

付 表

表 1.3.1 国内総生産および人口増加率

(Unit: %)

	Annual Growth Rate						
	1970/71	1975/76	1980/81	1981/82	1982/83	1983/84	1984/85
1984/85*	1974/75*	1979/80*	1984/85*	1980/81	1981/82	1982/83	1983/84
	(Fourth Plan Period)	(Fifth Plan Period)	(Sixth Plan Period)				
Gross Domestic Product	2.8	2.4	4.0	8.3	3.8	-3.0	7.8
Agriculture	2.1	-1.1	5.2	10.4	4.6	-1.1	9.5
Non-agriculture	4.3	9.0	2.2	5.5	2.6	-5.8	4.9
Population Growth Rate	2.6	2.7	2.6	2.6	2.6	2.6	2.6

* : Average annual growth

Source: Central Bureau of Statistics and Economic Survey (annual reports), Ministry of Finance, HMG.

表 2.2.1 地形別土地利用状況 (1/4 : グルミ)

Land Use Type	(unit:ha)				
	Terai	Siwalik	Middle Mountain	High Mountain	Total
I. Agricultural Land Use					
Wet, Upper Wet Lands (W)	-	-	-	-	-
Dry Lands (D)	-	-	-	-	-
Mixed Lands (X)	-	-	-	-	-
Sloping Terrace (% of cultivated area)					
C1 (25%-50%)	-	-	8,310	-	8,310
C2 (50%-75%)	-	-	19,190	-	19,190
C3 (75%-100%)	-	-	2,030	-	2,030
Alluvial terraces, footslopes (F)	-	-	4,630	-	4,630
Grazing Land (above mean sea level)					
G1 (< 1000m)	-	-	1,790	-	1,790
G2 (1000m-2000m)	-	-	9,990	-	9,990
G3 (2000m-2600m)	-	-	180	-	180
Level Terraces (% of cultivated area)					
T1 (25%-50%)	-	-	7,660	50	7,710
T2 (50%-75%)	-	-	11,320	-	11,320
T3 (75%-100%)	-	-	740	-	740
Valley floor including footslopes and/or alluvial fans					
V	-	-	90	-	90
H	-	-	-	-	-
Subtotal	-	-	65,930	50	65,980
II. Forestry Land Use					
C Coniferous	-	-	6,190	-	6,190
H Hardwood	-	-	19,520	-	19,520
M Mixed Wood	-	-	7,130	-	7,130
S Shrub	-	-	7,700	120	7,820
P1 Plantation	-	-	-	-	-
Subtotal	-	-	40,540	120	40,660
III. Other Land					
I Ice	-	-	-	-	-
R Rock	-	-	-	-	-
B Sand/gravel/boulders	-	-	720	-	720
P Swamps	-	-	-	-	-
U Urban centres	-	-	-	-	-
S1 Landslides	-	-	390	-	390
EF Experimental Farm	-	-	-	-	-
Subtotal	-	-	1,110	-	1,110
IV. Grand Total	-	-	107,580	-	107,760

Source : Land Utilization Report, Land Resources Mapping Project, 1986, Canadian International Development Agency.

Note : Areas of each land use type are represented in gross.

表 2.2.1 地形別土地利用状況 (2/4 : アルガカンチ)

(unit:ha)

Land Use Type	Terai	Siwalik	Middle Mountain	High Mountain	Total
I. Agricultural Land Use					
Wet, Upper Wet Lands (W)	-	-	-	-	-
Dry Lands (D)	-	-	-	-	-
Mixed Lands (X)	-	-	-	-	-
Sloping Terrace (% of cultivated area)					
C1 (25%-50%)	-	1,620	8,540	-	10,160
C2 (50%-75%)	-	1,660	18,820	-	20,470
C3 (75%-100%)	-	210	1,980	-	2,190
Alluvial terraces, footslopes (F)	-	1,620	4,140	-	5,760
Grazing Land (above mean sea level)					
G1 (< 1000m)	-	70	2,270	-	2,340
G2 (1000m-2000m)	-	240	6,900	-	7,140
G3 (2000m-2600m)	-	-	260	-	260
Level Terraces (% of cultivated area)					
T1 (25%-50%)	-	-	210	-	210
T2 (50%-75%)	-	210	160	-	370
T3 (75%-100%)	-	130	320	-	450
Valley floor including footslopes and/or alluvial fans					
V	-	160	170	-	330
H	-	-	-	-	-
Subtotal	-	5,920	43,770	-	49,690
II. Forestry Land Use					
C Coniferous	-	330	4,890	-	5,220
H Hardwood	-	11,600	16,760	-	28,370
M Mixed Wood	-	20,810	11,460	-	32,270
S Shrub	-	150	7,130	-	7,280
P1 Plantation	-	-	-	-	-
Subtotal	-	32,890	40,240	-	73,130
III. Other Land					
I Ice	-	-	-	-	-
R Rock	-	-	-	-	-
B Sand/gravel/boulders	-	420	10	-	420
P Swamps	-	-	-	-	-
U Urban centres	-	-	-	-	-
S1 Landslides	-	10	20	-	30
EF Experimental Farm	-	-	-	-	-
Subtotal	-	430	20	-	450
IV. Grand Total					
	-	39,240	84,030	-	123,270

Source : Land Utilization Report, Land Resources Mapping Project, 1986, Canadian International Development Agency.

Note : Areas of each land use type are represented in gross.

表 2.2.1 地形別土地利用状況 (3/4 : カピルバスト)

(unit:ha)

Land Use Type	Terai	Siwalik	Middle Mountain	High Mountain	Total
I. Agricultural Land Use					
Wet, Upper Wet Lands (W)	54,820	-	-	-	54,820
Dry Lands (D)	3,720	-	-	-	3,720
Mixed Lands (X)	5,760	-	-	-	5,760
Sloping Terrace (% of cultivated area)					
C1 (25%-50%)	-	490	-	-	490
C2 (50%-75%)	-	370	-	-	370
C3 (75%-100%)	-	-	-	-	-
Alluvial terraces, footslopes (F)	720	110	-	-	830
Grazing Land (above mean sea level)					
G1 (< 1000m)	930	-	-	-	930
G2 (1000m-2000m)	-	-	-	-	-
G3 (2000m-2600m)	-	-	-	-	-
Level Terraces (% of cultivated area)					
T1 (25%-50%)	-	60	-	-	60
T2 (50%-75%)	-	-	-	-	0
T3 (75%-100%)	-	-	-	-	0
Valley floor including footslopes and/or alluvial fans					
V	-	-	-	-	-
H	27,810	-	-	-	27,810
Subtotal	93,760	1,030	-	-	94,790
II. Forestry Land Use					
C Coniferous	-	-	-	-	-
H Hardwood	48,330	25,700	-	-	74,040
M Mixed Wood	-	1,580	-	-	1,580
S Shrub	400	-	-	-	400
P1 Plantation	1,820	-	-	-	1,820
Subtotal	50,550	27,280	-	-	77,840
III. Other Land					
I Ice	-	-	-	-	-
R Rock	-	-	-	-	-
B Sand/gravel/boulders	2,400	40	-	-	2,440
P Swamps	-	-	-	-	-
U Urban centres	170	-	-	-	170
Sl Landslides	-	60	-	-	60
EF Experimental Farm	400	-	-	-	400
Subtotal	2,970	100	-	-	3,070
IV. Grand Total	147,280	28,410	-	-	175,690

Source : Land Utilization Report, Land Resources Mapping Project, 1986, Canadian International Development Agency.

Note : Areas of each land use type are represented in gross.

表 2.2.1 地形別土地利用状況 (4/4 : ルパンデヒ)

(unit:ha)

Land Use Type	Terai	Siwalik	Middle Mountain	High Mountain	Total
I. Agricultural Land Use					
Wet, Upper Wet Lands (W)	48,080	30	-	-	48,110
Dry Lands (D)	60	-	-	-	60
Mixed Lands (X)	7,270	-	-	-	7,270
Sloping Terrace (% of cultivated area)					
C1 (25%-50%)	-	490	50	-	540
C2 (50%-75%)	-	190	190	-	390
C3 (75%-100%)	-	120	-	-	120
Alluvial terraces, footslopes (F)	7,650	280	-	-	7,930
Grazing Land (above mean sea level)					
G1 (< 1000m)	900	40	-	-	940
G2 (1000m-2000m)	-	10	60	-	70
G3 (2000m-2600m)	-	-	-	-	-
Level Terraces (% of cultivated area)					
T1 (25%-50%)	-	-	-	-	-
T2 (50%-75%)	-	-	-	-	-
T3 (75%-100%)	-	-	-	-	-
Valley floor including footslopes and/or alluvial fans					
V	50	-	-	-	50
H	33,440	-	-	-	33,440
Subtotal	97,460	1,160	300	-	98,920
II. Forestry Land Use					
C Coniferous	-	-	-	-	-
H Hardwood	20,710	18,060	70	-	38,830
M Mixed Wood	-	-	-	-	-
S Shrub	140	130	150	-	420
P1 Plantation	80	-	-	-	80
Subtotal	20,930	18,190	220	-	39,330
III. Other Land					
I Ice	-	-	-	-	-
R Rock	-	410	-	-	410
B Sand/gravel/boulders	2,020	-	-	-	2,020
P Swamps (pond)	440	-	-	-	440
U Urban centres	220	-	-	-	220
SI Landslides	-	-	-	-	-
EF Experimental Farm	-	-	-	-	-
Subtotal	2,680	410	-	-	3,100
IV. Grand Total	121,070	19,760	520	-	141,350

Source : Land Utilization Report, Land Resources Mapping Project, 1986, Canadian International Development Agency.

Note : Areas of each land use type are represented in gross.

表 2.2.2 計画地域の土地分級

Class	Gulmi		Arghakhanchi		Hill area total		Kapivastu		Rupandehi		Terai total		Total	
	Area (ha)	Proportional Extent	Area (ha)	Proportional Extent	Area (ha)	Proportional Extent	Area (ha)	Proportional Extent	Area (ha)	Proportional Extent	Area (ha)	Proportional Extent	Area (ha)	Proportional Extent
Suitable	1,500	1.4%	1,600	1.3%	3,100	1.3%	26,200	14.9%	31,300	22.1%	57,500	18.1%	60,600	11.1%
I/1 or 2	0	0.0%	900	0.7%	900	0.4%	65,800	37.5%	60,600	42.9%	126,400	39.9%	127,300	23.2%
I/3	0	0.0%	0	0.0%	0	0.0%	2,100	0.0%	1,100	0.0%	3,200	0.0%	3,200	0.0%
I/4	3,500	3.2%	2,300	1.9%	5,800	2.5%	22,500	12.8%	14,400	10.2%	36,900	11.6%	42,700	7.8%
I/5	400	0.4%	400	0.3%	800	0.3%	5,500	3.1%	3,300	2.3%	8,800	2.8%	9,600	1.8%
sub-total	5,400	5.0%	5,200	4.2%	10,600	4.6%	122,100	69.5%	110,700	78.3%	232,800	73.4%	243,400	44.4%
Marginal	41,900	38.8%	31,300	25.4%	73,200	31.7%	1,700	1.0%	1,500	1.1%	3,200	1.0%	76,400	13.9%
III														
Unsuitable	60,400	56.0%	52,300	42.4%	112,700	48.7%	21,600	12.3%	5,800	4.1%	27,400	8.6%	140,100	25.6%
IV	0	0.0%	0	0.0%	0	0.0%	900	0.5%	1,700	1.2%	2,600	0.8%	2,600	0.5%
V	100	0.1%	33,400	27.1%	33,500	14.5%	26,800	15.3%	18,600	13.2%	45,400	14.3%	78,900	14.4%
VI	100	0.1%	1,100	0.9%	1,200	0.5%	2,600	1.5%	3,100	2.2%	5,700	1.8%	6,900	1.3%
Others	60,600	56.2%	86,800	70.4%	147,400	63.8%	51,900	29.5%	29,200	20.7%	81,100	25.6%	228,500	41.7%
sub-total														
Total	107,900	100.0%	123,300	100.0%	231,200	100.0%	175,700	100.0%	141,400	100.0%	317,100	100.0%	548,300	100.0%

Source: Land Capability Report, Land Resources Mapping Project, 1986, Canadian International Development Agency

表 2.2.3 各観測所の気象データ (1/2)

703 BUTWAL El. 205 m													27°42" Lati. 83°28" Long.	
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean/Total		
Mean Temperature														
16.6	18.9	24.2	29.1	29.8	30.1	28.7	29.1	27.4	26.3	22.9	18.6	25.1		
Relative Humidity (%)														
72	64	47	40	51	69	81	81	82	73	64	69	66		
Rainfall (mm)														
9	14	14	22	95	403	639	461	387	119	6	25	2194		
Average from 1976 to 1986														
705 BHAIHAWA (AIRPORT) El. 110 m													27°31" Lati. 83°26" Long.	
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean/Total		
Mean Temperature														
15.4	17.8	23.1	28.1	30.0	30.5	29.2	29.7	28.5	26.1	21.8	17.2	24.8		
Relative Humidity (%)														
78	67	47	38	49	63	78	78	79	74	72	78	67		
Rainfall (mm)														
15	7	13	22	63	302	580	334	306	64	8	18	1732		
Average from 1976 to 1986														
707 BHAIHAWA (AGRI) El. 120 m													27°32" Lati. 83°28" Long.	
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean/Total		
Mean Temperature														
15.5	17.3	22.4	27.4	29.5	30.1	29.2	29.6	28.4	25.9	21.7	17.4	24.5		
Relative Humidity (%)														
84	78	62	52	60	69	82	82	84	81	78	83	75		
Sunshine Hours (hr/day)														
7.1	8.1	8.5	8.9	9.4	7.6	5.6	6.4	6.3	8.0	8.5	7.6	7.7		
Rainfall (mm)														
16	11	14	24	65	351	564	311	339	72	7	20	1793		
Average from 1976 to 1986														

表 2.2.3 各観測所の気象データ (2/2)

715 KHANCHIKOT El. 1,760 m 27'56" Lati. 83'09" Long.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean/Total
Mean Temperature	8.8	10.3	14.6	18.2	19.0	20.2	19.9	20.3	18.9	16.8	13.4	10.1	15.9
Relative Humidity (%)	71	69	55	53	66	81	92	90	87	75	75	70	74
Sunshine Hours (hr/day)	6.3	7.9	9.8	10.0	9.2	7.6	7.0	6.4	7.5	7.8	7.3	7.6	7.9
Rainfall (mm)	26	26	26	26	124	320	553	364	458	65	13	42	2042

Average from 1977 to 1986

716 TAULIHAWA El. 94 m 27'33" Lati. 83'04" Long.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean/Total
Mean Temperature	15.4	17.4	22.7	27.9	29.8	30.7	29.2	29.7	28.4	26.1	21.3	16.9	24.6
Relative Humidity (%)	84	72	52	43	53	66	81	80	81	77	77	82	71
Rainfall (mm)	18	14	20	28	62	236	561	301	293	57	7	16	1613

Average from 1979 to 1986

725 TAMGHAS El. 1,530 m 28'04" Lati. 83'15" Long.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Mean/Total
Mean Temperature	9.4	11.4	16.0	19.1	20.3	22.2	22.1	22.6	20.7	18.1	13.7	10.3	17.1
Relative Humidity (%)	82	78	67	58	75	84	93	90	90	81	81	83	80
Rainfall (mm)	35	18	25	57	161	304	490	340	418	70	24	36	1978

Average from 1981 to 1986

表 2.2.4 河川の月平均流量 (1/4)

(in Gubmi District)		Predicted Hydrograph m ³ /sec													
No.	Name of the River	C.A. (Km ²)	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1\	Kali Gandki *1	6,630	48.50	37.40	33.50	52.20	90.50	307.00	927.00	946.00	703.00	280.00	128.00	71.90	302.08
2\	Badi Gad	1,990	5.56	4.15	3.24	2.44	2.95	17.73	44.36	66.54	51.02	22.18	9.61	7.39	19.76
3\	Hugdi Khola	125	1.52	1.16	0.90	0.68	0.82	4.94	12.36	18.54	14.22	6.18	2.68	2.06	5.51
4\	Chhaldi Khola	480	1.03	0.78	0.61	0.46	0.56	3.34	8.36	12.54	9.62	4.18	1.81	1.39	3.72
5\	Panaha Khola	160	1.19	0.90	0.70	0.53	0.64	3.85	9.63	14.45	11.08	4.82	2.09	1.60	4.29
6\	Ridi Khola	550	3.24	2.46	1.93	1.45	1.75	10.54	29.36	39.54	30.32	13.18	5.71	4.39	11.99
7\	Kharjeng Khola	145	1.19	0.90	0.70	0.53	0.64	3.85	9.63	14.45	11.08	4.82	2.09	1.60	4.29
8\	Bharse Khola	20	0.36	0.27	0.21	0.16	0.19	1.16	2.91	4.36	3.34	1.45	0.63	0.48	1.29
9\	Daram Khola	255	1.19	0.90	0.70	0.53	0.64	3.85	9.63	14.45	11.08	4.82	2.09	1.60	4.29
10\	Nisti Khola	110	0.81	0.61	0.48	0.36	0.44	2.62	6.54	9.82	7.53	3.27	1.42	1.09	2.92
11\	Gyadi Khola	31.5	0.96	0.73	0.57	0.43	0.52	3.13	7.82	11.74	8.99	3.91	1.69	1.30	3.48
12\	Baudi Khola	-	0.29	0.22	0.18	0.13	0.16	0.96	2.39	3.59	2.75	1.20	0.52	0.40	1.07
13\	Tal Khola	14	0.47	0.36	0.28	0.21	0.25	1.53	3.83	5.74	4.40	1.91	0.83	0.64	1.70
14\	Harewa Khola	15.2	0.36	0.27	0.21	0.16	0.19	1.16	2.91	4.36	3.34	1.45	0.63	0.48	1.29
15\	Lumdi Khola	13	0.67	0.51	0.40	0.30	0.36	2.18	5.45	8.18	6.27	2.73	1.18	0.91	2.43
16\	Jumdi Khola	17	0.45	0.34	0.27	0.20	0.24	1.45	3.64	5.45	4.18	1.82	0.61	0.61	1.90
17\	Ulli Khola	30	0.31	0.24	0.19	0.14	0.17	1.02	2.54	3.82	2.93	1.27	0.55	0.42	1.13
18\	Dhodwa Khola	-	0.36	0.27	0.21	0.16	0.19	1.16	2.91	4.36	3.34	1.45	0.63	0.40	1.29
19\	Jhedi Khola	-	0.25	0.19	0.15	0.11	0.13	0.80	2.00	3.00	2.30	1.00	0.43	0.33	0.89
20\	Raiti Khola	-	0.22	0.17	0.13	0.10	0.12	0.73	1.82	2.73	2.09	0.91	0.39	0.30	0.81

*1: Average of 3 years from 1974 to 1976 at Seti Beni near Dumrichar

表 2.2.4 河川の月平均流量 (2/4)

(in Arghakhanchi District)		Predicted Hydrograph m ³ /sec													
No.	Name of the River	C.A. (Km ²)	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1\	Rapti Khola *1	-	31.70	26.30	21.40	18.20	22.80	60.30	192.00	259.00	268.00	117.00	58.60	39.80	92.93
2\	Jhimruk Khola *2	-	6.31	5.29	4.76	3.70	3.34	15.50	64.90	85.20	72.60	34.40	13.10	7.70	26.40
3\	Wakle Khola	25	0.27	0.20	0.16	0.12	0.15	0.87	2.18	3.27	2.51	1.08	0.47	0.36	0.97
4\	Sisne Khola	76	0.42	0.32	0.25	0.19	0.23	1.38	3.45	5.18	3.97	1.72	0.75	0.58	1.54
5\	Durga Khola	35	0.22	0.17	0.13	0.10	0.12	0.73	1.82	2.73	2.09	0.91	0.39	0.30	0.81
6\	Kedua Khola	40	0.25	0.19	0.15	0.11	0.13	0.80	2.00	3.00	2.30	1.00	0.43	0.33	0.89
7\	Kharjyang Khola	30	0.34	0.26	0.20	0.15	0.18	1.11	2.79	4.18	3.21	1.39	0.60	0.46	1.24
8\	Penere Khola	-	0.03	0.02	0.02	0.01	0.02	0.10	0.24	0.36	0.28	0.12	0.05	0.04	0.11
9\	Pahilapani Khola	-	0.05	0.04	0.03	0.02	0.03	0.16	0.41	0.62	0.47	0.21	0.09	0.07	0.18
10\	Bangi Khola	50	0.38	0.29	0.23	0.17	0.20	1.24	3.09	4.64	3.55	1.55	0.67	0.52	1.38
11\	Gachne Khola	22	0.10	0.07	0.06	0.04	0.05	0.32	0.79	1.18	0.91	0.39	0.17	0.13	0.35
12\	Ghoche Khola	22	0.06	0.04	0.03	0.02	0.03	0.18	0.46	0.69	0.53	0.23	0.10	0.08	0.20
13\	Khanchi Khola	125	0.57	0.43	0.34	0.25	0.31	1.84	4.61	6.91	5.30	2.30	1.00	0.77	2.05
14\	Mathura Khola	85	0.34	0.25	0.20	0.15	0.18	1.09	2.73	4.09	3.14	1.36	0.59	0.45	1.21
15\	Chauwa Khola	22	0.18	0.14	0.11	0.08	0.10	0.58	1.45	2.18	1.67	0.73	0.32	0.24	0.65
16\	Pharjeng Khola	-	0.07	0.05	0.04	0.03	0.04	0.22	0.54	0.82	0.63	0.27	0.12	0.09	0.24
17\	Duware Khola	15	0.25	0.19	0.15	0.11	0.13	0.80	2.00	3.00	2.30	1.00	0.43	0.33	0.89
18\	Sirling Khola	38	0.23	0.18	0.14	0.1	0.13	0.76	1.89	2.84	2.17	0.94	0.41	0.32	0.84
19\	Bongseri Khola	37	0.14	0.11	0.08	0.06	0.08	0.46	1.16	1.74	1.34	0.58	0.25	0.19	0.52
20\	Sit Khola	160	0.81	0.62	0.48	0.36	0.44	2.64	6.60	9.90	7.59	3.30	1.43	1.10	2.94
21\	Soile Khola	-	0.04	0.03	0.03	0.02	0.02	0.14	0.36	0.54	0.42	0.18	0.08	0.06	0.16
22\	Kusum Khola	-	0.15	0.12	0.09	0.07	0.08	0.49	1.24	1.85	1.42	0.62	0.27	0.21	0.55
23\	Katke Khola	-	0.03	0.02	0.02	0.01	0.02	0.10	0.24	0.36	0.28	0.12	0.05	0.04	0.11
24\	Siling Khola	52	0.07	0.05	0.04	0.03	0.04	0.23	0.58	0.87	0.67	0.29	0.13	0.10	0.26
25\	Rangsing Khola	-	0.18	0.14	0.11	0.08	0.10	0.58	1.45	2.18	1.67	0.73	0.32	0.24	0.65
26\	Mandre Khola	25	0.31	0.24	0.19	0.14	0.17	1.02	2.54	3.82	2.93	1.27	0.55	0.42	1.13
27\	Ganga Khola (Ban Ganga)	200	1.1	0.84	0.65	0.49	0.60	3.58	8.95	13.42	10.29	4.48	1.94	1.49	3.99
28\	Riste Khola	-	0.09	0.07	0.05	0.04	0.05	0.29	0.73	1.09	0.84	0.36	0.16	0.12	0.32
29\	Ridi Khola	400	2.73	2.07	1.62	1.22	1.48	8.87	22.18	33.27	25.51	11.09	4.81	3.70	9.88
30\	Arcli Khola and Masane Khola	-	0.04	0.03	0.03	0.02	0.02	0.14	0.36	0.54	0.42	0.18	0.18	0.06	0.17
31\	Chidika Khola	-	0.05	0.04	0.03	0.02	0.03	0.16	0.41	0.62	0.47	0.21	0.09	0.07	0.18
32\	Pangrapani Khola a Paudi Khola	-	0.04	0.03	0.03	0.02	0.02	0.14	0.36	0.54	0.42	0.18	0.08	0.06	0.16
33\	Seri Khola, Samu K and Bad Khola	-	0.06	0.04	0.03	0.02	0.03	0.18	0.46	0.69	0.53	0.23	0.10	0.08	0.20
34\	Dhod Khola	-	0.04	0.03	0.02	0.02	0.02	0.12	0.30	0.45	0.35	0.15	0.06	0.05	0.13
35\	Jore Khola	-	0.02	0.02	0.01	0.01	0.01	0.07	0.18	0.27	0.21	0.09	0.04	0.03	0.08
36\	Bhadri Khola	-	0.01	0.01	0.01	0.01	0.01	0.05	0.12	0.18	0.14	0.06	0.03	0.02	0.05
37\	Lewase Khola	-	0.07	0.05	0.04	0.03	0.04	0.22	0.54	0.82	0.63	0.27	0.12	0.19	0.25

*1: Average of 10 years from 1976 to 1985 at Bagasoti Gaon near Bhaluwang

*2: Average of 18 years from 1965 to 1984 at Tigra Village

表 2.2.4 河川の月平均流量 (3/4)

(in Kapilvastud District)			Predicted Hydrograph m ³ /sec.												
No.	Name of the River	C.A. (Km ²)	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1\	Banganga river	340	1.09	0.73	0.46	0.33	1.16	1.98	4.62	11.55	11.22	3.96	2.48	1.65	3.44
2\	Murthi river	195	0.13	0.09	0.06	0.04	0.14	0.24	0.56	1.40	1.36	0.48	0.30	0.20	0.42
3\	Kothi river	125	1.02	0.68	0.43	0.31	1.08	1.86	4.34	10.85	10.54	3.72	2.32	1.55	3.23
4\	Jamuwar Nala	92	0.10	0.07	0.04	0.03	0.10	0.18	0.42	1.05	1.02	0.36	0.22	0.15	0.31
5\	Beti Nadi	95	0.10	0.07	0.04	0.03	0.10	0.18	0.42	1.05	1.02	0.36	0.22	0.15	0.31
6\	Kalla Khola	123	0.79	0.52	0.33	0.24	0.84	1.43	3.34	8.40	8.12	2.87	1.79	1.19	2.49
7\	Gurumuwa Khola	99	0.33	0.22	0.14	0.10	0.35	0.60	1.40	3.50	3.40	1.20	0.75	0.50	1.04
8\	Kanchani river	80	0.16	0.11	0.07	0.05	0.18	0.30	0.70	1.75	1.70	0.60	0.38	0.25	0.52
9\	Surahi river	70	0.16	0.11	0.07	0.05	0.18	0.30	0.70	1.75	1.70	0.60	0.38	0.25	0.52
10\	Jawai river	-	0.41	0.28	0.18	0.12	0.44	0.75	1.75	4.38	4.25	1.50	0.94	0.62	1.30
11\	Arra Nala	118.0	0.82	0.55	0.35	0.25	0.88	1.50	3.50	8.75	8.50	3.00	1.88	1.25	2.60

表 2.2.4 河川の月平均流量 (4/4)

(in Rupandehi District)			Predicted Hydrograph m ³ /sec.												
No.	Name of the River	C.A. (Km ²)	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1\	Tinai Khola *1	554	4.36	3.03	2.36	2.16	2.35	15.10	58.30	108.00	46.70	24.70	7.61	4.94	23.30
2\	Dano Khola	502	2.58	measured at intake site of Marchawar Lift Irrigation Project (Jan. 31 '84)											
3\	Rohini Khola	193	0.98	measured at Baikunthapur (Dhakdhai Panchayat) (Jan. 28 '84)											

*1: Average of 6 years from 1964 to 1969 at suspension bridge, 4.2 km downstream from Dobhan Khola at Butwal

表 2.2.5 地下水開発可能性の検討結果

Potential Area Type of Well	High ($T_{1.35} = 3.74 \times 10^{-2} \text{ m}^2/\text{sec}$)	Moderate ($T_{1.35} = 3.94 \times 10^{-2} \text{ m}^2/\text{sec}$)	Low ($T_{1.35} = 4.01 \times 10^{-2} \text{ m}^2/\text{sec}$)	Remarks
Deep (Depth: 200 m Diameter: 8")	$T_{2.00} = 6.4 \times 10^{-2} \text{ m}^2/\text{sec}$ $S_{2.00} = 5.0 \times 10^{-3}$	$T_{2.00} = 6.7 \times 10^{-2} \text{ m}^2/\text{sec}$ $S_{2.00} = 5.0 \times 10^{-3}$	$T_{2.00} = 6.9 \times 10^{-2} \text{ m}^2/\text{sec}$ $S_{2.00} = 5.0 \times 10^{-3}$	Pumping hour: 12 hrs/day
	Discharge (l/sec) 50 Drawdown (m) 1.12 Radius of Influence (m) 900	Discharge (l/sec) 50 Drawdown (m) 10.7 Radius of Influence (m) 900	Discharge (l/sec) 25 Drawdown (m) 51.9 Radius of Influence (m) 900	
	$T_{1.00} = 1.1 \times 10^{-2} \text{ m}^2/\text{sec}$ $S_{1.00} = 1.0 \times 10^{-3}$	$T_{1.00} = 1.2 \times 10^{-2} \text{ m}^2/\text{sec}$ $S_{1.00} = 1.0 \times 10^{-3}$	$T_{1.00} = 1.2 \times 10^{-2} \text{ m}^2/\text{sec}$ $S_{1.00} = 1.0 \times 10^{-3}$	
Shallow (Depth: 70 m Diameter: 8")	Discharge (l/sec) 50 Drawdown (m) 6.51 Radius of Influence (m) 900	Discharge (l/sec) 15 Drawdown (m) 17.9 Radius of Influence (m) 900	Discharge (l/sec) 10 Drawdown (m) 119.4 Radius of Influence (m) 900	Pumping hour: 12 hrs/day
	$T_{1.00} = 1.1 \times 10^{-2} \text{ m}^2/\text{sec}$ $S_{1.00} = 1.0 \times 10^{-3}$	$T_{1.00} = 1.2 \times 10^{-2} \text{ m}^2/\text{sec}$ $S_{1.00} = 1.0 \times 10^{-3}$	$T_{1.00} = 1.2 \times 10^{-2} \text{ m}^2/\text{sec}$ $S_{1.00} = 1.0 \times 10^{-3}$	
	Discharge (l/sec) 50 Drawdown (m) 5.21 Radius of Influence (m) 900	Discharge (l/sec) 15 Drawdown (m) 17.9 Radius of Influence (m) 900	Discharge (l/sec) 10 Drawdown (m) 119.4 Radius of Influence (m) 900	
Hand Pump (Depth: 30 m Diameter: 4")	$T = 1.0 \times 10^{-6} \text{ m}^2/\text{sec}$ S (Effective Porosity) = 0.25			Pumping hour: 12 hrs/day
	Discharge (l/sec) 1.0 0.2			
	Drawdown (m) 59.7 11.9 Radius of Influence (m) 22 90			
Remarks	Discharge of more than 50 l/sec could be obtained from both a deep and a shallow tubewell in high potential area. In this case, however, larger diameter well will be required.			Low potential area is not suitable for deep and shallow tubewell.

表 2.2.6 井戸本数と開発可能水量

Potential Area	Pumping (l/sec / hrs. cycle)	Area (km ²)	Radius of Influence		Well Number to be Constructed (nos.)	Existing Well (nos.)	Proposed Well Number (nos.)	Proposed Discharge (m ³ /day)	Total Discharge (m ³ /day)	Remarks
			(km)	(km ²)						
High Potential Area	50 / 12	30.6	0.9	2.54	12	4	8	17,000+	25,000+	
	50 / 12		0.9	2.54	12		8	17,000+	25,000+	
Moderate Potential Area	50 / 12	19.4	0.9	2.54	7	19	-	-	15,000	* There is no space for proposed well. * Total discharge is calculated with 7 deep tubevelis and 9 shallow tubevelis respectively.
	10 / 12		0.8	2.01	9		-	-	3,000	
Low Potential Area	50 / 12	40.0	0.9	2.54	15	7	8	17,000	30,000	
	10 / 12		0.8	2.01	19		12	5,000	8,000	
	50 / 12	29.2	0.9	2.54	11	5	6	12,000	20,000	
	10 / 12		0.8	2.01	14		9	3,000	6,000	
Total	50 / 12	22.8	0.9	2.54	8	1	7	15,000	17,000	* Area is only inside the study area.
	10 / 12		0.8	2.01	11		10	4,000	4,000	
Total	Hand Pump					67+				
					53	103+	29	61,000+	107,000+	
					65		39	29,000+	46,000+	

Note: 1) "Existing Well" includes both deep and shallow tubevelis.

2) In "High Potential Area", "Moderate Potential Area" and "Total" columns, a case of deep tubevell is indicated in upper part and a case of shallow tubevell is in lower part respectively.

3) In "Proposed Discharge" and "Total Discharge" columns, any fractional sum less than 1,000 m³/day discharge shall be discarded.

4) Existing wells are assumed to be arranged and pumped as proposed wells.

表 2.3.1 人口および人口増加率

District	1971	1981			1987	Annual Growth Rate 1981-87 (%)
	Total Population	Total Population	Male	Female	Total Population	
Gulmi	227,746	238,113	125,644	112,469	250,605	0.9
Arghakhanchi	130,212	157,304	86,515	70,789	170,996	1.4
Kapilvastu	205,216	270,045	143,400	126,645	309,897	2.3
Rupandehi	243,346	379,096	196,783	182,313	472,346	3.7
(Marchawar)	(N.A.)	69,390	36,430 /1	32,960 /1	89,700 /2	(3.7)
Total 4 districts	806,520 (100.0%)	1,044,558 (52.9%)	552,342 (47.1%)	492,216	1,203,844	2.4
Study Area	(N.A.) (100.0%)	734,852 (53.3%)	391,989 (46.7%)	342,863	821,198	1.9

Source: CBS, Population Census

Remarks: /1: Estimated based on the available population data of panchayats in Marcharwar area.

/2: Estimated based on the annual growth rate of Rupandehi District.

表 2.3.2 耕作規模別農家数

Land Holding Size	Gulmi District		Arghakhanchi District		Kapilvastu District		Rupandehi District	
	No. of Farm Households	Area (ha)						
0.0 - 0.5	20,314 (60%)	5,401 (29%)	14,370 (66%)	3,639 (35%)	11,113 (28%)	1,530 (2%)	9,102 (17%)	2,626 (3%)
0.5 - 1.0	11,476 (34%)	8,164 (44%)	5,677 (26%)	4,446 (43%)	6,312 (16%)	4,847 (6%)	12,253 (23%)	8,686 (10%)
1.0 - 2.0	1,342 (4%)	1,837 (10%)	1,573 (7%)	1,987 (19%)	9,903 (25%)	14,578 (18%)	18,360 (34%)	24,371 (29%)
2.0 - 3.0	320 (1%)	743 (4%)	95 (0%)	229 (2%)	4,989 (13%)	12,411 (15%)	8,052 (15%)	18,937 (22%)
3.0 - 4.0	225 (1%)	795 (4%)	13 (0%)	48 (0%)	2,532 (6%)	8,875 (11%)	2,411 (5%)	8,136 (10%)
4.0 - 5.0	95 (0%)	437 (2%)	13 (0%)	61 (1%)	1,776 (4%)	7,950 (10%)	1,361 (3%)	5,910 (7%)
5.0 - 10.0	71 (0%)	429 (2%)	6 (0%)	46 (0%)	1,761 (4%)	12,122 (15%)	1,470 (3%)	9,643 (11%)
Above 10.0	23 (0%)	881 (5%)	0 (0%)	0 (0%)	1,149 (3%)	19,847 (24%)	435 (1%)	6,622 (8%)
Total	33,866 (100%)	18,687 (100%)	21,747 (100%)	10,456 (100%)	39,535 (100%)	82,210 (100%)	53,444 (100%)	84,931 (100%)

Source: National Sample Census of Agriculture (1981/82)

表 2.3.3 農家の土地所有状況

Hill Area								
	Gulmi				Arghakhanchi			
	No. of Farmers	(%)	Area	(%)	No. of Farmers	(%)	Area	(%)
	(ha)				(ha)			
(A) Land Tenure Form								
Cultivated by Owner	33,618	(99)	18,530	(99)	21,133	(97)	10,045	(96)
Owner Cum Tenant	248	(1)	157	(1)	573	(3)	406	(4)
Cultivated by Tenant	-	(-)	-	(-)	41	(0)	5	(0)
(B) Sampled Panchayats								
Cultivated by Owner	-	96.6	-	97.3	-	99.8	-	99.9
Cultivated by Tenant	-	3.4	-	2.7	-	0.2	-	0.1
Terai Area								
	Kapilvastu				Rupandehi			
	No. of Farmers	(%)	Area	(%)	No. of Farmers	(%)	Area	(%)
	(ha)				(ha)			
(A) Land Tenure Form								
Cultivated by Owner	35,368	(89)	73,848	(90)	52,809	(99)	83,943	(99)
Owner Cum Tenant	3,376	(9)	7,244	(9)	558	(1)	1,002	(1)
Cultivated by Tenant	791	(2)	1,118	(1)	77	(0)	171	(0)
(B) Sampled Panchayats								
Cultivated by Owner	-	88.6	-	87.3	-	87.6	-	88.8
Cultivated by Tenant	-	11.4	-	12.7	-	12.4	-	11.2

Source; (A): National Sample Census of Agriculture (1981/82)
 (B): Rural Socio-economic Survey on IRDP in Lumbini Zone (1988)

表 2.3.4 計画地域の社会経済状況 (1/2)

Item	Unit	Hill Area		Terai Area		Whole Nation
		Gulmi	Arghakhanchi	Kapilvastu	Ruphandehi	
1. Socio-economy						
1.1 Area		1,078	1,233	1,757	1,414	147,200
1.2 Population						
Population (1987)	(10 ³)	251	171	310	472	17,000
Popu. density (1987)	(Persons/km ²)	231	139	176	334	115
Growth rate (1981-87)	(%/year)	0.9	1.4	2.3	3.7	2.2
Projected popu. (2005/1987)	(times)	1.18	1.28	1.51	1.92	1.48
Ratio of active population (1981)	(%)	48	57	67	54	59
Agri. related population (1981)	(%)	96	97	95	85	91
1.3 Household						
Total household (1981)	(10 ³)	42.0	27.5	46.4	61.2	2,585
Farm household (1981/82)	(10 ³)	33.9	21.8	39.5	53.4	2,194
% of farm household	(%)	80.7	79.3	85.1	87.3	84.9
2. Agriculture (1981/82)						
2.1 Farm Area	(10 ³ ha)	25.6	20.0	84.7	87.2	2,464
Paddy	(10 ³ ha)	4.0	4.1	74.9	76.1	1,418
Upland crops	(10 ³ ha)	21.6	15.9	9.8	11.1	1,046
2.2 Farm Area per Household	(ha)	0.78		1.52		1.12
Paddy	(ha)	0.14		1.34		0.65
Upland	(ha)	0.64		0.18		0.47
2.3 Main Crops (#1)						
a) Paddy						
Cultivated area	(ha)	4,110	3,400	69,900	69,120	1,423,000
Change	(%)	132	216	102	98	112
Unit yield	(kg/ha)	1,830	1,860	1,660	2,060	2,100
Change	(%)	78	83	121	127	114
Production	(ton)	7,530	6,340	116,380	142,500	2,982,000
Change	(%)	102	179	125	125	127
b) Maize						
Cultivated area	(ha)	20,590	9,240	810	850	673,000
Change	(%)	234	112	24	22	148
Unit yield	(kg/ha)	1,150	1,330	1,720	1,930	1,340
Change	(%)	55	63	93	90	82
Production	(ton)	23,630	12,300	1,390	1,640	745,000
Change	(%)	130	71	23	20	121
c) Wheat						
Cultivated area	(ha)	4,250	2,920	24,610	23,010	59,700
Change	(%)	319	588	161	111	168
Unit yield	(kg/ha)	1,020	1,030	1,340	1,370	1,250
Change	(%)	83	100	111	109	107
Production	(ton)	4,320	3,010	32,860	31,430	902,000
Change	(%)	265	587	179	121	168
d) Others						
Millet	(ha)	3,130	1,100	-	-	-
Oil crops	(ha)	420	190	2,240	3,880	151,500
Potato	(ha)	480	210	1,740	640	80,200
Pulses	(ha)	1,340	1,090	7,050	6,300	-
Sugarcane	(ha)	-	-	1,470	1,790	29,500

#1 Area, unit yield and production are averaged figures for last three years (1985/86-87/88). Change means the ratio between the averaged figures mentioned above and the data in 1977/78.

表 2.3.4 計画地域の社会経済状況 (2/2)

Item	Unit	Hill Area		Terai Area		Whole Nation
		Gulmi	Arghakhanchi	Kapilvastu	Ruphandehi	
2.4 Food Balance						
(Grains, pulses and potato)						
a) Present situation		Shortage of 31%	Shortage of 22%	Surplus of 47%	Shortage of 21%	Balanced
Per capita consumption (kg/year) (1986/87)		148	132	172	195	153
b) Projection (2005) (#2)						
Production (ton)		91,700		429,900		5,746,000
Per capita consumption (kg/year)		248		248		248
Demand (ton)		107,820		276,040		5,746,000
Balance (ton)		-16,120 (-15%)		153,860 (+56%)		0
						Balanced
2.5 Ratio of Irrigated area	(%)	7.2	11.3	29.9	36.2 Terai Hill	21 11
2.6 Typical Farm Budget						
Farm Area	(ha)	0.78		1.52		
Family Size	(persons)	7.0		7.0		
Gross Income	(Rs.)					
Farm Income	(Rs.)	13,500		18,800		
Non-farm Income	(Rs.)	4,000		300		
Total	(Rs.)	17,500		19,100		
Gross Income after the Project (Rs.)		35,100		35,600		
3. Road Condition						
3.1 Total Length						
National Road	(km)	0	0	61	79	1,963
Feeder Road	(km)	45	41	73	30	1,988
District Road	(km)	177	131	87	56	1,320
4. Living Condition						
4.1 Coverage of Water Supply Systems						
	(%)	35	35	9	21	40
4.2 Coverage of sewage						
	(%)	0	0	0	0	-
4.3 Education						
Literacy Ratio	(%)	32	25	13	28	23
Primary School Attendance Rate	(%)	109	113	70	52 Male Female	105 48
4.4 Health						
No. of Hospital	(Nos.)	1	-	2	3	73
No. of Health Center	(Nos.)	1	1	-	-	
No. of Health Post	(Nos.)	13	2	4	11	644

Remarks : #2 : Figures show by the case of medium population growth rate, and case 2 irrigated area in the Annex A.1.10 food balance.

#3 : About 26 % of the attendances are over the school age.

表 2.4.1 計画地域の作物収量および生産量

Area	Crop	Cropped Area (ha)	Unit Yield (ton/ha)	Production (ton)
Hill Area				
	Paddy field (irrigated)			
	Paddy	4,900	2.23	10,940
	Wheat	4,100	1.23	5,030
	Paddy field (rainfed)			
	Paddy	4,000	1.32	5,260
	Wheat	2,830	0.72	2,040
	Upland			
	Maize	34,990	1.19	41,640
	Millet	4,960	0.91	4,510
	Other cereals	690	0.86	590
	Pulses	2,440	0.53	1,290
	Sweet potatoes	1,890	4.52	8,540
	Oil seeds	700	0.52	360
	Total			
	Paddy	8,900	1.82	16,200
	Wheat	6,930	1.02	7,070
	Maize	34,990	1.19	41,640
	Millet	4,960	0.91	4,510
	Other cereals	690	0.86	590
	Pulses	2,440	0.53	1,290
	Sweet potatoes	1,890	4.52	8,540
	Oil seeds	700	0.52	360
Terai Area				
	Paddy field (irrigated)			
	Paddy	25,400	2.04	51,820
	Wheat	24,580	1.39	34,170
	Oil seed	2,200	0.57	1,250
	Paddy field (rainfed)			
	Paddy	61,000	1.85	112,850
	Pulses	1,600	0.89	1,420
	Upland			
	Maize	1,170	1.78	2,080
	Pulses	7,100	0.53	3,760
	Sugar cane	1,700	27.60	46,920
	Total			
	Paddy	86,400	1.91	164,670
	Wheat	24,580	1.39	34,170
	Maize	1,170	1.78	2,080
	Pulses	8,700	0.60	5,180
	Sugar cane	1,700	27.60	46,920
	Oil seeds	2,200	0.57	1,250

表 2.4.2 家畜所有状况 (1981/82)

District	Item	Cattle	Buffaloes	Goats	Sheep	Pigs	Poultry
Gulmi	Total Household						
	Household with Livestock	25,847	8,216	592	2,217	12,362	
	Proportional extent	61%	76%	24%	2%	7%	37%
	Number of livestock	96,173	89,509	27,779	3,916	5,172	93,678
	Heads per Household	4.7	3.5	3.4	6.6	2.3	7.6
Arghakhanchi	Total Household						
	Household with Livestock	18,621	9,107	285	170	8,007	
	Proportional extent	67%	86%	42%	1%	1%	37%
	Number of livestock	64,742	52,221	36,770	1,809	176	58,716
	Heads per Household	4.4	2.8	4.0	6.3	1.0	7.3
Hill area	Total Household						
	Household with Livestock	44,468	17,323	877	2,387	20,369	
	Proportional extent	63%	80%	31%	2%	4%	37%
	Number of livestock	160,915	141,730	64,549	5,725	5,348	152,394
	Heads per Household	4.6	3.2	3.7	6.5	2.2	7.5
Kapilvastu	Total Household						
	Household with Livestock	9,000	9,235	390	452	4,622	
	Proportional extent	69%	23%	23%	1%	1%	12%
	Number of livestock	128,550	31,018	31,265	3,320	3,966	50,614
	Heads per Household	4.7	3.4	3.4	8.5	8.8	11.0
Rupandehi	Total Household						
	Household with Livestock	17,081	20,574	231	401	13,813	
	Proportional extent	32%	38%	0%	1%	26%	
	Number of livestock	160,505	58,711	64,726	1,592	850	145,074
	Heads per Household	4.0	3.4	3.1	6.9	2.1	10.5
Terai	Total Household						
	Household with Livestock	26,081	29,809	621	853	18,435	
	Proportional extent	73%	28%	32%	1%	1%	20%
	Number of livestock	289,055	89,729	95,991	4,912	4,816	195,688
	Heads per Household	4.3	3.4	3.2	7.9	5.6	10.6

Source: National Sample Census of Agriculture, 1981/82

表 2.7.1 既存灌漑プロジェクト一覧 (1/3)

Kapilvastu District

Name of Project	Command Area (ha)	Present Condition
I. Completed		
1. Banganga Irrigation Project	6,000	Sediment, weeds
2. Kapilvastu Tube Well Project	-	Investigation
3. Surai Irrigation Project	400	Damaged, sediment
4. Jamai Irrigation Project	270	Sediment
5. Bhataha Bandh Scheme	1,520	
6. Murthi Nale (Pakadi) Scheme	720	
7. Patharkot (Gurumuwa Khola)	480	
II. Under Construction		
1. DOI Project		
a. Sakuniya - Doni Bandh	300	
b. Jahadi Bandh	200	
c. Karma Bandh	310	
d. Kanchaniya Bandh	500	
e. Amiya Kachuwa	450	
f. Ratkurahawa	900	
g. Ghaghuwa Nalla	200	
h. Ghaghna Bandh	150	
i. Dhankuali Jaswaric	300	
j. Ghorahi Maorma	150	
k. Shankerpur Reservoir	150	
2. DP Scheme (for irrigation)		
a. Kauna Bandh	-	
b. Jahadi Bandh	-	
c. Agia Kuchawa	-	
d. Kanchania Dam	-	
e. Dohani Dam	-	
f. Sakuniya Tal	-	
g. Rajkudwa	900	
3. DP Scheme (for river training)		
a. Banganga Khola	1 site	
b. Surai Khola	1 site	

表 2.7.1 既存灌漑プロジェクト一覧 (2/3)

Rupandehi District

Name of Project	Command Area (ha)	Present Condition
I. Completed		
1. Bhairahawa-Lumbini Groundwater Project Stage I	7,680	
2. Tube Well Water and Distribution Project	1,000	
3. Siyari Irrigation Project	1,000	Not functioning
4. Sorah-Chattis Mahia Kulo Irrigation Scheme	12,000	Damaged, sediment
5. Panch Majha-Aath Majha Kulo Scheme	11,200	Damaged
6. Mahau Irrigation Scheme	2,880	Sediment, Damaged
II. Under Construction		
1. DOI Project		
a. Madhuvani Irrigation	1,050	
b. Karaiya Ga. Panchayat - Kantalupur	135	
c. Paruha Ga. Panchayat	1,350	
d. Gamari Ga. Panchayat (not fixed yet)		
e. Tenuhawa Ga. Panchayat	135	
f. Gahaghar River Irrigation	2,000	
g. Brairahawa - Lumbini Groundwater Project Stage II	1,920	
h. Marchawar Lift Irrigation Project	5,770	
Pump station, main canal, branch canals and transmission line will be completed in 1989/90.		
Other facilities such as secondary and tertiary canals service roads, etc. will be constructed under the fund to be provided in future.		
2. DP Scheme (for irrigation)		
Not clarified		
3. DP Scheme (for river training)		
a. Tinau/Dano Rivers	1 site	
b. Sakaura Khola	1 site	

表 2.7.1 既存灌漑プロジェクト一覧 (3/3)

Gulmi District

Name of Project	Command Area (ha)	Present Condition
I. Completed		
1. Argentichhap Chaur Irrigation Project	50	
2. Aapchaur Coffee Kheti	75	
II. Under Construction		
1. DOI Project		
a. Aap Chuar Coffee Kheti	100	
b. Chhaldi Khola	67	
c. Arbeni Thumka - Kanchhi Jethi Kulo	60	
d. Wamitaksar	130	
2. DP Scheme (for irrigation) Not clarified		
3. DP Scheme (for river training)		
a. Chhali IKhola	7 sites	
b. Badi gad	5 sites	
c. Pan gad	3 sites	
d. Kahrjang Khola	3 sites	
e. Arjai Khola	1 site	
f. Araudi Khola	1 site	
g. Ulli Khola	1 site	

Arghakhauchi District

Name of Project	Command Area (ha)	Present Condition
I. Completed		
1. Pharsawa Naya Kulo System	20	
2. Khahare Khet Kulo System	100	
3. Sera Kulo System	70	
4. Khamari Kulo System	30	
II. Under Construction		
1. DOI Project		
a. Pawartar	50	
b. Sit Khola Farm Irrigation	105	
c. Chidika Farm Irrigation	20	
d. Bangi Khola Farm Irrigation	50	
e. Jukena Farm Irrigation Project	80	

表 2.8.1 道路の受益地およびその人口

Road	Benefited Area (km ²)	Cultivated Land (km ²)	Population (1,000)
Tansen - Tamghas	1,253	293	264
M.R.M. - Sandhikharka	918	149	149
Jitpur - Taulihawa	447	400	110
Wamitaksar - Ridibazar	492	94	105
Tamghas - Aglung	341	92	75
Kakarhawa - Bitharai	444	309	49
Taulihawa - Bahadurgans	166	155	51

表 2.8.2 主要道路の交通調査結果

(Unit: Vehicles/day)

Survey Date	Average Daily Traffic (4 days count average)				
	Lights	Buses	Trucks	Total	AADT
Nov. 1984	94	101	176	371	368
Mar. 1985	95	108	205	408	364
Jul. 1985	73	107	111	291	318
Sep. 1985	48	126	165	339	403
Nov. 1985	87	120	313	420	416
Total	Annual Increasing Rate (%)				
Nov. 1984 - Nov. 1985	-7.4	18.8	21.0	13.2	13.0

Source : National Traffic Data Base for the Feeder Roads project, August, 1986.
 AADT : Average annual daily traffic

表 2.8.3 幹線道路の交通量調査結果

(Unit: vehicles/day)

Road	Bus	Truck	Tractor	AADT
Tansen - Tamghas	12	30 - 40	10 - 20	52 - 72
M.R.M - Sandhikharka	9	9	7	25

表 2.8.4 バス交通状況

Route	Bus charge (Rs.)	Persons/bus	Bus/day
Bhairahawa - Narayangadh	30	50	4
Bhairahawa - Butwal	5	40	30
Bhairahawa - Lumbini	5.5	20	12
Bhairahawa - Lamdi	23	10	3
Bhairahawa - Taulihawa	16.5	30	1
Butwal - Krishnanagar	19	30	10
Bhairahawa - Tamghas	75	40	1

表 2.8.5 計画地域の道路補修機械

Machinery	Weight (ton)	Place	Number	Condition (As of 1989)
1) Truck dozer	20	MRM-Sandhikharka	1	Under repair
2) Wheel dozer	11	Lumbini	1	Working
3) Wheel loader	22	Lumbini	3	Working
Wheel loader	22	Lumbini	1	Under repair
4) Motor grader	22	Lumbini	1	Under repair
5) Wheel excavator	3	Lumbini	1	Working
6) Road roller	67	Lumbini	8	Working
Road roller	67	Lumbini	1	Under repair
7) Tire Roller	12	Lumbini	1	Working
8) Crane Car	6	Butwal	1	Working
9) Tank Car	22	Lumbini	1	Working
10) Backhoe loader	6	Lumbini	1	Working

表 2.8.6 道路維持費

Classification	Expenditure for	Cost (Rs.)	Remarks
Two lanes road	Repair of asphalt pavement	65,000-70,000/km/year	Excluding drainage and shoulder repair
One lane road	Repair of road surface	35,000-40,000/km/year	-
	Gravel road	15,000-20,000/km/year	-
	Earth road	10,000- 5,000/km/year	-

表 2.10.1 計画地域の就学状況

Year	Primary			Lower Secondary			Secondary		
	Number of Students	Number of Schools	Students per School	Number of Students	Number of Schools	Students per School	Number of Students	Number of Schools	Students per School
Gulmi District									
1976/77	16,951	198	86	4,656	55	85	991	9	110
1980/81	27,843	220	127	3,162	58	55	1,972	15	131
1986/87	38,112	237	161	5,178	61	85	4,632	26	178
Arghakhanchi District									
1976/77	12,500	124	101	2,636	34	78	568	5	114
1980/81	17,641	145	122	1,890	39	48	1,352	10	135
1986/87	26,793	177	151	3,344	45	74	3,258	24	136
Kapilvastu District									
1976/77	10,187	117	87	2,639	29	91	845	8	106
1980/81	19,773	138	143	2,227	33	67	1,448	11	132
1986/87	30,038	151	199	3,267	40	82	2,954	17	174
Rupandehi District									
1976/77	17,210	128	134	6,854	45	152	2,168	13	167
1980/81	32,386	150	216	4,554	47	97	3,376	19	178
1986/87	33,820	166	204	6,017	60	100	6,203	33	188
Western Region									
1976/77	214,048	2,375	90	61,556	713	86	18,807	152	124
1980/81	373,993	2,682	139	42,086	774	54	32,895	242	136
1986/87	494,463	2,953	167	70,333	896	78	63,290	375	169
Whole Country									
1976/77	769,049	9,067	85	226,639	2,400	94	82,158	552	149
1980/81	1,388,001	10,628	131	169,564	2,786	61	144,331	918	157
1986/87	1,857,658	12,186	152	271,244	3,729	73	268,805	1,411	191

Source: Statistical Profile, Development Atlas of Nepal, Center for Research Team, August 1988.

表 2.10.2 計画地域の教師数

Year	Number of Teachers						
	Primary		Lower Secondary		Secondary		
	Total	Trained	Total	Trained	Total	Trained	
Gulmi District	1976/77	513	83	200	57	56	26
	1980/81	591	137	251	82	67	45
	1986/87	1,057	286	183	66	126	64
Arghakhanchi District	1976/77	262	116	110	53	29	14
	1980/81	375	130	146	41	51	25
	1986/87	697	167	134	38	110	35
Kapilvastu District	1976/77	304	153	103	31	44	16
	1980/81	378	152	169	29	56	21
	1986/87	717	207	121	38	96	39
Rupandehi District	1976/77	436	314	229	81	91	48
	1980/81	506	311	244	87	113	53
	1986/87	940	359	192	101	211	134

Source: Statistical Profile, Development Atlas of Nepal, Center for Research Team, August 1988.

表 2.10.3 計画地域の高等教育機関

Name of the Campus	Faculty	Level	Enrollment	
			1982/82	1986/87
<u>Gulmi District</u>				
1. Resunga Campus (P), Tamghas	Humanities and Social Science	Certified	-	218
<u>Arghakhanchi District</u>				
<u>Kapilvastu District</u>				
1. Kapilvastu Campus (P), Anandabag	Humanities Management	Certified Certified	25 -	44 30
<u>Rupandehi District</u>				
1. Butawal Campus (TU), Butawal	Humanities Science Education	Certified, Diplomat Certified Certified	25 - 265	44 105 260
2. Pakalihawa Campus (TU)	Agriculture	Certified	359	387
3. Lumbini Commerce Campus (P), Butawal	Management	Certified	112	392
4. Bhairahawa Campus (TU), Bhairahawa	Humanities Management	Certified, Diplomat Certified	469 -	314 257

Source: Statistical Profile, Development Atlas of Nepal, Center for Research Team, August 1988.

Note: TU; Tribhuvan University

表 2.10.4 計画地域の保健医療機関一覧 (1986/87)

Health Facility	District			
	Gulmi	Argha- khanchi	Kapil- vastu	Rupandehi
Hospital	1	-	2	3
Bed	15	-	30	81
Health Center	1	1	-	-
Health Post	14	10	9	11
Ayurvedic Dispensary	3	1	1	1
Family Planning and Maternity Child Health Project	9	5	7	6
Panchayat Based Health Worker	70	35	103	140
Population per worker	3,580	4,886	3,009	3,374
Hospital Laboratory	1	-	2	2
Expanded Programme Immunization	1	-	1	1
Others (Malaria)	-	1	9	9

Source: Statistical Profile, Development Atlas of Nepal,
Center for Research Team, August 1988

表 4.3.1 灌漑プロジェクトのグループ化と優先順位

No. of Group	No. of Project	Command Area (ha)	Capital Cost (mil. NRs)	Net Present Value at 10% Dis. Rate		B - C (mil. NRs)	B/C	IRR (%)	Household (Nos.)	Concrete- ^{*1} ness of the Project	Problem ^{*2} of Water Right	Priority Ranking
				Cost ^{*3}	Benefit ^{*4}							
Kapilvastu District												
1. a.	Rajkudwa I.P.	2,400	281.4	211	287	76	1.36	13.4	1,121	5	-1	1
2. c.	Bel Nadi I.P.	400	37.6									
	d. Khanchaniya I.P.	160	15.0									
	h. Cheranga I.P.	320	30.1	Total of c, d, h								
	Sub-total	880	82.7	63	87	24	1.38	12.9	411	3	-2	2
3. e.	Phulika I.P.	1,500	141.0									
	f. Patana I.P.	540	50.8									
	g. Jakira Bandh I.P.	700	65.8	Total of e, f, g								
	Sub-total	2,740	257.6	190	272	82	1.43	13.5	1,280	3	-5	3
	District Total	6,020	621.7	464	646	182			2,812			
Gulmi District												
1. h.	Sprinkler I.P.	100	48.4	62	62	0	1.00	9.9	131	1	-2	3
	a. Ghamir Khola I.P.	250	35.2	26	34	8	1.31	12.5	329	2	-2	2
	Sub-total	350	83.6									
2. h.	Sprinkler I.P.	100	48.4	62	62	0	1.00	9.9	131	1	-2	3
	b. Khadga Kat I.P.	110	15.5									
	c. Paudi Archa	110	15.5	Total of b, c, d								
	d. Chaldi Khola	100	14.1	34	44	10	1.29	12.5	421	2	-2	2
	Sub-total	420	93.5									
3. h.	Sprinkler I.P.	100	48.4	62	62	0	1.00	9.9	131	1	-2	3
	e. Puri Ghat I.P.	90	12.7									
	f. Sirseni I.P.	140	19.7	Total of e, f, g								
	g. Lahata I.P.	40	5.6	28	37	9	1.32	12.5	355	2	-2	2
	Sub-total	370	86.4									
	District Total	1,140	263.5	274	301	37			684			
Arghakhanchi District												
1. h.	Sprinkler	200	96.8	124	125	1	1.01	10.1	263	1	-2	3
	a. Rindi Wangla	70	9.8									
	b. Chauwatar	70	9.8	Total of a, b, c								
	c. Mil Mile Khola	220	30.9	38	50	12	1.32	12.5	315	2	-2	2
	Sub-total	560	147.3									
2. h.	Sprinkler	200	96.8	124	125	1	1.01	10.1	263	1	-2	3
	d. Pipalta I.P.	100	14.1									
	e. Rajvang I.P.	110	15.5	Total of d, e, g								
	g. Khanchi I.P.	160	22.5	39	51	12	1.31	12.5	402	2	-2	2
	Sub-total	570	148.9									
3. h.	Sprinkler	200	96.8	124	125	1	1.01	10.1	263	1	-2	3
	f. Durga Khola I.P.	400	56.3	42	55	13	1.31	12.6	435	2	-2	2
	Sub-total	600	153.1									
	District Total	1,730	449.3	491	531	40						
Total		8,890	1,334.5									

*1: 5 very clear, 4 clear, 3 good, 2 fair, 1 not clear

*2: -5 very difficult, -4 difficult, -3 not clear, -2 a few problem, -1 few problem

*3: Conversion factor is at 0.9 as mentioned in the Annex C "Agriculture and Agro-economy".

*4: Benefit per ha for Terai area NRs. 16,800 per year.

Benefit per ha for Hill area NRs. 23,250 per year in surface irrigation.

Benefit per ha for Hill area NRs. 103,570 per year in sprinkler irrigation.

表 5.2.1 灌漑プロジェクトの建設費

Name of District/ Project	Command Area (ha)	Construction Cost (million NRs.)
(1) Central Level		
1) Kapilvastu		
- Rajkudwa I.P.	2,400	281.4
- Other I.P.	3,620	340.3
<u>Sub-total</u>		<u>621.7</u>
2) Gulmi		
- Surface I.P.	840	118.3
- Sprinkler I.P.	300	145.2
<u>Sub-total</u>		<u>263.5</u>
3) Arghakhanchi		
- Surface I.P.	1,130	158.9
- Sprinkler I.P.	600	290.4
<u>Sub-total</u>		<u>449.3</u>
<u>Total of Central Level</u>	<u>8,890</u>	<u>1,334.5</u>
(2) District Level		
1) Kapilvastu	9,000	176.9
2) Gulmi	600	11.8
3) Arghakhanchi	280	5.5
<u>Total of District Level</u>	<u>9,880</u>	<u>194.2</u>
(3) Grand Total of Irrigation	18,770	1,528.7

表 5.2.2 農村道路プロジェクトの建設費

District	Name of Road		Construction Cost (million NRs.)
(1) Central Level			
Gulmi	Tamghas - Tansen	75 km	240.0
Arghakhanchi	M.R.M. - Sandhikarka	69 km	290.0
Gulmi	Wamitaksar - Ridibazar	64 km	210.0
Arghakhanchi	Sandikarka - Tamghas	45 km	190.0
Kapilvastu	Lumbini - Taulihawa	16 km	10.0
Kapilvastu	Jitpur - Taulihawa	24 km	20.0
Kapilvastu	Taulihawa - Bahadurganj	22 km	90.0
Gulmi	Tamghas - Aglung	42 km	130.0
Arghakhanchi	Sandikharka - Pyathan	30 km	120.0
<u>Total of Central Level</u>		<u>387 km</u>	<u>1,300.0</u>
(2) District Level			
Gulmi	Village road in the district	20 km	60.0
Arghakhanchi	Village road in the district	20 km	80.0
<u>Total of District Level</u>		<u>40 km</u>	<u>140.0</u>
Grand Total of Rural Road		427 km	1,440.0

表 5.2.3 農村水道プロジェクトの建設費

	Additional Population to be served	Construction Cost (million NRs.)
(1) Kapilvastu	315,500	284
(2) Gulmi	132,500	186
(3) Arghakhanch	103,000	125
Total	551,000	595

表 5.2.4 農業生産振興計画の建設費

Item	Construction Cost (million NRs.)
(1) Central Level	
Livestock	20.4
Suuply System of Agricultural Input Corporation	15.0
Public Wholesale Market	200.0
Suuply System of Nepal Food Corporation	6.0
<u>Total of Central Level</u>	<u>241.4</u>
(2) District Level	
Agricultural Extension	134.3
Livestock	57.7
Fish Culture	5.2
Apriculture	0.6
Input Supply	30.0
Marketing System of Agricultural Products	46.4
Processing of Agricultural Products	8.4
<u>Total of District Level</u>	<u>282.6</u>
Total	524.0

表 5.2.5 灌漑開発の年間資金計画

Central Level	1990		1991		1992		1993		1994		1995		1996		1997		1998	
	L.C.	F.C.																
Construction cost																		
1) Kapilvastu		18	63	95	42	63							7	10	13	20	13	20
2) Gulmi			3	4	9	13	9	13	9	13	5	7	4	5	10	14	10	14
3) Arghkahnchi			4	6	15	23	15	23	15	23	10	15	4	6	15	23	15	23
Sub-total	0	18	70	105	66	99	24	36	24	36	15	22	14	22	38	57	38	57
Price escalation	0	0.2	18	4	27	7	14	4	18	5	14	4	17	5	56	16	68	18
Total	0	18	88	109	93	106	37	39	42	41	29	26	32	26	94	73	106	75

	1999		2000		2001		2002		2003		2004		2005		Total
	L.C.	F.C.													
Construction cost															
1) Kapilvastu					21	31	28	41	28	41	28	41			622
2) Gulmi	10	14	5	7	3	5	9	13	9	13	9	13	5	7	264
3) Arghkahnchi	15	23	10	15	5	7	16	24	16	24	16	24	10	15	450
Sub-total	25	37	15	22	28	42	52	78	52	78	52	78	15	22	1335
Price escalation	52	14	36	9	81	19	175	40	203	44	233	48	74	15	1339
Total	77	51	51	31	109	62	228	118	255	122	285	127	89	36	2674

District Level	1990		1991		1992		1993		1994		1995		1996		1997		1998	
	L.C.	F.C.																
Consturction cost																		
Terai			5	7	5	7	5	7	5	7	5	7	5	7	5	7	5	7
Hill			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sub-total			5	8	5	8	5	8	5	8	5	8	5	8	5	8	5	8
Price escalation	0	0	1	0	2	1	3	1	4	1	5	2	6	2	8	2	9	3
Total	0	0	7	9	7	9	8	9	9	10	10	10	12	10	13	11	15	11

	1999		2000		2001		2002		2003		2004		2005		Total
	L.C.	F.C.													
Consturction cost															
Terai	5	7	5	7	5	7	5	7	5	7	5	7	5	7	177
Hill	1	1	1	1											17
Sub-total	5	8	5	8	5	7	5	7	5	7	5	7	5	7	194
Price escalation	11	3	13	3	14	3	16	4	18	4	21	4	24	5	194
Total	16	11	18	12	18	10	21	11	23	11	26	11	29	12	388

Summary

Construction Cost	
Central Level	1335
District Level	194
Sub-total	1529
Price Escalation	1533
Total	3062

表 5.2.6 農村道路開発の年間資金計画

(Unit: million NRs.)

	1990		1991		1992		1993		1994		1995		1996		1997		1998	
	L.C.	F.C.																
Construction cost	13	15	29	35	48	58	73	89	73	89	50	60	11	13	38	47	38	47
Price escalation	1	0	7	1	19	4	42	10	56	13	49	11	13	3	56	13	67	15
Total	14	15	36	36	67	62	115	99	129	102	99	71	24	16	94	59	105	61

	1999		2000		2001		2002		2003		2004		2005		Total
	L.C.	F.C.													
Construction cost	38	47	48	59	47	57	34	42	34	42	33	41	43	52	1440
Price escalation	80	17	119	24	135	26	115	21	133	24	149	25	221	35	1504
Total	118	63	167	83	181	83	150	63	168	66	182	66	264	87	2944

表 5.2.7 農村水道開発の年間資金計画表

(Unit: million NRs.)

	1990		1991		1992		1993		1994		1995		1996		1997		1998	
	L.C.	F.C.																
Construction cost	15	22	19	29	15	22	15	22	15	22	15	22	15	22	15	22	15	22
Price escalation	2	0	5	1	6	2	8	2	11	3	14	4	18	5	22	6	26	7
Total	16	22	24	29	21	23	23	24	26	25	29	26	32	27	36	28	40	29

	1999		2000		2001		2002		2003		2004		2005		Total
	L.C.	F.C.													
Construction cost	15	22	15	22	15	22	15	22	15	22	15	22	15	22	595
Price escalation	31	8	36	9	42	10	49	11	57	12	65	14	75	15	576
Total	45	30	51	31	57	32	64	33	71	34	80	35	90	37	1171

表 5.2.8 農業生産振興開発の年間資金計画 (1/2)

Item	Quantity	Unit	Unit Cost	Amount	1st year	2nd year	3rd year	4th year	5th year
Central Level Project									
(1) Livestock Development									
1) construction Cost of Semen Bank									
Office	1	location	2,700	2,700	540	540	540	540	540
Stall	1	set	900	900	180	180	180	180	180
Facility	1	set	16,000	16,000	3,200	3,200	3,200	3,200	3,200
Vehicle (liquid N)	1	set	800	800	160	160	160	160	160
Subtotal				20,400	4,080	4,080	4,080	4,080	4,080
District Level Project									
(1) Agricultural Extension Service									
1) Agri. Development Office	3	location	4,500	13,500	2,700	2,700	2,700	2,700	2,700
2) Ilaka Service Center	22	location	1,800	39,600	7,920	7,920	7,920	7,920	7,920
3) Quarter	33	location	500	16,500	3,300	3,300	3,300	3,300	3,300
4) Furniture	25	set	80	2,000	400	400	400	400	400
5) Equipments		L.S.		7,558	1,512	1,512	1,512	1,512	1,512
6) Demonstration farm for food crops *1	1,800	location	10	18,000	3,600	3,600	3,600	3,600	3,600
7) Demonstration farm for cash crops *1	900	location	40	36,000	7,200	7,200	7,200	7,200	7,200
8) Nursery farm *1	17	location	70	1,190	238	238	238	238	238
9) Subtotal				134,348	26,870	26,870	26,870	26,870	26,870
(2) Livestock Development									
1) Livestock Development Office	3	location	3,600	10,800	2,160	2,160	2,160	2,160	2,160
2) Ilaka Service Center	27	location	990	26,730	5,346	5,346	5,346	5,346	5,346
3) Artificial Insemination Center	6	location	540	3,240	648	648	648	648	648
4) Quarters	31	location	400	12,400	2,480	2,480	2,480	2,480	2,480
5) Equipments		L.S.		4,568	914	914	914	914	914
6) Subtotal				57,738	11,548	11,548	11,548	11,548	11,548
(3) Inland Fishery									
1) Fingering Production Pond *1	2	location	440	880	176	176	176	176	176
2) Production Pond *1	16	location	220	3,520	704	704	704	704	704
3) Equipments *1	2	set	400	800	160	160	160	160	160
4) Subtotal				5,200	1,040	1,040	1,040	1,040	1,040
(4) Apiculture									
1) Supply of Beehive *1	3,000	pieces	0.2	600	120	120	120	120	120
(5) Sub-total				197,886	39,577	39,577	39,577	39,577	39,577
Total Construction Cost									
Foreign correny portion (60%)				218,286	43,657	43,657	43,657	43,657	43,657
Local correny portion (40%)				130,972	26,194	26,194	26,194	26,194	26,194
Price escalation				87,314	17,463	17,463	17,463	17,463	17,463
Total				487,919	90,326	90,326	90,326	90,326	90,326

Note *1: Facilities and equipments in farmers' level, therefore O/M cost of these facilities is not counted.

表 5.2.8 農業生産振興開発の年間資金計画 (2/2)

(Unit : Rs 1,000,000)

Item	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	Total
	year	year	year	year	year											
CENTRAL LEVEL PROJECT																
(1) Agricultural Input Supply	-	-	-	5.0	5.0	5.0	-	-	-	-	-	-	-	-	-	15.0
1) Agricultural Input Corporation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(2) Marketing System of Products	-	-	-	-	-	-	-	-	-	-	66.7	66.7	66.7	-	-	200.1
1) Public Wholesale Market	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) Nepal Food Corporation	-	-	-	-	2.0	2.0	2.0	2.0	-	-	-	-	-	-	-	6.0
(3) Total	0.0	0.0	0.0	5.0	5.0	7.0	2.0	2.0	0.0	0.0	66.7	66.7	66.7	0.0	0.0	221.1
DISTRICT LEVEL PROJECT																
(1) Agricultural Input Supply	-	-	-	-	-	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	21.0
1) Storage for Cooperatives	-	-	-	-	-	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	9.0
2) Storage for District	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(2) Marketing System of Products	-	-	-	-	-	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	44.4
1) Haat Bazar	-	-	-	-	-	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.6
2) Producers' Groups and Associations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3) Small Marketing Group	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
(3) Processing of Agricultural Products	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
1) Provision of Grain Mills	-	-	-	-	-	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	8.0
2) Processing Facilities of Cash Crops	-	-	-	-	-	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	84.8
(4) Total	0.0	0.0	0.0	0.0	0.0	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	84.8
Total	0.0	0.0	0.0	5.0	5.0	15.5	10.5	10.5	8.5	8.5	75.2	75.2	75.2	8.5	8.5	305.9
Local currency portion (60%)																
Local currency portion (60%)	0.0	0.0	0.0	3.0	3.0	9.3	6.3	6.3	5.1	5.1	45.1	45.1	45.1	5.1	5.1	183.5
Foreign currency portion (40%)																
Foreign currency portion (40%)	0.0	0.0	0.0	2.0	2.0	6.2	4.2	4.2	3.4	3.4	30.1	30.1	30.1	3.4	3.4	122.4
Price escalation	0.0	0.0	0.0	6.6	7.1	23.6	17.3	18.7	16.3	17.7	170.5	185.3	201.8	24.8	27.1	716.7
Grand Total	0.0	0.0	0.0	11.6	12.1	39.1	27.7	29.1	24.8	26.2	245.6	260.5	276.9	33.3	35.6	1,022.6

表 5.3.1 優先灌漑プロジェクトの事業費

		(Thousand NRs.)
Item		Amount
<u>Rajkudwa, and Gorshinghiya and Rajipur Ponds Irrigation Project</u>		
1. Intake Facilities		
Diversion Weir		18,897
Intake		1,921
Settling Basin		5,020
Guide Bank		2,372
Sub-total		28,210
2. Main Canal & Related Structures		
Preparatory Works	L.S.	6,272
Main Canal		78,338
Pond	L.S.	20,190
Related Structures	L.S.	41,430
Miscellaneous Works		2,198
Sub-total		148,428
3. Secondary & Tertiary Canals	L.S.	18,960
4. Total Direct Cost		195,598
5. Physical Contingency	L.S.	19,560
6. Base Cost		215,158
7. Overhead & Profit	L.S.	32,274
8. Contract Tax	L.S.	1,614
9. Design & S/V*1	L.S.	32,376
10. Total Cost		281,422

*1: Cost for mapping and feasibility study is not included.

表 5.3.2 優先農村道路プロジェクトの事業費)

(Thousand NRs.)	
Items	Amount
<u>Tansen - Tamghas Road</u>	
1. Earth Works	22,125
2. Drainage Works	60,912
3. Slope Protection Works	46,825
4. Pavement Works	22,781
5. Bridge Works	5,800
6. Miscellaneous	15,844
7. Total Direct Cost	174,287
8. Contingencies	17,428
9. Total	191,715
10. Overhead + Profit	28,757
11. Contract Tax	9,585
12. Total	230,057
13. Survey, Design and S/V	6,901
Grand Total	236,958
<u>MRM - Sandhikharka Road</u>	
1. Earth Works	29,520
2. Drainage Works	75,632
3. Slope Protection Works	37,085
4. Pavement Works	19,597
5. Bridge Works	30,800
6. Miscellaneous	19,267
7. Total Direct Cost	211,947
8. Contingencies	21,194
9. Total	233,135
10. Overhead + Profit	34,970
11. Contract Tax	11,656
12. Total	279,761
13. Survey, Design and S/V	8,392
Grand Total	288,153

表 5.3.3 優先農村水道プロジェクトの事業費

(Thousand NRs.)	
Item	Amount
1. Supply of deep well material	850
2. Well construction	2,895
3. Water source and tank	5,527
4. Supply of pipes and fittings (for Banganga)	13,591
5. Pipe laying work	6,831
6. Power facilities	1,191
7. Supply of pipes and fittings (for hill area)	5,081
8. Total of 1. - 7.	35,966
9. Design and S/V	3,596
10. Overhead cost	3,596
11. Contingencies	4,315
12. Total cost	47,474

表 5.3.4 優先農業生産振興プロジェクトの事業費

Project / Item	Quantity	Construction Cost (million NRs.)
(1) Agricultural Extention Reinforcement		
District Agriculture Development Office	3	13.5
Ilaka Service Centre	22	39.6
Quarters	33	16.5
Equipment	L.S.	9.6
Farm	2,700 places	54.0
Nursery Farm	17 places	1.2
<u>Sub-Total</u>	-	<u>134.4</u>
(2) Livestock Development		
Semen Bank / Facilities	1	20.4
District Livestock Development Office	3	10.8
Ilaka Service Centre	27	26.7
Artificial Insemination Centre	6	3.2
Quarters	31	12.4
Equipment	L.S.	4.6
<u>Sub-Total</u>	-	<u>78.1</u>
<u>Ground Total</u>		<u>212.5</u>

表 6.1.1 セクター別の事業評価点数

PROJECT	COST	UNITCOST	BURDEN	PRODUCT	LIVING	ENVIRON	FLOW	MIGRATE	PARTICI	EASY	SUBTOTAL
1 Irr-1 K	281,400	5	4	5	1	2	5	3	5	5	35
2 Irr-2 K	82,700	5	4	5	1	2	3	3	3	3	29
3 Irr-3 K	257,000	5	4	5	1	2	5	5	5	3	33
4 Irr-6 G	121,000	2	2	5	1	3	5	4	5	1	28
5 Irr-7 G	35,200	3	3	5	1	2	3	3	3	2	25
6 Irr-8 G	121,000	2	2	5	1	3	5	4	5	1	28
7 Irr-9 G	45,100	3	3	5	1	2	3	3	3	2	25
8 Irr-10G	121,000	2	2	5	1	3	5	4	5	1	28
9 Irr-11G	38,000	3	3	5	1	2	3	3	3	2	25
10 Irr-12A	121,000	2	2	5	1	3	5	4	5	1	28
11 Irr-13A	50,500	3	3	5	1	2	3	3	3	2	25
12 Irr-14A	121,000	2	2	5	1	3	5	4	5	1	28
13 Irr-15A	52,100	3	3	5	1	2	3	3	3	2	25
14 Irr-16A	121,000	2	2	5	1	3	5	4	5	1	28
15 Irr-17A	56,300	3	3	5	1	2	3	3	3	2	25
16 Road-18G	246,000	4	4	5	4	1	5	2	3	4	32
17 Road-19AK	294,500	4	4	5	4	1	5	2	3	4	32
18 Road-20G	213,000	4	3	4	4	1	5	2	3	4	30
19 Road-21AG	192,000	4	3	4	4	1	5	2	3	4	30
20 Road-22KR	13,375	3	3	3	3	1	4	2	3	4	26
21 Road-23K	22,475	3	3	3	3	1	4	2	3	4	26
22 Road-24K	90,250	3	3	3	3	1	3	2	3	4	25
23 Road-25G	131,000	3	3	3	3	1	3	2	3	4	25
24 Road-26A	120,500	3	3	3	3	1	3	2	3	4	25
25 Road-27G	63,600	3	1	4	5	1	3	4	4	3	28
26 Road-28A	83,600	3	1	3	5	1	3	4	4	3	27
27 Wate-29K	142,000	5	4	1	5	2	1	3	5	5	31
28 Wate-30K	142,000	4	3	1	4	2	1	3	5	4	27
29 Wate-31G	93,000	5	3	1	5	2	1	3	5	3	28
30 Wate-32G	93,000	4	2	1	5	2	1	3	5	2	25
31 Wate-33A	63,000	5	3	1	5	2	1	3	5	3	28
32 Wate-34A	62,000	4	2	1	5	2	1	3	5	2	25
33 Agri-35H	311,100	4	2	5	2	4	4	4	5	3	33
34 Agri-35T	121,900	5	2	4	2	3	4	4	4	4	32
35 Agri-36	319,900	3	2	4	4	2	3	4	4	3	39
36 Agri-37	29,800	3	3	3	2	3	3	3	4	3	26
37 Agri-38	17,100	3	3	2	2	3	2	3	3	3	24
38 Agri-39	44,500	5	2	4	1	2	4	4	4	4	29
39 Agri-40	258,800	3	2	3	2	2	4	4	4	2	26
40 Livi-41	540,000	4	3	2	5	3	2	5	5	2	34
27,79487											

表 6.2.1 セクター間の調整ウエイト

	UNITCOST	BURDEN	PRODUCT	LIVING	ENVIRON	FLOW	MIGRATE	PARTICI	EASY	SUBTOTAL
Irr.	3	5	4	1	3	2	3	3	3	27
Road	3	5	3	3	1	5	2	3	3	28
Water	5	3	1	5	3	2	3	5	5	32
Agri.	4	2	5	2	3	3	5	4	2	30
FULL	5	5	5	5	5	5	5	5	5	45

表 6.2.2 評価基準のウエイト

	UNITCOST	BURDEN	PRODUCT	LIVING	ENVIRON	FLOW	MIGRATE	PARTICI	EASY
Weight	3	2	3	3	2	1	1	3	2
	3	2	3	3	2	1	1	3	2
	3	2	3	3	2	1	1	3	2
	3	2	3	3	2	1	1	3	2
	3	2	3	3	2	1	1	3	2
	3	2	3	3	2	1	1	3	2

表 6.2.3 セクター間の調整と評価基準を重ねたウエイト

	UNITCOST	BURDEN	PRODUCT	LIVING	ENVIRON	FLOW	MIGRATE	CONTIOUS	EASY	SUBTOTAL
Irr.	9	10	12	3	6	2	3	9	6	60
Road	9	10	9	9	2	5	2	9	6	61
Water	15	6	3	15	6	2	3	15	10	75
Agri.	12	4	15	6	6	3	5	12	4	67
FULL	15	10	15	15	10	5	5	15	10	100

表 6.2.4 追加基準の点数

	URGENCY	WEAKS	EXPAND	T IMPACT
Irr.(L)	4	3	4	4
Irr.(S)	3	4	2	3
Road(L)	4	3	5	5
Road(S)	3	4	3	3
Water	4	5	2	4
Agri.(Ma)	4	4	4	5
Agri.(Mi)	3	3	3	3
FULL	5	5	5	5

表 6.2.5 総合ウエイト

	WTOTAL	%WTOTAL
Irr.(L)	900	0.45
Irr.(S)	720	0.36
Road(L)	1037	0.5185
Road(S)	793	0.3965
Water	1125	0.5625
Agri.(Ma)	1206	0.603
Agri.(Mi)	804	0.402
FULL	2000	1
Total/Ave.	6518	0.465571

表 6.2.6 各プロジェクトの総合加重点数

PROJECT	SUBTOTAL	W TOTAL
1 Irri-1 K	35	15.75
2 Irri-2 K	29	10.44
3 Irri-3 K	33	14.85
4 Irri-6 G	28	10.08
5 Irri-7 G	25	9.00
6 Irri-8 G	28	10.08
7 Irri-9 G	25	9.00
8 Irri-10G	28	10.08
9 Irri-11G	25	9.00
10 Irri-12A	28	10.08
11 Irri-13A	25	9.00
12 Irri-14A	28	10.08
13 Irri-15A	25	9.00
14 Irri-16A	28	10.08
15 Irri-17A	25	9.00
16 Road-18G	32	16.59
17 Road-19AK	32	16.59
18 Road-20G	30	15.56
19 Road-21AG	30	15.56
20 Road-22KR	26	10.31
21 Road-23K	26	10.31
22 Road-24K	25	9.91
23 Road-25G	25	12.96
24 Road-26A	25	12.96
25 Road-27G	28	11.10
26 Road-28A	27	10.71
27 Wate-29K	31	17.44
28 Wate-30K	27	15.19
29 Wate-31G	28	15.75
30 Wate-32G	25	14.06
31 Wate-33A	28	15.75
32 Wate-34A	25	14.06
33 Agri-35H	33	18.79
34 Agri-35T	32	18.22
35 Agri-36	29	16.52
36 Agri-37	26	10.45
37 Agri-38	24	9.65
38 Agri-39	29	16.52
39 Agri-40	26	14.81
40 Livi-41	34	15.83

表 6.2.7 各プロジェクトの総合加重点数による順位

PROJECT	SUBTOTAL	W TOTAL
1 Agri-35H	33	18.79
2 Agri-35T	32	18.22
3 Wate-29K	31	17.44
4 Road-18G	32	16.59
4 Road-19AK	32	16.59
6 Agri-36	29	16.52
6 Agri-39	29	16.52
8 Livi-41	34	15.83
9 Irri-1 K	35	15.75
9 Wate-31G	28	15.75
9 Wate-33A	28	15.75
12 Road-20G	30	15.56
13 Road-21AG	30	15.56
14 Wate-30K	27	15.19
15 Irri-3 K	33	14.85
16 Agri-40	26	14.81
17 Wate-32G	25	14.06
18 Wate-34A	25	14.06
19 Road-25G	25	12.96
20 Road-26A	25	12.96
21 Road-27G	28	11.10
22 Road-28A	27	10.71
23 Agri-37	26	10.45
24 Irri-2 K	29	10.44
25 Road-22KR	26	10.31
26 Road-23K	26	10.31
27 Irri-6 G	28	10.08
28 Irri-8 G	28	10.08
29 Irri-10G	28	10.08
30 Irri-12A	28	10.08
31 Irri-14A	28	10.08
32 Irri-16A	28	10.08
33 Road-24K	25	9.91
34 Agri-38	24	9.65
35 Irri-7 G	25	9.00
36 Irri-9 G	25	9.00
37 Irri-11G	25	9.00
38 Irri-13A	25	9.00
39 Irri-15A	25	9.00
40 Irri-17A	25	9.00

表 6.2.8 各プロジェクトの順位と費用

(Unit : '000 Rs)		
PROJECT	COST	ACC COST
1 Agri-35H:AGRICULTURAL PRODUCTION (H)	311,100	311,100
2 Agri-35T:AGRICULTURAL PRODUCTION (T)	121,900	433,000
3 Water-29K:KAPILVASTU WATER SUPPLY (A)	142,000	575,000
4 Road-18G:TANSEN-TANGHAS ROAD	246,000	821,000
5 Road-19AK:MRM-SHANDHIKHARKA ROAD	294,500	1,115,500
6 Agri-39:AGRICULTURAL INPUTS SUPPLY	44,500	1,160,000
7 Agri-36:LIVESTOCK DEVELOPMENT	319,900	1,479,900
8 Livi-41:LIVING ENVIRONMENT IMPROVEMENT	540,000	2,019,900
9 Agri-40:AGRICULTURAL PRODUCTS MARKETING	473,400	2,493,300
10 Water-33A:ARGHAKHANCHI WATER SUPPLY (A)	63,000	2,556,300
11 Water-31G:GULMI WATER SUPPLY (A)	93,000	2,649,300
12 Irri-1 K:RAJKUDWA IRRIGATION PROJECT	281,400	2,930,700
13 Road-21AG:SANDHIKHARKA-TANGHAS ROAD	192,000	3,122,700
14 Road-20G:WAMITAKSAR-RIDIBAZAR ROAD	213,000	3,335,700
15 Water-30K:KAPILVASTU WATER SUPPLY (B)	142,000	3,477,700
16 Irri-3 K:PHULIKA IRRIGATION PROJECT	257,000	3,734,700
17 Water-34A:ARGHAKHANCHI WATER SUPPLY (B)	62,000	3,796,700
18 Water-32G:GULMI WATER SUPPLY (B)	93,000	3,889,700
19 Road-26A:SANDHIKHARKA-PUTAN ROAD	120,500	4,010,200
20 Road-25G:TANGHAS-AGLUNG ROAD	131,000	4,141,200
21 Road-27G:GULMI VILLAGE ROADS	63,600	4,204,800
22 Road-28A:ARGHAKHANCHI VILLAGE ROADS	83,600	4,288,400
23 Agri-37:FISHERIES DEVELOPMENT	29,800	4,318,200
24 Irri-2K:BEL NADI IRRIGATION (& 2 OTHERS)	82,700	4,400,900
25 Road-22KR:LUMBINI-TAULIHAWA ROAD	13,375	4,414,275
26 Road-23K:JITPUR-TAULIHAWA ROAD	22,475	4,427,650
27 Irri-8 G:GULMI WPRINKLER IRRIGATION (B)	121,000	4,450,125
28 Irri-14A:ARGHAKHANCHI SPRINKLER IRRIGATION (B)	121,000	4,571,125
29 Irri-6 G:GULMI SPRINKLER IRRIGATION (A)	121,000	4,692,125
30 Irri-16A:ARGHAKHANCHI SPRINKLER IRRIGATION (C)	121,000	4,813,125
31 Irri-12A:ARGHAKHANCHI SPRINKLER IRRIGATION (A)	121,000	4,934,125
32 Irri-10G:GULMI SPRINKLER IRRIGATION (C)	121,000	5,055,125
33 Road-24K:TAULIHAWA-BAHADURGANJI ROAD	90,250	5,176,125
34 Agri-38:APICULTURE DEVELOPMENT	17,100	5,266,375
35 Irri-7 G:GHAMIR KHOLA IRRIGATION	35,200	5,283,475
36 Irri-11G:PURTI GHAT IRRIGATION (& 2 OTHERS)	38,000	5,318,675
37 Irri-9 G:KHADGA KOT IRRIGATION (& 2 OTHERS)	45,100	5,356,675
38 Irri-13A:MIL MILE KHOLA IRRIGATION (& 2 OTHERS)	50,500	5,401,775
39 Irri-15A:KHANCHI IRRIGATION (& 2 OTHERS)	52,100	5,452,275
40 Irri-17A:DURGA KHOLA IRRIGATION	56,300	5,508,575

表 7.1.1 総合的事業実施スケジュール

Administrative level/Projects	Year							
	1990	1991	1992	1993	1994	1995	1996	1997
Central level agencies								
Irrigation project								
Rjikudwa								
Bel Nadi, Khanchaniya, Charanga								
Siyari								
Telar								
Sprinkler and other in the hill area								
Road project								
Tansen - Tanghas road								
MRM - Sandikharkha road								
Wamitaksar - Ridibazar road								
Banganga rural water supply project								
District, Ilaka, Ward level								
Irrigation project								
Road project in the hill area								
Agricultural production promotion project								
Construction of facilities								
Training, input supply and extension								
Confidence building projects								
Project level								
Reinforcement of organization								

表 7.2.1. 事業実施体制

<u>Administration level</u>	<u>Station</u>	<u>Institutions</u>	<u>Functions</u>	<u>No. of Experts & Advisers</u>
Central level	Kathmandu	NPC MPLD Line Ministries	Coordinate Ministries & Donors	1-Adviser
Regional level	Pokhara	Regional Development Directorate	Monitoring /Evaluation Coordination among Districts/Sectoral Directorates	1-Coordinator
District level	Gulmi Arghakhanchi Kapilvastu (Marchawar area)	District Panchayats LDOs	Prepare District development Plan Project implementation	3-Task forces: each task force composing of 3-Engineers 6-Assistant engineers
Ilaka level	Each Ilaka	Ilaka center		
Village level	Each Village	Village Panchayat		

付 図

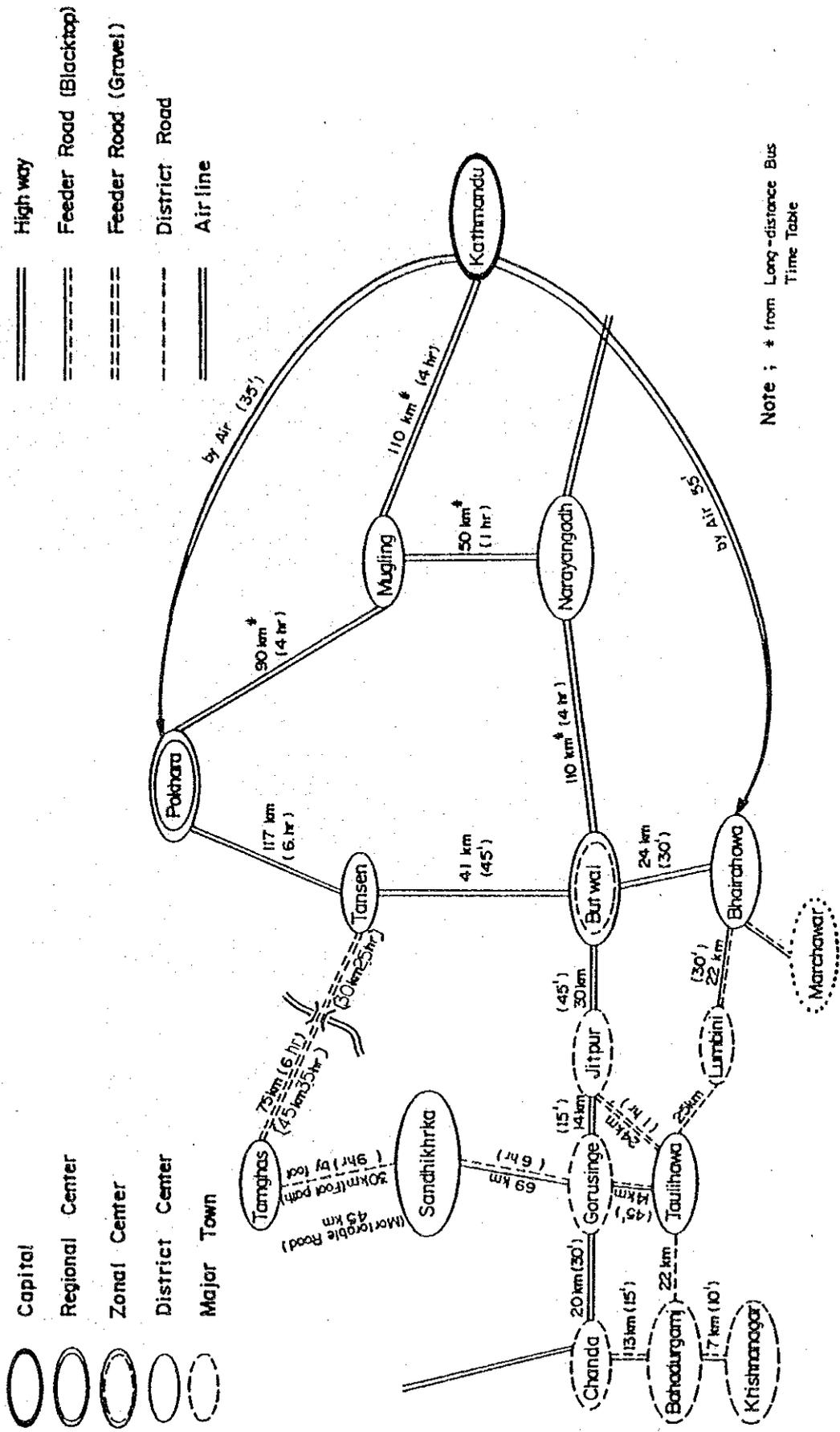


図 2.1.1 調査地域の主要都市と道路網

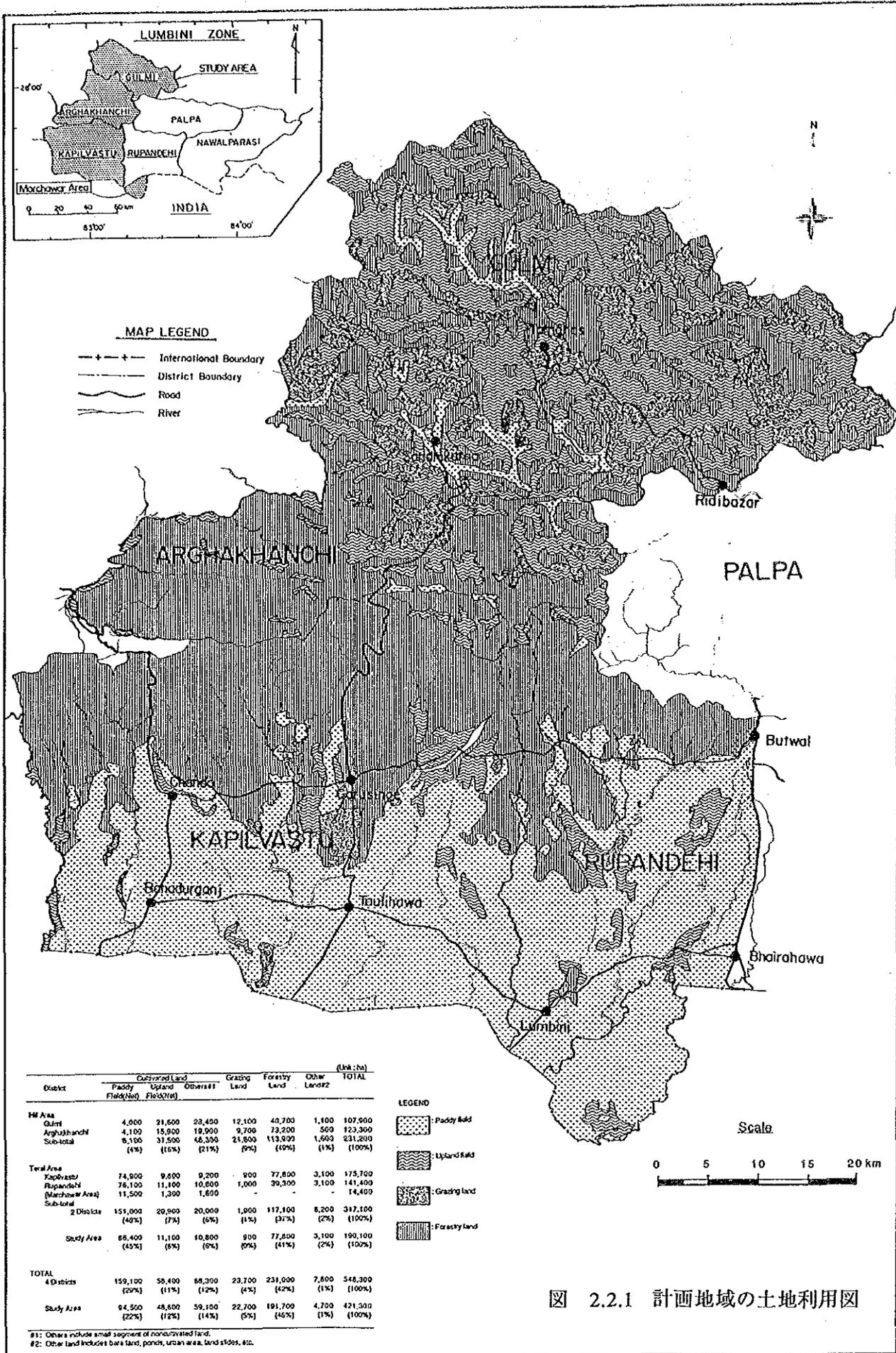
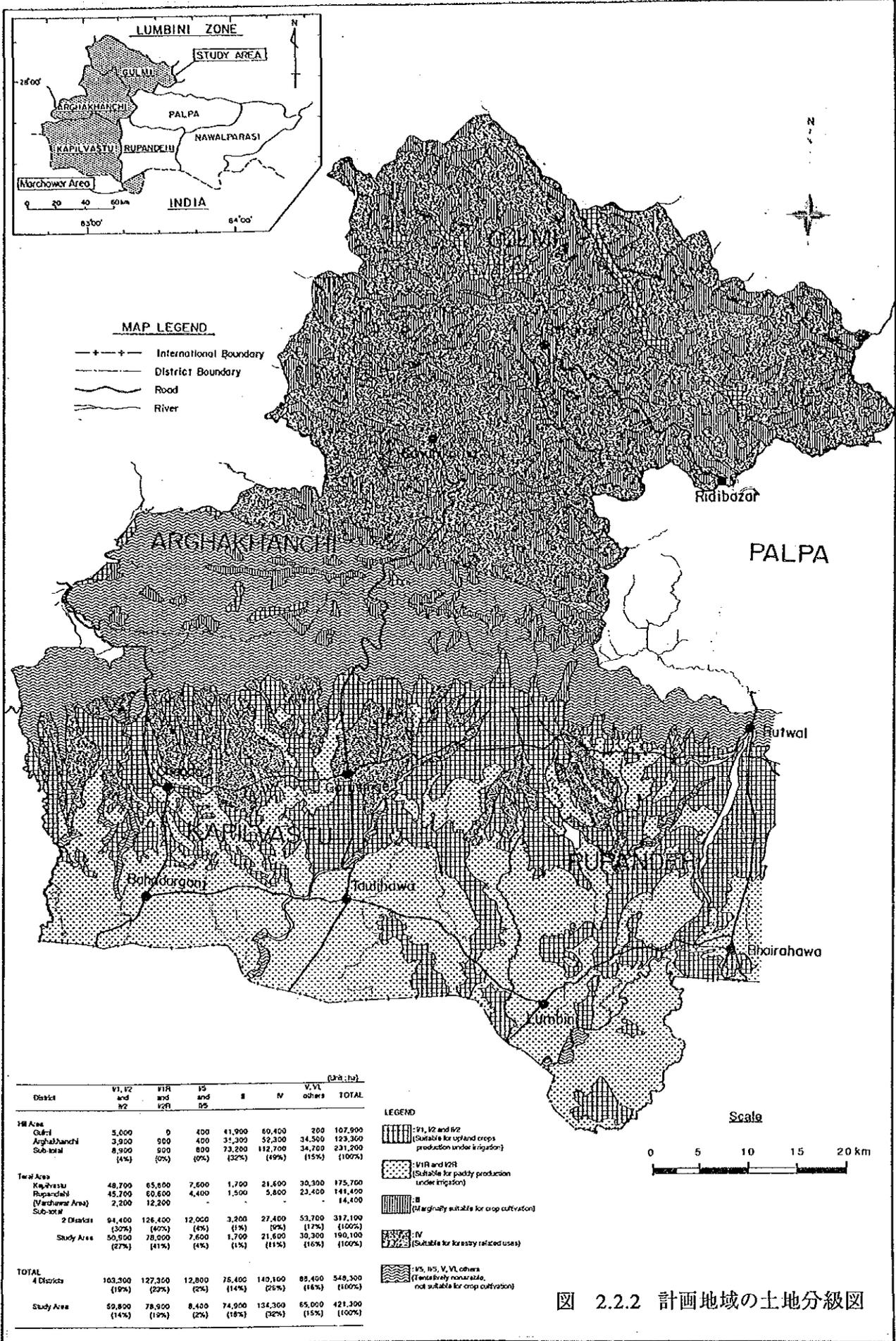


図 2.2.1 計画地域の土地利用図

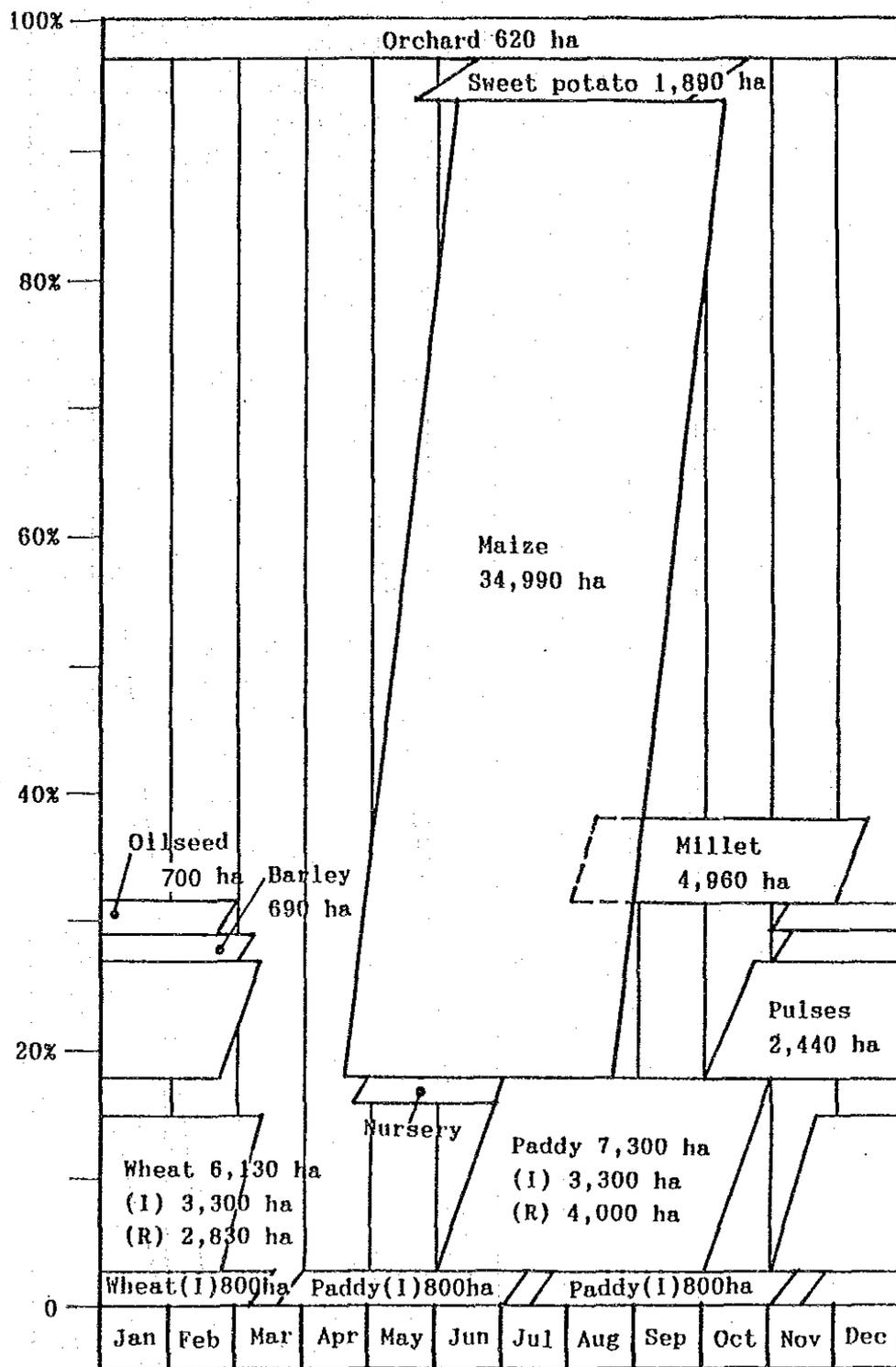


District	[ha]						TOTAL
	V1, V2 and V3	IIR and I2R	I3 and I5	II	IV	V, VI others	
IR Area							
Gulmi	5,000	0	400	41,900	60,400	200	107,900
Arghakhanchi	3,900	900	400	31,300	57,300	34,500	123,300
Sub-total	8,900 (14%)	900 (2%)	800 (2%)	73,200 (32%)	117,700 (49%)	34,700 (15%)	231,200 (100%)
Total Area							
Kapilvastu	48,700	65,600	7,600	1,700	21,600	30,300	175,700
Rupandehi	45,700	60,600	4,400	1,500	5,800	23,400	141,400
(Vardhera Area)	2,200	12,200	-	-	-	-	14,400
Sub-total	96,600 (32%)	138,400 (46%)	12,000 (4%)	3,200 (1%)	27,400 (9%)	53,700 (17%)	317,100 (100%)
2 Districts	94,400 (27%)	126,400 (41%)	12,000 (4%)	3,200 (1%)	27,400 (11%)	53,700 (16%)	317,100 (100%)
Study Area	50,500 (16%)	78,000 (25%)	7,600 (2%)	1,700 (1%)	21,600 (7%)	30,300 (10%)	190,100 (60%)
TOTAL							
4 Districts	103,200 (19%)	127,300 (23%)	12,800 (2%)	75,400 (14%)	140,100 (26%)	88,400 (16%)	548,300 (100%)
Study Area	52,800 (10%)	78,000 (14%)	8,400 (2%)	74,900 (14%)	134,300 (24%)	65,000 (12%)	423,300 (77%)

LEGEND

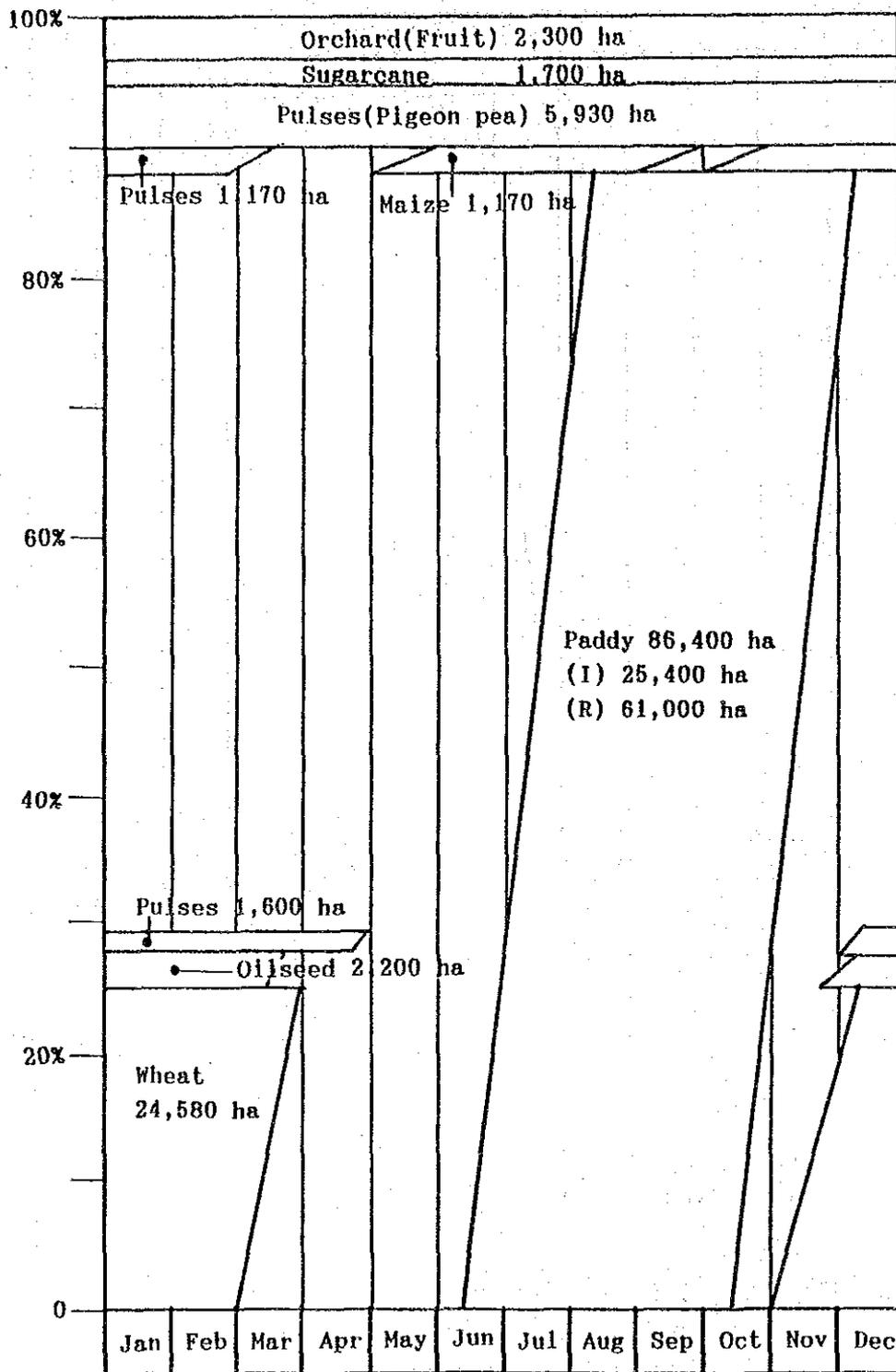
- IIR, I2R and I3R (Suitable for upland crops production under irrigation)
- IIR and I2R (Suitable for paddy production under irrigation)
- II (Marginally suitable for crop cultivation)
- IV (Suitable for forestry related uses)
- I3, I5, V, VI others (Totally non-arable, not suitable for crop cultivation)

図 2.2.2 計画地域の土地分級図



(I): Irrigated, (R): Rainfed

図 2.4.1(1/2) 丘陵地域の現況作付体系



(I): Irrigated, (R): Rainfed

図 2.4.1(2/2) テライ地域の現況作付体系

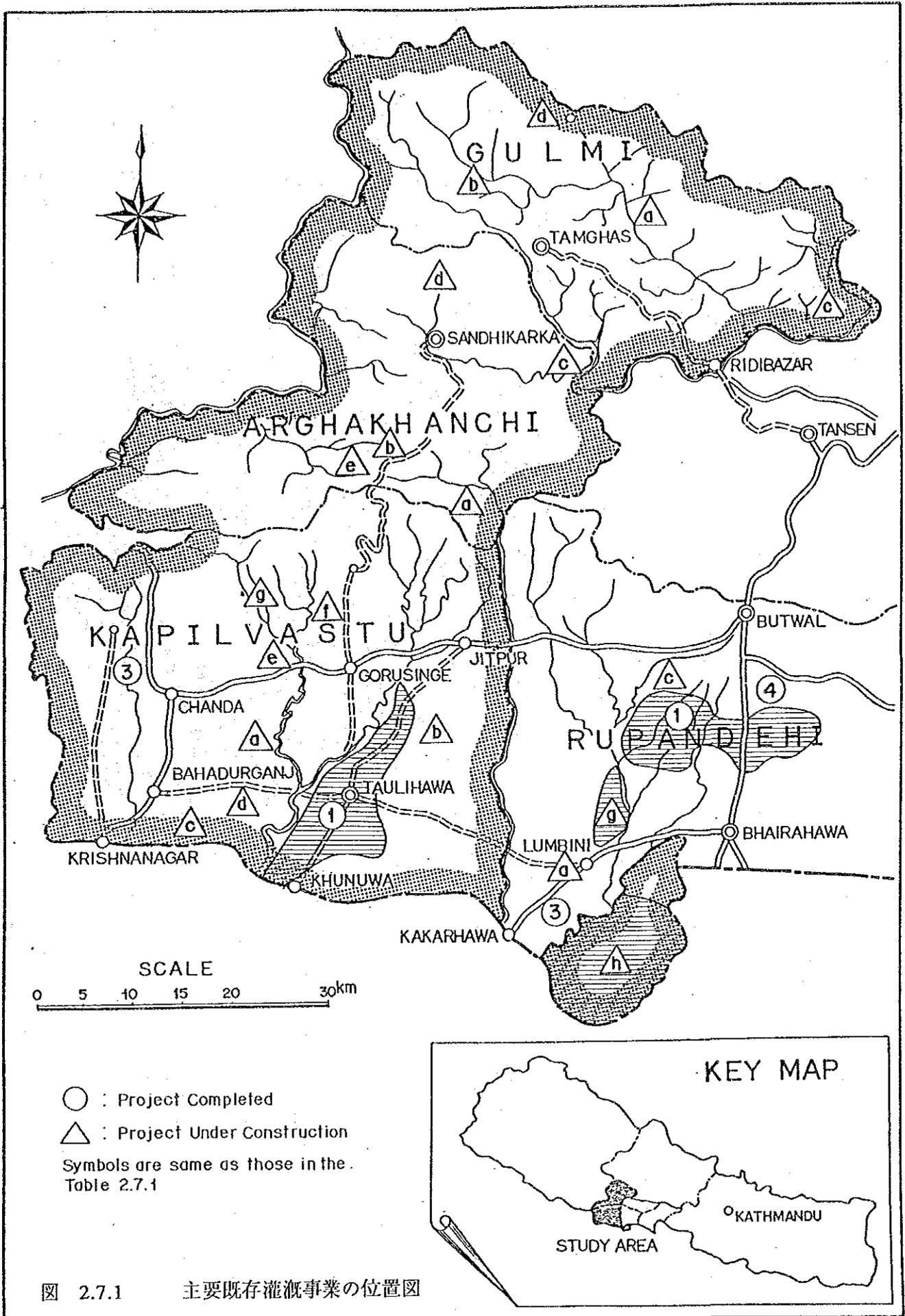


図 2.7.1 主要既存灌漑事業の位置図

SCALE 1 : 500,000

LEGEND

- | | | |
|---------------|------------------|---------|
| Boundaries | International | --- -- |
| | District | - - - - |
| Head Quarters | Zone | ⊙ |
| | District | ⊙ |
| | Place names | ○ |
| Road | National Highway | ==== |
| | Feeder Road | ===== |
| | District Road | ===== |

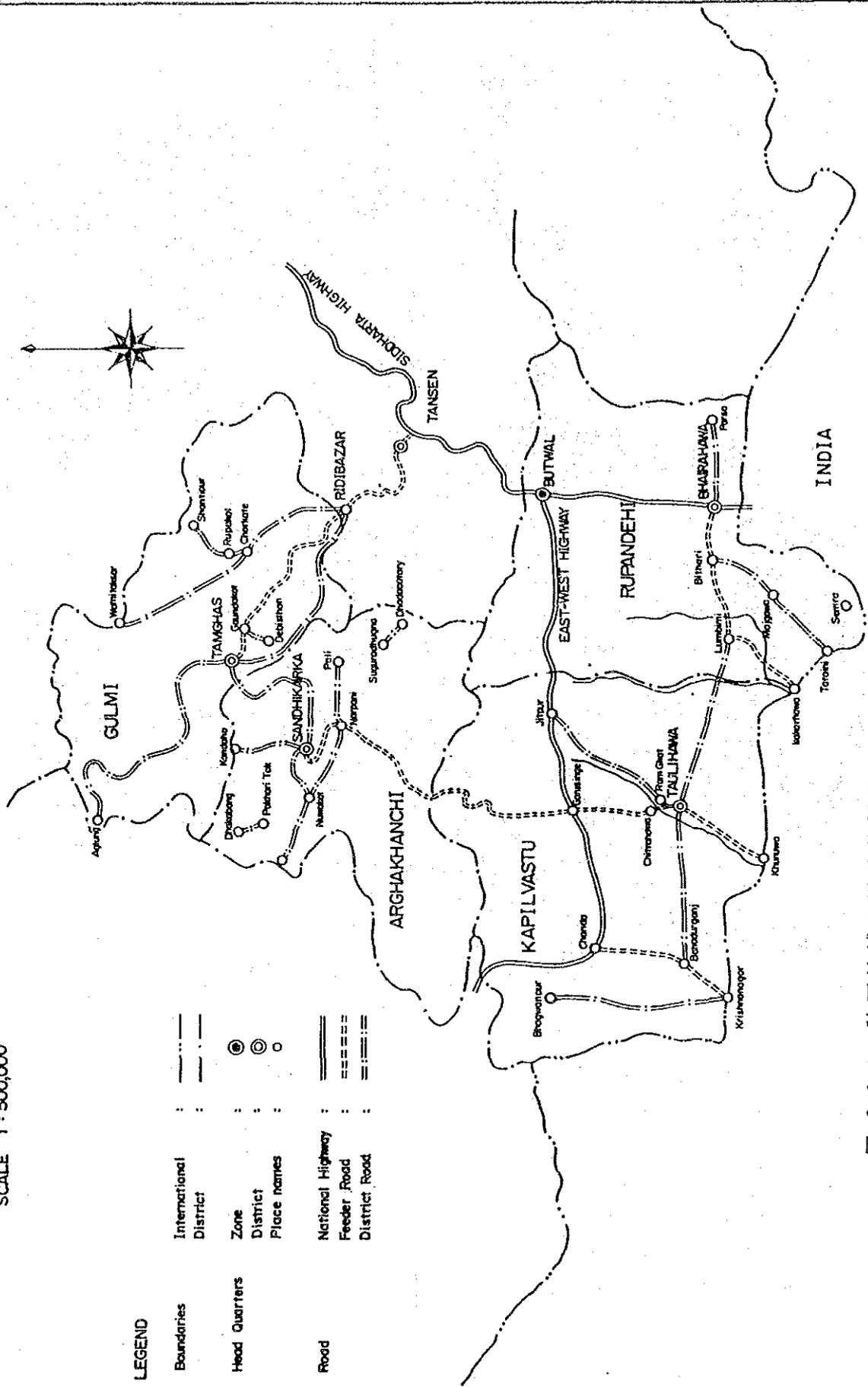


図 2.8.1 計画地域の道路位置図

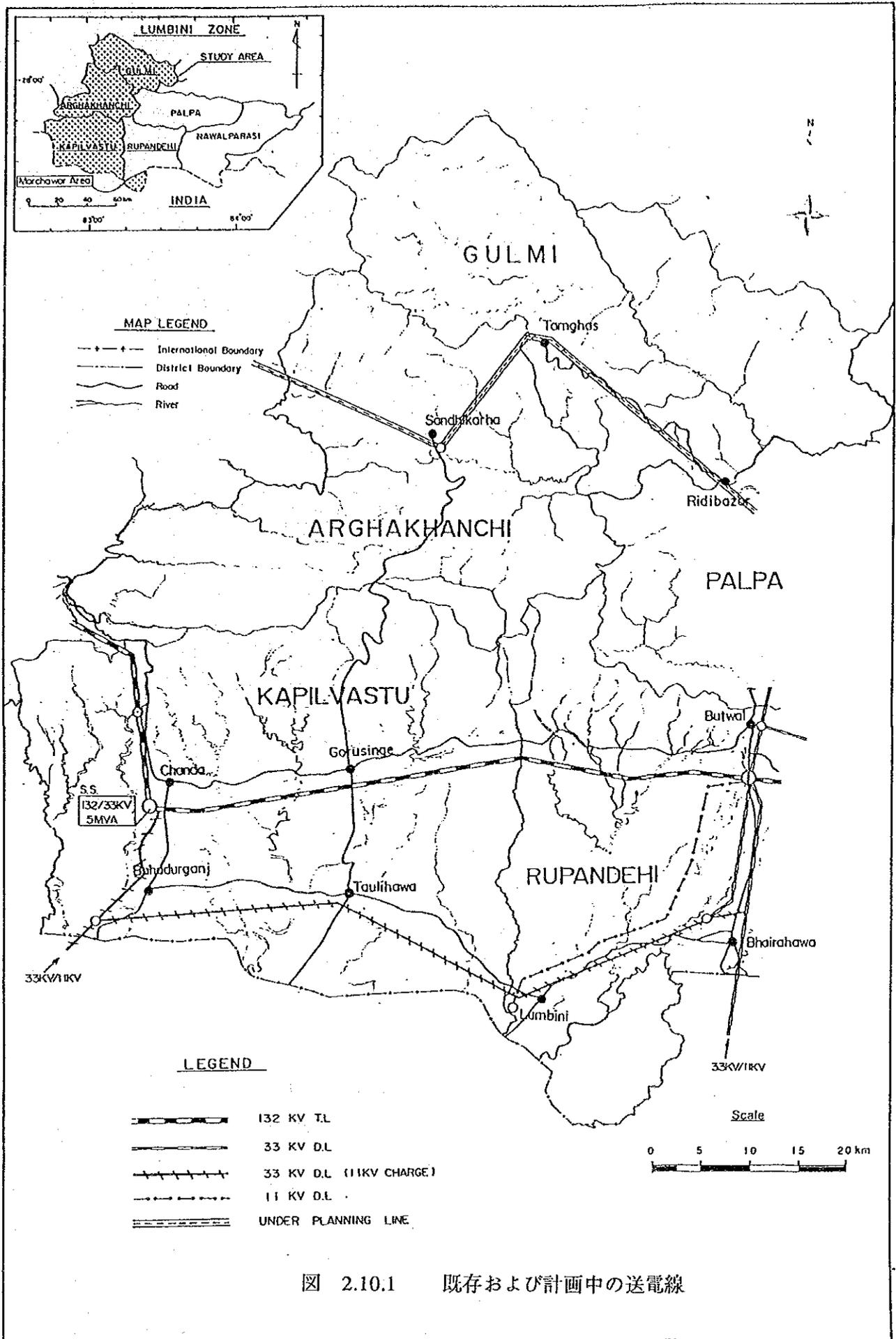


図 2.10.1 既存および計画中の送電線

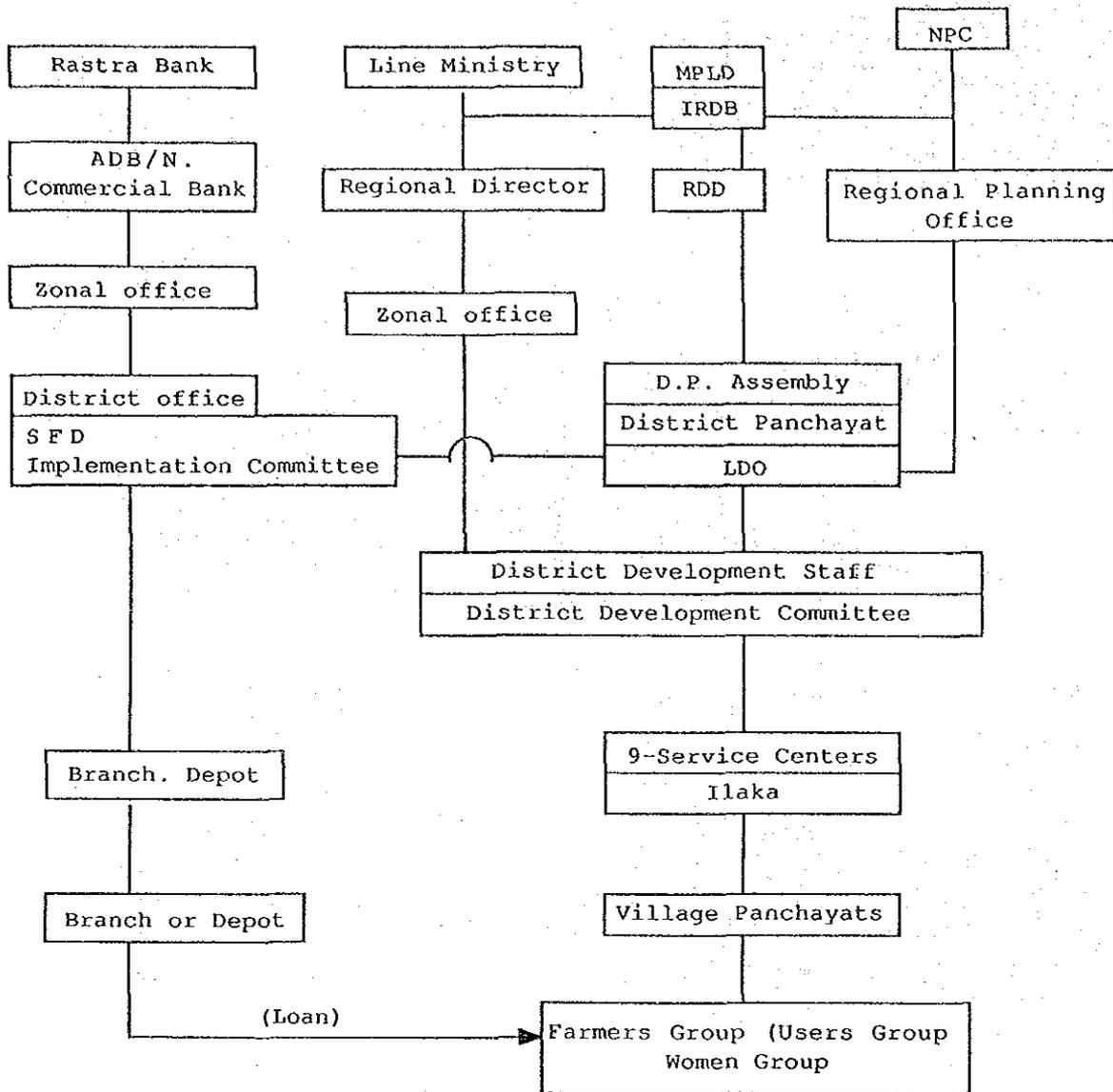
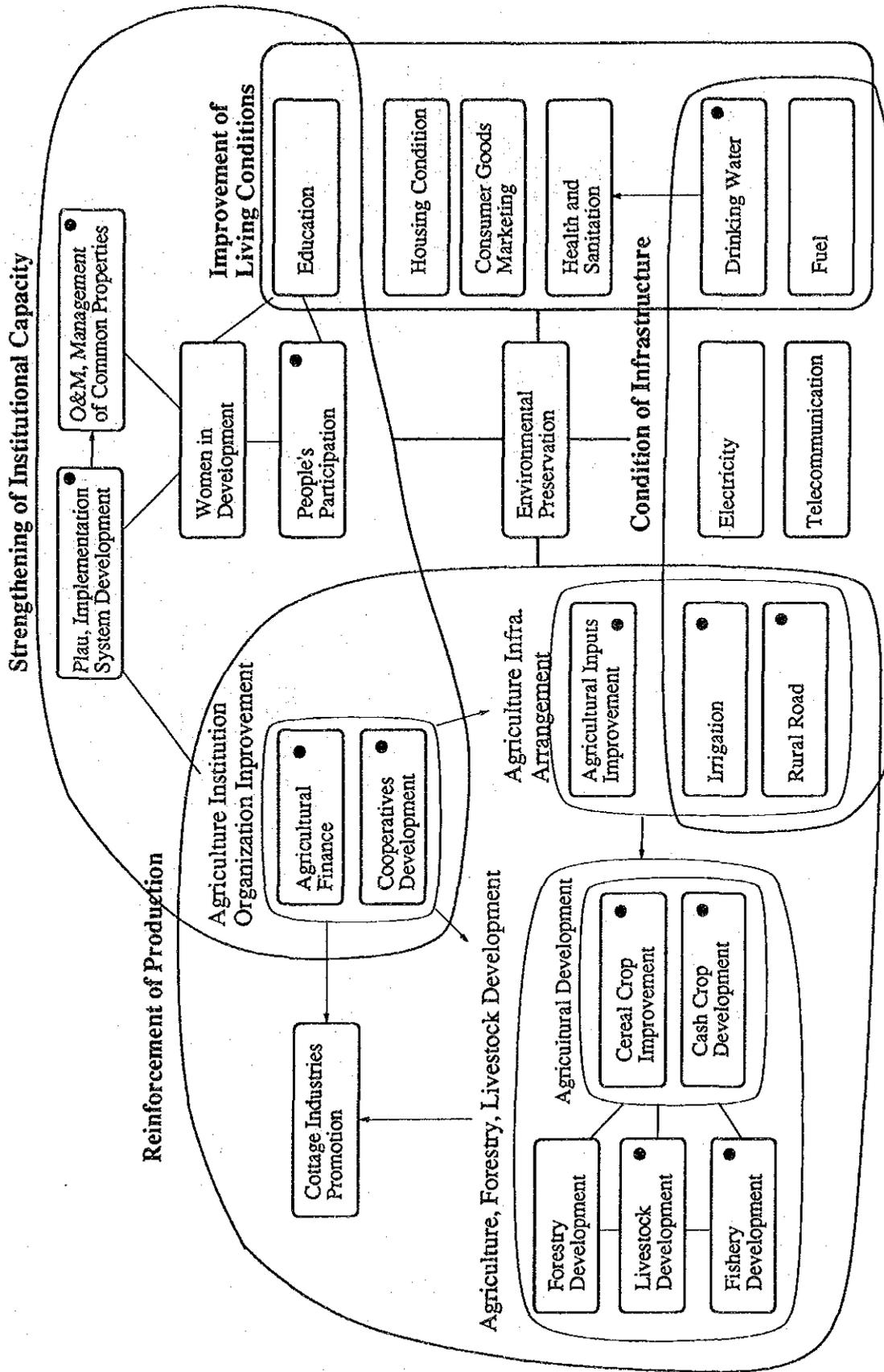


図 2.11.1 現行の地方開発組織体制



● taken up by Lumbini IRDP
 図 4.1.1 マスタープランの概念図

4. Reinforcement of Plan Implementation Capacity

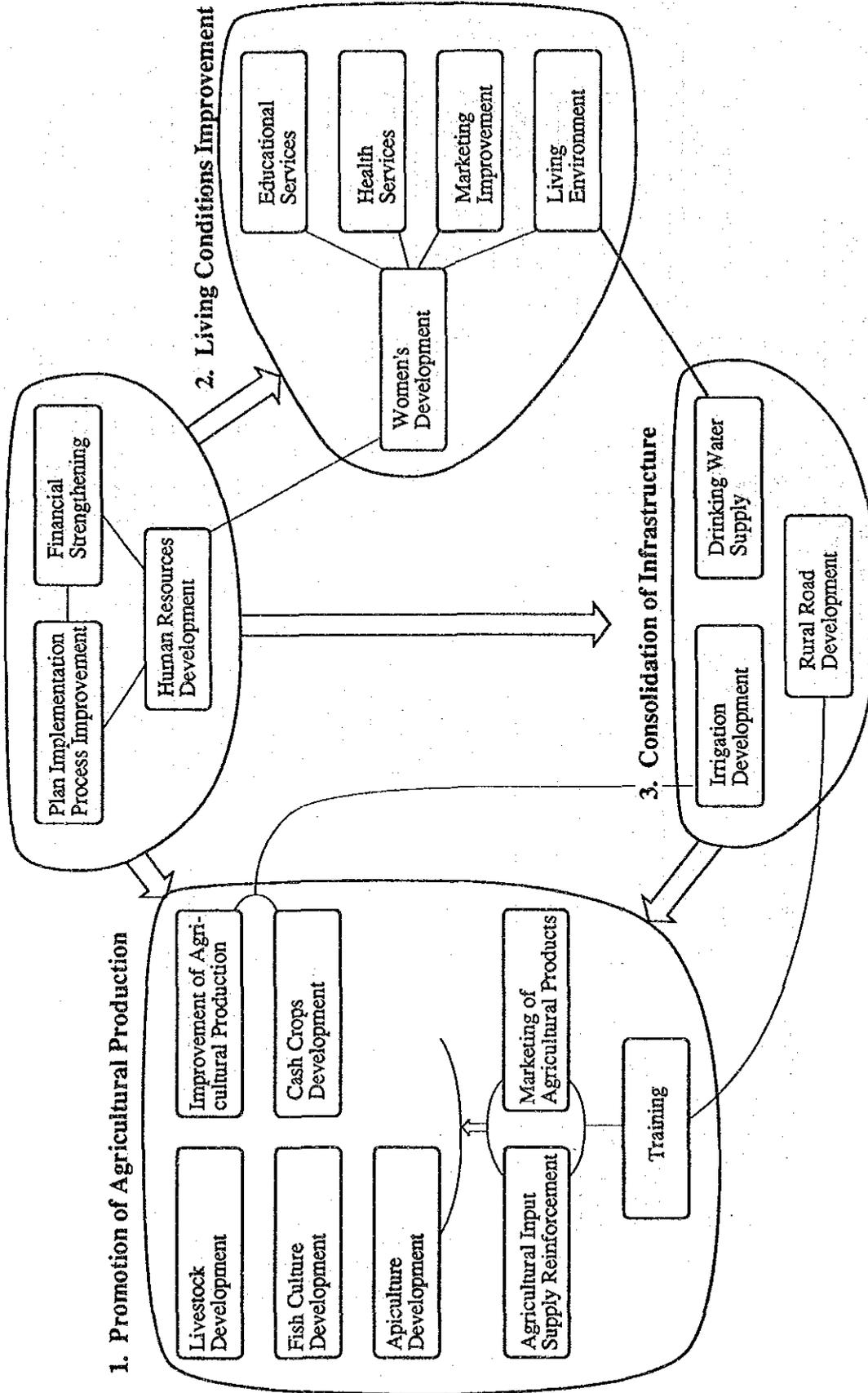


図 4.1.2 マスタープランの基本構想図

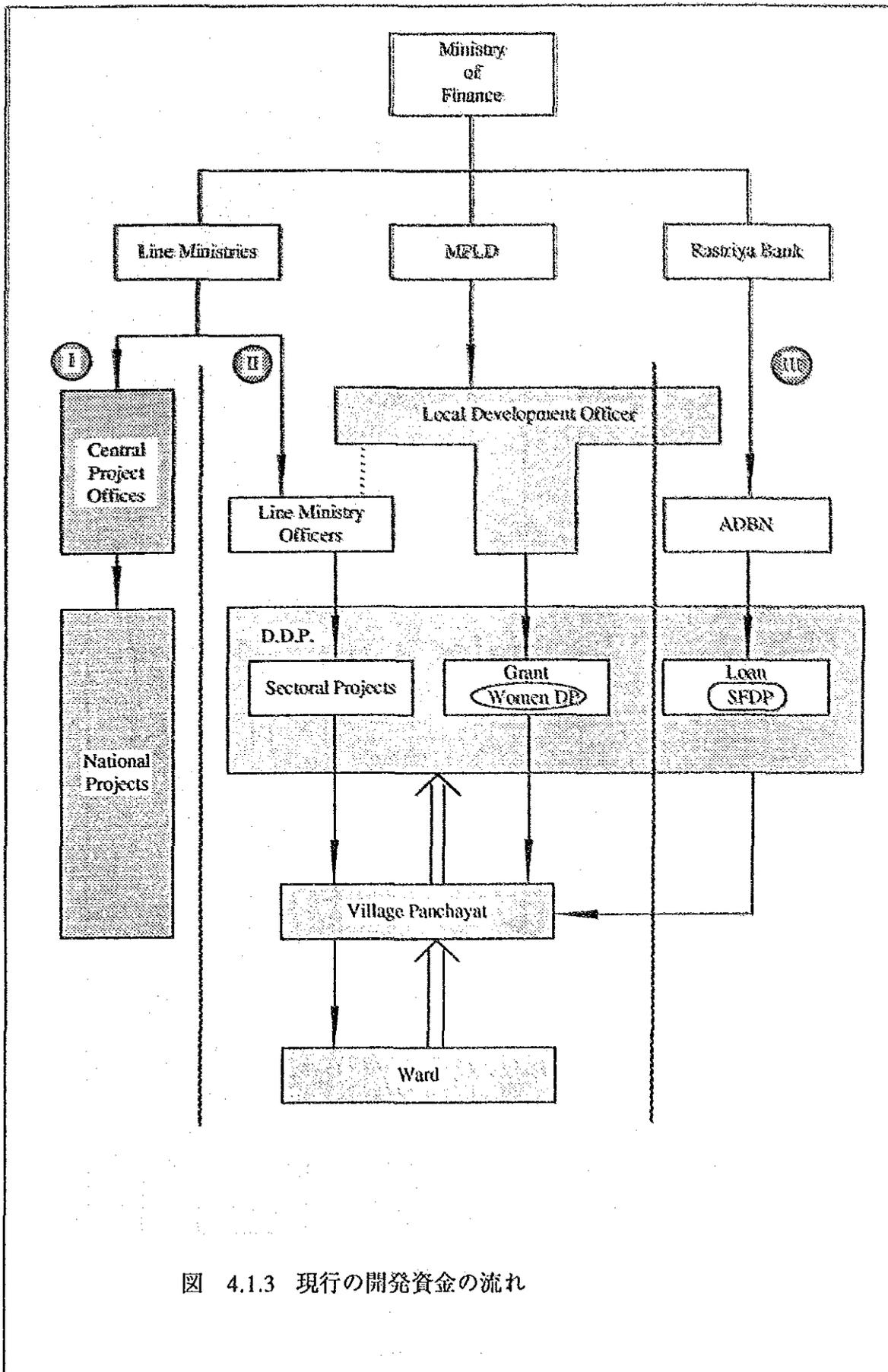
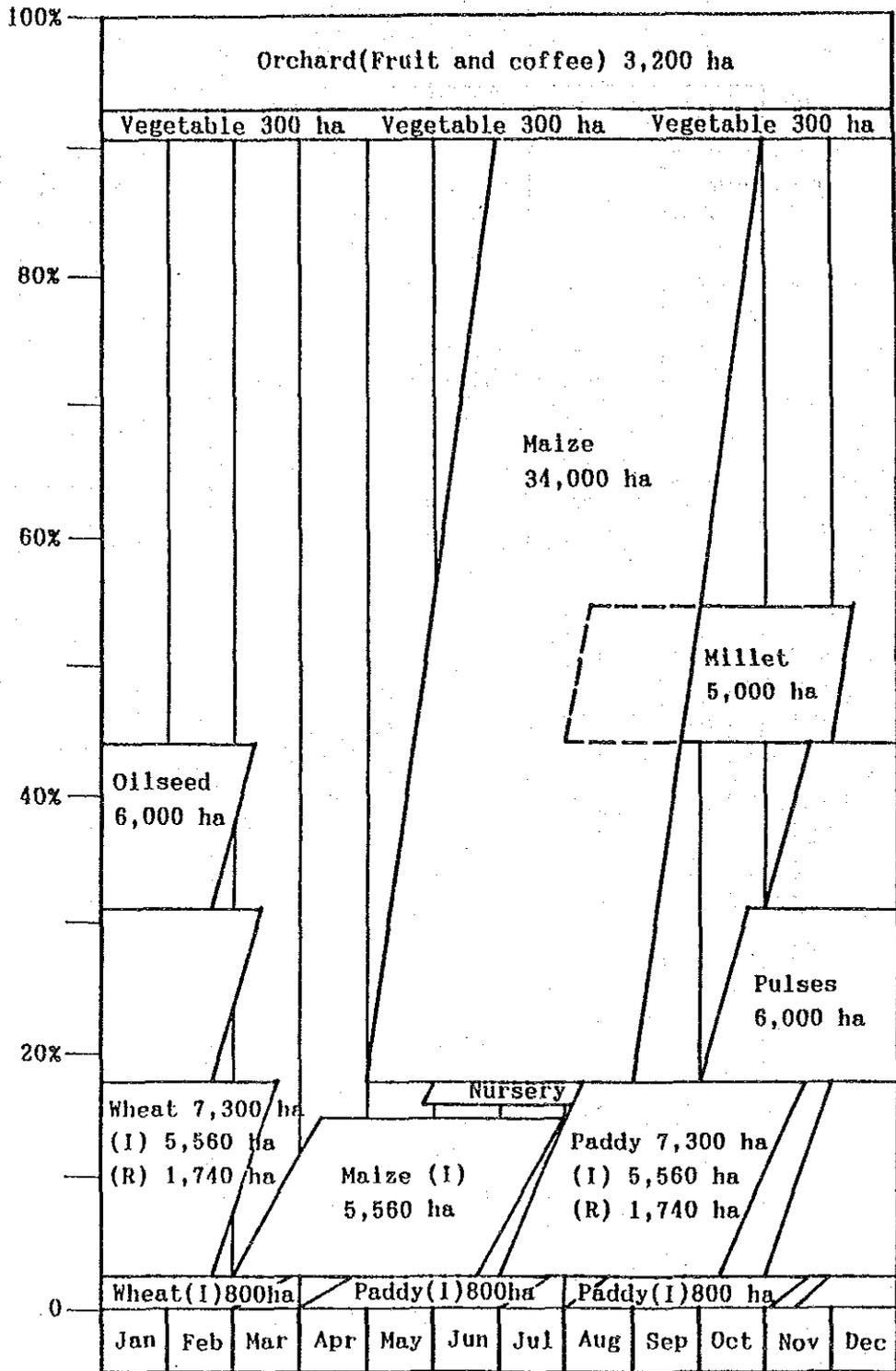
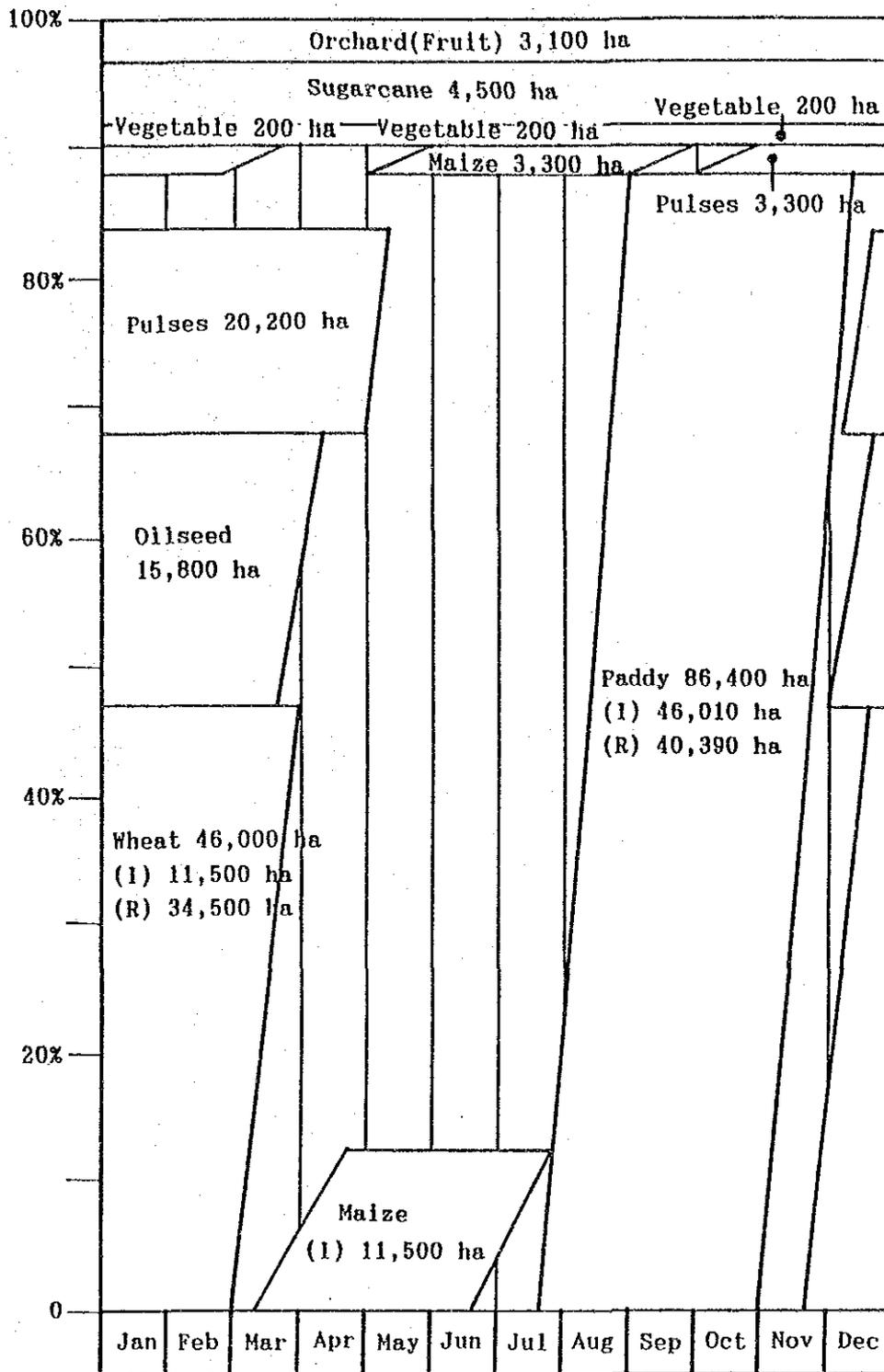


図 4.1.3 現行の開発資金の流れ



(I): Irrigated, (R): Rainfed

図 4.2.1(1/2) 丘陵地域の計画作付体系



(i): Irrigated, (R): Rainfed

図 4.2.1(2/2) テライ地域の計画作付体系

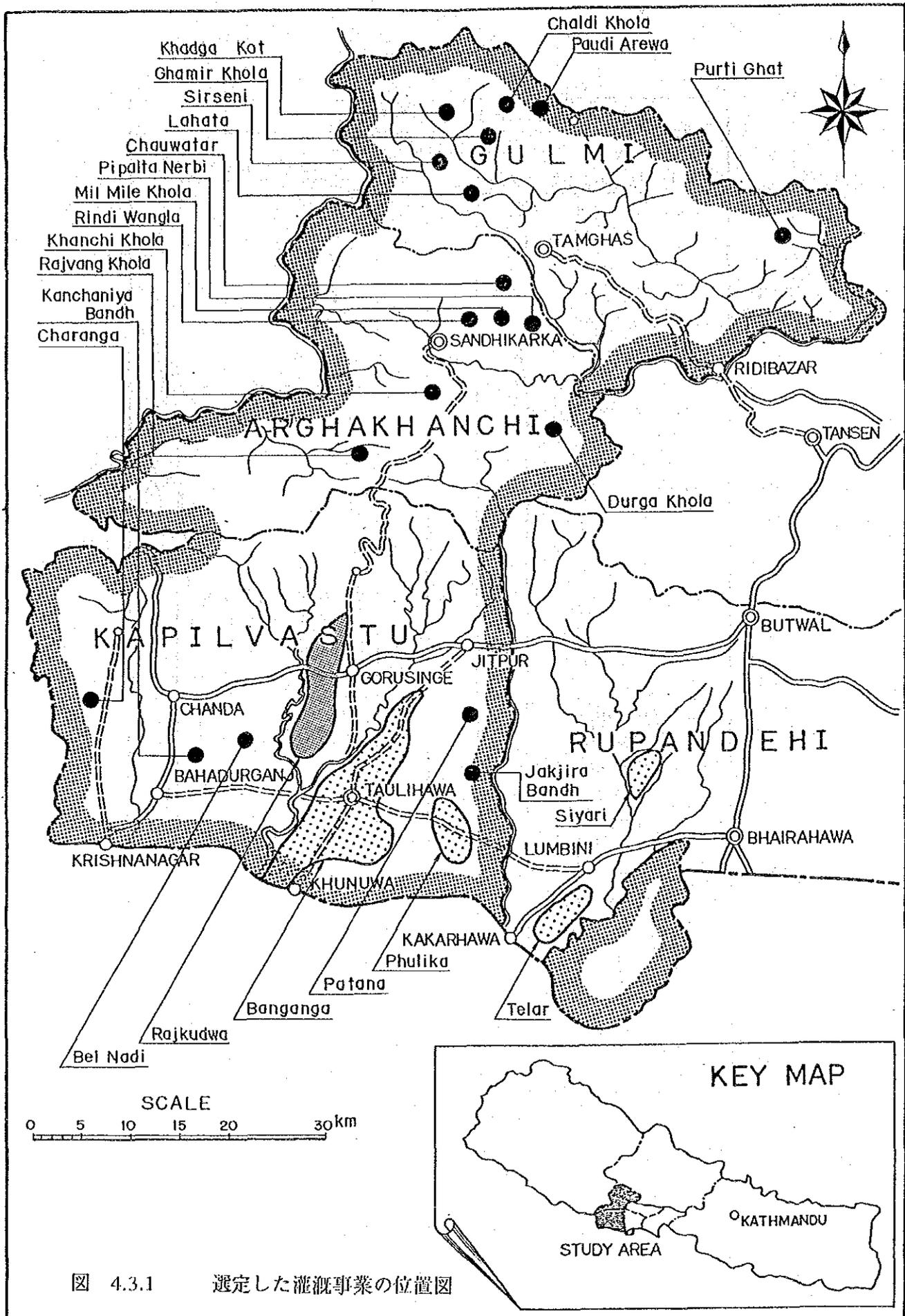
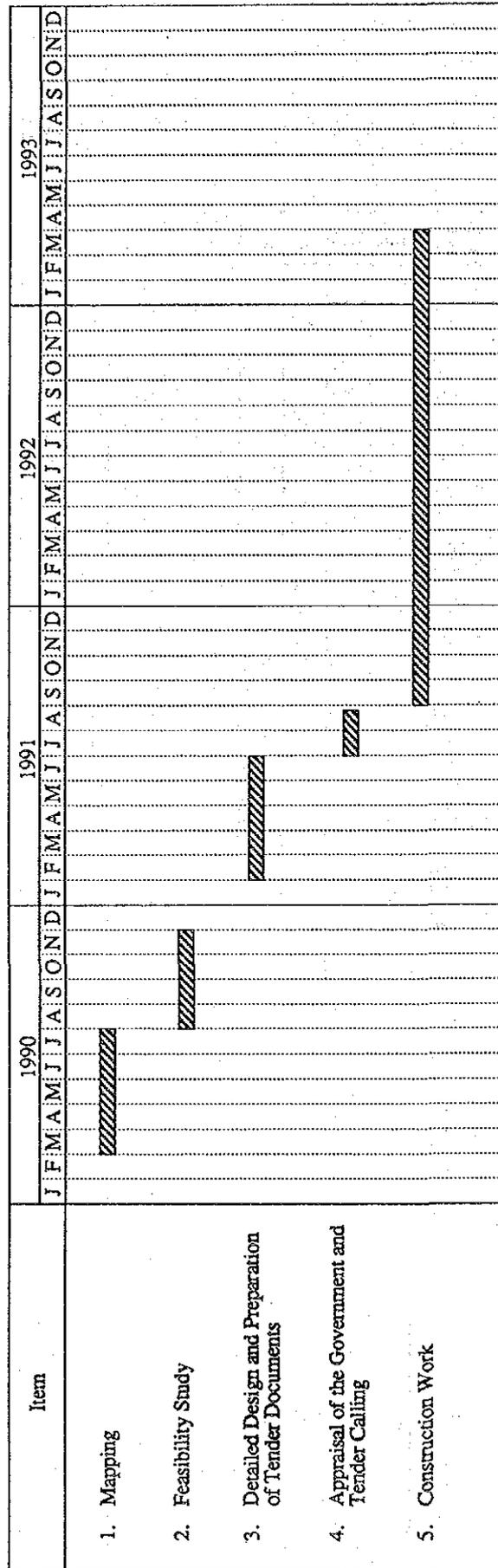


図 4.3.1 選定した灌漑事業の位置図

図 7.1.1 灌漑プロジェクトの事業実施計画

Name of Project	Command area (ha)	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
I. CENTRAL LEVEL																		
(1) Kapilvastu District																		
1) a. Rajkudwa	2,400		1) Mapping & F/S						2)									
2) b. Bel Nadi	400																	
c. Khanchaniya	160																	
g. Charanga	320																	
3) d. Phulika	1,500													3)				
e. Patana	540																	
f. Jakira Bandh	700																	
(2) Gulmi District																		
1) h. Sprinkler	100		1)															
a. Ghamir Khola	250								2)									
2) h. Sprinkler	100																	
b. Khadga Kot	110																	
c. Paudi Areba	110																	
d. Chaldi Khola	100																	
3) h. Sprinkler	100													3)				
e. Pirti Ghat	90																	
f. Sirseni	140																	
g. Lahata	40																	
(3) Arghkhanchi District																		
1) h. Sprinkler	200		1)															
a. Rindi Wangla	70																	
b. Chauwatar	70																	
c. Mil Mile Khola	220								2)									
2) h. Splinkler	200																	
d. Pipalta	100																	
e. Rajwang	110																	
g. Khanchi	160																	
3) h. Sprinkler	200													3)				
f. Durga Khola	400																	
II. DISTRICT LEVEL																		
(1) Kapilvstu District	9,000																	
90 projects																		
(2) Gulmi District	600																	
32 projects																		
(3) Arghkhanchi District	280																	
15 projects																		

図 7.1.2 優先灌漑プロジェクトの事業実施計画



zzzzz : Rajkudwa Project

図 7.1.3 道路事業の実施計画

District	Name of Road	Construction Period (15 years)																
		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
Gulmi	Tamghas ~ Tansen L = 75Km																	
Arghak-anchi	M·R·M ~ Sandhikarka L = 69Km																	
Gulmi	Wamitaksar ~ Ridibazar L = 64Km																	
Arghak-anchi	Sandhikarka ~ Tamghas L = 45Km																	
Kapilvastu	Lumbini ~ Taulihawa L = 16Km																	
Kapilvastu	Jitpur ~ Taulihawa L = 24Km																	
Kapilvastu	Taulihawa ~ Bahadurganj L = 22Km																	
Gulmi	Tamghas ~ Aglung L = 42Km																	
Arghak-anchi	Sandhikarka ~ Pyuthan L = 30Km																	
Gulmi	Village Roads in the District L = 20Km																	
Arghak-anchi	Village Roads in the District L = 20Km																	
Total	427Km																	

Legend :  Major Work  Minor Work

図 7.1.6 バンガンガ水道プロジェクトの事業実施計画

Item	Year & Month		1990			1991								1992								
	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	
Field reconnaissance and topographical survey	■																					
Detail design and preparation of tender documents		■	■	■																		
Appraisal of the government and tender call					■	■																
Tender evaluation and contract of construction work							■															
Manufacturing and shipping of materials								■	■	■	■											
Construction work													■	■	■	■	■	■	■			
Test run																					■	

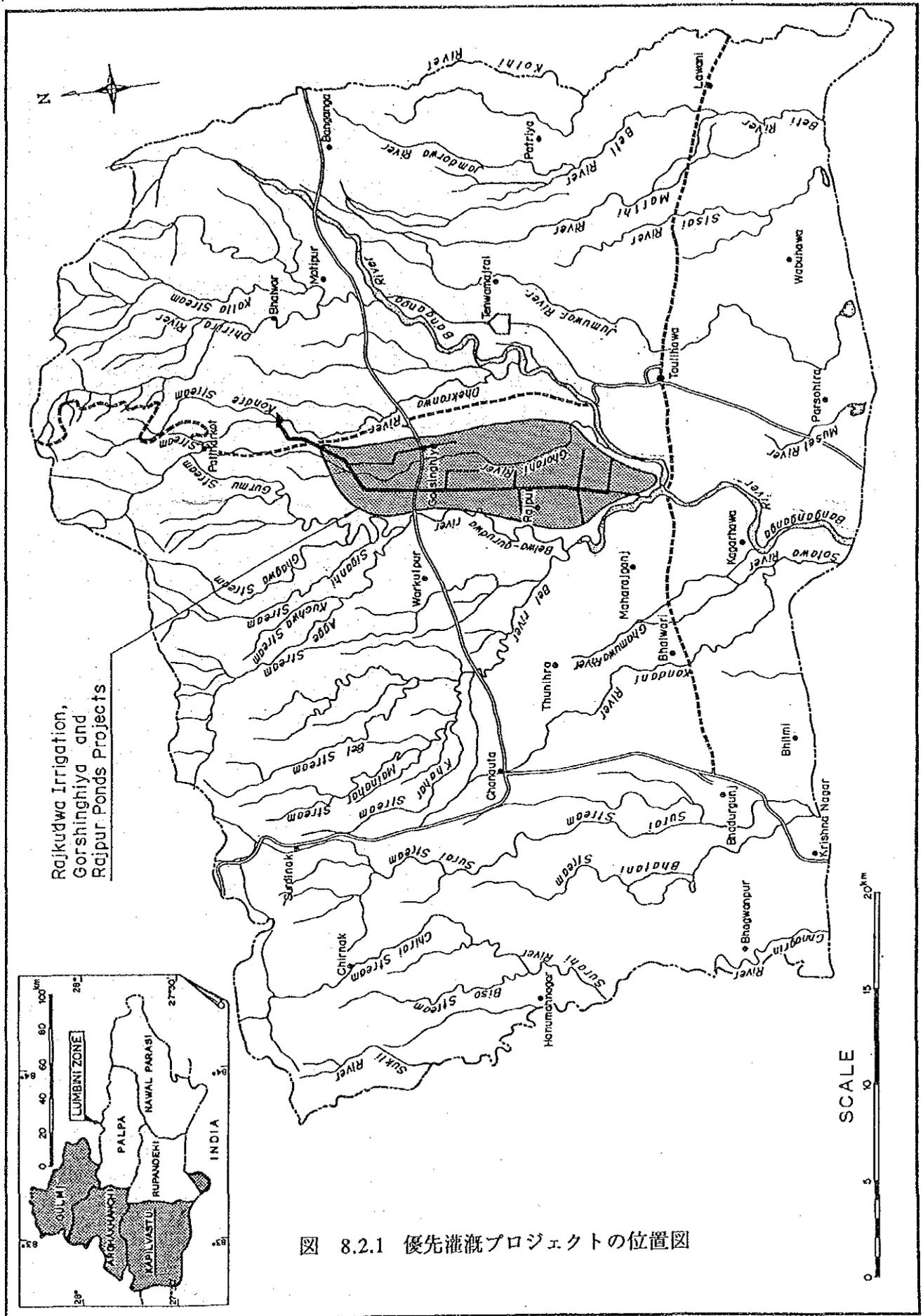
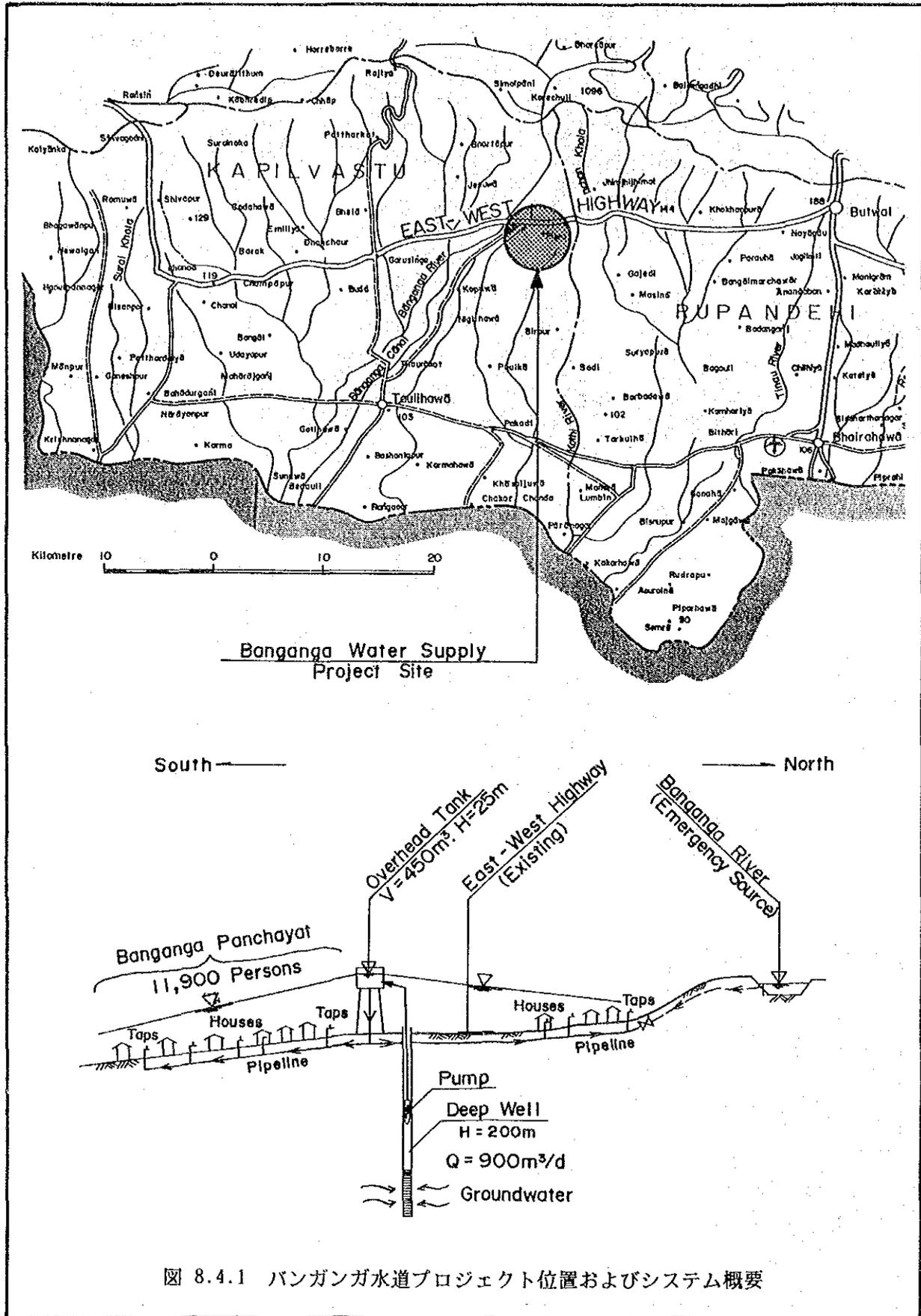


図 8.2.1 優先灌漑プロジェクトの位置図



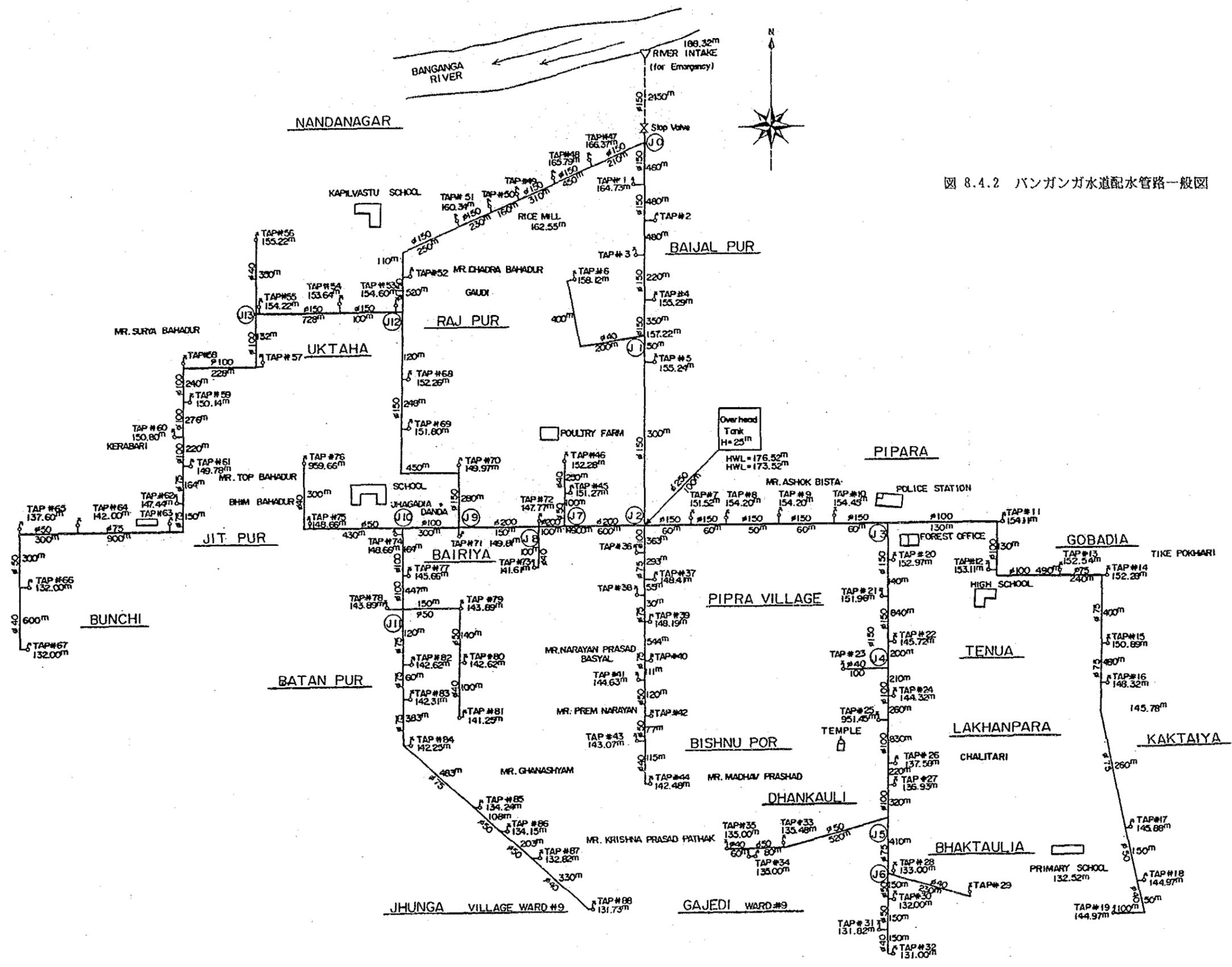


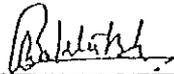
図 8.4.2 バンガンガ水道配水管路一般図

付属資料

SCOPE OF WORK
FOR
THE MASTER PLAN STUDY
ON
THE INTEGRATED RURAL DEVELOPMENT PROJECT
IN
THE LUMBINI ZONE

AGREED UPON BETWEEN
HIS MAJESTY' S GOVERNMENT OF NEPAL
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

Kathmandu June 13, 1988



Mr. B.B. Koirala

Act. Secretary
Ministry of Panchayat and
Local Development HMG/N



Mr. Toshiki SAITO
Leader,
Preliminary Survey Team
JICA

I. INTRODUCTION

In response to the request of His Majesty's Government of Nepal (hereinafter referred to as "HMG/N"), the Government of Japan has decided to implement the Master Plan Study for the Integrated Rural Development Project in the Lumbini Zone (hereinafter referred to as "the Study"), in accordance with the relevant laws and regulations in force in Japan.

Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study, in close cooperation with the authorities of HMG/N.

The present document sets forth the Scope of Work with regard to the Study

II. OBJECTIVE

The objective of the Study is to formulate the Master plan for the Integrated Rural Development Project in the Lumbini Zone.

III. OUTLINE OF THE STUDY

1. Study Area

Study Area covers four (4) districts of Lumbini Zone, that is Gulmi, Arghakhanchi, Kapilvastu and Rupendehi with special focus on less development Marchawar region.

2. Scope of Work

In order to achieve the above objective, the Study which consists of two phases, will cover the following items.



Phase I

Data collection, review of the existing data and field survey for the project formulation are carried out in the study area.

1)-1 To collect and review of the existing data and information and carry out survey and investigation

A. Natural condition

- a). Topography
- b). Meteorology and Hydrology
- c). Geology and Soil
- d). Hydrogeology

B. Social Condition

- a). Population
- b). Land ownership
- c). Land disposal

C. Agriculture

- a). Farm management
- b). Land use
- c). Land holding
- d). Crop production
- e). Agricultural inputs
- f). Storage Facilities

D. Agricultural infrastructure

- a). Irrigation and drainage system
- b). Farm land conservation
- c). Farm road



E. Agro-economy

- a). Marketing system
- b). Farmers' income and productivity
- c). Agricultural credit
- d). Farmers' organization
- e). Extension service
- f). Cottage-industry

F. Social infrastructure

- a). Rural electrification
- b). communication
- c). Drinking water
- d). Social welfare

1)-2 To identify the development potentials and formulate the basic development concept.

b) Phase II

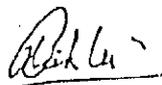
Master plan will be formulated based on the Phase I study

2)-1 To formulate the master plan for integrated rural development Project.

- A. Formulation of the basic plan for the development
- B. Preliminary design of the major structures
- C. Approximate estimation of the development cost

2)-2 A. Identification of the development priority projects in the study area taking into consideration such components as follows;

- a). Development of irrigation system
 - b). Development of rural roads and farm roads
 - c). Promotion of agricultural production
 - d). Development of drinking water
- B. Execution of Pre-Feasibility Study on the development priority projects in the study area.



WORK SCHEDULE

The study will be executed in accordance with the attached tentative work schedule.

(1)

REPORTS

JICA shall prepare and submit following reports in English to the HMG/N.

(1) Inception report

Twenty (20) copies at the commencement of the field work.

(2) Progress report

Twenty (20) copies at the middle of the Phase I study.

(3) Interim report

Twenty (20) copies at the end of the Phase I study.

(4) Progress report (II)

Twenty (20) copies at the end of the field work in the Phase II Study.

(5) Draft final report

Twenty (20) copies

HMG/N is requested to provide its comments on the Draft Final Report within one (1) month after its receiving.

(6) Final report

Fifty (50) copies within two (2) months after receiving the comments on the Drafts Report.



2. UNDERTAKING OF HMG/N

1. To facilitate smooth conduct of the Study, HMG/N shall take necessary measures;
 - (1) to secure the safety of the Japanese study team,
 - (2) to permit the members of the Japanese study team to enter, leave and sojourn in the Kingdom of Nepal for the duration of their assignment therein, and exempt them from alien registration requirements and consular fees,
 - (3) to exempt the members of the Japanese study team from taxes, duties, fees and other charges on equipment, machinery and other materials brought into the Kingdom of Nepal for the conduct of the Study,
 - (4) to exempt the members of the Japanese study team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Japanese study team for their services in connection with the implementation of the Study,
 - (5) to provide necessary facilities to the Japanese Study team for the remittance as well as utilization of the funds introduced into Nepal from Japan in connection of the implementation of the Study
 - (6) to secure permission for entry into private properties or restricted areas for the conduct of the Study as and when necessity arises,
 - (7) to secure permission for the study team to take all data and documents related to the Study including photographs and maps out of the kingdom of Nepal to Japan by the Japanese study team,
 - (8) to provide medical services as needed. Its expense will be chargeable on the members of the Japanese study team.



2. HMG/N shall bear claims, if any arises, against the members of the Japanese study team resulting from, occurring in the course of, or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or wilful misconduct on the part of the members of the Japanese study team.
3. Ministry fo Panchayat and Local Development (hereinafter referred to as "MPLD") shall act as the counterpart agency to the Japanese study team and also as the coordinating body to other relevant organizations for the smooth implementation of the Study.
4. MPLD shall, at its own expense, provide the Japanese study team with the followings:
 - 1) Available data and information related to the Study
 - 2) Counterpart personnel,
 - 3) Suitable office with necessary equipment and furniture in Kathmandu and Project sites,
 - 4) Credentials or identification cards,
 - 5) Permission for use of radio communication (Walkie Talkie).

[Handwritten signature]

UNDERTAKING OF JICA

For the conduct of the Study, JICA shall take the following measures;

1. To dispatch, at its own expenses, the study team
2. To pursue technology transfer to the IMG/N's counterpart personnel in the course of the Study.
3. To provide the equipment and machinery for the conduct of the Study, which will remain the property of JICA unless otherwise agreed upon.

JICA and MPLD will consult with each other in respect to any other matter that is not agreed upon in this document and may arise from or in connection with the Study.

White

Minutes of Meeting
on
the Master Plan Study
on
the Integrated Rural Development Project
in
the Lumbini Zone

Kathmandu June, 13, 1988



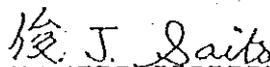
Mr. B. B. Koirala

Acting Secretary

Ministry of Panchayat and

Local Development (MPLD)

HHG/N



Mr. Toshiki SAITO

Leader

Preliminary Survey Team

JICA

Act.

In response to the request of His Majesty's Government of Nepal (hereinafter referred to as "HMG/N") for a Master Plan Study on Integrated Rural Development in Lumbini Zone (hereinafter referred to as the M/P study), the Government of Japan decided to dispatch through Japan International Cooperation Agency (hereinafter referred to as "JICA") responsible for the implementation of technical cooperation programmes of the Government of Japan, the preliminary study team headed by Mr. Toshiki SAITO to Nepal from June 6 to June 14, 1988 so as to discuss and exchange views on the M/P study with concerned authorities of HMG/N.

The following minutes were prepared to confirm the main issues discussed and matters agreed upon by both sides in connection with the conducting M/P study.

1. Characteristics of representative areas

- (1) The Team asked Nepalese side about the characteristics of representative areas.
- (2) The Nepalese side explained that the representative areas were selected as sample areas for the study owing to the large number of Panchayats and also due to the time constraint.
- (3) Both sides agreed that there are no relationship between the representative areas and the location of high priority project(s) to be selected.
- (4) The high priority project(s) will be identified in the study area during the study period.

The basic concept for the priority project(s) will be indicated and discussed at the end of Phase I study.

2. Methodology for the Study

For the formulation of master plan, the field survey will be conducted to cover about 10% of the total Village Panchayats in the study area which will be carefully selected in accordance with a certain criteria as a sample.

3. Characteristics of high priority project(s)

Both sides agreed that the high priority project(s) should have the following characteristics;

- (1) the project(s) should be self-contained i.e. not dependent upon additional project(s).



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(2) the project(s) should have symbolic value and also have a considerable impact i.e. multiplier effect on rural development.

(3) the project will benefit the people in general as much as possible.

4. The target year for the implementation of the Master Plan

Both sides agreed that the target year for the implementation of the proposed fifteen (15) year Master Plan would be in consonance with the periodic National Plan of HMG/N.

5. Basic need oriented projects

Both sides agreed that basic need oriented projects should be emphasized in the Master Plan.

6. The study items

The Nepalese side stated that the following items should also be taken into account in the study;

1) Women's development

2) Development of hill and Terai link road

It was agreed that above mentioned items will be included in the Scope of Work under its study item 1)-1, D. Agricultural infrastructure, E. Agro-economy and F. Social infrastructure.

7. Counterpart personnel

The team requested that required number of counterpart personnel belonging to different sectors be made available to the study team as and when necessary.

8. Coordination meeting

Coordination meeting shall be convened by MPLD for smooth conducting the study with other ministries concerned.

9. Arrangement of vehicles

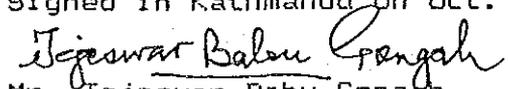
The MPLD explained on the problem of providing vehicles for the use of the study team and requested its arrangement with JICA. The Team recognized the problem and promised to convey the same to the Government of Japan.

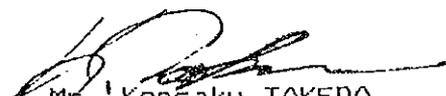
MINUTES OF MEETING
ON
THE INCEPTION REPORT FOR THE MASTER PLAN STUDY
ON
THE INTEGRATED RURAL DEVELOPMENT PROJECT IN
THE LUMBINI ZONE, NEPAL

In accordance with the Scope of Work signed on June 13, 1988 for the Master Plan Study on the Integrated Rural Development Project in the Lumbini Zone, the Japan International Cooperation Agency (JICA) has dispatched a study team headed by Mr. Kensaku TAKEDA to Nepal to conduct the above mentioned study. At the initial stage of the meeting the study team presented the Inception Report and explained the outline and schedule of the study in the presence of the representatives of His Majesty's Government of Nepal. As a result of subsequent discussions, the following main items have been agreed upon by Nepalese party and the study team.

1. Nepalese party received officially 20 copies of the Inception Report from the study team.
2. Nepalese party agreed that the Inception Report was prepared in accordance with terms and conditions stipulated in the scope of work and that, based on this understanding, the study would be carried out according to the outline and schedule mentioned in the Inception Report.
3. If any matter arises in the course of the study that requires clarification and consultation by both parties, it shall be settled by mutual discussion referring the Scope of Work mentioned above.
4. No Specific concentration will be made during study period on rural electrification though there has been a brief mention about it on page 7,9,14, and 18 of the Inception Report.

Signed in Kathmandu on Oct. 4, 1988.


Mr. Tejeswar Babu Gongah
Under Secretary/Counter Part
for Lumbini IRDP, MPLD


Mr. Kensaku TAKEDA
Leader of the JICA
Study Team for the
Lumbini IRDP.


Dr. Dwarika Nath Dhungel
Joint Secretary
Ministry of Panchayat
& Local Development

IN THE PRESENCE OF


Dr. SHOICHIRO NAKAGAWA
Leader of the JICA
Advisory Team for the
LUMBINI IRDP

LIST OF PARTICIPANTS

NO.	NAME	POSITION
1.	DR. Dwarika Nath Dhungel	Joint Secretary MPLD
2.	Mr. Govinda Frasad Ranjitkar	Joint Secretary Ministry of Public Works & Transport.
3.	Mr. Posan Nath Nepal	Acting Superintending Eng. Ministry of Housing and Physical Construction (Drinking Water Dept.)
4.	Ms. Vijaya Pradhan	Under Secretary Ministry of Agriculture
5.	Mr. Shyam Man Singh	Chief Divisional Eng. Department of Irrigation
6.	Mr. Bidhan Ratna Yami	Ministry of Housing and Physical Construction
7.	Mr. Tejeswar Babu Gongah	Under Secretary MPLD

Japanese Team

1.	Mr. Kensaku TAKEDA	Team Leader, JICA Study Team
2.	Mr. Akio MAEDA	Member
3.	Mr. Yoshio KOYAMA	"
4.	Mr. Hisashi ISHIKAWA	"
5.	Dr. Shoichiro NAKAGAWA	Team Leader, JICA Advisory Team.
6.	Mr. Masahiko KAMEDA	Member, JICA Advisory Team
7.	Mr. Takashi MUROMOTO	Second Secretary, Embassy of JAPAN.
8.	Mr. Mitsukuni SUGIMOTO	Assistant Resident Representative, JICA.

MINUTES OF MEETING
ON
THE DRAFT INTERIM REPORT FOR THE MASTER PLAN STUDY
ON
THE INTEGRATED RURAL DEVELOPMENT PROJECT IN
THE LUMBINI ZONE, NEPAL

Chairperson: Dr. Dwarika Nath Dhungel, Joint Secretary MPLD

Date : February 23, 1989

Place : Meeting Room Hotel Himalaya, Kathmandu.

Participant: See Attachment

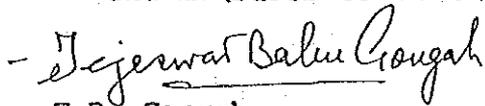
The JICA study team submitted 10 copies of the draft Interim Report on February 21, 1989 at Kathmandu.

The meeting on the report was held between the officials of HMG/Nepal concerned and JICA study team.

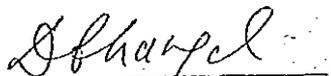
After explanation on the report by the study team, a series of discussions were held.

As a result of discussion, the following main items have been agreed upon by HMG/Nepal and the JICA study team.

1. Nepalese side agreed, in general, with the results of the study presented in the report including the basic concept for Project development and Priority Project.
2. Nepalese side also agreed with the programme for future study works presented in the report.
3. Nepalese side also gave a clear picture of how the service centers in the 9 Ilakas of the district should be strengthened and measures to be taken in this regard.



T.B. Gongah
Under Secretary
MPLD, HMG/Nepal



Dr. D.N. DHUNGEL
Joint Secretary
MPLD, HMG/Nepal
(Witness)



Kensaku TAKEDA
Leader of the JICA
Study Team for the Lumbini IRDP



Masasada ITO
Representative
JICA Advisory
Committee for Lumbini IRDP
(Witness)

LIST OF PARTICIPANTS

SUBJECT : Discussion on Draft Interim report (Lumbini IRDP)
DATE AND TIME : February 23, 1989
PLACE : Himalaya Hotel, Kathmandu

<u>NO.</u>	<u>NAME</u>	<u>POSITION</u>
1.	Mr. D.B. Thapa	Secretary MPLD
2.	Dr. D.N. Dhungel	Joint Secretary MPLD
3.	Mr. Govinda P. Ranjitkar	Joint Secretary (Ministry of Works & Transport)
4.	Mr. Vishwa Bandha MULEPATI	Under Secretary (National Planning Commission)
5.	Ms. Bejoy K. Pradhan	Economist MOA
6.	Mr. Mohan Dhoj Karki	Dept. of Irrigation DG
7.	Mr. Ratnakar Dutta	Dept. of Water Supply & Sewerage Director General Dy. D.G.
8.	Mr. Ananta Rijal	S.O. Women Dev. Sec MPLD
9.	Mr. Komal Pd. Timilsena	Project Chief (Feasibility Study Project DOI)
10.	Mr. Subhakar Baidya	Section Officer, Coordination Section, MPLD
11.	Mr. Tulashi Neopane	Under Secretary (Mini. of Finance)
12.	Mr. Masasada ITO	Members of Advisory Committee
13.	Mr. Masatoshi NAGATOMO	Members of Advisory Committee
14.	Mr. Mitsukuni SUGIMOTO	Asst. Res. Representative (JICA NEPAL OFFICE)
15.	Mr. Kensuku TAKEDA	Leader of Study Team
16.	Mr. Akio MAEDA	Member of Study Team
17.	Mr. Hisashi ISHIKAWA	Member of Study Team
18.	Mr. Makoto Yasuda	Member of Study Team

MINUTES OF MEETING
ON
THE PROGRESS REPORT (No.1) FOR THE MASTER PLAN STUDY
ON
THE INTEGRATED RURAL DEVELOPMENT PROJECT IN
THE LUMBINI ZONE, NEPAL

Chairperson: Dr. Dwarika Nath Dhungel, Joint Secretary, MPLD

Date : January 02, 1989

Place : Meeting Room, Hotel Narayani, Kathmandu

Participant: (See ATTACHMENT I)

The JICA study team submitted 20 copies of the Progress Report (No.1) on December 30, 1988, at Kathmandu in accordance with the Scope of Work on the study agreed upon between His Majesty's Government of Nepal and JICA on June 13, 1988.

The meeting on the report was held between the officials of HMG/Nepal concerned, JICA study team and representative from JICA.

After explanation on the report by the study team, a series of discussion was held.

As a result of discussion, the following main items have been agreed upon by HMG/Nepal and the study team.

1. Nepalese party received officially 20 copies of the Progress Report (No.1) from the study team.
2. Nepalese party agreed, in general, with the results of the study presented in the report including the programme for the future study works with some comments (See ATTACHMENT II).
3. HMG/Nepal will, if any, present comments on the Report (No.1) to the study team through Mr. T. B. Gongah, Under Secretary of MPLD.

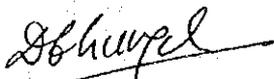
Signed in Kathmandu on January 02, 1989.



T. B. GONGAH
Under Secretary
MPLD, HMG/Nepal



Kensaku TAKEDA
Leader of the JICA
Study Team for the
Lumbini IRDP



Dr. D. N. DHUNGEL
Joint Secretary
MPLD, HMG/Nepal
(Witness)

ATTACHMENT I

LIST OF PARTICIPANTS

Subject : Progress report (No.1), Lumbini Irb Project
 Date & Time: January 02, 1989, 9:30 a.m.
 Place : Hotel Narayani

<u>Name</u>	<u>Position</u>	
<u>HEG/Nepal</u>		
Dwarika M. Dhungel	Joint Secretary,	EPID
Tejeswar B. Gongah	Under Secretary,	EPID
Chandni Joshi	Under Secretary,	EPID
D. D. Pradhananga	Senior Div. Engineer,	DOR
Shree K. Joshi	Asst. Economist,	DOA
Bijoy Pradhan	Economist,	MOA
Ratnakar Dutta	Dy. Director General,	DWSS
Indra B. Mali	Asst. Secretary,	MHPF
Subhakar Baidya	Section Officer,	EPID
Komal P. Timilsena	Project Chief, Feasibility Study Project	DOL
Kirti Chand Thakur	Chief Planning Coordinator,	MOWR
Govinda P. Ranjitkar	Joint Secretary,	MOWT
<u>JICA Study Team</u>		
K. Takeda	Team Leader	
A. Maeda	Rural Development Planner	
Y. Mase	Irrigation Engineer	
H. Ishikawa	Agronomist/Agro-Economist	
K. Hoshii	rural Infrastructure Engineer	
M. Yasuda	Hydrogeologist	
N. Morioka	Marketing/Processing Engineer	
<u>JICA/Nepal Office</u>		
M. Sugimoto	Assistant Resident Representative	

ATTACHMENT II

COMMENTS

1. Mention the role of women in the development of IRD Project.
2. Mention the role of women in the area of rural development works because 50% of total population are women.
3. Role of rural electrification should be dealt in connection with irrigation and as a base for cottage industry.
4. Naumure Irrigation Project lying between Arghakhanchi and Pyuthan districts should be erased as nothing has been done on it.
5. No blue print approach is planable for road projects.
6. Peoples' participation should be involved in IRDPs to meet their aspirations and expectations.
7. FINIDA assisted Drinking Water Projects are under preparation. Lumbini IRDP should take up other projects to avoid overlapping.
8. On the basis of experiences learned so far, HMG/N is trying to take different policy measures to improve the management of IRDP.
9. At the district level the elected institution (District Panchayat & Assembly) would coordinate Project activities as per the decentralization act of 1982.
10. The LDO as the secretary to the district Panchayat and other district level line agencies will be responsible for project activities at district where as the regional offices would provide support to the districts in managing project activities. However, the MPLD in its capacity as the lead agency for IRDP would look after the project from the center and coordinate project activities through existing IRD board.
11. Points for Clarification:
 - a. Only important components such as irrigation, rural road, agricultural products and drinking water supply are included in it to utilize available resources to maximum extent with rational manner. Also the programs for specific target group such as women and small farmers should also be emphasized in the project.
 - b. Further encroachment of forest should not be an angle for designing projects.
 - c. General statements should be avoided in the interim report which should be written more concretely and specifically.

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MINUTES OF MEETING
ON
THE DRAFT INTERIM REPORT FOR THE MASTER PLAN STUDY
ON
THE INTEGRATED RURAL DEVELOPMENT PROJECT IN
THE LUMBINI ZONE, NEPAL

Chairperson: Dr. Dwarika Nath Dhungel, Joint Secretary MPLD

Date : February 23, 1989

Place : Meeting Room Hotel Himalaya, Kathmandu.

Participant: See Attachment

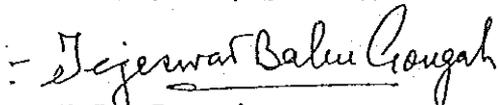
The JICA study team submitted 10 copies of the draft Interim Report on February 21, 1989 at Kathmandu.

The meeting on the report was held between the officials of HMG/Nepal concerned and JICA study team.

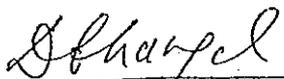
After explanation on the report by the study team, a series of discussions were held.

As a result of discussion, the following main items have been agreed upon by HMG/Nepal and the JICA study team.

1. Nepalese side agreed, in general, with the results of the study presented in the report including the basic concept for Project development and Priority Project.
2. Nepalese side also agreed with the programme for future study works presented in the report.
3. Nepalese side also gave a clear picture of how the service centers in the 9 Ilakas of the district should be strengthened and measures to be taken in this regard.



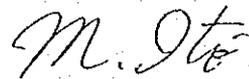
T.B. Gongah
Under Secretary
MPLD, HMG/Nepal



Dr. D.N. DHUNGEL
Joint Secretary
MPLD, HMG/Nepal
(Witness)



Kensaku TAKEDA
Leader of the JICA
Study Team for the Lumbini IRDP



Masasada ITO
Representative
JICA Advisory
Committee for Lumbini IRDP
(Witness)

LIST OF PARTICIPANTS

SUBJECT : Discussion on Draft Interim report (Lumbini IRDP)
DATE AND TIME : February 23, 1989
PLACE : Himalaya Hotel, Kathmandu

<u>NO.</u>	<u>NAME</u>	<u>POSITION</u>
1.	Mr. D.B. Thapa	Secretary MPLD
2.	Dr. D.N. Dhungel	Joint Secretary MPLD
3.	Mr. Govinda P. Ranjitkar	Joint Secretary (Ministry of Works & Transport)
4.	Mr. Vishwa Bandha MULEPATI	Under Secretary (National Planning Commission)
5.	Ms. Bejoy K. Pradhan	Economist MOA
6.	Mr. Mohan Dhoj Karki	Dept. of Irrigation DG
7.	Mr. Ratnakar Dutta	Dept. of Water Supply & Sewerage Director General Dy. D.G.
8.	Mr. Ananta Rijal	S.O. Women Dev. Sec MPLD
9.	Mr. Komal Pd. Timilsena	Project Cheif (Feasibility Study Project DOI)
10.	Mr. Subhakar Baidya	Section Officer, Coordination Section, MPLD
11.	Mr. Tulashi Neopane	Under Secretary (Mini. of Finance)
12.	Mr. Masasada ITO	Members of Advisory Committee
13.	Mr. Masatoshi NAGATOMO	Members of Advisory Committee
14.	Mr. Mitsukuni SUGIMOTO	Asst. Res. Representative (JICA NEPAL OFFICE)
15.	Mr. Kensuku TAKEDA	Leader of Study Team
16.	Mr. Akio MAEDA	Member of Study Team
17.	Mr. Hisashi ISHIKAWA	Member of Study Team
18.	Mr. Makoto Yasuda	Member of Study Team

MINUTES OF MEETING
ON
THE PROGRESS REPORT (II) FOR
THE MASTER PLAN STUDY ON THE INTEGRATED RURAL
DEVELOPMENT PROJECT IN THE LUMBINI ZONE, NEPAL

Place : Meeting room, Blue Star Hotel, Kathmandu
Day : September 27, 1989.
Participant : See attached paper

The JICA study team submitted 20 copies of the progress report (II) for consideration by MPLD and other concerned line agencies in accordance with the scope of work on the study agreed upon between HMG/N and JICA on June 13, 1988.

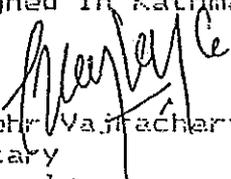
The meeting on the report was held on above mentioned date between the officials of HMG/N concerned and JICA study team.

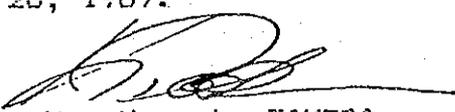
After explanation of the report by the study team, a detailed discussion was held.

As a result of discussion, the following main items have been confirmed by HMG/N and JICA study team.

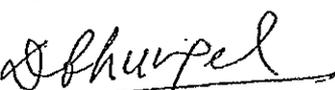
1. In general, Nepalese side agreed with the results of the field work presented in the report including the basic concept for project development and identification of the priority projects.
2. It was suggested by the participant from the MOA that the agriculture development activities including livestock programme should not only be confined to Marchwar region but should cover the whole of Rupandehi district. If this was not possible as per the scope of work, it was requested that for agriculture development activities, the said region should be deleted.
3. Nepalese side also agreed with the program for the succeeding study works showing the report to be conducted in Japan on the basis of responses and suggestions received during the meeting.

Signed in Kathmandu on September 28, 1989.


Mr. Chakramohr Vajracharya
Under Secretary
MPLD, HMG/Nepal

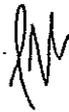

Mr. Kensaku TAKEDA
Leader of the JICA
Study Team for

The Lumbini IRDP


Dr. Ewariks Nath Dhungel
Joint Secretary
MPLD, HMG/Nepal
(Witness)

LIST OF PARTICIPANTS

<u>Name</u>	<u>Position</u>
1. Dr. Dwarika Nath Dhungel	Joint Secretary, MPLD
2. Mr. Govinda Prasad Ranjiker	Joint Secretary, MOWT
3. Ms. Bijaya K. Pradhan	Economist
4. Mr. V.P. Sharma	Dy. Director General, DCA
5. Mr. Bhaba Nand Thakur	Dy. Director General, DLS
6. Mr. Prabesh M. S. Pradhan	Chief Planning Div. DLS
7. Mr. S.C. Adhikary	Engineer, WSSC
8. Mr. Chakramehr Vajracharya	Under Secretary, MPLD
9. Mr. Surya Kanta Paudel	Section Officer, MPLD
10. Mr. Komal Pd. Timilsina	D.E., DOI
11. Mr. Ananta Rijal	Act. Chief, WDS/MPLD
12. Mr. B. K. Sharma	Asst. Agro-marketing Economist, DFAMS
13. Mr. K. Takeda	Team Leader, JICA Study Team
14. Mr. A. Maeda	Development Planner, ,, ,,
15. Mr. Y. Koyama	Project Evaluation, ,, ,,
16. Mr. H. Ishikawa	Agronomist/Agro-economist ,,
17. Mr. H. Yamazaki	Water Supply, ,,
18. Mr. M. Kodama	Irrigation, ,,
19. Mr. N. Morioka	Marketing/Processing ,,




Date: Sept. 27, 1989.
Lumbini IRDP.

JICA