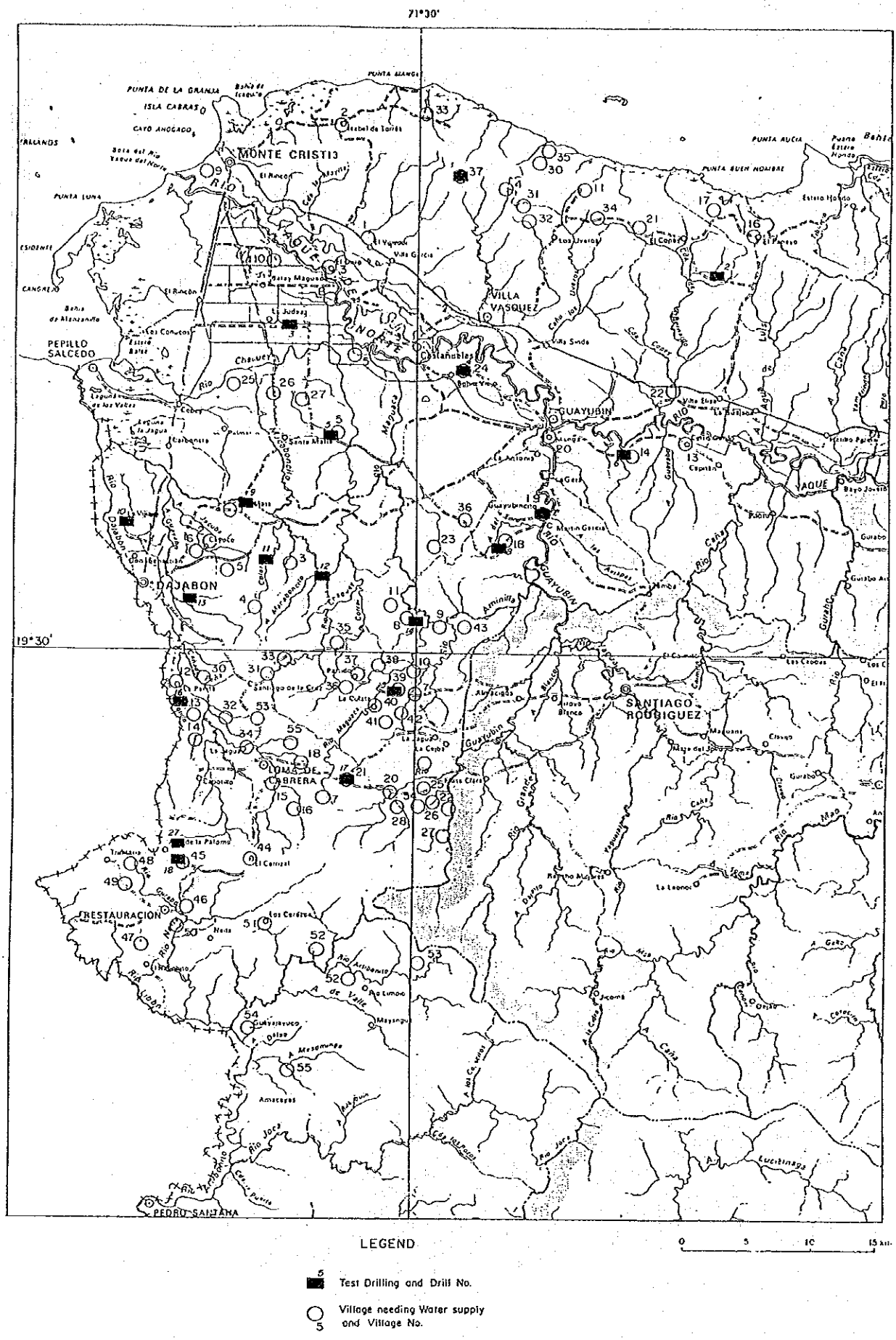


図 3.1.(1)　試験井掘削位置図

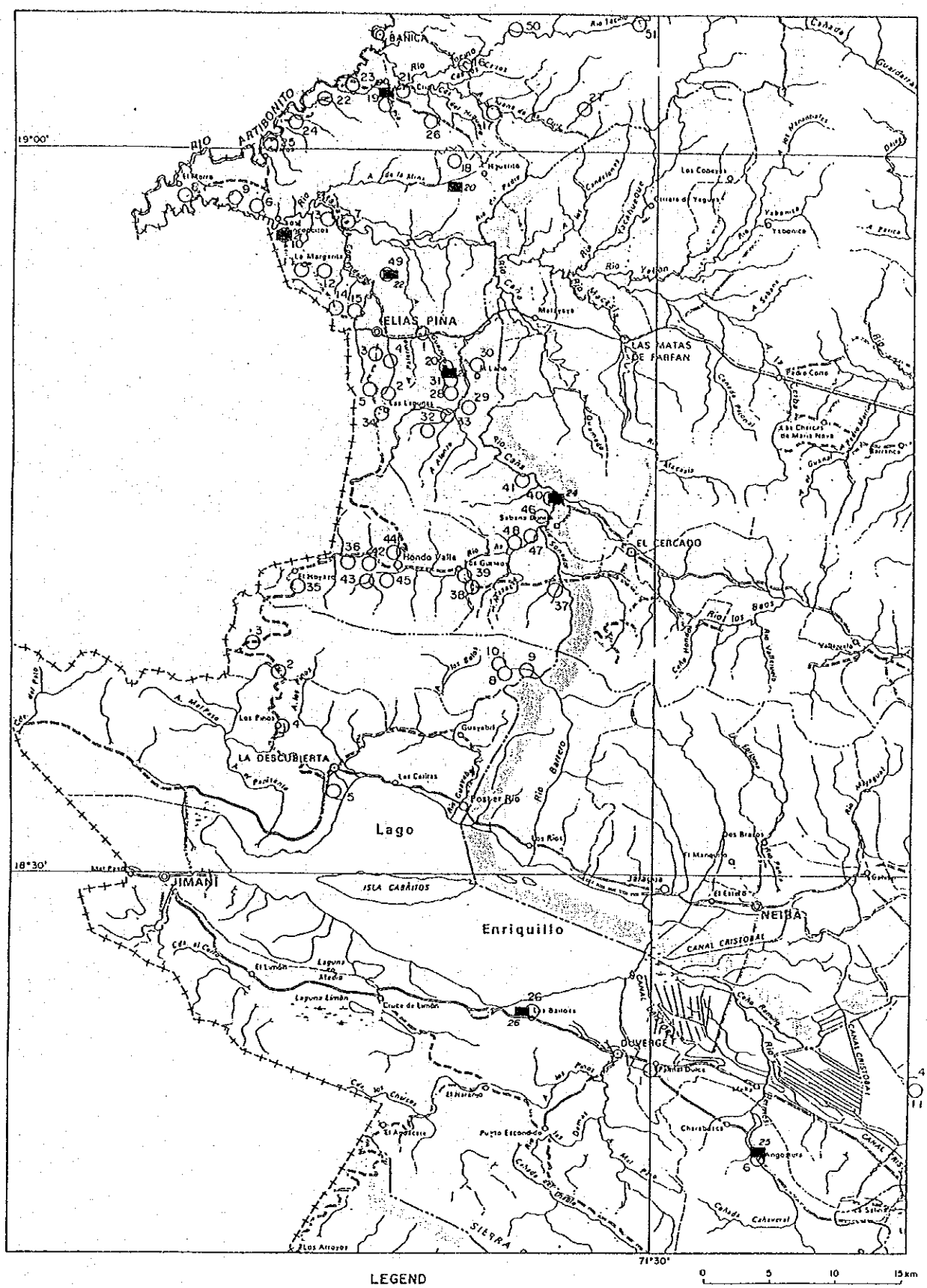


図 3.1.(2)　試験井掘削位置図

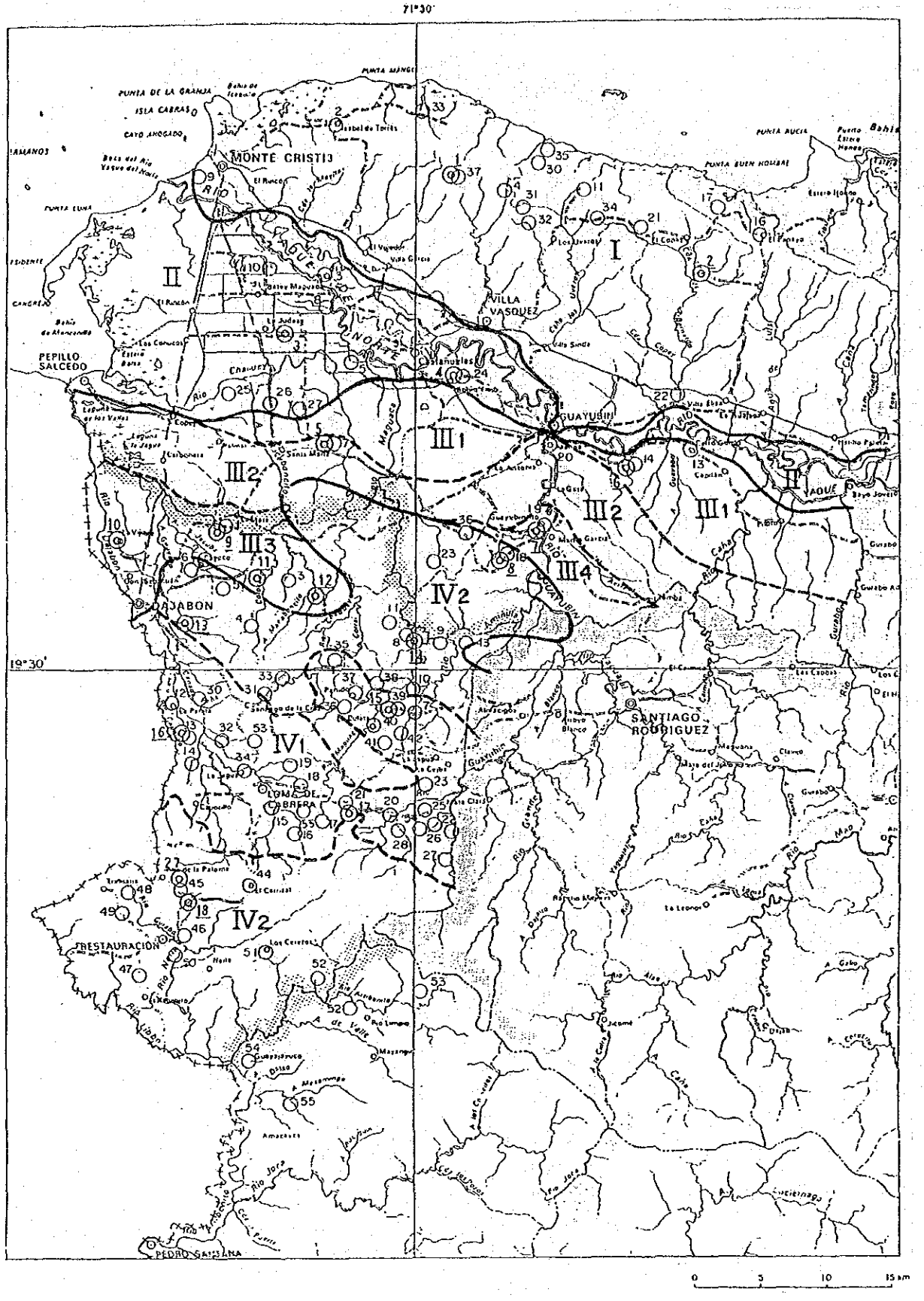


図 3.2.(1)　水文地質区の区分図

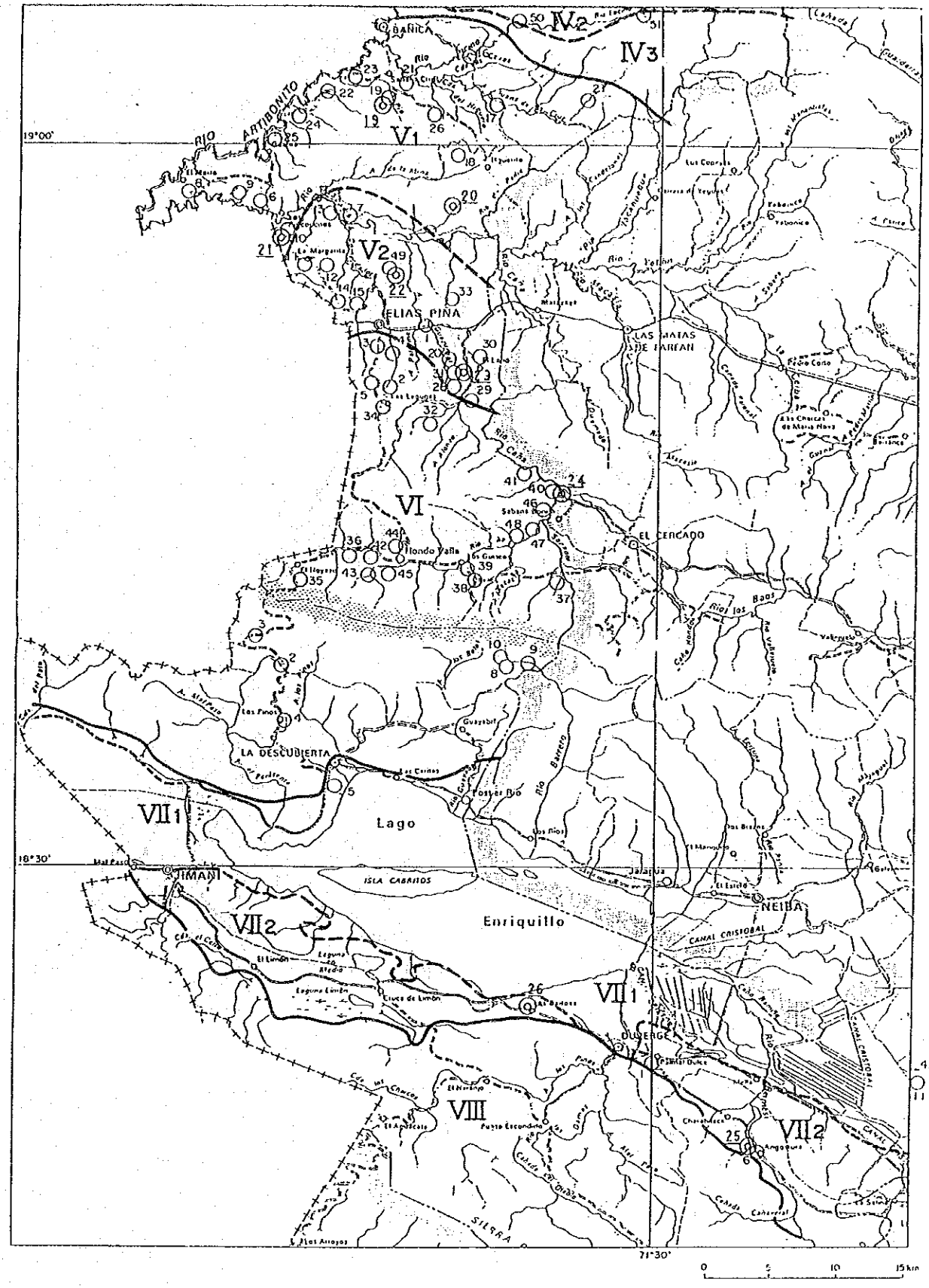
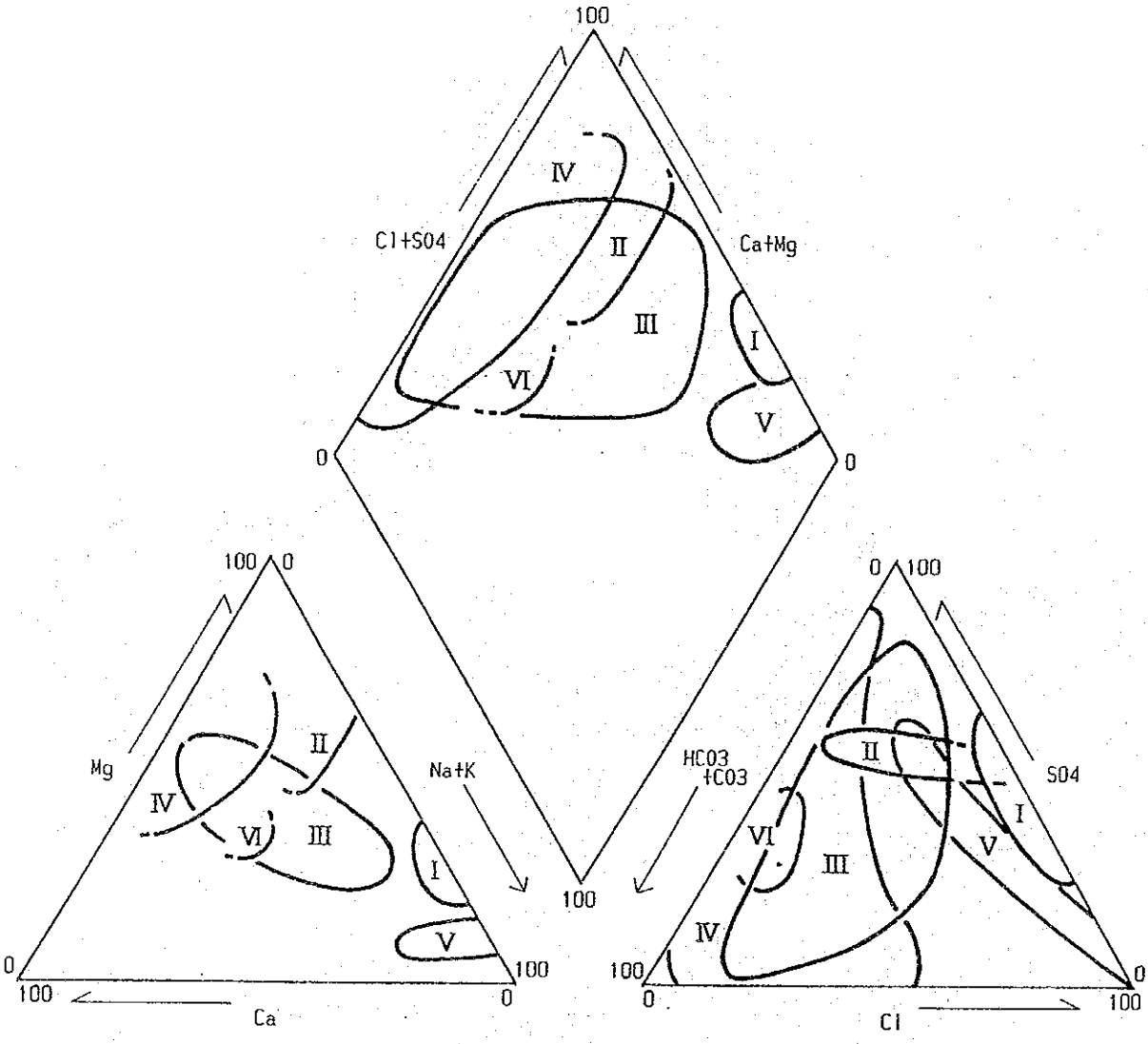


図 3.2.(2)　水文地質区の区分図



* Province VII : Scattered Data – No apparent trend
* Province VIII : No Samples

図３．３　水文地質区別地下水の水質

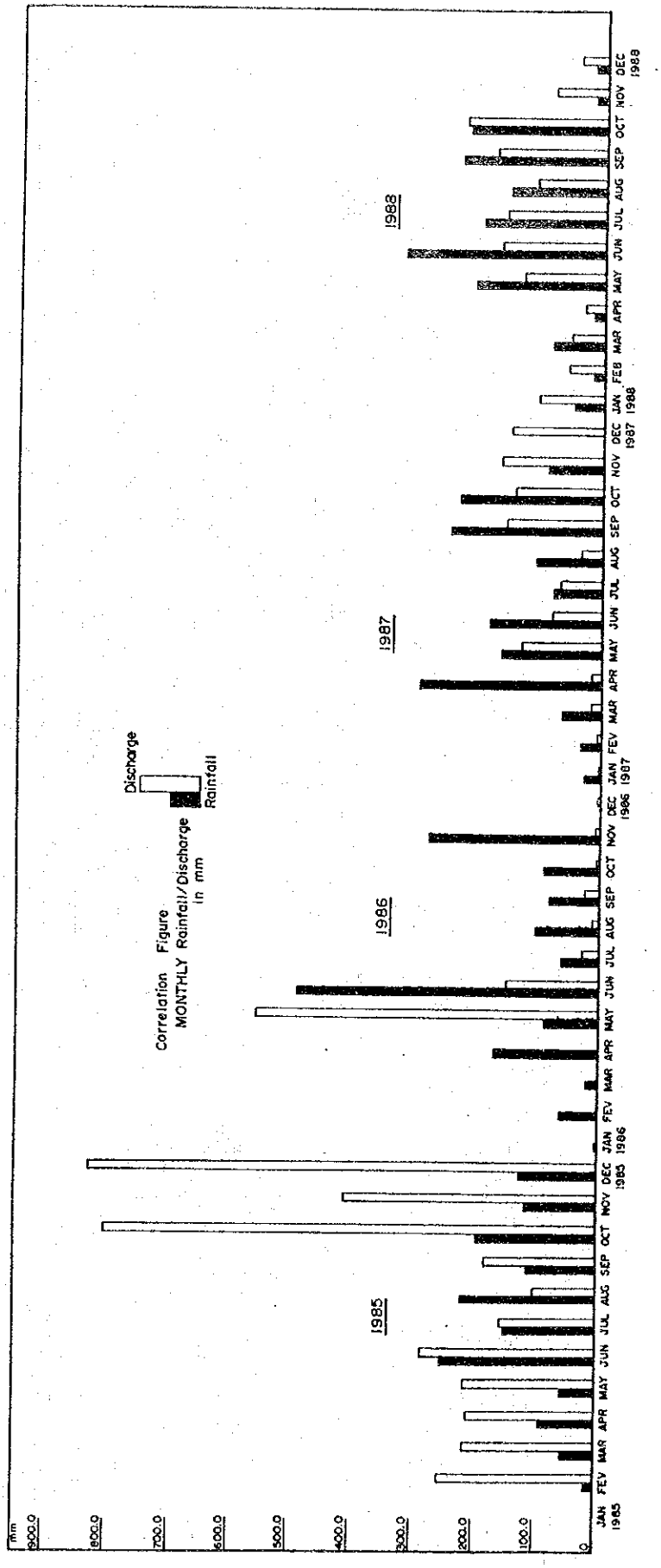


図３．４　Rio Masacre の日，月流量と流域地点雨量の相関図

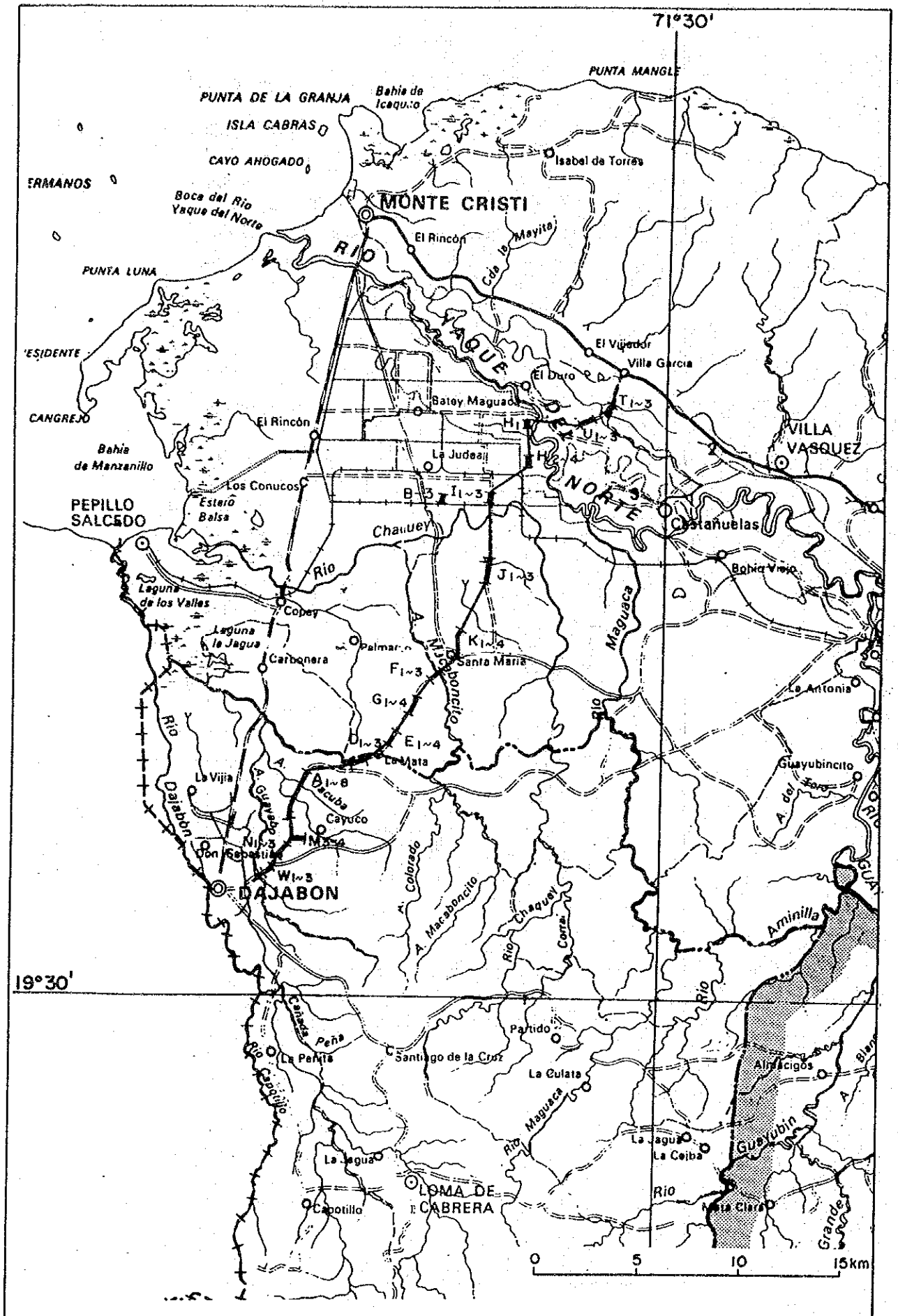

71°30'
19°30'
PUNTA MANGLE
PUNTA DE LA GRANJA
Bahia de Icaquito
ISLA CABRAS
CAYO AHOGADO
ERMANOS
Isabel de Torres
MONTE CRISTI
Boca del Rio Yaque del Norte
El Rincón
Cda. la Mayita
RIO YAQUE DEL NORTE
PUNTA LUNA
El Viajador
Villa García
El Duro
Batey Maguaca
El Rincón
VILLA VASQUEZ
CANGREJO
Bahia de Manzanillo
La Judea
Los Conucos
Estero Balsa
PEPILLO SALCEDO
Chanuey
Castañuelas
Bahia Viejo
Laguna de los Valles
Copey
Rio Maguaca
Laguna la Jagua
Carbonera
Palmar
Santa María
La Antonia
Rio Dajabon
La Vija
A. Guayubin
A. Macabonicito
La Mata
Guayubincito
A. del Toro
Cayuco
Don Sebastián
DAJABON
A. Colorado
A. Macabonicito
Rio Chaguey
Aminilla
Partido
Canada Peña
La Peñita
Santiago de la Cruz
La Culata
Almacigos
Rio Capotillo
Rio Maguaca
La Jagua
La Ceiba
Guayubin
La Jagua
LOMA DE CABRERA
Capotillo
Mata Clara
Rio Grande
0 5 10 15km

図３．５　地質断面位置図

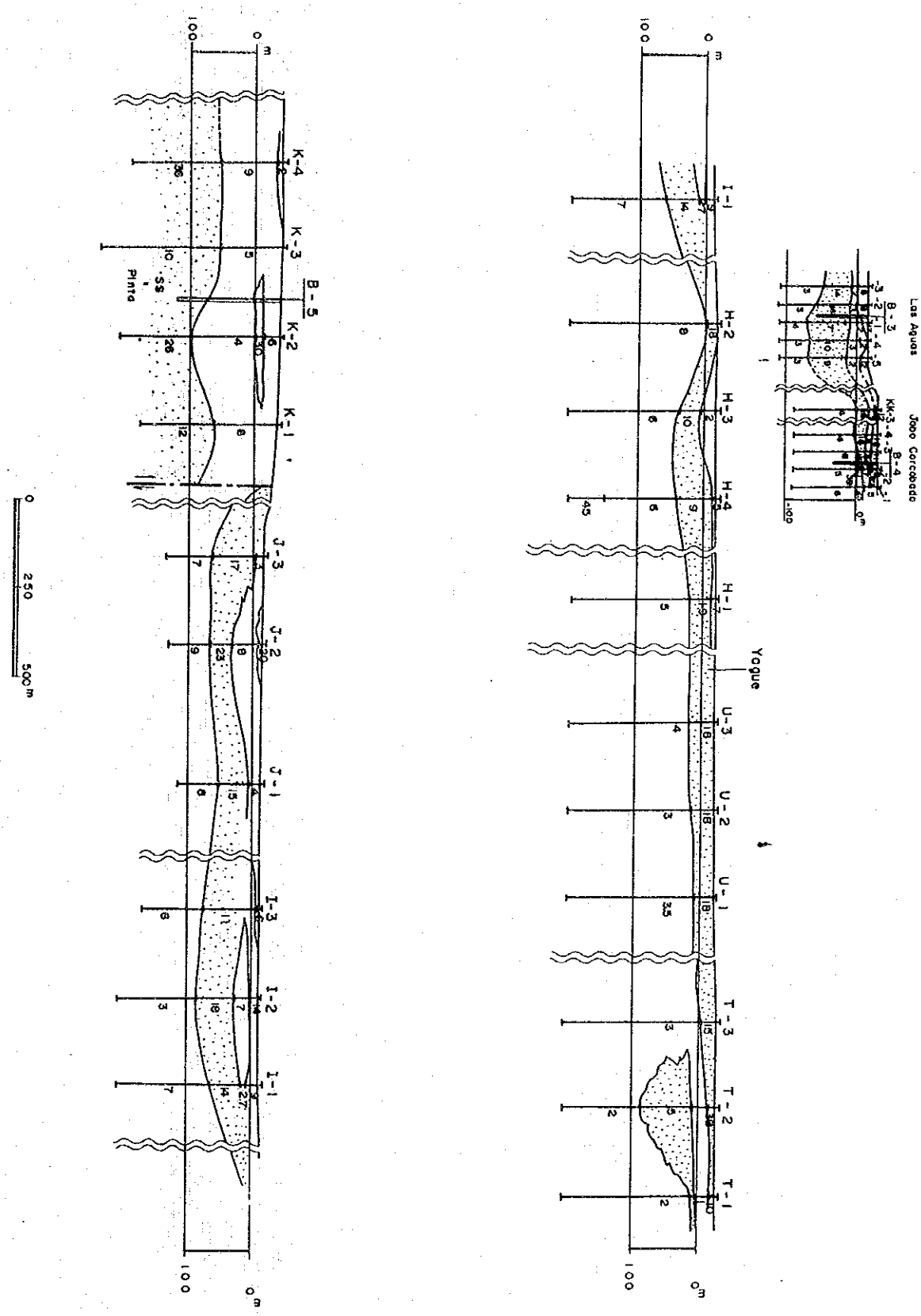

K-4
K-3
B-5
K-2
K-1
J-3
J-2
J-1
I-3
I-2
I-1
Plata
0
250
500m
I-1
H-2
H-3
H-4
H-1
Yague
U-3
U-2
U-1
T-3
T-2
T-1
Las Aguas
Joco Corcobado
B-3
B-4
100
0 m

図３．６-(1)　地質断面図

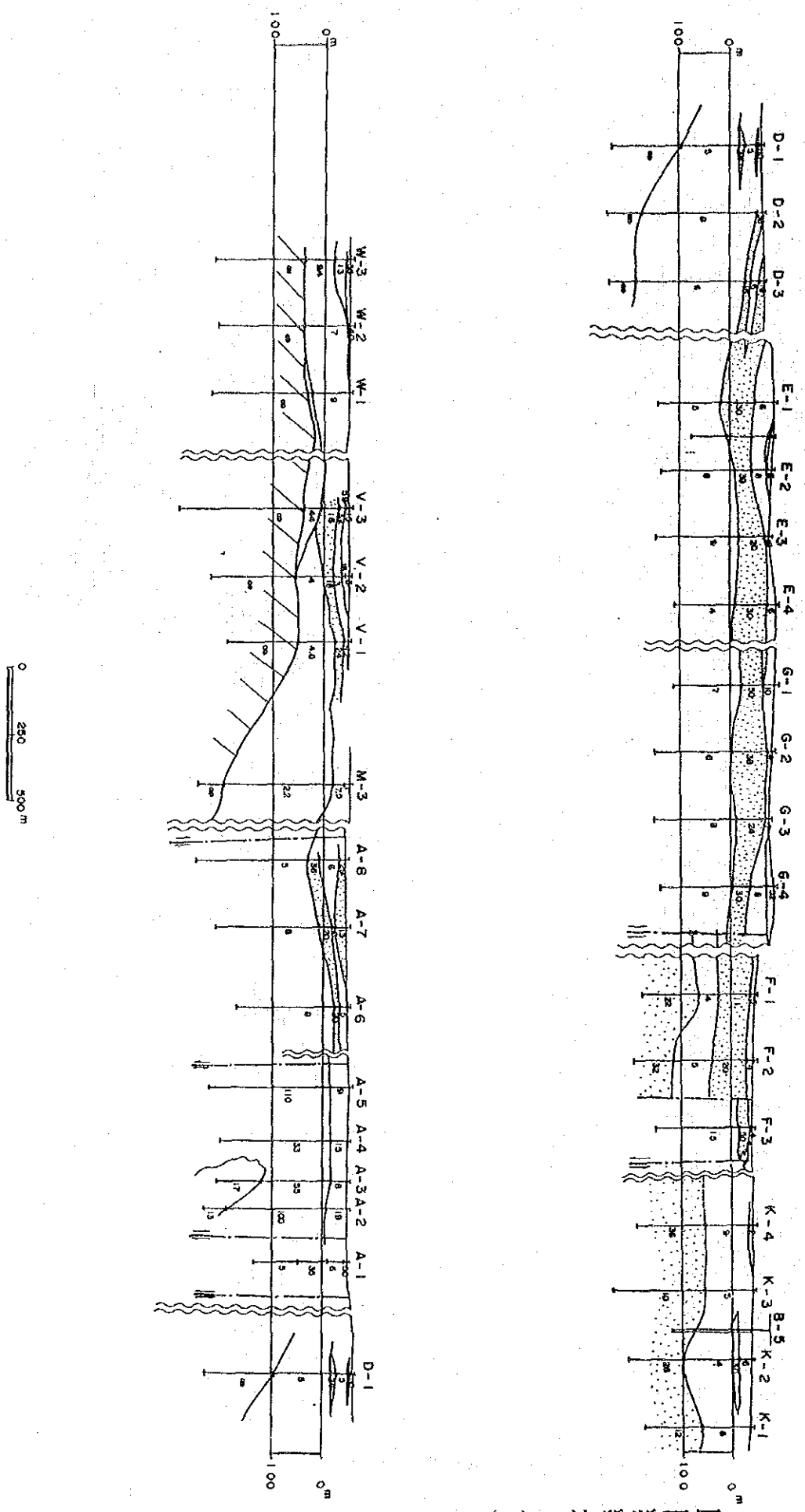

0
250
500m
W-3
W-2
W-1
V-3
V-2
V-1
M-3
A-8
A-7
A-6
A-5
A-4
A-3
A-2
A-1
D-1
D-1
D-2
D-3
E-1
E-2
E-3
E-4
G-1
G-2
G-3
G-4
F-1
F-2
F-3
K-4
K-3
B-5
K-2
K-1

図３．６-(2)　地質断面図

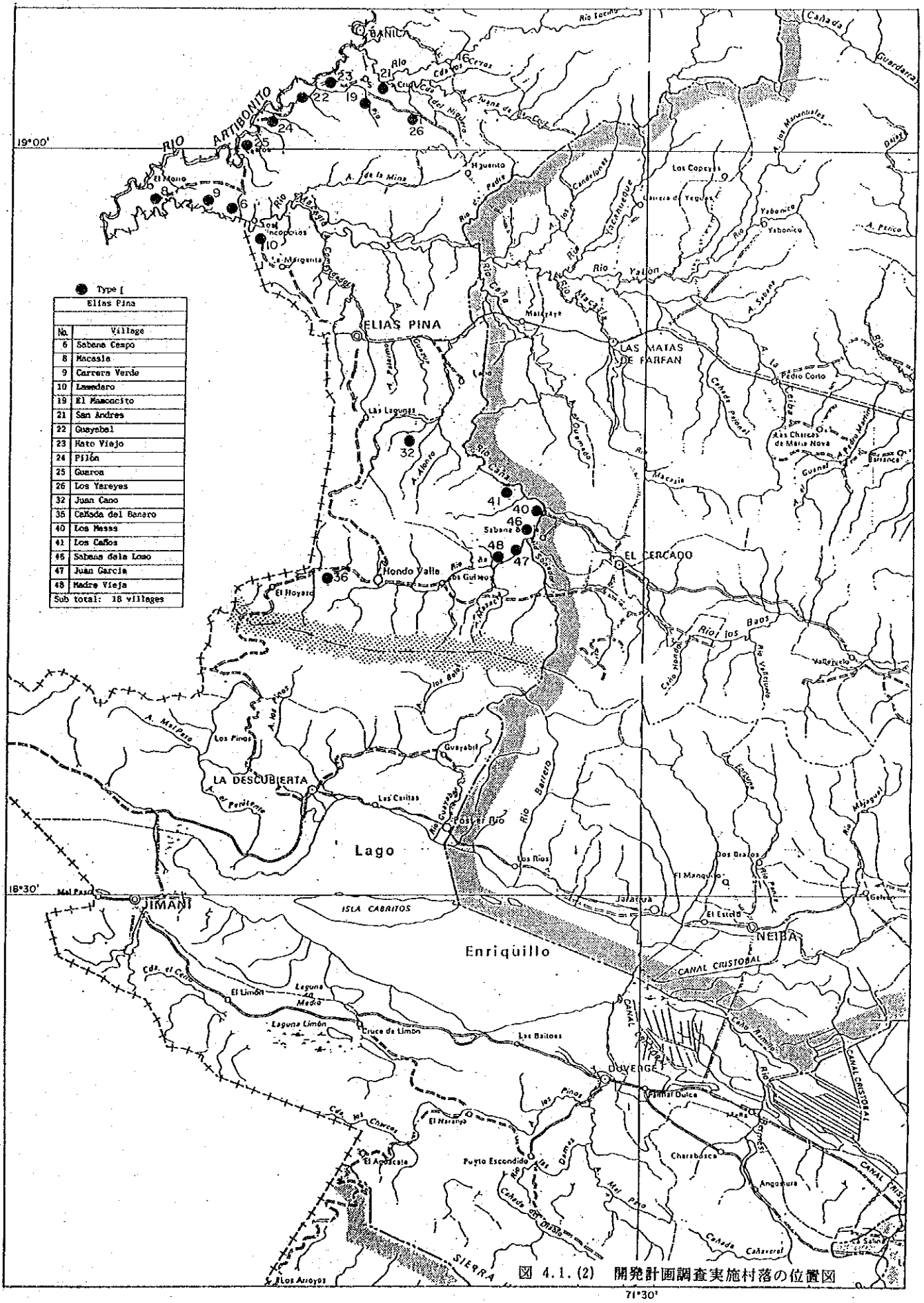


図 4.1.(2) 開発計画調査実施村落の位置図

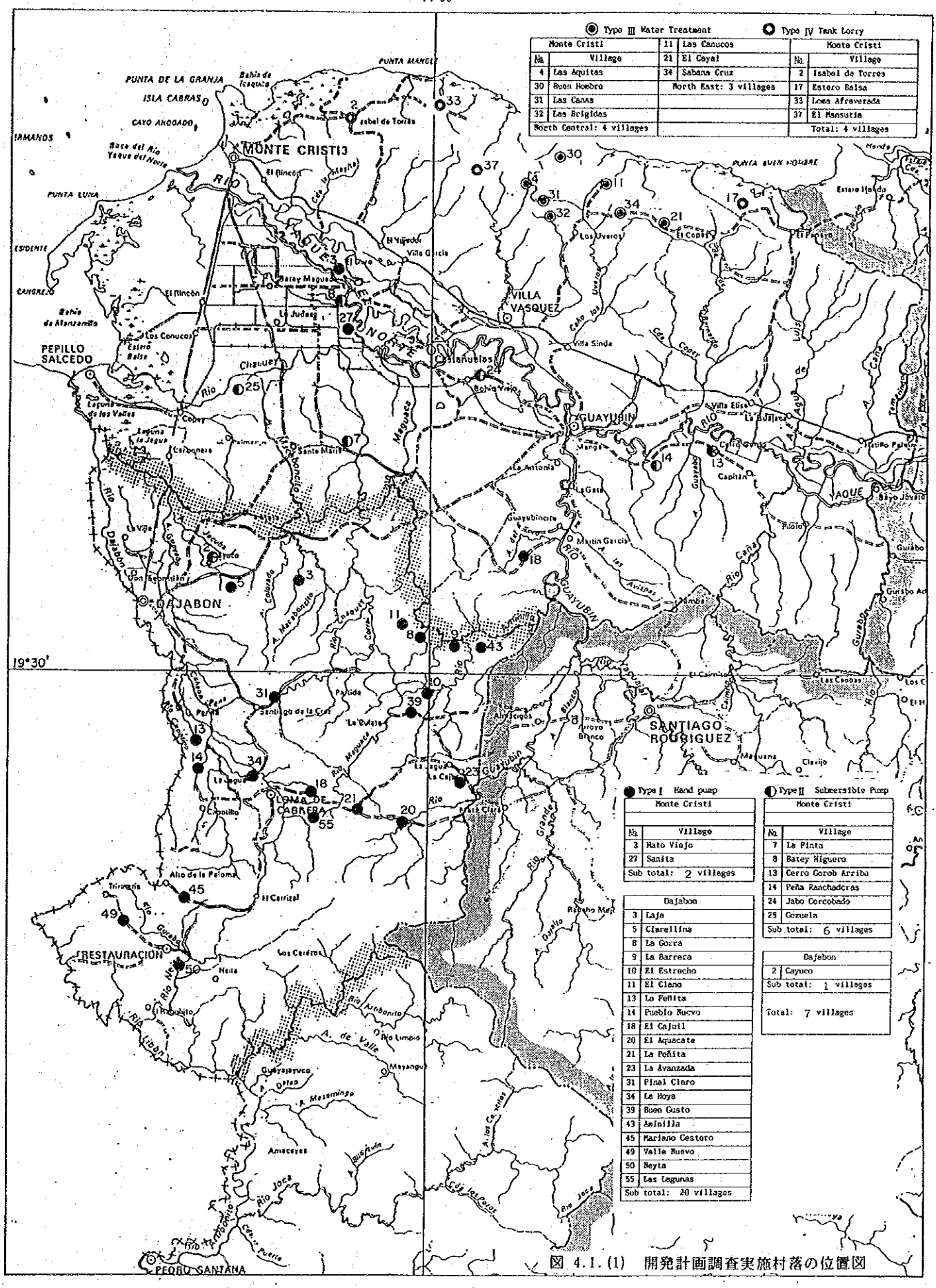


図 4.1.(1) 開発計画調査実施村落の位置図

図４．２　計画給水システム

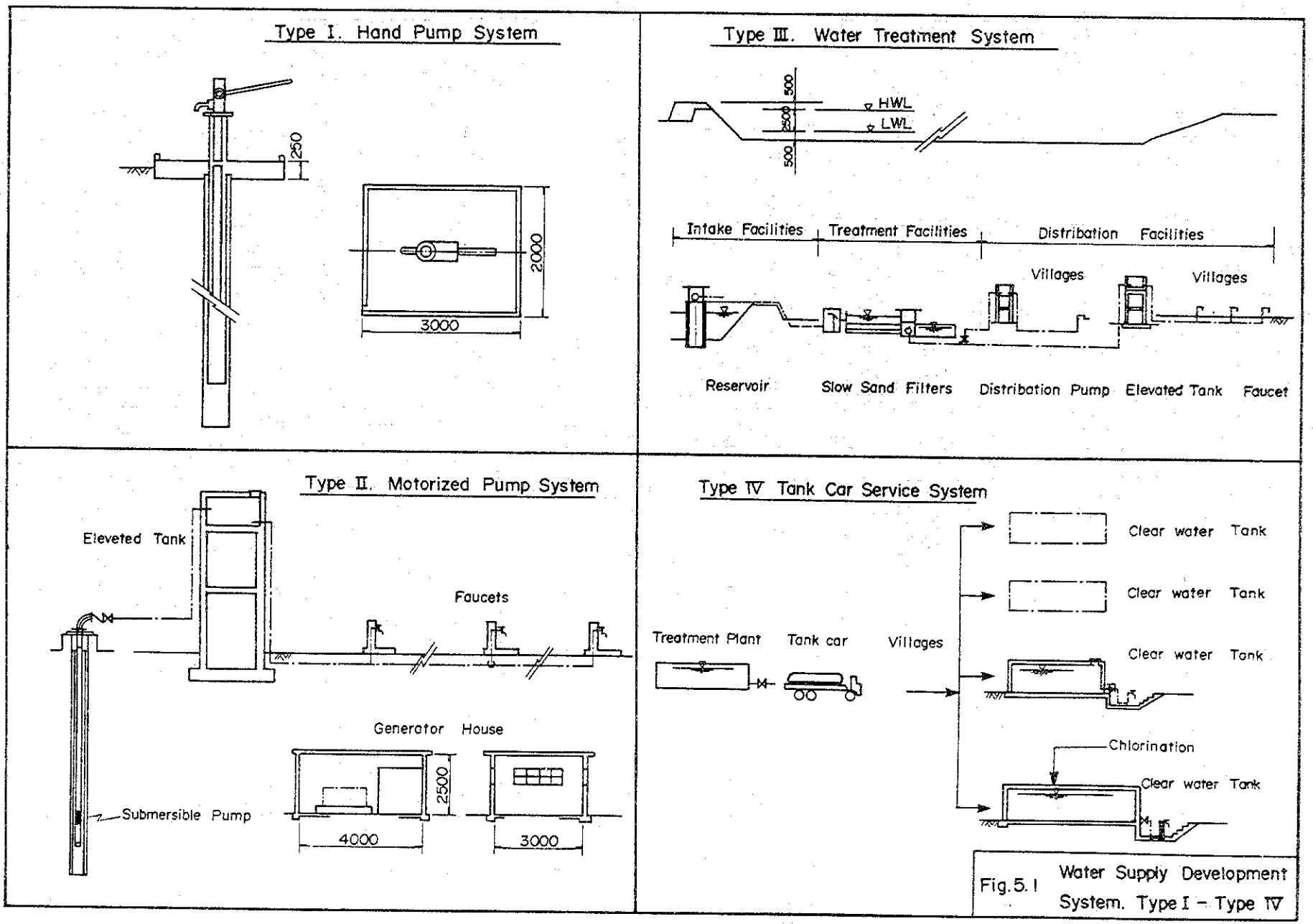


Fig. 5. 1　Water Supply Development System. Type I – Type IV

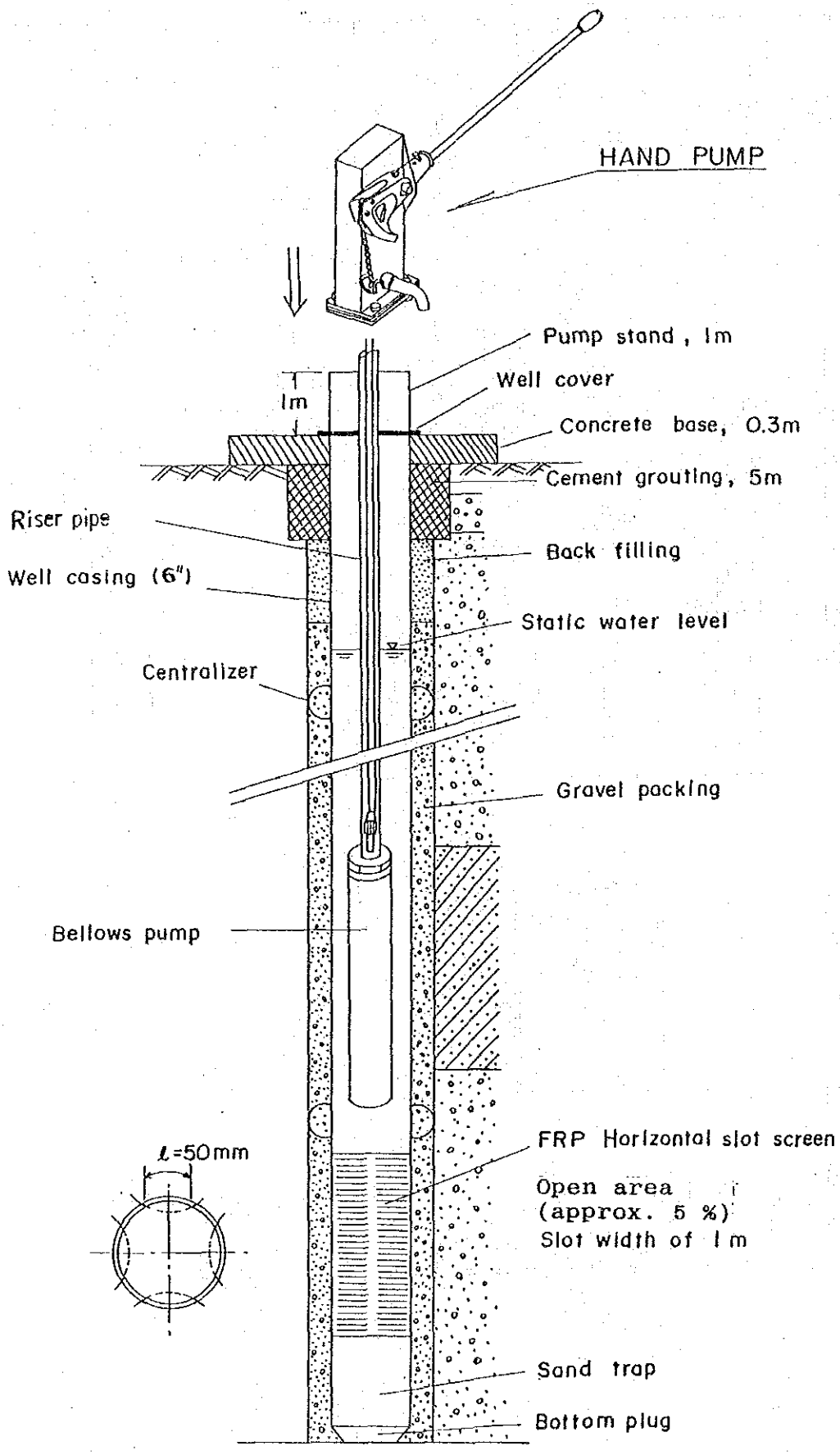


図 5.1.(1) 計画井戸標準断面図

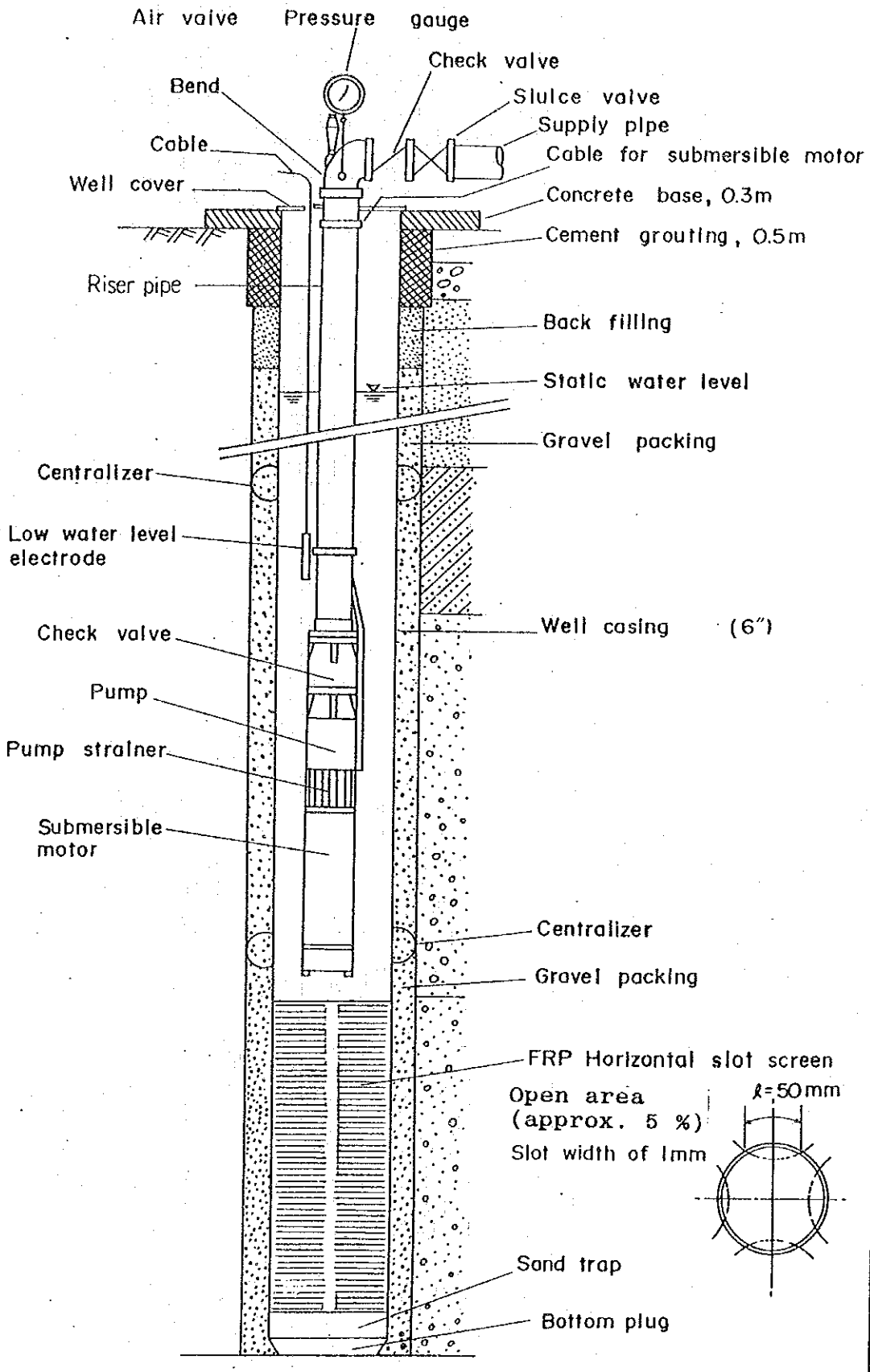


図 5.1.(2) 計画井戸標準断面図

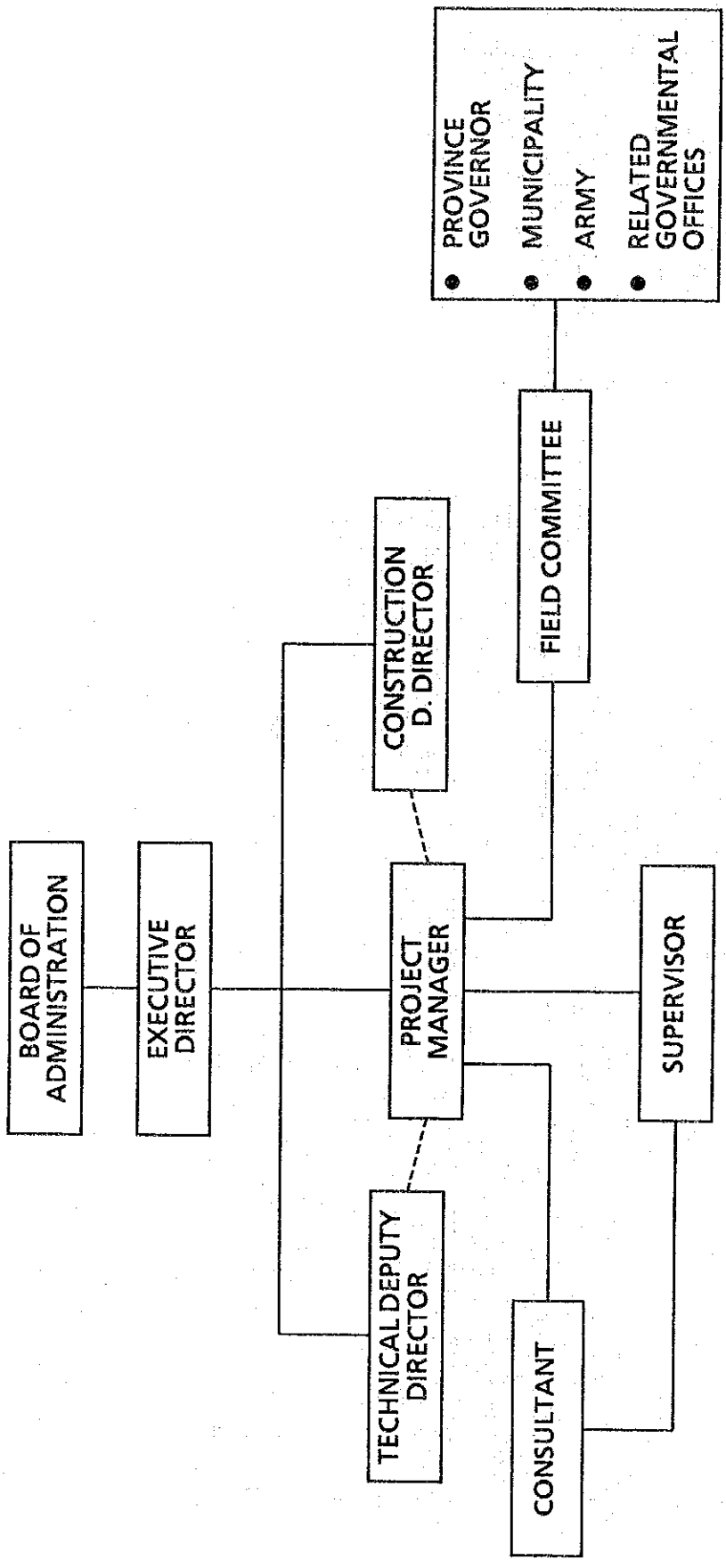

PROVINCE GOVERNOR
MUNICIPALITY
ARMY
RELATED GOVERNMENTAL OFFICES
FIELD COMMITTEE
CONSTRUCTION D. DIRECTOR
BOARD OF ADMINISTRATION
EXECUTIVE DIRECTOR
PROJECT MANAGER
SUPERVISOR
TECHNICAL DEPUTY DIRECTOR
CONSULTANT

図７．１　実施組織系統図

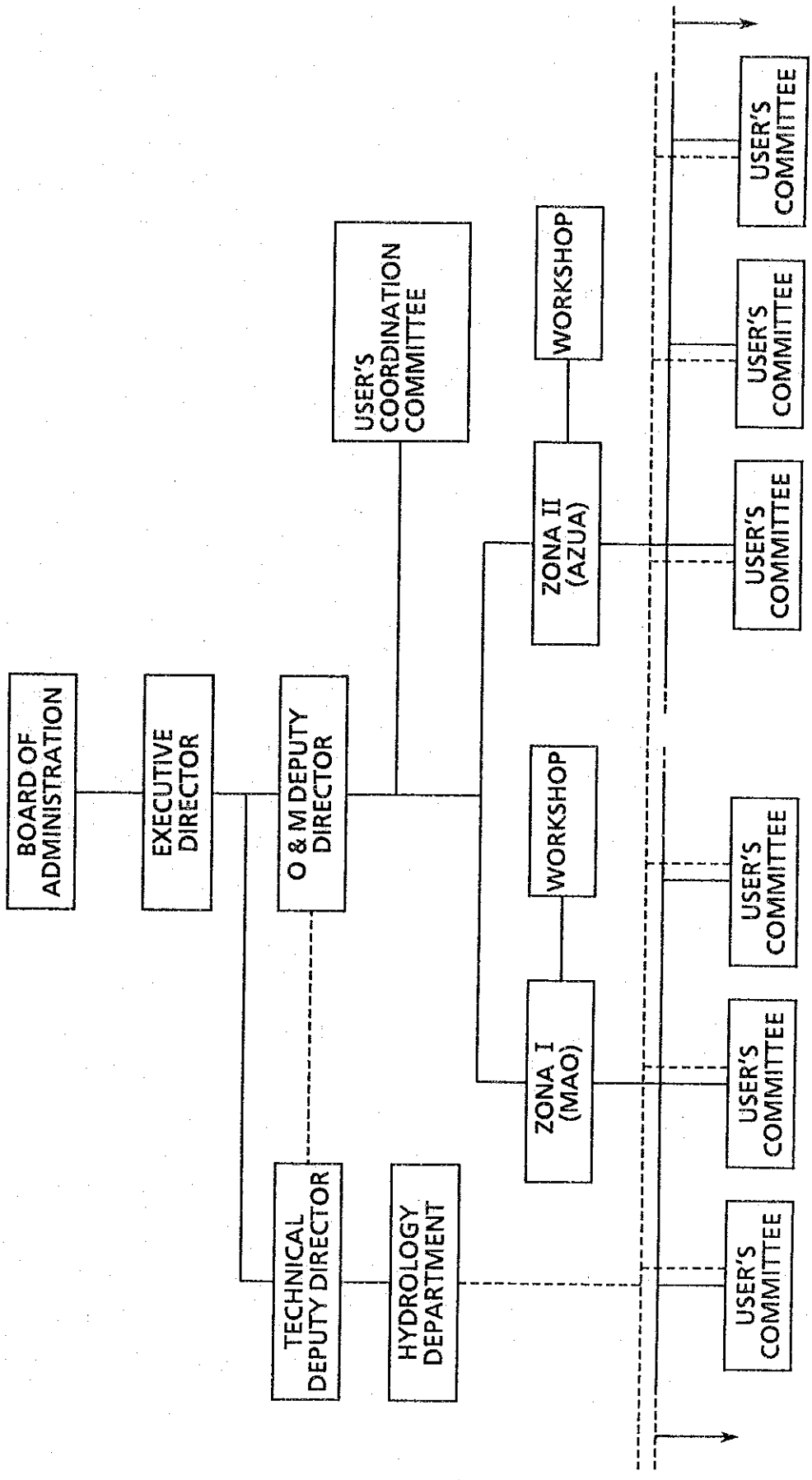


図８．１　維持管理組織系統図

JICA