

ANNEX O

SELECTION OF MODEL AREAS

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Survey on Type-A Model Areas

Table O.1-1 Selected Candidates for Type-A Model Area

DISTRICT	SERIAL NUMBER	SCHEME NAME	DISTANCE FROM SCHEME TO ALL WEATHER ROAD (kml)	PROPOSED IRRIGABLE AREA (HA)	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	SPONSORING AGENCY	JUDGEMENT OF ORGANIZATION MEETINGS	JUDGEMENT OF ORGANIZATION MANAGEMENT	JUDGEMENT ON ORGANIZATION FINANCIAL STATUS	AVAILABLE WATER RESOURCES	IRRIGATION CONDITION
KIR	1	KANDAKAME	7.0	60.0	60	70	FARMERS	STRONG	STRONG	STRONG		STRONG
MER	117	GAKUMBO WATER ASSOCIATI	30.0	24	60	70	FARMERS	STRONG	STRONG	STRONG		STRONG
MER	189	MUKURIA KIAMBOGO	0.0	6	15	70	SISDO (1995)	STRONG	STRONG	STRONG		STRONG
THA	1	CIAMBARAGA	9.0	0	0	70	MIN. OF AGR	STRONG	STRONG	STRONG		STRONG
MER	101	MUGUNA		60	120	70	FARMERS	STRONG	STRONG	STRONG		STRONG

Table O.1-2 Selected Candidates for Type-B Model Area

DISTRICT	SERIAL NUMBER	SCHEME NAME	DISTANCE FROM SCHEME TO ALL WEATHER ROAD [km]	PROPOSED IRRIGABLE AREA [HA]	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	SPONSORING AGENCY	JUDGEMENT OF ORGANIZATION MEETINGS	JUDGEMENT OF ORGANIZATION MANAGEMENT	JUDGEMENT ON ORGANIZATION FINANCIAL STATUS	AVAILABLE WATER RESOURCES	IRRIGATION CONDITIONS
EMB	34	RUPINGAZI IIRRI SCHEM	0.2	36.0	200	70	FARMERS	WEAK	WEAK	WEAK		
KIR	34	GITHUKAKI WATER PROJECT	2.0	800.0	500	70	MOA	WEAK	WEAK	WEAK		
NYA	12	KINANDUBA	2.0	400	400	70		WEAK	WEAK	WEAK		
NYE	11	NGOGITHI (MATHINA)	0	63	40	70	MOA	MEDIUM	WEAK	WEAK		

Table O.I-3 Selected Candidates for Type-C Model Area

DISTRICT	SERIAL NUMBER	SCHEME NAME	PROPOSED CHANGES	SPECIFIC CHANGES	DISTANCE FROM SCHEME TO ALL WEATHER ROAD [km]	PRESENT IRRIGATED AREA [HA]	PRESENT NUMBER OF FARMERS	PROPOSED IRRIGABLE AREA [HA]	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF FARMERS OF HORTICULTURE	AGROECOLOGICAL LETTER	SPONSORING AGENCY	ESTIMATED CONSTRUCTION COST/HA [KS]	ESTIMATED CONSTRUCTION COST /FARMER [KS]	JUDGEMENT OF ORGANIZATION MEETINGS	JUDGEMENT OF ORGANIZATION MANAGEMENT	JUDGEMENT ON FINANCIAL STATUS
WER	118	GANKERE WATER PROJEC	EXP	DOMESTIC	0 km	15 ha	50	50	180	70			2,940	1,167	MEDIUM	WEAK	WEAK
WER	119	GIATUNE RUTUNTUNE. IP	EXP	DOMESTIC	1 km	0 ha	0	40	40	70			4,200	4,200	MEDIUM	WEAK	WEAK
WER	149	GATEMANA WATER PROJE	EXP	DOMESTIC	0 km	0 ha	0	90	150	70	FARMERS		4,200	2,920	STRONG	MEDIUM	MEDIUM
WER	91	MBURI WATER PROJECT	EXP	SPRINKLER	0 km	0 ha	0	100	200	70	LM		4,200	2,100	STRONG	MEDIUM	MEDIUM
WBE	18	KARABA IRR	EXPANSION	PIPING	0 km	5 ha	40	50	40	70	LM		9,065	16,188	MEDIUM	STRONG	STRONG
WBE	26	WANGO RIAKAHU	EXPANSION	SPRINKLER	0 km	0 ha	0	50	50	70	LM AGENCY		12,950	12,950	MEDIUM	STRONG	STRONG
KIP	25	NYANGATI/NGOMANO	EXPANSION	EXPANSION	0 km	13 ha	66	72	66	70	LM		10,815	16,855	MEDIUM	STRONG	STRONG
WBE	25	WACHORO/IRAITUNE PJ	EXPANSION	EXPANSION	1 km	5 ha	50	50	100	70	LM FARMERS		9,065	6,475	MEDIUM	STRONG	STRONG
WER	130	LOWER CHUGU	NEW	DOMESTIC	1 km	0 ha	0	60	300	70	LM		4,200	840	STRONG	MEDIUM	WEAK
WER	105	MUTONGA WATER FURROW	NEW		1 km	6 ha	30	30	6	70	LM		2,940	21,000	WEAK	WEAK	WEAK
WER	176	MUGURU WATER PROJECT	NEW		1 km	0 ha	0	50	70	70	UM		4,200	3,000	WEAK	WEAK	WEAK
WYR	66	KIHORA IRR S. H. P	NEW		1 km	0 ha	0	40	75	70			4,200	2,240	MEDIUM	WEAK	WEAK

Note : Project cost per hectare was reviewed based on the following equation:

$$\text{New Area} : \text{Cost} = \left(\frac{\text{Proposed Length of Lined Canal (km)} \times 3,000 \text{ ks/acre} \times 2.5 \times \text{Proposed Area (ha)} + \text{Proposed Length of Piprline (km)} \times 7,000 \text{ ks/acre} \times 2.5 \times \text{Proposed Area (ha)} + 4,200 \text{ ks} \right) / \text{Proposed Area (ha)}$$

$$\text{Expansion Area: Cost} = \left(\frac{\text{Proposed Length of Lined Canal (km)} \times 3,000 \text{ ks/acre} \times 2.5 \times \text{Proposed Area (ha)} + \text{Proposed Length of Piprline (km)} \times 7,000 \text{ ks/acre} \times 2.5 \times \text{Proposed Area (ha)} + 4,200 \text{ ks} \right) \times 0.7 / \text{Proposed Area (ha)}$$

Table O.1.4 Selected Candidates for Type-D Model Area

DISTRICT	SERIAL NUMBER	SCHEME NAME	PROPOSED CHANGES	SPECIFIC CHANGES	DISTANCE FROM SCHEME TO ALL WEATHER ROAD [km]	PRESENT IRRIGATED AREA [HA]	PRESENT NUMBER OF FARMERS	PROPOSED IRRIGABLE AREA [HA]	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	AGROECOLOGICAL LETTER	SPONSORING AGENCY	ESTIMATED CONSTRUCTION COST/HA [KS]	ESTIMATED CONSTRUCTION COST /FARMER [KS]	JUDGEMENT OF ORGANIZATION MEETINGS	JUDGEMENT OF ORGANIZATION MANAGEMENT	JUDGEMENT ON ORGANIZATION FINANCIAL STATUS
MER	10	MKUU-NJUNO W ASSOC		SMALL IMPROV.	3 km	0 ha	0	60	200	67	UM		109,200	32,760	MEDIUM	MEDIUM	MEDIUM
MER	43	KANTIURA WATER PROJEC			3 km	0 ha	0	80	400	67	LH		266,700	53,340	STRONG	N/A	WEAK

Table O.1-5 Selected Candidates for Type-E Model Area

DISTRICT	SERIAL NUMBER	SCHEME NAME	PROPOSED CHANGES	SPECIFIC CHANGES	DISTANCE FROM SCHEME TO ALL WEATHER ROAD [km]	PRESENT IRRIGATED AREA [HA]	PRESENT NUMBER OF FARMERS	PROPOSED IRRIGABLE AREA [HA]	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	AGROECOLOGICAL LETTER	SPONSORING AGENCY	ESTIMATED CONSTRUCTION COST/HA [K\$]	ESTIMATED CONSTRUCTION COST /FARMER [K\$]	JUDGEMENT OF MEETINGS	JUDGEMENT OF MANAGEMENT	JUDGEMENT ON FINANCIAL STATUS
NYA	4	KANJOO	EXP	LINING	25 km	100 ha	700	400 ha	1000	70%	LM	FARMERS/MDA	198,940	113,680	MEDIUM	STRONG	WEAK
NYA	16	MAREGA	NEW		22 km	0 ha	0	900 ha	350	70%	LM	FARMERS/MDA	564,200	1,450,800	STRONG	STRONG	STRONG
NYA	18	THEGI WATER PROJECT	NEW		22 km	1 ha	10	4 ha	10	70%	UM	FARMERS/MDA	17,640	10,080	STRONG	STRONG	WEAK
NYA	22	TUTHA WATER PROJECT	EXP	DOMESTIC	22 km	3 ha	70	20 ha	70	70%	LH	FARMERS/MDA	39,690	16,200	STRONG	STRONG	MEDIUM
NYA	24	KUNATTI	EXP		36 km	2 ha	25	200 ha	200	69%	LM		23,940	34,200	STRONG	MEDIUM	WEAK
THA	4	RIGU WATER FARM	EXP	CAN	10 km	10 ha	70	40 ha	180	50%	UM		134,190	42,600	WEAK	WEAK	MEDIUM
THA	20	MUTHUARI	NEW		15 km	0 ha	0	140 ha	350	40%	LM		34,200	13,680	WEAK	N/A	WEAK
THA	33	GITOMBANI WATER PROJ	NEW	SPRINKLER	10 km	0 ha	0	70 ha	50	70%	UM		109,200	152,880	MEDIUM	N/A	MEDIUM
THA	34	RUMA MAGUTUNI PROJ	EXP		18 km	12 ha	162	365 ha	2280	40%	UM		23,940	5,475	WEAK	MEDIUM	WEAK
THA	41	TUMBURA	NEW		40 km	0 ha	0	250 ha	350	40%	LM		74,200	53,000	STRONG	N/A	MEDIUM
THA	40	RUUNGU/KARDCHO	NEW		25 km	0 ha	0	400 ha	164	40%	LM	SISOO	4,200	10,244	STRONG	N/A	WEAK

Table O.1-6 Classification of Existing Smallholder Irrigation Schemes (Type-A and Type-B)

Type-A

district	SERIAL NUMBER	SCHEME NAME	DISTANCE FROM SCHEME TO ALL WEATHER ROAD [km]	GROSS AREA [HA]	POTENTIAL IRRIGABLE AREA [HA]	PRESENT IRRIGATED AREA [HA]	PRESENT NUMBER OF FARMERS	PROPOSED IRRIGABLE AREA [HA]	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	SPONSORING AGENCY	MAJOR CROP A	MAJOR CROP B	JUDGEMENT OF ORGANIZATION MEETINGS	JUDGEMENT OF ORGANIZATION MANAGEMENT	JUDGEMENT ON ORGANIZATION FINANCIAL STATUS
MER	121	KARAI WATER PROJECT	8.0	1050	700	50	350	120	750	70		F/BEANS	ONIONS	STRONG	STRONG	MEDIUM
MER	123	KIANLAGI WATER PROJ	7.0	600	300	250	300	300	360	70		F/BEANS	CHILLIES	STRONG	STRONG	MEDIUM
MER	152	QAKUMBO	5.0	3050	800	150	670	600	1500	70		F/BEANS	POTATOES	STRONG	STRONG	MEDIUM
NYR	8	KIRINYAGA NYANGE W.P	9	1440	134	67	336	130	336	70	SELF HELP	CABBAGES	TOMATOES	STRONG	STRONG	WEAK
MER	31	ITHAMBARA WATER PROJ	3.0	1000	600	300	750	500	1200	70		POTATOES	CABBAGES	STRONG	STRONG	MEDIUM
NYR	3	NUGULINI GITERO KABA	3	1200	400	80	350	400	350	70	WATER DEPT/ADF/USA	CABBAGES	SNOWPEAS	STRONG	STRONG	STRONG
NYR	25	HUKUS	0	1000	240	120	300	240	400	70	MOWD	CABBAGES	TOMATOES	STRONG	STRONG	MEDIUM
NYR	19	GATUAMBA KARICHEN	4	1200	800	80	1000	160	400	70	EEC,MOWD,CATHOLIC	CABBAGE	CARROTS	STRONG	STRONG	MEDIUM
NYR	18	NDATHI MBI/IRI	2	548	410	55	162	360	548	70	CANADIAN/CATHOLIC	CABBAGE	TOMATOES	STRONG	STRONG	MEDIUM
NYR	22	WARAZA LUSOI JET WP	8	428	183	61	153	360	800	70	MOWD	CABBAGE	CARROTS	STRONG	STRONG	MEDIUM
MER	30	KIMATE WATER	10.0	4500	4050	324	1	200	408	70	DIocese OF MERU	MELONS	F/BEANS	STRONG	STRONG	MEDIUM
THA	1	CIAMBARAGA	9.0	900	675	52	122	0	0	70	MIN,OF AGR	F/BEANS	TOMATOES	STRONG	STRONG	STRONG

Type-B

district	SERIAL NUMBER	SCHEME NAME	DISTANCE FROM SCHEME TO ALL WEATHER ROAD [km]	GROSS AREA [HA]	POTENTIAL IRRIGABLE AREA [HA]	PRESENT IRRIGATED AREA [HA]	PRESENT NUMBER OF FARMERS	PROPOSED IRRIGABLE AREA [HA]	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	SPONSORING AGENCY	MAJOR CROP A	MAJOR CROP B	JUDGEMENT OF ORGANIZATION MEETINGS	JUDGEMENT ON ORGANIZATION MANAGEMENT	JUDGEMENT ON ORGANIZATION FINANCIAL STATUS
THA	4	IRIGU WATER FARRROW	10.0	250	50	10	70	40	180	50		F/BEANS	TOMATOES	WEAK	MEDIUM	WEAK
NYR	11	NGOGITHI(MATHINA)LS	0	84	63	24	60	63	40	70	MOA	CABBAGES	TOMATOES	MEDIUM	WEAK	MEDIUM
MER	124	KIBURINE FURROW I.PR	33.0	1600	200	50	200	200	400	70		TOMATOES	G/MAIZE	MEDIUM	WEAK	MEDIUM
MER	77	GATANKENE WATER PROJ	7.0	200	120	30	100	80	100	70		F/BEANS	CABBAGES	WEAK	WEAK	WEAK
MER	185	KAGURU-KIROGINE FURR	2.0	260	20	30	200	100	200	70		F/BEANS	ONIONS	WEAK	WEAK	WEAK
MER	178	MUTONGE MUTUNE WATER	4.0	400	280	80	400	100	400	70		F/BEANS	TOMATOES	WEAK	NA	WEAK
MER	84	KATHUKU WATER FURROW	6.0	200	180	60	300	180	300	70		TOMATOES	ONIONS	WEAK	WEAK	WEAK
KIR	30	MWIRIA IRRIGATION SC	0.2	30	27.0	1.5	10	12.0	63	70	FARMERS	CABBAGES	TOMATOES	MEDIUM	WEAK	MEDIUM
EMB	1	KANGARU IRR SCHEME	5.0	10	9.0	5.0	16	7.0	20	70	FARMERS	BANANAS	KALES	MEDIUM	WEAK	MEDIUM
MER	105	MUTONGA WATER FURROW	1.0	24	10	5	30	30	6	70		F/BEANS	TOMATOES	WEAK	WEAK	WEAK
EMB	34	RUPINGAZI IIRI SCHEM	0.2	40	36.0	1.0	18	36.0	200	70	FARMERS	TOMATOES	KALES	WEAK	WEAK	WEAK
KIR	34	GITHUKAKI WATER PROJECT	2.0	1000.0	800.0	20.0	100	800.0	500	70	GoK	TOMATOES	F/BEANS	WEA	WEA	WEA
NYA	12	KINANDUBA	2.0	1200	900	2	8	400	400	70		TOBACCO	ASIAN VEGS	WEAK	WEAK	WEAK

Table O.1-7 Classification of Expansion and New Development Schemes (Type-C, Type-D and Type-E)

District : Nyeri

DISTRICT	SERIAL NUMBER	SCHEME NAME	DISTANCE FROM SCHEME TO ALL WEATHER ROAD (km)	GROSS AREA (HA)	POTENTIAL IRRIGABLE AREA (HA)	PRESENT IRRIGATED AREA (HA)	PRESENT NUMBER OF FARMERS	PROPOSED IRRIGABLE AREA (HA)	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	MAJOR CROP A	MAJOR CROP B	ESTIMATED CONSTRUCTION COST (KSH)	CLASSIFIED MODEL TYPE
NYR	12	KABURAINI IRR. WATER	3 km	1200	152	0 ha	0	76 ha	380	70% MAIZE	BEANS		424200	D-3
NYR	13	MWEA B WATER PROJECT	2 km	172	129	0 ha	0	32 ha	160	70% MAIZE	WHEAT		354200	D-3
NYR	28	KIUGU WATER PROJECT	2 km	41	30	8 ha	14	20 ha	14	80% CABBAGES	TOMATOES		15190	D-2
NYR	30	HONI RUHOTIE	2 km	70	27	18 ha	0	27 ha	24	70% CABBAGES	TOMATOES		25690	D-2
NYR	43	UPPER MAGUTU WATER	0 km	360	324	0 ha	0	61 ha	308	70% CABBAGES	BEANS		304200	C-2
NYR	7	NAROMORU-AGUTHI W.F.	2 km	800	320	120 ha	500	320 ha	500	70% CABBAGES	MAIZE		351190	D-3
NYR	27	LAMURIA (RURICHU)	7 km	600	250	36 ha	250	50 ha	250	70% CABBAGES	TOMATOES		815440	E-1
NYR	36	IHWAGI GREEN LAND	1 km	200	180	40 ha	100	120 ha	250	70% CABBAGES	TOMATOES		247940	C-2
NYR	38	KANGOCHO WATER FURRO	0 km	90	81	10 ha	75	15 ha	75	70% TOMATOES	KALES		135940	C-2
NYR	5	NUAMBA TIKERE W.P.	18 km	32	24	8 ha	5	24 ha	25	70% CABBAGES	TOMATOES		2940	E-1
NYR	6	NAROMORU WATER PROJE	5 km	2060	160	5 ha	250	100 ha	250	70% POTATOES	CABBAGES		235690	D-2
NYR	9	GITWE IRR. W.P.	0 km	572	100	30 ha	300	240 ha	300	70% CABBAGES	PEAS		370440	C-2
NYR	40	KANJURI WATER PROJEC	1 km	240	108	40 ha	180	36 ha	200	70% CABBAGES	TOMATOES		64190	C-2
NYR	37	KIMBIRIA KAGONGO W.P.	1 km	78	70	13 ha	65	13 ha	65	70% CABBAGES	TOMATOES		2940	C-1
NYR	14	KAGA WATER PROJECT	2 km	1078	480	0 ha	0	98 ha	240	70% BEANS	MAIZE		441700	D-3
NYR	46	SAGANA SCHEME	2 km	300	260	120 ha	250	120 ha	250	70% CABBAGES	F.BEANS		2940	D-1
NYR	26	WATUKA	20 km	3408	1700	43 ha	426	170 ha	426	60% CABBAGES	CARROTS		2940	E-1
NYR	70	MUTARO YOUNG FARMERS	1 km	30	20	4 ha	13	8 ha	2	70% TOMATOES	CABBAGES		30800	C-2
NYR	10	MARAGOMA & TAGWA	0 km	736	360	0 ha	0	380 ha	420	70% MAIZE	BEANS		406700	C-2
NYR	15	GIKANGA WATER PJ.	1 km	108	88	0 ha	0	44 ha	270	70% POTATOES	MAIZE		266700	C-2
NYR	24	KABENDERA IRR WP	240 km	240	218	36 ha	180	66 ha	300	70% POTATOES	CABBAGES		64190	E-1
NYR	31	KINYATI WATER PROJE	2 km	1120	896	0 ha	0	80 ha	400	70% CABBAGES	ONION		94200	D-2
NYR	23	ISLAND FARMERS SSWP	4 km	750	300	150 ha	375	225 ha	375	70% CARROTS	CABBAGES		815440	D-2
NYR	39	MUTEITHIA IRR WAT PJ	8 km	180	160	0 ha	0	40 ha	15	70% CABBAGES	TOMATOES		249200	E-1
NYR	64	KIANTI IRR SCHEME	3 km	8	8	8 ha	30	8 ha	30	70% KALES	TOMATOES		2940	D-1
NYR	20	MURERU WATER PROJECT	3 km	1600	1440	30 ha	150	200 ha	1000	70% CABBAGES	TOMATOES		125440	D-2
NYR	57	WANGI IRR. W.P.	0.5	600	500	0 ha	0	450 ha	600	70% VEGETABLES	MAIZE		336700	C-2
NYR	2	GATUNE WATER PROJECT	2 km	250	225	0 ha	0	80 ha	200	70% POTATOES	CABBAGES		91700	D-2
NYR	16	THIGU-JOINT WATER PJ	1 km	1800	600	0 ha	0	300 ha	1500	70% MAIZE	BEANS		511700	C-2
NYR	4	BARGURET WATER PROJE	0 km	3600	600	10 ha	1000	300 ha	300	0% MAIZE	BEANS		247940	E-1
NYR	17	MWICURI WATER PJ.	2 km	350	140	0 ha	0	100 ha	350	70% POTATOES	WHEAT		144200	D-2
NYR	29	KAPGUNI IRR SCHEME	1 km	50	11	0 ha	0	3 ha	14	70% CABBAGES	TOMATOES		36200	C-2
NYR	32	MITHUNI IRR PROFIL	3 km	118	40	0 ha	0	30 ha	42	0% MAIZE	BEANS		74200	D-2
NYR	33	QATARAKWA MUGUNDA	3 km	10600	7000	0 ha	0	1800 ha	4500	80% TOMATOES	POTATOES		1481700	D-3
NYR	34	MWEIGA DIV. JOINT WP	16 km	28300	4000	0 ha	0	1000 ha	10000	60% CABBAGES	POTATOES		879200	E-1
NYR	35	KABENDERA	3 km	490	180	0 ha	0	40 ha	200	80% TOMATOES	CABBAGES		4200	D-1
NYR	41	GIKORE WATER PROJECT	1 km	120	108	0 ha	0	20 ha	100	70% MAIZE	BEANS		354200	C-2
NYR	42	GITUNDUTI WATER PROJ	2 km	200	170	0 ha	0	32 ha	180	70% MAIZE	BEANS		4200	D-1
NYR	44	GAIKUYU/KIANGIMA WAT	130 km	160	120	0 ha	0	120 ha	180	70% CABBAGES	TOMATOES		56700	E-1
NYR	45	RUTURU	0 km	480	432	0 ha	0	80 ha	400	70%			74200	C-2
NYR	47	KAGATI IRR. PROJECT	1 km	51	46	16 ha	41	17 ha	43	70% CABBAGES	TOMATOES		2940	C-1
NYR	48	RURURU	0 km	100	0	100 ha	0	250 ha	0	70% CABBAGES	TOMATOES		27440	C-2
NYR	49	WEST MAGUTU	12 km	720	648	0 ha	0	90 ha	900	70% FBEAN	TOMATOES		511700	E-1
NYR	50	SAGANA MAGANJO	5 km	450	405	0 ha	0	20 ha	200	70% FBEAN	ONION		354200	D-3
NYR	51	HIKA IRRIGATIO PROJE	0 km	110	100	0 ha	0	30 ha	150	70% CABBAGES	FBEAN		266700	C-2
NYR	52	IRURI	0 km	600	540	0 ha	0	100 ha	500	70% CABBAGES	TOMATOES		441700	C-2
NYR	53	KIAMARIGA	0 km	480	432	0 ha	0	80 ha	400	70% CABBAGES	CARROTS		529200	C-2
NYR	54	THIKA SAGANA IRR SCH	0 km	128	120	0 ha	0	120 ha	300	40% BANANAS	MAIZE		354200	C-2
NYR	55	GAIKUNDO	3 km	140	85	0 ha	0	85 ha	220	70% COFFEE	MAIZE		4200	D-1
NYR	56	NIENGU SCHEME	0 km	1200	1000	0 ha	0	125 ha	500	40% CABBAGES	TOMATOES		4200	C-1
NYR	59	KARUTHI IRR W.P.	10 km	720	648	0 ha	300	3375 ha	150		CABBAGES	TOMATOES	4200	E-1
NYR	60	GIREU S.H. HORT PROJ	2 km	1200	63	10 ha	20	14 ha	20	70% CABBAGES	TOMATOES		30800	D-2
NYR	61	KAMOKO IRR PROJECT	3 km	420	378	0 ha	0	150 ha	350	70% TEA	COFFEE		4200	D-1
NYR	62	KIANGONDO GENERAL IRR	1 km	22	12	0 ha	0	4 ha	18	70% COFFEE	MAIZE		4200	C-1
NYR	63	KAGUMO	3 km	12	12	0 ha	0	30 ha	18	70% F.BEANS	TOMATOES		4200	D-1
NYR	65	NYERI HILL S.H.L.P	0 km	210	8	0 ha	0	20 ha	40	70% CABBAGES	TOMATOES		4200	E-1
NYR	66	KIHOHA IRR S.H.P	1 km	250	100	0 ha	0	40 ha	75	70% CABBAGES	TOMATOES		4200	C-1
NYR	67	KIANYU IRR SCHEME	2 km	30	30	0 ha	0	80 ha	80	70% CABBAGES	TOMATOES		106200	D-2
NYR	68	AGUTHI/GAKI GURA	1 km	460	400	0 ha	0	231 ha	1850	70% MAIZE	BEANS		529200	C-2
NYR	69	ITHUTHI/KAGUMO	0 km	48	38	2 ha	25	24 ha	25	70% TOMATOES	CABBAGES		2940	C-1
NYR	7	GITHINA WATER PROJ	18 km	60	34	18 ha	28	34 ha	25	70% CABBAGES	TOMATOES		2940	E-1
NYR	21	KABUNDA WATER PROJEC	3 km	720	648	120 ha	200	280 ha	600	70% CABBAGES	SNOWPEAS		185940	D-3
NYR	25	KANINA		800	480	0 ha	0	80 ha	600				4800	X

Table O.1-8 Classification of Expansion and New Development Schemes (Type-C, Type-D and Type-E)

District : Kirinyaga

DISTRICT	SERIAL NUMBER	SCHEME NAME	DISTANCE FROM SCHEME TO ALL WEATHER ROAD (km)	GROSS AREA (HA)	POTENTIAL IRRIGABLE AREA (HA)	PRESENT IRRIGATED AREA (HA)	PRESENT NUMBER OF FARMERS	PROPOSED IRRIGABLE AREA (HA)	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	MAJOR CROP A	MAJOR CROP B	ESTIMATED CONSTRUCTION COST(HA PISE)	CLASSIFIED MODEL TYPE
KIR	6	KIAMICIRI	3 km	180.0	160.0	24 ha	40	120 ha	152	70%	F/BEANS	TOMATOES	2940	D-1
KIR	22	NYANGATI/NGOMANO	0 km	400.0	200.0	19 ha	86	72 ha	66	70%	MAIZE	BEANS	10615	C-1
KIR	33	WAKULIMA WATER PROJECT	3 km	54.0	45.0	0 ha	0	45 ha	27	70%	ONIONS	CABBAGES	30450	D-2
KIR	28	KITHANJE KAVINGAZI V	1 km	10	9.0	0 ha	0	8 ha	19	70%	TOMATOES	CABBAGES	7700	C-1
KIR	29	MUKONGORO	1 km	10	9.0	0 ha	0	7 ha	35	70%	CABBAGES	TOMATOES	179200	C-2
KIR	31	NDAARI IIRI PROJECT	1 km	20	18.0	0 ha	0	10 ha	43	70%	TOMATOES	CABBAGES	4200	C-1
KIR	32	NTHUMBIRI	2 km	35	30.0	0 ha	0	20 ha	150	70%	CABBAGES	CARROTS	36200	D-2
KIR	33	RIAMACIRI IIRI PROJE	0 km	15	14.0	0 ha	0	3 ha	12	70%	ONIONS	CABBAGES	12950	C-1
KIR	35	RWANYAGA/OKAGO	1 km	32	29.0	0 ha	0	4 ha	18	70%	TOMATOES	KALES	25200	C-2
KIR	36	THAMBANA NGANDORI PJ	1 km	80	70.0	0 ha	0	80 ha	300	70%	TOMATOES	CABBAGES	74200	C-2
KIR	37	IKINDU IIRI PROJECT	1 km	14	13.0	0 ha	0	14 ha	30	70%	CABBAGES	TOMATOES	18200	C-2
KIR	38	KAMURARU	0 km	40	18.0	0 ha	0	16 ha	30	70%	KALES	CHILLIES	12950	C-1
KIR	39	KEYOTE IIRI PROJECT	1 km	35	33.0	0 ha	0	15 ha	44	70%	TOMATOES	CABBAGES	28950	C-2
KIR	41	KIANJUKI IIRI PROJEC	3 km	30	26.0	0 ha	0	26 ha	60	70%	KALES	TOMATOES	13200	D-2
KIR	42	MAKENGI IIRI PROJECT	2 km	20	18.0	0 ha	0	12 ha	35	70%	F/BEANS	TOMATOES	18200	D-2
KIR	7	MUTHIGA III	0 km	1900.0	300.0	0 ha	0	160 ha	400	70%	COFFEE	MAIZE	4200	C-1
KIR	10	UCELUMBUGA IRR PROJEC	7 km	150.0	0.0	0 ha	50	80 ha	100	70%	MAIZE	BEANS	4200	E-1
KIR	11	GAKINDU IRRIGATION PJ.	0 km	220.0	176.0	0 ha	0	44 ha	110	70%	MAIZE	BEANS	109200	C-2
KIR	12	GITOOINI IRR PROJECT	3 km	200.0	22.0	0 ha	60	24 ha	120	70%	MAIZE	BEANS	4200	D-1
KIR	15	KARUKUNGU/KANYANGEINI	3 km	430.0	350.0	0 ha	0	50 ha	58	30%	MAIZE	BEANS	19200	D-2
KIR	17	KIRATINAKUMBU	10 km	1180.0	800.0	0 ha	0	377 ha	476	80%	MAIZE	BEANS	144200	E-1
KIR	23	RUKANGA IRR PROJECT	0 km	3100.0	2400.0	0 ha	0	809 ha	1000	70%	TOMATOES	ONIONS	4200	C-1
KIR	29	KIAMUCURU	7 km	528.0	52.0	0 ha	0	52 ha	263	70%	BEANS	CABBAGES	74200	E-1
KIR	31	KIMUCU IIRI PROJECT	1 km	120.0	0.0	0 ha	60	248 ha	0	70%	F/BEANS	TOMATOES	56700	C-2
KIR	44	ENA IRRIGATION SCHEM	1 km	160	144.0	2 ha	0	63 ha	315	70%	TOMATOES	KALES	737940	C-2
KIR	32	MBETI IIRI PROJECT	1 km	320.0	88.0	0 ha	178	68 ha	0	70%	COFFE	MAIZE	74200	C-2
KIR	43	NEW KARURUMU NJOGA	1 km	60	54.0	5 ha	10	20 ha	75	70%	F/BEANS	KALES	51840	C-2
KIR	1	KANDAKAME	7 km	180.0	60.0	30 ha	60	60 ha	60	70%	F/BEANS	KALES	2940	E-1
KIR	8	RIKENYA	1 km	700.0	240.0	175 ha	200	240 ha	280	70%	F/BEANS	TOMATOES	2940	C-1
KIR	18	KITHINDI/RWAMBITI	2 km	400.0	150.0	75 ha	40	100 ha	65	70%	F/BEANS	TOMATOES	5565	D-1
KIR	21	MUCHANGONDI	10 km	210.0	25.0	14 ha	35	28 ha	250	70%	F/BEANS		8190	E-1

Table O.1-9 Classification of Expansion and New Development Schemes (Type-C, Type-D and Type-E)

District : Embu

DISTRICT	SERIAL NUMBER	SCHEME NAME	DISTANCE FROM SCHEME TO ALL WEATHER ROAD (Km)	GROSS AREA (HA)	POTENTIAL IRRIGABLE AREA (HA)	PRESENT IRRIGATED AREA (HA)	PRESENT NUMBER OF FARMERS	PROPOSED IRRIGABLE AREA (HA)	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	MAJOR CROP A	MAJOR CROP B	ESTIMATED CONSTRUCTION COST(HA (KSh)	CLASSIFIED MODEL TYPE
EMBU	27	KII IIRRI SCHEME	1 km	20	18.0	4 ha	35	8 ha	67	20%	TOMATOES	KALES	2940	C-1
EMBU	14	KATHIGA	1 km	200.0	150.0	12 ha	100	80 ha	100	70%	TOMATOES	F/BEANS	13440	C-2
EMBU	40	KIANDUNDU	0 km	40	36.0	0 ha	0	15 ha	85	70%	CABBAGES	TOMATOES	56700	C-2
EMBU	3	GATUGURA FURROW	4 km	160.0	70.0	40 ha	60	70 ha	145	70%	F/BEANS	TOMATOES	2940	D-1
EMBU	19	MITHUTHI-INI IRRIGAT	5 km	138.0	69.0	32 ha	69	69 ha	0	70%	TOMATOES	F/BEANS	8190	D-1
EMBU	18	KARANGI	1 km	18	18.0	3 ha	27	6 ha	38	70%	TOMATOES	CABBAGES	21315	C-2
EMBU	24	KIANDARI IIRRI PROJEC	0 km	30	27.0	1 ha	30	6 ha	45	70%	TOMATOES	CABBAGES	15540	C-2
EMBU	5	ITIMBOGO S.H. IRR.PJ	1 km	27	24.0	8 ha	25	20 ha	40	70%	KALES	TOMATOES	16085	C-2
EMBU	45	KAMIUGU	0 km	15	14.0	3 ha	28	7 ha	40	70%	TOMATOES	KALES	27440	C-2
EMBU	6	KANYANGE IIRRI PROJEC	1 km	30	26.0	0 ha	0	18 ha	40	70%	TOMATOES	F/BEANS	4200	C-1
EMBU	3	GACENGA IIRRI SCHEME	3 km	10	9.0	0 ha	1	6 ha	27	70%	TOMATOES	KALES	8190	D-1
EMBU	48	KIGARITHO MBIRURI	0 km	20	5.0	1 ha	15	5 ha	20	70%	KALES	ONIONS	30690	C-2
EMBU	20	MITOINI KOMBUNI PJ	3 km	3343.0	300.0	0 ha	110	268 ha	320	80%	TOMATOES	F/BEANS	11700	D-1
EMBU	13	KAMAVINDIGATUNDURI	0 km	33	30.0	0 ha	0	12 ha	75	70%	TOMATOES	CABBAGES	21700	C-2
EMBU	5	KAGUMA WOMEN GROUP	7 km	20.0	14.0	8 ha	14	14 ha	20	70%	MAIZE	BEANS	2940	E-1
EMBU	25	BARICHO YOUTH GROUP	3 km	84.0	56.0	8 ha	40	25 ha	40	70%	F/BEANS	ONIONS	100940	O-2
EMBU	26	GETUYA IIRRI PROJECT	2 km	120.0	40.0	0 ha	0	20 ha	100	70%	TOMATOES	F/BEANS	74200	D-2
EMBU	27	KAHUHOINI IRRIGATION PROJ	4 km	40.0	26.0	0 ha	0	15 ha	32	70%	F/BEANS	TOMATOES	44450	D-2
EMBU	28	KAKI IRRIGATION PROJECT	7 km	178.0	132.0	0 ha	0	50 ha	110	70%	TOMATOES	ONIONS	144200	E-1
EMBU	2	NUKUR/INTHAMBO	1 km	64	58.0	0 ha	0	34 ha	180	70%	TOMATOES	KALES	144200	C-2
EMBU	4	IRIARI	0 km	150	70.0	0 ha	0	50 ha	200	70%	TEA	COFFEE	84200	C-2
EMBU	7	KAPIRU	1 km	126	114.0	0 ha	0	106 ha	533	70%	F/BEANS	TOMATOES	441700	C-2
EMBU	9	GITURI IIRRI PROJECT	2 km	7	5.0	0 ha	0	4 ha	15	70%	TOMATOES	CABBAGES	12950	D-1
EMBU	10	IRATI	0 km	4	3.0	0 ha	0	2 ha	20	70%	TOMATOES	CABBAGES	30450	C-2
EMBU	11	IRIANI	4 km	20	15.0	0 ha	0	18 ha	25	70%	CABBAGES	TOMATOES	4200	D-1
EMBU	12	KAGUMA IIRRI PROJECT	1 km	30	27.0	0 ha	0	12 ha	63	70%	TOMATOES	F/BEANS	26200	C-2
EMBU	15	KAMVU IRRIGATION S.	1 km	30	27.0	0 ha	0	25 ha	60	70%	TOMATOES	F/BEANS	30450	C-2
EMBU	16	KANYIRI	2 km	12	11.0	0 ha	0	10 ha	18	70%	TOMATOES	F/BEANS	25200	D-2
EMBU	17	KAPINGAZI KIRIGI	1 km	40	37.0	0 ha	0	35 ha	80	70%	TOMATOES	CABBAGES	54200	C-2
EMBU	19	KARAU IIRRI PROJECT	3 km	8	8.0	0 ha	0	4 ha	20	70%	TOMATOES	CABBAGES	26950	D-2
EMBU	20	KATHIGARI/ KITHANGAN	17 km	36	32.0	0 ha	0	15 ha	45	70%	TOMATOES	KALES	25200	E-1
EMBU	21	KATHONGONDU	1 km	5	4.0	0 ha	0	4 ha	12	70%	CABBAGES	TOMATOES	25200	C-2
EMBU	22	KATHUNIRI	1 km	15	14.0	0 ha	0	12 ha	18	70%	CABBAGES	TOMATOES	4200	C-1
EMBU	23	KIAMBUGI	1 km	8	7.0	0 ha	0	7 ha	22	70%	TOMATOES	CABBAGES	35700	C-2
EMBU	25	KIBUGU/NGUVU	2 km	150	120.0	0 ha	0	40 ha	500	70%	TOMATOES	CABBAGES	354200	D-1
EMBU	26	KIERISHA	1 km	14	13.0	0 ha	0	10 ha	20	70%	TOMATOES	CABBAGES	21700	C-2
EMBU	47	MWAUGU-KIRI	1 km	50	30.0	3 ha	60	30 ha	60	70%	TOMATOES	KALES/MAIZE	51940	E-2
EMBU	48	NDAMUNGE S.H. PROJEC	1 km	30	10.0	5 ha	40	10 ha	40	70%	ONIONS	TOMATOES	39690	C-2
EMBU	8	GICHANGAI	1 km	40	36.0	10 ha	80	20 ha	100	50%	TOMATOES	CABBAGE	2940	C-1
EMBU	14	KAMBEVO	0 km	10	9.0	1 ha	28	5 ha	37	70%	TOMATOES	CABBAGES	2940	C-1
EMBU	24	TOGONYE FURROW	7 km	250.0	200.0	20 ha	30	30 ha	30	70%	F/BEANS	TOMATOES	8190	E-1
EMBU	2	GATU S.H WATER PROJE	8 km	70.0	24.0	14 ha	35	24 ha	0	70%	F/BEANS	TOMAT	2949	D-1
EMBU	4	GIKUMBO KIREREMBE	8 km	136.0	65.0	30 ha	0	35 ha	68	70%	F/BEANS	KALES	8190	E-1
EMBU	8	THIMU GATU FURROW	1 km	1200.0	80.0	25 ha	63	60 ha	75	70%	MAIZE	F/BEANS	29190	C-2
EMBU	13	KARIKOINI IRR. SCHEM	4 km	283.0	254.0	70 ha	140	120 ha	160	70%	F/BEANS	TOMATOES	8190	D-1
EMBU	16	KI MURINDUKO IRR PJ	4 km	1000.0	800.0	30 ha	720	170 ha	0	80%	F/BEANS	TOMATOES	19890	D-2
EMBU	30	KIBIRIGWI IRR SCHEME	1 km	423.0	335.0	112 ha	277	0 ha	0	70%	F/BEANS/NS	ONIONS	7840	C-1

Table O.1-10 Classification of Expansion and New Development Schemes (Type-C, Type-D and Type-E)

District : Mbeere

DISTRICT	SERIAL NUMBER	SCHEME NAME	DISTANCE FROM SCHEME TO ALL WEATHER ROAD (km)	GROSS AREA (HA)	POTENTIAL IRRIGABLE AREA (HA)	PRESENT IRRIGATED AREA (HA)	PRESENT NUMBER OF FARMERS	PROPOSED IRRIGABLE AREA (HA)	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	MAJOR CROP A	MAJOR CROP B	ESTIMATED CONSTRUCTION COST (HA) (KES)	CLASSIFIED MODEL TYPE
MBE	6	GEKOU		200	150.0	0 ha	0	100 ha	250	70% MAIZE	HORTICULTURE		4200	X
MBE	18	GATEGI(KARUNGURU) SC	0 km	840	240.0	50 ha	480	400 ha	480	70% KALES	CHILLIES		50190	C-2
MBE	9	KATHGA GACHERU	50 km	107	100.0	20 ha	107	100 ha	150	70% TOMATOES	KALES		247940	E-1
MBE	18	KARABA IRR	0 km	100	80.0	5 ha	40	50 ha	40	70% HORTICULTURE	FOOD CROPS		9065	C-1
MBE	28	WANGO RIAKANAU	0 km	100	80.0	0 ha	0	80 ha	50	70% KALES	CHILLIES		12950	C-1
MBE	25	WACHORO/IRIAITUNE PJ	1 km	100	80.0	5 ha	50	50 ha	100	70% HORTICULTURE	FOOD CROPS		9065	C-1
MBE	15	RWIKA RUPINGAZI	3 km	50	35.0	1 ha	20	40 ha	50	70% TOMATOES	KALES		15190	D-2
MBE	21	MASHAMBA IRR SCHEME	9 km	2000	800.0	0 ha	0	800 ha	2000	70% MAIZE	BEANS		79200	E-1
MBE	11	KIARURIGA GACHURIRI	2 km	40	35.0	2 ha	16	50 ha	80	70% KALES	CABBAGES		2940	D-1
MBE	19	KIKUMINI FARMERS GRP	8 km	40	25.0	5 ha	4	15 ha	0	70% TOMATOES	ONIONS		51940	E-1
MBE	29	KARIRU S.H. GROUP	10 km	15	12.0	1 ha	30	9 ha	30	70% TOMATOES	CHILLIES		6615	E-1
MBE	23	NGECHA IRRIGATION	9 km	30	25.0	5 ha	0	20 ha	40	70% TOMATOES	KALES		9065	E-1
MBE	24	NTHINGINI	20 km	60	40.0	8 ha	30	40 ha	60	70% TOMATOES	KALES		6615	E-1
MBE	2	KAREREMA IRR SCHEME	18 km	112	86.0	0 ha	0	145 ha	58	70% MILLET	SORGHUM		74200	E-1
MBE	3	KARUTHANGU PUMP	1 km	30	28.0	0 ha	15	25 ha	15	70% KALES	TOMATOES		7840	C-1
MBE	4	MLA-CHAKI	2 km	300	800.0	0 ha	0	300 ha	150	70% MAIZE	MILLET		428200	D-2
MBE	5	MURINGARI	5 km	90	80.0	0 ha	11	38 ha	31	70% TOMATOES	KALES		7840	D-1
MBE	7	KAGANDARI A	1 km	110	80.0	0 ha	0	150 ha	100	70% MAIZE	MILLET		91700	C-2
MBE	8	KARURIRI PUMP	2 km	240	200.0	0 ha	11	25 ha	15	70% KALES	TOMATOES		6615	D-1
MBE	10	KAMUGONGONGIRERI	7 km	100	0.0	0 ha	0	10 ha	80	70% HORTICULTURE			4200	E-1
MBE	12	NDUNDA IRR. W/G	1 km	50	0.0	0 ha	0	20 ha	30	70% HORTICULTURE	TOMATOES		12950	C-1
MBE	13	RUGONGWE UNITY S.H.Y	1 km	50	0.0	0 ha	0	10 ha	17	70% HORTICULTURE			4800	C-1
MBE	14	RUPINGAZI YOUTH S.H.	7 km	30	20.0	2 ha	15	15 ha	60	70% TOMATOES	KALES		15190	E-1
MBE	17	KAMUNYAGIA IRR.GRP.	15 km	150	100.0	5 ha	20	40 ha	60	70% TOMATOES	KALES		81890	E-1
MBE	20	MAKIMA-KITHESU	2 km	200	180.0	25 ha	34	80 ha	44	70% CHILLIES	KARELLA		9065	D-1
MBE	22	MBONDONI IRR SCHEME	7 km	80	40.0	9 ha	7	20 ha	40	70% CHILLIES	KARELLA		15190	E-1
MBE	27	GATITU RIVERSIDE S.H	8 km	17	12.0	2 ha	34	5 ha	34	70% KALES	TOMATOES		6615	D-1
MBE	28	KANGONDI YOUTH GRP	6 km	10	7.0	1 ha	28	2 ha	28	70% KALES	TOMATOES		7840	D-1
MBE	1	ISHIARAKATHGI IRR	50 km	200	150.0	30 ha	85	60 ha	100	70% TOMATOES	FRUIT TREE		29190	E-1

Table O.1-11 Classification of Expansion and New Development Schemes (Type-C, Type-D and Type-E

District : Tharaka Nithi

DISTRICT	SERIAL NUMBER	SCHEME NAME	DISTANCE FROM SCHEME TO ALL WEATHER ROAD (km)	GROSS AREA (HA)	POTENTIAL IRRIGABLE AREA (HA)	PRESENT IRRIGATED AREA (HA)	PRESENT NUMBER OF FARMERS	PROPOSED IRRIGABLE AREA (HA)	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	MAJOR CROP A	MAJOR CROP B	ESTIMATED CONSTRUCTION COST/HAS (KSh)	CLASSIFIED MODEL TYPE
THA	31	NTHAMBO A	1 km	51	40	5 ha	10	5 ha	10	70% TEA	COFFEE		51940	C-2
THA	38	THIGAA	7 km	105	70	12 ha	10	70 ha	108	50% SUGAR CANE	CABBAGES		2940	E-2
THA	30	MWIRITHI	2 km	25	10	7 ha	20	10 ha	50	70% F/BEANS	KALES		23640	D-2
THA	34	IRUMA MAGUTUNI PROJ	18 km	704	400	12 ha	162	305 ha	2280	40% COFFEE	BANANAS		23640	E-2
THA	35	KIENI	4 km	200	80	2 ha	10	80 ha	450	60% COFFEE	BANANAS		2940	D-1
THA	36	MAARA	7 km	20	8	2 ha	8	8 ha	30	70% TOMATOES	CABBAGES		2940	E-2
THA	5	KAMAGUTU WATER FURRO	1 km	40	30	0 ha	0	20 ha	50	50% F/BEANS	CABBAGES		4200	C-1
THA	33	GITOMBANI WATER PROJ	10 km	300	250	0 ha	0	70 ha	50	70% ONION	TOMAT		108200	E-2
THA	2	GATWONI WATER SCHEME	1 km	32	14	4 ha	19	14 ha	40	55% F/BEANS	TOMATOES		737940	C-2
THA	6	KATHERU WATER FARRROW	1 km	20	15	0 ha	0	10 ha	30	70% F/BEAN	A VEGETABL		4200	C-1
THA	7	KATHIMA MUCHEGE	1 km	45	38	0 ha	0	20 ha	32	60% FRINCH BEAN	KALES		4200	C-1
THA	8	MBARAGA IRRIGATION	12 km	30	40	0 ha	0	40 ha	80	60% F/ BEAN	TOMATO		4200	E-2
THA	11	NTUNTUNI IRR PROJECT	5 km	300	100	0 ha	0	60 ha	150	70% TEA	COFFEE		161700	D-2
THA	12	KANDONDO	2 km	30	28	0 ha	0	28 ha	65	40% MAIZE	BEANS		4200	D-1
THA	14	KIAMURAMBA	8 km	35	30	0 ha	0	30 ha	38	40% MAIZE	BEANS		4200	E-2
THA	15	KARITHA WOMEN GROUP	12 km	84	20	0 ha	0	54 ha	120	30% A/VEG	F/BEANS		4200	E-2
THA	16	KIGATUNII	1 km	28	19	0 ha	0	18 ha	40	40% MAIZE	BEANS		4200	C-1
THA	17	KITHINGE	25 km	30	10	0 ha	0	10 ha	28	40% MAIZE	BEANS		4200	E-2
THA	18	MPANGUA	8 km	31	18	0 ha	0	18 ha	24	40% MAIZE	BEANS		4200	E-2
THA	19	MUGERE	25 km	40	30	0 ha	0	30 ha	40	50% MAIZE	BEANS		4200	E-2
THA	20	MUTHIARI	15 km	400	140	0 ha	0	140 ha	350	40% MAIZE	BEANS		34200	E-2
THA	21	NOEETHA PROPOSED PJ	25 km	28	20	0 ha	0	28 ha	30	70% VEGETABLE	TOMATOES		4200	E-2
THA	22	NKARAMBATU	5 km	29	20	0 ha	0	20 ha	38	40% MAIZE	BEANS		4200	D-1
THA	23	NTITHINI	4 km	45	40	0 ha	0	40 ha	6	40% MAIZE	BEANS		4200	D-1
THA	24	NTUMBARA	5 km	26	20	0 ha	0	20 ha	38	40% MAIZE	BEANS		4200	D-1
THA	25	INAMAKITHI	4 km	35	25	0 ha	0	28 ha	75	70% TEA	CAFFEE		4200	D-1
THA	26	KAMOGORO	1 km	20	10	0 ha	0	10 ha	25	80% F/BEANS	KALES		4200	C-1
THA	27	KAMLU	9 km	24	12	0 ha	0	12 ha	25	60% F/BEANS	TOMATOES		4200	D-1
THA	28	MIIGI WOMENS GROUP	5 km	40	15	0 ha	0	7 ha	36	70% COFFEE	BANANAS		4200	D-1
THA	29	NTHAMBO B	1 km	840	400	5 ha	10	80 ha	380	40% TEA	COFFEE		272440	C-2
THA	36	NKONDI PROPOSED SCHE	37 km	1710	400	0 ha	0	365 ha	380	30% COTTON	MAIZE		4200	E-2
THA	40	RIUNGUU PROP IRR PROJ	25 km	1900	400	0 ha	0	48 ha	194	40% MAIZE	BEANS		13700	E-2
THA	41	TUMBURA	40 km	1200	500	0 ha	0	250 ha	350	40% FRUITS	A VEGETABL		74200	E-2
THA	42	THAMANTU	80 km	800	300	0 ha	0	300 ha	1000	40% FRUITS	BANANAS		4200	E-2
THA	43	URU/RUNKURU	52 km	1800	800	0 ha	0	800 ha	400	40% A/VEGETABL	F/BEANS		4200	E-2
THA	44	NTHIKURU	47 km	180	80	0 ha	0	80 ha	300	40% MAIZE	BEANS		4200	E-2
THA	46	NGUURU GAKIRWE PH 2	27 km	1000	600	24 ha	80	52 ha	130	50% F/BEANS	A VEGETABL		2940	E-2
THA	47	NGUURU GAKIRWE PH 3	27 km	800	400	0 ha	0	82 ha	130	40% F/BEANS	A VEGETABL		4200	E-2
THA	48	NKARINI PROP PROJECT	50 km	800	300	0 ha	0	300 ha	80	40% HORTICULTU			4200	E-2
THA	49	SHARIBENE	30 km	40	18	8 ha	18	16 ha	28	70% TOMATOES	ONIONS		150840	E-2
THA	5	SHULICHA	1 km	480	800	0 ha	0	12 ha	88	70% COFFEE	MAIZE		136700	C-2
THA	8	MAANYAGA	12 km	2250	800	0 ha	0	180 ha	800	70% COFFEE	TEA		528200	E-2
THA	29	MURUURU MURU	2 km	300	280	0 ha	0	24 ha	80	70% TEA	COFFEE		214200	D-2
THA	37	MUTHANDE IRR PROJECT	8 km	800	450	0 ha	0	50 ha	100	70% COFFEE	MAIZE		178200	E-2
THA	10	MBURU MWANJATE	10 km	1800	1400	0 ha	0	100 ha	250	70% TOMATOES	ONIONS		4200	E-2
THA	45	NGUURU GAKIRWE PH 1	27 km	800	280	32 ha	120	0 ha	8	40% F/BEANS	A VEGETABL		5940	E-2

Table O.1-12 Classification of Expansion and New Development Schemes (Type-C, Type-D and Type-E)

District : Meru

DISTRICT	SERIAL NUMBER	SCHEME NAME	DISTANCE FROM SCHEME TO ALL WEATHER ROAD (km)	GROSS AREA (HA)	POTENTIAL IRRIGABLE AREA (HA)	PRESENT IRRIGATED AREA (HA)	PRESENT NUMBER OF FARMERS	PROPOSED IRRIGABLE AREA (HA)	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	MAJOR CROP A	MAJOR CROP B	ESTIMATED CONSTRUCTION COST/HA (KSh)	CLASSIFIED MODEL TYPE
MER	14	GAITU-KAGUMA W.PROJ	12 km	1600	1280	10 ha	400	1000 ha	1200	40% F/BEANS	ONIONS		100940	E-1
MER	15	IGANE KATHIGAU W.PR.	12 km	820	900	10 ha	255	220 ha	800	70% F/BEANS	TOMATOES		2940	E-1
MER	23	MUWA-MUTUTA W. SCHEME	5 km	3000	2900	2 ha	20	440 ha	1100	70% F/BEANS	TOMATOES		223440	D-2
MER	24	MUTURA WOMEN W. PROJECT	15 km	1000	600	30 ha	308	400 ha	1000	70% F/BEANS	TOMATOES		309190	E-1
MER	36	CIANTEERE W. PROJECT	8 km	150	100	0 ha	0	24 ha	60	70% POTATOES	CABBAGES		179200	E-1
MER	38	GATUNTUNE WATER PROJECT	0 km	410	320	41 ha	205	125 ha	205	0%			2940	C-1
MER	62	MBOROKO WA. ASSOCIAT	1 km	120	80	40 ha	48	60 ha	500	70% POTATOES	F/BEANS		247940	C-2
MER	72	NTUMBURI WATER PROJ.	0 km	840	400	10 ha	200	400 ha	1000	40% POTATOES	ONIONS		2940	C-1
MER	80	GITINE WATER PROJECT	1 km	400	250	0 ha	0	120 ha	300	70% TOMATOES	ONIONS		4200	C-1
MER	89	LOWER KITHANGARI	1 km	1800	120	0 ha	0	121 ha	300	70% MAIZE	BEANS		36200	C-2
MER	94	NYOMBA YA KAGIA	0 km	50	30	0 ha	0	30 ha	100	70% CABBAGES	POTATOES		879200	C-2
MER	96	LOWER KITHANGARI	2 km	150	120	12 ha	250	120 ha	300	70% TOMATOES	ONIONS		2940	D-1
MER	99	MUGUNU "B" W. ASSOCIATION	2 km	120	100	0 ha	0	80 ha	180	70% POTATOES	MAIZE		91700	D-2
MER	115	COMBURU PROPOSED.P	0 km	40	40	0 ha	0	14 ha	32	70% ONIONS	TOMATOES		4200	C-1
MER	118	GANKERE WATER PROJEC	0 km	400	180	15 ha	50	50 ha	180	70% F/BEANS	MAIZE		2940	C-1
MER	119	GIATUNE RUTUNTUNE IP	1 km	200	40	0 ha	0	40 ha	40	70% MAIZE	BEANS		4200	C-1
MER	120	GICHUNGE	0 km	255	130	8 ha	170	120 ha	425	70% TOMATOES	CABBAGES		2940	C-1
MER	127	KIORU RUNGENE W.PROJ	6 km	3600	900	0 ha	0	200 ha	1200	70% F/BEANS	TOMATOES		4200	D-1
MER	128	KIRUAI PROPOSED PROJ	0 km	72	70	0 ha	0	24 ha	75	70% ONIONS	TOMATOES		4200	C-1
MER	131	MEMEU WATER PROJECT	8 km	800	100	10 ha	50	50 ha	200	70% TOMATOES	CABBAGES		2940	D-1
MER	132	MUGUNA MUTETHIA W.AS	2 km	234	50	15 ha	234	50 ha	760	70% F/BEANS	KALES		2940	D-1
MER	137	NANGITHIA WATER PROJ	3 km	240	120	12 ha	60	60 ha	110	70% F/BEANS	ONIONS		2640	D-1
MER	143	THUURA SOUTH	3 km	1400	800	4 ha	400	160 ha	800	70% ONIONS	TOMATOES		2940	D-1
MER	144	TUTI WATER PROJECT	8 km	800	250	12 ha	100	160 ha	360	70% F/BEANS	TOMATOES		2940	E-1
MER	149	GATEMANA WATER PROJE	0 km	450	120	0 ha	0	90 ha	150	70% F/BEANS	KALES		4200	C-1
MER	158	MWOROSA	0 km	309	210	25 ha	75	250 ha	105	70% F/BEANS	TOMATOES		2940	C-1
MER	159	NGACHUMA WATER PROJECT	1 km	100	40	20 ha	100	25 ha	300	70% TOMATOES	KALES		2940	C-1
MER	171	MAGUNDU WATER PROJEC	1 km	300	160	10 ha	50	144 ha	90	70% TOMATOES	ONIONS		125440	C-2
MER	181	NKOWIGA UNMOJA W. PROJECT	4 km	750	70	8 ha	50	80 ha	120	0% F/BEANS	CABBAGES		30960	D-2
MER	188	MUGUMA WATER PROJEC	0 km	1200	600	18 ha	200	160 ha	400	70% POTATOES	ONIONS		2940	C-1
MER	12	NTURIORU WATER PROJECT	3 km	875	650	29 ha	57	51 ha	125	70% F/BEANS	CABBAGES		88630	D-2
MER	80	MARAA	1 km	3500	100	10 ha	50	120 ha	200	70% OKRA	KARELA		100940	C-2
MER	172	MBARANTHIGA 'A' W.PROJECT	4 km	500	140	28 ha	50	120 ha	80	0% CABBAGES	F/BEANS		15190	D-2
MER	173	MITARUNE/GIANKAMA W.PROJEC	6 km	2500	1450	10 ha	40	60 ha	67	70% F/BEANS	CABBAGES		64190	D-2
MER	167	MILIMANI 'B' WATER PROJE.	2 km	740	500	37 ha	370	200 ha	370	70% POTATOES	SNOW PEAS		51940	D-2
MER	47	KATHER/INTHIMBIRI PR	0 km	400	300	148 ha	2500	200 ha	10000	70% POTATOES	F/BEANS		149940	C-2
MER	59	KIRUNGURUNE W. PROJ.	0 km	120	72	30 ha	75	60 ha	200	70% POTATOES	F/BEANS		15190	C-2
MER	100	NKANDO PROJECT	1 km	200	30	14 ha	35	140 ha	75	70% ONIONS	POTATOES		2940	C-1
MER	110	KIANGUA WATER PROJECT		1200	300	0 ha	0	100 ha	500	70%			74200	X
MER	116	GACHUA FARMING W. PROJ.	30 km	440	340	12 ha	1	100 ha	150	60% MAIZE	BEANS		140940	E-1
MER	126	MEGIMO	7 km	20	10	2 ha	4	10 ha	30	70% F/BEANS	KARELA		2940	E-1
MER	190	MUTUNYI IIRRI PROJECT	2 km	350	300	70 ha	200	100 ha	500	70% TOMATOES	ONIONS		2940	D-1
MER	196	NGARE NDARE IIRI SCHE	22 km	300	200	88 ha	200	132 ha	230	70% ONIONS	TOMATOES		309190	E-1
MER	1	OMTARE WATER PROJ.	5 km	280	210	40 ha	780	200 ha	560	70% TOMATOES	F/BEANS		247940	D-2
MER	2	KAIREBI S.H.GROUP	1 km	80	50	5 ha	36	50 ha	150	70% TOMATOES	F/BEANS		27440	C-2
MER	3	KAMENYA WATER PROJ.	3 km	400	250	2 ha	19	200 ha	200	70% TOMATOES	F/BEANS		113190	D-2
MER	8	MUKIKA WATER PROJECT	4 km	800	300	2 ha	127	200 ha	1500	70% TOMATOES	F/BEANS		100940	D-2
MER	10	NIQU-NUMBO W. ASSOC.	3 km	190	78	9 ha	9	80 ha	200	67% F/BEANS	TOMATOES		106690	D-2
MER	16	ITHURI WATER PROJECT	15 km	240	220	8 ha	18	180 ha	120	40% F/BEANS	TOMATOES		247940	E-1
MER	32	MUKUNGU WATER ASSOCI	5 km	80	64	5 ha	50	30 ha	100	50% POTATOES	F/BEANS		76440	D-2
MER	33	MUTHURA WATER PROJECT	1 km	130	74	24 ha	36	32 ha	36	70% CABBAGES	FRESH POTATO		64190	C-2
MER	35	ANGAAPA WATER PROJ.	3 km	200	140	4 ha	90	100 ha	600	70% F/BEANS	POTATOES		64190	D-2
MER	40	BITHOKO/KAPUMBA	2 km	340	230	40 ha	300	120 ha	600	45% POTATOES	F/BEANS		140940	D-2
MER	44	KAPIMBENE WATER PROJ	2 km	200	160	7 ha	12	120 ha	100	70% F/BEANS	CABBAGES		370440	D-3
MER	48	KATHANGAROO PROJ.	1 km	80	40	12 ha	36	30 ha	180	60% F/BEANS	POTATOES		180440	C-2
MER	46	KATHMA WATER PROJ.	13 km	200	150	10 ha	40	120 ha	100	50% F/BEANS	POTAT		223440	E-1

DISTRICT	SERIAL NUMBER	SCHEME NAME	DISTANCE FROM SCHEME TO ALL WEATHER ROAD (km)	GROSS AREA (HA)	POTENTIAL IRRIGABLE AREA (HA)	PRESENT IRRIGATED AREA (HA)	PRESENT NUMBER OF FARMERS	PROPOSED IRRIGABLE AREA (HA)	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	MAJOR CROP A	MAJOR CROP B	ESTIMATED CONSTRUCTION COST(HA POS)	CLASSIFIED MODEL TYPE
MER	52	KIBARANYANG W. PROJ.	4 km	160	100	25 ha	100	80 ha	200	50% POTATOES	CABBAGES		113100	D-2
MER	56	KINONDONE W. PROJECT	21 km	50	45	8 ha	20	20 ha	30	67% POTATOES	CABBAGES		149940	E-1
MER	60	MARATHI WATER ASSOCI.	2 km	60	50	20 ha	43	40 ha	150	70% POTATOES	F/BEANS		86600	D-2
MER	63	MUIRU WATER PROJECT	1 km	100	50	15 ha	20	20 ha	100	50% F/BEANS	POTAT		2940	C-1
MER	64	MUKURIA WATER PROJ.	4 km	32	25	16 ha	28	23 ha	60	70% POTATOES	F/BEANS		61840	D-2
MER	70	MWONOKIA K.W. PROJECT	3 km	180	90	12 ha	120	60 ha	600	60% F/BEANS	POTATOES		370440	D-3
MER	97	KONGOACHEKE WATER ASSOC.	1 km	40	40	20 ha	75	35 ha	140	0% TOMATOES	ONIONS		2940	C-1
MER	101	MUGUNA WATER PRO		100	60	40 ha	80	60 ha	120				2940	X
MER	138	NDEKERO W.GROUP PROJ	2 km	60	60	24 ha	30	35 ha	28	70% F/BEANS	ONIONS		2940	D-1
MER	192	KITHIMA KIA MUNYI	7 km	240	100	24 ha	118	48 ha	236	70% GARLIC	SNOWPEAS		27440	E-1
MER	13	KARIENE WATER ASSOCIATION	2 km	1500	400	15 ha	150	55 ha	210	70% KALES	F/BEANS		39690	C-2
MER	29	MULUA KATHIGAU WATER PROJE	10 km	405	243	0 ha	0	81 ha	200	70%			144200	E-1
MER	65	MUTURU WATER ASSOCIA	3 km	50	35	16 ha	24	30 ha	100	70% F/BEANS	POTATOES		2940	D-1
MER	76	BARANGA WATER PROJE	7 km	360	220	30 ha	180	150 ha	180	70% F/BEANS	TOMATOES		2940	E-1
MER	78	GIANTUGWARA WATER FU	6 km	240	200	0 ha	0	100 ha	200	70% F/BEANS	TOMATOES		4200	D-1
MER	79	GITINDA WATER PROJE	6 km	380	100	15 ha	80	50 ha	100	70% F/BEANS	TOMATOES		2940	D-1
MER	82	KANGOCHINE WATER FUR	3 km	380	200	60 ha	318	150 ha	318	70% F/BEANS	ONIONS		2940	D-1
MER	83	KARIIGI WATER PROJE	11 km	41	20	3 ha	28	6 ha	26	70% ONIONS	CABBAGES		2940	E-1
MER	85	KIRAMBIRI WATER PROJ	6 km	360	300	60 ha	300	100 ha	500	70% F/BEANS	KALES		2940	E-1
MER	86	KIRIE WATER PROJECT	7 km	200	100	10 ha	50	40 ha	100	70% TOMATOES	ONIONS		2940	E-1
MER	97	KITHINO MARI WAT PRO	6 km	600	320	60 ha	538	216 ha	538	70% TOMATOES	ONIONS		2940	D-1
MER	91	MBURI WATER PROJECT	1 km	240	150	0 ha	0	100 ha	200	70% ONIONS	KALES		4200	C-1
MER	89	MUTWATINE WATER PROJ	8 km	200	150	60 ha	300	100 ha	300	70% TOMATOES	ONIONS		2940	D-1
MER	102	MUGUUGU 'B' WATER ASSOC.	5 km	435	87	22 ha	215	65 ha	215	70% POTATOES	F/BEANS		27440	D-2
MER	108	MUTUNGURU WATER PROJ	10 km	100	60	10 ha	60	40 ha	50	70% F/BEANS	ONIONS		2940	E-1
MER	111	KATHIGU M.C.K WAT PJ	4 km	800	200	40 ha	400	100 ha	400	70% ONIONS	KALES		2940	D-1
MER	140	NIKABUNE FACTORY W.P.	5 km	1000	340	2 ha	4	50 ha	200	40% F/BEANS	TOMATOES		2940	D-1
MER	156	MUGUNA/GORJI	6 km	660	180	0 ha	0	88 ha	220	60% F/BEANS	TOMATOES		4200	D-1
MER	183	CMALUOGIA WATER PROJECT	18 km	300	200	60 ha	100	160 ha	120	70% ONIONS	F/BEANS		2940	E-1
MER	184	ITHAMBARA WATER PROJ	10 km	300	250	20 ha	753	500 ha	1200	70% F/BEANS	KALES		2940	E-1
MER	196	KAMENCHU WATER PROJECT	6 km	250	0	7 ha	17	40 ha	50	70% TEA	COFFEE		64190	D-2
MER	187	KAUJUGI WATER PROJECT	8 km	100	20	20 ha	40	30 ha	80	70% BEANS	MAIZE		64190	E-1
MER	188	KITHARE WATER PROJE	4 km	200	100	30 ha	100	80 ha	120	70% F/BEANS	TOMATOES		2940	D-1
MER	189	KITHARU WATER PROJE	10 km	80	70	20 ha	40	20 ha	40	70% ONIONS	F/BEANS		2940	E-1
MER	170	KITHINO GREEN WATER	3 km	636	360	90 ha	372	300 ha	420	70% F/BEANS	TOMATOES		2940	D-1
MER	175	MUCHEGE I. S. H. GROUP	12 km	2400	200	10 ha	50	200 ha	150	70% MAIZE	BEANS		113100	E-1
MER	178	NGONYI WATER PROJECT	6 km	350	190	10 ha	300	120 ha	300	70% F/BEANS	TOMATOES		2940	D-1
MER	180	NJURENE WATER PROJE	0 km	600	400	80 ha	980	300 ha	980	70% ONIONS	KALES		2940	C-1
MER	7	KITHAMBARU S.H.GROUP	1 km	520	440	3 ha	80	180 ha	400	70% F/BEANS	TOMATOES		27440	C-2
MER	28	TABATA WATER PROJECT	0 km	1200	75	0 ha	0	60 ha	250	70% F/BEANS	TOMATOES		266700	C-2
MER	42	KAIBI WATER PROJECT	5 km	90	83	15 ha	37	60 ha	200	0% POTATOES	CABBAGES		15190	D-2
MER	49	KATHITA GANKAU PROJ.	2 km	1800	800	22 ha	108	400 ha	1000	50% F/BEANS	POTATOES		64190	D-2
MER	65	KIMURU WATER ASSOCIA	3 km	1000	980	10 ha	180	300 ha	1000	70% F/BEANS	TOMATOES		370440	D-3
MER	61	MAHIENE WATER PROJE	3 km	23	20	11 ha	19	15 ha	100	70% POTATOES	CABBAGES		86690	D-2
MER	66	MWITETHA WATERASSO	8 km	800	600	24 ha	240	120 ha	1200	70% F/BEANS	POTATOES		182190	D-2
MER	74	RUTHATENE W. PROJECT	8 km	18	12	1 ha	5	12 ha	40	70% POTATOES	CABBAGES		27440	E-1
MER	75	WERU WATER PROJECT	1 km	800	170	18 ha	80	130 ha	300	70% F/BEANS	POTATOES		30690	C-2
MER	122	KATHILUNE MUJOGIA WP	4 km	3300	2400	15 ha	150	120 ha	600	30% TOMATOES	ONIONS		2940	D-1
MER	145	MUGUTA WATER PROJECT	30 km	458	342	4 ha	80	24 ha	80	80% MAIZE	BEANS		76440	E-1
MER	148	MUGUNA 'B' WATER PROJECT		1500	120	0 ha	0	60 ha	300				4200	X
MER	180	MAQUINDU W.P.	7 km	800	150	15 ha	100	200 ha	650	70%			2940	E-1
MER	185	KIGURU IRRI SCHEME	6 km	300	200	40 ha	75	80 ha	100	70% GARLI	POTATOES		64190	D-2
MER	5	CENTRAL AGOTTHALUCHI	1 km	9900	5960	230 ha	2000	9900 ha	14000	70% F/BEANS	TOMATOES		88440	C-3
MER	37	GAKANDU WOMEN W. PRO	3 km	800	600	10 ha	100	80 ha	200	20% POTATOES	ONIONS		615440	D-3
MER	129	BITRICKA MLETINA P.P.	0 km	400	100	0 ha	0	60 ha	200	60% POTATOES	TOMATOES		4200	C-1
MER	130	LOWER CHUGU	1 km	1250	500	0 ha	0	80 ha	300	70% F/BEAN	TOMATOES		4200	C-1
MER	136	MURATHANKARI WATER PROJECT	3 km	188	180	0 ha	0	80 ha	80	70% TOMATOES	CABBAGES		3850	D-1
MER	134	MURATHANKARI PROP PR	6 km	370	150	0 ha	0	60 ha	200	70% ONIONS	TOMATOES		4200	D-1
MER	154	MWITETHA WATER PROJECT	8 km	800	600	24 ha	240	120 ha	1200	70% F/BEANS	POTATOES		182190	D-2
MER	157	MWITETHA KITHU W.P.	0 km	270	84	0 ha	0	70 ha	120	80% FOODE	KALES		4200	C-1
MER	80	MWITETHA WATER PROJECT	8 km	144	78	80 ha	80	80 ha	80	70% POTATOES	CABBAGES		27440	D-1
MER	159	MWITETHA WATER PROJECT	8 km	144	78	80 ha	80	80 ha	80	70% POTATOES	CABBAGES		27440	D-1

DISTRICT	SERIAL NUMBER	SCHEME NAME	DISTANCE FROM SCHEME TO ALL WEATHER ROAD (KM)	GROSS AREA (HA)	POTENTIAL IRRIGABLE AREA (HA)	PRESENT IRRIGATED AREA (HA)	PRESENT NUMBER OF FARMERS	PROPOSED IRRIGABLE AREA (HA)	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	MAJOR CROP A	MAJOR CROP B	ESTIMATED CONSTRUCTION COST(RM. KSH)	CLASSIFIED MODEL TYPE
MER	161	KIAMBOGO FACTORY W.P	2 km	50	30	0 ha	0	30 ha	60	55% F/BEANS	TOMATOES		4200	D-1
MER	11	HTUGUINE WATER ASSOCIATION	1 km	750	75	20 ha	50	33 ha	80	70% F/BEANS	CABBAGES		78440	C-2
MER	107	MUJUN/OKUJI WATER PROJECT	1 km	500	425	0 ha	0	122 ha	150	70% COFFEE	MAIZE		36200	C-2
MER	150	KAAGA SELF-HELP W. PROJEC	2 km	162	81	0 ha	0	81 ha	200	0% COFFEE	BANANAS		144200	D-2
MER	155	MARIARA	0 km	900	450	0 ha	0	15 ha	1000	70% F/BEANS	KALES		4200	C-1
MER	177	MUTETHIA RUGOMO WATER PROJ	6 km	2300	45	0 ha	0	45 ha	106	70% MAIZE	COFFEE		4200	D-1
MER	193	MWITETHIA		50	30	0 ha	0	28 ha	24	70% CABBAGES	POTATOES		144200	X
MER	4	KATHENJU S.H/W/PROJ.	7 km	100	90	0 ha	0	90 ha	200	70% F/BEANS	TOMATOES		4200	E-1
MER	6	IGELUCHA GATIMBI PR.	3 km	5000	400	600 ha	300	1800 ha	18000	70% F/BEANS	ONIONS		615440	D-3
MER	9	NKUENE-KATHAI W.PROJ	10 km	800	600	0 ha	0	500 ha	1200	40% F/BEANS	TOMATOES		354200	E-1
MER	17	KANJA SELF HELPWOMEN GR.	18 km	940	840	0 ha	0	750 ha	1500	70% TOMATOES	ONIONS		424200	E-1
MER	18	KARAENE WATER PROJECT	16 km	1600	800	0 ha	0	240 ha	3000	25% TOMATOES	ONIONS		354200	E-1
MER	19	IKIGA WATER PROJECT	3 km	300	225	0 ha	0	180 ha	300	70% F/BEANS	A.YEG		4200	D-1
MER	20	MARIGANO WATER PROJECT	15 km	720	680	0 ha	0	600 ha	450	70% TOMATOES	ONIONS		354200	E-1
MER	21	MUGUNA MRAJONE W.PRO	15 km	250	200	0 ha	0	150 ha	250	80% TOMATOES	ONIONS		528200	E-1
MER	25	MUJUNGO WOMEN WAT P	15 km	650	600	0 ha	0	500 ha	400	70% TOMATOES	ONIONS		231700	E-1
MER	28	NGONGA-MAKANDUNE	25 km	2500	2000	0 ha	0	400 ha	1000	70% COTTON	B.MILLET		704200	E-1
MER	27	NDAMENE WATER PROJ.	15 km	300	200	0 ha	0	200 ha	450	70% F/BEANS	TOMATOES		179200	E-1
MER	39	GITHONGO W. ASSOCIA	3 km	600	500	0 ha	0	200 ha	500	36% POTATOES	F/BEANS		179200	D-2
MER	41	KABUTHI WATER PROJEC	1 km	70	40	0 ha	0	30 ha	110	40% POTATOES	F/BEANS		266700	C-2
MER	43	KAMURA WATER PROJEC	3 km	200	120	0 ha	0	80 ha	400	67% F/BEANS	POTATOES		266700	D-3
MER	45	KATHANGARIA W. ASSOC	8 km	210	200	0 ha	0	180 ha	200	70% POTATOES	CABBAGES		266700	E-1
MER	50	KATHITA MUFURI PROJ.	3 km	400	350	0 ha	0	340 ha	900	70% F/BEANS	POTATOES		189700	D-2
MER	51	KAMIOGO WATER ASSOC	3 km	3100	3000	0 ha	0	700 ha	1500	70% POTATOES	CABBAGES		214200	D-2
MER	53	IGOROKO S.W.PROJECT	8 km	12	8	2 ha	9	6 ha	30	83% POTATOES	CABBAGES		26690	E-1
MER	54	KIGINE CIRIMU W.PRO	5 km	416	210	0 ha	0	150 ha	750	62% POTATOES	F/BEANS		4200	D-1
MER	57	IKONYOO KITHIKAU	6 km	240	100	0 ha	0	100 ha	300	70% F/BEANS	POTATOES		441700	D-3
MER	58	KIRIMA KJA ATHI W.PR	0 km	400	300	0 ha	0	200 ha	700	70% F/BEANS	POTATOES		144200	C-2
MER	66	MWAA W. ASSOCIATION	8 km	2000	1900	0 ha	0	1200 ha	1000	60% POTATOES	CABBAGES		4200	E-1
MER	67	MWENDWA WATER ASSOCI	4 km	300	280	0 ha	0	50 ha	150	15% POTATOES	CABBAGES		106200	D-2
MER	68	MWIKUNI W. ASSOCIATI	8 km	202	130	0 ha	61	142 ha	100	70% POTATOES	CABBAGES		181700	E-1
MER	71	HTANAKU-KARATU W. PR	2 km	150	100	0 ha	0	80 ha	240	70% POTATOES	F/BEANS		266700	D-3
MER	73	FRIGENE W.ASSOCIATIO	8 km	40	30	0 ha	0	25 ha	100	70% POTATOES	CABBAGES		106600	E-1
MER	81	IGOKINE WATER ASSOCI	7 km	800	360	0 ha	0	280 ha	300	70% F/BEANS	ONIONS		4200	E-1
MER	92	MURUINE WATER PROJ	5 km	440	300	0 ha	0	280 ha	219	70% F/BEANS	CABBAGES		4200	D-1
MER	95	NYOMBAYATHI WATER PJ	1 km	500	300	0 ha	0	280 ha	300	70% TOMATOES	F/BEANS		4200	C-1
MER	96	KUMIRA PROPOSED PRO	8 km	1000	100	0 ha	0	50 ha	280	70% TOMATOES	ONIONS		4200	D-1
MER	103	GAKIRINE SELF HELP GROUP	4 km	800	700	5 ha	0	120 ha	130	70% COFFEE	BANANAS		125440	D-2
MER	104	GIKOI MWERU IRR SCHE	5 km	11900	3000	0 ha	0	2400 ha	6000	70% F/BEANS	ONIONS		354200	D-3
MER	109	OKURU HARARISE W.P	4 km	810	810	0 ha	0	100 ha	150	70% MAIZE	BEANS		108200	D-2
MER	112	WERU WATER PROJECT	18 km	162	154	0 ha	0	25 ha	80	80% MAIZE	BEANS		4200	E-1
MER	113	IKOPU-GANI WATER PROJECT	18 km	508	450	0 ha	0	100 ha	280	70% MAIZE	BEANS		176200	E-1
MER	114	RUUGENE WATER PROJECT	0 km	143	136	0 ha	0	26 ha	300	70% MAIZE	BEANS		4200	C-1
MER	136	MWIMONYI S.H.W.PROJ	0 km	112	100	0 ha	0	20 ha	80	70% F/BEANS	TOMATOES		4200	C-1
MER	139	NDINE WENIGIA WA.PR	6 km	400	150	10 ha	100	80 ha	200	70% F/BEANS	ONIONS		2940	D-1
MER	141	MURUGUINE WATER PROJECT	30 km	121	115	0 ha	0	12 ha	30	0% MAIZE	BEANS		66700	E-1
MER	142	THUURA CENTRAL W. PROJECT	9 km	101	90	0 ha	0	40 ha	100	80% MAIZE	BEANS		4200	E-1
MER	147	UMUTHA MEN WATER PROJECT	10 km	46	45	0 ha	0	20 ha	80	80% MAIZE	BEANS		78200	E-1
MER	176	MUGURU WATER PROJECT	1 km	84	50	0 ha	0	50 ha	70	70% TOMATOES	ONIONS		4200	C-1
MER	186	RUGOINO NANA WATER PROJECT	8 km	2000	140	0 ha	0	180 ha	200	70% F/BEANS	CABBAGES		181700	D-3
MER	183	THINGITHU WATER PROJ	3 km	192	100	0 ha	0	80 ha	180	70% TOMATOES	ONIONS		4200	D-1
MER	188	KITHITHIA IRR PROJ	7 km	2500	1000	10 ha	80	30 ha	280	70% POTATOES	GARLI		188200	E-1
MER	191	MWICHURI WATER GROUP	8 km	6000	50	0 ha	0	30 ha	25	70% SNOW PEAS	POTATOES		74200	E-1
MER	194	MANI W.P		150	90	0 ha	0	15 ha	80	70%			81790	X
MER	196	UMOJA WATER PROJECT	8 km	120	80	2 ha	15	18 ha	45	70% GARLI	CARROTS		2940	E-1
MER	198	THINGINA WATER PROJECT	4 km	2400	1800	0 ha	0	100 ha	200	70% COFFEE	TEA		58700	D-2
MER	199	KOLURINE MUTETHIA W. PROJ	0 km	280	280	0 ha	0	180 ha	140	60% MAIZE	BEANS		168200	C-2
MER	148	MERU CHILDREN W. PROJECT	0 km	32	28	1 ha	56	27 ha	56	0% KALES	CARROTS		2940	C-1
MER	117	GAKUMBO WATER ASSOCIATION	30 km	178	180	37 ha	47	24 ha	60	70% DOLICCS	BEANS		55615	E-1
MER	135	MUTUGURU WATER PROJECT	30 km	78	68	17 ha	34	34 ha	34	80% MAIZE	BEANS		79440	E-1
MER	195	IGORINE KAGURU W. HANNOV	4 km	1080	80	20 ha	20	80 ha	300	70% VALONE	BANANAS		2940	D-1
MER	184	KABUNGI WATER PROJECT	10 km	50	30	5 ha	22	9 ha	22	70% SNOW PEAS	CARROTS		27440	E-1

DISTRICT	SERIAL NUMBER	SCHEME NAME	DISTANCE FROM SCHEME TO ALL WEATHER ROAD (km)	GROSS AREA (HA)	POTENTIAL IRRIGABLE AREA (HA)	PRESENT IRRIGATED AREA (HA)	PRESENT NUMBER OF FARMERS	PROPOSED IRRIGABLE AREA (HA)	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	MAJOR CROP A	MAJOR CROP B	ESTIMATED CONSTRUCTION COST/HA (RS)	CLASSIFIED MODEL TYPE
MER	186	MUKURIA KIAMBOGO	0 km	50	30	6 ha	15	5 ha	15	70% POTATOES	GARLIC		2840	C-1
MER	22	MUTETHA GITURI S.H PROJECT	8 km	100	25			25 ha	20	70% COFFEE	MAIZE		39200	E-1
MER	86	LOWER CHURU/BARANGA	0 km	250	75	20 ha	120	30 ha	300	70% VAROLE	F/BEANS		2840	C-1
MER	154	KIRIUNGI W.G.WATER.P	4 km	147	100	0 ha	0	96 ha	196	60% F/BEANS	TOMATOES		4200	D-1
MER	174	MITUNGUJI IRR PROJ	10 km	500	500	400 ha	305	400 ha	1200	70% F/BEANS	KARAI		2940	E-1

Table O.1-13 Classification of Expansion and New Development Schemes (Type-C, Type-D and Type-E)

District : Nyambene

DISTRICT	SERIAL NUMBER	SCHEME NAME	DISTANCE FROM SCHEME TO ALL WEATHER ROAD (km)	GROSS AREA (HA)	POTENTIAL IRRIGABLE AREA (HA)	PRESENT IRRIGATED AREA (HA)	PRESENT NUMBER OF FARMERS	PROPOSED IRRIGABLE AREA (HA)	PROPOSED NUMBER OF FARMERS	PERCENTAGE OF HORTICULTURE	MAJOR CROP A	MAJOR CROP B	ESTIMATED CONSTRUCTION COST/HA (KSh)	CLASSIFIED MODEL TYPE
NYA	13	AMETHO SELF HELP GROUP I	24 km	150	60	8 ha	58	45 ha	80	70% KALES	BRINJALS	2940	E-2	
NYA	27	MURICHA WATER PROJECT	23 km	150	60	6 ha	20	90 ha	180	70% KALES	CABBAGES	2940	E-2	
NYA	9	ANTUBOCHIU	5 km	180	40	15 ha	90	20 ha	90	70% KALES	CABBAGES	2940	D-1	
NYA	11	KATHIMA	0 km	450	30	37 ha	0	15 ha	0	70% KALES	POTAT	2940	C-1	
NYA	22	ITUTHA WATER PROJECT	22 km	150	60	3 ha	70	20 ha	70	70% KALES	TOMATOES	39940	E-2	
NYA	37	MAGUNDU	7 km	900	350	150 ha	300	300 ha	450	70% EGPLA	CHILI	2940	E-2	
NYA	2	GAKU	8 km	350	150	2 ha	10	60 ha	200	60% TOMATOES	S-POTATOES	2940	E-2	
NYA	3	GAKUNKU	19 km	150	100	30 ha	120	100 ha	200	70% OKRA	CHILLIES	2940	E-2	
NYA	4	KANJOO	25 km	6000	600	100 ha	700	400 ha	1000	70% KARELLA	DUDHI	19940	E-2	
NYA	5	KITHEO	13 km	900	750	30 ha	90	280 ha	0	70% KALES	TOMATOES	2940	E-2	
NYA	14	AMETHO SELF HELP PROJECTII	21 km	200	70	20 ha	90	70 ha	90	70% TOMATOES	KALES	2940	E-2	
NYA	20	AMUGAA INITATIVE PRO.	23 km	200	160	10 ha	70	80 ha	120	66% CABBAGES	KALES	2940	E-2	
NYA	21	ITHAARIU WATER PROJ.	25 km	150	70	10 ha	36	70 ha	180	65% CABBAGES	POTATOES	2940	E-2	
NYA	23	KAMUJINE Y FARMERS	0 km	300	260	50 ha	100	250 ha	300	59% TOBAC	MAIZE	2940	C-1	
NYA	26	MUTHA WATER PROJECT	2 km	120	40	5 ha	25	40 ha	80	60% CABBAGES	KALES	2940	D-1	
NYA	28	MUTINE WATER PROJECT	21 km	150	120	10 ha	35	60 ha	120	65% KALES	TOMATOES	2940	E-2	
NYA	38	URINGU VEGETABLE SCHEME	0 km	8	7	8 ha	25	7 ha	30	69% KALES	TOMATOES	2940	C-1	
NYA	24	KUNATI	36 km	500	420	2 ha	25	200 ha	220	68% KALES	COW PEAS	23940	E-2	
NYA	29	KAMATHINYA	3 km	40	35	10 ha	80	35 ha	80	40% MAIZE	BEANS	2940	D-1	
NYA	31	KAMANOGGUA	5 km	80	50	10 ha	70	80 ha	600	40% KALES	ONIONS	2940	D-1	
NYA	35	KIORIMBA	17 km	350	300	40 ha	150	200 ha	200	70% TOMATOES	BAT TOBACC	7140	E-2	
NYA	1	KITHETU	2 km	80	30	0 ha	0	30 ha	28	70% KALES	CABBAGES	4200	D-1	
NYA	30	KINGIRWA WATER PROJECT	1 km	400	200	10 ha	64	138 ha	430	70% TOMATOES	ONIONS	149940	C-2	
NYA	8	KITUMAKUDU	0 km	1	1	0 ha	20	2 ha	0	70% T_NUR	TOMATOES	21700	C-2	
NYA	10	KINDANI/KILILI	16 km	1000	300	0 ha	0	300 ha	500	70% OKRA	DUDHI	4200	E-2	
NYA	16	MAREGA	22 km	1600	600	0 ha	0	900 ha	350	70% F/BEANS	TOMATOES	564200	E-2	
NYA	18	THEGI WATER PROJECT	22 km	8	4	1 ha	10	4 ha	10	70% TOMATOES	KALES	17640	E-2	
NYA	19	THITI	18 km	80	45	0 ha	0	10 ha	70	70% TOMATOES	KALES	4200	E-2	
NYA	25	MAJIRA FURROR	38 km	30	20	4 ha	30	20 ha	50	70% COW PEAS	KALES	2940	E-2	
NYA	32	MBARUA SWAMP	1 km	80	50	20 ha	80	50 ha	300	49% BEANS	F/BEANS	2940	C-1	
NYA	34	KIONDE	10 km	20	16	2 ha	3	18 ha	20	70% F/BEANS	KARELLA	2940	E-2	
NYA	15	ATHVANA NGWATANIRO	19 km	900	120	0 ha	0	120 ha	600	70%		161700	E-2	
NYA	17	MUCAICINE	21 km	120	40	0 ha	0	9 ha	150	70% KALES	BRINJALS	137200	E-2	
NYA	6	NTAMBIRO	17 km	250	200	50 ha	50	150 ha	600	70% OKRA	DUDHI	2940	E-2	
NYA	7	KATHIMA GAMITINI	0 km	45	25	3 ha	15	15 ha	40	70% KALES	ONIONS	2940	C-1	
NYA	33	KAMBURI	17 km	40	25	2 ha	7	25 ha	90	70% TOMATOES	KALES	2940	E-2	
NYA	36	MACHENGENE	17 km	400	300	50 ha	120	300 ha	256	70% KARELLA	VALOO	10815	E-2	

O.2 Survey on Type-A Model Areas

1. Introduction

In the process for selecting Model Areas, which has been studied during the Phase-II field works, existing smallholder irrigation schemes are classified into five types from Type-A to Type-E. Out of these classified Model Areas, as a typical Model Areas of Type-A, Muguma Water Project in Meru district and Cimbaraga Irrigation Scheme in Tharaka Nithi district have been listed up. Type-A schemes are characterized that irrigation and farming activities are will managed under the provision of irrigation facilities and establishment of farmer's organization.

The major features and findings of these Type-A schemes are summarized hereinafter, based on the collected data and field survey conducted during Phase-III field work..

2. Findings of Type-A Model Areas through Survey

2.1 Muguma Water Project in Meru District

1) Location of the Project

Muguma Water Project is situated in Meru district, Buuri division, Kirua location, and Kithima sub-location, which was recently shifted from the larger North Inmenti division to Meru Central division. It is situated in 45 km away from Meru town along Meru-Isiolo road, and about 10 km from Isiolo town.

2) History of the Project

The current inhabitants migrated from Meru town due to population pressure which led to lack of farms for agricultural production. They were allocated land in 1969 which was infested by wildlife due to the desert type of vegetation.

The major activity was grazing of livestock for their subsistences which was hectic due to rustling and wildlife. To cope with these problems, the farmers started clearing bushes for agricultural production. That was in 1970. The major crops (rainfed) were maize, beans, dalichos (i.e. field crops) etc. Their cultivation was done on small-scale on plots of approximately 0.5-1.0 acre in size, although each farmer had about 25 acres allocated, which could have been all arable except some small portions of rocky area (negligible). Cultivation was also necessitated by the fact that the government used to tax for grazing of cattle. During dry weather vegetation was green along the areas with water where grazing was concentrated. And it was this reason that the farmers realised that they could use this water for growing of their crops for subsistence through irrigation.

In 1971, two farmers, namely Mr. Wilson M. Ituanthuku, now the current chairman and a Mrs. Zipporah Nkaimura, excavated a furrow canal from a well/spring by the Name Kithima Kia Mukuu. The intake was about 300 m to the first farm in length and about two feet and one foot in width and depth, respectively. This is a history how the furrow irrigation/gravity-fed irrigation method was born.

The crops grown by applying furrow irrigation are cow peas, maize, yams, dalichos, bananas, fruit trees (citrus, mangoes etc.). Trees are cypress, gravilea, robusta, etc. As time went by other crops were introduced, namely tomatoes, onions, kales, cabbages etc. which they grow to date.

Other people were attracted since these two farmers mentioned above expanded their irrigation plots to 10 acres. These led to the expansion of furrow/canal and the scheme hence the current trend.

3) Area

The scheme generally covers approximately 150 acres (60 ha) and has a potential of about 500 acres (120 ha). This is about one half of total area of Kithima Sub-location which has an approximate five acres (2 ha) of farm size.

4) Main Horticultural Crop

The major horticultural crop is tomatoe (variety; Kalj). This crop is preferred by the farmers, because of the following reason;

- Less requirements of labour in terms of husbandry,
- High returns per unit area (income),
- Favourable for furrow irrigation method,
- High yields - high demand, and
- Availability of seeds.

In general each farmer has approximately two to three acres of the crop, which yields about 200-300 crates/acre (4 crates is 63.5 kg), depending on management. Other horticultural crops are onion, kales, cabbages, in order of preference. However, due to current El-Nino weather phenomena, there are very few tomatoes, because they were affected in the nursery by diseases wiping out almost all the seedlings. The crops in the farms currently dominant are onions and kales in that order.

5) Marketing of Products

Farmers market the crops, which are in excess for their consumption. The major market centres are Isiolo and Meru which are ten km and 45 km away, respectively from the scheme area. Others are Nairobi, Mombasa, Mandera, Moyale, and Nanyuki markets.

The farmers prefer to take their produce to Nairobi, since it offers them better prices. This is usually done by hiring of transport by two farmers or more so long as they can produce 22 crates so as to enable them to fill a pick up vehicle. Other market outlets are brokers and farm gate markets, etc.

The timing of production (by irrigation) ensures that the farmers have no problem in marketing except exploitation by brokers who may want to buy the produce at throw away prices; since farmers sell their produce on individual basis. A farmer will sell the product at a certain price according to the problems farmers have. This is derived from the fact that there exists no marketing organisation or society.

A crate 63.5 kg, when in high demand especially in March, April and May is sold for Kshs. 1,500-1,600, while, at low demand a crate is sold for Kshs. 700- 1,000.

Regarding accessibility to market, the scheme lies along the Meru-Isiolo road which is tarmacked and the feeder roads are in fair conditions, although they are not graded. Market Information is passed by the farmers themselves and obtained from newspapers.

6) Farmer's Group and Community Organisations

The group operates in the name of Muguna Irrigation Water Association. The registered members are 30 farmers and 20 farmers who have hired farms for irrigation. There exists a committee of 13 members which comprise of chairman, treasurer and secretary and others.

The committee members meet regularly at every three months interval, although special meetings are called in case any unusual matter arises. The messages are conveyed through letters or orally. The committee have the duties of overseeing the efficient use of water in terms of equitable water distribution among their members through a time table. This group is registered with the Ministry of Culture and Social Services and issued with a water permit by the Ministry of Water.

The members have by-laws which govern their organisational operation and maintenance of the scheme. Although they have no bank account, they are in the process. Money contributions are usually made for specific purposes such as permit renewal, maintenance of the conveyance canals, etc. All the details are kept in records.

New members pay some fee which is used for the above purposes. Elections of committee members are held in every five years. Finally the farmers have completed the process of acquiring title deeds for their farms and are awaiting for their issues.

7) Current Problems and Findings

Major problems and findings of the schemes, although the scheme is operated by farmers are summarised as shown below;

- The main canal having three kilometre in length is not lined, therefore the farmers feel that they can use the water more efficiently, if canal was lined, and or piping (open surface) was also done.
- Availability of certified seeds and related input material is also essential, since farmers buy expired seeds, etc.
- Farmers lack normal techniques on water management, crop water requirements, nursery establishment, etc., hence the need for training on matters pertaining to irrigation in horticultural production.
- Due to lack of proper market organisation, the farmers are prone to unscrupulous middlemen who buy their produce. Therefore the training on the establishment of an organisation for better bargain of prices is essential and important. and also for an advantage of economy of large scale. This can ensure a continuous revolving fund for the scheme self-sustaining and provision of loan.
- A ready market can be found, if a processing plant could be built nearby, so that the processed produce (tomatoes) can be canned for export. In this the farmers can buy shares for the processing plant like in the case of Kabazi Cannery for tomatoes in Nakuru.

2.2 Ciambaraga Irrigation Scheme in Thraka Nithi District

1) Location of the Project

The project is situated in six kilometre east of Chuka town, and located in Meru South district, Chuka division, Karingani location, Mariani sub-location, Ciambaraga unit, respectively.

2) History of the Project

The idea of the project was the brain child of a few members who wanted to solve the problem of a domestic water in the area. This was in 1992. After holding the first general meeting of those who were willing to join the group, they decided to get both domestic and irrigation water. It was also resolved that anybody who wanted to be a member was to be registered with Kshs. 100. The group registered with the Ministry of Culture and Social Services in April, 1993 and applied for a water permit in May, 1993.

3) Area

Major features of the project are as follows;

- Scheme gross area : 6 sq.km
- Number of farm households : 700
- Households with irrigation facilities : 122
- Soil types : Deep well drained clay loam soils
- Land slope : 5 to 10%
- Irrigated Area : 150 acres (52 ha)

4) Main Horticultural Crops

Main horticultural crops are French beans, Asian vegetables such as chillies, okra, kallera, dudhi, local vegetables such as. tomatoes, kale and green maize.

5) Marketing of Products

After the implementation of the scheme a marketing committee was established to look for an exporter or whoever was willing to buy the produce from the farmers. Presently, Fresh Produce Exporters Association of Kenya (FPEAK) is assisting the market activities for the project.

6) Farmer's Group and Community Organization

Water Users Association

All the scheme members belong to Ciambaraga water users association. They contribute Kshs. 200 per month, which is banked in the operation and maintenance account in a local bank. This money also pays the water attendant who monitors the project on day to day basis.

Community Organization

After forming the group in 1992, the members selected a steering committee consisting of chairman, secretary and treasure. Under the steering committee, 20 sub-group leaders (a man and a woman), maintenance committee, marketing committee, and excavation committee (disbanded after implementation), etc. are organised.

The steering committee then approached the Ministry of Agriculture for advice. They were advised to register with Ministry of Culture and Social Services and apply for a water permit from Ministry of Water. After fulfilling the requirements, they were introduced to SISDO for loaning.

7) SISDO's Loan Conditions

SISDO's loan conditions are as follows;

- The group to be registered with Ministry of Culture and Social Services,
- The group to get authority to extract water from Ministry of Water,

- Farmers to contribute 15 percent of the estimated project cost. (this was meant to show the farmers commitment towards the project)

After fulfilling the first two conditions, SISDO in conjunction with Ministry of Agriculture started training the leaders on group organisation and project management. By-laws were formulated by the members with assistance from Ministry of Agriculture and SISDO.

The bigger group was divided into ten smaller groups with membership of 10 to 25 for easy management. Each group was to be lead by two leaders; a woman and a man for gender equality. These sub-group leaders were the ones to collect the security fund from their members and deposit into the group account in the bank. This made the work of collecting money easier since the smaller groups were located in the same area. The members were involved in all stages from profile survey, design, and tender awarding, tender evaluation, implementation and marketing of product.

They also provided the labour for excavation and back filling of pipeline from intake up to the infields system.

7) Current Problems and Findings

Major findings and problems of the scheme are summarized as shown below;

- The farmers are well organized with a strong committee, and also project's steering committee is very strong as they have managed to lead the project from its inception to this day.
- Once implemented, the members will benefit from increased agricultural production and more high value of horticultural crops which will lead to higher incomes and increased employment opportunities in the locality is realized.
- Project implementation will also play a roll in generating the much needed foreign exchange because some of the vegetable will be for export market.
- However, on the other hand, all of farmers are suffering from high repayment costs of about 3,000 Ksh/month/househols, of which farmers are payable about 2,000 Ksh/month, resulting in SISDO's shortage of funds.
- No agricultural extension services for farm and water management are undertaken by Ministry of Agriculture.
- There exist a public domestic water supply system in the upper section of the project, but the pipes have run dry because of illegal connections by families on the higher side of the system. This will not happen to the proposed system, because it will belong to members of Ciambaraga farmers only.

ANNEX P

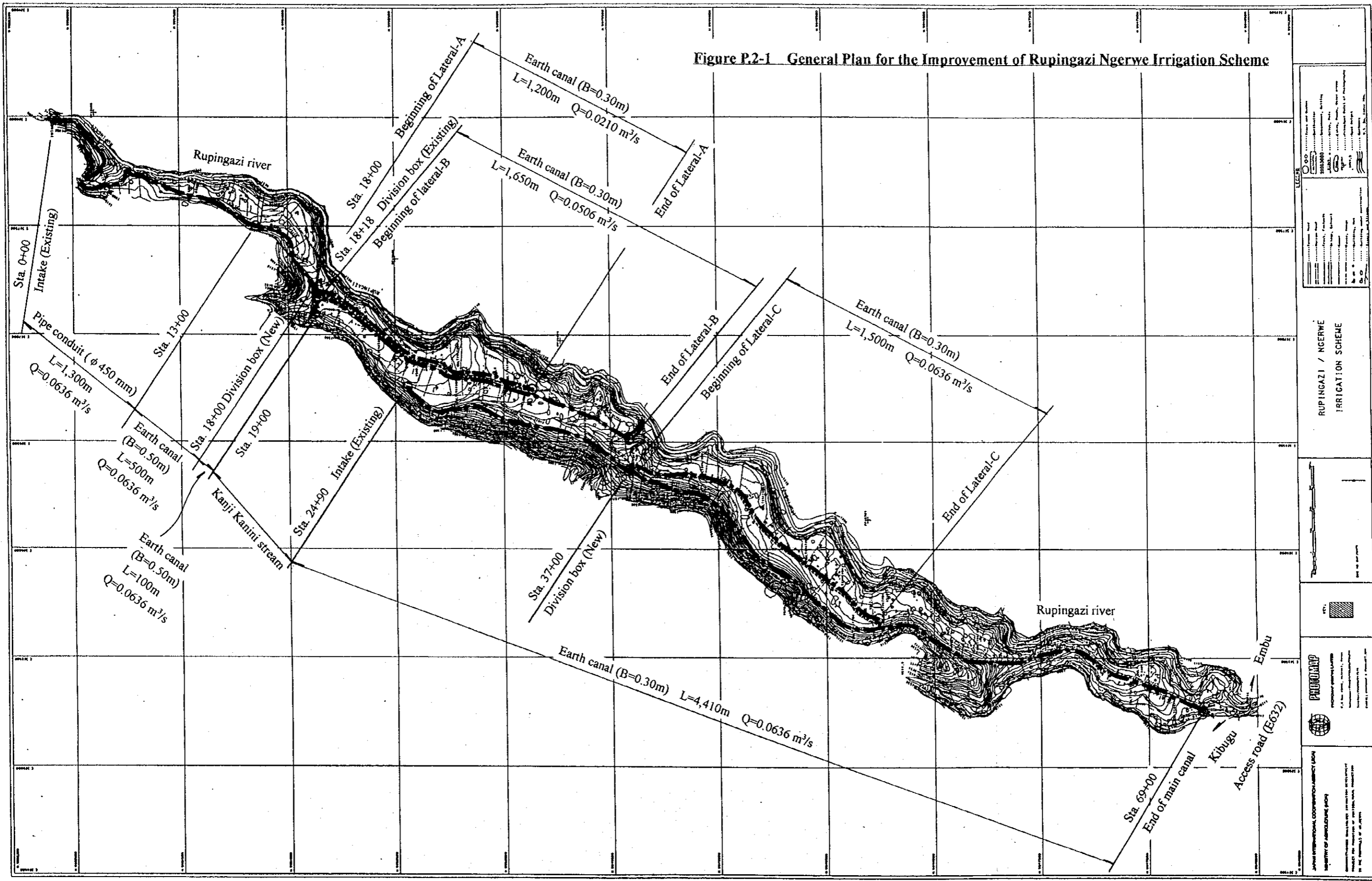
PHYSICAL PLAN

List of Tables and Figures

P.2 Feasibility Study

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- Figure P.2-2 General Plan for the Improvement of Ngomano/Nyangati Water Furrow Project
- Figure P.2-3 General Plan for the Improvement of Nkunjumo Water Project
- Figure P.2-4 General Plan for the Improvement of Ruungu/Krocho Irrigation Project
- Figure P.2-5 Structural Plan of Intake Weir for Ngomano/Nyangati Water Furrow Project
- Figure P.2-6 Spillway Bridge for Ruungu/Karocho Irrigation Project
- Figure P.2-7 Cross Section of Access Roads and Village/Farm Roads

Figure P.2-1 General Plan for the Improvement of Rupingazi Ngerwe Irrigation Scheme



RUPINGAZI / NGERWE IRRIGATION SCHEME

PAU/UMAP

PAU/UMAP
PROJECTING ENGINEER
U.P. No. 100, 100/1, 100/2, 100/3, 100/4, 100/5, 100/6, 100/7, 100/8, 100/9, 100/10, 100/11, 100/12, 100/13, 100/14, 100/15, 100/16, 100/17, 100/18, 100/19, 100/20, 100/21, 100/22, 100/23, 100/24, 100/25, 100/26, 100/27, 100/28, 100/29, 100/30, 100/31, 100/32, 100/33, 100/34, 100/35, 100/36, 100/37, 100/38, 100/39, 100/40, 100/41, 100/42, 100/43, 100/44, 100/45, 100/46, 100/47, 100/48, 100/49, 100/50, 100/51, 100/52, 100/53, 100/54, 100/55, 100/56, 100/57, 100/58, 100/59, 100/60, 100/61, 100/62, 100/63, 100/64, 100/65, 100/66, 100/67, 100/68, 100/69, 100/70, 100/71, 100/72, 100/73, 100/74, 100/75, 100/76, 100/77, 100/78, 100/79, 100/80, 100/81, 100/82, 100/83, 100/84, 100/85, 100/86, 100/87, 100/88, 100/89, 100/90, 100/91, 100/92, 100/93, 100/94, 100/95, 100/96, 100/97, 100/98, 100/99, 100/100

Figure P.2-2 General Plan for the Improvement of Ngomano/Nyangati Water Furrow Project

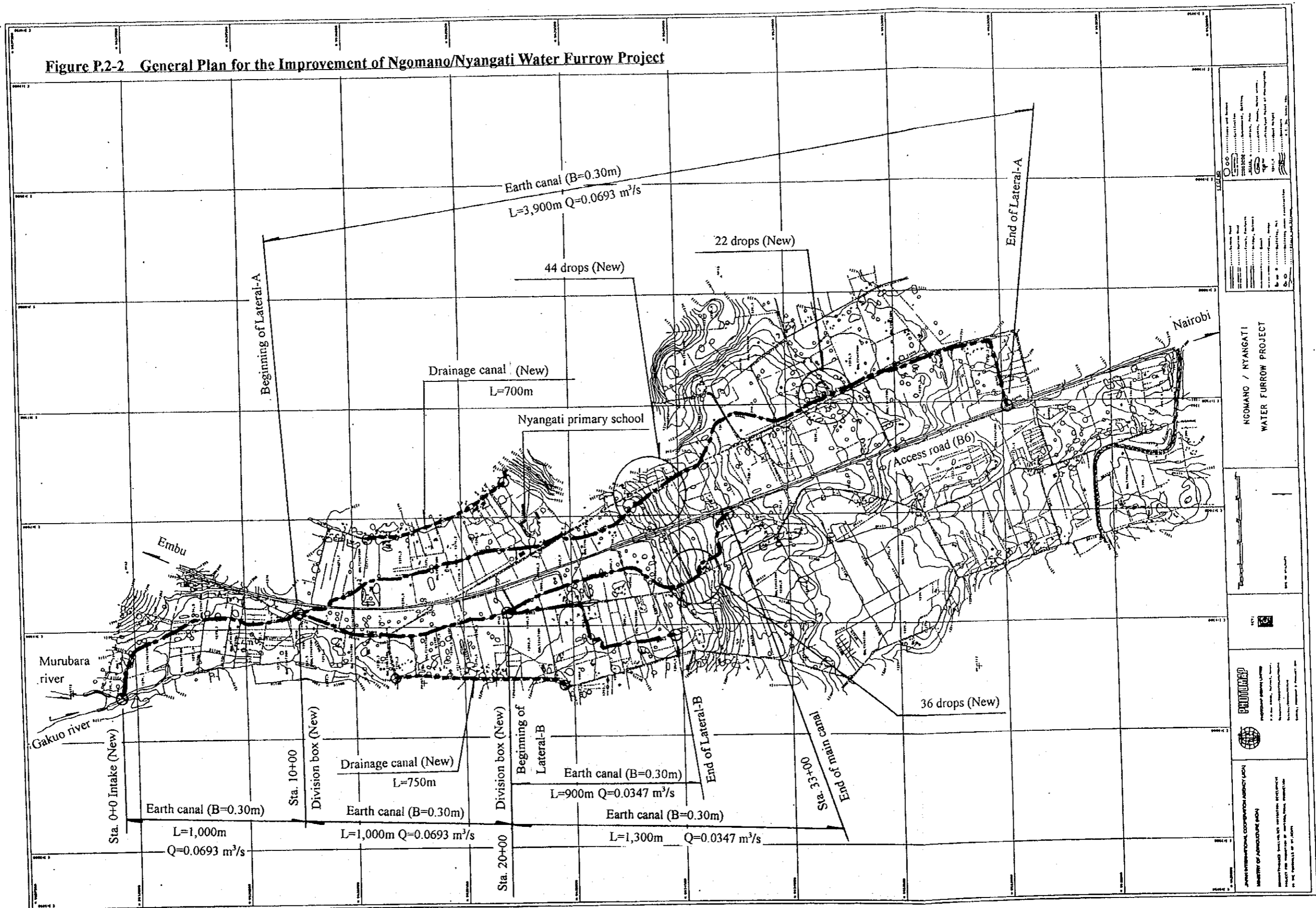
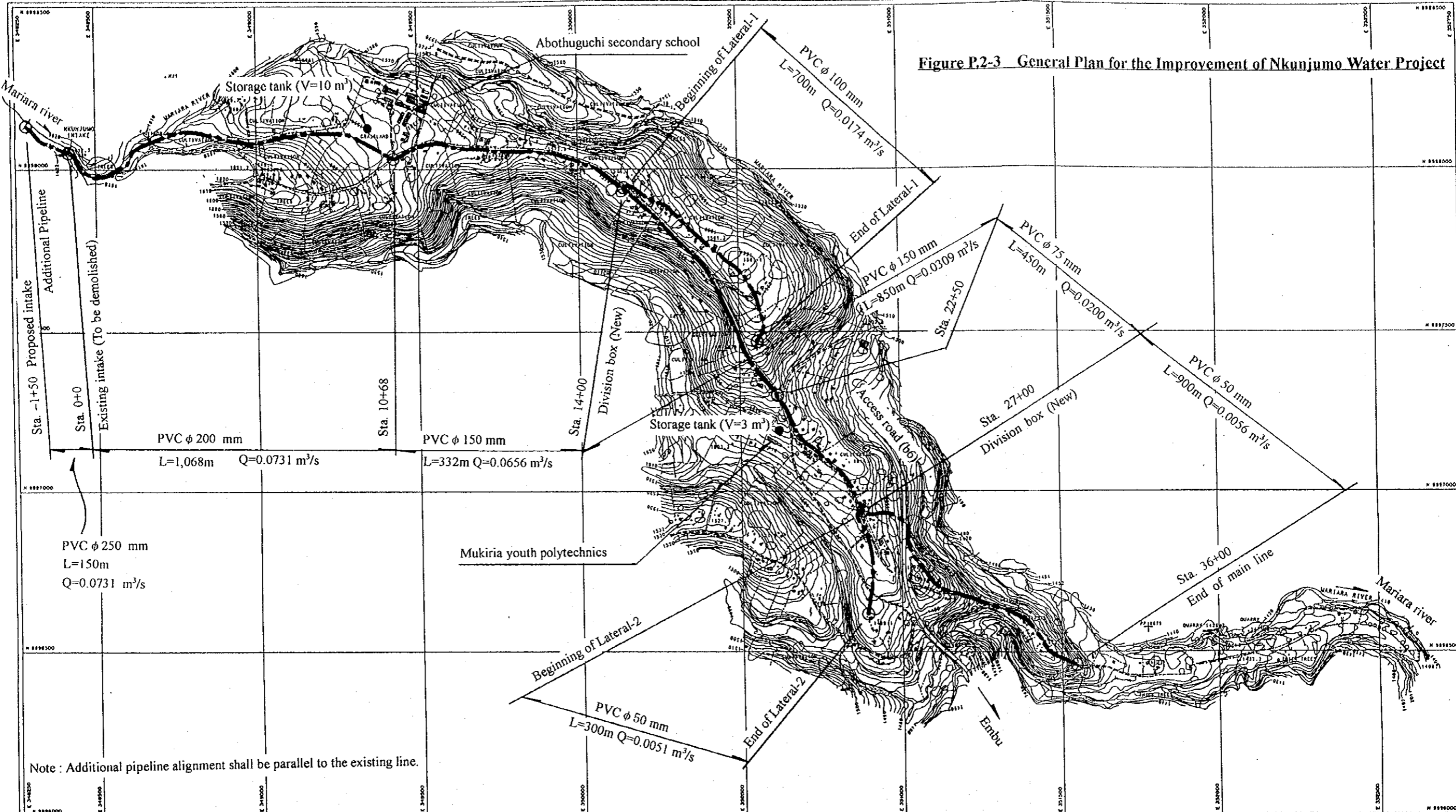


Figure P.2-3 General Plan for the Improvement of Nkunjumo Water Project

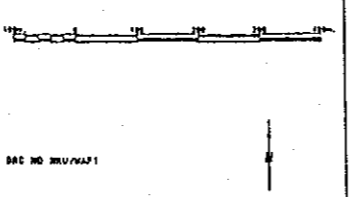


Note: Additional pipeline alignment shall be parallel to the existing line.

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
 MINISTRY OF AGRICULTURE (MOA)
 COMMUNITY-BASED SMALLHOLDER IRRIGATION DEVELOPMENT
 PROJECT FOR PROMOTION OF HORTICULTURAL PRODUCTION
 IN THE FOOTHILLS OF Mt. KENYA

PHOTOMAP
 PHOTOMAP (KENYA) LIMITED
 P.O. Box 43889, Nairobi, Kenya
 Telephone: 254 20 722200/722201
 Telex: 254020/722201
 E-MAIL: PHOTOMAP@FOM-MAIL.OW

KEY:

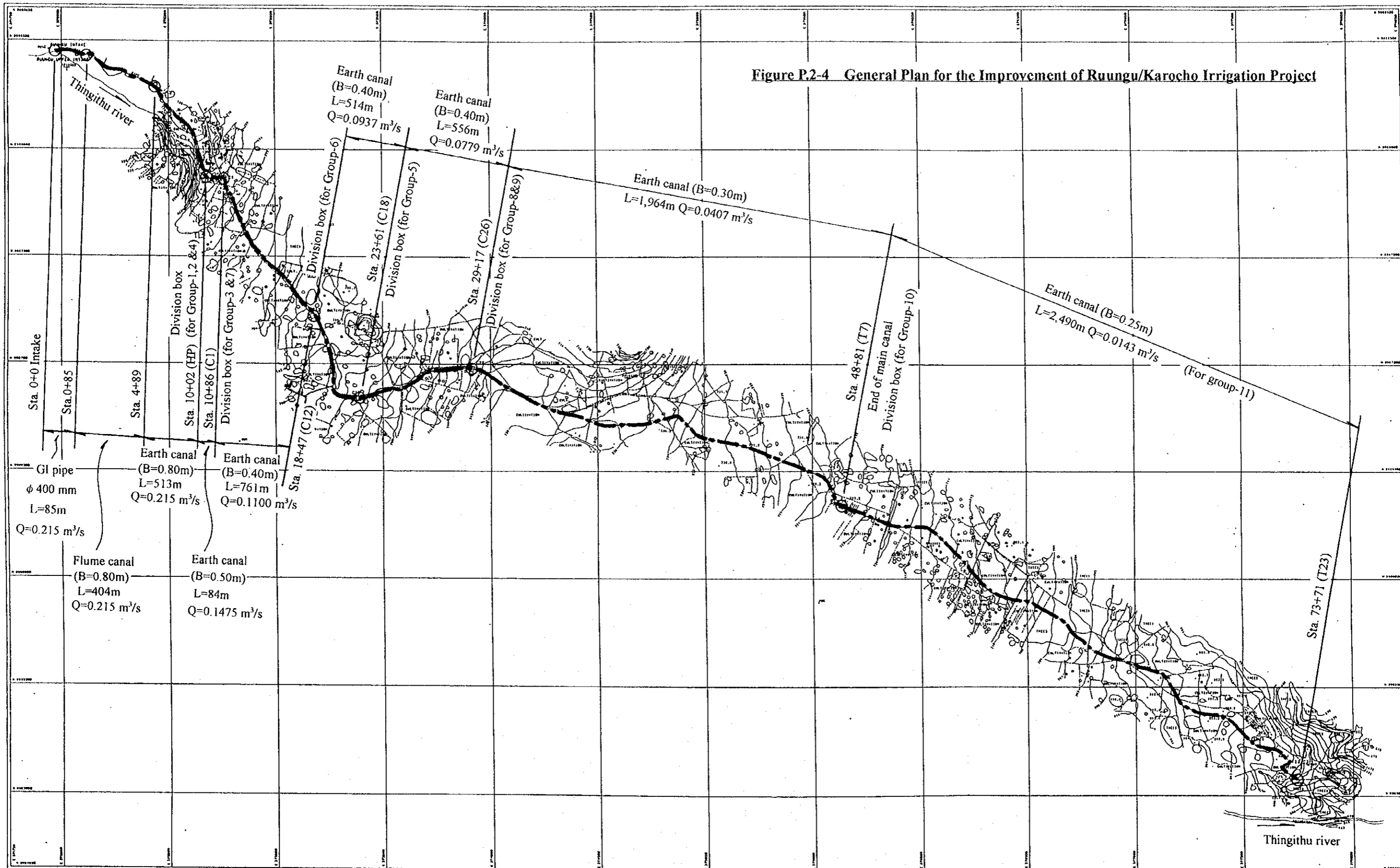


NKUNJUMO WATER PROJECT

LEGEND

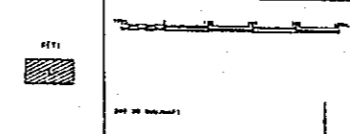
	Jamul Road		Trees and Bushes
	Murram Road		Cultivation
	Drain, Footpath		Embankment, Colling
	Culvert		Blotch, Pale
	Grabbing pipeline		Lohan, Ponds, Water areas
	Fence, Hedge		Photogram Point of Photography
	Building, Hut		Spot Height
	Building under construction		Contours
	Shaded and Stream		U.S. 2m. Index 10m.

Figure P.2-4 General Plan for the Improvement of Ruungu/Karocho Irrigation Project



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
MINISTRY OF AGRICULTURE (MOA)
MINISTRY OF LAND MANAGEMENT, CONSTRUCTION AND PLANNING
PROJECT FOR PROMOTION OF AGRICULTURAL PRODUCTION
IN THE PROVINCE OF SIKASSO

PROJMAP
PHOTOGRAPH MEASURED MAP
S.C. No. 1000, 1:25,000 Scale
Geographic Projection: UTM
Datum: WGS 84
Elevation: Mean Sea Level

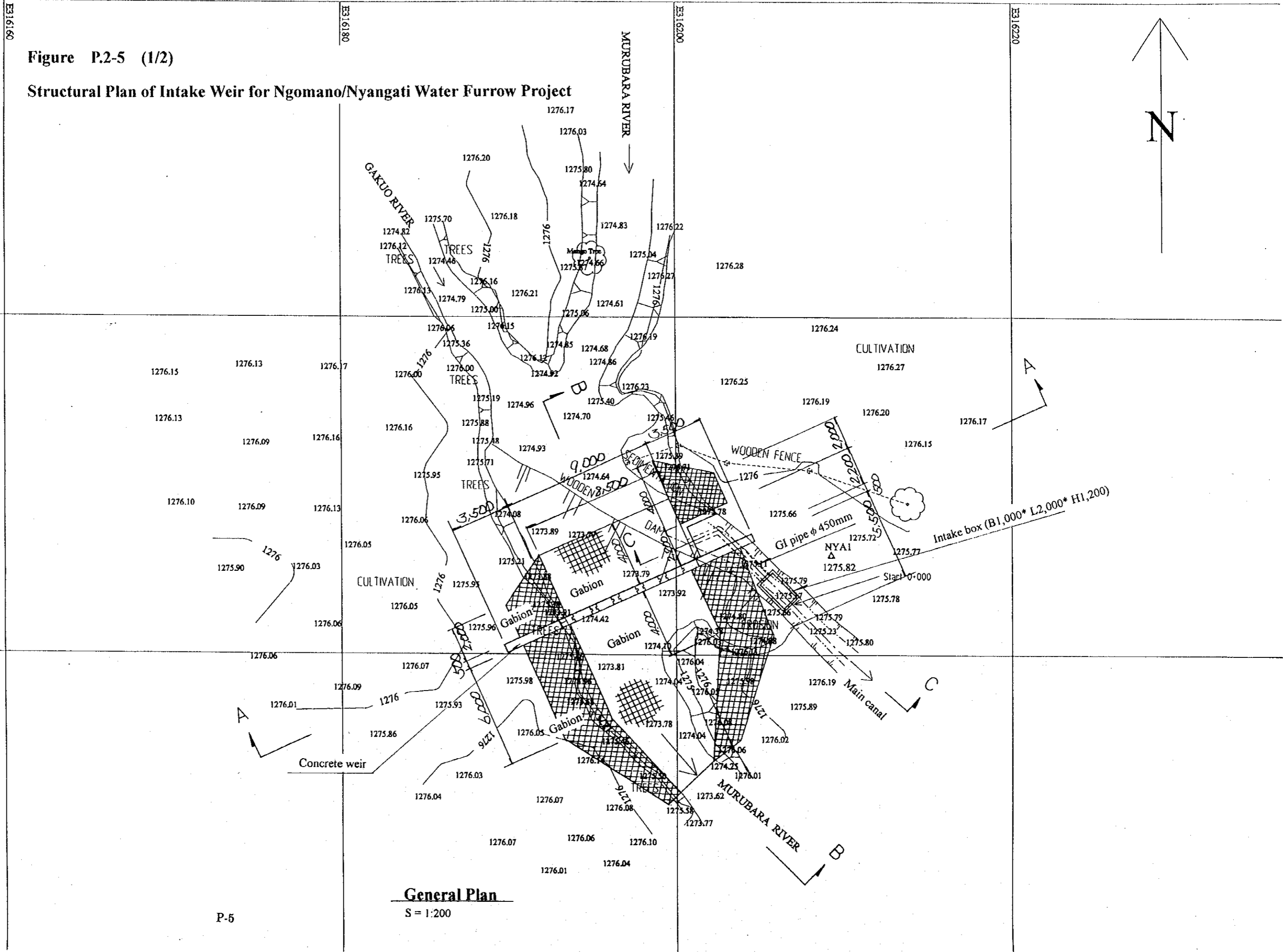


RUUNGU / KAROCHO
IRRIGATION PROJECT

LEGEND	
	Canal
	Division Box
	Intake
	Flume Canal
	Earth Canal
	Road
	River
	Contour Line
	Spot Elevation
	Building
	Well
	Dam
	Bridge
	Power Line
	Telephone Line
	Fencing
	Boundary

Figure P.2-5 (1/2)

Structural Plan of Intake Weir for Ngomano/Nyangati Water Furrow Project



General Plan
S = 1:200

Figure P.2-5 (2/2)

Structural Plan of Intake Weir for Ngomano/Nyangati Water Furrow Project

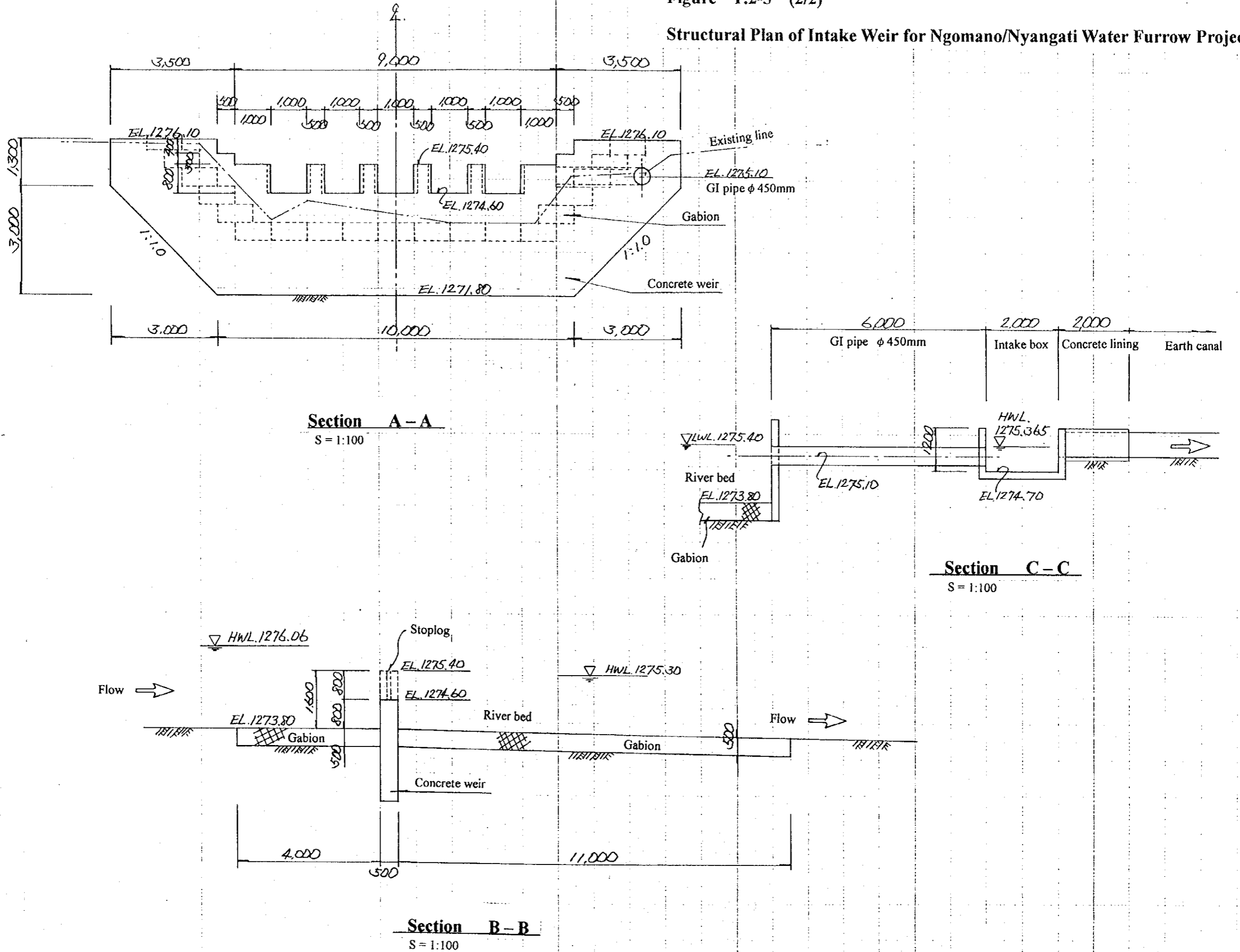


Figure P.2-6

Spillway Bridge for Ruungu/Karocho Irrigation Project

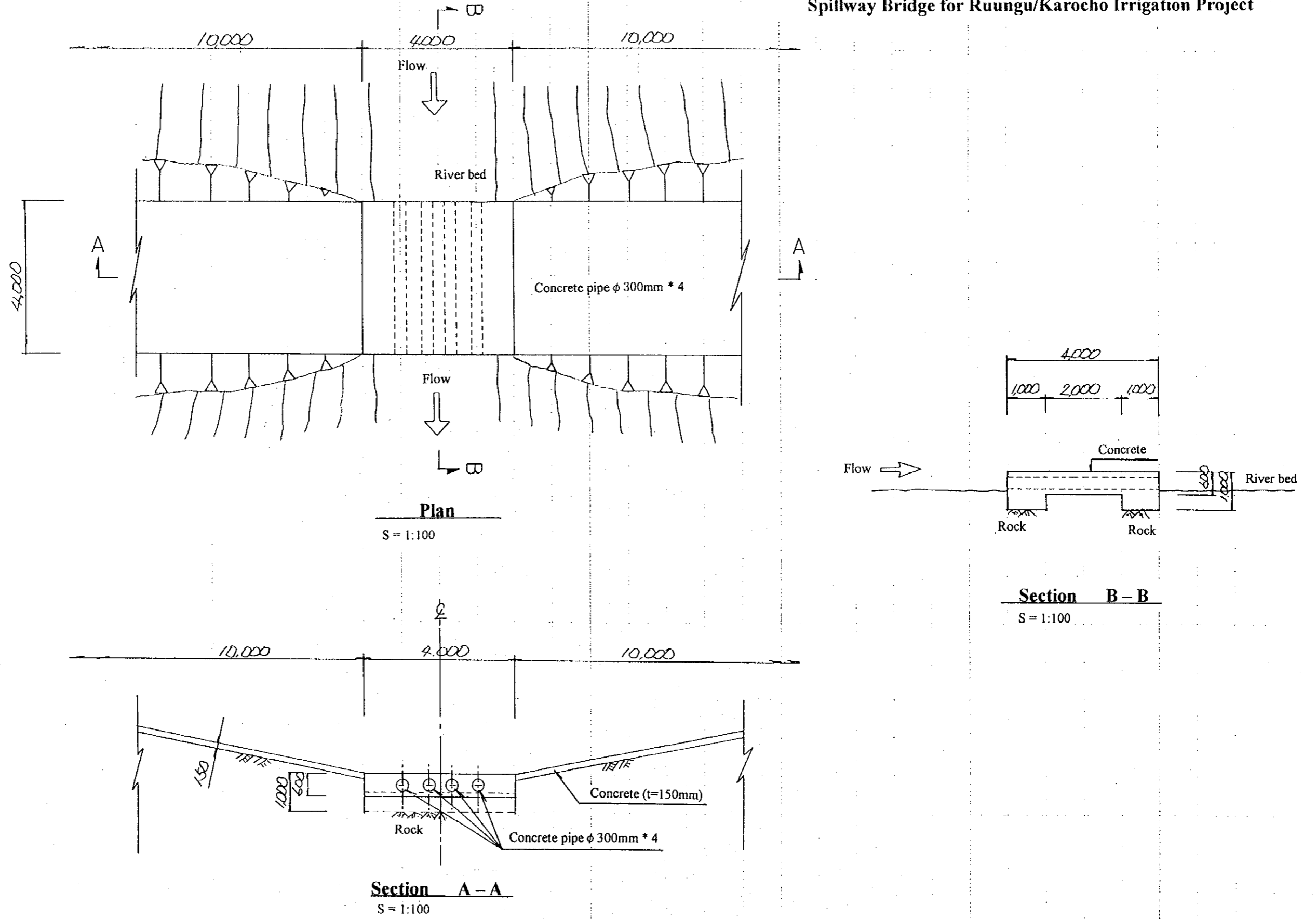
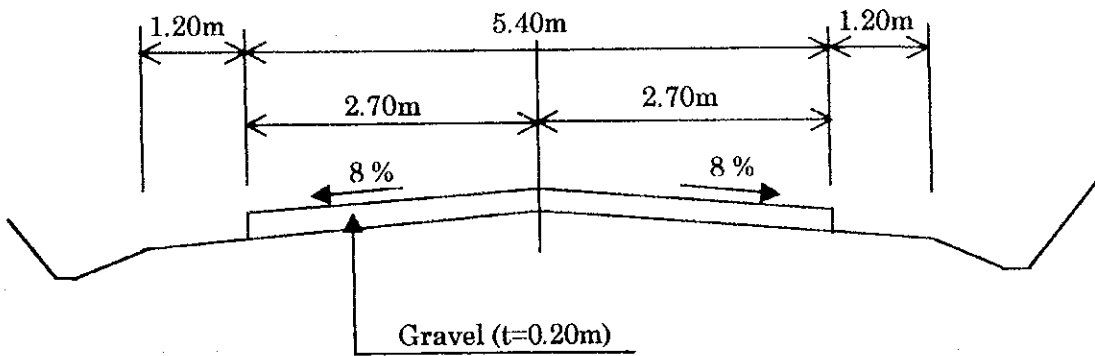
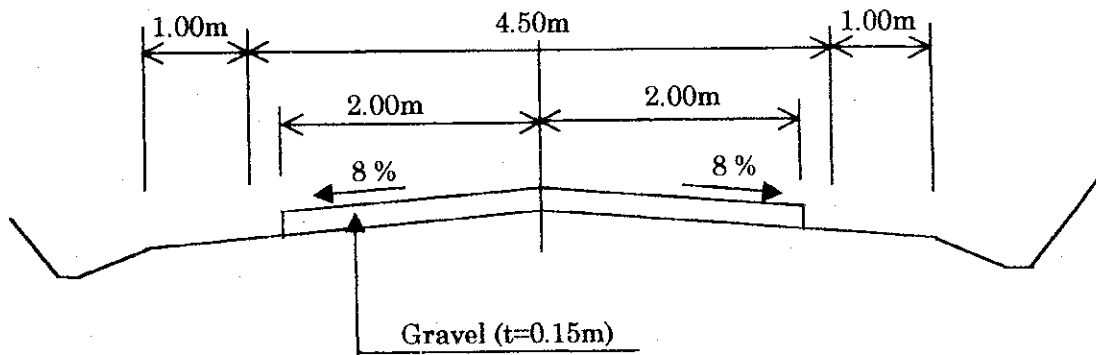


Figure P.2-7 Cross Section of Access Roads and Village/Farm Roads

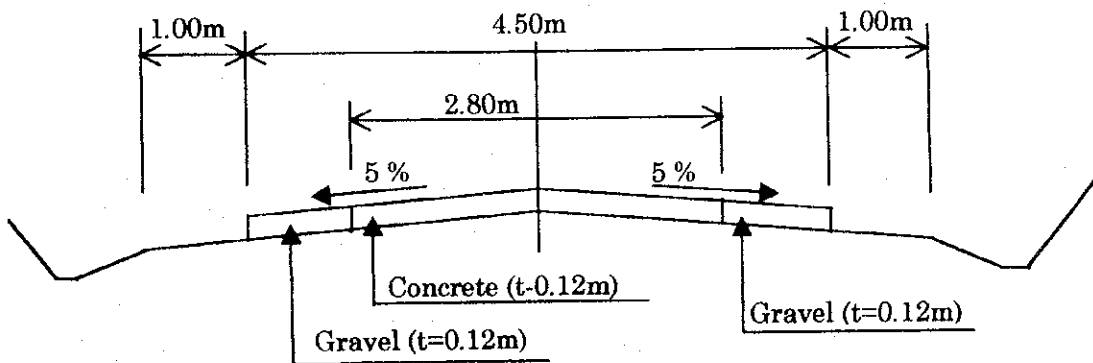
1) Cross Section A (Standard Cross Section)



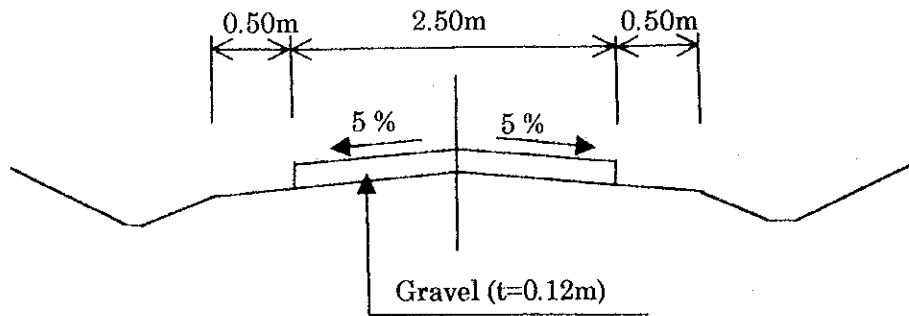
2) Cross Section B (Standard Rural Access Road)



3) Cross Section C (Centre Concrete Running Road)



4) Cross Section D (Village/Farm Roads)



- Note:
- 1) Cross section A is a standard section to be applied in most situation.
 - 2) Cross section B is applied to minor roads and village access roads.
 - 3) Cross section C is applied to severe terrain in the mountainous areas as concrete provides good quality durable surface with low maintenance requirement.
 - 4) Cross Section D is applied to village/farm roads in the farming areas.