

附表

表 2-1 ネパール及びカトマンズ盆地の人口及び人口増加率

Location *1	Area (sq. km)			Population and Density					Annual Average Growth Rate *2						
	1952/54	1961	1971	1981	1991	2001	1952/54-1961	1961-1971	1971-1981	1981-1991	2001	1952/54-1961	1961-1971	1971-1981	1981-1991
Nepal	147,181	8,256,625	9,412,996	11,555,983	15,022,839	18,491,097	22,760,000	1.65%	2.07%	2.66%	2.10%	1.65%	2.07%	2.66%	2.10%
Density per sq.km	56	64	79	102	126	155									
Urban	235,892	336,222	461,938	956,721	1,758,931			4.53%	3.23%	7.55%	6.28%	4.53%	3.23%	7.55%	6.28%
Rural	8,020,733	9,076,774	11,094,045	14,066,118	16,732,166			1.56%	2.03%	2.40%	1.75%	1.56%	2.03%	2.40%	1.75%
Kathmandu Valley	899	410,995	459,989	619,911	766,345	1,105,379		1.42%	3.03%	2.14%	3.73%	1.42%	3.03%	2.14%	3.73%
Density per sq.km	457	512	690	852	1,230										
Urban	178,699	202,608	249,563	363,507	598,528			1.58%	2.11%	3.83%	5.11%	1.58%	2.11%	3.83%	5.11%
Rural	232,296	257,381	370,348	402,838	506,851			1.29%	3.71%	0.84%	2.32%	1.29%	3.71%	0.84%	2.32%
Bhaktapur District	119	83,460	89,822	110,157	159,767	172,952		0.92%	2.06%	3.79%	0.80%	0.92%	2.06%	3.79%	0.80%
Density per sq.km	701	755	926	1,343	1,453										
Urban	32,118	33,877	40,112	48,472	61,405			0.67%	1.70%	1.91%	2.39%	0.67%	1.70%	1.91%	2.39%
Rural	51,342	55,945	70,045	111,295	111,547			1.08%	2.27%	4.74%	0.02%	1.08%	2.27%	4.74%	0.02%
Kathmandu District	395	193,782	224,866	353,756	422,237	675,341		1.88%	4.64%	1.79%	4.81%	1.88%	4.64%	1.79%	4.81%
Density per sq.km	491	569	896	1,069	1,710										
Urban	105,247	121,018	150,402	235,160	421,258			1.76%	2.20%	4.57%	6.00%	1.76%	2.20%	4.57%	6.00%
Rural	88,535	103,848	203,354	187,077	254,083			2.01%	6.95%	-0.83%	3.11%	2.01%	6.95%	-0.83%	3.11%
Lalitpur District	385	133,753	145,301	155,998	184,341	257,086		1.04%	0.71%	1.68%	3.38%	1.04%	0.71%	1.68%	3.38%
Density per sq.km	347	377	405	479	668										
Urban	41,334	47,713	59,049	79,875	115,865			1.81%	2.15%	3.07%	3.79%	1.81%	2.15%	3.07%	3.79%
Rural	92,419	97,588	96,949	104,466	141,221			0.68%	-0.07%	0.75%	3.06%	0.68%	-0.07%	0.75%	3.06%

Source : Population Monograph of Nepal, 1987 and Statistical Year Book of Nepal, 1993, Central Bureau of Statistics.

Note *1 : Urban area is defined as community with 5,000 population or more until 1981 and population in Municipalities in 1991.

* 2 : Exponential model.

表 2-2 国内総生産 (GDP) (1/2)

Industrial Origination	Unit : NRs. million									
	1974/75	1975/76	1976/77	1977/78 (Share)	1978/79	1979/80	1980/81	1981/82	1982/83 (Share)	1983/84
1 Agriculture, Fisheries & Forestry	11,435	11,495	10,389	11,616 (63.0%)	13,365	13,520	15,510	17,715	19,082 (60.3%)	22,570
2 Mining & Quarrying	22	23	26	26 (0.1%)	34	42	58	66	85 (0.3%)	111
3 Manufacturing	664	690	736	794 (4.3%)	848	936	1,029	1,243	1,460 (4.6%)	1,816
4 Electricity, Gas & Water	34	38	39	42 (0.2%)	48	60	67	82	127 (0.4%)	158
5 Construction	583	718	1,020	1,338 (7.3%)	1,559	1,570	1,974	2,342	2,377 (7.5%)	2,576
6 Trade, Restaurants & Hotels	540	603	636	707 (3.8%)	724	889	953	1,068	1,199 (3.8%)	1,520
7 Transport, Communication & Storage:	690	805	852	1,093 (5.9%)	1,248	1,541	1,889	1,992	2,129 (6.7%)	2,468
8 Financial & Real Estate	1,095	1,171	1,412	1,534 (8.3%)	1,613	1,833	2,077	2,366	2,594 (8.2%)	2,937
9 Community & Social Services	873	1,046	1,145	1,277 (6.9%)	1,340	1,495	1,889	2,163	2,591 (8.2%)	2,848
GDP at Factor Cost	15,936	16,589	16,255	18,427 (100%)	20,779	21,886	25,446	29,037	31,644 (100%)	37,004
Indirect Taxes less Subsidy	635	805	1,025	1,306	1,436	1,466	1,841	1,951	2,117	2,386
Agriculture	115	116	117	136	157	163	169	188	200	201
Non-agriculture	520	689	908	1,170	1,279	1,303	1,672	1,763	1,917	2,185
GDP at Market Price	16,571	17,394	17,280	19,733	22,215	23,352	27,287	30,988	33,761	39,390
Nominal GDP	16,571	17,394	17,280	19,732 (100%)	22,215	23,352	27,287	30,988	33,761 (100%)	39,390
Average Annual Growth Rate for Five Years	(5.99%) = three years' average									
Agriculture	11,550	11,611	10,506	11,752 (59.6%)	13,522	13,683	15,679	17,903	19,282 (57.1%)	22,771
Non-agriculture	5,021	5,783	6,774	7,980 (40.4%)	8,693	9,669	11,608	13,085	14,479 (42.9%)	16,619
Real GDP (1974/75 Price)	16,571	17,300	17,822	18,607 (100%)	19,048	18,607	20,143	20,920	20,297 (100%)	22,262
Average Annual Growth Rate for Five Years	(3.94%) = three years' average									
Agriculture	11,550	11,615	11,141	11,141 (59.9%)	11,480	10,933	12,066	12,616	12,478 (61.5%)	13,668
Non-agriculture	5,021	5,685	6,681	7,466 (40.1%)	7,568	7,674	8,077	8,304	7,819 (38.5%)	8,594
GDP Deflator	100.00	100.54	96.96	106.05	116.63	125.50	135.47	148.13	166.33	176.94
Agriculture	100.00	99.97	94.30	105.48	117.79	125.15	129.94	141.91	154.53	166.60
Non-Agriculture	100.00	101.72	101.39	106.88	114.87	126.00	143.72	157.57	185.18	193.38
GDP per Capita										
Population (1,000) *4	12,502	12,835	13,176	13,526	13,886	14,255	14,634	15,023	15,338	15,660
at Current Prices	1,325	1,355	1,311	1,459	1,600	1,638	1,865	2,063	2,201	2,515
at 1974/75 Prices	1,325	1,348	1,353	1,376	1,372	1,305	1,376	1,393	1,323	1,422

Sources : Statistical Year Book of Nepal, 1993, Central Bureau of Statistics.

Note *1 : Revised Estimate *2 : Revised Preliminary Estimate *3 : Preliminary Estimate

*4 : Population in other year than shown in Table 2-1 was estimated based on the average growth rate.

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表 2-2 国内総生産 (GDP) (2/2)

Industrial Origin	Unit : NRs. million									
	1984/85	1985/86	1986/87	1987/88 (Share)	1988/89	1989/90	1990/91	1991/92	1992/93 (Share)	
1 Agriculture, Fisheries & Forestry	23,927	26,555	30,448	35,477 (55.7%)	40,889	47,251	52,047	61,486	66,520 (49.3%)	
2 Mining & Quarrying	140	120	100	93 (0.1%)	101	116	131	162	232 (0.2%)	
3 Manufacturing	1,998	2,622	3,065	3,761 (5.9%)	3,799	4,775	6,333	9,330	11,300 (8.4%)	
4 Electricity, Gas & Water	196	342	415	467 (0.7%)	513	537	652	994	1,457 (1.1%)	
5 Construction	3,583	3,989	5,040	5,396 (8.5%)	6,074	7,042	8,155	10,193	11,824 (8.8%)	
6 Trade, Restaurants & Hotels	1,837	2,207	2,905	3,365 (5.3%)	3,911	4,512	5,901	7,536	8,721 (6.5%)	
7 Transport, Communication & Storage:	2,764	3,123	3,594	3,686 (5.8%)	3,572	4,751	5,894	7,652	9,921 (7.4%)	
8 Financial & Real Estate	3,420	3,942	4,715	5,599 (8.8%)	6,727	8,394	9,517	11,372	13,571 (10.1%)	
9 Community & Social Services	3,691	4,164	5,076	5,871 (9.2%)	6,717	7,385	8,314	9,196	11,277 (8.4%)	
GDP at Factor Cost	41,556	47,064	55,358	63,715 (100%)	72,303	84,763	96,944	117,921	134,823 (100%)	
Indirect Taxes less Subsidy	2,861	3,364	3,888	5,258	5,437	6,245	7,004	8,265	10,136	
Agriculture	244	264	311	348	190	190	200	210	220	
Non-agriculture	2,617	3,100	3,577	4,910	5,247	6,055	6,804	8,055	9,916	
GDP at Market Price	44,417	50,428	59,246	68,973	77,740	91,008	103,948	126,186	144,959	
Nominal GDP	44,417	50,428	59,246	68,973 (100%)	77,740	91,008	103,948	126,186	144,959 (100%)	
Average Annual Growth Rate for Five Years				(15.36%)						
Agriculture	24,171	26,819	30,759	35,825 (51.9%)	41,079	47,441	52,247	61,696	66,740 (46.0%)	
Non-agriculture	20,246	23,609	28,487	33,148 (48.1%)	36,661	43,567	51,701	64,490	78,219 (54.0%)	
Real GDP (1974/75 Price)	23,630	24,645	25,617	27,515 (100%)	28,748	31,034	32,448	33,115	34,075 (100%)	
Average Annual Growth Rate for Five Years				(6.27%)					(4.37%)	
Agriculture	13,990	14,705	14,789	15,993 (58.1%)	17,234	18,513	19,026	18,805	18,579 (54.5%)	
Non-agriculture	9,640	9,940	10,828	11,522 (41.9%)	11,514	12,521	13,422	14,310	15,496 (45.5%)	
GDP Deflator	187.97	204.62	231.28	250.67	270.42	293.25	320.35	381.05	425.41	
Agriculture	172.77	182.38	207.99	224.00	238.36	256.26	274.61	328.08	359.22	
Non-Agriculture	210.02	237.52	263.09	287.69	318.40	347.95	385.20	450.66	504.77	
GDP per Capita										
Population (1,000) *4	15,989	16,324	16,667	17,017	17,374	17,739	18,111	18,491	18,879	
at Current Prices	2,778	3,089	3,555	4,053	4,475	5,130	5,740	6,824	7,678	
at 1974/75 Prices	1,478	1,510	1,537	1,617	1,655	1,750	1,792	1,791	1,805	

Sources : Statistical Year Book of Nepal, 1993, Central Bureau of Statistics.

Note *1 : Revised Estimate *2 : Revised Preliminary Estimate *3 : Preliminary Estimate

*4 : Population in other year than shown in Table 2-1 was estimated based on the average growth rate.

表 2-3 主要部門別經濟的活動人口

	3 Districts in Kathmandu Valley				Valley Total (Share)
	Nepal (Share)	Kathmandu	Lalitpur	Bhaktapur	
In 1981					
Agriculture	6,244,289 (91.1%)	132,154	61,163	56,354	249,671 (75.5%)
Industry	39,035 (0.6%)	4,386	1,897	1,539	7,822 (2.4%)
Commerce & Services	109,446 (1.6%)	11,910	3,253	3,809	18,972 (5.7%)
Others	458,116 (6.7%)	35,615	11,110	7,523	54,248 (16.4%)
Total	6,850,886 (100%)	184,065	77,423	69,225	330,713 (100%)
					(43.2%)
Total population	15,022,839 (100%)	422,237	184,341	159,767	766,345 (100%)
In 1991					
Agriculture	5,952,047 (81.1%)	60,323	42,544	44,967	147,834 (36.6%)
Industry	310,414 (4.2%)	50,537	21,022	8,320	79,879 (19.8%)
Commerce & Services	672,235 (9.2%)	64,973	16,499	8,277	89,749 (22.2%)
Others	404,890 (5.5%)	61,067	16,904	8,202	86,173 (21.3%)
Total	7,339,586 (100%)	236,900	96,969	69,766	403,635 (100%)
					(39.7%)
Total population	18,491,097 (100%)	675,341	257,086	172,952	1,105,379 (100%)

Source : Statistical Year Book of Nepal, 1991 & 1993, Central Bureau of Statistics.

表 2-4 对外貿易及び国際収支 (1/2)

	Unit : NRs. million												
	1974/75	(Share)	1975/76	(Share)	1976/77	(Share)	1977/78	1978/79	1979/80	1980/81	1981/82	(Share)	1982/83
1 Export (f.o.b.)	889.6	*	1,185.8	*	1,164.7	*	1,046.2	*	1,296.8	*	1,608.7	1,491.5	1,132.0
Agricultural Product	520.3	(58.5%)	809.8	(67.1%)	617.1	(53.0%)	518.9	(44.9%)	329.5	(25.8%)	641.9	798.3	383.2
Non-Agricultural Product	369.3	(41.5%)	376.0	(32.3%)	547.6	(47.0%)	527.3	(45.1%)	967.3	(74.2%)	966.8	693.2	748.8
Trade with India	746.7	(83.9%)	893.7	(75.6%)	779.6	(66.9%)	498.1	(41.5%)	650.1	(50.1%)	992.4	994.4	843.3
Other countries	142.9	(16.1%)	292.1	(24.4%)	385.1	(33.1%)	548.1	(46.6%)	646.7	(50.0%)	616.3	497.1	288.7
2 Import (c.i.f.)	1,814.6		1,981.7		2,008.0		2,469.6		2,884.7		4,428.2	4,930.3	6,314.0
Agricultural Product	269.0	(14.8%)	340.9	(17.2%)	277.8	(13.8%)	398.1	(20.1%)	350.1	(12.1%)	718.5	719.1	1,053.5
Non-Agricultural Product	1,545.6	(85.2%)	1,640.8	(82.8%)	1,730.2	(86.2%)	2,071.5	(90.0%)	2,534.6	(87.9%)	3,709.7	4,211.2	5,260.5
Trade with India	1,475.7	(81.3%)	1,227.1	(61.9%)	1,343.5	(66.9%)	1,534.1	(74.3%)	1,581.7	(58.1%)	2,179.2	2,280.9	2,499.6
Other countries	338.9	(18.7%)	754.6	(38.1%)	664.5	(33.1%)	935.5	(47.7%)	1,303.0	(50.0%)	2,249.0	2,649.4	3,814.4
3 Trade Balance	-925.0		-795.9		-843.3		-1,423.4		-1,587.9		-2,819.5	-3,438.8	-5,182.0
Agricultural Product	251.3	(29.2%)	468.9	(58.3%)	339.3	(28.2%)	120.8	(10.0%)	-20.6	(-1.7%)	-76.6	79.2	-670.3
Non-Agricultural Product	-1,176.3	(70.8%)	-1,264.8	(77.5%)	-1,182.6	(71.8%)	-1,544.2	(80.0%)	-1,567.3	(-80.0%)	-2,742.9	-3,518.0	-4,511.7
Trade with India	-729.0	(82.2%)	-333.4	(41.3%)	-563.9	(66.9%)	-1,036.0	(69.9%)	-931.6	(-58.8%)	-1,186.8	-1,286.5	-1,656.3
Other countries	-196.0	(17.8%)	-462.5	(58.7%)	-279.4	(33.1%)	-387.4	(40.1%)	-656.3	(-41.2%)	-1,632.7	-2,152.3	-3,525.7
A Trade Balance *1	-925.0		-812.9		-856.4		-1,450.6		-1,608.8		-2,830.2	-3,452.0	-5,197.0
i. Export f.o.b. *1	889.6		1,208.7		1,189.0		1,065.2		1,303.6		1,612.7	1,496.0	1,135.8
ii. Import c.i.f. *1	1,814.6		2,021.6		2,045.4		2,515.8		2,912.4		4,442.9	4,948.0	6,332.8
B Service Account	280.8		284.3		493.2		571.6		778.6		873.2	1,117.0	1,634.9
C Unrequited Transfers	523.9		588.6		617.9		587.5		869.5		1,188.2	1,417.3	1,890.7
D Current Account Balance	-120.3		60.0		254.7		-291.5		39.3		-295.9	-392.0	-1,671.4
E Official Capital Net	86.7		145.8		214.8		291.9		428.6		577.3	633.0	927.7
F Miscellaneous Capital Items, Net	388.8		152.4		-158.7		10.4		115.5		-209.3	-143.8	72.0
G Change in Reserves Net	355.2		358.2		310.8		10.8		583.4		193.3	501.8	-671.7

Sources : Statistical Year Book of Nepal, 1991 & 1993, Central Bureau of Statistics.

* : Economic Survey Fiscal Year 1992-93, Ministry of Finance.

Note *1 : Revised on customs date basis at basic exchange rate, according to footnote on Statistical Year Book.

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表 2-4 对外貿易及国际收支 (2/2)

Unit : NRs. million

	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	Share	Growth Rate %2
1 Export (f.o.b.)	1,703.9	2,740.6	3,078.0	2,991.4	4,114.6	4,195.3	5,156.2	7,387.5	13,939.4	(Share)	(36.0%)
Agricultural Product	657.0	1,054.1	897.1	824.3	985.9	684.5	640.2	1,199.6	2,220.7	(27.6%)	(21.9%)
Non-Agricultural Product	1,046.9	1,686.5	2,180.9	2,167.1	3,128.7	3,510.8	4,516.0	6,187.9	11,718.7	(72.4%)	(40.2%)
Trade with India	1,160.7	1,601.7	1,241.1	1,302.5	1,567.8	1,034.9	602.5	1,552.2	1,568.9	(43.5%)	(3.8%)
Other countries	543.2	1,138.9	1,836.9	1,688.9	2,546.8	3,160.4	4,553.7	5,835.3	12,370.5	(56.5%)	(48.9%)
2 Import (c.i.f.)	6,514.3	7,742.1	9,341.2	10,905.4	13,869.6	16,263.7	18,324.9	23,226.5	32,951.3	(12.4%)	(24.8%)
Agricultural Product	878.7	985.0	1,185.9	1,348.7	2,048.5	1,872.4	2,310.6	2,819.2	4,623.6	(87.6%)	(27.9%)
Non-Agricultural Product	5,635.6	6,757.1	8,155.3	9,556.7	11,821.1	14,391.3	16,014.3	20,407.3	28,327.7	(39.1%)	(24.3%)
Trade with India	3,058.0	3,895.8	3,970.9	4,262.1	4,595.8	4,238.7	4,674.5	7,323.1	11,815.9	(60.9%)	(22.6%)
Other countries	3,456.3	3,846.3	5,370.3	6,643.3	9,273.8	12,025.0	13,650.4	15,903.4	21,135.4	(39.1%)	(26.0%)
3 Trade Balance	-4,810.4	-5,001.5	-6,263.2	-7,914.0	-9,755.0	-12,068.4	-13,168.7	-15,839.0	-19,011.9	(15.6%)	(19.2%)
Agricultural Product	-221.7	69.1	-288.8	-524.5	-1,062.6	-1,187.8	-1,670.4	-1,619.6	-2,402.9	(84.4%)	(35.6%)
Non-Agricultural Product	-4,588.7	-5,070.6	-5,974.4	-7,389.5	-8,692.4	-10,880.6	-11,498.3	-14,219.4	-16,609.0	(84.4%)	(17.6%)
Trade with India	-1,897.3	-2,294.1	-2,729.8	-2,959.6	-3,028.0	-3,203.8	-4,072.0	-5,770.9	-10,247.0	(40.0%)	(28.2%)
Other countries	-2,913.1	-2,707.4	-3,533.4	-4,954.4	-6,727.0	-8,864.6	-9,096.7	-10,068.1	-8,764.9	(60.0%)	(12.1%)
A Trade Balance *1	-4,823.6	-5,022.2	-6,286.3	-7,924.1	-9,765.5	-12,085.7	-13,186.6	-15,852.4	-19,039.8		(19.2%)
i. Export f.o.b. *1	1,709.9	2,746.4	3,085.6	3,003.0	4,127.3	4,211.1	5,169.9	7,403.3	13,958.5		(36.0%)
ii. Import c.i.f. *1	6,533.5	7,768.6	9,371.9	10,927.1	13,892.8	16,296.8	18,356.5	23,255.7	32,998.3		(24.7%)
B Service Account	1,406.8	1,079.5	1,574.5	2,327.4	2,211.7	2,989.5	2,752.9	2,691.5	3,893.1		(10.8%)
C Unrequited Transfers	2,073.4	2,093.7	2,240.9	2,692.3	2,931.0	2,761.4	2,790.1	3,661.2	4,294.3		(9.8%)
D Current Account Balance	-1,343.4	-1,849.0	-2,470.9	-2,904.4	-4,622.8	-6,334.8	-7,643.6	-9,499.7	-10,852.4		(30.2%)
E Official Capital Net	1,203.5	1,270.2	1,811.5	1,888.3	4,368.0	6,045.1	5,888.8	6,300.0	7,326.0		(31.1%)
F Miscellaneous Capital Items, Net	13.9	-287.2	1,220.4	1,644.6	2,527.8	365.6	4,404.4	7,331.9	7,859.6		(36.7%)
G Change in Reserves Net	-126.0	-866.0	561.0	628.5	2,273.0	75.9	2,649.6	4,132.2	4,333.2		(47.1%)

Sources : Statistical Year Book of Nepal, 1991 & 1993, Central Bureau of Statistics.

* : Economic Survey Fiscal Year 1992-93, Ministry of Finance.

Note *1 : Revised on customs date basis at basic exchange rate, according to footnote on Statistical Year Book.

*2 : An average annual growth rate during past five years (Exponential model).

表 2 - 5 食糧の貿易均衡 (1975/76 - 1991/92)

		Unit : ton									
Item		1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	
1 Rice	Export	157,716	129,216	62,915	67,598	12,216	45,453	61,714	2,698	18,916	
	Import	1,493	1,091	4,698	7,095	37,526	55,156	8,813	34,478	13,266	
	Food Aid	0	0	0	0	0	8,115	0	38,438	7,444	
	Balance	156,223	128,125	58,217	60,503	-25,310	-17,818	52,901	-70,218	-1,794	
2 Maize	Export	N.A.	2,025	4,012	3,592	2,328	17,749	15,988	246	3,000	
	Import	N.A.					35,000		1,815	422	
	Food Aid	N.A.					950		1,985		
	Balance		2,025	4,012	3,592	2,328	-18,201	15,988	-3,554	2,578	
3 Wheat	Export	N.A.				169	11,417	10,417	563	5,234	
	Import	N.A.					31,042	9,000	41,981	6,331	
	Food Aid	N.A.	93	763	3,306	11,220	28,336	8,813	45,634	2,982	
	Balance		-93	-763	-3,306	-11,051	-47,961	-7,396	-87,052	-4,079	
4 Pulses	Export	N.A.	N.A.				17,000	21,000	8,745	13,214	
	Import	N.A.	N.A.				4,000	3,000	3,991	2,968	
	Food Aid	N.A.	N.A.	54	167	488	300	181	511	219	
	Balance			-54	-167	-488	12,700	17,819	4,243	10,027	
5 Potatoes	Export	N.A.	N.A.	N.A.	N.A.	N.A.	2,000	1,000	2,612	2,755	
	Import	N.A.	N.A.	N.A.	N.A.	N.A.	16,000	12,000	23,474	23,589	
	Balance						-14,000	-11,000	-20,862	-20,834	

		Unit : ton									
Item		1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92		
1 Rice	Export	58,962	20,209	2,152	41	216	244	224			
	Import	8,899	6,608	35,012	21,669	9,169	13,529	8,101	25,000		
	Food Aid	4,008	0	17,002	871						
	Balance	46,055	13,601	-49,862	-22,499	-8,953	-13,285	-7,877	-25,000		
2 Maize	Export	8,368	11,939	5,312	0	1,128	12	2,752			
	Import	458	287	260	4,043	384	604	60			
	Food Aid				10,046						
	Balance	7,910	11,652	5,052	-14,089	744	-592	2,692	0		
3 Wheat	Export	7,007	3,435	255	114	16	85	4			
	Import	1,433	10,226	21,217	63,660	6,165	2,281	1,513	39,070		
	Food Aid	843	1,400	100	2,478	7,720	93		2,196		
	Balance	4,731	-8,191	-21,062	-66,024	-13,869	-2,289	-1,509	-41,266		
4 Pulses	Export	24,495	34,929	18,023	21,159	11,011	12,814				
	Import	3,989	5,003	4,038	11,399	11,226	8,318				
	Food Aid	230	83	186	75	445					
	Balance	20,276	29,843	13,799	9,685	-660	4,496	0	0		
5 Potatoes	Export	1,792	2,792	1,335	1,185	315	187	800			
	Import	36,007	37,157	29,527	53,985	50,752	39,375	41,446			
	Balance	-34,215	-34,365	-28,192	-52,800	-50,437	-39,188	-40,646	0		

Sources : Agricultural Project Services Center, Essential Food Commodities Supply Management, Data Base Study, July-1990, Department of Customs, Foreign Trade Statistics, Fiscal Year 1987/88 to 1990/91, and Unpublished data from Nepal Food Corporation.

表 2-6 主要作物の生産状況

Year	Major Food Crops												Total				
	Paddy		Maize		Wheat		Millet		Barley		Total		Area	Production	Yield		
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield					
1980/81	1,275.5	2,464.3	1.93	457.5	742.9	1.62	391.8	477.2	1.22	121.8	121.5	1.00	26.7	0.86	2,273.2	3,829.0	1.68
1981/82	1,296.5	2,560.1	1.97	475.5	751.5	1.58	399.9	525.9	1.32	122.1	121.7	1.00	27.0	0.86	2,321.0	3,982.6	1.72
1982/83	1,264.8	1,832.6	1.45	510.8	718.2	1.41	483.8	656.6	1.36	129.1	121.1	0.94	24.3	0.87	2,412.9	3,349.7	1.39
1983/84	1,334.2	2,757.0	2.07	503.8	761.1	1.51	471.8	633.7	1.34	123.9	114.9	0.93	24.8	0.90	2,458.4	4,289.0	1.74
1984/85	1,376.9	2,709.4	1.97	578.7	819.9	1.42	451.9	533.7	1.18	134.4	124.4	0.93	27.6	0.86	2,569.4	4,211.1	1.64
1985/86	1,391.0	2,804.5	2.02	614.7	873.8	1.42	482.8	598.0	1.24	151.1	137.9	0.91	29.3	0.80	2,668.9	4,437.6	1.66
1986/87	1,333.4	2,372.0	1.78	626.7	868.4	1.39	535.5	701.0	1.31	150.8	137.6	0.91	28.6	0.86	2,674.9	4,103.7	1.53
1987/88	1,423.3	2,981.8	2.09	673.8	901.5	1.34	596.8	744.6	1.25	164.8	150.1	0.91	29.1	0.83	2,887.7	4,802.3	1.66
1988/89	1,450.5	3,283.2	2.26	721.9	1,071.6	1.48	599.3	830.1	1.39	182.6	183.1	1.00	29.5	0.92	2,983.6	5,395.0	1.81
1989/90	1,432.9	3,389.7	2.37	751.2	1,201.0	1.60	604.2	855.0	1.41	193.5	224.8	1.16	29.5	0.93	3,011.3	5,697.8	1.89
1990/91	1,455.0	3,502.0	2.41	757.7	1,231.0	1.62	592.7	836.0	1.41	198.6	231.6	1.17	29.6	0.94	3,033.6	5,828.4	1.92
1991/92	1,411.8	3,222.5	2.28	754.1	1,204.7	1.60	571.3	779.2	1.36	198.4	228.7	1.15	29.7	0.93	2,965.2	5,462.7	1.84
	(Share in 1991/92)		(38.5%)	(20.6%)			(15.6%)			(5.4%)			(0.8%)				(80.9%)
Average (1980/81-84/85)	1,309.6	2,464.7	1.88	505.2	758.7	1.50	439.8	565.4	1.29	126.2	120.7	0.96	26.1	0.87	2,407.0	3,932.3	1.63
Average (1987/88-91/92)	1,434.7	3,275.8	2.28	731.7	1,122.0	1.53	592.9	808.9	1.36	187.6	203.7	1.09	29.5	0.91	2,976.3	5,437.2	1.83
1992/93 provisional	1,262.0	2,585.0	2.05	775.0	1,290.0	1.66	628.0	765.0	1.22	202.0	237.0	1.17	30.0	0.93	2,897.0	4,905.0	1.69

Year	Major Cash Crops												Total				
	Oilseed		Potato		Sugar cane		Tobacco		Jute		Total		Area	Production	Yield		
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield					
1980/81	122.3	77.1	0.63	49.6	280.5	5.66	24.0	479.8	20.02	7.2	5.5	0.76	52.0	59.0	1.13	255.0	2,528.3
1981/82	113.9	79.1	0.69	52.0	321.1	6.17	25.2	590.0	23.44	6.8	4.8	0.70	35.3	42.7	1.21	233.2	2,554.3
1982/83	110.3	69.6	0.63	59.2	373.0	6.30	25.4	616.1	24.25	9.0	6.6	0.74	30.4	39.0	1.28	234.3	2,647.2
1983/84	110.7	73.4	0.66	58.9	383.1	6.51	22.7	509.1	22.39	9.1	6.9	0.76	23.7	25.0	1.06	225.0	2,683.5
1984/85	127.8	84.0	0.66	65.5	420.2	6.41	17.5	408.3	23.36	8.6	6.4	0.75	27.2	33.1	1.22	246.6	2,816.0
1985/86	138.5	78.7	0.57	70.0	356.7	5.10	23.0	558.3	24.27	8.7	4.7	0.54	47.2	61.1	1.29	287.3	2,956.2
1986/87	142.9	82.5	0.58	74.3	395.1	5.32	24.9	616.6	24.75	8.8	4.9	0.55	19.8	23.5	1.18	270.8	2,945.7
1987/88	151.5	94.4	0.62	80.2	570.0	7.11	29.5	814.4	27.59	6.5	4.5	0.69	14.5	15.8	1.09	282.1	3,169.8
1988/89	154.9	99.2	0.64	81.6	640.9	7.86	29.6	903.0	30.56	7.3	5.4	0.74	13.6	17.6	1.30	286.8	3,270.5
1989/90	153.7	98.1	0.64	83.4	671.8	8.06	31.5	988.3	31.37	7.6	6.6	0.87	14.1	16.1	1.14	290.2	3,301.0
1990/91	156.3	92.1	0.59	84.3	738.0	8.76	33.0	1,106.0	33.55	7.3	7.0	0.96	15.5	19.1	1.23	296.3	3,330.5
1991/92	154.6	87.8	0.57	85.3	732.9	8.59	37.4	1,291.3	34.52	6.5	6.0	0.92	15.0	19.0	1.27	298.8	3,666.4
	(Share in 1991/92)		(4.2%)	(2.3%)			(1.0%)			(0.2%)			(0.4%)				(8.1%)
Average (1980/81-84/85)	117.0	76.6	0.66	57.0	355.6	6.23	23.0	520.6	22.68	8.1	6.1	0.75	33.7	39.8	1.18	238.8	2,645.8
Average (1987/88-91/92)	154.2	94.3	0.61	82.9	670.7	8.09	32.2	1,020.6	31.71	7.0	5.9	0.84	14.5	17.5	1.21	290.9	3,347.6
1992/93 provisional	166.0	94.0	0.57	87.0	733.0	8.43	39.0	1,366.0	35.03	7.0	6.0	0.86	9.0	10.0	1.11	308.0	3,205.0

Sources : Statistic Year Book of Nepal, 1991 & 1993, Central Bureau of Statistics, Statistical Data of Agriculture, 1990/91 & 1991/92, MoA, and Economic Survey, Fiscal Year 1992/93, Ministry of Finance.

Note *1 : Total cropped area shown in this column is total area of major food crops and major cash crops only except for 1991/92.

*2 : Total cropped area in 1991/92 was estimated at 3,666,400 ha consisting of 2,965,240 ha of food crops, 298,800 ha of cash crops, 261,860 ha of legume and 140,500 ha of vegetables.

表 2-7 ネパールの農耕地及び灌漑開発面積

unit : 1,000 ha

Description	Ecological Zone *1			Total *1	Target Development *2		Remarks
	Terai	Hill	Mountain		In 8-th Plan	Accumulated	
1 Total Area	3,410	6,152	5,185	14,747			
2 Agricultural Land Use at Present							
Irrigated	(A) 725	179	29	933 (35%)	294	1,227	46% of Total Cultivated Area
Rainfed Area							
Irrigable	(B) 613	189	31	833 (32%)	-294	539	20% of Total Cultivated Area
Non-irrigable	21	687	167	875 (33%)		875	33% of Total Cultivated Area
Total	634	876	198	1,708 (65%)	-294	1,414	54% of Total Cultivated Area
Total Cultivated Area	1,359	1,055	227	2,641	0	2,641	
3 Potential Irrigable Area							
Irrigable Agricultural Area	1,338	368	60	1,766		1,766	
Irrigable Non-Agricultural Area	406	5	1	412		412	
Total Irrigable Area	1,744	373	61	2,178		2,178	
4 Total Remaining Irrigable Area	(C)-(A) 1,019	194	32	1,245	-294	951	
1 Government Managed Irrigation Area							
(1) DoI Managed Project	250	15	0	265 (10%)	161.2	426.2	16% of Total Cultivated Area
Large scale projects					108.5		
Small & medium scale schemes					52.7		
(2) Agency Assisted Farmer Managed Irrigation Scheme (FMIS)	161	20	5	186 (7%)	119.7	305.7	12% of Total Cultivated Area
Total	411	35	5	451	280.9	731.9	
2 Other Farmer Managed Irrigation Scheme	314	144	24	482 (18%)	13.1	495.1	19% of Total Cultivated Area
3 Total Irrigated Area	725	179	29	933 (35%)	294.0	1,227.0	46% of Total Cultivated Area

Sources *1 : Master Plan for Irrigation Development in Nepal, Cycle 2, 1990

*2 : Eighth Plan (1992-1997), Summary, National Planning Commission, July 1992

表 2-8 政府財政 (年間予算配分) および政府予算の状況

Items	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
	/80	/81	/82	/83	/84	/85	/86	/87	/88	/89	/90	/91	/92	/93	*1
Unit : NRs. million															
I. EXPENDITURE															
A Regular Expenditure															
1 General Administration	183.4	218.8	253.1	328.1	355.8	416.7	522.6	615.4	701.3	845.1	963.4	1,180.4	1,534.3	1,866.1	
2 Revenue Administration	30.5	35.8	43.9	54.7	58.7	63.0	75.4	95.6	101.1	111.2	124.3	124.8	173.5	218.6	
3 Defence	223.0	258.9	282.8	392.4	453.6	507.9	606.2	712.4	768.3	898.7	1,027.2	1,151.4	1,489.0	1,737.6	
4 Social Services	184.5	210.2	249.6	320.4	360.5	410.6	493.1	508.2	562.0	634.9	716.1	742.6	999.0	1,302.4	
5 Economic Services	105.7	110.1	130.5	165.7	174.6	199.4	232.3	286.0	289.7	351.5	423.7	374.9	548.6	699.1	
5-1 Agriculture	7.7	3.4	3.7	4.5	5.2	6.3	6.6	8.3	9.0	29.8	31.6	33.0	40.4	55.1	
5-2 Irrigation	2.4	3.2	3.6	4.7	5.7	5.8	6.2	6.9	7.9	8.7	10.1	4.6	8.9	12.0	
5-3 Land Reform	12.0	12.9	15.7	18.1	19.2	17.5	23.6	27.4	29.6	11.5	11.9	13.9	14.6	35.2	
5-4 Cadastral Survey	3.9	4.2	5.3	6.8	7.4	8.3	9.5	11.8	12.7	14.9	14.9	17.7	22.2	27.7	
5-5 Forest	4.3	4.6	5.4	7.3	8.0	8.7	10.0	13.3	14.6	15.7	17.3	17.4	22.6	28.6	
5-6 Other Economic Services	75.4	81.8	96.8	124.3	129.7	152.8	176.4	218.3	215.9	270.9	337.9	288.3	439.9	540.5	
6 Loan Repayment & Interest	217.0	216.3	256.6	307.0	497.6	678.2	1,019.3	1,196.6	1,441.6	1,720.7	2,279.2	2,407.4	3,797.1	4,360.5	
7 Others	218.0	311.1	417.8	428.8	372.0	630.4	635.0	709.4	758.1	1,114.4	1,138.3	1,592.6	1,363.9	1,815.9	
Total	1,162.1	1,361.2	1,634.3	1,997.1	2,272.8	2,906.2	3,583.9	4,123.6	4,622.1	5,676.5	6,672.2	7,574.1	9,905.4	12,000.2	
B Development Expenditure															
1 Economic Development	1,813.3	2,101.0	2,556.0	3,287.0	3,582.5	3,617.0	4,414.6	5,168.6	6,751.8	8,241.1	8,200.7	11,893.3	11,063.3	14,360.1	
1-1 Agriculture	153.4	257.0	468.0	668.6	547.1	703.6	856.2	681.7	928.9	1,016.2	1,193.5	1,534.6	1,276.0	2,266.3	
1-2 Irrigation	232.7	288.2	359.6	487.4	545.3	652.2	846.7	846.8	854.7	1,623.2	1,204.8	1,718.9	2,212.2	2,054.3	
1-3 Land Reform	11.3	12.2	16.3	20.6	21.4	17.9	18.9	26.7	19.6	29.3	38.8	40.4	31.3	8.0	
1-4 Cadastral Survey	25.7	30.2	37.7	45.6	45.9	40.7	46.7	67.5	72.1	80.8	64.5	68.9	87.6	120.1	
1-5 Forest	94.2	89.3	185.4	228.1	234.5	290.4	365.0	388.4	449.6	556.7	547.2	460.1	884.3	959.3	
1-6 Other Economic Development	1,296.0	1,424.1	1,489.0	1,836.7	2,188.3	1,912.2	2,281.1	3,157.5	4,426.9	4,934.9	5,161.9	8,670.4	6,571.9	8,952.1	
2 Social Development	444.3	572.5	1,059.6	1,540.3	1,493.5	1,501.2	1,699.9	2,036.3	2,433.4	3,309.2	3,973.2	3,569.3	5,040.3	7,051.6	
3 Planning and Statistics	14.3	30.0	14.4	20.2	15.4	5.2	4.0	4.0	5.9	10.1	10.8	83.3	39.3	31.2	
4 Administrative Reform	0.5	0.7	2.9	7.9	13.0	11.9	10.3	18.4	24.4	35.0	14.3	11.3	13.8	37.4	
5 Miscellaneous	36.2	26.9	93.9	126.7	59.4	353.3	84.5	150.7	212.6	732.8	798.7	422.2	356.1	115.0	
Total	2,308.6	2,731.1	3,726.8	4,982.1	5,163.8	5,488.6	6,213.3	7,378.0	9,428.1	12,328.2	12,997.7	15,979.4	16,512.8	21,595.3	
TOTAL EXPENDITURE	3,470.7	4,092.3	5,361.1	6,979.2	7,436.6	8,394.8	9,797.2	11,501.6	14,050.2	18,004.7	19,669.9	23,553.5	26,418.2	33,595.5	
II. RECEIPTS															
Revenue	2,685.6	3,288.1	3,612.8	3,931.7	4,285.9	4,840.0	5,817.4	7,260.1	9,427.2	9,457.5	11,262.9	12,894.6	15,559.6	21,621.8	
Foreign Grant	1,880.0	2,419.2	2,679.5	2,841.6	3,409.3	3,916.6	4,644.5	5,975.1	7,350.4	7,776.9	9,287.5	10,729.9	13,303.2	17,001.1	
Overall Surplus or Deficit (-)	805.6	868.9	933.3	1,090.1	876.6	923.4	1,172.9	1,285.0	2,076.8	1,680.6	1,975.4	2,164.7	2,256.4	4,620.7	
Source of Financing Deficit	-785.1	-804.2	-1,748.3	-3,047.5	-3,150.7	-3,554.8	-3,979.8	-4,241.5	-4,623.0	-8,547.2	-8,407.0	-10,658.9	-10,858.6	-11,973.7	
Foreign Loan & Reimbursement	534.9	693.3	729.9	985.8	1,670.9	1,764.9	2,501.1	2,705.8	3,815.8	5,666.4	5,959.6	6,256.7	7,075.6	10,353.4	
Internal Loan	180.0	250.0	500.0	1,000.0	1,576.8	799.9	1,403.4	1,644.7	1,130.0	1,330.0	2,159.0	4,552.7	2,082.2	1,620.0	
CASH BALANCE SURPLUS	-70.2	139.1	-518.4	-1,061.7	97.0	-990.0	-75.3	109.0	322.8	-1,350.8	-297.4	150.5	-1,700.8	-0.3	

Source : Statistic Year Book of Nepal, 1989 for 1979/80, 1991 for 1980/81 & 1982/83, and 1993 for 1983/84 to 1990/91

Note : * Revised Estimate in Statistic Year Book of Nepal 1993

** Estimate in Statistic Year Book of Nepal 1993

*1 Economic Survey Fiscal Year 1992-93, Ministry of Finance, 1993

*2 Estimate from Annual Budget in FY2049/2050 B.S.(1992/93)

表 2-9 海外援助 (有償及び無償) の各部門別支出

Sector	Unit : NRs. Million																
	1975 /76	1976 /77	1977 /78	1978 /79	1979 /80	1980 /81	1981 /82	1982 /83	1983 /84	1984 /85	1985 /86	1986 /87	1987 /88	1988 /89	1989 /90	1990 /91	1991 /92
1. Agriculture, Irrigation and Forestry																	
Grant	125.1	98.7	148.0	227.5	220.6	322.6	454.3	599.2	757.6	1,053.1	1,298.8	1,037.6	1,236.3	1,466.8	1,489.7	1,253.2	1,945.4
Loan	85.5	57.6	69.0	130.0	118.5	150.0	160.2	251.6	250.1	319.7	230.1	203.1	169.3	211.4	194.9	141.1	313.3
1 Agriculture	39.6	41.1	79.0	97.5	102.1	172.6	294.1	347.6	507.5	733.4	1,068.7	834.5	1,067.0	1,255.4	1,294.8	1,112.1	1,632.1
Grant	91.4	50.7	76.2	83.3	54.6	139.9	181.7	235.3	315.3	465.4	626.2	348.3	553.3	529.5	536.2	609.6	396.8
Loan	74.8	43.8	47.7	65.2	36.8	84.9	86.9	72.1	107.2	89.4	83.9	61.1	70.6	82.6	92.5	62.4	126.4
2 Irrigation	16.6	6.9	28.5	18.1	17.8	55.0	94.8	163.2	208.1	376.0	542.3	287.2	482.7	446.9	443.7	547.2	270.4
Grant	24.0	36.2	46.2	121.9	133.0	148.7	200.7	267.9	337.5	449.2	577.2	514.7	482.3	791.9	772.4	435.3	1,158.9
Loan	1.3	7.5	16.9	46.9	54.3	41.9	54.2	133.7	87.9	154.8	103.3	59.7	29.0	71.1	46.9	20.4	93.9
3 Forest & Others	22.7	28.7	29.3	75.0	78.7	106.8	146.5	134.2	249.6	294.4	473.9	455.0	453.3	720.8	725.5	414.9	1,065.0
Grant	9.7	11.8	25.6	22.3	33.0	34.0	71.9	96.0	104.8	138.5	95.4	174.6	200.7	145.4	181.1	208.3	389.7
Loan	9.4	6.3	4.4	17.9	27.4	23.2	19.1	45.8	55.0	75.5	42.9	82.3	69.7	57.7	55.5	58.3	93.0
4 Others	0.3	5.5	21.2	4.4	5.6	10.8	52.8	50.2	49.8	63.0	52.5	92.3	131.0	87.7	125.6	150.0	296.7
2. Transport, Power and Communication																	
Grant	230.7	290.4	499.5	559.8	908.8	1,000.0	775.6	648.8	859.1	969.7	1,321.2	1,473.7	2,794.6	3,120.1	2,678.1	2,575.6	2,485.1
Loan	162.7	218.3	247.8	317.3	556.9	561.8	528.1	324.2	314.9	217.6	476.0	376.2	1,196.0	672.2	919.5	1,043.8	475.0
3 Industry and Commerce	68.0	72.1	251.7	242.5	351.9	438.2	247.5	324.6	544.2	752.1	845.2	1,097.5	1,598.6	2,447.9	1,758.6	1,531.8	2,010.1
Grant	62.3	91.8	68.9	30.6	76.6	69.7	143.9	211.2	494.9	191.8	275.7	183.4	445.7	191.1	656.6	1,390.9	2,174.3
Loan	36.2	63.5	54.0	18.1	36.3	28.8	39.0	60.4	45.0	50.8	43.1	63.1	252.1	48.2	10.7	120.2	30.6
4 Social Services	26.1	28.3	14.9	12.5	40.3	40.9	104.9	150.8	449.9	141.0	232.6	120.3	193.6	142.9	645.9	1,270.7	2,143.7
Grant	86.0	73.8	130.4	168.5	124.0	146.4	335.9	612.4	432.4	435.3	586.4	585.4	522.3	845.0	1,575.8	667.9	1,191.6
Loan	73.8	51.0	94.2	130.9	83.4	104.7	252.5	450.6	263.1	323.8	361.8	296.1	293.9	510.3	633.3	284.1	708.1
1 Education	12.2	22.8	36.2	37.6	40.6	41.7	83.4	161.8	169.3	111.5	224.6	289.3	228.4	334.7	942.5	383.8	483.5
Grant	21.9	12.7	25.7	22.0	22.2	31.5	76.8	167.9	138.8	101.9	194.6	169.9	180.4	268.9	184.6	122.2	205.1
Loan	21.9	12.7	25.7	21.4	21.0	28.3	49.7	140.5	80.9	49.2	120.5	47.5	44.8	34.5	65.9	30.8	58.2
2 Health	0.0	0.0	0.0	0.6	1.2	3.2	27.1	27.4	57.9	52.7	74.1	122.4	135.6	234.4	118.7	91.4	146.9
Grant	48.6	24.1	34.8	46.9	29.6	47.6	74.9	116.7	99.7	141.5	137.5	148.4	139.7	288.8	129.6	105.4	182.0
Loan	48.6	24.1	34.8	46.4	29.3	47.6	74.9	112.9	94.7	135.6	133.5	148.2	138.1	288.0	106.3	105.4	182.0
3 Drinking Water	0.0	0.0	0.0	0.5	0.3	0.0	0.0	3.8	5.0	5.9	4.0	0.2	1.6	0.8	23.3	0.0	0.0
Grant	5.7	22.5	19.0	35.2	38.5	31.4	49.1	116.6	78.2	56.1	142.7	169.6	76.5	117.6	240.6	181.9	633.0
Loan	0.0	4.5	0.0	3.4	2.0	0.0	1.0	6.2	2.8	17.6	20.3	7.4	11.9	62.2	90.7	50.4	417.9
4 Others	5.7	18.0	19.0	31.8	36.5	31.4	48.1	110.4	75.4	38.5	122.4	162.2	64.6	55.4	149.9	131.5	215.1
Grant	9.8	14.5	50.9	64.4	33.7	35.9	135.1	211.2	115.7	135.8	111.6	97.5	125.7	169.7	1,021.0	258.4	171.5
Loan	3.3	9.7	33.7	59.7	31.1	28.8	126.9	191.0	84.7	121.4	87.5	93.0	99.1	125.6	370.4	97.5	50.0
5 Others	6.5	4.8	17.2	4.7	2.6	7.1	8.2	20.2	31.0	14.4	24.1	4.5	26.6	44.1	650.6	160.9	121.5
Grant	1.5	2.4	1.6	3.1	10.5	23.5	13.5	4.2	3.5	26.6	9.5	34.3	89.6	43.9	45.9	61.9	4.0
Loan	1.5	2.4	1.6	3.1	10.5	23.5	13.5	3.3	3.5	11.6	9.5	14.0	82.9	34.2	39.4	0.3	4.0
TOTAL	505.6	557.1	848.4	989.5	1,340.5	1,562.2	1,723.2	2,075.8	2,547.5	2,676.5	3,491.6	3,314.4	5,088.5	5,666.9	6,446.1	5,949.5	7,800.4
Grant	359.7	392.8	466.6	599.4	805.6	868.8	993.3	1,090.1	876.6	923.5	1,120.5	952.5	1,994.2	1,476.3	1,797.8	1,589.5	1,531.0
Loan	145.9	164.3	381.8	390.1	534.9	693.4	729.9	985.7	1,670.9	1,753.0	2,371.1	2,361.9	3,094.3	4,190.6	4,648.3	4,360.0	6,269.4

Source : Economic Survey, Fiscal Year 1992-93, Ministry of Finance, 1993.

表 2-10 財源別海外援助支出

Unit : US\$ million

DONOR	YEAR														Average	Maximum	TOTAL	Order
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1991				
BILATERAL, DAC Countries																		
Australia	0.90	1.40	1.70	2.00	1.60	1.90	1.50	1.40	2.80	3.40	3.80	1.20	2.50	2.01	3.80	26.10		
Canada	5.20	4.30	6.20	6.80	6.80	7.30	7.70	6.30	7.80	12.50	10.50	8.40	6.40	7.40	12.50	96.20		
Finland	0.00	0.10	0.00	0.10	1.90	3.00	3.80	5.30	9.90	6.20	18.50	15.50	18.00	6.33	18.50	82.30		
France	-	0.30	0.20	3.20	2.00	2.50	1.80	3.50	2.20	5.50	17.80	33.96	14.70	7.31	33.96	87.66		
Germany	17.10	18.80	8.00	8.00	17.20	10.30	10.58	21.29	26.70	68.53	38.00	35.56	38.90	24.54	68.53	318.96	2	
Japan	19.70	24.30	33.10	35.22	28.31	28.52	50.74	68.06	76.78	62.35	77.39	55.17	127.54	52.86	127.54	687.18	1	
Netherlands	4.30	1.50	1.50	5.50	4.10	1.60	2.50	3.30	4.40	5.10	4.50	6.90	5.00	3.86	6.90	50.20		
Norway	0.40	0.30	0.80	2.50	1.60	1.40	2.00	3.90	3.10	3.80	5.00	9.80	5.80	3.11	9.80	40.40		
Switzerland	5.50	8.10	9.70	11.80	10.70	8.00	7.60	9.10	9.70	12.80	19.50	18.00	11.40	10.92	19.50	141.90	5	
U. K.	23.50	15.60	16.00	16.60	11.00	11.30	12.38	14.40	16.30	19.06	28.20	25.78	33.50	18.74	33.50	243.62	3	
U. S. A.	6.00	8.00	12.00	19.00	22.00	22.00	21.00	17.00	20.00	15.00	14.00	17.00	14.00	15.92	22.00	207.00	4	
Others	-0.20	1.30	-1.20	0.68	2.29	0.58	1.87	16.63	9.92	10.73	11.71	11.56	12.56	5.47	16.63	78.43		
Total	82.40	84.00	88.00	111.40	109.50	98.40	123.47	170.18	189.60	224.97	248.90	238.83	290.30	158.46	290.30	2,059.95		
MULTILATERAL																		
ADB	6.80	9.20	14.30	19.60	23.10	36.60	42.30	34.76	27.80	41.70	62.70	65.66	74.70	35.32	74.70	459.22	2	
E.E.C.	0.00	-	2.10	1.30	2.00	6.20	2.20	1.70	4.70	3.50	2.00	3.90	3.20	2.73	6.20	32.80		
IDA/IBRD	18.60	25.00	32.90	33.50	30.40	29.30	32.50	53.96	78.40	82.00	107.00	65.00	48.00	48.97	107.00	636.56	1	
IFAD	-	0.00	2.20	1.40	1.90	4.40	5.70	6.10	8.60	6.20	7.70	10.00	2.30	4.71	10.00	56.50		
IMF	5.40	4.70	0.10	-	-	-	-	-	-	12.00	7.80	-0.50	-0.10	4.20	12.00	29.40		
UNDP	8.10	8.30	11.40	12.60	10.80	11.00	12.10	11.99	13.50	18.00	20.90	22.83	20.70	14.02	22.83	182.22	3	
UNTA	1.30	0.20	1.80	1.60	2.70	1.20	2.50	1.20	2.50	1.80	3.30	2.00	3.40	1.96	3.40	25.50		
UNICEF	3.10	3.60	3.10	3.70	4.00	5.20	4.90	4.30	6.90	6.80	7.40	7.90	7.40	5.25	7.90	68.30		
WFP	4.50	14.90	8.20	4.90	10.80	2.40	6.80	7.70	5.50	6.90	5.40	6.60	1.10	6.59	14.90	85.70		
Arab OPEC	-	-	2.60	5.50	1.50	0.10	-0.10	0.60	1.80	-0.10	0.30	-1.20	-0.90	0.92	5.50	10.10		
Others	3.10	6.40	5.10	5.10	5.00	4.40	5.44	4.36	3.90	-8.95	25.70	5.44	4.20	2.67	25.70	69.19		
Total	50.90	72.30	83.80	89.20	92.20	100.80	114.34	126.67	153.60	169.85	250.20	187.63	164.00	127.35	250.20	1,655.49		
OPEC Countries	3.50	6.80	8.80	0.00	-0.90	-0.90	-1.50	4.10	3.60	4.30	2.30	2.30	-1.00	2.42	8.80	31.40		
TOTAL ODA NET	136.80	163.10	180.60	200.60	200.80	198.30	236.31	300.95	346.80	399.12	501.40	428.76	453.30	288.22	501.40	3,746.84		

Sources : Geographical Distribution of Financial Flows to Developing Countries, OECD Paris, 1984, 1987, 1990 & 1993

表 2-11 海外援助支出の主要財源とその割合

DONOR	Unit : US\$ million (Share in %)												
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Bilateral(DAC Countries), Top 4 and Others													
Japan	19.70 (14.4%)	24.30 (14.9%)	33.10 (18.3%)	35.22 (17.6%)	28.31 (14.1%)	28.52 (14.4%)	50.74 (21.5%)	68.06 (22.6%)	76.78 (22.1%)	62.35 (15.6%)	77.39 (15.4%)	55.17 (12.9%)	127.54 (28.1%)
Germany	17.10 (12.5%)	18.80 (11.5%)	8.00 (4.4%)	8.00 (4.0%)	17.20 (8.6%)	10.30 (5.2%)	10.58 (4.5%)	21.29 (7.1%)	26.70 (7.7%)	68.53 (17.2%)	38.00 (7.6%)	35.56 (8.3%)	38.90 (8.6%)
U. K.	23.50 (17.2%)	15.60 (9.6%)	16.00 (8.9%)	16.60 (8.3%)	11.00 (5.5%)	11.30 (5.7%)	12.38 (5.2%)	14.40 (4.8%)	16.30 (4.7%)	19.06 (4.8%)	28.20 (5.6%)	25.78 (6.0%)	33.50 (7.4%)
U. S. A.	6.00 (4.4%)	8.00 (4.9%)	12.00 (6.6%)	19.00 (9.5%)	22.00 (11.0%)	22.00 (11.1%)	21.00 (8.9%)	17.00 (5.6%)	20.00 (5.8%)	15.00 (3.8%)	14.00 (2.8%)	17.00 (4.0%)	14.00 (3.1%)
Others	16.10 (11.8%)	17.30 (10.6%)	18.90 (10.5%)	32.58 (16.2%)	30.99 (15.4%)	26.28 (13.3%)	28.77 (12.2%)	49.43 (16.4%)	49.82 (14.4%)	60.03 (15.0%)	91.31 (18.2%)	105.32 (24.6%)	76.36 (16.8%)
Total	82.40 (60.2%)	84.00 (51.5%)	88.00 (48.7%)	111.40 (55.5%)	109.50 (54.5%)	98.40 (49.6%)	123.47 (52.2%)	170.18 (56.5%)	189.60 (54.7%)	224.97 (56.4%)	248.90 (49.6%)	238.83 (55.7%)	290.30 (64.0%)
Multilateral, Top 3 and Others													
IDA/IBRD	18.60 (13.6%)	25.00 (15.3%)	32.90 (18.2%)	33.50 (16.7%)	30.40 (15.1%)	29.30 (14.8%)	32.50 (13.8%)	53.96 (17.9%)	78.40 (22.6%)	82.00 (20.5%)	107.00 (21.3%)	65.00 (15.2%)	48.00 (10.6%)
ADB	6.80 (5.0%)	9.20 (5.6%)	14.30 (7.9%)	19.60 (9.8%)	23.10 (11.5%)	36.60 (18.5%)	42.30 (17.9%)	34.76 (11.6%)	27.80 (8.0%)	41.70 (10.4%)	62.70 (12.5%)	65.66 (15.3%)	74.70 (16.5%)
UNDP	8.10 (5.9%)	8.30 (5.1%)	11.40 (6.3%)	12.60 (6.3%)	10.80 (5.4%)	11.00 (5.5%)	12.10 (5.1%)	11.99 (4.0%)	13.50 (3.9%)	18.00 (4.5%)	20.90 (4.2%)	22.83 (5.3%)	20.70 (4.6%)
Others	17.40 (12.7%)	29.80 (18.3%)	25.20 (14.0%)	23.50 (11.7%)	27.90 (13.9%)	23.90 (12.1%)	27.44 (11.6%)	25.96 (8.6%)	33.90 (9.8%)	28.15 (7.1%)	59.60 (11.9%)	34.14 (8.0%)	20.60 (4.5%)
Total	50.90 (37.2%)	72.30 (44.3%)	83.80 (46.4%)	89.20 (44.5%)	92.20 (45.9%)	100.80 (50.8%)	114.34 (48.4%)	126.67 (42.1%)	153.60 (44.3%)	169.85 (42.6%)	250.20 (49.9%)	187.63 (43.8%)	164.00 (36.2%)
OPEC Countries	3.50 (2.6%)	6.80 (4.2%)	8.80 (4.9%)	0.00 (0.0%)	-0.90 (-0.4%)	-0.90 (-0.5%)	-1.50 (-0.6%)	4.10 (1.4%)	3.60 (1.0%)	4.30 (1.1%)	2.30 (0.5%)	2.30 (0.5%)	-1.00 (-0.2%)
TOTAL ODA NET	136.80 (100%)	163.10 (100%)	180.60 (100%)	200.60 (100%)	200.80 (100%)	198.30 (100%)	236.31 (100%)	300.95 (100%)	346.80 (100%)	399.12 (100%)	501.40 (100%)	428.76 (100%)	453.30 (100%)

Sources : Geographical Distribution of Financial Flows to Developing Countries, OECD Paris, 1984,1987,1990 & 1993

表 3 - 1 調査地域の基礎人口統計 (1991/1992)

	Nos. of Village Development Committee	Area			Population			Farmhousehold			
		Total Area (ha)	Cultivated Area (ha)	Average Farm Size (ha/Household)	Household	Population	Family Size Average	Density (person / sq.km) (1981 - 1991)	Growth Rate	Household	% in Total Household
Nepal		14,712,100	2,598,970	0.95	3,328,721	18,491,097	5.56	125.6	2.1%	2,736,050	82.2%
Kathmandu District (the Study Area)	67	39,500	13,560	0.30	127,196	675,341	5.31	1,709.7	4.8%	45,541	35.8%
Lalitpur District (the Study Area)	11	3,800	2,110	0.34	7,486	41,737	5.58	1,098.3		6,254	83.5%
Bhaktapur District (the Study Area)	41	38,500	9,872	0.34	45,682	257,086	5.63	667.8	3.4%	28,951	63.4%
	18	10,700	5,074	0.25	37,043	208,158	5.62	1,945.4		20,699	55.9%
	22	11,900	6,445	0.28	28,160	172,952	6.14	1,453.4	0.8%	22,725	80.7%
	11	7,500	2,927	0.33	9,734	55,026	5.65	733.7		8,932	91.8%
Total (3 Districts) The Study Area	130	89,900	29,877	0.31	201,038	1,105,379	5.50	1,229.6	3.7%	97,217	48.4%
	40	22,000	10,111	0.28	54,263	304,921	5.62	1,386.0		35,885	66.1%

Source : Statistical Year Book of Nepal, 1993 & National Population Census, 1991/1992

表3-2 カトマンズ盆地における灌漑システムリスト

Name of System	Name of Source	Command Area (Seasonal)	Name of System	Name of Source	Command Area (Seasonal)
Kathmandu District			Unit: ha		
AK-01	Bela	25	21. Khanathali Kulo	Godavari Khola	
AK-02	Bakambu I.P.	50	22. Tar Kulo	Nalla Khola	3
AK-03	Balkhu	25	23. Kulo Toke Khoicha Kulo	Kholcha	2
AK-04	Biswambhara	80	24. Nalla Khola	Nalla Khola	11
AK-05	Bosan LP	150	25. 3 No. Rani Kulo	Nakhu Khola	350
AK-06	Budhanikartha LP	200	26. 4 No. Ghatte Kulo	Nakhu Khola	
AK-07	Dakshinkali I.P.	100	27. 5 No. Ghatte Kulo	Nakhu Khola	
AK-09	Dhalopani LP	25	28. Sera Kulo	Nakhu Khola	25
AK-10	Gopal Indrayani	130	29. Jhangati Kulo	Nakhu Khola	150
AK-12	Gokarna LP	75	30. Sano Kulo	Nakhu Khola	25
AK-13	Ichadol LP	35	31. Apha Kulo	Kadaku Khola	30
AK-14	Indrayani I.P.	100	32. Takshar Kulo	Kadaku Khola	
AK-24	Pharping I.P.	74	33. Sankhami Kulo		
AK-25	Sahi Nadi LP	150	34. Chyanda Kulo	Kadaku Khola	
AK-26	Sundarjal LP	35	35. Sankhami Bagmati Kulo	Bagmati river	
AK-27	Toke LP	100	36. Khumli Kulo		
1. Narayan Khola LP	Narayan Khola	20	37. Bhakhal Kulo	Nakhu Khola	
2. Ghatke Kulo	Sahi Nadi	20	38. Murali Kulo	Mahadev Khola	125
3. Gagalko Kulo	Manamati Khola	15	39. Chalise Tarko	Labhu Khola	10
4. Thado Kulo LP	Kageswari & Dhakal Khola	60	40. Mui Kulo		
5. Rajkulo	Bagmati River	25	Sub-total		3,398
6. Sweetbarahi LP	Salmati Khola	120	Bhaktapur District		
7. Rakze Kulo	Salmati Khola	15	AB-01	Balakra I.P.	Kalicha Khola
8. Khahare Kulo	Khahare Khola	15	AB-02	Bidol LP	Sarawati Khola
9. Patichar LP	Baitu Khola	50	AB-03	Chakhu I.P.	Chakhu Khola
10. Babewa I.P.	Thulo Khola	32	AB-04	Dhunge Dhara	Hanumante river
11. Ghatte Kulo	Thulo Khola	100	AB-07	Ghatte Kulo P.	Chakhu Khola
12. Pashupati LP	Bagmati Khola	6	AB-08	Hanumante I.P.	Hanumante river
13. Chaurihei I.P.	Dhobi Khola	16	AB-10	Katunje I.P.	Budhi Ganga
14. Panchetar I.P.	Jhor Khola	100	AB-12	Khatudhal I.P.	Hanumante river
15. Manamaji LP	Khahare Khola	30	AB-13	Lapetar Kulo P.	Budhi Ganga
16. Larnabagar LP	Mahadev Khola	90	AB-14	Mahadev Khola I.P.	Mahadev Khola
17. Alle Mhan I. System	Alle Khola	30	AB-17	Nil Balahi	Manohara river
18. Mahadevkhola Kulo	Mahadev Khola	15	AB-18	Sipadol Katunje	Chakhu Khola
19. Dhungakosang Kulo	Mahadev Khola	50	AB-20	Sweety	Shahouari Khola
20. Kavresthali Kulo	Mahadev Khola	55	1. Narabu Kulo P.	Chakhu Khola	13
21. Majhako Kulo	Mahadev Khola	40	2. Nalinchok Ko 4 no. Kulo	Doke Khola	7
22. Siran Kulo	Mahadev Khola	80	3. Raj Kulo	Manohara river	47
23. Ichangu I. System	Dholanga Khola	50	4.	Manohara river	15
24. Lupang LP	Lupang Khola	70	5. Kurnajol ko Kulo	Manohara river	8
25. Teragann Kulo	Ghatte Khola	50	6. Pakho ko Kulo	Manohara river	47
26. Ramkot I.P.	Ghatte Khola	80	7.	Manohara river	7
27. Ghatte Khola I.P.	Ghatte Khola	25	8. Barha Bise Kulo		35
28. Manamati LP	Manamati Khola		9.	Manohara river	
29. Thanzar Kulo	Daudale Khola	70	11.	Manohara river	17
30. Daudale Khola Kulo	Daudale Khola	20	12. Terzo Kulo	Hanumante river	10
31. Thapa Dhara I.P.	Thapa Dhara	30	13. Dhungakhani ko kulo	Mahadev Khola	4
32. Satorgal I. System	Ghatte Khola		14. Bhairabhan ko Kulo	Mahadev Khola	11
33. Machhegan I. System	Khwangiang Khola	80	15. Banjh Kulo	Mahadev Khola	45
34. Thado Khola I. System	Thado Khola	10	16. Daudar Ko Kulo	Mahadev Khola	11
35. Kathali LP	Karpa Spring	11	17.	Mahadev Khola	26
36. Simlebot Kulo	Simlebot Spring	20	18. Chakhu Kulo	Mahadev Khola	23
37. Kathali Kulo	Dhamite Khola	20	19. Eedol Ko Kulo	Mahadev Khola	6
38. Satrai Kulo	Satrai Spring	25	20.	Mungre Khola	14
39. Ghatte Kulo	Dulla KHola	30	21. Reekhedo Ko Kulo	Budhi Khola	9
40. Dulla Khola I.P.	Dulla KHola	25	22.	Chakhu Khola	12
41. Tallo Rajkulo	Seshnayan Spring	30	23. Jagate Kulo	Kalicha Khola	26
42. Chalise LP	Simkhet Spring	20	24.	Kalicha Khola	19
43. Hisidole Rajkulo	Hisidole Spring	20	25.	Doke Khola	3
44. Thabam Kulo	Hisidole Spring	35	26. Debre Kulo	Doke Khola	38
Sub-total		3,059	27. Dahise Kulo	Doke Khola	9
Lalitpur District			28. Nalinchok Ko Kulo	Doke Khola	21
AL-02	Bhorle	150	29. Balanta ko Mathalo Kulo	Doke Khola	9
AL-03	Charpi	100	30. Tallo Kulo	Doke Khola	5
AL-05	Godavari	175	31. Terzo Kulo (Maha Gan K	Ghyampe Khola	8
AL-06	Khokana	150	32. Kalimati Kulo	Tabyakhusi Khola	88
AL-10	Kotkhu	325	33.	Tabyakhusi Khola	46
AL-13	Labhu	100	34.	Tabyakhusi Khola	13
AL-18	Saitu	125	35. Saat Talle Kulo	Tabyakhusi Khola	34
AL-19	Tika Bhairav I	300	36.	Tabyakhusi Khola	11
AL-20	Tika Bhairav II	200	37. Hanumante Chado Ko Kul	Trib. of Sweete Khola	27
1. i. No. Raj Kulo	Kavr Khola	80	38. Thali Ko Kulo	Trib. of Sweete Khola	10
2. ii. No. Raj Kulo	Lele Khola	25	39.	Trib. of Sweete Khola	4
3. Bhetuni Kulo	Maha Khola	30	40.	Trib. of Sweete Khola	5
4. Barah-Beshe Kulo	Maha Khola	10	41.	Trib. of Sweete Khola	10
5. Karri Ko Dhara Kulo	Kavr Khola	4	42. Chalise Khola Ko Kulo	Trib. of Sweete Khola	28
6. Dhara Ko Mhan Kulo	Kavr Khola	15	43. Daha Ko Kulo	Trib. of Sweete Khola	6
7. Kailash Kulo	Kavr Khola	4	44. Rato Pati Ko Kulo	Sarawati Khola	4
8. 3 Nos. Dungkhal Kulo	Kaphai Danda Khola	15	45. Mili Kulo	Khasyang Khung Khola	2
9. Bhaise Kulo	Bhaise Khola	13	46. Best Pikel Kulo	Khasyang Khung Khola	46
10. Jamuna Kulo	Mahadev Khola	8	47. Wadaha Dovan Kulo	Khasyang Khung Khola	19
11. Jor Chate Kulo	Nalla Khola	8	48.	Khasyang Khung Khola	11
12. Naya Kulo	Godavari Khola	60	49. Wadaha Kulo	Khasyang Khung Khola	5
13. Dharnite Khola Kulo	Dharnite Khola	10	50.	Trib. of Khasyang Khung	17
14. Dhara Pani Kulo	Kodaku Khola	100	51. Chohapur Dol Ko Kulo	Trib. of Khasyang Khung	17
15. Kande Pani Kulo	Kodaku Khola	75	52.	Charkhade Khola	37
16. Kule Kulo	Godavari Khola	75	53. Charkhade Kulo	Charkhade Khola	3
17. Moti Kulo	Godavari Khola	100	54. Dhungre Kulo	Dhungre Khola	47
18. Siddhipur Raj Kulo	Godavari Khola	200	55. Tathali Ko Kulo	Trib. of Hanumante	3
19. Bahwa Kulo	Baluwa Khola	10	Sub-total		2,661
20. Khanadhali Kulo Mhan Kodaku		200	Gland Total		9,118

Source : A** : This Study. Others : Water Resources Inventory Study, WECS

表 3 - 3 飲料水供給リスト

(1) Municipal Water Supply

System	Intake	Water Source	River Basin
<u>Existing and under construction</u>			
Balaju	Pauchmani	River	Mahadev Khola
	Mahadev Khola	River	Mahadev Khola
	Allye	River	Mahadev Khola
	Boude	River	Bisnumati Khola
	Bhandare	River	Bisnumati Khola
	Chhahare	Spring	(outside valley)
Bansbari	Bisnumati (U/S)	River	Bisnumati Khola
Maharajganj	Bisnumati (D/S)	River	Bisnumati Khola
	Shivapuri		Dhobi Khola
Sundarijal	Sundarijal	Tail Water from Power Station	Bagmati River
Mahankal Chaur	Dhobi Khola	River	Dhobi Khola
Shaibu	Shesh Narayan	Spring	
	Sat Mul	Spring	
	Kutori Mul	Spring	
Sundarighat	Nakhu Khola	River	Nakhu Khola
Chapagaon	Muldore	Spring	
	Nakhu pump house	River	Nakhu Khola
Dood Pokhari	Dood Pokhari	Spring	
Lokhat	Lokhat	Spring	
Bhaktapur	Mahadev Khola	River	Hanumante River
<u>Planned</u>			
Manohala	Manohala	River	Manohara River
Balkhu	Balkhu Khola	River	Balkhu Khola
Lambagar	Lambagar Khola	River	Lambagar Khola

Source : Nepal Water Supply Corporation

(2) Rural Water Supply

District	Total No. of Rural Water Supply Project	Design Population (person)	Total Design Discharge (lit/sec)
<u>Kathmandu District</u>			
Existing	8	33,130	20.58
On-going	9	42,018	51.06
Planned	6	13,835	36.41
(Sub-total)	(23)	(88,983)	(108.05)
<u>Bhaktapur District</u>			
Existing	6	37,722	17.60
On-going	3	10,923	6.35
Planned	5	7,521	11.50
(Sub-total)	(14)	(56,166)	(35.45)
<u>Lalitpur District</u>			
Existing	5	17,116	7.56
On-going	4	30,665	3.12
Planned	2	38,358	3.49
(Sub-total)	(11)	(86,139)	(14.17)
Total	48	231,288	157.67

Source : Department of Water Supply and Sewerage

表 3-4 水資源調査要約 (1/3)

Code No.	AK-01	AK-02	AK-03	AK-04	AK-05	AK-06	AK-07
Project Name	Balaju	Balambu	Balkhu	Biswambhara	Boshan	Budhaikatha	Daksinhali
Command Area (rainy season)	25	50	25	80 *	150 *	200	100 *
(dry season)	20	50		60 *	125 *	150	60 *
Water Source		Indrawati Khola	Bhalkhu Khola	Manohara River	Boshan Khola	Bisnumati Khola	Kharpa Khola
Catchment Area (km ²)		23	38	5.83	6.8	3.5	10
Basin Rainfall (mm/yr)		2,230	2,100	2,210	2,250	2,730	2,610
Upstream Water Use Irrigation intake			5 farmers' systems (170 ha)				AK-24 and 2 farmers' systems (114 ha)
Water supply and Hydropower generatin						Urban water supply intake	
Discharge measurement by DOI			1.2 m ³ /sec (April)	0.12 m ³ /sec (date is not given)			
shown in WECS report				0.07 m ³ /sec (March)	0.05 m ³ /sec (April)	Low in dry season	Low in dry season
by Study team						0.07 m ³ /sec (May 5, 1993)	
Estimated discharge given in Project request sheet (Dry season)				0.05 m ³ /sec			
(Rainy season)							
Estimated discharge in this study (Dry season (Feb.))		0.27 m ³ /sec	0.41 m ³ /sec	0.064 m ³ /sec	0.115 m ³ /sec	0.12 m ³ /sec	0.099 m ³ /sec
(Rainy season (Jun.))		1.4 m ³ /sec	1.4 m ³ /sec	0.215 m ³ /sec	0.294 m ³ /sec	0.29 m ³ /sec	0.411 m ³ /sec
Estimated flood discharge (1/10)		68 m ³ /sec	96 m ³ /sec	26 m ³ /sec	29 m ³ /sec	18 m ³ /sec	38 m ³ /sec
(1/50)		105 m ³ /sec	150 m ³ /sec	39 m ³ /sec	44 m ³ /sec	27 m ³ /sec	58 m ³ /sec

Code No.	AK-09	AK-10	AK-12	AK-13	AK-14	AK-24	AK-25
Project Name	Dhulopuro	Gagal Indrayani Kul	Gokarna	Ichadol	Indrayani	Pharping Dhunge Di	Shali Nadi
Command Area (rainy season)	25	130	75	35	100 *	74	150 *
(dry season)			60	30	73 *	60	100 *
Water Source	Dukan Khola	Ghatte Khola	Bagmati river	Tribeni Khola	Ghatte Khola	Hundu Khola	Sali Nadi
Catchment Area (km ²)	0.3	0.6	56	9.8	5.2	8.3	12
Basin Rainfall (mm/yr)	2,200	2,280	2,480	1,960	2,510	2,680	2,660
Upstream Water Use Irrigation intake			AK-09, 26 and 8 farmers' systems (442 ha)	5 farmers' systems (225 ha)	1 farmers' system (15 ha)		1 farmers' system (20 ha)
Water supply and Hydropower generatin							
Discharge measurement by DOI					0.07 m ³ /sec (date is not given)		
shown in WECS report	No water in dry season		0.3 m ³ /sec (March)	0.8 m ³ /sec (April)	0.025 m ³ /sec (March)	Low in dry season	0.1 m ³ /sec (March)
by Study team							0.11 m ³ /sec (Apr. 27, 1993) 0.83 m ³ /sec (Jul. 26, 1993)
Estimated discharge given in Project request sheet (Dry season)							
(Rainy season)							
Estimated discharge in this study (Dry season (Feb.))	0 m ³ /sec	0.01 m ³ /sec	0.72 m ³ /sec	0.12 m ³ /sec	0.057 m ³ /sec	0.14 m ³ /sec	0.153 m ³ /sec
(Rainy season (Jun.))	0.02 m ³ /sec	0.4 m ³ /sec	2.4 m ³ /sec	0.53 m ³ /sec	0.213 m ³ /sec	0.62 m ³ /sec	0.526 m ³ /sec
Estimated flood discharge (1/10)	3.3 m ³ /sec	5.3 m ³ /sec	127 m ³ /sec	37 m ³ /sec	24 m ³ /sec	33 m ³ /sec	43 m ³ /sec
(1/50)	4.7 m ³ /sec	7.7 m ³ /sec	198 m ³ /sec	57 m ³ /sec	36 m ³ /sec	51 m ³ /sec	66 m ³ /sec

表 3-4 水資源調査要約 (2/3)

Code No.	AK-26	AK-27	AB-01	AB-02	AB-03	AB-04	AB-07
Project Name	Sundarjal	Tokha	Balakhu	Bidol	Chakhu Khola	Dhunge Dhala	Ghatte Kulo
Command Area (rainy season)	35	100	60	100 *	60	120	190
(dry season)	35	80	50	60 *	60	120	290
Water Source	Bagmati river	Tokha Khola	Katca Kushi	Tholo Khola	Sipadol Khola	Ghatte Khola	Ghatte Khola
Catchment Area (km ²)	34	0.3	1.9	3.6	4.4	6.9	
Basin Rainfall (mm/yr)	2,810	2,230	1,650	1,790	1,900	1,900	
Upstream Water Use							
Irrigation intake	2 farmers' systems (135 ha)		3 farmer's systems (122 ha)		AB-7,18 (290 ha)		AB-18 (100 ha)
Water supply and Hydropower generatin	Urban water supply intake Hydropower generation	Rural water supply intake				Urban water supply intake	Urban water supply intake
Discharge measurement by DOI				0.004 m ³ /sec (Feb.1, 1991)		0.07 m ³ /sec (date is not given)	
shown in WECS report	0.03 m ³ /sec (March)	0.045 m ³ /sec (April)	0.019 m ³ /sec (Mar.8, 1988)	0.004 m ³ /sec (Mar.5, 1988)	0.003 m ³ /sec (Mar.4, 1988)	0.012 m ³ /sec (Mar.5, 1988)	0.009 m ³ /sec (Mar.4, 1988)
by Study team	0.014 m ³ /sec (Apr.27, 1993)	0.004 m ³ /sec (May 5, 1993)				0.007 m ³ /sec (Apr.29, 1993) 0.16 m ³ /sec (Jul.26, 1993)	
Estimated discharge given in Project request sheet							
(Dry season)						0.05 m ³ /sec	
(Rainy season)						0.5 m ³ /sec	
Estimated discharge in this study							
(Dry season (Feb.))	0.5 m ³ /sec	0.004 m ³ /sec	0.02 m ³ /sec	0.032 m ³ /sec	0.05 m ³ /sec	0.03 m ³ /sec	
(Rainy season (Jun.))	1.7 m ³ /sec	0.02 m ³ /sec	0.09 m ³ /sec	0.108 m ³ /sec	0.23 m ³ /sec	0.31 m ³ /sec	
Estimated flood discharge							
(1/10)	89 m ³ /sec	3.3 m ³ /sec	12 m ³ /sec	19 m ³ /sec	21 m ³ /sec	29 m ³ /sec	
(1/50)	139 m ³ /sec	4.7 m ³ /sec	18 m ³ /sec	28 m ³ /sec	32 m ³ /sec	44 m ³ /sec	

Code No.	AB-08	AB-10	AB-12	AB-13	AB-14	AB-17	AB-18
Project Name	Hanumante	Katunje	Kunudhal	Lapetar	Mahadev Khola	Nil Barahi	Sipadol Katunje
Command Area (rainy season)	150	100 *	100 *	60	375 *	60	100
(dry season)	150	100 *	80 *		300 *	40	40
Water Source	Hanumante Kh.	Ghatte Khola	Ghatte Khola	Gundu Khola	Mahadev Kh. ?	Manohara River	Sipadol Khola
Catchment Area (km ²)	12	2.4	7.3	1.6	4.4	54	1.4
Basin Rainfall (mm/yr)	1,780	1,540	1,880	1,750	1,900	2,200	2,080
Upstream Water Use							
Irrigation intake	AB-04, 08 and 1 farmers' system (230 ha)	AB-13 and 1 farmers' system (69 ha)	AB-04 (120 ha)		3 farmers' systems (19 ha)	AB-10, 14 and 6 farmers' systems (378 ha)	
Water supply and Hydropower generatin	Urban water supply intake		Urban water supply intake			Urban water supply intake	Rural water supply intake
Discharge measurement by DOI		0.3 m ³ /sec (date is not given)	0.03 m ³ /sec (Feb.2, 1991) 0.12 m ³ /sec (date is not given)		0.03 m ³ /sec (Jan.31, 1991) 0.07 m ³ /sec (date is not given)		
shown in WECS report	0.006 m ³ /sec (Mar.5, 1988)	0.004 m ³ /sec (Mar.8, 1988)		0.006 m ³ /sec (Mar.8, 1988)	0.062 m ³ /sec (Mar.2, 1988)		
by Study team		0.02 m ³ /sec (Apr.29, 1993)	0.009 m ³ /sec (Apr.29, 1993)		0.03 m ³ /sec (Apr.29, 1993)		
Estimated discharge given in Project request sheet							
(Dry season)		0.02 m ³ /sec	0.06 m ³ /sec		0.1 m ³ /sec		
(Rainy season)		0.3 m ³ /sec	0.5 m ³ /sec		0.5 m ³ /sec		
Estimated discharge in this study							
(Dry season (Feb.))	0.11 m ³ /sec	0.011 m ³ /sec	0.01 m ³ /sec	0.02 m ³ /sec	0.028 m ³ /sec	0.61 m ³ /sec	0.02 m ³ /sec
(Rainy season (Jun.))	0.37 m ³ /sec	0.045 m ³ /sec	0.134 m ³ /sec	0.08 m ³ /sec	0.122 m ³ /sec	2.1 m ³ /sec	0.08 m ³ /sec
Estimated flood discharge							
(1/10)	43 m ³ /sec	14 m ³ /sec	30 m ³ /sec	11 m ³ /sec	21 m ³ /sec	123 m ³ /sec	10 m ³ /sec
(1/50)	66 m ³ /sec	21 m ³ /sec	46 m ³ /sec	16 m ³ /sec	32 m ³ /sec	193 m ³ /sec	14 m ³ /sec

表 3-4 水資源調査要約 (3/3)

Code No.	AB-20	AL-02	AL-03	AL-05	AL-08	AL-10	AL-13
Project Name	Sweety	Bhoric	Champi	Godawari	Khokana	Kotkhu	Lubhu
Command Area (rainy season)	23	150	100	175	150	325 *	100 *
(dry season)	23	150	100	150	150	200 *	75 *
Water Source	Shishougari Kh.	Nakhu Khola	Nakhu Khola	Godawari Khola	Nakhu Khola	Kotkhu Khola	Sineri Khola
Catchment Area (km ²)	2.7	44	43	7.8	49	16	5.2
Basin Rainfall (mm/yr)	1,830	2,490	2,500	2,200	2,380	1,800	1,750
Upstream Water Use							
Irrigation intake	4 farmers' systems (170 ha)	AL-03, 19 and 13 farmers' systems (612 ha)	AL-19 and 13 farmers' systems (512 ha)	1 farmers' system (100 ha)	AL-02, 03, 19, 20 and 13 farmers' (962 ha)	1 farmers' system (10 ha)	1 farmers' system (10 ha)
Water supply and Hydropower generation		Kakhu dam project (Water supply master plan)	Kakhu dam project (Water supply master plan)			Kotkhu dam project (Water supply) F/S level	
Discharge measurement by DOI					1.25 m ³ /sec (April)	2.4 m ³ /sec (June)	1.83 m ³ /sec (June)
shown in WECS report				0.99 m ³ /sec in rainy season			
by Study team				0.044 m ³ /sec (May 2, 1993)		0.19 m ³ /sec (May 2, 1993)	
Estimated discharge given in Project request sheet (Dry season)					1.25 m ³ /sec	1.26 m ³ /sec	0.091 m ³ /sec
(Rainy season)							
Estimated discharge in this study (Dry season (Feb.))	0.03 m ³ /sec	0.56 m ³ /sec	0.34 m ³ /sec	0.11 m ³ /sec	0.33 m ³ /sec	0.113 m ³ /sec	0.044 m ³ /sec
(Rainy season (Jun.))	0.14 m ³ /sec	1.9 m ³ /sec	0.9 m ³ /sec	0.48 m ³ /sec	0.71 m ³ /sec	0.429 m ³ /sec	0.149 m ³ /sec
Estimated flood discharge (1/10)	15 m ³ /sec	107 m ³ /sec	105 m ³ /sec	32 m ³ /sec	115 m ³ /sec	53 m ³ /sec	24 m ³ /sec
(1/50)	23 m ³ /sec	167 m ³ /sec	164 m ³ /sec	48 m ³ /sec	180 m ³ /sec	81 m ³ /sec	36 m ³ /sec

Code No.	AL-18	AL-20	AL-19	
Project Name	Saibu	Tika Bhairav-II	Tika Bhairav-I	
Command Area (rainy season)	90	200 *	300 *	
(dry season)	125	150 *	200 *	
Water Source	Nakhu Khola	Nakhu Khola	Lele & Nallu Kh.	
Catchment Area (km ²)	52	47	39	
Basin Rainfall (mm/yr)	2,320	2,410	2,270	
Upstream Water Use				
Irrigation intake	AL-02, 03, 08, 19, 20 and 13 farmers' syst's. (1,112 ha)	AL-03, 19, 20 and 13 farmers' syst's. (1,112 ha)	10 farmers' systems (196 ha)	
Water supply and Hydropower generation	Kakhu dam project (Water supply master plan)	Kakhu dam project (Water supply master plan)	Kakhu dam project (Water supply master plan)	
Discharge measurement by DOI		1.5 m ³ /sec (April)	4.75 m ³ /sec (June)	
shown in WECS report				
by Study team		0.35 m ³ /sec (May 3, 1993)	0.13 m ³ /sec (May 3, 1993) 0.73 m ³ /sec (Jul. 27, 1993)	
Estimated discharge given in Project request sheet (Dry season)			0.30 m ³ /sec	
(Rainy season)				
Estimated discharge in this study (Dry season (Feb.))	0.28 m ³ /sec	0.235 m ³ /sec	0.34 m ³ /sec	
(Rainy season (Jun.))	0.47 m ³ /sec	1.565 m ³ /sec	1.361 m ³ /sec	
Estimated flood discharge (1/10)	120 m ³ /sec	112 m ³ /sec	98 m ³ /sec	Lele Khola 57 m ³ /sec Nallu Khola 64 m ³ /sec
(1/50)	188 m ³ /sec	175 m ³ /sec	153 m ³ /sec	87 m ³ /sec 99 m ³ /sec

Note *: Command area of each scheme is nominal area registered on the list prepared by DIO. Actual irrigation area of the selected model schemes shall be referred to the result of Phase-II Study.

表3-5 カトマンズ盆地における政府管理灌漑施設の年間維持管理予算

Unit: NRs.1,000

Name of Irrigation Schemes	Fiscal Year					Remarks
	1985/86	1986/87	1987/88	1988/89	1989/90	
Kathmandu District						
AK-01 Balaju	33	40	95	50	-----	50
AK-02 Balambu	-	-	-	-	-----	-
AK-03 Balkhu	-	-	-	-	-----	-
AK-04 Biswambhara	80	100	160	200	-----	140
AK-05 Boshan	134	175	375	250	-----	100
AK-06 Budhanikantha	32	50	50	50	-----	65
AK-07 Chaitrya Kulo	30	75	100	100	-----	20
AK-07 Dakshinkali	60	150	400	150	-----	90
AK-08 Dalu Kulo	-	-	-	-	-----	-
AK-09 Dhulopuro	-	-	-	-	-----	-
AK-10 Gogal Indrayani Kulo	-	-	-	-	-----	-
AK-11 Ghatti Khola	-	-	-	-	-----	-
AK-12 Gokarna	148	200	100	150	-----	80
AK-13 Ichadol	44	50	75	150	-----	50
AK-14 Indrayani	110	150	180	200	-----	75
AK-15 Itakot	-	-	-	-	-----	-
AK-16 Kudali Kulo	-	5	5	5	-----	5
AK-17 Lamabagar	-	-	-	-	-----	-
AK-18 Lupang	-	-	-	-	-----	-
AK-19 Manamatti	-	-	-	-	-----	-
AK-20 Narayan Khola	-	-	-	-	-----	-
AK-21 Panchmane	-	-	-	-	-----	-
AK-22 Pashupati	50	50	50	60	-----	25
AK-23 Patichaur	-	-	-	-	-----	-
AK-24 Pharping Dhunge Dhara	44	50	55	100	-----	25
AK-25 Shali Nadi	-	-	-	-	-----	-
AK-26 Sundarijal	-	-	-	-	-----	-
AK-27 Tokha	25	40	55	50	-----	25
AK-28 Takucha Rajilulo	-	-	-	-	-----	-
Kathmandu District Total	790	1,135	1,700	1,515	-----	750
Bhaktapur District						
AB-01 Balakhu including for	90	150	190	300	-----	150
AB-02 Bidol	-	-	-	-	-----	-
AB-04 Dhunge Dhara	-	-	-	-	-----	-
AB-12 Kutudhal	-	-	-	-	-----	-
AB-03 Chakhu Khola	59	100	100	200	-----	50
AB-05 Dhunge Kulo	-	-	-	-	-----	-
AB-06 Doka and Triveni	-	-	-	-	-----	-
AB-07 Ghatti Kulo	-	-	-	-	-----	-
AB-08 Hanumante	38	100	50	125	-----	50
AB-09 Kathuraji Kulo	-	-	-	-	-----	-
AB-10 Katunje	25	50	75	125	-----	50
AB-11 Khasyan Khulsung	-	-	-	-	-----	-
AB-13 Lapsetar	-	-	-	-	-----	-
AB-14 Mahadev Khola	90	150	190	300	-----	150
AB-15 Nala Kulo	-	-	-	-	-----	-
AB-16 Narayanthali	-	-	-	-	-----	-
AB-17 Nil Barahi	-	-	-	-	-----	-
AB-18 Sipadol Katunje	-	-	-	-	-----	-
AB-19 Surya Biyanak	-	-	-	-	-----	-
AB-20 Sweety (Shishaugari)	-	-	-	-	-----	-
AB-21 Thimi Manohara Kulo	-	-	-	-	-----	-
AB-22 Walakhe Kulo	-	-	-	-	-----	-
AB-23 Yogdhara Kulo	-	-	-	-	-----	-
Bhaktapur District Total	302	550	605	1,050	-----	450
Lalitpur District						
AL-01 Apha Kulo	-	-	-	-	-----	-
AL-02 Bhorie	-	-	-	-	-----	-
AL-03 Champi	-	-	-	-	-----	-
AL-04 Gimdi	-	-	-	-	-----	-
AL-05 Godawari	80	125	225	250	-----	70
AL-06 Ikudhal Kulo	-	-	-	-	-----	-
AL-07 Kamabhu Kulo	-	-	-	-	-----	-
AL-08 Khokana	-	-	-	-	-----	-
AL-09 Khurmi Khola	-	-	-	-	-----	-
AL-10 Kotkhu	144	100	150	200	-----	70
AL-11 Kumbheswar	-	-	-	-	-----	-
AL-12 Lele Kulo	-	-	-	-	-----	-
AL-13 Lubhu	129	150	40	125	-----	100
AL-14 Lukani Besi	-	-	-	-	-----	-
AL-15 Manikhet	-	-	-	-	-----	-
AL-16 Meltar	-	-	-	-	-----	-
AL-17 Pyutar	-	-	-	-	-----	-
AL-18 Saibu / Makal Kulo, Sara Kulo	-	-	-	-	-----	-
AL-19 Thika Bhairaw-I	163	150	280	40	-----	100
AL-20 Thika Bhairaw-II	170	350	325	100	-----	60
Lalitpur District Total	686	875	1,020	715	-----	400
Total in Kathmandu Valley	1,778	2,560	3,325	3,280	-----	1,600

Note: Data provided by the CRID. Data in FY 1989/90 are not available in CRID.

表3-6 灌漑セクタープログラム (ISP) による灌漑施設

No.	Name of Scheme	Command Area (ha.)	Subject Cost (Rs.)	Cost per ha. (Rs.)	Farmer's Contribution		EIRR (%)	Remarks JICA No.
					Cash (Rs.)	Labor (Rs.)		

List of Approved Project

Kathmandu District

IK-1	Balambu	50.0	1,229,750.00	24,595.00	29,182.88	129,817.12	20.00	AK-02
IK-2	Bhare	100.0	5,033,125.70	50,331.26	12,321.88	301,927.00	23.00	
IK-3	Chunnikhel	55.0	1,491,203.00	27,112.78	22,916.67	114,583.33	15.00	
IK-4	Dhulopuro	30.0	875,944.00	29,198.13	17,509.73	72,490.27	15.00	AK-09
IK-5	Dhungana Besi	80.0	2,363,148.28	29,539.35	41,337.00	171,255.00	29.00	
IK-6	Ghatte Khola I	25.0	213,155.00	8,526.20	10,658.00	42,631.00	38.00	AK-11
IK-7	Ghatte Khola II	20.0	1,129,040.00	56,452.00	10,285.71	61,714.29	14.00	AK-11
IK-8	Jantara Khola	30.0	1,234,275.00	41,142.50	12,342.00	74,056.00	19.00	
IK-9	Lamabagar	36.0	186,480.00	5,180.00	9,325.00	37,300.00	30.00	AK-17
IK-10	Narayan Khola	52.0	1,457,795.00	28,034.52	30,350.19	125,649.81	15.00	AK-20
IK-11	Pakhure Salle	52.0	292,684.94	5,628.56	51,219.00	212,965.00	20.00	
IK-12	Panchmane	21.0	200,172.00	9,532.00	10,009.00	40,035.00	47.00	AK-21
IK-13	Paticaur	50.0	1,374,000.00	27,480.00	29,182.88	120,817.12	15.00	AK-23
IK-14	Setidevi	32.0	929,775.00	29,055.47	16,271.00	67,408.00	30.00	
IK-15	Sundarijal Barchatar	150.0	5,308,800.00	35,392.00	92,404.00	384,888.00	22.00	
IK-16	Swet Brahi	100.0	2,229,800.00	22,298.00	58,365.75	241,634.24	21.00	
IK-17	Taudha Boshan	50.0	1,372,600.00	27,452.00	29,182.88	120,817.12	23.00	AK-05
IK-18	Thadokulo	80.0	2,328,640.00	29,108.00	46,692.61	193,307.39	30.00	
IK-19	Tokhel	30.0	884,730.00	29,491.00	17,509.73	72,490.27	25.00	

Bhaktapur District

IB-1	Amdol	12.5	218,000.00	17,440.00	5,045.00	27,250.00	33.00	
IB-2	Chankhu Khola	59.0	882,286.00	14,954.00	24,583.33	183,916.67	25.00	
IB-3	Dhumbu Khola	130.0	3,499,000.00	26,915.38	61,233.00	253,678.00	25.00	
IB-4	Dhusi Phat	32.0	989,000.00	30,906.25	17,308.00	71,703.00	24.00	
IB-5	Dobhan Khola	55.0	978,010.00	17,782.00	24,450.25	122,251.25	24.00	
IB-6	Doke Khola I	38.0	475,000.00	12,500.00	15,833.33	79,166.67	22.00	AB-06
IB-7	Doke Khola II	29.0	240,207.00	8,283.00	12,010.00	38,042.00	18.00	AB-06
IB-8	Ghatte Khola	30.0	394,920.00	13,164.00	12,500.00	63,500.00	26.00	
IB-9	Hermancha	50.0	1,081,250.00	21,625.00	29,182.88	120,817.12	18.00	
IB-10	Idol	18.0	114,984.00	6,388.00	5,750.00	22,998.00	7.00	
IB-11	Kasyan Khusing	40.0	524,320.00	13,108.00	16,666.67	83,333.33	34.00	AB-11
IB-12	Nanabu	78.0	670,020.00	8,590.00	33,501.00	13,400.40	35.00	
IB-13	Sirutar	55.0	1,404,000.00	25,527.27	24,570.00	101,790.30	28.00	
IB-14	Suti Khola	23.0	140,461.00	6,107.00	7,008.00	28,091.00	17.00	
IB-15	Vigali Khola	36.0	1,409,000.00	39,138.89	24,658.00	102,139.00	30.00	

Lalitpur District

IL-1	Bugmati	63.0	624,834.00	9,918.00	31,241.00	124,963.00	7.00	
IL-2	Charnmpi	125.0	2,200,000.00	17,600.00	55,000.00	275,000.00	30.00	AL-03
IL-3	Majha Kulo	100.0	1,411,000.00	14,110.00	41,666.67	208,333.33	22.00	
IL-4	Makal Kulo	90.0	1,909,368.55	21,215.21	47,734.22	238,671.11	27.50	AL-18
IL-5	Moti Rajkulo I.P.	65.0	1,350,000.00	20,769.23	33,750.00	168,750.00	19.00	
IL-6	Mulpani I.P.	60.0	12,000,000.00	200,000.00	30,000.00	150,000.00	27.50	
IL-7	Phulingdhal	68.0	266,128.00	3,913.65	13,306.00	53,225.00	31.00	
IL-8	Sidhipur	150.0	1,899,900.00	12,666.00	62,500.00	312,500.00	23.00	
IL-9	Sirkha Dol	125.0	1,427,000.00	11,416.00	52,083.33	260,416.67	24.00	

List of Projects to be Appraised

Kathmandu District		Nil						
Bhaktapur District		Nil						
Lalitpur District								
IL-10	Bumadi	75.0	1,950,000.00	26,000.00	48,750.00	243,750.00	23.00	
IL-11	Harisiddhi	80.0	2,398,000.00	29,975.00	41,965.00	173,855.00	18.00	
IL-12	Khokana	250.0	3,500,000.00	14,000.00	87,300.00	437,500.00	31.00	AL-08
IL-13	Khyakdol I.P.	250.0	700,000.00	2,800.00	12,250.00	50,750.00	20.00	
IL-14	Nagdaha	30.0	895,000.00	29,833.33	15,662.50	64,887.50	21.50	
IL-15	Piple Dol	90.0	2,380,000.00	26,444.44	41,650.00	172,550.00	27.00	

表3-7 インベントリ調査一覧

No.	Sub No.	Name of Scheme	Project Area (ha.)				Priority by DoI	Involvement by ISP	Remarks	Inventory Survey
			Informed	Rainy Season	Dry Season	Planned				
Kathmandu District										
AK-01	K-09	Balaju	60	25	20	----	----	Almost urbanized	Listed	
AK-02	K-20	Balamu	20	50	20	----	----	Approved	Listed	
AK-03	----	Balkhu	25	25	----	----	----	Almost urbanized, and too small	Listed	
AK-04	K-07	Biswambhara	200	80	32	125	1/6	----	Listed	
AK-05	K-3	Boshan	260	150	50	210	2/6	----	Listed	
AK-06	K-8	Budhanikantha	200	200	150	----	----	----	Listed	
AK-07	K-1	Dakshinkali	100	100	60	100	----	----	Listed	
AK-08	----	Dalu Kulo	10	----	----	----	----	Almost urbanized, and too small	Omitted	
AK-09	K-17	Dtslopuro	25	25	----	----	----	Approved	Listed	
AK-10	K-13	Gogal Indrayani Kulo	162	130	----	----	----	----	Listed	
AK-11	----	Ghante Khola	15	----	----	----	----	Approved	Omitted	
AK-12	K-6	Gokarna	375	75	60	----	6/6	----	Listed	
AK-13	K-5	Ichadol	70	35	30	----	----	----	Listed	
AK-14	K-11	Indrayani	145	100	73	140	4/6	----	Listed	
AK-15	----	Bakot	3	----	----	----	----	Not identified by DoI	Omitted	
AK-16	K-4	Kudali Kulo	10	----	----	----	----	Too small	Omitted	
AK-17	K-22	Lamabagar	40	----	----	----	----	Implemented	Omitted	
AK-18	----	Larpang	5	----	----	----	----	Not identified by DoI	Omitted	
AK-19	K-19	Manamati	6	----	----	----	----	Too small	Omitted	
AK-20	K-15	Narayan Khola	30	----	----	----	----	Implemented	Omitted	
AK-21	K-12	Panchmane	60	----	----	----	----	Approved	Omitted	
AK-22	----	Pastupati	75	----	----	----	----	Almost urbanized	Omitted	
AK-23	K-16	Patichaur	40	----	----	----	----	Approved	Omitted	
AK-24	K-2	Pharping Dhunge Dhara	339	74	60	----	----	----	Listed	
AK-25	K-14	Shali Nadi	600	150	100	300	3/6	----	Listed	
AK-26	K-18	Sundarijal	20	35	35	----	----	----	Listed	
AK-27	K-10	Tokha	200	100	80	150	5/6	----	Listed	
AK-28	----	Takucha Rajtilo	30	----	----	----	----	Almost urbanized	Omitted	
Bhaktapur District										
AB-01	B-05	Balaktu	60	60	50	----	----	----	Listed	
AB-02	B-07	Bidol	65	100	60	60	----	----	Listed	
AB-03	B-04	Chakhu Khola	100	60	60	----	----	----	Listed	
AB-04	B-10	Dhunge Dhara	520	210	120	210	2/4	----	Listed	
AB-05	----	Dhunge Kulo	28	----	----	----	----	Approved	Omitted	
AB-06	----	Doke and Triveni	180	----	----	----	----	Approved	Omitted	
AB-07	----	Ghante Kulo	350	190	290	----	----	----	Listed	
AB-08	B-08	Hamumante	100	150	150	----	----	----	Listed	
AB-09	----	Katunji Kulo	400	----	----	----	----	Not identified by DoI	Omitted	
AB-10	B-02	Katunje	95	100	100	90	4/4	----	Listed	
AB-11	----	Khasyan Khusung	20	----	----	----	----	Approved	Omitted	
AB-12	B-09	Kutudhal	40	100	80	147	3/4	----	Listed	
AB-13	----	Lapetar	60	60	----	----	----	----	Listed	
AB-14	B-01	Mahadev Khola	375	375	300	450	1/4	----	Listed	
AB-15	----	Nala Kulo	120	----	----	----	----	Outside Kathmandu Valley	Omitted	
AB-16	----	Narayanthali	30	----	----	----	----	Not identified by DoI	Omitted	
AB-17	B-11	Nij Barahi	60	60	40	----	----	----	Listed	
AB-18	B-03	Sipadol Katunje	100	100	40	----	----	Water shortage is anticipated in the future	Listed	
AB-19	----	Surya Biyanak	50	----	----	----	----	Fatal lack of irrigation water	Omitted	
AB-20	B-06	Sweety (Shishaugari)	23	23	23	----	----	----	Listed	
AB-21	----	Thimi Manohara Kulo	40	----	----	----	----	Not identified by DoI	Omitted	
AB-22	----	Walaithe Kulo	40	----	----	----	----	Not identified by DoI	Omitted	
AB-23	----	Yogdhara Kulo	400	----	----	----	----	Not identified by DoI	Omitted	
Lalitpur District										
AL-01	----	Aphar Kulo	250	----	----	----	----	Outside Kathmandu Valley	Omitted	
AL-02	L-06	Bhorie	50	150	150	----	----	Implemented	Listed	
AL-03	L-09	Champi	100	100	100	----	----	Implemented	Listed	
AL-04	----	Gimdi	20	----	----	----	----	Outside Kathmandu Valley	Omitted	
AL-05	L-03	Godawari	104	175	150	----	6/6	----	Listed	
AL-06	----	Itudhal Kulo	120	----	----	----	----	Outside Kathmandu Valley	Omitted	
AL-07	----	Kamabhu Kulo	50	----	----	----	----	Outside Kathmandu Valley	Omitted	
AL-08	L-07	Kbokana	300	150	150	250	5/6	----	Listed	
AL-09	----	Khurmi Khola	15	----	----	----	----	Outside Kathmandu Valley	Omitted	
AL-10	L-04	Kotkhu	100	240	150	445	4/6	----	Listed	
AL-11	----	Kumbheswar	50	----	----	----	----	Outside Kathmandu Valley	Omitted	
AL-12	----	Lele Kulo	25	----	----	----	----	Outside Kathmandu Valley	Omitted	
AL-13	L-05	Lubhu	600	115	75	165	3/6	----	Listed	
AL-14	----	Lukani Beri	10	----	----	----	----	Outside Kathmandu Valley	Omitted	
AL-15	----	Mankhet	40	----	----	----	----	Outside Kathmandu Valley	Omitted	
AL-16	----	Meltar	10	----	----	----	----	Outside Kathmandu Valley	Omitted	
AL-17	----	Pyutar	20	----	----	----	----	Outside Kathmandu Valley	Omitted	
AL-18	L-08	Saiba / Makal Kulo, Sara Kulo	50	90	125	----	----	Approved	Listed	
AL-19	L-01	Thika Bhairaw-I	400	500	500	600	1/6	----	Listed	
AL-20	L-02	Thika Bhairaw-II	300	200	150	400	2/6	----	Listed	

表3-8 調査地域における主要作物の作付面積、収量、および生産量

Crops	Nepal (1991/92)			Kahmandu Valley (1991/92)			The Study Area		
	Planted Area (ha)	Production (ton)	Yield (ton/ha)	Planted Area (ha)	Production (ton)	Yield (ton/ha)	Planted Area (ha)	Production (ton)	Yield (ton/ha)
<i>Paddy</i>	1,411,810	3,222,540	2.28	18,550	83,130	4.48	5,900	28,000	4.74
<i>Wheat</i>	571,260	779,160	1.36	16,480	27,410	1.66	5,300	9,000	1.69
<i>Maize</i>	754,090	1,204,710	1.60	11,890	30,090	2.53	3,800	7,900	2.08
<i>other cereals*</i>	228,080	256,300	1.12	2,380	3,570	1.50	850	1,100	1.29
<i>Potatoes</i>	85,300	732,860	8.59	2,040	21,000	10.29	650	7,200	11.12
<i>Mustard</i>	154,570	87,840	0.57	550	320	0.58	200	130	0.65
<i>Legumes</i>	261,860	154,540	0.59	510	310	0.61	350	200	0.57 **
<i>Vegetables***</i>	142,500	1,127,836	7.91	3,519	34,242	9.73	450	4,450	9.88
							Total Planted Area:	17,500	

Remarks * : Including the Millet, Barley etc.

** : Including such legumes as Black gram, Horse gram, Soybean etc.

*** : Including follow vegetables and spices;

Cauliflower, Radish, Cabbage, Broadleaf mustard, Tomato, Brinjal, Gourd, Sweet chili, Cucumber, etc., and
Ginger, Turmeric, Chilli, Garlic, etc.

Source : Agricultural Statistics in Nepal 1991/92

Sample Farm Survey by JICA Study Team 1993

Data from Each DADO office Horticulture Section

表 3-9 調査地域の野菜の現行耕種法

Vegetables	Planted Area*	Name	Variety (Season)	Cropping Calendar (Planting - Harvesting)												Seed Rate (kg/ha)	Row Plant	Spacing (cm)	Irrigation (time)	Compost Used (ton/ha)			Chemical fertilizer (kg Agro-Chemical)	Weeding (times)	Yield (ton/ha)
				1	2	3	4	5	6	7	8	9	10	11	12					Complete	Urea	Potash			
<i>Winter</i> <i>Yazuna/Jan</i> Cauliflower	1,387 430	Kaishimaru Local Snowball - 16 Deepali	Middle Late Early																7.5-24.0	350-500 N:P:K = 180:120:0	0	Novan	2-3	20-30	
Radish	316	40 days Mino early White neck Pytane red	Early Early - Mid. Mid-Late																10.0-16.0	400-450 N:P:K = 130:85:0	0		1	10	
Cabbage	302	Golden Ace Green Cross K.K.Cross Late Large Drum Head Green Crownet Red Cabbage																	7.5-16.0	400-500 N:P:K = 200:90:0	0	Novan Dithane-45	2-3	24-40	
Broadleaf Mustard	162	Khumal Broad Leaf Marpha Broad Leaf																	5.0-12.0	300-350 N:P:K = 125:65:0	0			20	
Onion	111	Red Croal Local (Chinese Leaf Onion)	middle very early																20	300 N:P:K = 60:60:40	65	Malathion 1-2	1-2	20	
Garden Pea	88	New Line Perfection Akel																	10	200 N:P:K = 40:40:60	100	Malathion 1-2	1-2	4-8	
Garden Cress	82	Kaishimaru Local																	8-12	300 N:P:K = 150:60:0	0		2-3	6-10	
Spinach	81	(Local variety)																	12	500 N:P:K = 100:100:0	0		2	10-20	
Turnip	78	Purple Top White Globe																	16	400-450 N:P:K = 130:85:0	0		2	10	
Carrot	53	New kuroda																	8	300 N:P:K = 60:60:0	0	Novan	2	12	
<i>Summer</i> <i>Yazuna/Jan</i> French Beans	821 149	Kentucky Wonder	middle																5	300 N:P:K = 175:60:0	0		1	4-6	
Brinjal	79	Pusa Purple Long	middle																10	100 N:P:K = 200:200:0	0	Novan	2-3	16	
Sweet pepper	69	California Wonder	middle																6	300 N:P:K = 100:60:0	0		2	10	
Tomato	53	Roma Moneacco Pusa Ruby Local	early-mid. spring middle																7-10	500-550 N:P:K = 150:200:0 N:P:K = 130:160:60:70:0	0	Dithane-45	3	20	
Cucumber	36	Local																	6-10	200 N:P:K = 85:40:0	100		0	12	
Lady's Finger	31	Local																	6	200 N:P:K = 85:40:0	0		0	15	
Pumpkin	4	Sugani																	6	200 N:P:K = 110:40:0	150		0	10	
<i>Spices</i> Garlic	648 246	Local																	20	400-500 N:P:K = 170:190:80:100:0	200	Menacid Novan Dithane-45	2-4	30	
Chili	138	Kaishimaru Local																	6-8	300 N:P:K = 130:60:0	150		2-3	5	
Ginger	136	Boae, Naae																	20-30	200 N:P:K = 60:40:0	45		2	7-10	
Turmeric	90																		20-30	400 N:P:K = 80:80:0	400		0		
Total	2,468																								

Remarks: * : Planted Area in 1990/91, unpublished data of horticulture section of each DALDO

表 3 - 10 調査地域の家畜頭数

Livestocks	Nepal		CDR		Kathmandu Valley		The Study Area				
	Total Head	Average No. per Farm Household	Total Head	Average No. per Farm Household	Total Head	Average No. per Farm Household	Total Head	Average No. per Farm Household	No. of holding	(%)*	Ave. Nos. / holding
Cattle	6,245,682	8.3	1,470,824	7.5	81,942	0.8	26,820	0.7	26,820	41.1	1.8
Buffalo	3,058,341	4.1	775,987	4.0	31,706	0.3	11,950	0.3	11,950	16.8	2.0
Sheep	912,372	1.2	109,092	0.6	14,864	0.2	4,740	0.1	4,740	5.1	2.6
Goat	5,405,793	7.2	1,666,219	8.5	104,992	1.1	40,090	1.1	40,090	34.2	3.3
Pig	598,935	0.8	81,220	0.4	3,431	0.0	1,460	0.0	1,460	1.1	3.9
Poultry	13,496,245	17.9	5,517,166	28.3	1,096,171	11.3	291,270	8.1	291,270	34.2	23.8
Duck	389,542	0.5	125,366	0.6	9,994	0.1	3,790	0.1		1.6	6.4

Remarks *: Proportion of livestock holdings to total farm household
 Source : Agricultural Statistics 1991/1992
 National Sample Census of Agriculture , 1991/1992

表 3 - 11 調査地域の畜産物生産量

Description	Nepal	CDR	Kathmandu Valley	The Study Area
Milk Production (unit : Mt)				
No. of Milk Cow (% of total head)	695,130 (11.1)	161,641 (11.0)	15,804 (19.3)	5,834 (21.8)
No. of Milk Buffalo (% of total head)	751,920 (24.6)	186,522 (24.0)	18,213 (57.4)	6,723 (56.3)
Cow Milk	259,230	74,353	10,975	4,051
Buffalo Milk	612,004	174,146	18,567	6,854
Milk Total	871,234	248,499	29,542	10,905
Meat Production (unit : Mt)				
Buffalo	96,013	34,160	8,056	2,974
Mutton	3,044	369	89	33
Goat	29,844	7,626	1,530	565
Pig	10,407	1,523	455	168
Chicken	9,119	4,250	1,986	733
Duck	268	86	4	1
Total	148,695	48,014	12,120	4,474
Egg Production (unit : '000' Nos)				
No. of Hen (% of total head)	4,187,282 (31.0)	1,780,224 (32.3)	529,467 (48.3)	195,438 (67.1)
No. of Duck (% of total head)	202,352 (51.9)	66,107 (52.6)	3,766 (37.7)	1,390 (36.7)
Hen Egg	352,983	166,003	62,600	23,107
Duck Egg	15,181	5,008	280	103
Egg Total	368,164	171,011	62,880	23,210
Wool Production (unit : kg)				
No. of Sheep	912,372	109,092	14,864	5,487
Wool Production	620,413	74,183	13,997	5,167

Source : Agricultural Statistics 1991/1992
 National Sample Census of Agriculture , 1991/1992

表 3-12 調査地域における湖沼面積、水面面積、水産量

	Nepal											
	Nepal			Central Development Region (CDR)				Kathmandu Valley				
	Total	Terai	Hill	Mountain	Total	Terai	Hill	Mountain	Total	Kathmandu	Lalitpur	Bhaktapur
Area Condition												
No. of Pond (No)	16,562	15,691	858	13	6,045	5,732	300	13	135	77	57	1
Area of Pond (ha)	8,381	8,230	149	2	4,040.80	3,967.37	71.62	1.81	35.07	15.70	17.69	1.68
Area of Water Surface distribution (%)	4,746	4,630	115	1	2,054.72	1,998.77	54.82	1.13	25.01	13.17	10.47	1.37
(Area of Paddy cum Fish Culture) (ha)		(97.56)	(2.42)	(0.02)		(97.28)	(2.67)	(0.05)	(45.6% of hill area in CDR)			
									7.00	2.00	3.00	2.00
Production Amount												
Fish Production distribution (%)	9,125.0	8,922.0	202.0	1.0	3,842.8	3,753.0	88.3	1.5	33.2	21.0	9.2	3.0
	(97.78)	(97.78)	(2.21)	(0.01)		(97.66)	(2.30)	(0.04)	(37.6% of total production of CDR hill area)			
Yield (ton/ha)	1.92	1.93	1.76	1.00	1.87	1.88	1.61	1.33	1.33	1.59	0.88	2.19

Source : Unpublished Agricultural Statistics Data, MoA, 1991/92

表 3 - 13 平均規模農家の年間農家所得

Holding Land	: 0.282 ha	Cropping Intensity	: 172
Family Member	: 6		
Workable Member	: 3.5		
Main Crops	: Paddy, Wheat, Maize, Potato and Vegetables		
Livestock	: Cattle 2, Buffalo 1, Goats 3, Poultry 30		
		NRs.	Proportion
Gross Farm Income		11,482	
Production Cost		3,367	
Net Farm Income		<u>8,115</u>	23.0%
Other Farm Income (Livestock)		<u>1,136</u>	3.2%
Non Farm Income		<u>26,084</u>	73.8%
Total Household Income		<u><u>35,335</u></u>	100.0%
Living Expenses			
Food		19,924	57.3%
Clothing		3,865	11.1%
Housing		6,657	19.2%
Medicine		1,543	4.4%
Education		1,492	4.3%
Transport		297	0.9%
Social Expenses		969	2.8%
Sub- Total		<u>34,747</u>	100.0%
Saving/Reserve		<u><u>588</u></u>	

表 3 - 14 農業普及員数

Item	Lalitpur	Bhaktapur	Kathmandu	Total
Agricultural Service Center	6	6	7	19
Agricultural Service Sub-Center	11	-	7	18
Nos. of villages covered by a Center	7.0	3.6	9.6	6.8
Cultivated Area covered by a Center (ha)	1,937	1,074	897	3,908
Nos. of Extension Worker	52	31	60	143
Assistant Agri. Development officer	8	-	-	8
Junior Technician	13	6	29	48
Junior Technical Assistant	31	25	31	87
Nos. of Village per worker	0.8	0.7	2	0.9
Nos. of Farm Families per worker	557	733	759	680
Average covering area per worker (ha)	190	208	226	209

表 3 - 15 農業普及活動 (1991/92)

Item	Lalitpur	Bhaktapur	Kathmandu	Total
Number of Farmers Group	122	45	179	346
Member of Farmers Group	2,076	900	1,960	4,936
Number of 4-H Club	10	18	9	37
Member of 4-H Club	156	245	153	554
Training Course for Farmers				
1) Field Level				
Annual Training Courses	12	40	27	79
Attended farmers	500	800	400	1,700
2) District Level				
Annual Training Courses	16	7	3	26
Horticulture	4	3	-	7
Cereal Crops	12	4	3	19
Attended Farmers	340	175	75	590
3) Regional Level				
Dispatched Number of farmers	49	36	30	115

表 3 - 16 調査対象地域における現況施肥量と推奨量の比較

(Unit : kg/ha)

<u>Average Amount of Fertilizers Supplied by AIC</u>				Total	N	P	K
	Nutrients content (N : P : K)			Consumption			
1 Urea	(46	: 0	: 0)	197	91	0	0
2 Complex	(20	: 20	: 0)	118	24	24	0
3 Murate of Potash	(0	: 0	: 60)	1	0	0	1
4 T.S.P	(0	: 48	: 0)	0	0	0	0
5 D.A.P	(18	: 46	: 0)	2	0	1	0
6 Anmonium Sulphate	(21	: 0	: 0)	35	7	0	0
Total					122	25	1

<u>Actual Dosage and Recommendation to Major Crop</u>				Recommendation**		
	Actual Dosage *			(N : P : K)		
	(N	: P	: K)			
1 Paddy	146	20	0	100	30	30
2 Wheat	127	13	0	80	40	20
3 Maize	106	11	0	120	75	50
4 Potatoes	240	39	0	150	60	350
5 Mustard	86	40	0	34	22	28
6 Vegetables***	117	69	0	100	60	50

Remarks * : Farm Survey by JICA Study Team , 1993

** : Source : Trainer's manual, Manpower Development Agriculture Project, DoA.

*** : Average of cauliflower, tomato, and radish.

表 3 - 17 農業金融状況

Unit : NRs.1,000 (%)

	1988/89	1989/90	1990/91	1991/92
1. Disbursement				
a. Agri. production	3,112 (7.6%)	4,664 (8.0%)	3,973 (7.2%)	4,131 (5.0%)
b. Agri. tools & irrigation	796 (1.9%)	1,630 (2.8%)	1,336 (2.4%)	3,783 (4.6%)
c. Agri. business	13,271 (32.4%)	29,791 (51.2%)	23,408 (42.3%)	21,864 (26.3%)
d. Agri. industry & marketing	22,098 (54.0%)	19,601 (33.7%)	25,295 (45.7%)	52,669 (63.4%)
e. Bio-gass plant	581 (1.4%)	1,149 (2.0%)	222 (0.4%)	119 (0.1%)
f. Horticulture	126 (0.3%)	854 (1.5%)	1,142 (2.1%)	458 (0.6%)
g. Housing & land developmen	917 (2.2%)	474 (0.8%)	17 (0.0%)	-
Total	40,901 (100.0%)	58,163 (100.0%)	55,393 (100.0%)	83,024 (100.0%)
Annual Increase Rate	100.0%	42.2%	-4.8%	49.9%
2. Repayment				
a. Agri. production	2,369 (6.5%)	3,389 (9.1%)	3,240 (7.9%)	5,694 (9.4%)
b. Agri. tools & irrigation	962 (2.6%)	1,248 (3.3%)	1,490 (3.6%)	2,255 (3.7%)
c. Agri. business	18,172 (50.0%)	16,381 (43.9%)	17,746 (43.2%)	22,146 (36.7%)
d. Agri. industry & marketing	14,563 (40.0%)	15,721 (42.1%)	18,063 (44.0%)	28,998 (48.1%)
e. Bio-gass plant	256 (0.7%)	438 (1.2%)	426 (1.0%)	389 (0.6%)
f. Horticulture	38 (0.1%)	125 (0.3%)	55 (0.1%)	193 (0.3%)
g. Housing & land developmen	15 (0.0%)	31 (0.1%)	22 (0.1%)	591 (1.0%)
Total	36,375 (100.0%)	37,333 (100.0%)	41,042 (100.0%)	60,266 (100.0%)
Annual Increase Rate	100.0%	2.6%	9.9%	46.8%
3. Outstanding	139,624	162,630	175,779	211,055
Total out standing index	100	116	126	151
4. Number of borrower		6,070	6,068	7,952

Sources : Agricultural Development Bank, Nepal

表 3 - 18 調査地域の小農振興計画

Unit : NRs.1,000

Description	Lalitpur	Bhaktapur	Kathmandu	Total
Number of Covered Village	8	3	4	15
Disbursement Amount	3,791	846	1,248	5,885
Repayment Amount	2,442	677	1,924	5,043
Outstanding (accumulated)	11,858	3,632	4,275	19,765

Sources : Agricultural Development Bank, Nepal

表 3 - 19 調査地域の都市人口による野菜の年間消費量

Municipality	Population	Per capita Consumption *1		Total Annual Purchase Amount *2	
		g/day	kg/yr	tons	tons
Lalitpur	117,203	227	83	9,727	10,894
Bhaktapur	61,112	241	88	5,378	6,023
Kathmandu	414,264	260	95	39,335	44,055
Total	592,579	252	92	54,440	60,972

Source *1 : Department of Agriculture Development

Note *2 : Loss and waste rate is assumed 12%.

表 3 - 20 主要野菜市場における年間取扱量

Unit : tons (%)

Market	Monthly Average	Annual Amount	Proportion of Handling Amount
Kalimati WM	2,421	29,052	46.8%
Ason	565	6,780	10.9%
Ranamukteshowar	599	7,188	11.6%
Mahaboudha/Bir Hospital	283	3,396	5.5%
Sasto Bazaar	466	5,592	9.0%
Mangal Bazaar	238	2,856	4.6%
Sukuldhoka	599	7,188	11.6%
Total	5,171	62,052	100.0%

Source : Marketing Development Division, DoAD

表 3 - 21 農業投入材の現行公社価格

		Unit : NRs./Unit					
Input	Unit	FY92/93			FY91/92		FY90/91
		Feb.'93	Jan.'93	Nov.'92	July'92	Aug.'91	
1. Fertilizer							
Urea (46:0:0)	Kg	5.60	5.14	5.14	5.71	5.14	4.07
Complex (20:20:0)	Kg	10.00	10.00	10.00	6.30	5.68	4.50
DAP (18:46:0)	Kg	12.50	12.50	11.00	8.36	7.52	6.32
A. Sulfate (21:0:0)	Kg	6.90	6.90	4.20	4.67	4.20	3.11
Potash (0:0:60)	Kg	8.50	8.50	6.00	3.21	2.90	2.32
TSP (0:46:0)	Kg	8.00	8.00	8.00	5.15	4.64	3.96
2. Crop Seed							
Paddy	Kg		16.70				
Wheat	Kg		12.00		12.05		9.55
Maize	Kg		14.70		14.70		11.00
3. Vegetables Seed							
Cauliflower	Kg		300.00				
Cabbage (late large)	Kg		150.00				
Cabbage (pride of India)	Kg		180.00				
Broccoli	Kg		150.00				
Cress	Kg		50.00				
Radish (ME-L)	Kg		55.00				
Radish (Tokinashi)	Kg		125.00				
Broad Leaf Mustard (MBL)	Kg		80.00				
Broad Leaf Mustard (KBL)	Kg		50.00				
Fenugreek (L)	Kg		30.00				
Fenugreek (I)	Kg		60.00				
Spinach	Kg		50.00				
Onion	Kg		25.00				
Bitter Gourd	Kg		150.00				
Cucumber	Kg		250.00				
4. Pesticide/Insecticide							
BHC Dust	Kg		6.00				
Hinosan	100 ml bottle		50.80				
Metacid	100 ml bottle		59.95				

表 3 - 22 収穫後処理施設調査

Item	Unit : Nos.			
	Lalitpur	Bhaktapur	Kathmandu	Total
1. Rice Mills	37	72	55	164
a. Rice only	8	34	52	94
b. Dual purpose	4	20	3	27
2. Beaten Rice Mill	4	9	2	15
3. Flour Mill	6	7	5	18
4. Spice Mill	6	5	14	25
5. Feed Mill	2	10	13	25
6. Oilseed Mill	9	4	3	16
7. Agri-based Factory	24	9	41	74

Note : Number is only registered one in Department of Industry since 1990/90 - 1992/93.

Capacity of rice mill is estimated about 500 tons per year on an average.

Source: Department of Cottage and Small Industries, Ministry of Industry.

表 3 - 23 カトマンズ盆地における大規模農業関連工業一覧 (1992/1993)

Number of Company	Main Products	Amount of Products	Raw Mate-rial Total	Unit : ton		
				From K. Valley	From Other Districts	Imported
1	Poultry Feeds	2,012	2,188	755	1,025	408
	Cattle Feeds	60				
2	Wheat Flour	8,200	9,700		9,700	
	Wheat Bran	2,500				
3	Biscuits	1,955	2,190	1,721	437	32
4	Butter	16				
	Milk	912	957		946	11
5	Biscuits	69	82		75	7
6	Beer	8,000	10,387	60	2	10,325
7	Instant Noodle	1,329				
8	Snacks	66	1,671	41	1,063	567
9	Cattle & Poultry Feeds	7,088	7,768	2,011	5,297	460
Total		32,207	34,943	4,588	18,545	11,810
%			100.0	13.1	53.1	33.8

表 3 - 24 調査対象地域の野菜価格 (1992/1993)

Unit: NRs./kg

Crops	Farm-gate	Wholesale	Retail
Potatoes	6.45	7.03	8.05
Radish	2.50	3.26	4.68
Cauliflower	12.00	12.26	16.50
Tomato	8.50	10.07	14.62
Brinjal	4.00	5.82	9.03
Beans	10.00	11.72	-
Cabbage	5.50	5.92	8.53
Onion	6.00	6.24	8.27
Ginger	14.53	-	19.06
Green chilli	9.00	20.82	-
Pointed Gourd	-	12.03	12.58
Carrot	6.00	-	-
Coriander	15.00	-	-
Cress	10.00	-	-
Spinach	10.00	-	-
Lettuce	10.00	-	-

表 3 - 25 穀類の受給バランス

		87/88	88/89	89/90	90/91	91/92
Nepal	P	17,753	18,207	18,677	18,263 *1	18,661
	C	3,006	3,418	3,550	3,619	3,373
	N	2,726	2,921	3,559	3,487	3,562
	B	280	497	-9	132	-189
Lalitpur district	P	217	222	228	255	262
	C	24	27	26	29	29
	N	45	46	46	51	53
	B	-21	-19	-20	-22	-24
Bhaktapur district	P	189	194	199	172 *1	175 *1
	C	24	24	23	27	23
	N	23	25	40	34	35
	B	1	-1	-17	-7	-12
Kathmandu district	P	482	491	501	653	684
	C	44	48	43	46	39
	N	96	99	101	131	137
	B	-52	-51	-58	-85	-98
Kathmandu Valley	P	888	907	928	1,080	1,121
	C	92	99	92	102	91
	N	164	170	187	216	225
	B	-72	-71	-95	-114	-134

Note : P = Population midterm estimate (1,000)

C = Consumptive Production (1,000 tons)

N = Necessity of food based on calories (1,000 tons)

B = Balance (surplus or deficit; 1,000 tons)

*1 : From CBS in reduced form.

Source : Consumptive Cereals of Kingdom of Nepal 1987-1992

Agriculture Marketing Development Division, DoAD.

表 3 - 26 カトマンズ盆地における農業共同組合社現況組織

Primary ACS	Nos. of Villages Covered	Nos. of Members	Total Nos. of Household in Village covered	Systematization Rate	Financial Balance in FY1991/92 NRs.1,000
Lalitpur District	41	15,574	28,951	54%	-
D. Co-op. Union	35	15,574	21,213	73%	-359
1	4	1,464	2,055	71%	-28
2	3	2,635	2,651	99%	-69
3	6	2,503	3,950	63%	-49
4	2	2,040	2,298	89%	-5
5	2	1,169	1,970	59%	-48
6	3	1,823	2,245	81%	-95
7	5	3,303	3,286	101%	-51
8	4	534	965	55%	-
9	6	103	1,793	6%	0
Bhaktapur district	22	547	22,725	2%	-
D. Co-op. Union	21	547	16,942	3%	-781
1	3	67	2,453	3%	-81
2	2	69	1,398	5%	-60
3	2	213	1,597	13%	-98
4	2	53	1,692	3%	-151
5	3	40	2,515	2%	-33
6	2	8	1,426	1%	-118
7	2	28	1,844	2%	-68
8	3	33	2,586	1%	-129
9	2	36	1,431	3%	-41
Kathmandu district	67	23,384	45,541	51%	-
D. Co-op. Union	66	23,384	37,344	63%	N.A.
1	5	1,147	3,177	36%	-24
2	2	936	1,158	81%	-32
3	5	1,588	2,669	59%	-41
4	5	1,761	2,422	73%	-56
5	4	1,520	2,203	69%	-79
6	3	1,446	1,615	90%	-47
7	4	1,285	1,750	73%	-14
8	3	1,325	2,329	57%	56
9	4	2,576	2,725	95%	-23
10	4	1,015	2,102	48%	-38
11	6	1,998	3,169	63%	-29
12	2	1,370	1,413	97%	-42
13	4	1,025	2,039	50%	-11
14	11	2,622	5,940	44%	-43
15	4	1,770	2,633	67%	-32

Source : District Co-operative Office in Lalitpur, Bhaktapur and Kathmandu.

表 4-1 優先スキームの評価

No.	Sub No.	Name of Schemes	Evaluation Items							Evaluation by JICA Study Team
			ISP	Farm land condition	Water sources	Farmer's intention	Urbanization	Priority by DOI	Accessibility	
AK-01	K-09	Balaju	○	X	△	X	X	X	○	X
AK-02	K-20	Balambu	X	-	-	-	-	-	-	ISP
AK-03	---	Balkhu	○	X	△	X	X	X	○	X
AK-04	K-07	Biswambhara	○	○	○	⊙	○	○	○	○
AK-05	K-3	Bosban	○	○	○	⊙	○	○	△	○
AK-06	K-8	Budhanikantha	○	○	○	△	△	X	△	△
AK-07	K-1	Dakshinkali	○	○	○	⊙	○	△	○	○
AK-09	K-17	Dhulopuro	X	-	-	-	-	-	-	ISP
AK-10	K-13	Gogal Indrayani Kulo	○	○	△	○	○	X	△	△
AK-12	K-6	Gokarna	○	△	X	△	X	○	○	X
AK-13	K-5	Ichadol	○	X	△	○	△	X	△	X
AK-14	K-11	Indrayani	○	○	○	⊙	○	○	△	○
AK-24	K-2	Pharping Dhunge Dhara	○	△	X	○	○	X	△	X
AK-25	K-14	Shali Nadi	○	○	○	⊙	○	○	○	○
AK-26	K-18	Sundarijal	○	X	○	○	○	X	△	X
AK-27	K-10	Tokha	○	○	△	⊙	○	○	○	○
AB-01	B-05	Balakhu	○	△	△	△	X	X	△	X
AB-02	B-07	Bidol	○	○	○	⊙	○	△	△	○
AB-03	B-04	Chakhu Khola	○	△	○	○	○	X	△	△
AB-04	B-10	Dhunge Dhara	○	⊙	○	⊙	○	○	△	○
AB-07	---	Ghatte Kulo	○	○	△	○	△	X	△	△
AB-08	B-08	Hanumante	○	○	△	△	△	X	○	△
AB-10	B-02	Katunje	○	○	○	⊙	△	○	△	○
AB-12	B-09	Kumdhul	○	○	○	⊙	○	○	△	○
AB-13	---	Lapsatar	○	△	△	○	○	X	○	△
AB-14	B-01	Mabadev Khola	○	⊙	○	⊙	△	○	△	○
AB-17	B-11	Nil Barahi	○	△	○	○	○	X	△	△
AB-18	B-03	Sipadol Katunje	○	○	△	○	○	X	△	△
AB-20	B-06	Sweety (shishaugari)	○	X	○	○	○	X	△	X
AL-02	L-06	Bhorle	X	-	-	-	-	-	-	ISP
AL-03	L-09	Champi	X	-	-	-	-	-	-	ISP
AL-05	L-03	Godawari	○	○	△	○	△	○	○	△
AL-08	L-07	Khokana	○	○	○	⊙	○	○	△	○
AL-10	L-04	Kotkhu	○	⊙	○	⊙	△	○	○	○
AL-13	L-05	Lubhu	○	○	○	⊙	△	○	△	○
AL-18	L-08	Saibu / Makal Kulo, Sara Kulo	X	-	-	-	-	-	-	ISP
AL-19	L-01	Thika Bhairaw-I	○	⊙	○	⊙	△	○	○	○
AL-20	L-02	Thika Bhairaw-II	○	⊙	○	⊙	△	○	△	○

表 5 - 1.1 灌漑用水量の算定 (ゾーンA)

Field Efficiency	Paddy	85%
	Dry Field	60%
Distribution Efficiency		80%
Deep Percolation (mm/day)		5.0

ZONE A

Meteo. Station : Kathmandu Airport (1030)

Crops	Irrigation Water Requirement [mm / half month]																								
	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	
Paddy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	319.06	238.27	130.05	71.89	0.00	0.00	99.01	66.31	120.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wheat	17.05	18.00	28.60	35.81	119.92	34.29	42.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.89	18.14
Potatoes	49.76	49.37	55.98	43.36	6.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.10	35.23	44.44	50.50
Maize	0.00	0.00	0.00	20.48	54.60	78.29	131.94	117.78	100.59	15.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Summer vegetables	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Winter vegetables	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mustard	24.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	42.73	44.54	25.98	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.19	31.88	52.53	46.13	50.00

Crops	Irrigation Water Requirement for the Project [mm / half month]																								
	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	
Paddy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	127.62	190.62	119.41	66.61	0.00	0.00	81.12	58.15	99.82	52.48	17.44	5.34	0.00	0.00	0.00	0.00
Wheat	6.82	7.20	11.44	14.32	47.97	13.72	17.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potatoes	9.95	9.87	11.20	8.67	1.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.02	7.05	8.89	10.10
Maize	0.00	0.00	0.00	2.05	5.46	7.83	13.19	11.78	10.06	1.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Summer vegetables	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.70	8.93	6.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Winter vegetables	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mustard	4.27	4.45	2.60	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	22.67	21.52	25.24	25.99	54.67	21.55	30.34	11.78	12.76	138.13	197.57	119.41	66.61	0.00	0.00	81.12	58.15	99.82	53.90	27.68	23.37	22.29	26.43	32.84	
TOTAL	0.17	0.16	0.19	0.23	0.42	0.16	0.23	0.09	0.10	1.00	1.52	0.92	0.51	0.00	0.00	0.59	0.45	0.77	0.42	0.20	0.18	0.17	0.20	0.24	

表 5 - 1.2 灌漑用水量の算定 (ゾーンB)

Field Efficiency	Paddy	85%
	Dry Field	60%
Distribution efficiency		80%
Deep Percolation	(mm/day)	5.0

ZONE B

Meteo. Station : Changu Narayan (1059)

Irrigation Water Requirement [mm / half month]

	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec				
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2			
Crops	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Paddy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Wheat	28.38	19.78	24.00	31.21	116.90	45.98	36.45	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.89	18.14	34.67			
Potatoes	61.09	51.14	51.38	38.75	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.17	25.10	44.44	50.50		
Maize	0.00	0.00	0.00	15.88	51.58	89.98	142.21	112.11	109.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Summer vegetables	0.00	0.00	0.00	0.00	0.00	0.00	1.39	0.00	34.63	86.63	26.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Winter vegetables	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.64	92.03	53.19	14.25	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	36.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mustard	54.06	46.31	21.38	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Irrigation Water Requirement for the Project [mm / half month.]

Crops	Cropped Area (%)	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		
		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	
Paddy	80%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	40%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	40%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wheat	40%	11.35	7.91	9.60	12.48	46.76	18.39	14.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Potatoes	20%	12.22	10.23	10.28	7.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maize	10%	0.00	0.00	0.00	1.59	5.16	9.00	14.22	11.21	10.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Summer vegetables	20%	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	3.46	8.66	2.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	10%	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	3.46	8.66	2.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	10%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Winter vegetables	20%	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6.66%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6.66%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6.66%	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mustard	10%	5.41	4.63	2.14	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	[mm/hm]	31.38	22.77	22.02	21.91	51.92	27.39	28.94	11.21	14.44	135.38	163.77	128.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	[Usecha]	0.24	0.16	0.17	0.20	0.40	0.20	0.22	0.09	0.11	0.98	1.26	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

表 5-2 スキーム別灌漑必要水量の算定

No.		Name of Scheme	Area (ha)		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		
			Gross	Net	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E
Unit Water Requirement (l/sec/ha)					0.17	0.16	0.19	0.23	0.42	0.16	0.23	0.09	0.10	1.00	1.52	0.92	0.51	0.00	0.00	0.00	0.59	0.45	0.77	0.42	0.20	0.18	0.17	0.20	0.24
Water Requirement (m ³ /sec)																													
AB-10		Kanunje	90	72	0.012	0.012	0.014	0.017	0.030	0.012	0.017	0.006	0.007	0.072	0.109	0.066	0.037	0.000	0.000	0.042	0.032	0.055	0.030	0.014	0.013	0.012	0.014	0.014	0.017
AB-14		Mahadev Khola	450	360	0.061	0.058	0.068	0.083	0.151	0.058	0.083	0.032	0.036	0.360	0.547	0.331	0.184	0.000	0.000	0.212	0.162	0.277	0.151	0.072	0.065	0.061	0.072	0.086	0.086
AL-8		Khotana	250	200	0.034	0.032	0.038	0.046	0.084	0.032	0.046	0.018	0.020	0.200	0.304	0.184	0.102	0.000	0.000	0.118	0.090	0.154	0.084	0.040	0.036	0.034	0.040	0.048	0.048
AL-10		Koukhu	445	356	0.061	0.057	0.068	0.082	0.150	0.057	0.082	0.032	0.036	0.356	0.541	0.328	0.182	0.000	0.000	0.210	0.160	0.274	0.150	0.071	0.064	0.061	0.071	0.085	0.085
AL-13		Lubhu	165	132	0.022	0.021	0.025	0.030	0.055	0.021	0.030	0.012	0.013	0.132	0.201	0.121	0.067	0.000	0.000	0.078	0.059	0.102	0.055	0.026	0.024	0.022	0.026	0.032	0.032
AL-19		Thika Bhairaw-I	600	480	0.082	0.077	0.091	0.110	0.202	0.077	0.110	0.043	0.048	0.480	0.730	0.442	0.245	0.000	0.000	0.283	0.216	0.370	0.202	0.096	0.086	0.082	0.096	0.115	0.115
AL-20		Thika Bhairaw-II	400	320	0.054	0.051	0.061	0.074	0.134	0.051	0.074	0.029	0.032	0.320	0.486	0.294	0.163	0.000	0.000	0.189	0.144	0.246	0.134	0.064	0.058	0.054	0.064	0.077	0.077

No.		Name of Scheme	Area (ha)		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		
			Gross	Net	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E	L	E
Unit Water Requirement (l/sec/ha)					0.24	0.16	0.17	0.20	0.40	0.20	0.22	0.09	0.11	0.98	1.26	0.99	0.00	0.00	0.00	0.00	0.00	0.22	0.64	0.42	0.27	0.18	0.17	0.20	0.24
Water Requirement (m ³ /sec)																													
AK-4		Biswambhara	125	100	0.024	0.016	0.017	0.020	0.040	0.020	0.022	0.009	0.011	0.098	0.126	0.099	0.000	0.000	0.000	0.000	0.022	0.064	0.042	0.027	0.018	0.017	0.020	0.024	0.024
AK-5		Boshan	210	168	0.040	0.027	0.029	0.034	0.067	0.034	0.037	0.015	0.018	0.165	0.212	0.166	0.000	0.000	0.000	0.000	0.037	0.108	0.071	0.045	0.030	0.029	0.034	0.040	0.040
AK-7		Dakshinkali	100	80	0.019	0.013	0.014	0.016	0.032	0.016	0.018	0.007	0.009	0.078	0.101	0.079	0.000	0.000	0.000	0.000	0.018	0.051	0.034	0.022	0.014	0.014	0.016	0.019	0.019
AK-14		Indrayani	140	112	0.027	0.018	0.019	0.022	0.045	0.022	0.025	0.010	0.012	0.110	0.141	0.111	0.000	0.000	0.000	0.000	0.025	0.072	0.047	0.030	0.020	0.019	0.022	0.027	0.027
AK-25		Shali Nadi	300	240	0.058	0.038	0.041	0.048	0.096	0.048	0.053	0.022	0.026	0.235	0.302	0.238	0.000	0.000	0.000	0.000	0.053	0.154	0.101	0.065	0.043	0.041	0.048	0.058	0.058
AK-27		Tolcha	90	72	0.017	0.012	0.012	0.014	0.029	0.014	0.016	0.006	0.008	0.071	0.091	0.071	0.000	0.000	0.000	0.000	0.016	0.046	0.030	0.019	0.013	0.012	0.014	0.017	0.017
AB-2		Bidol	60	48	0.012	0.008	0.008	0.010	0.019	0.010	0.011	0.004	0.005	0.047	0.060	0.048	0.000	0.000	0.000	0.000	0.011	0.031	0.020	0.013	0.009	0.008	0.010	0.012	0.012
AB-4		Dhunge Dhara	210	168	0.040	0.027	0.029	0.034	0.067	0.034	0.037	0.015	0.018	0.165	0.212	0.166	0.000	0.000	0.000	0.000	0.037	0.108	0.071	0.045	0.030	0.029	0.034	0.040	0.040
AB-12		Kuudhal	147	118	0.028	0.019	0.020	0.024	0.047	0.024	0.026	0.011	0.013	0.116	0.149	0.117	0.000	0.000	0.000	0.000	0.026	0.076	0.050	0.032	0.021	0.020	0.024	0.028	0.028

表 5-3 利用可能水量

(1) Mean Discharge		Available Water at Intake Point (Mean Discharge, Unit : m ³ /sec)													
Code No.	Name of Scheme	River & Tributary	Catchment Area (km ²)	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
AK-04	Biswambhara	Manohara River*	5.84	0.100	0.076	0.058	0.053	0.052	0.357	0.756	1.316	0.752	0.481	0.333	0.155
AK-05	Boshan	Boshan Khola	6.80	0.119	0.089	0.071	0.065	0.062	0.422	0.895	1.559	0.891	0.570	0.395	0.185
AK-07	Dakhinkali	Kharpa & Hindu Khola	10.00	0.202	0.142	0.107	0.103	0.082	0.672	1.560	2.710	1.528	0.972	0.683	0.311
AK-14	Indrayani	Ghante/Manamatta Khola	5.20	0.100	0.074	0.058	0.054	0.047	0.348	0.763	1.330	0.755	0.482	0.335	0.156
AK-25	Sali Nadi	Sali Nadi Khola	12.00	0.239	0.179	0.138	0.129	0.116	0.834	1.800	3.140	1.794	1.145	0.799	0.368
AK-27	Tokha	Tokha Khola	0.30	0.005	0.004	0.003	0.003	0.003	0.018	0.039	0.068	0.039	0.025	0.017	0.008
AB-02	Bidol	Saraswasi/Tholo Khola	3.60	0.050	0.037	0.030	0.028	0.026	0.178	0.377	0.675	0.375	0.240	0.166	0.078
AB-04	Dhunge Dhara	Ghante Khola	6.90	0.052	0.026	0.011	0.006	0.005	0.311	0.717	1.286	0.714	0.438	0.288	0.108
AB-10	Kaunje	Budhi Ganga/Ghante Khola	2.40	0.026	0.017	0.011	0.013	0.009	0.059	0.204	0.363	0.186	0.123	0.091	0.040
AB-12	Kunudhal	Hanumante/Ghante Khola	7.30	0.069	0.024	0.015	0.009	0.009	0.200	0.761	1.363	0.707	0.425	0.286	0.091
AB-14	Mahadev Khola	Mahadev Khola	4.40	0.057	0.041	0.031	0.030	0.027	0.169	0.442	0.775	0.428	0.276	0.196	0.089
AL-08	Khokana	Nakhu Khola	49.00	0.537	0.326	0.202	0.332	0.096	0.710	5.417	7.907	5.865	2.532	1.248	0.737
AL-10	Kokhu	Karnanasiya/Kokhu Khola	16.00	0.178	0.135	0.110	0.129	0.142	0.403	1.449	2.094	1.615	0.712	0.368	0.245
AL-13	Lubhu	Sineri/Lubhu Khola	5.20	0.070	0.052	0.041	0.038	0.036	0.242	0.530	0.925	0.526	0.337	0.234	0.108
AL-19	Thika Bhatraw-I	Lele & Nakhu Khola	39.00	0.508	0.385	0.330	0.349	0.406	1.313	4.345	6.300	4.916	2.147	1.068	0.705
AL-20	Thika Bhatraw-II	Nakhu Khola	47.00	0.546	0.355	0.250	0.350	0.195	0.916	5.247	7.646	5.748	2.485	1.229	0.748

(2) 80% Reliable Discharge		Available Water at Intake Point (80% Reliable Discharge, Unit : m ³ /sec)													
Code No.	Name of Scheme	River & Tributary	Catchment Area (km ²)	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
AK-04	Biswambhara	Manohara River*	5.84	0.086	0.062	0.048	0.041	0.034	0.079	0.443	0.773	0.471	0.247	0.148	0.093
AK-05	Boshan	Boshan Khola	6.80	0.102	0.075	0.058	0.048	0.040	0.094	0.525	0.918	0.556	0.294	0.173	0.114
AK-07	Dakhinkali	Kharpa & Hindu Khola	10.00	0.169	0.123	0.087	0.077	0.031	0.106	0.914	1.597	0.946	0.494	0.294	0.189
AK-14	Indrayani	Ghante/Manamatta Khola	5.20	0.085	0.062	0.046	0.039	0.028	0.068	0.448	0.783	0.470	0.247	0.146	0.095
AK-25	Sali Nadi	Sali Nadi Khola	12.00	0.205	0.150	0.114	0.096	0.078	0.174	1.060	1.852	1.116	0.589	0.348	0.227
AK-27	Tokha	Tokha Khola	0.30	0.004	0.003	0.003	0.002	0.002	0.004	0.023	0.040	0.024	0.013	0.008	0.003
AB-02	Bidol	Saraswasi/Tholo Khola	3.60	0.043	0.032	0.024	0.020	0.017	0.040	0.221	0.387	0.234	0.124	0.073	0.048
AB-04	Dhunge Dhara	Ghante Khola	6.90	0.037	0.014	0.005	0.004	0.004	0.031	0.400	0.737	0.427	0.202	0.098	0.047
AB-10	Kaunje	Budhi Ganga/Ghante Khola	2.40	0.025	0.010	0.008	0.007	0.006	0.013	0.115	0.208	0.105	0.056	0.038	0.022
AB-12	Kunudhal	Hanumante/Ghante Khola	7.30	0.006	0.003	0.002	0.002	0.003	0.005	0.424	0.773	0.389	0.159	0.076	0.015
AB-14	Mahadev Khola	Mahadev Khola	4.40	0.048	0.034	0.024	0.021	0.018	0.021	0.256	0.453	0.259	0.137	0.084	0.053
AL-08	Khokana	Nakhu Khola	49.00	0.317	0.186	0.093	0.122	0.038	0.085	3.377	5.137	4.405	1.972	0.918	0.507
AL-10	Kokhu	Karnanasiya/Kokhu Khola	16.00	0.120	0.086	0.065	0.071	0.080	0.164	0.919	1.379	1.233	0.553	0.277	0.174
AL-13	Lubhu	Sineri/Lubhu Khola	5.20	0.059	0.043	0.033	0.028	0.023	0.054	0.313	0.546	0.328	0.173	0.102	0.066
AL-19	Thika Bhatraw-I	Lele & Nakhu Khola	39.00	0.338	0.235	0.180	0.189	0.208	0.483	2.765	4.150	3.786	1.677	0.808	0.505
AL-20	Thika Bhatraw-II	Nakhu Khola	47.00	0.336	0.185	0.060	0.150	0.069	0.146	3.287	4.986	4.348	1.955	0.919	0.528

Note : In interim report, Intake of Biswambhara was considered on the Godagare Khola which is a tributary of the Manohara River, with a catchment area of 1.7 km². Available water in this table will be reviewed in Phase-II Study for model schemes based on the monthly discharge to be estimated.

表 5 - 4 スキーム別改修計画案 (1 / 2)

(1) Kathmandu District (6 Schemes)

Name of Scheme	Weir	Apron	Gate	Canal
Biswambhara (AK-04) (A=125ha)	L=20 m Improvement (30% of construction cost)	Replacement by concrete and gravel work(100%) (Up/Downstream)	0.8 x 0.8 m. Replacement by steel gate.	L=3.5 km. Replacement by concrete canal (80%)
Boshan (AK-05) (A=210ha)	L=20 m. Replacement (100%)	Replacement by concret and gravel work(100%) (Up/Downstream)	0.8 x 0.9 m. Installation of steel gate.	L=2.0 km. Replacement by concrete canal (100%)
<u>Upper Scheme</u>				
Dakshinkali (AK-07) (A=100ha)	L=6 m.(Temp.) Replacement (100%)	Replacement by concrete and gravel work(100%) (Up/Downstream)	0.45 x 0.9 m. Replacement by steel gate.	No additional work.
<u>Lower Scheme</u>				
	L=12 m No additional work.	Replacement by concrete and gravel work(100%) (Up/Downstream)	No additional work.	L=2.4 km. Replacement by concrete canal (100%)
Indrayani (AK-14) (A=140ha)	L=16 m.(Temp.) Replacement (100%)	Replacement by concrete and work(100%) (Up/Downstream)	0.7 x 0.7 m. Replacement by steel gate	L=3.5km. Replacement by concrete canal (100%)
Shali Nadi (AK-25) (A=300ha)	L=15 m.(Temp.) Replacement (100%)	Replacement by concrete and gravel work(100%) (Up/Downstream)	0.6 x 0.7 m. Replacement by steel gate.	L=4.0km. Replacement by concrete canal (100%)
Tokha (AK-27) (A=90ha)*	L=3.4m. Replacement (100%)	Replacement by concrete and gravel work(100%) (Up/Downstream)	0.9 x 0.6 m. Replacement by steel gate.	L=2.2km. Replacement by concrete canal (100%)
Sub-total (965/ha)				

Note * : Command area of Tokha (AK-27) is changed for 90ha (maximum irrigable area) by the reason of available water discharge, though ordinary requested 150ha.

表 5 - 4 スキーム別改修計画案 (2 / 2)

(2) Bhaktapur District (5 Schemes)

Name of Scheme	Weir	Apron	Gate	Canal
Bidol (AB-02) (A=60ha)	L=3.5m Replacement (100%)	Provision of concrete and gravel apron (Up/Downstream)	0.45 x 0.70 m (2 Nos.) Replacement by steel gate	L=3.2km. Replacement by concrete canal (100%)
Dhunge Dhara (AB-04) (A=210ha)	L=20m. Replacement (100%)	Provision of concrete and gravel apron (Up/Downstream)	0.4 x 0.4 m Replacement by steel gate	L=4.1km. Replacement by concrete canal (100%)
Katunje (AB-10) (A=90ha)	Construction of a weir(L=5.0m)	Provision of concrete and gravel apron (Up/Downstream)	Provision of steel gate. (0.5 x 0.6 m)	L=2.0km. Replacement by concrete canal (100%)
Kutudhal (AB-12) (A=147ha)	L=12m Replacement (100%)	Provision of concrete and gravel apron (Up/Downstream)	Replacement of gate(0.4 x 0.4 m)	L=2.0km. Replacement by concrete canal (70%)
Mahadev Khola(AB-14) (A=450ha)	L=16m Improvement (50% of construction cost)	Provision of concrete and gravel apron (Up/downstream)	Replacement of gate(1.7 x 0.65 m)	L=6.5km. Replacement by concrete canal (100%)

Sub-total (957ha)

(3) Lalitpur (5 Schemes)

Name of Scheme	Weir	Apron	Gate	Canal
Khokana (AL-08) (A=250ha)	L=80m.(Temp) Construction of a weir (L=50m.)	Provision of concrete and gravel apron (Up/Downstream)	Installation of steel gate (0.6 x 0.8 m)	L=4.5km. Replacement by concrete canal (100%)
Kotkhu (AL-10) (A=445ha)	L=9m. Improvement (50% of construction cost)	Provision of concrete and gravel apron (Up/Downstream)	Replacement by steel gate (0.9 x 1.2 m)	L=7.0km. Replacement by concrete canal (100%)
Lubhu (AL-13) (A=165ha)	Construction of a weir (L=10m.)	Provision of concrete and gravel apron (Up/Downstream)	Installation of steel gate (0.9 x 0.85 m.)	L=4.0km. Replacement by concrete canal (100%)
Thika Bhairaw (1) (AL-19) (A=600ha)	L=10.6m. Improvement (50% of construction cost)	Provision of concrete and gravel apron (Up/Downstream)	Replacement by steel gate (1.75 x 0.95 m.)	L=14.5km. Replacement by concrete canal (100%)
Thika Bhairaw (2) (AL-20) (A=400ha)	Construction of a weir (L=25m.)	Provision of concrete and gravel apron (Up/Downstream)	Installation of steel gate (0.7 x 1.4 m)	L=7.4km. Replacement by concrete canal (100%)
Sub-total	(1,860ha)			
Total	(3,782ha)			

表 5-5 スキーム別概算工事費

Unit : NRs.1,000

No.	Name of Schemes	Net Comm. Area (ha)	Construction Cost							Div. Work	Prep. work 15%	Total	Admini. Cost 15%	Price Esc. 15%	Eng. Fee 7.0%	GRAND TOTAL	Unit Cost [./ha.] (US\$)
			Canal Works			Structures											
			Main Canal	Seco-ndary	Tertiary	Other	Total										
AK-04	Biswambhara	100	4,246	2,177	1,866	1,243	9,532	1,476	1,651	12,659	1,898	1,898	886	17,341	173.41	3,468	
AK-05	Boshan	168	3,912	3,657	3,134	1,605	12,308	4,884	2,578	19,770	2,965	2,965	1,383	27,083	161.21	3,224	
AK-07	Dakshinkali	80	4,541	1,741	1,492	1,166	8,940	3,621	1,884	14,445	2,166	2,166	1,011	19,788	247.35	4,947	
AK-14	Indrayani	112	6,865	2,438	2,089	1,709	13,101	3,904	2,550	19,555	2,933	2,933	1,368	26,789	239.19	4,784	
AK-25	Shali Nadi	240	11,010	5,224	4,478	3,107	23,819	3,712	4,129	31,660	4,749	4,749	2,216	43,374	180.73	3,615	
AK-27	Tokha	72	2,920	1,743	1,494	923	7,080	840	1,188	9,108	1,366	1,366	637	12,477	173.29	3,466	
	Sub-Total	772	33,494	16,980	14,553	9,753	74,780	18,437	13,980	107,197	16,077	16,077	7,501	146,852	190.22	3,804	
AB-02	Bidol	48	4,248	1,044	895	928	7,115	864	1,196	9,175	1,376	1,376	642	12,569	261.85	5,237	
AB-04	Dhunge Dhara	168	9,681	3,657	3,134	2,471	18,943	4,884	3,574	27,401	4,110	4,110	1,918	37,539	223.45	4,469	
AB-10	Katunje	72	3,759	1,567	1,343	1,000	7,669	1,231	1,335	10,235	1,535	1,535	716	14,021	194.74	3,895	
AB-12	Kundhal	118	2,868	2,560	2,194	1,143	8,765	2,145	1,636	12,546	1,881	1,881	878	17,186	146.14	2,923	
AB-14	Mahadev Khola	360	12,878	7,837	6,717	4,115	31,547	2,883	5,164	39,594	5,939	5,939	2,771	54,243	150.68	3,014	
	Sub-Total	766	33,434	16,665	14,283	9,657	74,039	12,007	12,905	98,951	14,841	14,841	6,925	135,558	177.06	3,541	
AL-08	Khokana	200	10,686	4,354	3,732	2,816	21,588	19,768	6,203	47,559	7,133	7,133	3,329	65,154	325.77	6,515	
AL-10	Kotkhu	356	13,419	7,750	6,642	4,172	31,983	1,112	4,964	38,059	5,708	5,708	2,664	52,139	146.46	2,929	
AL-13	Lubhu	132	5,938	2,873	2,463	1,691	12,965	2,451	2,312	17,728	2,659	2,659	1,240	24,286	183.98	3,680	
AL-19	Thika Bhairaw (1)	480	26,467	10,449	8,956	6,881	52,753	1,292	8,106	62,151	9,322	9,322	4,350	85,145	177.39	3,548	
AL-20	Thika Bhairaw (2)	320	15,062	6,966	5,971	4,200	32,199	6,153	5,752	44,104	6,615	6,615	3,087	60,421	188.82	3,776	
	Sub-Total	1,488	71,572	32,392	27,764	19,760	151,488	30,776	27,337	209,601	31,437	31,437	14,670	287,145	192.97	3,859	
	TOTAL	3,026	138,500	66,037	56,600	39,170	300,307	61,220	54,222	415,749	62,355	62,355	29,096	569,555	188.25	3,765	

表 5-6 事業実施の有無による経済便益の算定 (1/2)

Description Crop (ha)		Dry Season Crop										Total (0.730)															
		Wheat (0.520)		Maize (0.015)		Millet (0.045)		Peas (0.045)		Mustard (0.020)		Legumes (0.015)		Vegetable (Radish) (0.030)													
Unit	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)									
A) Output		kg	884	7.50	6,630	32	6.80	210	110	4.00	440	6.45	3,220	14	30.00	420	9	12.00	100	1,043	2.50	2,610					
a) Production		kg	884	0.25	210	33	0.20	10	159	0.30	50	0	0.00	4	0.50	0	4	0.20	0	0	0	0.00	0				
b) By-product		NRs.			6,840			220			490		3,220			420			100				2,610		13,680		
c) Gross Income																											
B) Input		kg	59	12.10	720	0	14.80	10	2	11.05	20	46	11.05	500	0	45.00	10	0	100.00	20	0	100.00	20			3,850	
a) Seed																											
b) Fertilizer		kg	33	10.20	330	1	10.20	10	2	10.20	20	9	10.20	90	4	10.20	40	0	10.20	0	17	10.20	170				
Complex		kg	129	5.72	740	3	5.72	20	0	5.72	20	0	5.72	110	2	5.72	10	0	5.72	0	4	5.72	20				
Urea		kg	3,383	0.25	850	75	0.25	20	49	0.25	20	481	0.25	120	120	0.25	30	0	0.25	0	56	0.25	10				
c) Pesticides		kg			2,640			60						80			90			20			220				
Sub-total (a to c)																											
d) Labour Requirement																											
Family Labour		M/D	11	75.00	860	1	75.00	40	2	75.00	140	2	75.00	170	0	75.00	30	0	75.00	20	2	75.00	110				
-Male		M/D	40	38.00	1,500	1	38.00	60	6	38.00	250	7	38.00	260	2	38.00	90	1	38.00	20	6	38.00	230				
Hired Labour		M/D	4	75.00	270	0	75.00	20	0	75.00	0	1	75.00	40	0	75.00	0	0	75.00	0	0	75.00	20				
-Male		M/D	9	38.00	340	0	38.00	10	0	38.00	0	2	38.00	60	0	38.00	0	0	38.00	0	0	38.00	20				
-Female		M/D	63		2,970	2		130	8		300	11		530	3		120	1		40	8		4,430				
Sub-total (d)		NRs			5,610			190			450			1,350			210			40			600				
Total Cost (a to d)		NRs			1,230			30			40			1,870			210			40			2,010				
C) Return (A - B)																											
Description		Unit	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	
A) Output		kg	800	7.50	6,000	250	6.80	1,700	1,300	6.45	8,390	160	30.00	4,800	6,950	2.50	17,380	0	0	0	0	0.00	0				
a) Production		kg	800	0.25	190	260	0.20	50	0	0.00	0	40	0.50	20	0	0.00	0	0	0	0	0	0.00	0				
b) By-product		NRs			6,190			1,750			8,390			4,820			17,380										
c) Gross Income																											
B) Input		kg	46	12.10	550	2	14.80	30	102	11.05	1,120	2	45.00	110	1	100.00	100										
a) Seed																											
b) Fertilizer		kg	25	10.20	260	6	10.20	60	20	10.20	200	40	10.20	410	112	10.20	1,140										
Complex		kg	100	5.72	570	21	5.72	120	44	5.72	250	20	5.72	110	27	5.72	160										
Urea		kg	2,602	0.25	650	500	0.25	120	1,069	0.25	270	1,200	0.25	300	375	0.25	90										
c) Pesticides		kg			2,090			330			1,840			990			1,490										
Sub-total (a to c)																											
d) Labour Requirement																											
Family Labour		M/D	9	75.00	660	3	75.00	260	5	75.00	380	4	75.00	300	10	75.00	770										
-Male		M/D	30	38.00	1,160	10	38.00	380	15	38.00	570	24	38.00	910	40	38.00	1,530										
-Female		M/D	3	75.00	210	2	75.00	140	1	75.00	90	0	75.00	0	2	75.00	140										
Hired Labour		M/D	7	38.00	260	2	38.00	60	4	38.00	140	0	38.00	0	4	38.00	140										
-Male		M/D	49		2,290	17		840	25		3,020	28		1,210	56		2,580										
-Female		NRs			4,320			1,170			5,370			2,680			13,310										
Sub-total (d)		NRs			1,870			550			640			2,470			11,300										
Total Cost (a to d)		NRs			640			550			640			2,470			11,300										
C) Return (A - B)																											
Incremental Benefit																											

表 5-6 事業実施の有無による経済便益の算定 (2/2)

Description		Rainy Season Crops												Annual												
		Dry season* (0.730)			Paddy (0.585)			Maize (0.360)			Potato (0.020)			Legumes (0.020)			Summer Veg. (Tomato) (0.015)			Total (1.730)		Remarks				
Crop (ha)	Unit	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Total Value (NRs.)	Total Value (NRs.)		
A) Output																										
a) Production	Kg	2,750	6.25	17,180	756	6.80	5,140	222	6.45	1,430	11	12.00	140	240	8.50	2,040										
b) By-product	Kg	1,314	0.75	990	786	0.20	160	0	0.00	0	6	0.20	140	0	0.00	0										
c) Gross Income	NRs			18,170			5,300			1,430						2,040							27,080	40,760		
B) Input																										
a) Seed	Kg	31	16.80	520	8	14.80	120	20	11.05	220	0	100.00	30	0	70.00	0										
b) Fertilizer	Kg	59	10.20	600	20	10.20	200	4	10.20	40	0	10.20	0	4	10.20	40										
Complex	Kg	160	5.72	910	75	5.72	430	9	5.72	50	0	5.72	0	1	5.72	10										
Urea	Kg	3,784	0.25	950	1,799	0.25	450	214	0.25	50	0	0.25	0	105	0.25	30										
c) Pesticides	Kg																									
Sub-total (a to c)	Kg			2,980			1,200			360			30		80									4,650	8,500	
d) Labour Requirement																										
Family Labour																										
-Male	M/D	20	75.00	1,500	12	75.00	900	1	75.00	80	0	75.00	30	1	75.00	50										
-Female	M/D	80	38.00	3,050	36	38.00	1,350	3	38.00	110	1	38.00	30	4	38.00	140										
Hired Labour																										
-Male	M/D	13	75.00	1,010	6	75.00	450	0	75.00	20	0	75.00	0	0	75.00	10										
-Female	M/D	30	38.00	1,130	5	38.00	210	1	38.00	30	0	38.00	0	0	38.00	10										
Sub-total (d)	NRs	144		6,750	60		2,970	5		240	1		60	5		210								10,210	14,640	
Total Cost (a to d)	NRs			9,710			4,170			600			90		290									14,860	23,140	
C) Return (A - B)	NRs			8,460			1,130			830			50		1,750									12,220	17,620	
With Project Condition																										
Description		Rainy Season Crops												Annual												
		Dry season* (1.00)			Paddy (0.80)			Summer Veg. (Tomato) (0.20)			Total (2.00)			Remarks												
Crop (ha)	Unit	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Qty	Price (NRs.)	Value (NRs.)	Total Value (NRs.)	Total Value (NRs.)								
A) Output																										
a) Production	Kg	4,000	6.25	25,000										3,200	8.50	27,200										
b) By-product	Kg	1,912	0.75	1,430										0	0.00	0										
c) Gross Income	NRs			26,430												27,200								53,630	92,160	
B) Input																										
a) Seed	Kg	42	16.80	710										1	70.00	40										
b) Fertilizer	Kg	81	10.20	820										50	10.20	510										
Complex	Kg	218	5.72	1,250										12	5.72	70										
Urea	Kg	5,175	0.25	1,290										1,400	0.25	350										
c) Pesticides	Kg																									
Sub-total (a to c)	Kg			4,070												970								5,040	11,660	
d) Labour Requirement																										
Family Labour																										
-Male	M/D	28	75.00	2,100										8	75.00	600										
-Female	M/D	110	38.00	4,160										47	38.00	1,800										
Hired Labour																										
-Male	M/D	18	75.00	1,350										1	75.00	90										
-Female	M/D	41	38.00	1,550										5	38.00	190										
Sub-total (d)	NRs	197		9,190										62		3,680								11,900	20,000	
Total Cost (a to d)	NRs			13,260												23,520								16,940	31,660	
C) Return (A - B)	NRs			13,170												36,690								60,500	60,500	
Incremental Benefit																										
	NRs			18,410												24,470									42,880	42,880

Note: See Table 5-6 (1/2)

表 5-7 スキーム別内部収益率

	Irrigation Area in ha		Construction Cost		Incremental Benefit NRs.1,000/yr	EIRR
	Gross	Net	Initial Cost			
			Total	NRs.1,000 /ha(Net)		
Kathmandu District						
AK-04 Biswambhara	125	100	17,341	173.41	3,498	16.1%
AK-05 Boshan	210	168	27,083	161.21	7,209	22.1%
AK-07 Dakshinkali	100	80	19,788	247.35	3,433	13.4%
AK-14 Indrayani	140	112	26,789	239.19	4,806	13.9%
AK-25 Shali Nadi	300	240	43,374	180.73	10,298	18.1%
AK-27 Tokha	90	72	12,477	173.29	1,946	11.6%
Sub-total	965	772	146,852	190.22		
Bhaktapur District						
AB-02 Bidol	60	48	12,569	261.85	2,060	12.4%
AB-04 Dhunge Dhara	210	168	37,539	223.45	4,480	7.6%
AB-10 Katunje	90	72	14,021	194.74	2,463	13.6%
AB-12 Kutudhal	147	118	17,186	146.14	3,781	17.8%
AB-14 Mahadev Khola	450	360	54,243	150.68	12,737	17.9%
Sub-total	957	766	135,558	177.06		
Lalitpur District						
AL-08 Khokana	250	200	65,154	325.77	8,582	9.0%
AL-10 Kotkhu	445	356	52,139	146.46	15,276	22.6%
AL-13 Lubhu	165	132	24,286	183.98	5,664	19.1%
AL-19 Thika Bhairaw (1)	600	480	85,145	177.39	20,597	18.5%
AL-20 Thika Bhairaw (2)	400	320	60,421	188.82	13,731	17.3%
Sub-total	1,860	1,488	287,145	192.97		
Total	3,782	3,026	569,555	188.25		

表 5-8 最優先スキームの選定

Code Scheme No.	Less Urbanization *1	Farmland Conditions *1	Availability of Irrigation Water *1	Accessibility *1	Economic Viability (EIRR) *1	Over-all Judgment *2	Selected Area (ha) as 1st priority		Selected Area (ha) as 2nd priority		Selected Area (ha) for Further Study	
							Gross	Net	Gross	Net	Gross	Net
Kathmandu District												
AK-04 Biswambhara	○	○	△	○	△	○			125	100	125	100
AK-05 Boshan	○	○	◎	△	○	◎					210	168
AK-07 Dakshinkali	○	△	◎	○	△	○		210	100	168	100	80
AK-14 Indrayani	○	○	◎	△	△	○			140	112	140	112
AK-25 Shali Nadi	○	○	◎	○	○	◎		300		240	300	240
AK-27 Tokha	○	△	×	○	△	×						
Sub-total								510	365	408	292	700
Bhaktapur District												
AB-02 Bidol	○	△	◎	△	△	○			60	48	60	48
AB-04 Dhunge Dhara	○	○	×	△	×	×						
AB-10 Karunje	△	△	△	△	△	○			90	72	90	72
AB-12 Kurudhal	○	○	△	△	○	◎		147		118	147	118
AB-14 Mahadev Khola	△	◎	△	△	○	◎		450		360	450	360
Sub-total								597	150	478	120	598
Lalitpur District												
AL-08 Khokana	○	○	○	△	×	×						
AL-10 Kotkhu	△	◎	○	○	○	◎		445		356	445	356
AL-13 Lubhu	△	○	○	△	○	◎		165		132	165	132
AL-19 Thika Bhauraw-I	△	◎	◎	○	○	◎		600		480	600	480
AL-20 Thika Bhauraw-II	△	◎	○	△	△	○			400		320	400
Sub-total								1,210	968	1,854	320	1,288
Total								2,317	915	3,232	732	2,586

Note *1 : Judged with the following criteria.

Urbanization : ○ almost nil △ a little progressed in a part of the comand area × progressed or most of area located in the urban extend area.

Farmland Conditions : ◎ over 300ha ○ 300-100 ha △ 100-40 ha × less than 40 ha of net command area.

Availability of Water : ◎ in dry season, 100% of area can be irrigated with 80% dependable discharge ○ also 100% of area is irrigable with average discharge

: △ about 40-50% of area can be irrigated in dry season × irrigable area in dry season is less than 20% for proposed cropping pattern.

Accessibility : ○ relatively good △ poor × bad

Economic viability : ○ over 18% △ between 10 - 18% × less than 10%

*2 : If there are any × in EIRR or Water Availability, scheme was judged as the lowest priority and first priority was given for scheme which has EIRR over 18%.

△ : selected schemes as model areas for feasibility study.

付図

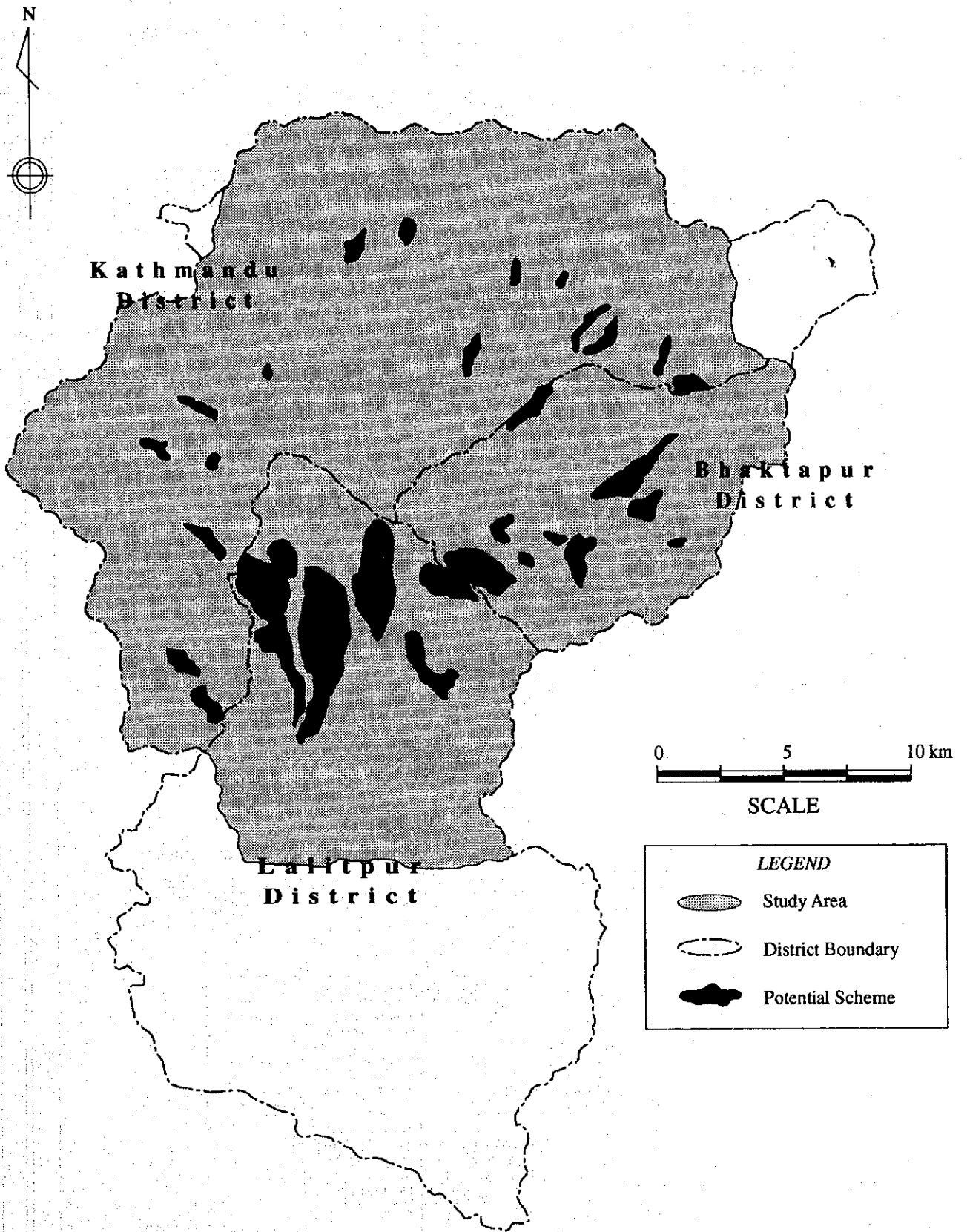


図 1 - 1 調査対象地区

図 1-2 調査の作業工程 (1/2)

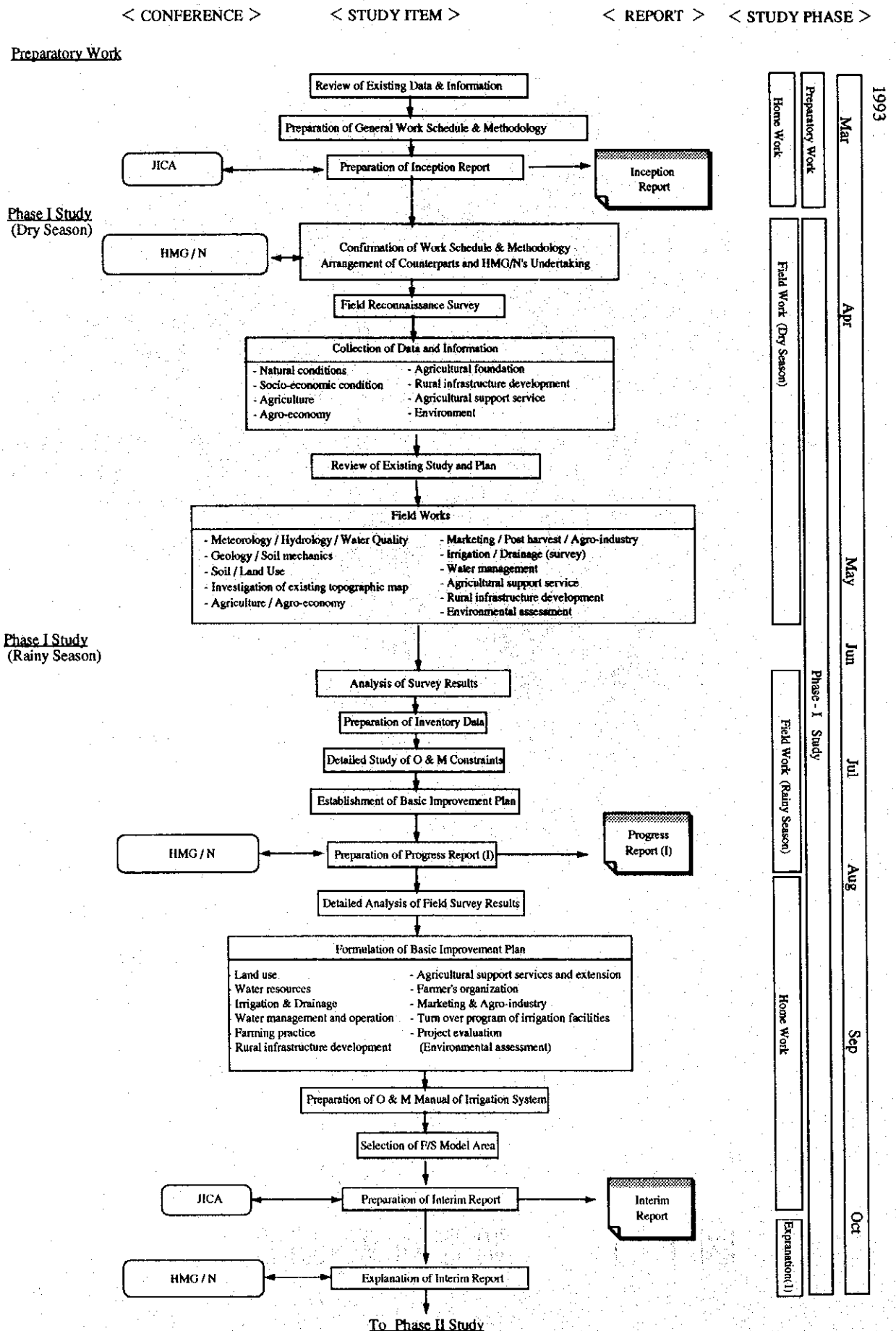


図 1 - 2 調査の作業工程 (2/2)

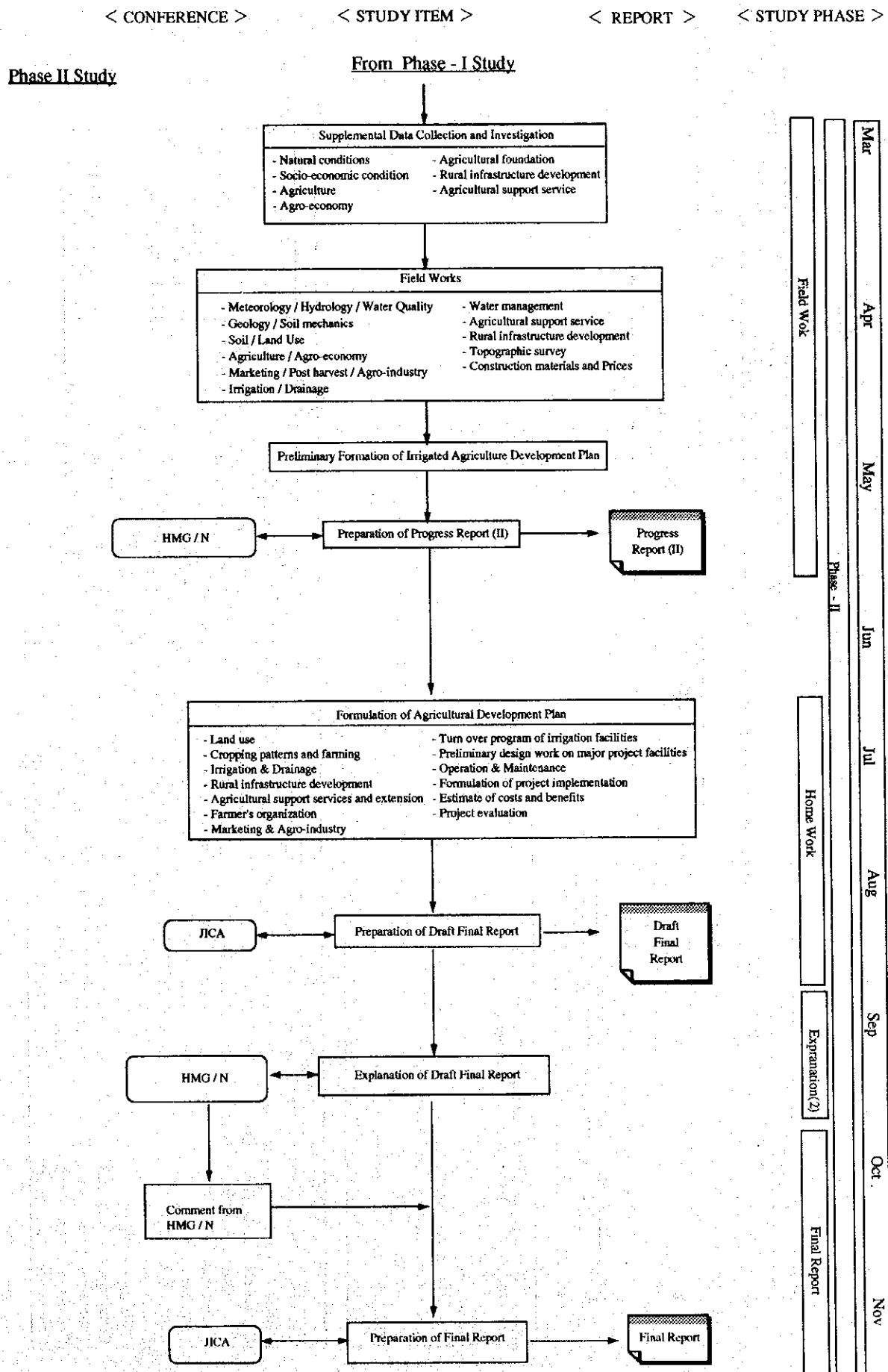


図 1-3.1

調査団のフェーズ - I 現地調査のための組織図

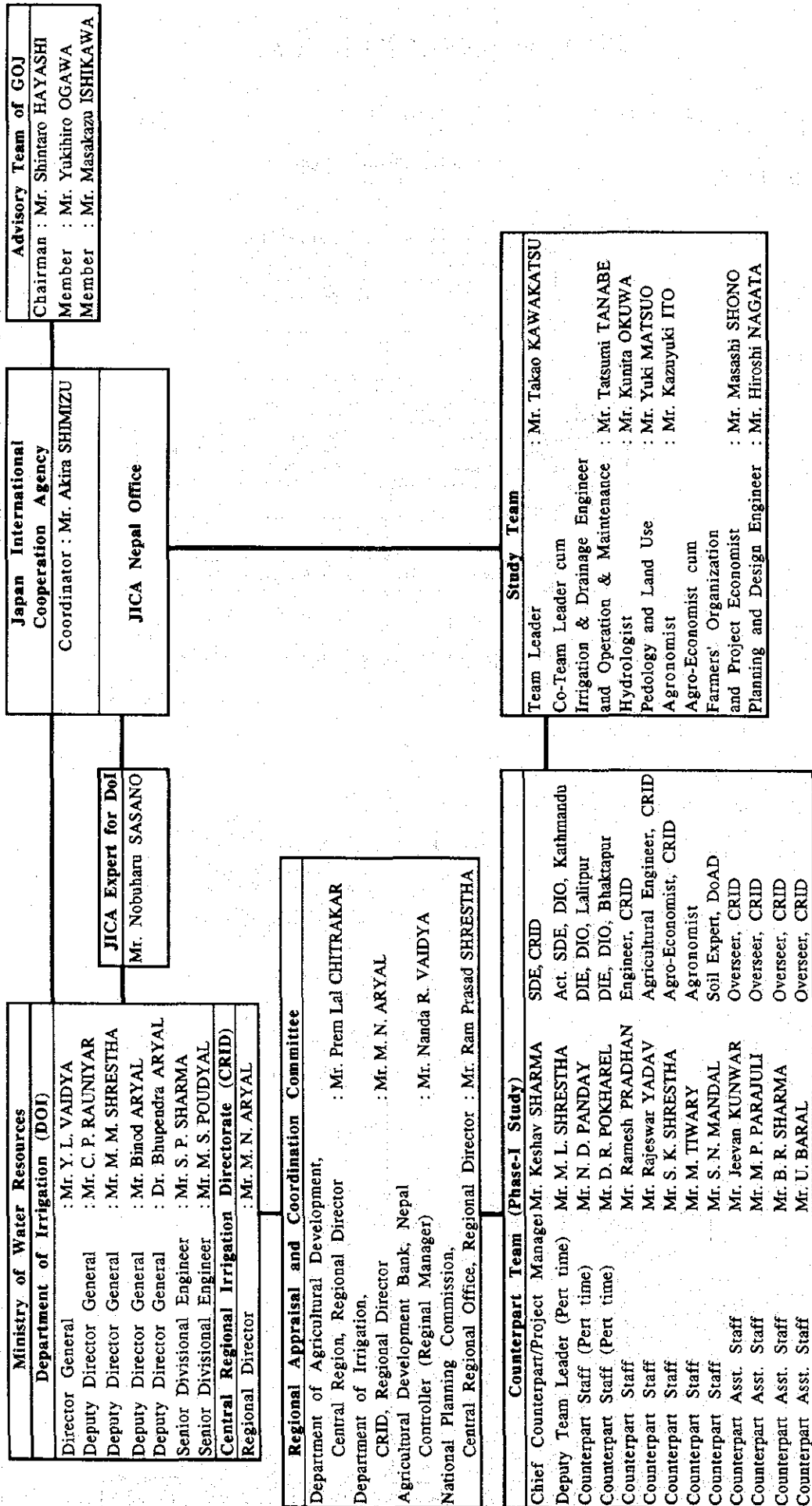


図 1-3.2

調査団のフェーズ-II 現地調査のための組織図

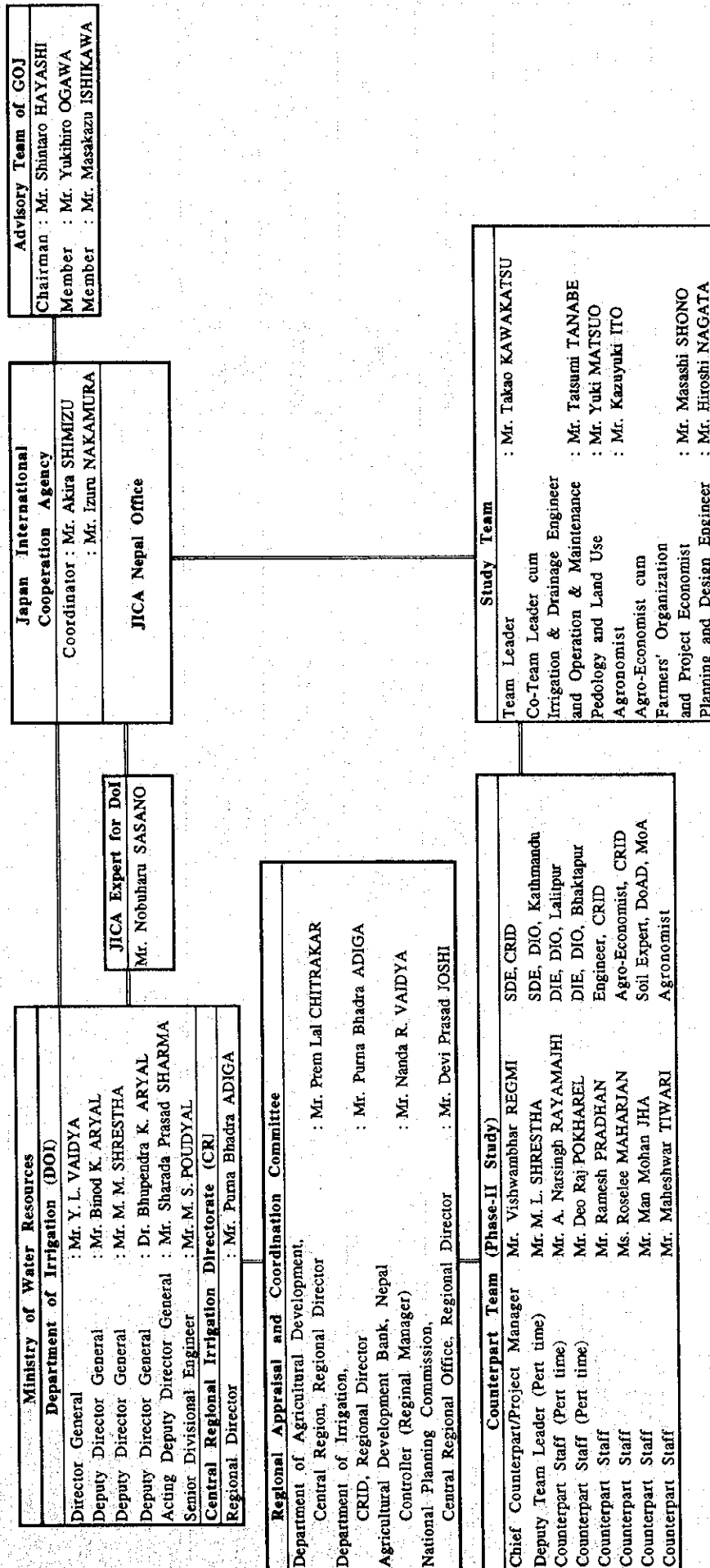
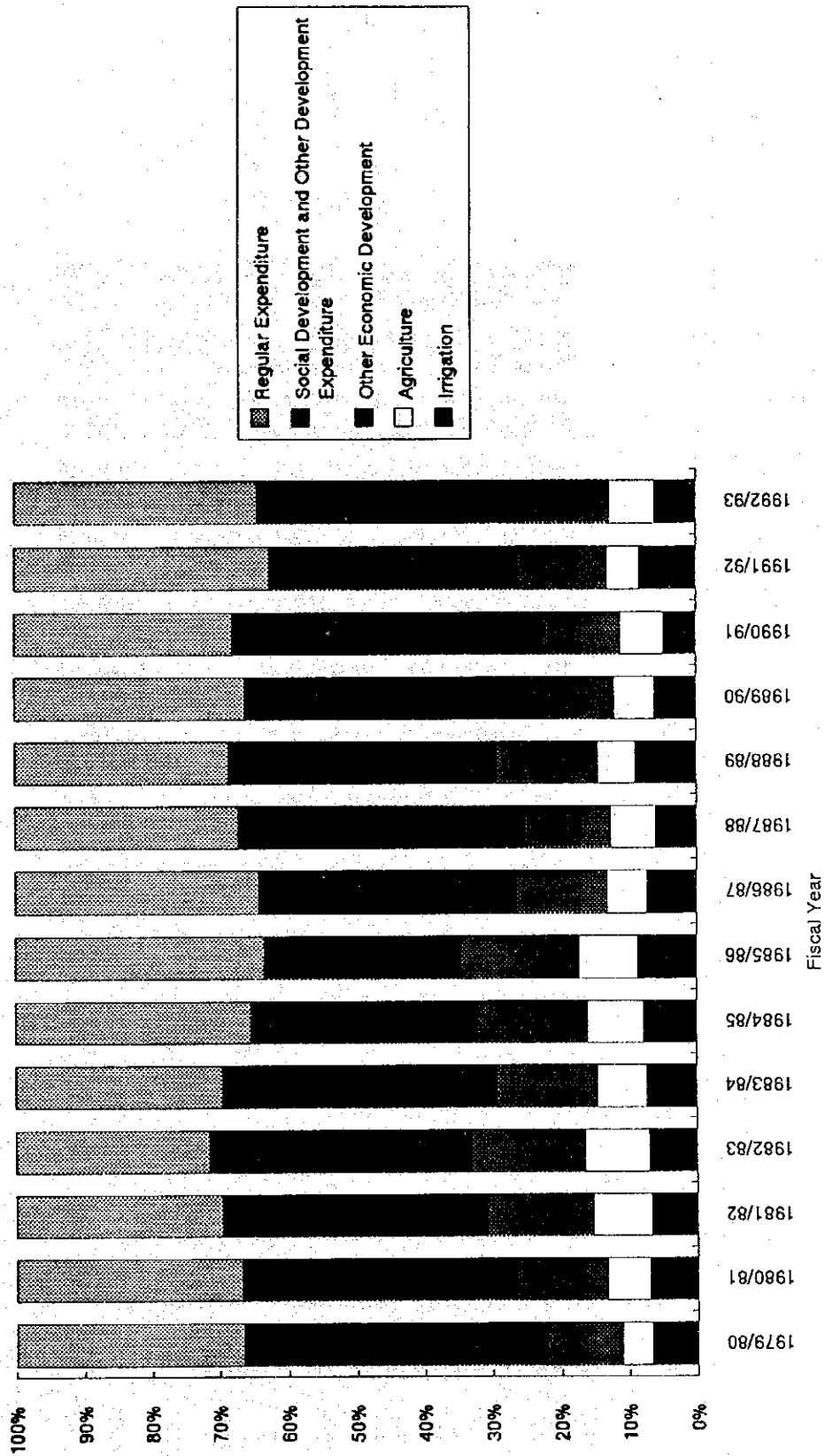


図 1-4 調査団の派遣スケジュール

Position	Name of Expert	Phase-I												Phase-II								
		1993												1994								
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Team Leader	T. Kawakatsu			6 (35)	10	4 (50)	22 (40)	14 (10)	23							23 (34)	26				23	23
Co-Team Leader cum Irrigation & Drainage Eng. Operation & Maintenance	T. Tanabe			6 (40)	15	24 (60)	22 (45)	14 (10)	23							31 (57)	26				23	23
Hydrologist	K. Okuwa			16 (30)	15	24 (60)	22 (45)															
Pedologist cum Land Use	Y. Matsuo			16 (30)	15	9 (30)	7 (30)									31 (57)	26					
Agronomist	K. Itoh			6 (30)	5	24 (60)	22 (45)									31 (57)	26					
Agro-Economist cum Farmers organization & Project Economist	M. Shono			6 (40)	15	24 (60)	22 (45)	14 (10)	23							31 (57)	26				23	23
Planning and Design Engineer	H. Nagata					9 (30)	7 (15)									31 (57)	26					
Reports																						
Inception Report																						
Progress Report (I)																						
Interim Report																						
Progress Report (II)																						
Draft Final Report																						
Final Report																						
Remarks																						

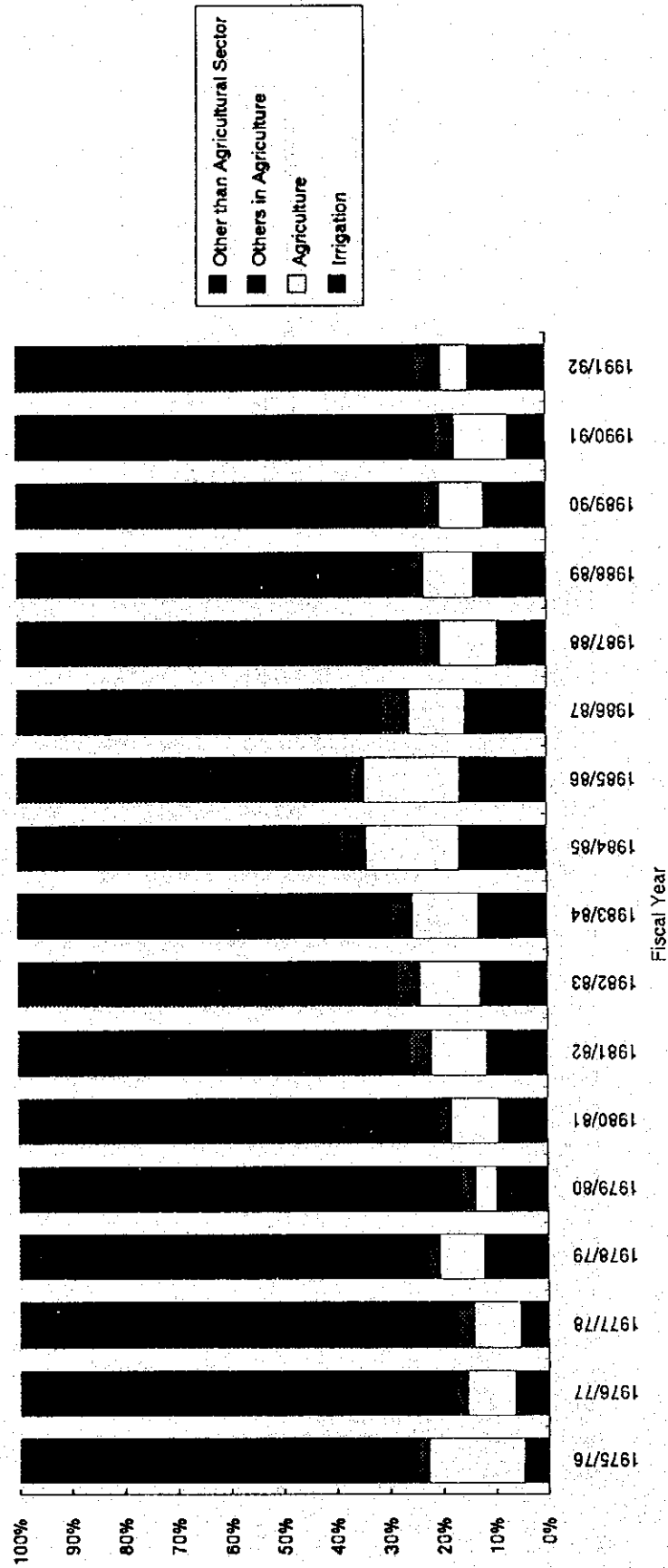
■ : Field Work in Nepal
□ : Home Office Work in Japan

図 2-1 灌漑及び農業開発に対する政府予算の配分割合



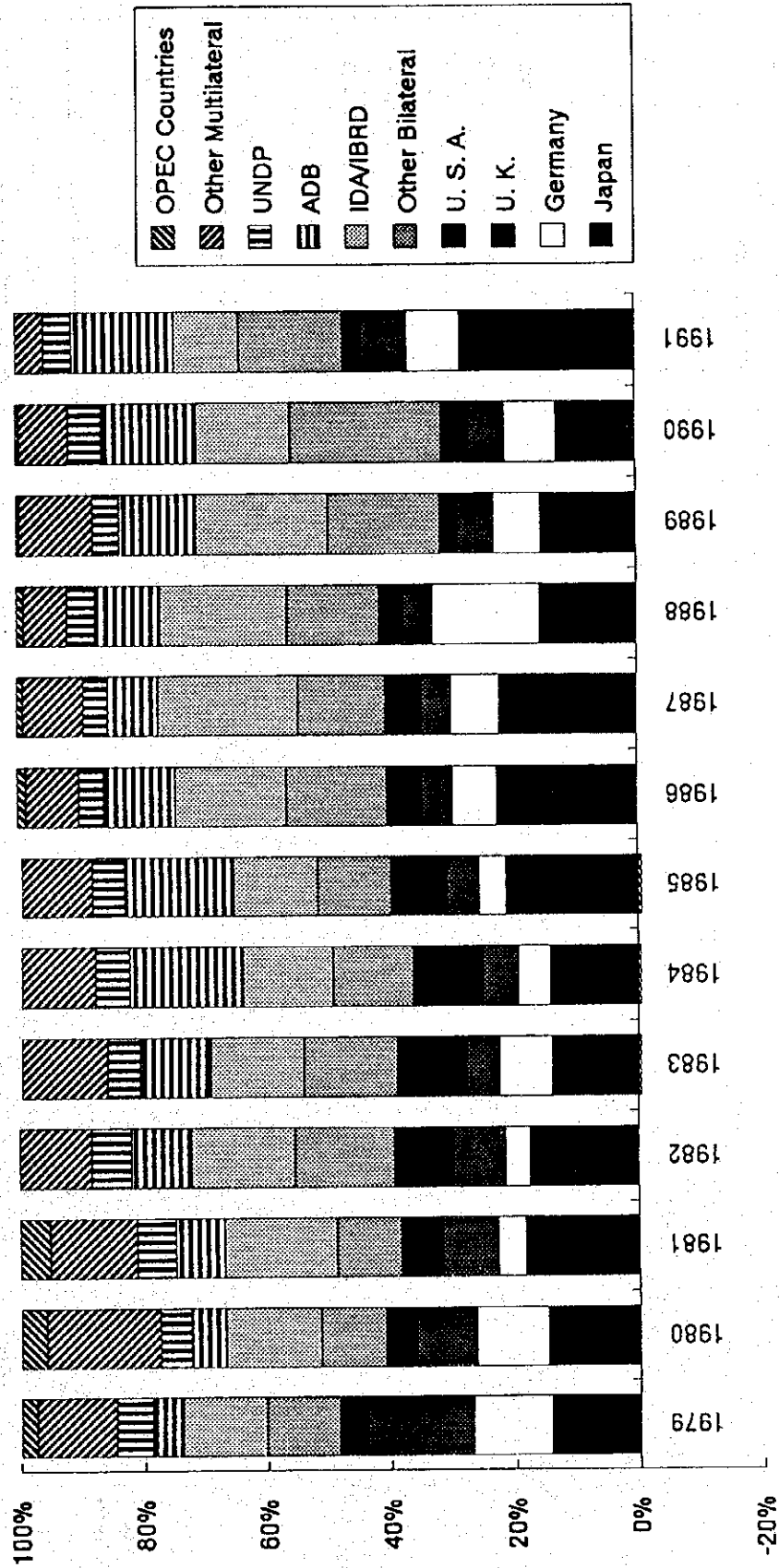
Source : Statistic Year Book of Nepal, 1989 for 1979/80, 1991 for 1980/81 & 1982/83, and 1993 for 1983/84 to 1990/91, Economic Survey Fiscal Year 1992-93, Ministry of Finance, 1993 for 1991/92 and Annual Budget in FY2049/50B.S.(1992/93)

図 2-2 農業セクターにおける海外援助の配分割合

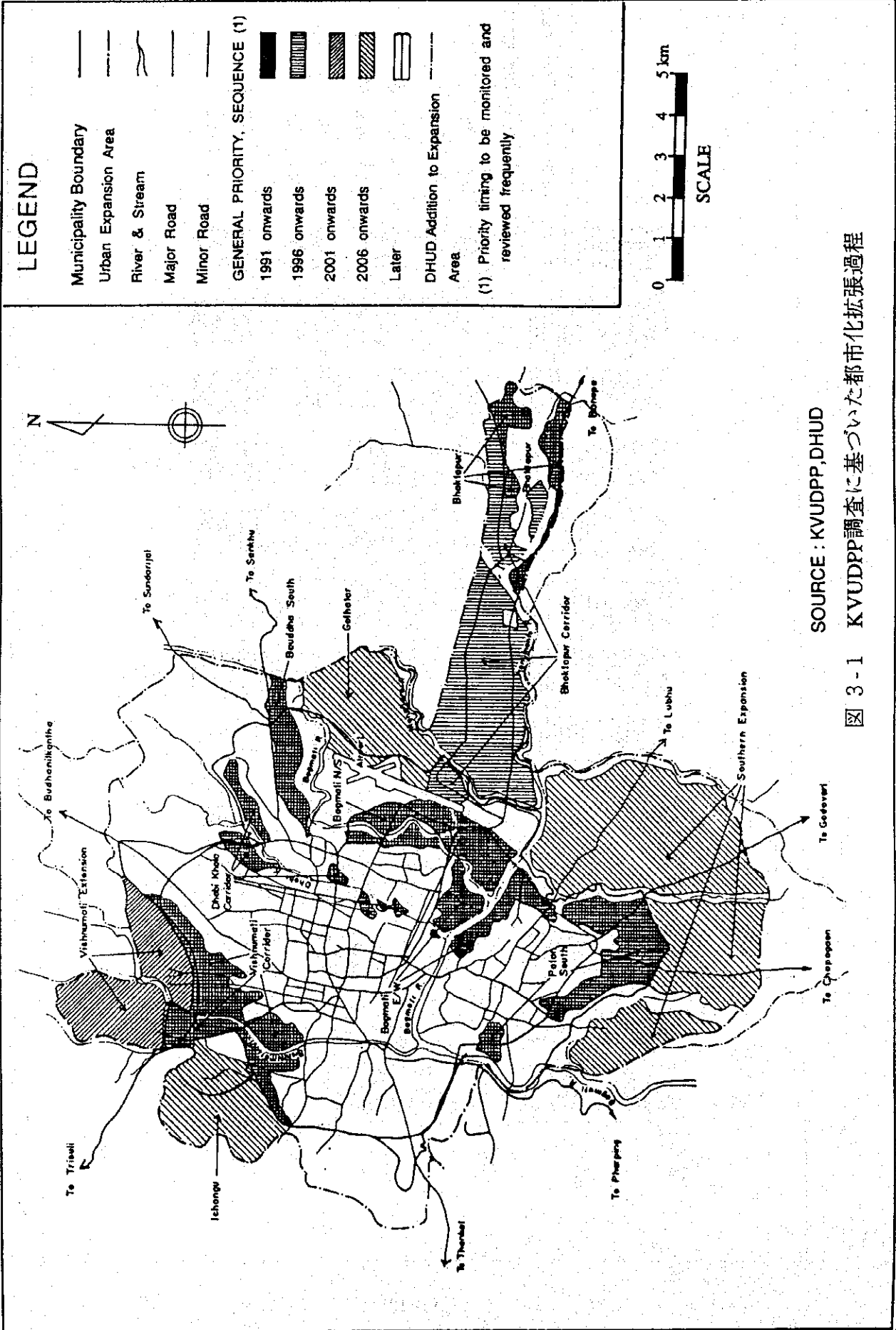


Source : Economic Survey, Fiscal Year 1992-93, Ministry of Finance, 1993.

図 2-3 海外援助の主要財源



Sources : Geographical Distribution of Financial Flows to Developing Countries, OECD Paris, 1984, 1987, 1990 & 1993



LEGEND

- Municipality Boundary
- - - Urban Expansion Area
- ~ River & Stream
- Major Road
- Minor Road

GENERAL PRIORITY, SEQUENCE (1)

- 1991 onwards
- ▨ 1996 onwards
- ▧ 2001 onwards
- ▩ 2006 onwards
- Later

DHUD Addition to Expansion Area

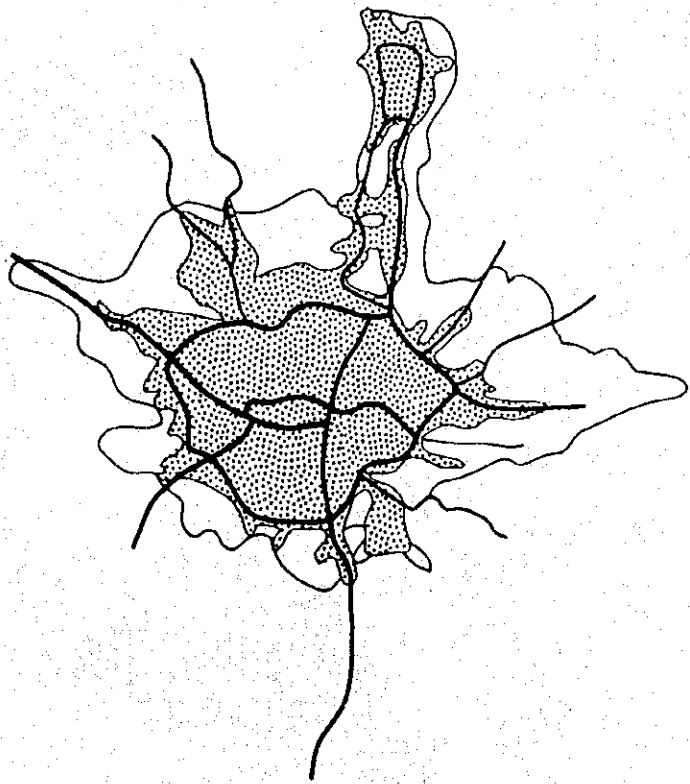
(1) Priority timing to be monitored and reviewed frequently



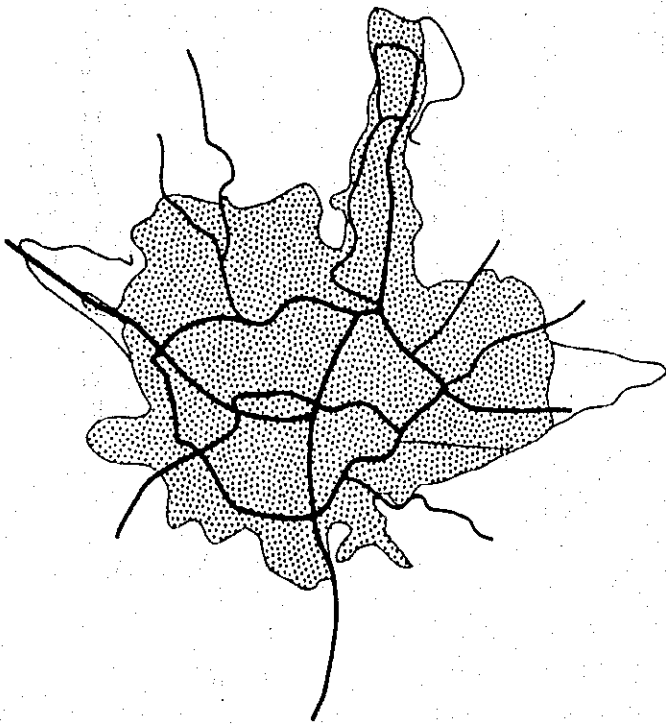
SCALE

SOURCE : KVUDPP, DHUD

图 3-1 KVUDPP調査に基づいた都市化拡張過程



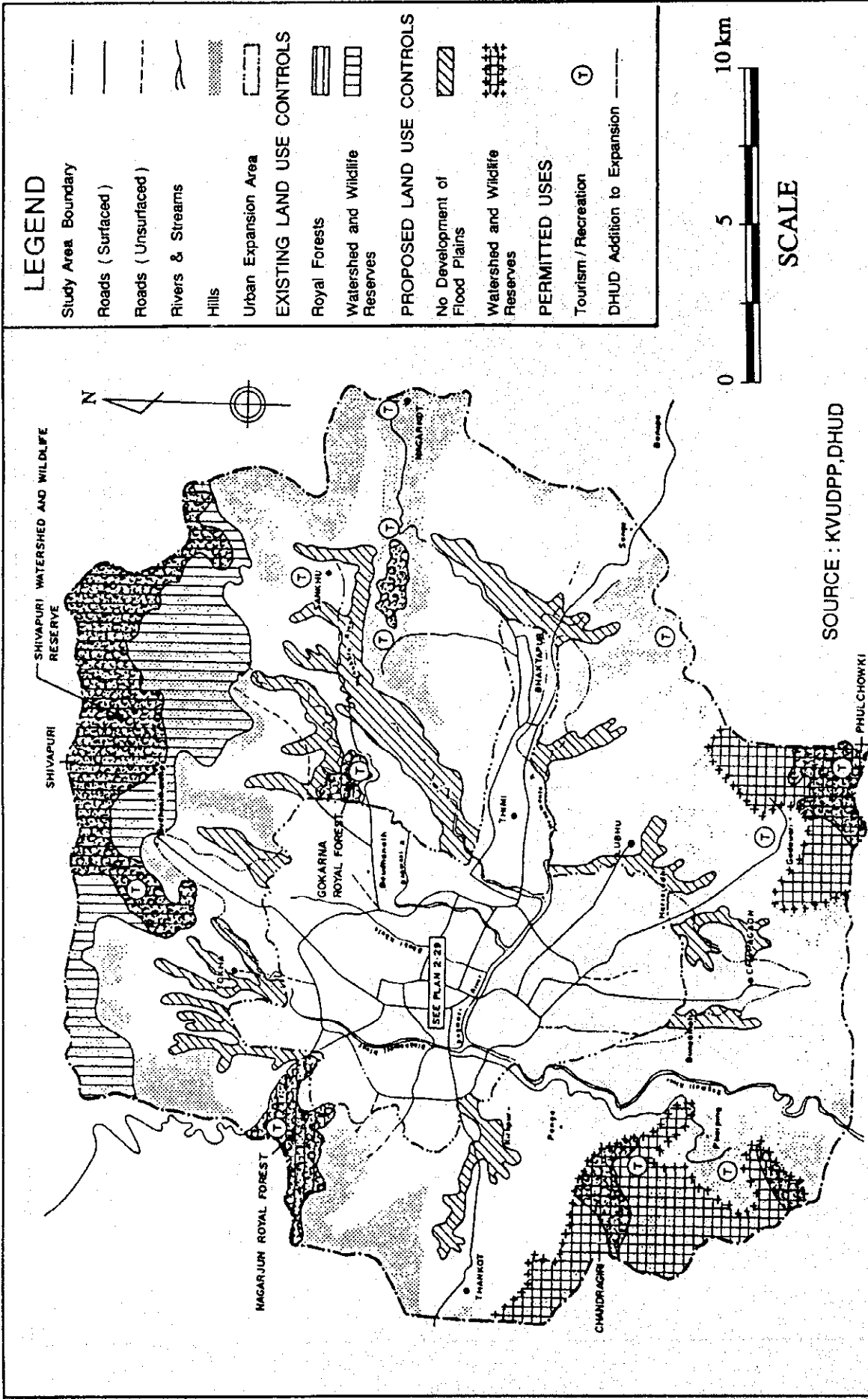
1997



2015

図 3-2 KVUDPP調査に基づいた都市化拡張地域

Source : Final Report on the Master Plan Study on Kathmandu Valley Urban Road Development
 JICA, Department of Road, HMG/N, March, 1993



SOURCE : KVUDPPP,DHUD

図 3-3 KVUDPPP調査に基づいた農村開発の土地利用計画

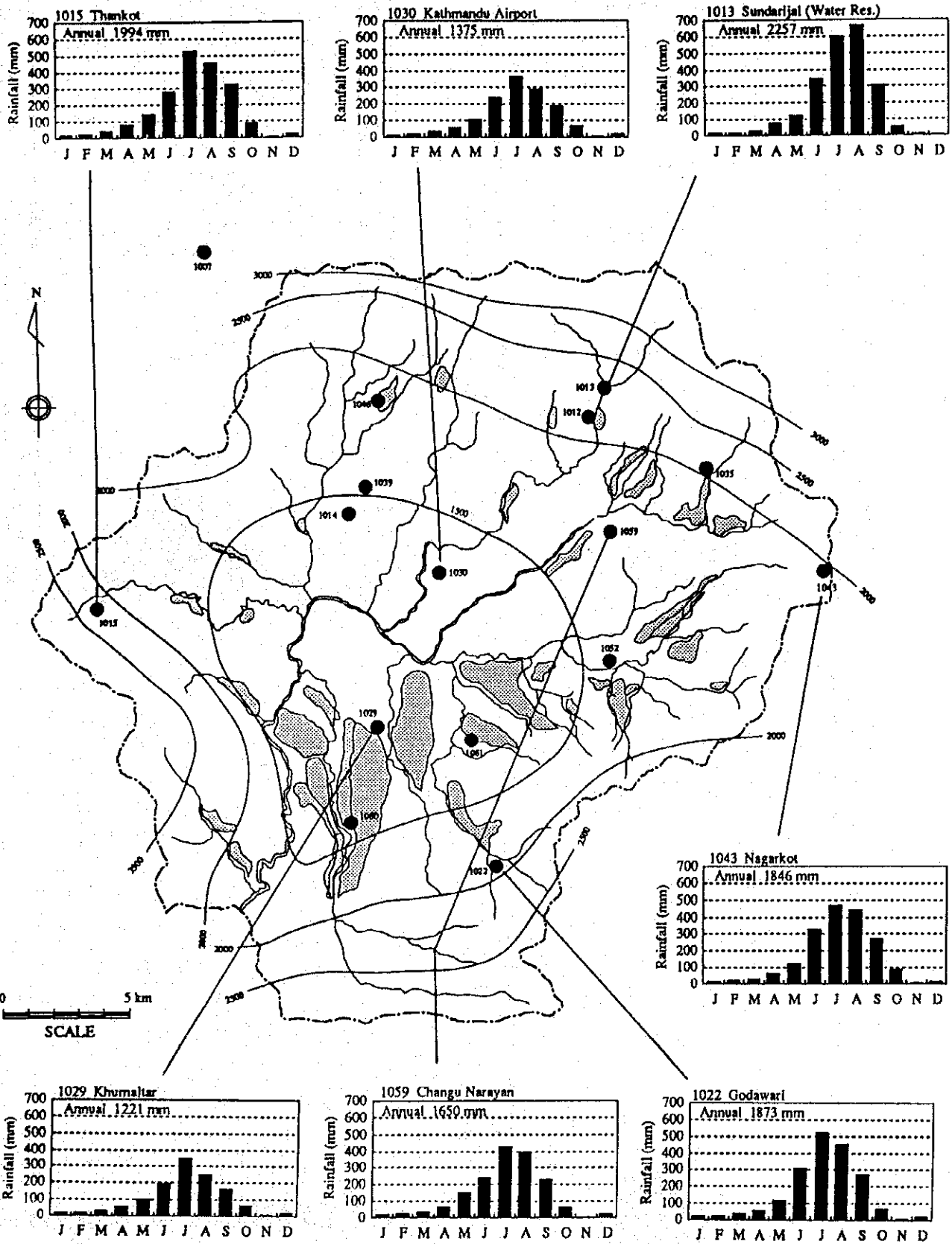


図 3-4 月別雨量及び等雨量線図

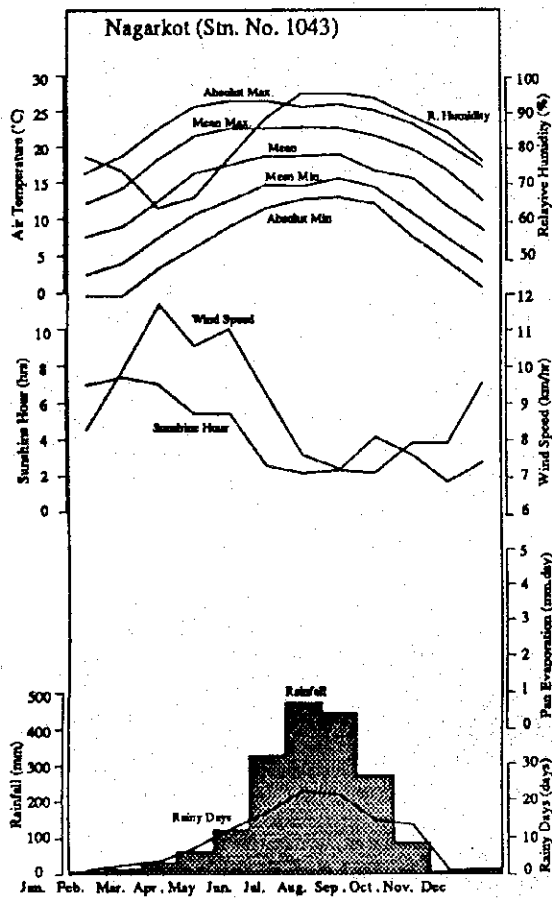
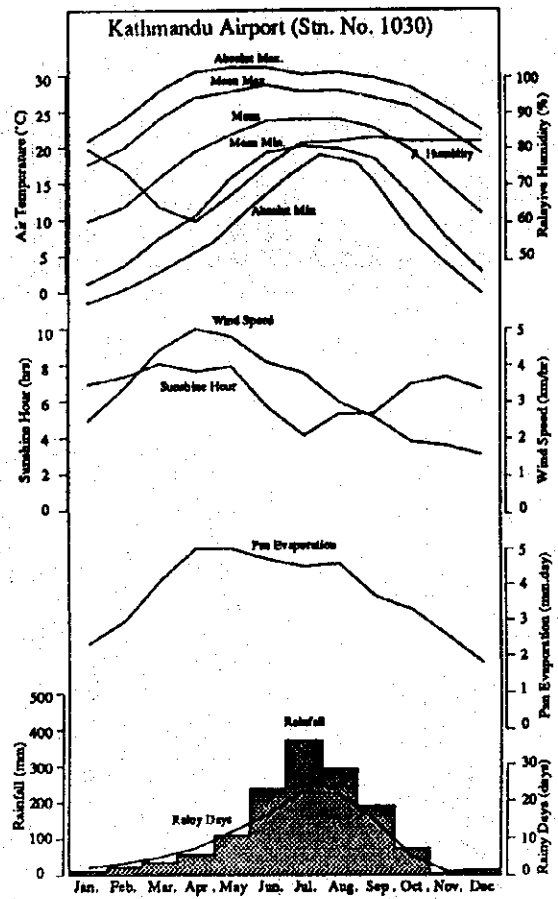
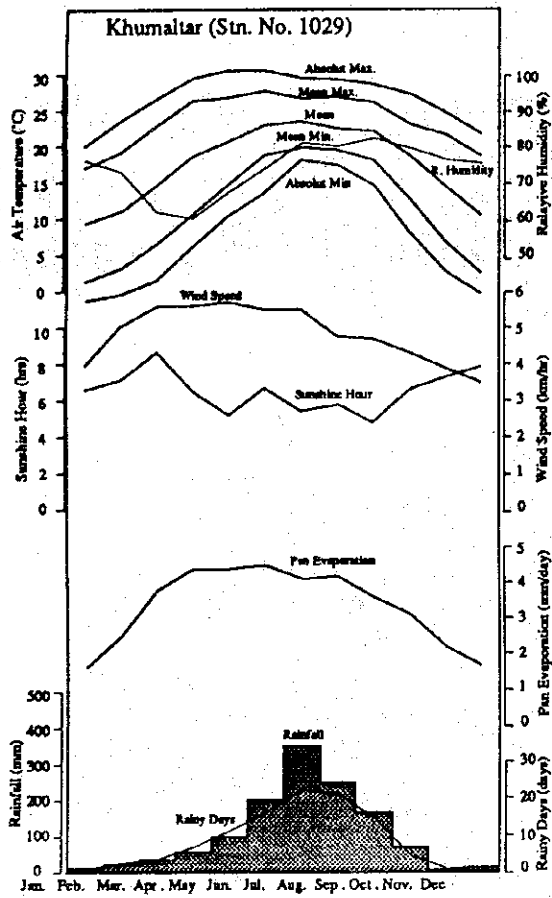


図 3-5 各気象観測所における気象パターン

Peak Discharge of Annual Maximum Flood

Year	Stn. No. 505 Sandarjai (C.A = 17 km ²)		Stn. No. 507 Mahankai (C.A = 13.7 km ²)		Stn. No. 510 Shyamchdo (C.A = 3.34 km ²)		Stn. No. 530 Gauri Ghat (C.A = 67.8 km ²)		Stn. No. 550 Cobar (C.A = 585 km ²)	
	Discharge (m ³ /sec)	Date	Discharge (m ³ /sec)	Date	Discharge (m ³ /sec)	Date	Discharge (m ³ /sec)	Date	Discharge (m ³ /sec)	Date
1962									287	Aug. 8
1963	12.30	Aug. 31	16.3	Aug. 18	4.19	Aug. 31			206	Sep. 1
1964	7.86	Aug. 30	9.5	Aug. 15	4.19	Jul. 29			251	Sep. 3
1965	16.00	Jul. 26	17.5	Jul. 26	9.97	Jul. 26			395	Jul. 9
1966	33.10	Sep. 4	52.0	Aug. 34	10.80	Sep. 4	119.0	Aug. 19	634	Aug. 24
1967	31.10	Jul. 10	19.2	Jul. 10	19.50	Jul. 10	236.0	Jul. 10	680	Jul. 10
1968	26.00	Jan. 27	25.8	Jan. 27	6.73	Aug. 16	73.8	Aug. 15	497	Oct. 4
1969	6.00	Jul. 27	10.0	Jul. 22	3.73	Aug. 5	51.3	Aug. 11	431	Aug. 19
1970	41.00	Jul. 19	19.6	Jul. 28	13.20	Jan. 1	125.0	Jul. 20	582	Jul. 16
1971	9.52	Jul. 14	10.0	Jan. 10	7.54	Aug. 15	90.4	Jan. 12	617	Jan. 12
1972	7.28	Jul. 28							876	Jul. 28
1973									335	Jul. 25
1974	3.76	Sep. 2							350	Aug. 30
1975	18.20	Sep. 2							591	Aug. 3
1976	31.20	Jun. 8							245	Jan. 30
1977	16.20	Jul. 9							299	Jan. 30
1978	33.20	Aug. 25							407	Jul. 16
1979	3.26	Aug. 23							416	Aug. 21
1980	11.00	Aug. 22							234	Jul. 31
1981	16.20	Sep. 2								
1982	6.16	Aug. 28								
1983	20.80	Aug. 1								
1984	4.76	Aug. 26								
1985	7.00	Jan. 26								
1986										
Max.	33.20		52.0		19.50		236.0		876	
Probable Flood										
10 year	38.54		43.5		18.10		261.2		729	
50 year	58.62		65.6		26.75		383.4		1005	

Sources: DoHM and RCI/9

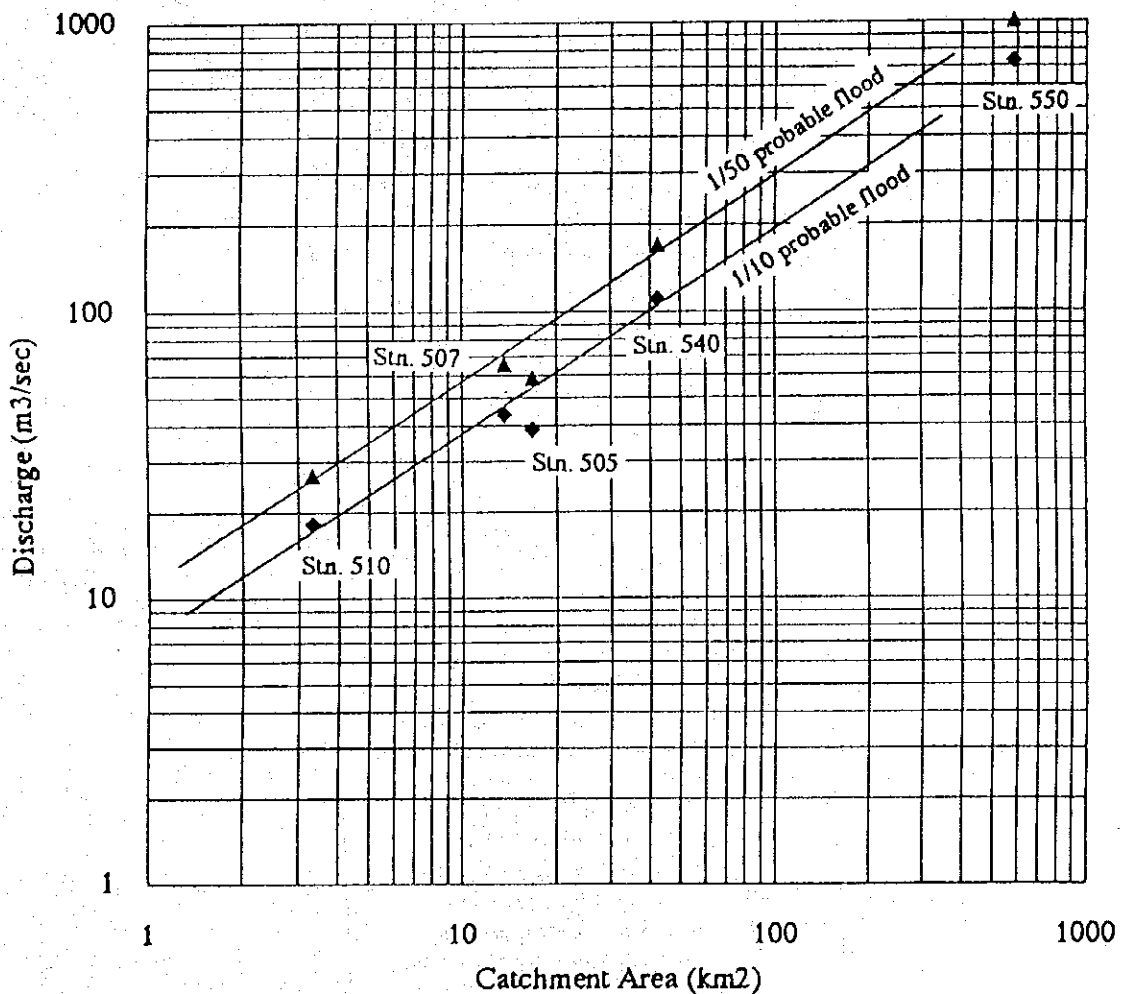
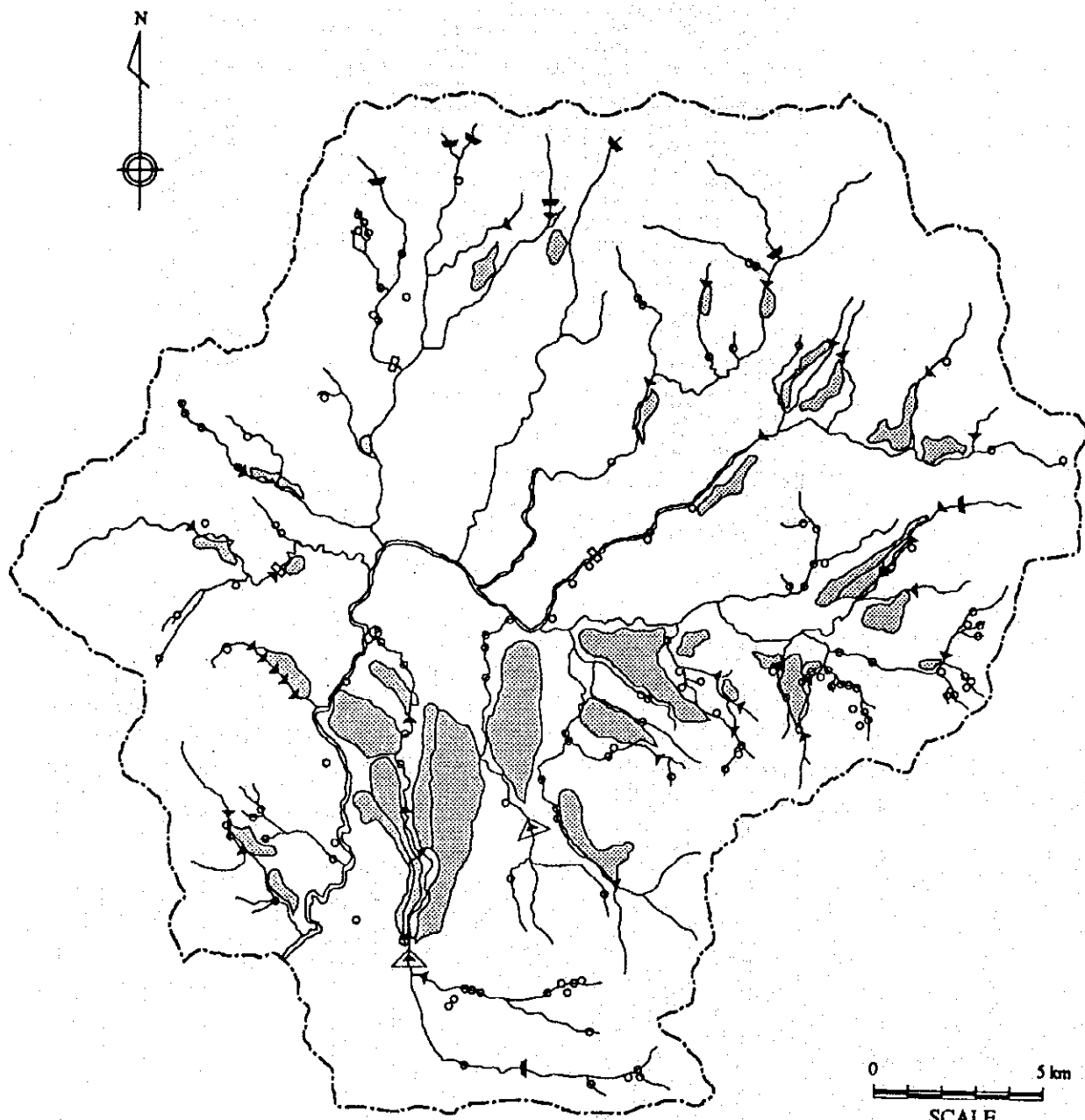


図 3-6 年最大洪水及び設計洪水量



LEGEND

	Boundary of the Kathmandu Valley
	Potential Irrigation Schemes
	Intake of Potential irrigation schemes
	Intake of Other irrigation System
	Water Supply Intake (Existing)
	Water Supply Intake (On-going)
	Water Supply Intake (Planned)
	Water Supply Intake (pump house)
	Proposed Damsite for Water Supply

図 3-7 カトマンズ盆地の水利用

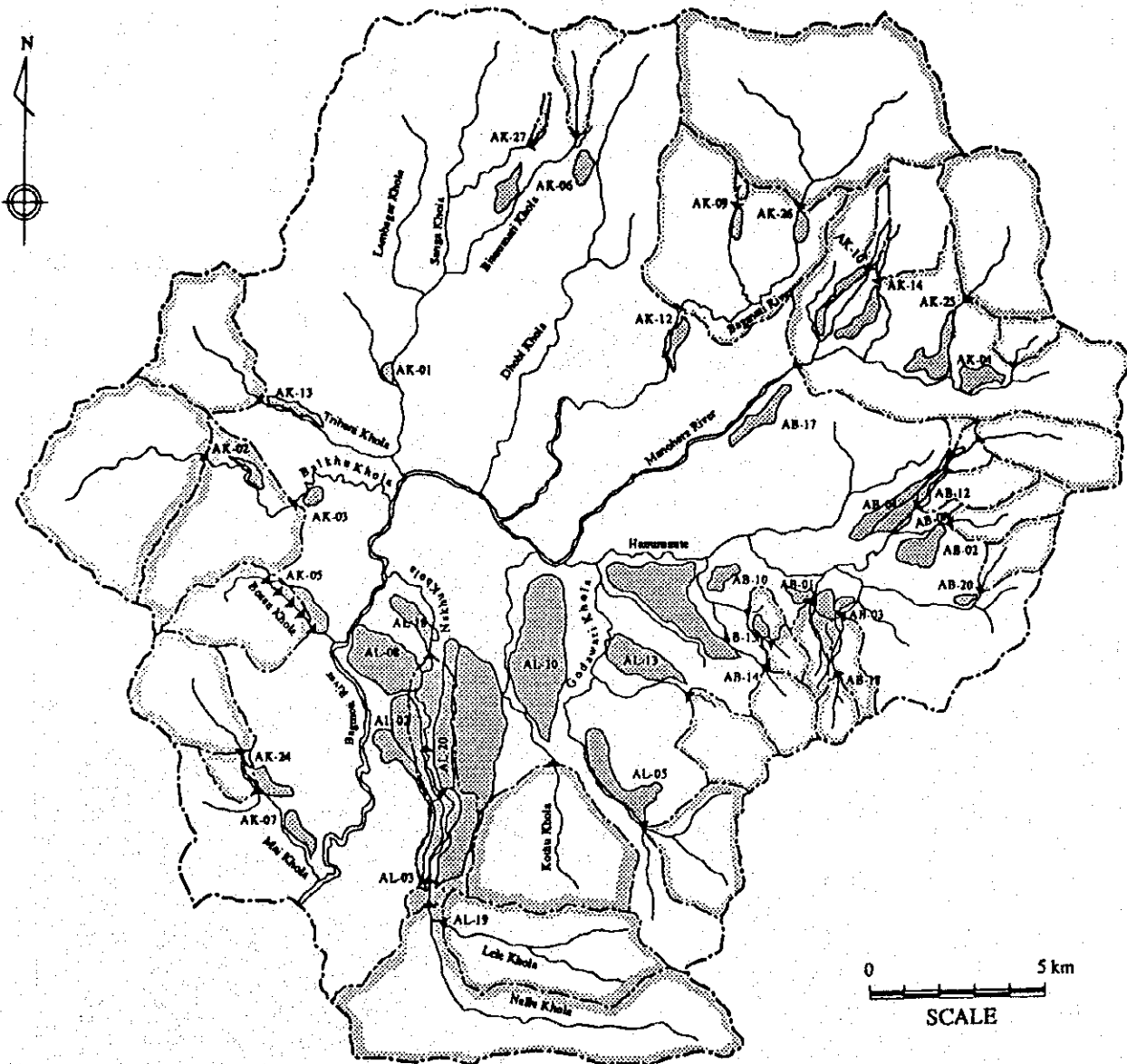


図 3-8 対象スキームの取水地点における流域面積