Fig.

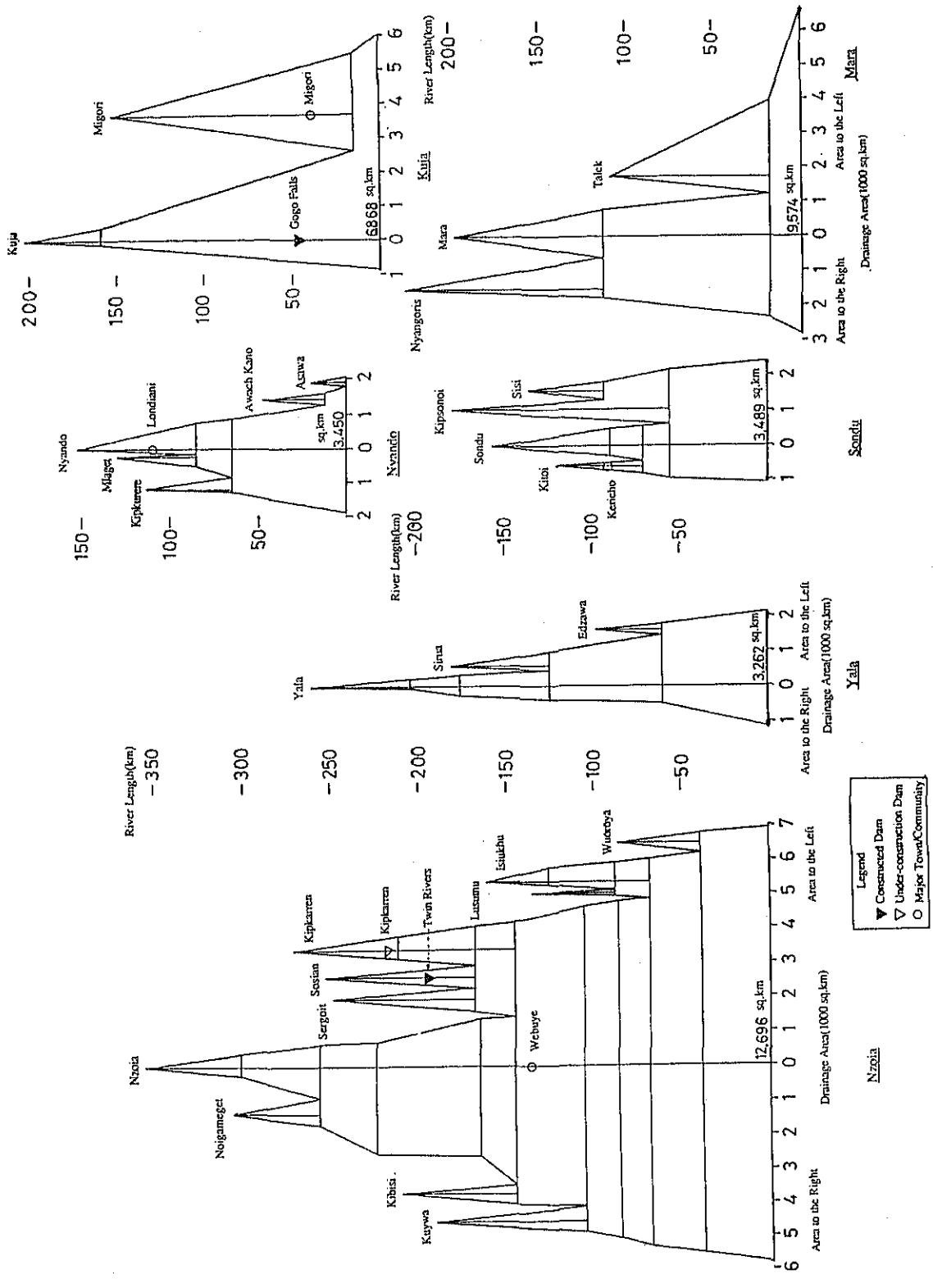

Figure B.5.6 Schematic Diagram of Drainage System (1/4)
(Drainage Area 1)

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Fig.

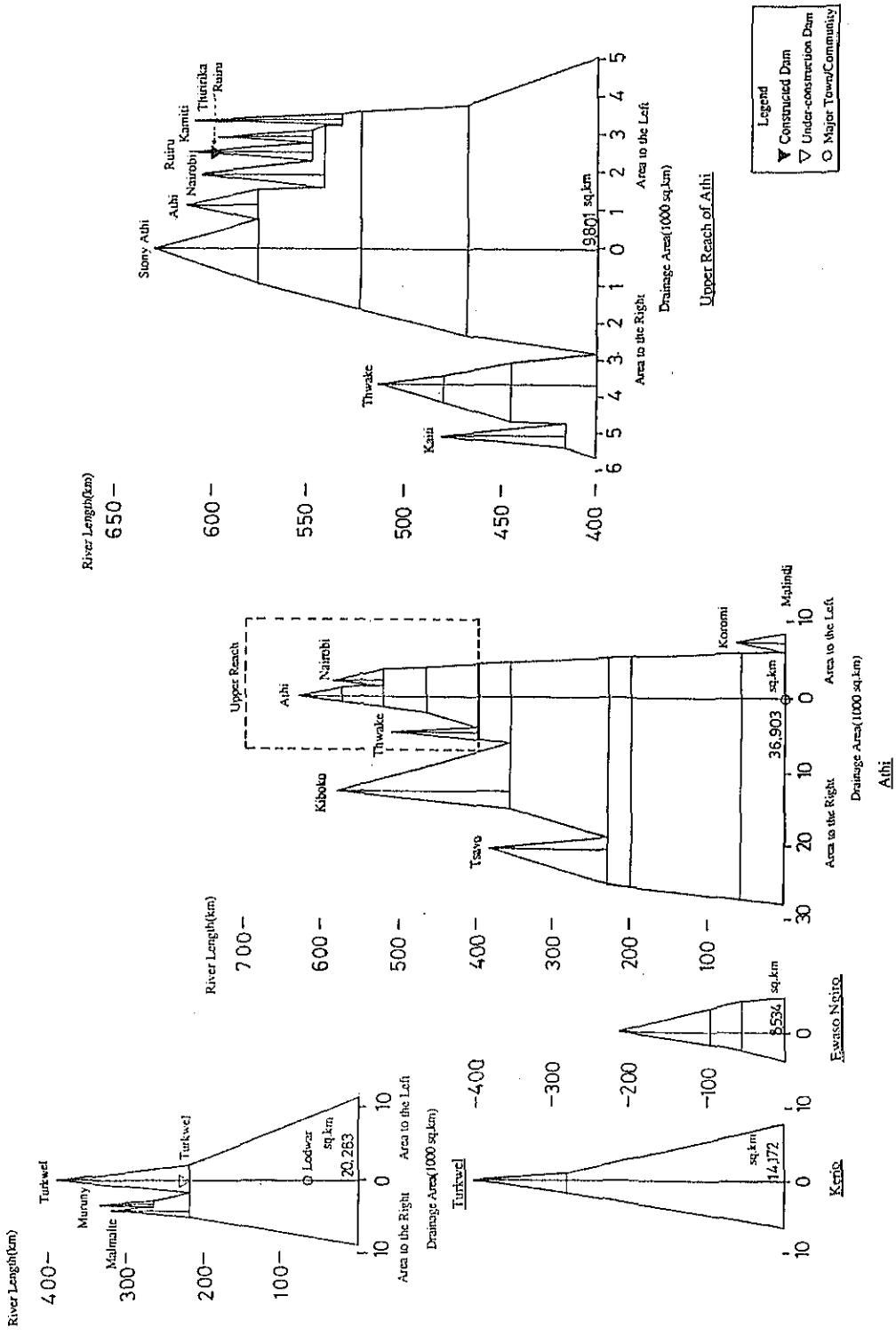

Figure B.5.7 Schematic Diagram of Drainage System (2/4)
(Drainage Areas 2 and 3)

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Fig.

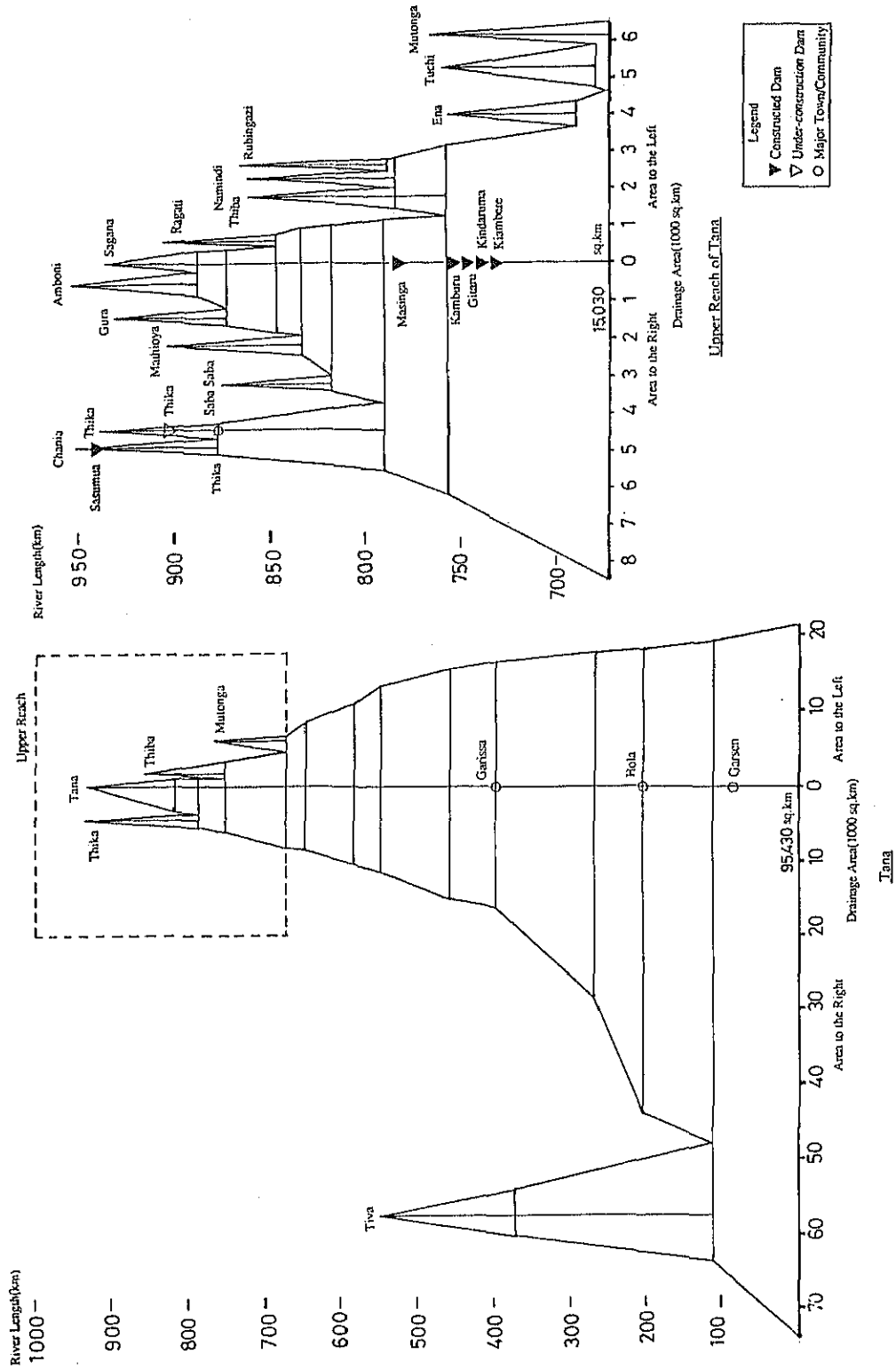

Figure B.5.8 Schematic Diagram of Drainage System (3/4)
(Drainage Area 4)

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Fig.

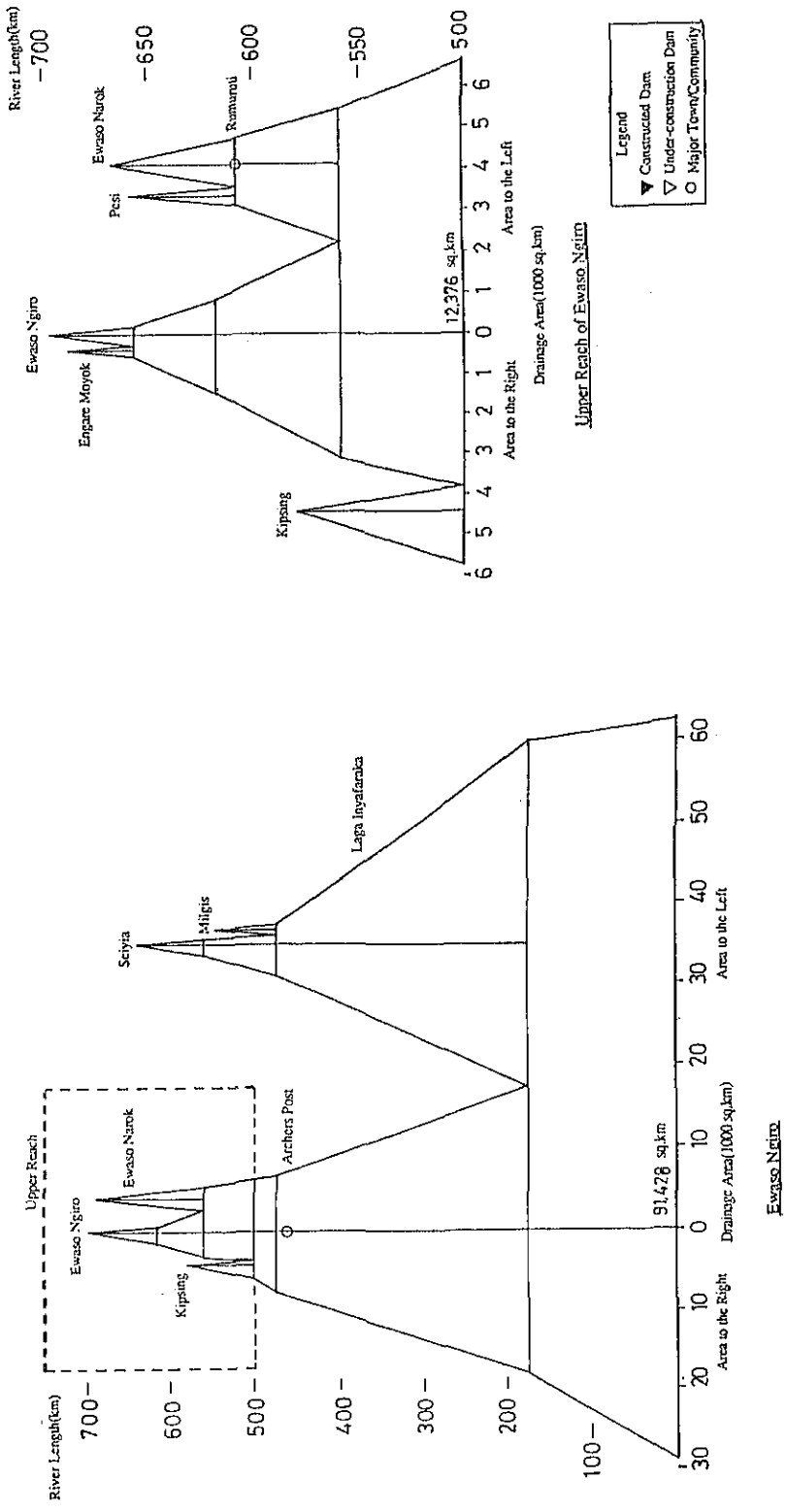

Figure B.5.9 Schematic Diagram of Drainage System (4/4)
(Drainage Area 5)

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APPENDIX B.6

Basin Mean Rainfall Depth

Table B.6.1 Basin Mean Rainfall by Sub-drainage Area (1/9)

Sub-Drainage Area	Catchment Area (sq.km)	Monthly Mean Rainfall (mm)												Annual
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1AA	246	53.3	87.6	158.1	258.9	252.8	126.9	106.4	125.4	143.7	146.9	158.0	69.1	1687.1
1AB	293	52.1	87.9	156.5	254.7	257.1	133.4	112.2	125.5	140.6	142.5	153.1	66.8	1682.4
1AC	120	52.8	89.3	159.0	258.0	260.1	133.7	111.5	124.1	140.8	143.7	155.5	68.1	1696.6
1AD	222	54.8	83.5	155.8	261.2	234.0	109.4	93.4	128.8	151.3	155.4	164.7	71.7	1664.0
1AE	176	56.2	79.6	153.8	263.3	216.7	93.2	81.5	132.0	158.3	163.3	170.9	74.2	1643.0
1AF	411	57.0	85.1	158.7	264.3	242.4	122.4	100.7	133.7	150.2	154.8	160.9	72.1	1702.3
1AG	359	64.8	87.3	166.0	275.4	254.7	149.2	113.7	150.8	152.2	158.7	154.1	75.0	1801.9
1AH	564	56.7	77.0	150.6	257.5	209.2	88.7	78.0	125.4	149.9	156.1	167.1	73.6	1589.8
1BA	628	34.5	47.6	86.7	171.0	162.1	84.5	129.8	124.7	74.5	93.7	113.0	42.5	1164.6
1BB	865	33.5	48.2	90.2	182.9	182.9	103.3	132.8	133.3	104.9	109.5	116.6	40.8	1278.9
1BC	770	24.2	42.7	75.6	175.9	188.6	126.1	166.1	159.0	131.8	94.2	95.4	29.3	1308.9
1BD	678	34.3	49.3	70.5	138.9	152.9	110.9	167.9	186.2	91.3	63.2	64.6	31.3	1161.3
1BE	1,011	35.0	53.4	95.2	172.6	183.3	126.8	133.5	162.1	135.0	112.7	93.0	34.9	1337.5
1BG	907	35.6	53.2	90.9	166.8	179.8	125.4	140.4	169.0	128.7	104.8	87.8	34.6	1317.0
1BH	618	43.4	69.6	122.3	208.9	216.6	129.3	126.4	147.9	134.8	123.3	119.1	49.8	1491.4
1CA	684	30.5	46.7	69.6	134.3	137.2	99.7	162.4	170.0	78.2	54.9	63.5	29.5	1076.5
1CB	671	31.3	46.9	71.4	140.2	140.9	101.4	165.4	173.8	79.4	56.5	68.4	31.6	1107.2
1CC	664	47.3	57.3	96.0	170.8	154.9	123.0	161.6	180.5	106.9	79.4	96.1	43.7	1317.5
1CD	521	42.8	58.0	88.3	160.4	164.9	124.1	169.3	191.1	106.8	77.4	80.1	38.4	1301.6
1CE	231	37.4	51.3	70.0	141.0	164.2	119.2	173.9	200.3	99.7	67.6	64.3	32.6	1221.5
1DA	520	53.3	84.5	143.1	238.0	240.3	137.4	135.4	152.9	137.3	129.9	135.7	62.4	1650.2
1DB	696	52.0	87.7	156.2	254.3	256.8	133.4	112.3	125.7	140.6	142.4	152.8	66.7	1680.9
1DC	373	61.3	89.3	165.1	270.2	263.0	151.8	118.0	142.8	146.5	151.8	152.0	72.3	1784.1
1DD	355	63.4	89.4	166.6	273.4	263.8	156.5	119.7	147.7	148.0	153.9	151.1	73.4	1806.9
1EA	429	88.7	122.9	194.1	312.7	274.3	196.2	202.6	231.3	191.5	172.5	160.5	88.3	2235.6
1EB	380	80.6	106.2	183.6	299.6	270.6	186.1	164.6	199.6	172.8	167.5	153.9	83.1	2068.2
1EC	250	76.2	96.9	177.8	292.3	268.6	180.5	143.5	181.9	162.4	164.8	150.3	80.2	1975.4
1ED	128	72.6	89.5	173.3	286.6	267.0	176.1	126.7	167.9	154.2	162.7	147.4	78.0	1902.0
1EE	401	67.3	74.6	152.1	252.8	214.3	120.4	92.5	125.3	122.6	134.1	143.2	74.1	1573.3
1EF	385	61.8	52.3	121.6	202.7	138.8	46.1	45.8	63.3	70.8	87.9	132.1	68.6	1091.8
1EG	544	67.4	70.2	146.6	243.1	200.9	109.9	85.4	113.9	110.3	123.4	138.8	73.2	1483.1

Table B.6.1 Basin Mean Rainfall by Sub-drainage Area (2/9)

Sub-Drainage Area	Catchment Area (sq.km)	Monthly Mean Rainfall (mm)												Annual
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1FA	240	59.3	67.2	115.6	189.1	169.7	144.3	158.4	189.1	133.7	99.3	111.1	49.5	1486.3
1FB	378	64.9	77.9	135.2	213.4	191.1	159.6	165.7	199.2	150.7	115.6	123.6	55.1	1652.0
1FC	272	65.2	78.3	135.7	214.2	191.8	160.0	166.0	199.5	151.1	116.1	123.9	55.4	1657.2
1FD	480	62.6	72.6	128.2	199.7	176.6	149.9	155.4	188.3	141.0	106.2	118.5	52.4	1551.4
1FE	652	85.4	116.2	189.9	307.4	272.8	192.1	187.4	218.6	184.0	170.5	157.8	86.2	2168.3
1FF	272	71.0	97.2	166.3	242.2	184.9	101.6	92.1	108.0	106.3	104.6	150.4	94.3	1518.9
1FG	980	60.0	56.3	122.0	204.0	136.0	51.5	44.6	61.9	69.3	84.8	130.0	68.3	1088.7
1GA	443	54.5	58.3	92.6	168.1	150.2	123.5	154.1	177.7	110.9	82.6	96.3	47.5	1316.3
1GB	518	73.8	83.2	142.3	209.1	155.5	109.1	109.0	131.2	105.2	97.1	121.3	73.0	1409.8
1GC	912	56.0	55.6	81.6	163.3	138.5	103.9	143.7	161.1	90.4	74.3	88.8	53.6	1210.8
1GD	720	78.9	89.1	149.8	208.4	136.3	79.7	76.8	91.3	79.5	86.7	121.1	83.7	1281.3
1GE	391	85.4	90.6	152.9	235.7	166.3	103.8	99.0	119.5	99.9	109.2	128.7	90.0	1481.0
1GF	260	80.9	89.6	150.7	216.9	145.7	87.2	83.7	100.1	85.9	93.7	123.5	85.7	1343.6
1GG	374	53.5	52.9	76.2	156.3	134.7	102.5	145.8	162.5	88.5	70.3	85.4	50.5	1179.1
1HA	869	72.0	92.2	156.7	218.3	151.1	78.8	73.0	85.4	84.2	86.7	137.7	91.1	1327.2
1HB	762	55.8	80.4	136.3	218.0	139.1	73.8	49.1	67.1	77.7	82.9	134.3	76.0	1190.5
1HC	521	54.4	66.9	123.8	209.6	131.2	62.5	41.4	60.6	71.1	82.0	128.7	67.5	1099.7
1HD	778	84.6	103.1	200.9	263.6	215.4	138.8	116.8	133.2	160.0	158.8	179.4	110.0	1864.6
1HE	761	76.9	93.8	180.4	249.5	199.2	117.4	95.3	116.4	142.7	147.8	168.9	102.5	1690.8
1HF	846	63.2	73.0	132.7	218.9	166.7	68.5	51.2	84.6	103.5	125.1	143.3	88.5	1319.2
1HG	333	60.7	71.0	125.5	204.7	150.9	60.9	42.3	62.5	76.2	99.9	135.8	91.1	1181.5
1JA	748	68.2	65.3	106.9	206.6	185.1	124.7	147.7	173.6	125.5	111.0	108.8	72.5	1495.9
1JB	262	85.1	85.8	143.6	243.4	184.8	121.3	122.2	146.7	114.6	120.5	127.8	88.9	1584.7
1JC	339	81.0	81.8	134.9	231.2	175.6	117.5	124.0	147.0	108.8	112.3	121.9	83.5	1519.5
1JD	213	90.6	91.9	155.3	257.2	189.9	122.8	116.5	141.6	115.9	126.9	134.7	95.0	1638.3
1JE	601	82.2	87.5	121.0	166.0	105.3	69.8	50.3	67.4	65.4	59.1	118.7	107.4	1100.1
1JF	1,006	81.6	80.5	137.4	241.5	201.0	129.9	133.9	161.7	132.5	129.4	127.7	89.0	1646.1
1JG	312	85.5	93.7	163.1	248.3	184.1	114.8	106.2	126.8	115.4	122.5	142.1	96.4	1598.9
1KA	463	78.2	94.3	182.3	250.7	203.0	118.6	97.4	119.2	146.1	151.8	170.8	104.5	1716.9
1KB	3,558	75.8	90.6	151.4	222.6	169.4	89.0	63.4	82.3	111.1	122.9	158.5	108.5	1445.5
1KC	2,898	84.9	98.7	143.7	207.7	153.0	84.4	53.8	74.4	108.4	109.9	156.7	120.6	1396.2

Table B.6.1 Basin Mean Rainfall by Sub-drainage Area (3/9)

Sub-Drainage Area	Catchment Area (sq.km)	Monthly Mean Rainfall (mm)												Annual
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1LA1	914	69.3	65.8	103.5	193.7	176.1	114.9	126.2	153.5	121.4	103.5	109.4	83.4	1420.7
1LA2	1,003	85.7	86.8	121.6	164.7	105.3	69.5	50.0	64.6	66.3	57.5	116.4	109.8	1098.2
1LA3	2,886	89.1	73.6	106.3	139.0	87.4	55.7	38.5	41.9	52.1	35.9	91.3	97.9	908.7
1LB1	1,449	71.4	70.1	105.2	181.3	148.5	97.8	101.0	124.4	97.5	85.7	108.4	87.7	1279.0
1LB2	2,715	85.3	73.0	104.0	138.9	84.2	54.5	38.5	43.7	47.2	35.3	91.4	94.9	890.9

Table B.6.1 Basin Mean Rainfall by Sub-drainage Area (4/9)

Sub-Drainage Area	Catchment Area (sq.km)	Monthly Mean Rainfall (mm) Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2AA	11,498	15.3	16.8	39.4	73.3	30.5	7.2	13.1	6.1	4.6	21.8	48.4	21.0	297.5
2AB	9,853	10.8	19.4	41.4	77.1	38.9	13.3	22.3	11.1	9.1	16.3	39.0	15.2	313.9
2BA	1,325	20.6	38.3	68.3	179.0	190.4	121.3	176.6	152.7	124.9	87.6	100.7	28.7	1289.1
2BB	2,038	12.4	23.1	52.9	114.8	100.9	49.1	78.7	61.5	51.5	49.4	62.7	24.7	681.7
2BC	3,827	13.6	27.7	55.9	136.9	134.8	80.6	121.1	101.6	84.5	60.1	71.3	23.6	911.7
2BD	13,251	7.5	12.4	34.5	71.2	41.5	14.0	31.1	18.6	14.5	17.7	34.2	17.3	314.5
2CA	3,571	8.7	11.4	28.1	62.8	30.7	10.3	25.0	12.2	8.9	13.4	30.6	15.6	257.7
2CB	2,380	38.0	47.9	88.4	191.1	166.7	106.0	175.5	182.5	83.2	75.3	117.0	51.3	1322.9
2CC	11,436	14.2	23.0	49.8	95.7	77.8	34.9	57.9	36.8	33.1	46.8	60.4	27.2	557.6
2D	12,965	22.9	28.9	57.1	109.6	78.0	43.0	64.3	60.9	33.2	53.5	76.6	31.0	659.0
2EA	412	26.9	30.9	54.4	122.6	98.4	62.4	80.8	90.0	55.6	59.1	63.4	32.6	777.1
2EB	726	25.4	29.5	54.2	123.5	84.0	58.2	82.5	83.5	46.9	56.5	60.1	27.3	731.6
2EC	826	31.7	35.0	57.6	126.8	130.3	74.6	83.4	107.8	76.7	68.0	71.8	44.0	907.7
2ED	421	49.2	48.4	67.0	144.6	128.3	100.2	149.3	165.0	85.3	63.8	79.7	45.4	1126.2
2EE	609	33.3	39.7	72.0	160.9	125.4	87.1	140.4	145.6	67.0	62.6	88.9	40.4	1063.3
2EF	389	43.0	43.5	63.7	139.4	115.6	89.2	132.7	143.9	74.7	61.7	74.4	40.2	1022.0
2EG1	397	51.3	49.6	71.3	153.8	140.7	106.0	151.9	170.1	95.4	73.0	83.8	49.3	1196.2
2EG2	1,264	32.2	34.9	57.8	129.5	96.7	70.2	101.5	106.8	57.9	58.6	65.7	32.5	844.3
2EH	604	37.3	47.9	91.5	203.0	172.5	114.2	195.0	204.8	85.7	69.6	121.9	54.5	1397.9
2EJ	1,419	23.1	28.3	55.2	123.9	92.6	62.8	98.1	103.4	45.5	51.8	71.7	30.4	786.8
2EK	603	24.7	28.9	54.1	123.9	77.6	56.3	83.3	80.7	43.0	55.4	58.7	25.0	711.6
2FA	548	30.5	34.5	56.1	121.2	109.7	59.4	60.6	81.3	60.7	59.7	71.1	43.8	788.6
2FB	143	29.8	33.8	54.9	121.1	126.3	70.7	77.7	102.6	72.4	64.1	69.8	42.7	865.9
2FC	1,514	39.4	40.4	67.3	145.7	146.0	86.1	95.8	121.7	91.9	80.9	81.0	51.7	1047.9
2GA	323	30.8	34.9	56.7	121.3	101.8	54.0	52.5	71.1	55.0	57.6	71.7	44.4	751.8
2GB	963	37.5	42.1	65.9	138.9	124.4	68.3	60.1	80.3	74.0	74.5	87.9	52.5	906.4
2GC	753	46.1	51.3	77.8	161.3	150.0	84.3	66.8	88.1	95.8	95.0	108.5	62.9	1087.9
2GD	1,153	31.7	35.9	58.1	121.6	82.3	40.6	32.4	46.1	41.2	52.5	73.3	45.9	661.6
2H	8,215	48.2	45.0	78.6	149.4	88.0	19.3	12.5	13.7	16.3	33.3	81.8	67.9	654.0
2J	28,304	11.5	21.9	55.3	87.3	50.7	24.4	44.5	31.2	21.8	24.5	48.6	19.7	441.4

Table B.6.1 Basin Mean Rainfall by Sub-drainage Area (5/9)

Sub-Drainage Area	Catchment Area (sq.km)	Monthly Mean Rainfall (mm) Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2KA	5,092	78.3	69.7	99.6	156.6	116.2	57.3	52.6	60.7	57.2	50.4	85.3	78.8	962.7
2KB	1,636	75.1	64.6	91.7	128.7	79.0	33.0	20.4	21.1	30.1	24.0	72.3	74.1	714.1
2KC	1,994	57.9	51.1	79.1	116.9	66.5	22.6	13.7	13.6	21.2	19.3	60.0	63.3	585.2

Table B.6.1 Basin Mean Rainfall by Sub-drainage Area (6/9)

Sub-Drainage Area	Catchment Area (sq.km)	Monthly Mean Rainfall (mm)												Annual
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
3AA	697	50.7	47.2	83.1	219.1	150.5	34.9	14.0	22.2	26.6	52.2	128.9	89.2	918.6
3AB	1,786	52.0	44.7	88.0	182.9	91.6	19.6	7.6	10.4	14.7	47.3	142.5	91.3	792.6
3AC	887	60.6	47.2	107.7	231.0	105.2	19.7	9.3	10.9	14.4	66.2	188.8	107.0	968.0
3BA	830	50.5	47.0	93.7	243.5	166.2	38.3	19.7	24.5	28.5	63.6	152.6	92.7	1020.8
3BB	256	50.9	47.4	107.5	276.1	188.7	43.6	28.0	28.2	31.7	77.5	182.9	98.4	1160.9
3BC	476	49.4	46.0	104.8	260.4	173.7	42.9	29.7	30.5	32.7	76.7	177.2	94.0	1118.0
3BD	328	48.4	45.5	112.6	284.1	189.5	44.2	31.0	29.5	32.1	87.5	195.8	95.1	1195.3
3CB	395	45.3	43.3	106.7	263.6	171.7	42.6	29.7	30.7	33.1	89.6	184.3	85.5	1126.1
3DA	807	61.8	46.6	113.7	235.7	96.0	16.2	8.2	8.2	11.4	71.8	204.0	109.4	983.0
3DB	822	50.4	40.8	115.3	234.8	58.4	8.3	4.3	6.0	9.8	71.4	270.7	116.7	986.9
3EA	875	71.7	51.6	114.7	222.6	79.0	13.5	7.4	7.2	10.7	54.9	202.7	126.3	962.3
3EB	804	71.7	51.6	114.7	222.6	79.0	13.5	7.4	7.2	10.7	54.9	202.7	126.3	962.3
3EC	671	57.0	45.1	95.6	178.6	66.2	12.4	5.2	5.3	9.3	47.2	164.3	101.8	788.0
3ED	570	48.5	38.3	97.8	193.4	49.2	7.2	3.5	4.7	7.8	57.6	234.4	115.2	857.6
3FA	9,995	45.4	35.8	72.2	124.6	40.6	7.3	2.8	2.9	6.1	36.4	142.1	92.8	609.0
3FB	4,196	41.8	29.4	72.9	123.0	29.3	3.8	1.0	3.7	7.2	23.2	185.1	143.4	663.8
3G	6,306	36.4	26.8	77.8	109.9	39.1	6.3	4.0	5.2	9.1	24.6	142.0	107.7	588.9
3HA	921	35.3	22.3	87.8	84.6	30.6	4.3	3.6	7.2	16.5	29.9	119.3	107.1	548.5
3HB	2,498	31.6	19.7	69.5	90.4	83.4	39.5	30.6	26.7	36.5	44.8	99.9	92.2	664.8
3HC	2,942	19.7	12.9	43.4	115.0	168.0	92.8	74.8	55.6	56.5	62.3	97.2	72.7	870.9
3HD1	627	21.4	13.3	53.3	122.3	203.7	113.2	84.8	63.0	67.8	66.7	83.4	79.7	972.6
3HD2	386	15.3	12.2	41.8	138.9	210.1	111.6	87.6	60.1	52.4	66.3	100.9	58.1	955.3
3J	3,022	33.2	24.8	86.6	101.0	62.9	13.9	10.2	9.8	13.3	25.6	95.7	66.0	543.0
3K	4,176	36.9	19.4	59.8	127.0	175.0	67.4	55.2	53.1	50.9	85.1	117.5	79.9	927.2
3LA	7,305	30.6	20.4	61.1	99.0	111.5	49.8	39.5	32.9	41.1	54.3	96.8	79.1	716.1
3LB	771	13.5	14.0	46.0	162.9	282.5	143.9	105.6	69.8	61.1	75.3	87.1	42.5	1104.2
3MA	6,120	38.2	23.2	77.6	88.4	58.5	16.2	14.7	20.1	28.8	42.2	102.7	80.5	591.1
3MB	1,700	32.1	17.9	54.0	122.4	158.1	74.4	60.7	53.3	55.5	94.9	92.4	74.3	890.0
3MC	1,044	37.1	18.4	65.9	125.7	151.5	67.9	54.9	53.1	53.7	93.3	108.4	85.1	915.0
3MD1	1,276	24.4	17.7	40.8	163.2	267.1	117.8	91.1	72.8	72.0	101.5	103.5	66.4	1138.3
3MD2	173	29.2	15.6	55.6	173.2	240.7	109.1	82.3	74.6	68.1	122.2	101.8	72.0	1144.4
3N	3,175	76.9	39.9	83.1	126.5	34.8	3.6	6.3	4.2	6.0	33.7	128.8	120.3	664.1

Table B.6.1 Basin Mean Rainfall by Sub-drainage Area (7/9)

Sub-Drainage Area	Catchment Area (sq.km)	Monthly Mean Rainfall (mm)												Annual
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
4AA	519	68.8	71.3	119.5	271.6	250.5	58.3	46.2	51.5	39.4	150.2	235.7	131.7	1494.7
4AB	684	54.1	53.3	81.5	179.0	155.7	40.8	45.2	42.2	40.1	107.7	137.6	79.9	1017.1
4AC	429	56.1	57.2	89.6	196.7	177.1	54.8	50.8	54.9	53.0	115.6	154.0	88.2	1148.0
4AD	441	51.4	52.4	79.3	170.4	152.4	56.6	54.0	59.1	61.4	103.3	124.7	72.5	1037.5
4BA	317	41.6	50.8	96.4	303.4	225.0	43.6	28.4	30.6	26.4	147.6	205.0	83.2	1282.0
4BB	259	59.4	66.0	117.4	306.7	260.3	56.8	39.0	45.4	34.9	158.4	243.1	120.8	1508.2
4BC	227	49.7	58.2	107.6	311.7	246.2	50.6	32.9	37.6	30.3	155.0	227.3	101.9	1409.0
4BD	547	39.2	47.5	85.9	262.4	195.4	50.2	36.4	41.5	42.3	131.1	169.1	68.8	1169.8
4BE	554	37.0	46.9	87.0	274.4	202.5	54.7	36.8	44.7	46.3	134.5	173.3	67.1	1205.2
4BF	374	36.7	35.0	109.3	273.1	146.0	24.5	11.5	11.9	14.1	117.3	206.4	67.2	1053.0
4BG	443	37.0	34.5	110.5	270.2	141.4	23.6	10.8	11.1	13.6	115.4	206.9	67.2	1042.2
4CA	537	46.7	48.5	92.5	212.3	164.8	67.0	51.2	63.2	68.8	93.6	145.9	75.2	1129.7
4CB	313	42.3	41.9	103.3	248.5	158.2	45.5	30.9	36.5	40.8	107.1	181.5	72.8	1109.3
4CC	1,019	40.3	35.7	111.6	264.2	133.1	22.1	10.2	10.4	13.0	108.7	206.8	72.5	1028.6
4DA	715	41.3	45.7	105.6	298.1	215.4	43.8	33.5	38.7	32.0	159.7	227.3	85.3	1326.4
4DB	453	42.8	44.9	109.4	291.0	211.0	44.3	36.6	42.7	34.8	163.0	234.6	88.1	1343.2
4DC	354	24.7	25.7	96.4	285.7	169.7	31.7	30.1	34.6	30.9	162.9	216.4	52.7	1161.5
4DD	452	24.7	25.7	96.4	285.7	169.7	31.7	30.1	34.6	30.9	162.9	216.4	52.7	1161.5
4DE	735	36.7	33.5	109.8	263.5	120.9	20.1	12.0	13.5	15.4	112.7	231.4	77.0	1046.5
4EA	743	41.3	32.1	90.8	165.6	62.6	20.1	12.6	17.4	11.9	114.3	198.3	90.1	857.1
4EB	1,193	33.5	30.1	95.1	235.1	127.9	27.8	23.2	27.9	23.1	141.8	210.4	71.7	1047.6
4EC	605	33.5	28.5	95.7	256.4	147.8	28.7	24.7	29.4	25.1	141.2	216.8	65.9	1093.7
4ED	3,160	40.0	26.6	97.7	205.8	55.8	9.3	4.8	8.4	8.5	85.1	251.0	88.9	881.9
4FA	2,181	42.4	33.3	90.4	154.7	53.6	19.2	11.1	16.0	10.8	109.9	194.7	92.7	828.8
4FB	3,950	40.2	22.8	74.9	138.4	34.3	7.9	1.6	5.2	4.2	65.4	180.2	74.9	650.0
4GA	3,909	18.3	15.4	45.8	99.0	19.8	2.6	0.8	1.8	2.5	39.9	125.0	55.4	426.3
4GB	5,503	14.4	10.7	55.0	95.6	12.4	1.7	1.0	1.7	3.5	37.7	106.6	53.4	393.7
4GC	1,823	11.1	6.8	52.2	82.9	14.3	4.2	2.9	5.2	7.0	32.5	88.5	51.8	359.4
4GD	7,399	20.6	11.7	60.2	104.3	25.7	8.7	4.7	8.1	9.3	42.5	123.1	61.4	480.3
4GE	11,732	29.9	23.5	78.5	156.7	46.3	17.6	9.7	14.3	17.5	59.4	199.8	83.5	736.7
4GF	15,518	27.4	22.1	71.6	146.0	55.2	24.4	14.8	17.8	22.4	54.9	181.4	79.8	717.8
4GG	7,120	21.0	11.1	37.8	116.6	151.0	78.8	60.2	40.3	48.8	45.3	100.8	61.1	772.8

Table B.6.1 Basin Mean Rainfall by Sub-drainage Area (8/9)

Sub-Drainage Area	Catchment Area (sq.km)	Monthly Mean Rainfall (mm)												Annual
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
4HA	5,480	38.9	31.5	92.2	178.7	36.2	4.3	1.6	4.2	7.8	52.2	246.3	124.5	818.4
4HB	9,066	31.4	20.3	57.0	119.4	78.7	35.6	24.6	19.1	26.5	33.4	143.5	97.3	686.8
4HC	6,623	32.3	20.9	65.3	105.8	70.3	30.6	25.5	21.7	26.3	36.7	135.3	109.0	679.7
4JA	8,489	12.0	6.6	51.3	81.3	17.7	6.3	4.1	7.1	8.7	32.3	87.9	52.6	367.9
4JB	3,691	9.2	6.1	39.3	123.5	269.2	143.2	77.9	42.1	48.1	42.2	54.0	48.4	903.2
4KA	8,251	14.2	9.3	42.9	94.5	127.2	69.1	38.2	27.4	31.4	37.3	74.0	53.1	618.6
4KB	10,218	15.1	9.7	41.0	100.2	154.2	83.8	47.3	32.2	37.5	38.4	72.8	53.4	685.6

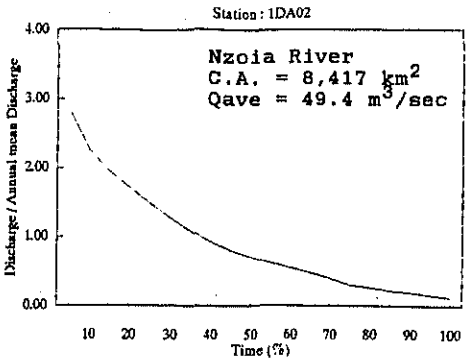
Table B.6.1 Basin Mean Rainfall by Sub-drainage Area (9/9)

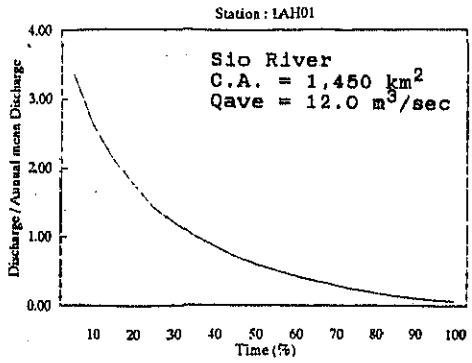
Sub-Drainage Area	Catchment Area (sq.km)	Monthly Mean Rainfall (mm)												Annual
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
5AA	1,247	28.5	32.9	59.8	112.9	76.3	49.8	71.4	80.6	50.8	56.0	85.8	40.8	745.6
5AB	482	29.6	34.3	63.9	112.5	59.3	42.8	67.9	71.4	45.1	55.6	96.8	42.7	721.9
5AC	1,085	18.8	20.6	46.8	101.0	71.1	38.2	60.3	66.3	28.8	43.0	71.5	30.5	596.9
5AD	517	22.9	25.9	53.9	103.2	61.3	37.6	62.6	67.2	33.6	46.6	83.5	35.7	634.0
5BA	269	45.0	44.9	73.6	159.7	129.2	34.7	40.9	41.4	36.5	99.7	124.8	68.8	899.2
5BB	452	45.9	47.0	74.9	157.9	129.6	45.4	50.8	53.3	48.4	94.8	120.9	66.9	935.8
5BC	1,636	27.0	31.9	65.9	132.0	87.9	42.2	47.1	62.5	47.6	82.3	111.7	51.0	789.1
5BD	674	28.3	32.9	62.4	109.4	55.1	40.3	67.3	70.1	41.7	52.9	95.1	41.2	696.7
5BE	1,238	29.4	33.6	74.3	143.9	89.7	37.9	34.2	50.0	39.6	104.5	136.9	66.8	840.8
5CA	2,342	15.3	19.0	39.4	86.9	69.1	45.8	68.2	78.7	29.8	40.6	60.5	24.1	577.4
5CB	2,259	17.6	23.6	42.3	84.3	61.4	50.4	73.4	83.6	33.7	44.0	61.0	22.9	598.2
5CC	3,005	23.0	28.2	52.6	96.9	58.6	37.8	51.9	55.8	25.5	48.4	70.6	26.8	576.1
5DA	2,237	40.9	38.5	90.6	142.3	47.9	19.3	10.1	15.4	13.5	106.2	177.7	91.5	793.9
5DB	1,286	29.6	30.0	71.0	126.9	63.4	28.5	26.9	38.3	27.3	85.0	131.3	63.4	721.6
5DC	1,268	14.6	15.3	40.7	96.6	78.4	35.9	53.2	63.1	24.1	41.2	66.2	28.3	557.6
5DD	1,883	22.9	23.8	52.8	99.5	59.3	36.2	49.5	58.4	24.4	51.8	90.9	40.9	610.4
5EA	25,393	9.4	7.9	41.4	101.9	44.5	3.9	3.6	3.4	5.4	44.7	71.8	24.1	362.0
5EB	27,092	10.4	9.9	39.1	114.2	53.1	5.2	4.5	4.4	6.8	55.7	66.1	25.5	394.9
5EC	29,264	21.1	15.2	47.0	143.7	45.3	4.6	5.7	6.6	5.3	60.9	94.3	32.9	482.6
5ED	17,936	15.7	15.6	42.0	93.6	18.9	3.7	1.3	2.5	4.2	37.8	106.8	48.2	390.3
5FA	18,485	9.3	7.7	40.5	88.3	12.3	2.5	1.5	2.8	4.9	28.0	80.3	44.8	322.9
5FB	8,171	8.2	7.3	29.8	93.1	14.0	2.1	1.0	2.0	4.1	23.6	68.9	36.9	291.0
5GA	22,579	7.5	5.4	42.8	113.2	51.0	4.6	5.4	5.6	8.8	56.2	63.1	21.4	385.0
5GB	3,379	1.5	5.2	21.8	92.7	38.2	0.8	1.5	0.5	2.1	43.2	50.0	6.0	263.5
5H	6,784	2.9	4.6	28.5	95.9	37.5	1.3	2.3	1.8	3.7	44.0	53.4	10.8	286.7
5J	29,263	19.8	16.1	41.9	98.5	38.1	6.2	10.8	7.4	4.8	38.8	63.7	24.8	370.9

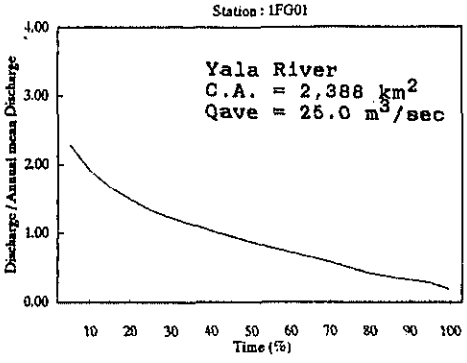
APPENDIX B.7

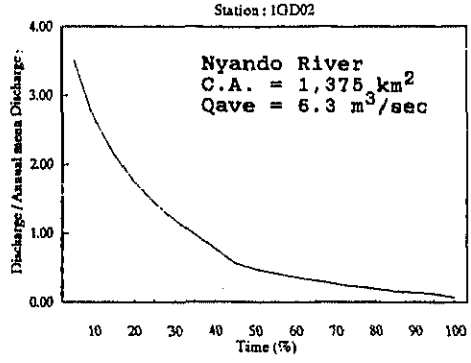
Dimensionless Flow Duration Curve

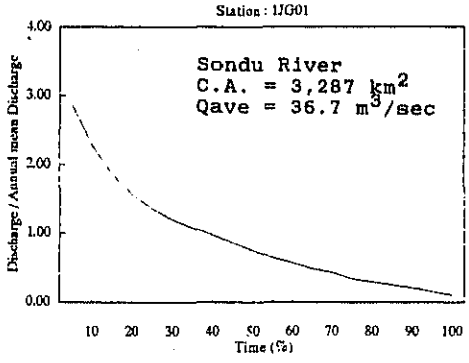
Fig.

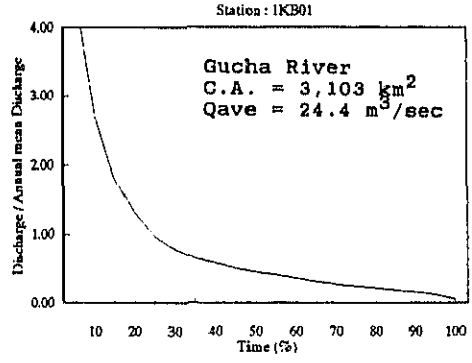


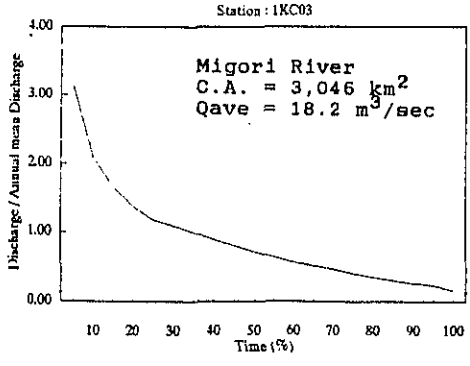


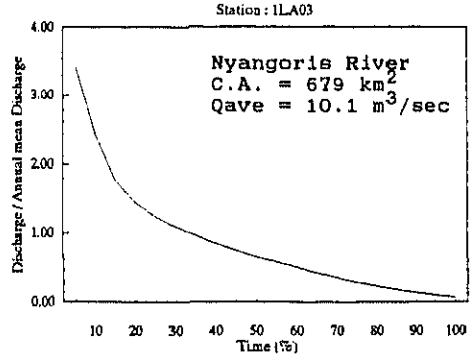












Legend : C.A. means catchment area
Qave means mean annual discharge

Figure B.7.1 Flow Duration Curve (Drainage Area 1)

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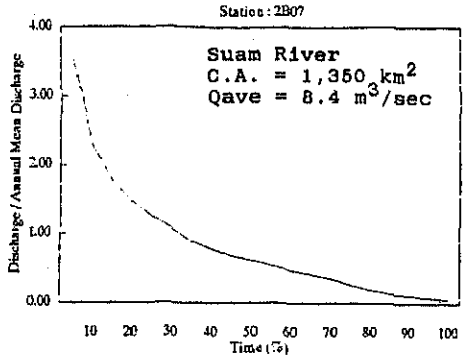
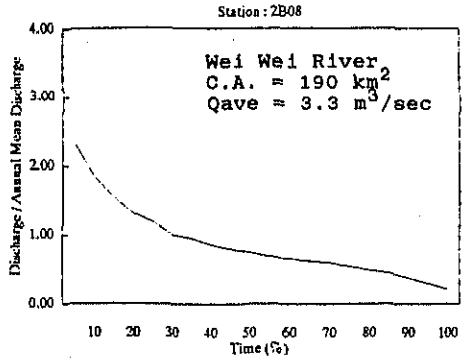
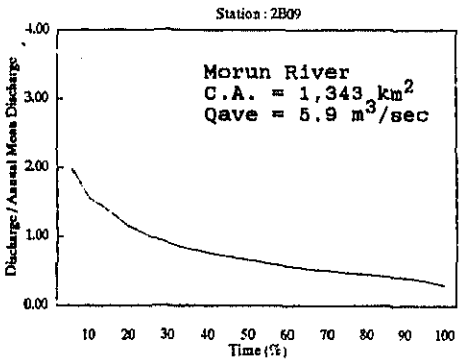
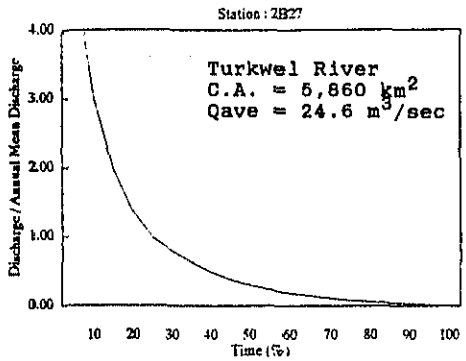
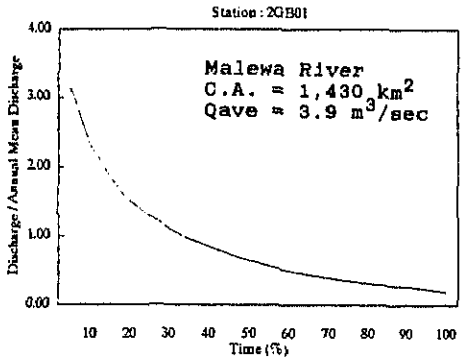
Fig.

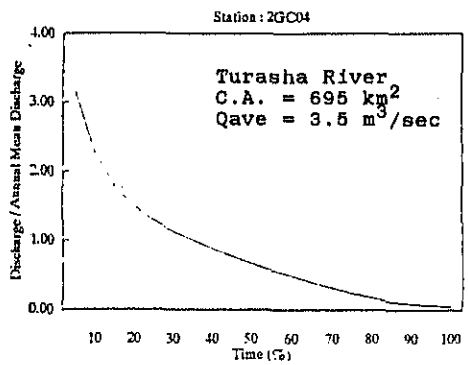


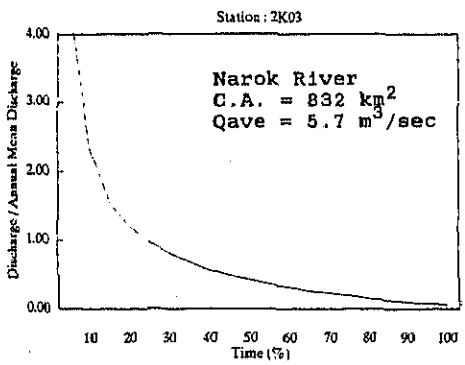


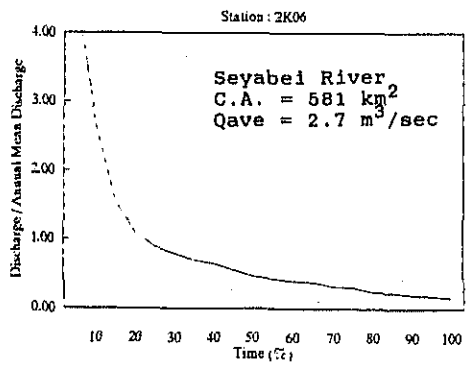












Legend : C.A. means catchment area
Qave means mean annual discharge

Figure B.7.2 Flow Duration Curve
(Drainage Area 2)

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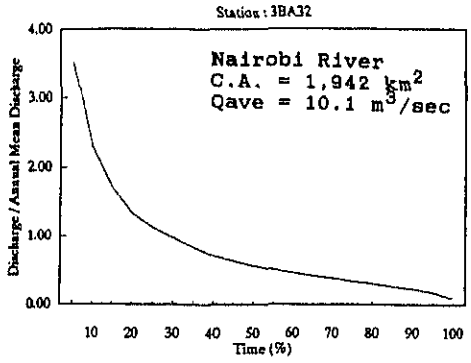
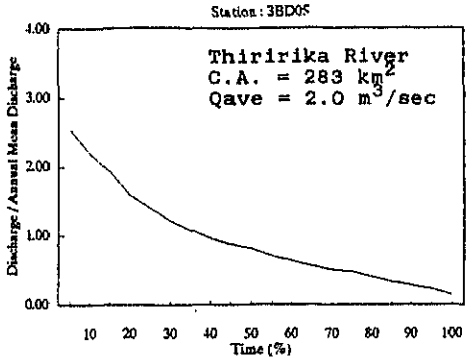
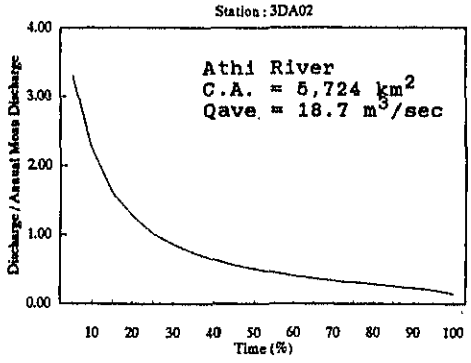
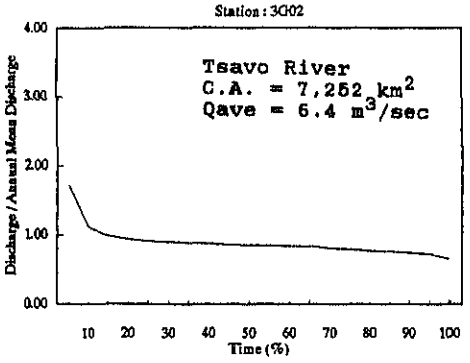
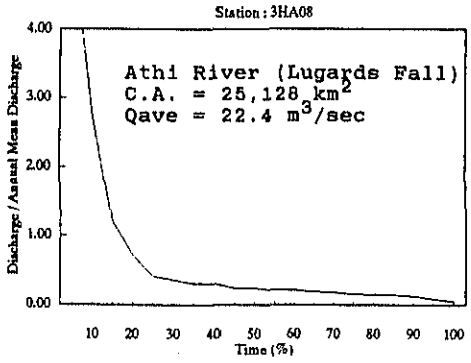
Fig.

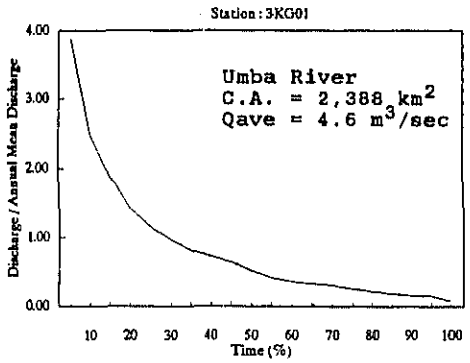


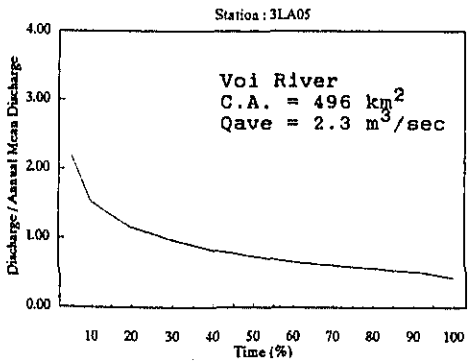


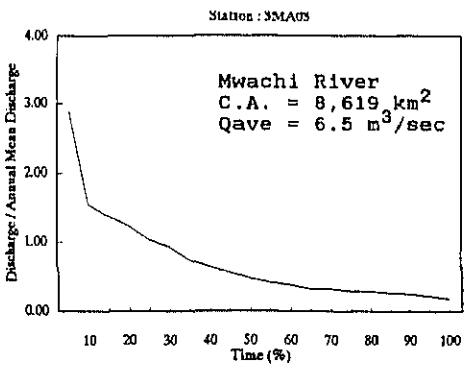












Legend : C.A. means catchment area
Qave means mean annual discharge

Figure B.7.3 Flow Duration Curve
(Drainage Area 3)

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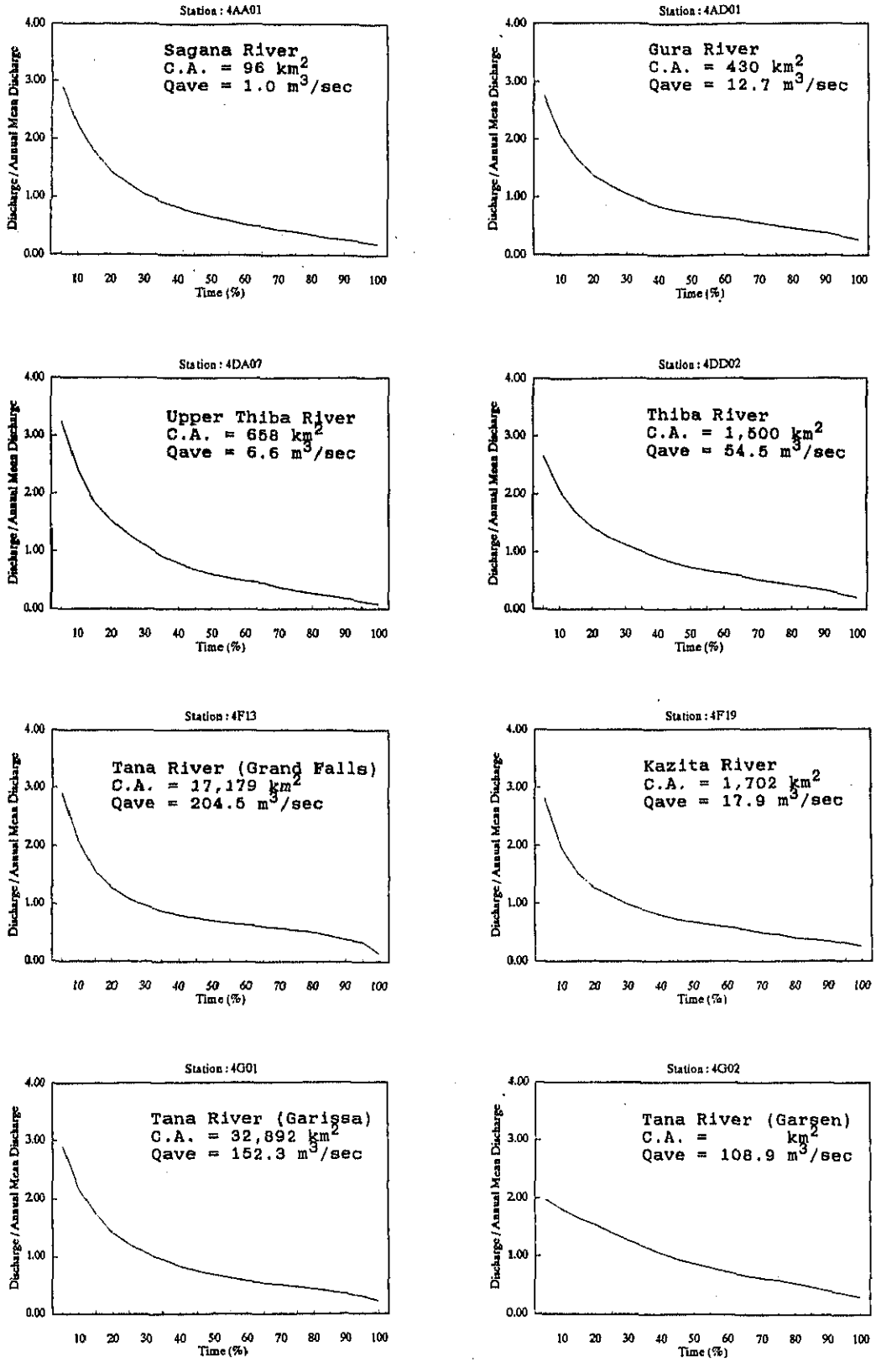
Fig.



Legend : C.A. means catchment area
Qave means mean annual discharge

Figure B.7.4 Flow Duration Curve
(Drainage Area 4)

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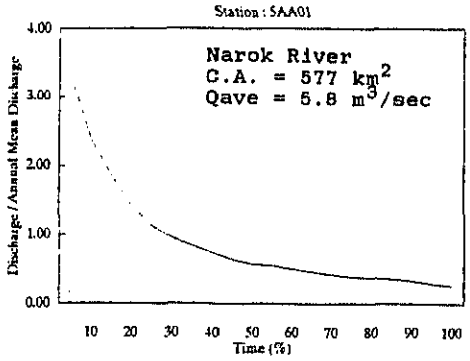
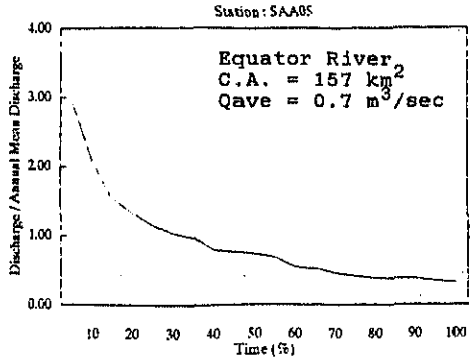
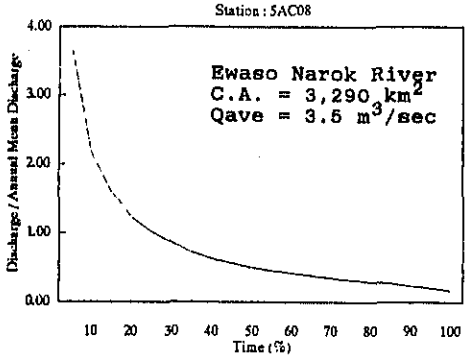
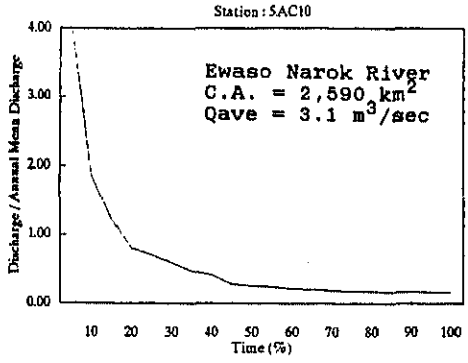
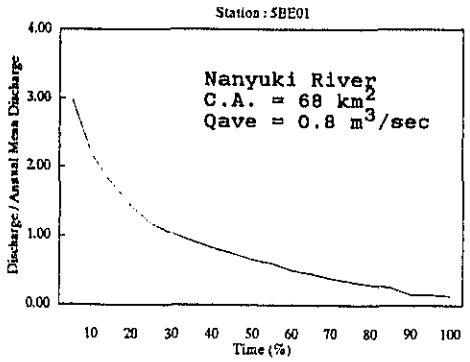
Fig.

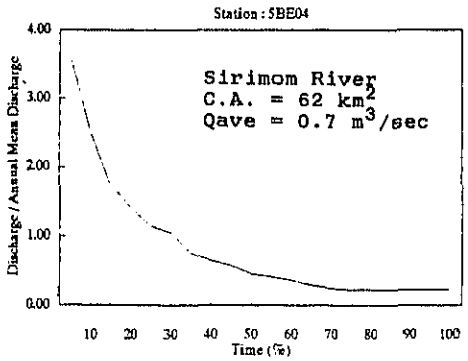


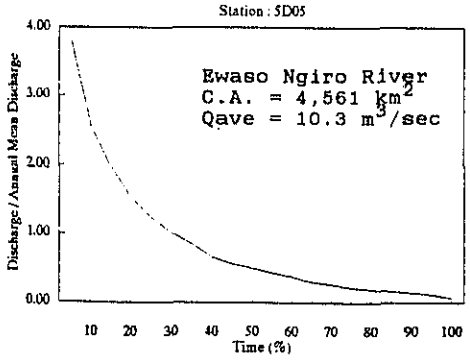


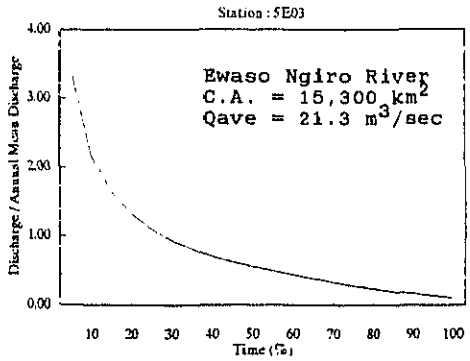












Legend : C.A. means catchment area
Qave means mean annual discharge

Figure B.7.5 Flow Duration Curve
(Drainage Area 5)

THE STUDY
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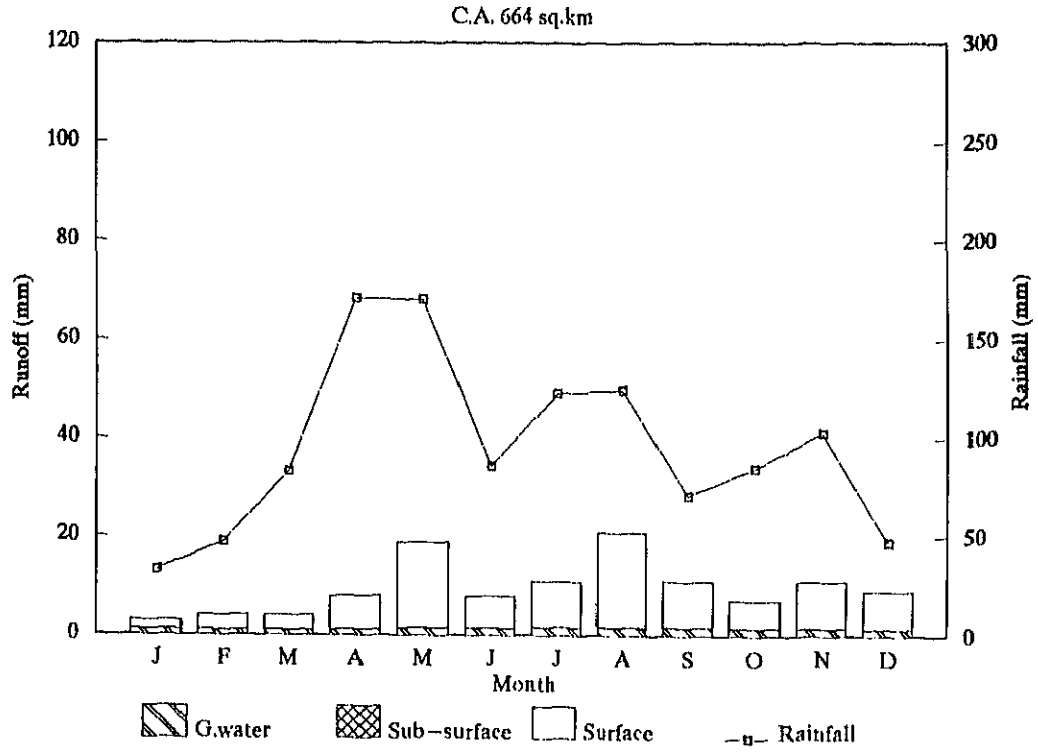
APPENDIX B.8

Water Balance Calculation for Uppermost Catchment

Fig.

Subbasin : 1BA



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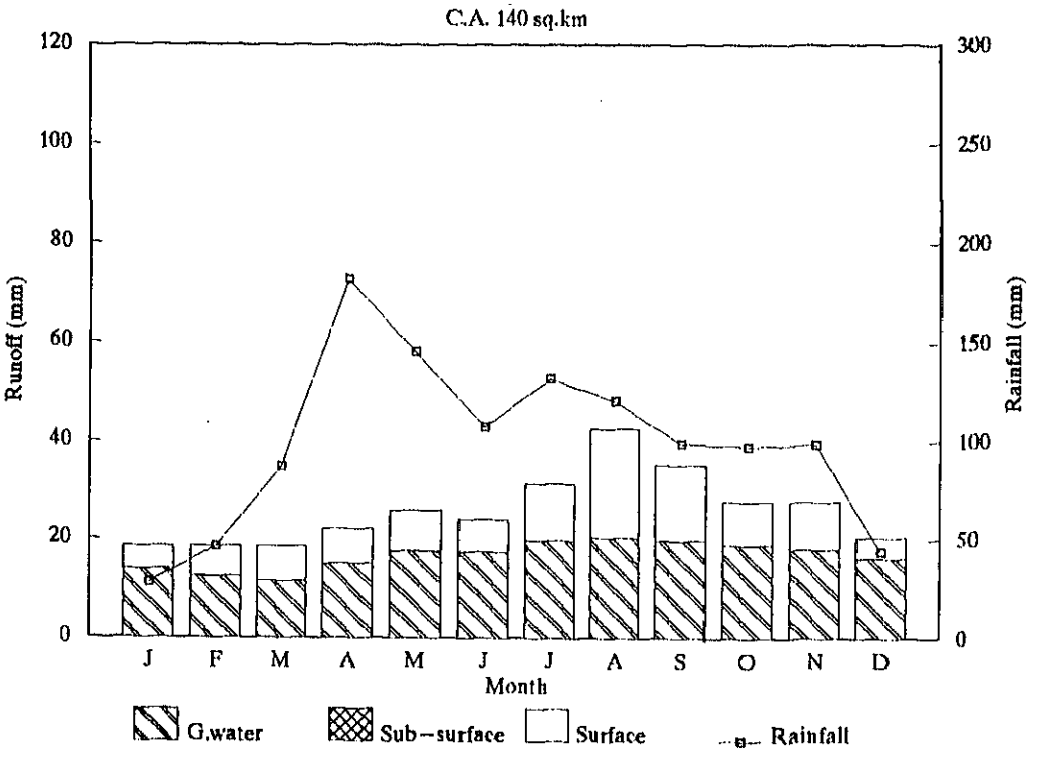

Figure B.8.1
Water Balance Calculation (1/7)

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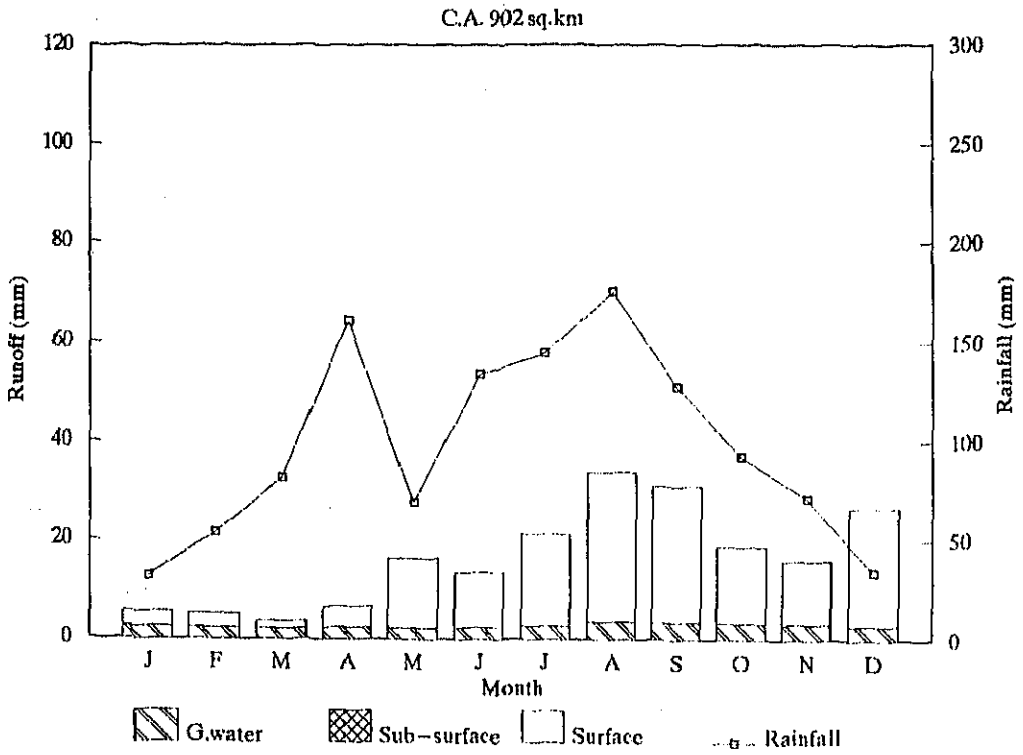
Fig.

Subbasin : 1BG



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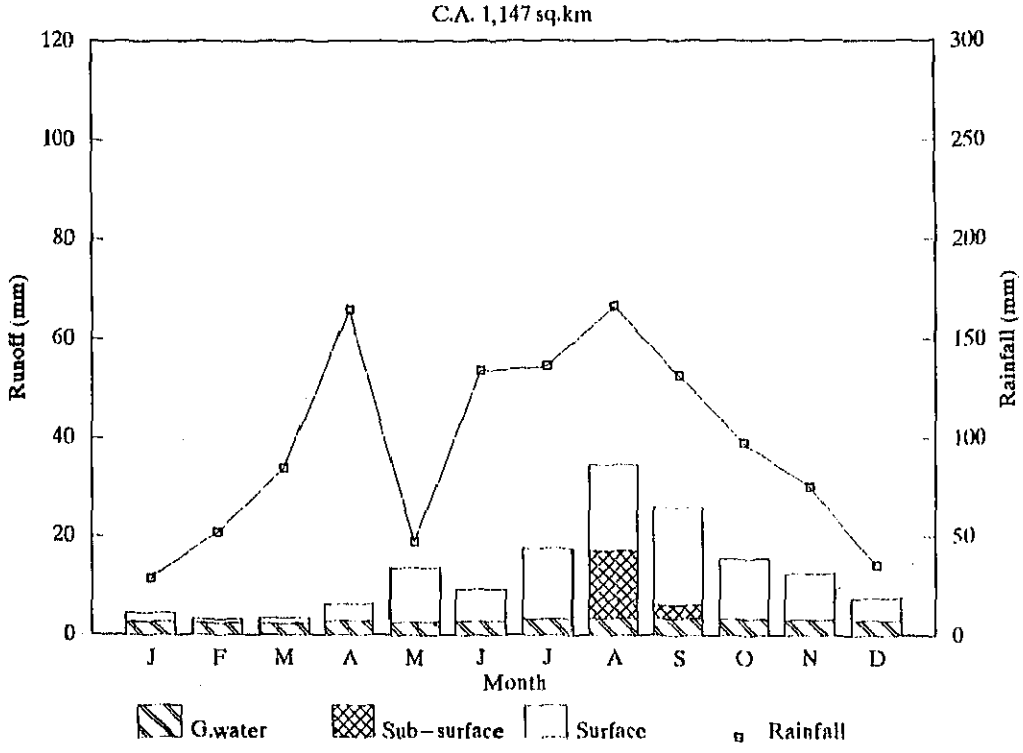

Figure B.8.2
Water Balance Calculation (2/7)

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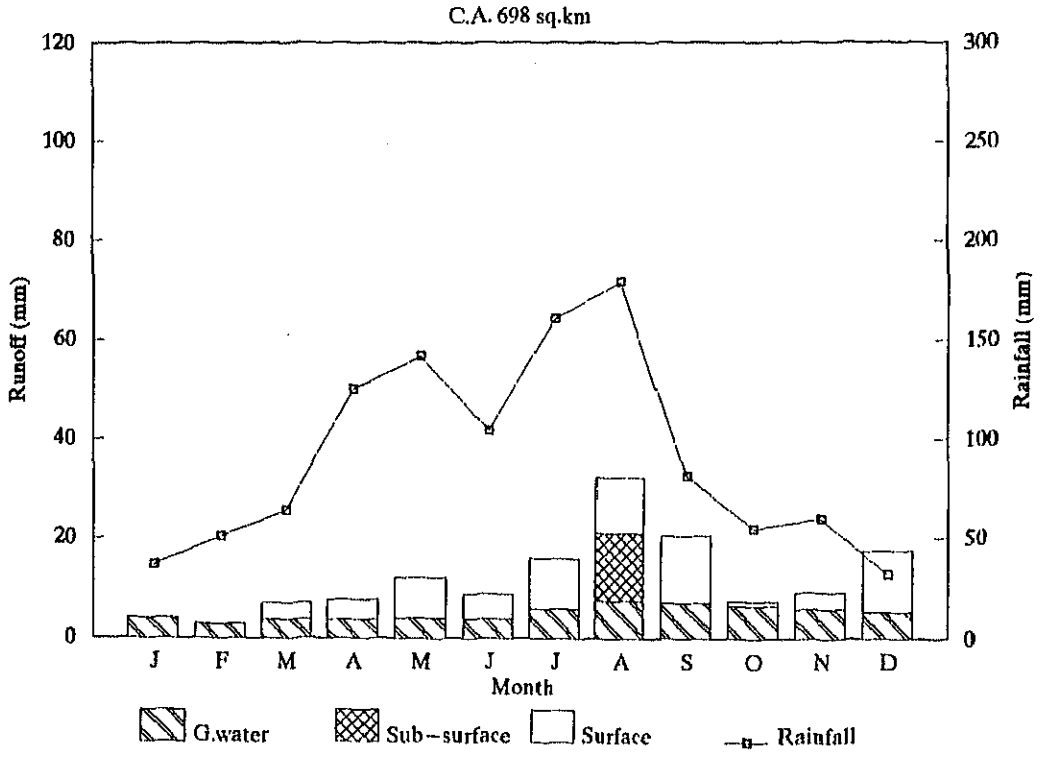
Fig.

Subbasin : 1CA



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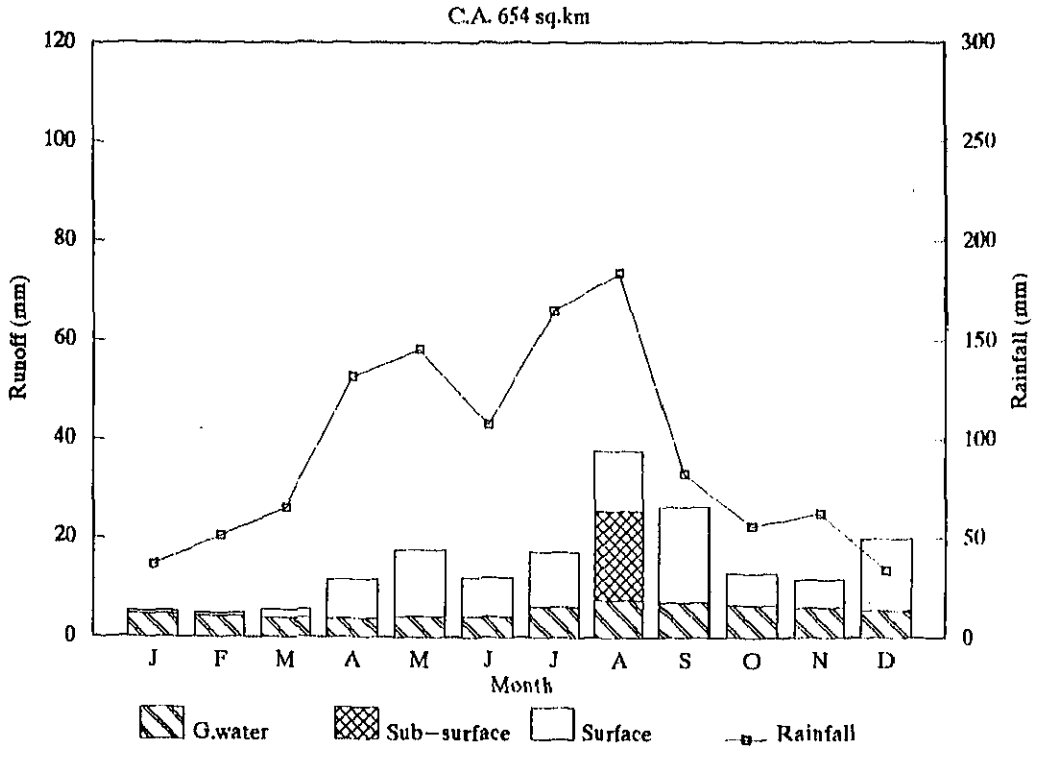

Figure B.8.3
Water Balance Calculation (3/7)

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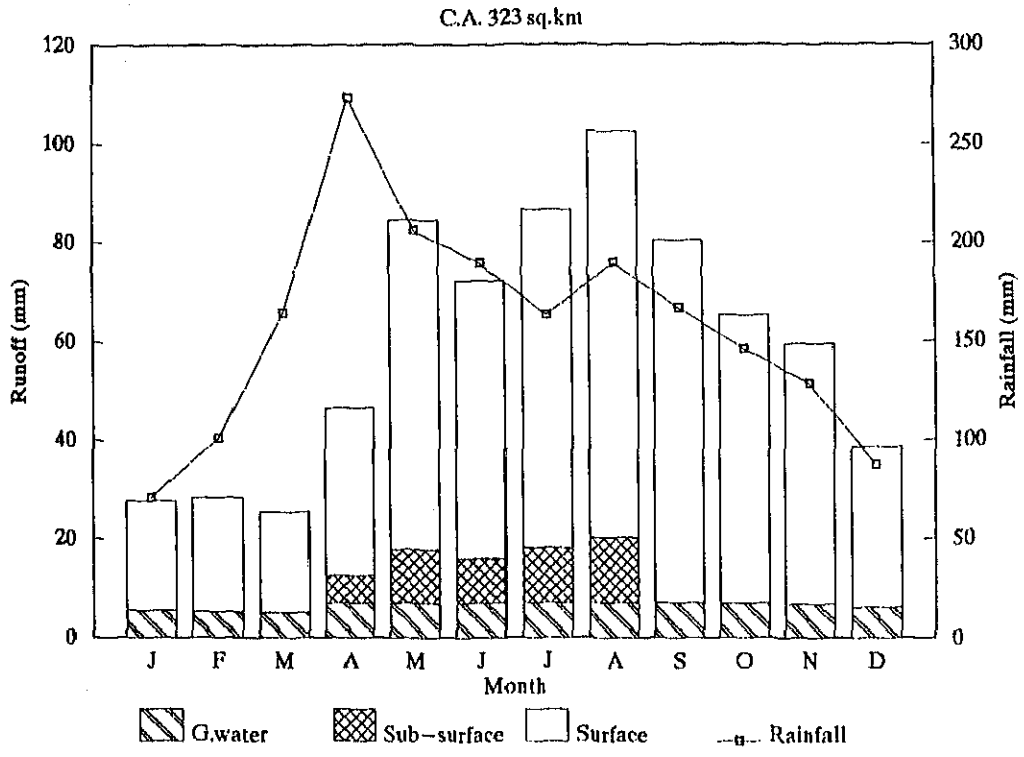
Fig.

Subbasin : 1EB



Subbasin : 1FF

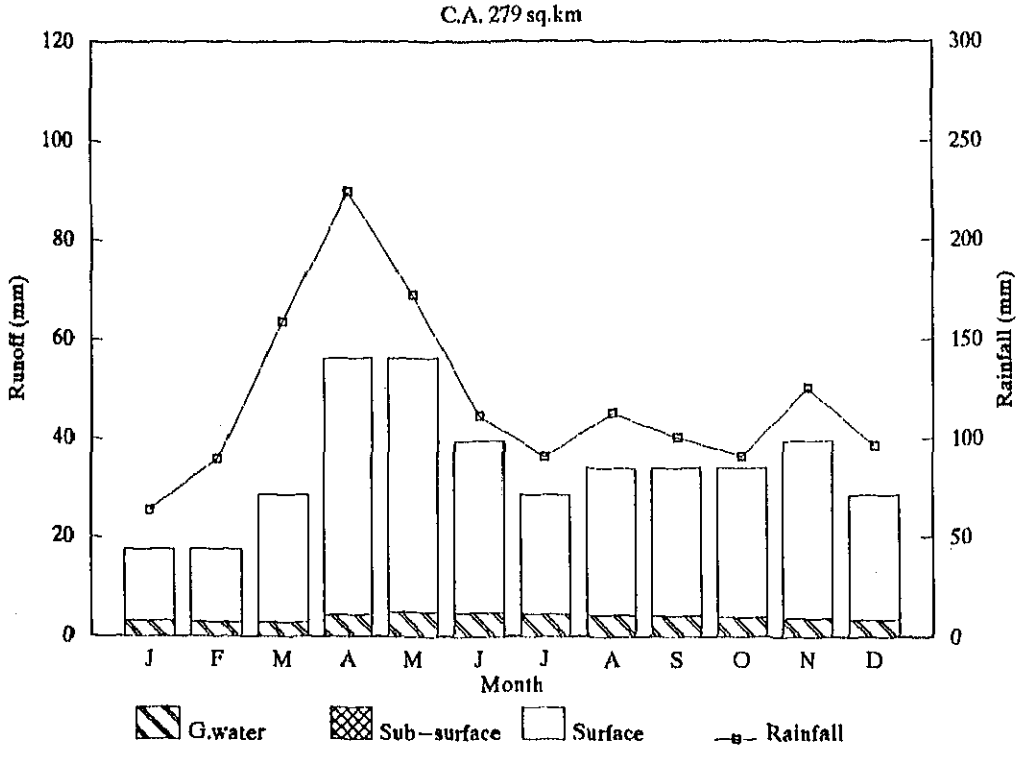


Figure B.8.4
Water Balance Calculation (4/7)

THE STUDY
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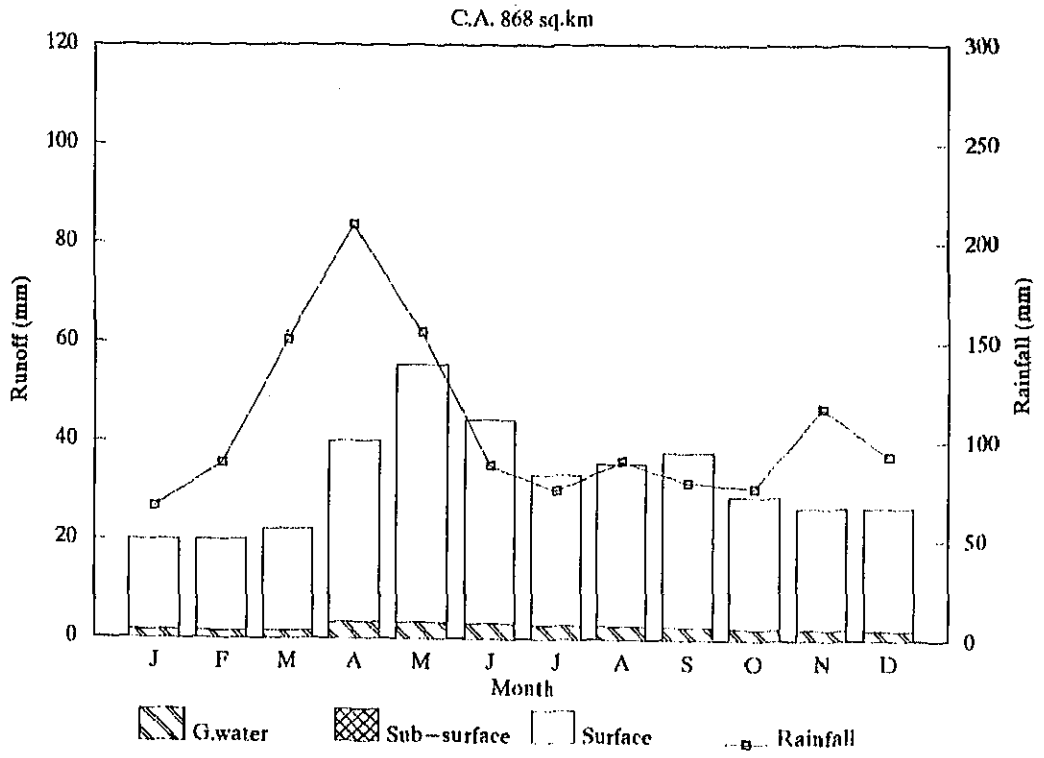
Fig.

Subbasin : 1HA



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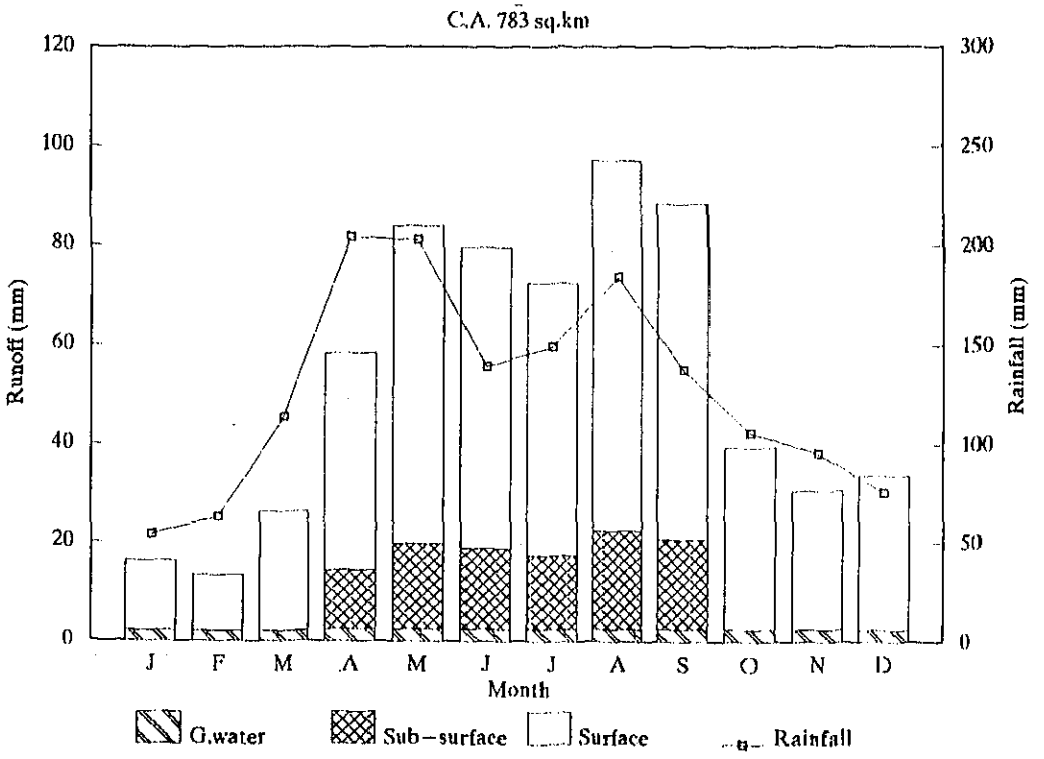

Figure B.8.5
Water Balance Calculation (5/7)

THE STUDY
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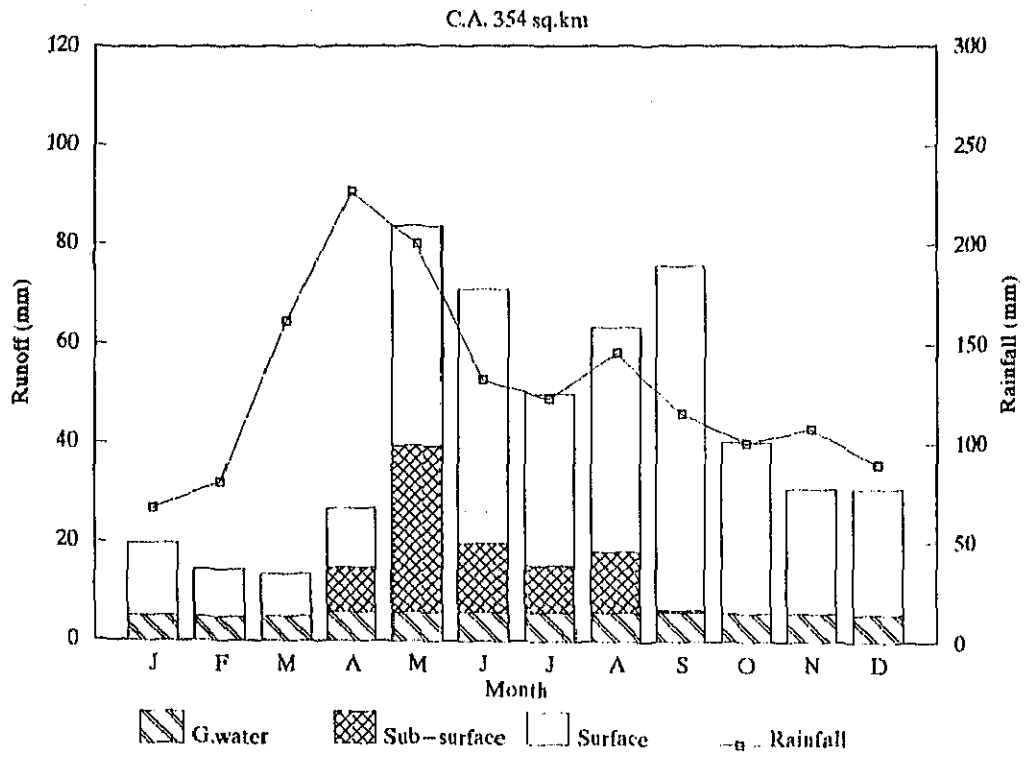
Fig.

Subbasin : 1JC



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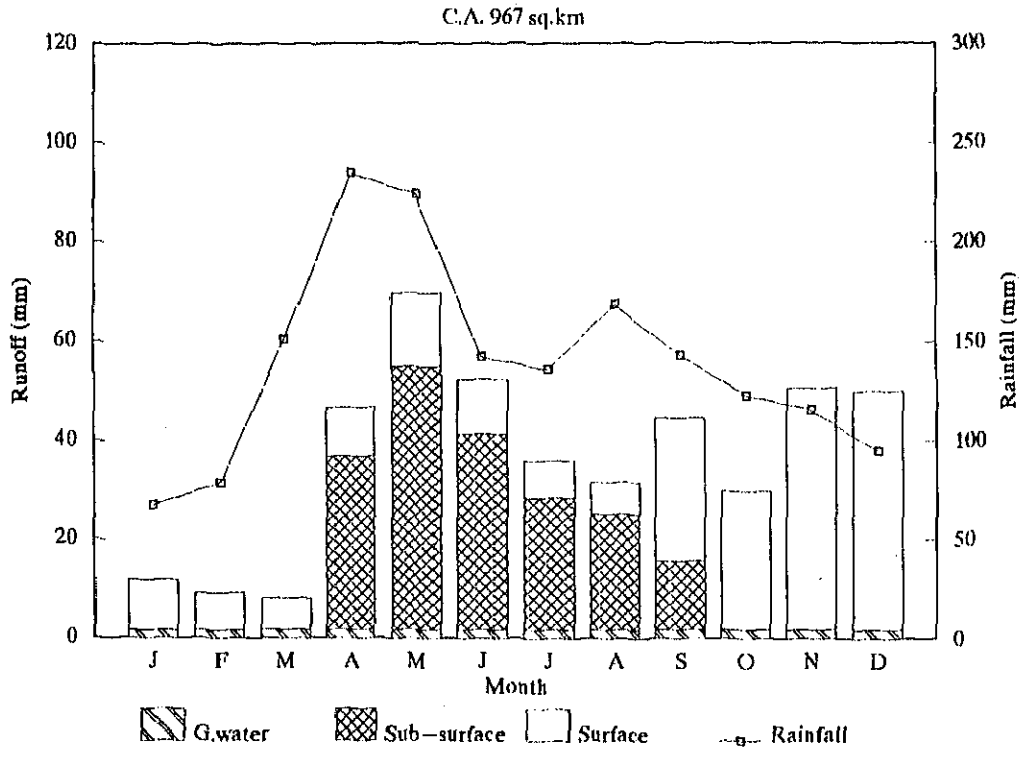

Figure B.8.6
Water Balance Calculation (6/7)

THE STUDY
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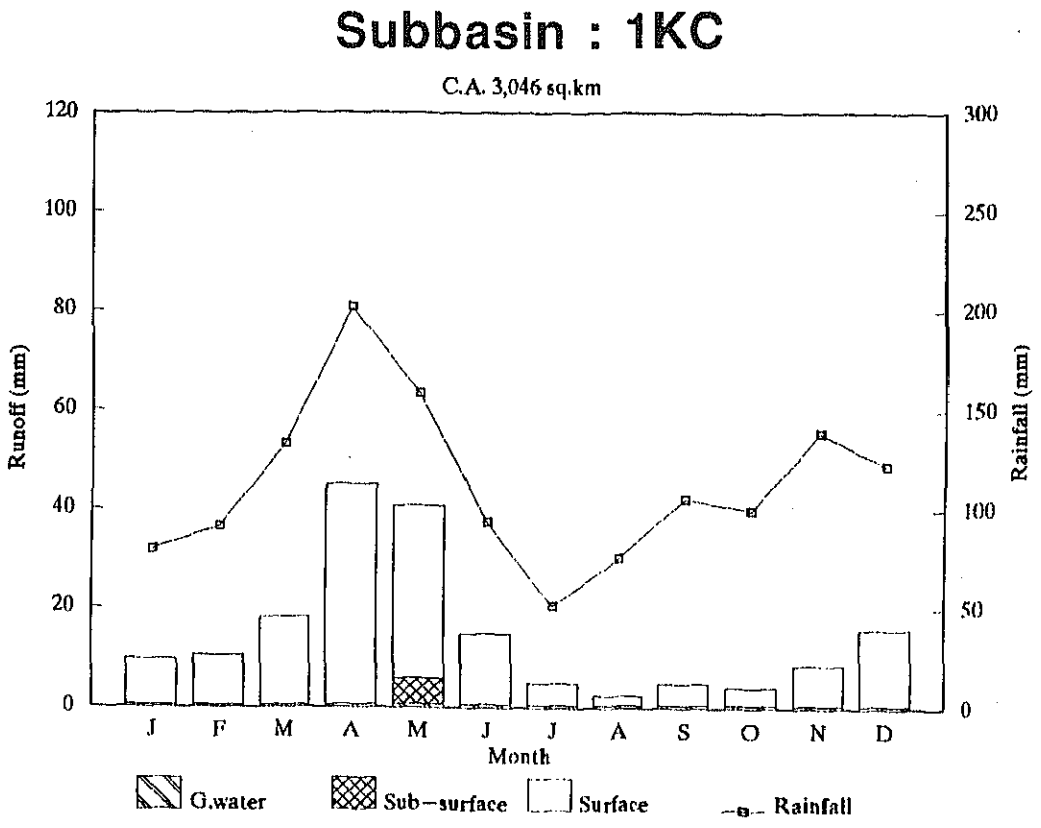
Fig.



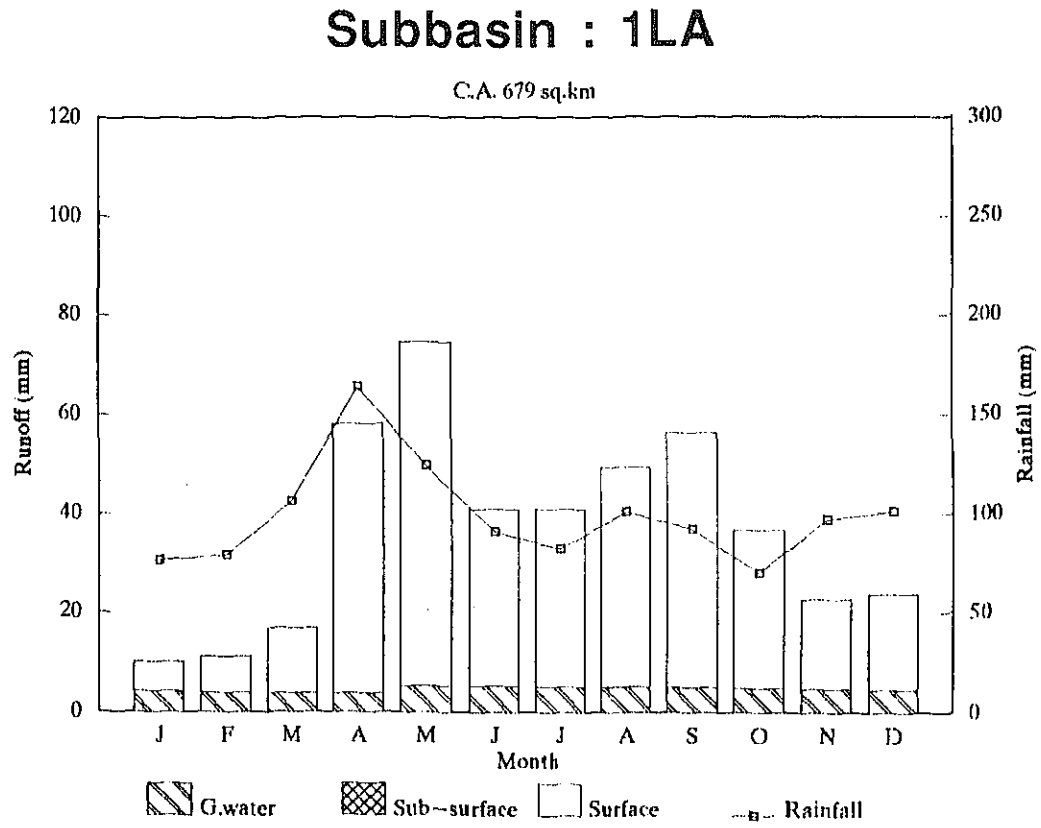


Figure B.8.7
Water Balance Calculation (7/7)

THE STUDY
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JAPAN INTERNATIONAL COOPERATION AGENCY

APPENDIX B.9

Simulated Discharge for Selected Rivers

Fig.

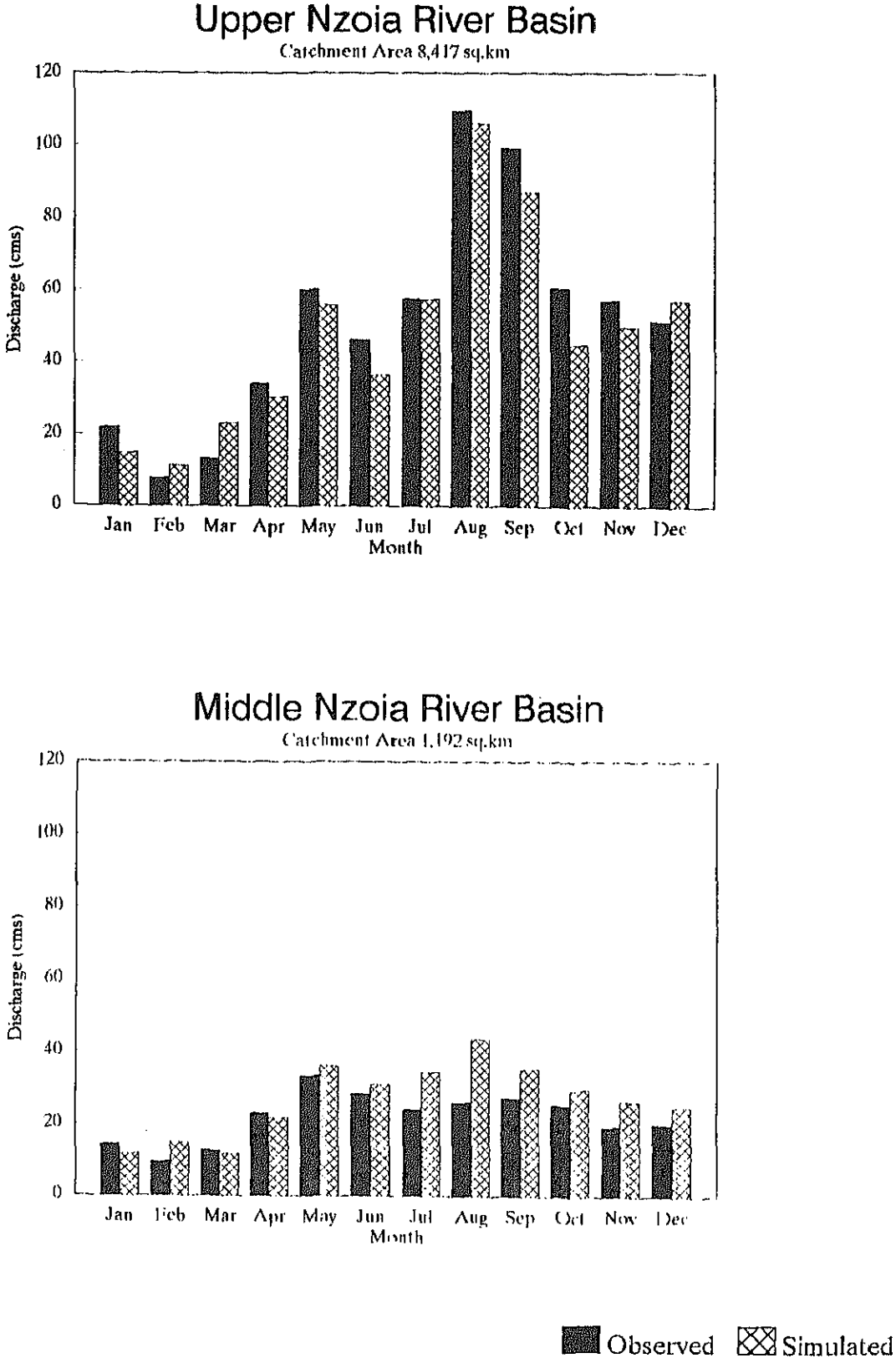

Figure B.9.1 Simulated Discharge for Major Rivers (1/3)

THE STUDY
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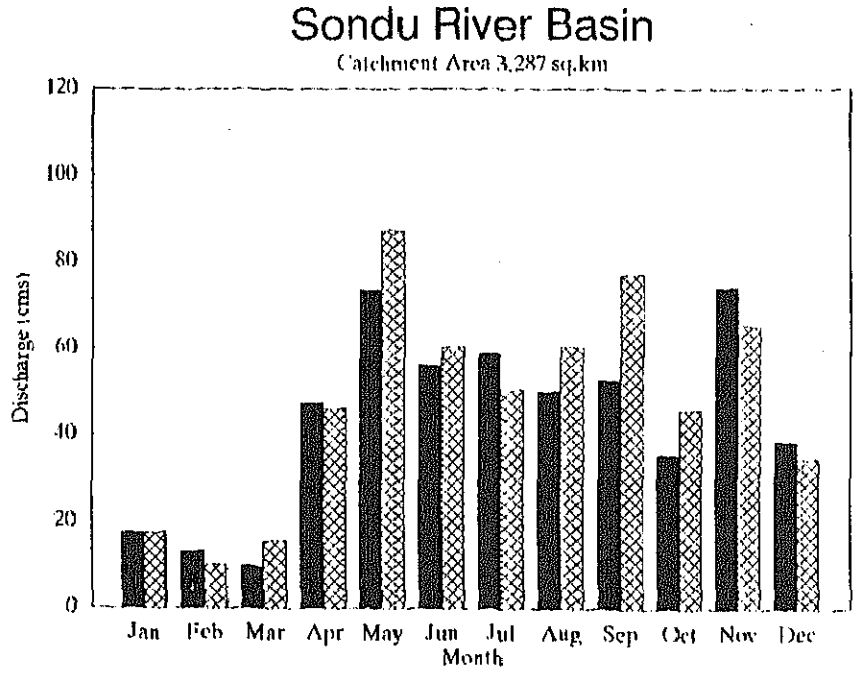
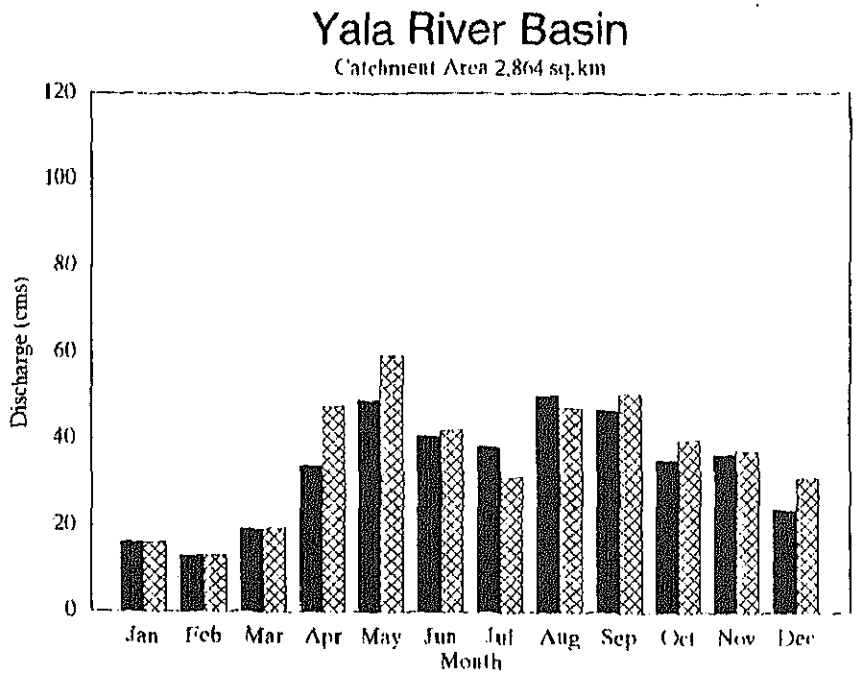
Fig.





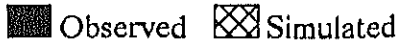


Figure B.9.2 Simulated Discharge for Major Rivers (2/3)

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Fig.

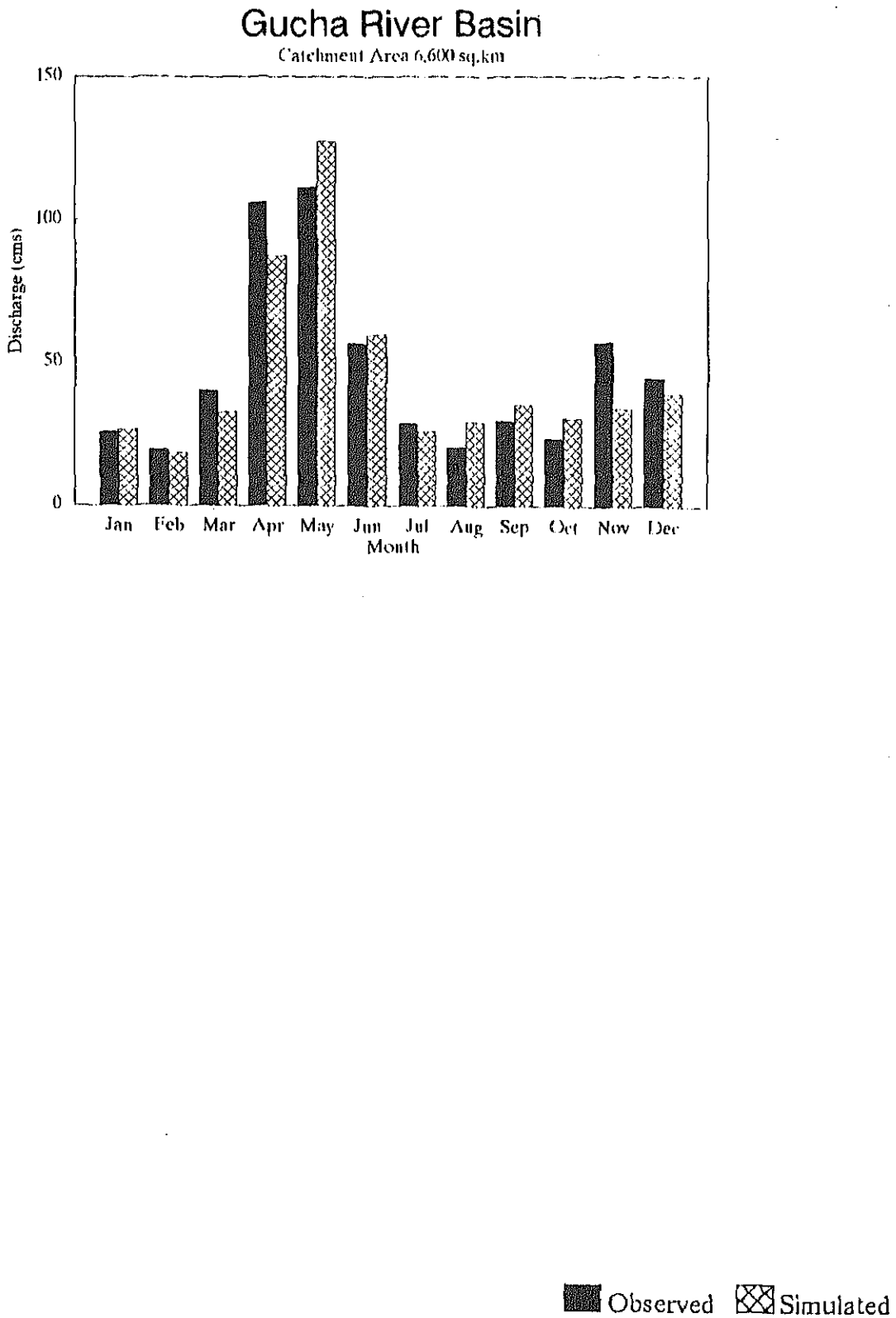

Figure B.9.3 Simulated Discharge for Major Rivers (3/3)

THE STUDY
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APPENDIX B.10

Monthly Mean Naturalized Discharge

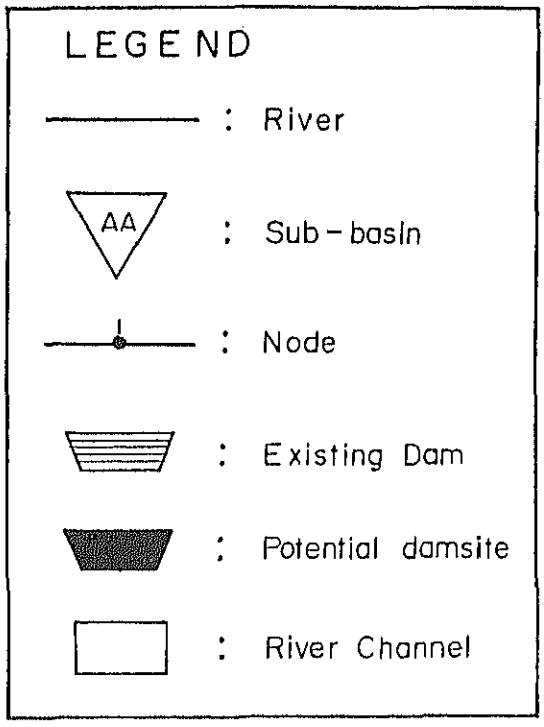
LEGEND
: River
AA
: Sub - basin
: Node
: Existing Dam
: Potential damsite
: River Channel

Fig.

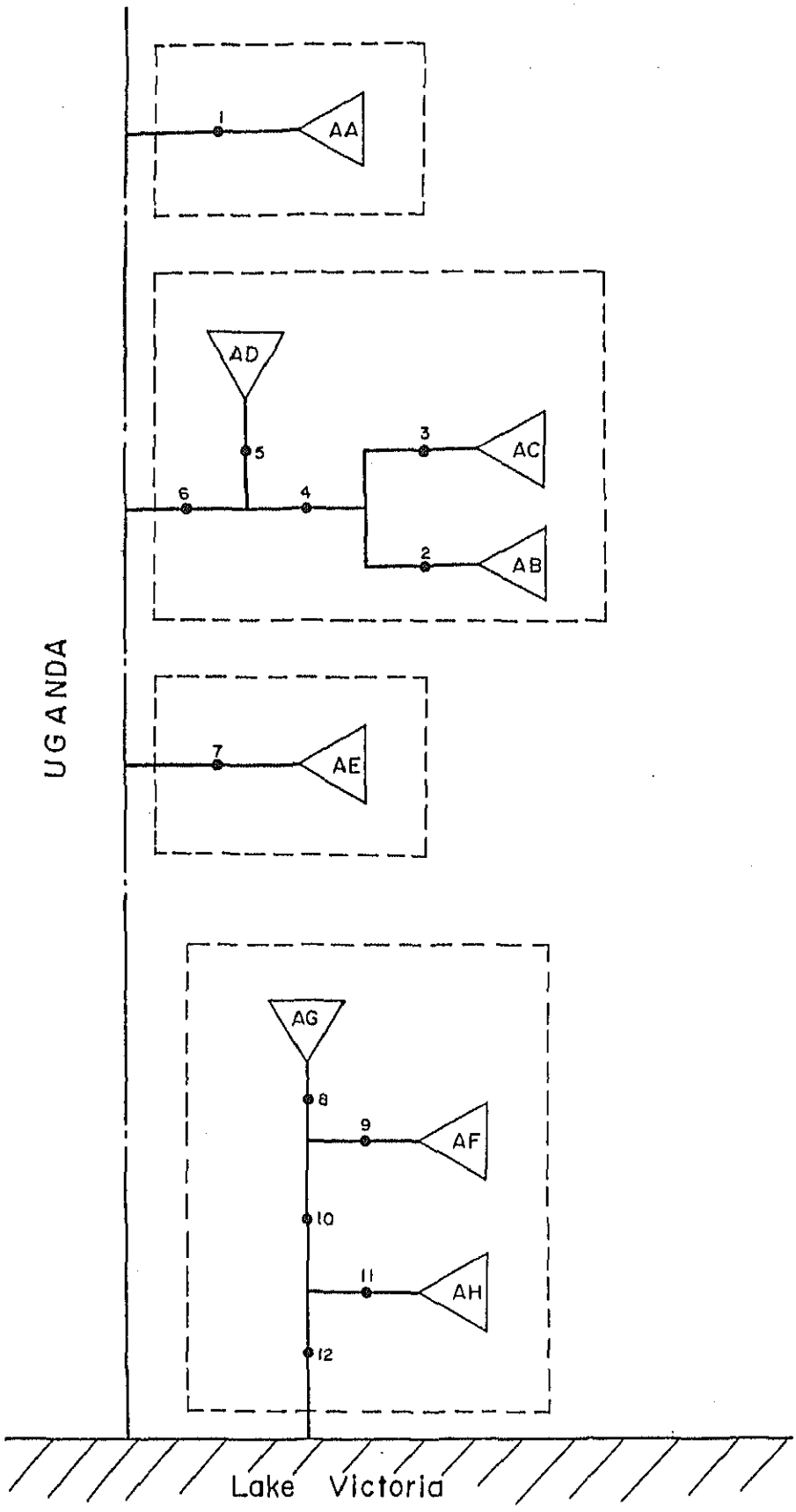

Figure B.10.1

Sio River Basin

THE STUDY
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Table B10.1 Naturalized Mean Monthly Discharge in the Sio River

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	.8	.7	.8	1.7	2.7	2.0	1.5	1.7	1.8	2.0	2.1	1.2	1.6
2	.9	.8	1.0	2.0	3.2	2.3	1.9	2.0	2.2	2.4	2.5	1.5	1.9
3	.4	.3	.4	.8	1.3	1.0	.8	.8	.9	1.0	1.0	.6	.8
4	1.3	1.1	1.4	2.8	4.5	3.3	2.6	2.8	3.0	3.4	3.6	2.0	2.7
5	.7	.6	.8	1.5	2.4	1.8	1.4	1.5	1.6	1.8	1.9	1.1	1.4
6	2.1	1.9	2.3	4.5	7.0	5.2	4.1	4.5	4.8	5.3	5.6	3.3	4.2
7	.5	.4	.5	2.1	3.8	2.6	1.4	1.2	1.4	1.6	1.8	1.0	1.5
8	.9	.7	1.0	4.3	7.6	5.3	2.8	2.4	2.8	3.3	3.7	2.0	3.1
9	1.0	.8	1.2	4.9	8.7	6.1	3.2	2.7	3.2	3.7	4.2	2.3	3.5
10	2.0	1.6	2.2	9.3	16.4	11.3	5.9	5.1	5.9	7.0	7.9	4.3	6.6
11	1.4	1.1	1.6	6.8	12.0	8.3	4.3	3.7	4.3	5.1	5.8	3.1	4.8
12	3.4	2.7	3.8	16.1	28.4	19.7	10.3	8.8	10.3	12.1	13.8	7.5	11.4

Fig.

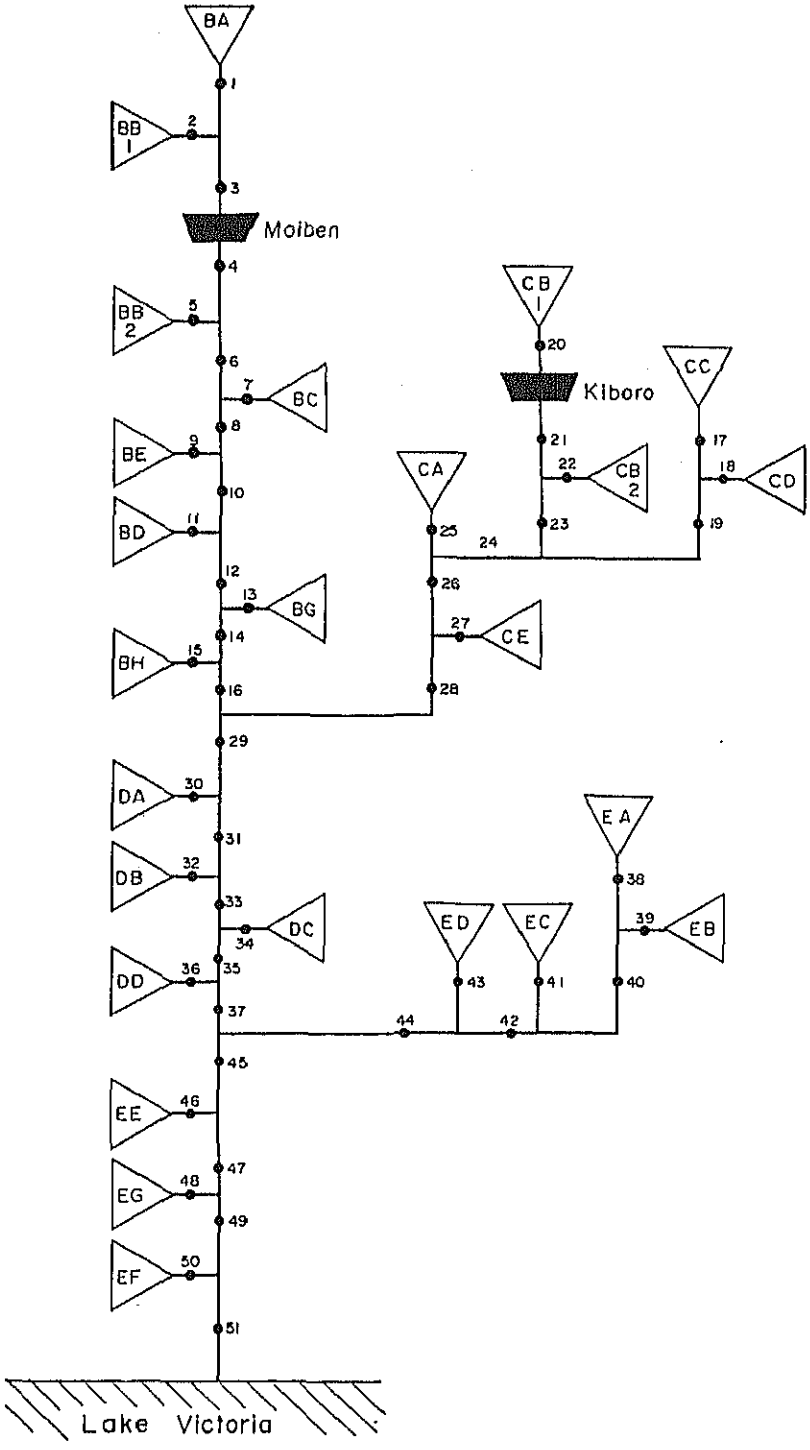

Figure B.10.2

Nzoia River Basin

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Table B10.2 Naturalized Mean Monthly Discharge in the Nzoia River

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	1.2	1.3	1.2	2.0	4.6	2.0	2.7	5.1	2.7	1.8	2.7	2.3	2.4
2	.1	.1	.1	.1	.1	.1	.1	.2	.1	.1	.1	.1	.1
3	1.2	1.4	1.3	2.1	4.7	2.0	2.8	5.2	2.8	1.9	2.8	2.3	2.5
4	1.2	1.4	1.3	2.1	4.7	2.0	2.8	5.2	2.8	1.9	2.8	2.3	2.5
5	3.7	3.7	3.7	4.8	7.0	5.1	6.8	10.1	7.4	5.6	6.2	4.7	5.7
6	4.9	5.1	5.0	6.9	11.7	7.2	9.5	15.3	10.2	7.5	9.0	7.1	8.3
7	4.2	5.0	4.6	6.4	8.0	8.7	11.7	15.1	13.1	7.1	6.8	4.4	7.9
8	9.1	10.1	9.6	13.3	19.7	15.9	21.2	30.4	23.3	14.6	15.8	11.5	16.2
9	2.3	1.6	1.7	2.5	5.3	4.9	8.1	14.7	11.4	6.0	4.9	3.2	5.5
10	11.4	11.8	11.3	15.8	25.0	20.8	29.3	45.1	34.7	20.6	20.7	14.7	21.8
11	1.5	1.1	1.1	1.7	3.5	3.3	5.4	9.9	7.6	4.0	3.3	2.1	3.7
12	12.9	12.9	12.4	17.5	28.5	24.0	34.7	55.0	42.3	24.6	24.0	16.8	25.5
13	2.4	2.1	1.6	2.3	5.7	4.7	7.4	11.9	10.9	6.6	5.6	9.4	5.9
14	15.3	15.0	13.9	19.9	34.2	28.7	42.1	66.9	53.2	31.1	29.6	26.1	31.3
15	1.8	1.8	1.3	2.0	4.7	3.3	4.6	7.1	7.8	5.3	5.1	9.1	4.5
16	17.1	16.7	15.3	21.8	38.8	32.0	46.7	74.0	60.9	36.4	34.7	35.3	35.8
17	2.2	1.8	2.0	3.7	4.9	3.7	4.3	10.0	9.0	4.6	4.2	7.1	4.8
18	1.7	1.4	1.6	2.9	3.9	2.9	3.3	7.9	7.1	3.6	3.3	5.5	3.8
19	3.9	3.2	3.6	6.5	8.8	6.6	7.6	17.9	16.1	8.1	7.5	12.6	8.5
20	1.6	1.5	1.5	2.8	4.1	2.8	4.0	8.9	6.2	3.0	2.8	4.8	3.7
21	1.6	1.5	1.5	2.8	4.1	2.8	4.0	8.9	6.2	3.0	2.8	4.8	3.7
22	.2	.2	.2	.3	.4	.3	.4	.9	.6	.3	.3	.5	.4
23	1.7	1.6	1.6	3.1	4.5	3.1	4.4	9.8	6.8	3.3	3.1	5.3	4.0
24	5.6	4.8	5.3	9.6	13.3	9.8	12.0	27.7	22.9	11.4	10.6	17.9	12.6
25	1.5	1.3	2.0	2.2	3.2	2.4	4.2	8.5	5.4	2.0	2.6	4.7	3.3
26	7.1	6.0	7.3	11.7	16.5	12.1	16.2	36.2	28.3	13.5	13.1	22.6	15.9
27	.5	.4	.7	.7	1.1	.8	1.4	2.9	1.8	.7	.9	1.6	1.1
28	7.6	6.5	7.9	12.5	17.6	12.9	17.6	39.1	30.2	14.2	14.0	24.2	17.0
29	24.7	23.2	23.2	34.3	56.5	45.0	64.3	113.1	91.1	50.6	48.7	59.5	52.8
30	1.7	1.8	1.3	2.0	4.6	2.9	3.4	5.1	6.8	5.1	5.5	10.3	4.2
31	26.4	25.0	24.5	36.3	61.1	47.8	67.7	118.2	97.9	55.7	54.2	69.7	57.0
32	2.3	2.4	1.8	2.7	6.2	3.8	4.6	6.8	9.1	6.8	7.4	13.8	5.6
33	28.8	27.3	26.3	39.0	67.3	51.7	72.3	124.9	107.0	62.6	61.6	83.5	62.7
34	1.5	1.3	1.0	1.5	3.4	2.3	2.6	4.1	5.1	3.9	3.9	8.0	3.2
35	30.2	28.7	27.4	40.5	70.7	54.0	74.9	129.1	112.1	66.5	65.6	91.5	65.9
36	1.4	1.3	1.0	1.5	3.3	2.3	2.5	4.1	4.9	3.8	3.7	7.7	3.1
37	31.7	30.0	28.4	41.9	73.9	56.3	77.3	133.1	117.0	70.2	69.3	99.2	69.0
38	5.1	5.4	4.5	8.0	14.1	12.6	17.5	19.6	14.7	11.1	10.3	6.8	10.8
39	4.5	4.8	4.0	7.1	12.5	11.1	15.5	17.4	13.1	9.8	9.1	6.0	9.6
40	9.6	10.3	8.4	15.1	26.6	23.7	33.1	37.0	27.8	20.9	19.3	12.8	20.4
41	2.5	2.5	2.4	4.4	8.0	6.7	7.2	9.0	7.3	6.2	5.6	3.6	5.5
42	12.2	12.8	10.8	19.5	34.6	30.4	40.3	46.0	35.1	27.1	24.9	16.4	25.8
43	1.3	1.3	1.2	2.2	4.1	3.5	3.7	4.6	3.7	3.2	2.9	1.8	2.8
44	13.5	14.1	12.0	21.7	38.7	33.9	44.0	50.6	38.8	30.3	27.8	18.2	28.6
45	45.2	44.0	40.4	63.7	112.7	90.2	121.4	183.7	155.8	100.5	97.1	117.4	97.7
46	4.1	4.1	3.8	7.0	12.9	10.8	11.6	14.4	11.7	9.9	9.0	5.8	8.8
47	49.3	48.1	44.3	70.7	125.6	101.0	133.0	198.1	167.5	110.5	106.1	123.2	106.4
48	5.5	5.5	5.2	9.5	17.5	14.7	15.8	19.5	15.9	13.5	12.2	7.8	11.9
49	54.8	53.6	49.5	80.2	143.0	115.7	148.8	217.7	183.3	123.9	118.2	131.0	118.3
50	3.9	3.9	3.7	6.7	12.4	10.4	11.1	13.8	11.2	9.5	8.6	5.5	8.4
51	58.7	57.5	53.2	86.9	155.4	126.0	159.9	231.5	194.6	133.4	126.9	136.5	126.7

Fig.

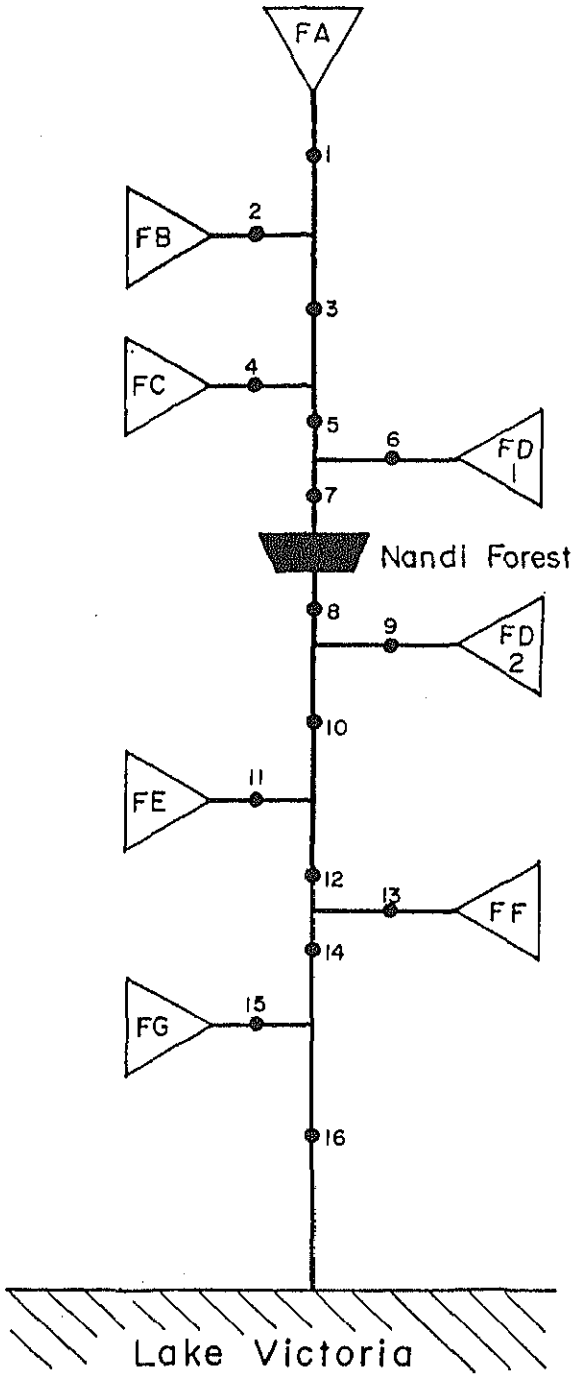

Figure B.10.3

Yala River Basin

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Table B10.3 Naturalized Mean Monthly Discharge in the Yala River

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	1.0	.8	.9	1.5	2.0	1.6	1.5	3.8	4.1	2.1	1.8	2.9	2.0
2	2.6	1.9	2.5	4.2	5.6	4.5	4.2	10.5	11.8	6.0	4.9	8.2	5.6
3	3.6	2.8	3.4	5.6	7.6	6.1	5.7	14.3	15.8	8.1	6.7	11.1	7.6
4	1.9	1.4	1.8	3.0	4.0	3.2	3.0	7.5	8.5	4.3	3.6	5.9	4.0
5	5.5	4.2	5.2	8.6	11.6	9.3	8.6	21.8	24.3	12.5	10.3	17.0	11.6
6	1.9	1.5	1.8	2.9	3.8	3.1	2.8	7.1	8.1	4.1	3.5	5.7	3.8
7	7.4	5.6	7.0	11.5	15.4	12.4	11.4	28.9	32.4	16.6	13.8	22.7	15.4
8	7.4	5.6	7.0	11.5	15.4	12.4	11.4	28.9	32.4	16.6	13.8	22.7	15.4
9	.1	.1	.1	.2	.3	.2	.2	.5	.6	.3	.2	.4	.3
10	7.5	5.7	7.1	11.7	15.6	12.6	11.6	29.4	32.9	16.9	14.0	23.1	15.7
11	4.5	4.5	7.2	14.1	14.1	9.9	7.2	8.6	8.6	8.6	10.0	7.2	8.7
12	12.0	10.2	14.4	25.9	29.7	22.5	18.8	38.0	41.5	25.4	24.0	30.3	24.4
13	1.9	1.9	3.0	5.9	5.9	4.2	3.0	3.6	3.6	3.6	4.2	3.0	3.6
14	13.9	12.1	17.4	31.8	35.6	26.7	21.8	41.5	45.1	29.0	28.1	33.3	28.0
15	6.8	6.8	10.9	21.3	21.2	15.0	10.8	12.9	12.9	12.9	15.0	10.8	13.1
16	20.7	18.8	28.3	53.0	56.8	41.6	32.6	54.4	58.0	41.8	43.1	44.1	41.1

Fig.

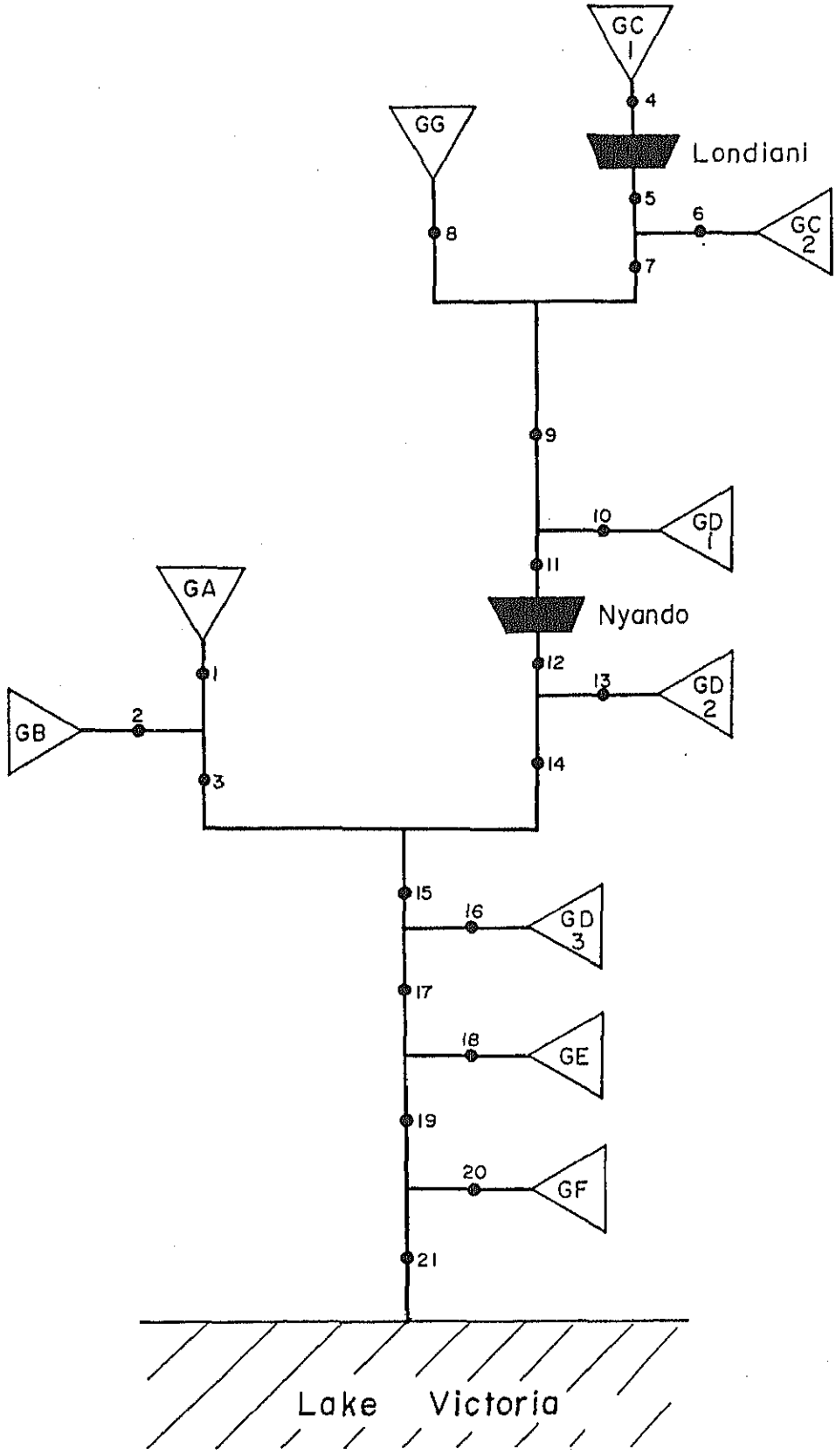

Figure B.10.4

Nyando River Basin

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Table B10.4 Naturalized Mean Monthly Discharge in the Nyando River

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	1.3	1.4	1.3	2.1	2.8	2.0	2.3	3.2	3.0	2.3	2.0	1.6	2.1
2	1.5	1.6	1.5	2.4	3.3	2.3	2.6	3.6	3.4	2.6	2.3	1.8	2.4
3	3.0	3.1	3.0	4.7	6.3	4.6	5.0	7.0	6.6	5.1	4.5	3.5	4.7
4	.2	.2	.3	.6	.9	.5	.6	.9	.8	.4	.3	.3	.5
5	.2	.2	.3	.6	.9	.5	.6	.9	.8	.4	.3	.3	.5
6	2.2	3.0	3.5	7.0	10.4	6.0	7.1	11.1	9.0	5.4	4.1	3.2	6.0
7	2.3	3.3	3.8	7.6	11.2	6.5	7.7	12.0	9.8	5.8	4.5	3.4	6.5
8	.9	1.3	1.5	3.0	4.5	2.6	3.1	4.9	3.9	2.3	1.8	1.3	2.6
9	3.2	4.6	5.3	10.6	15.8	9.1	10.8	16.9	13.7	8.1	6.2	4.7	9.1
10	.2	.2	.2	.4	.6	.3	.4	.6	.5	.3	.3	.2	.3
11	3.4	4.8	5.5	11.0	16.3	9.4	11.2	17.5	14.2	8.4	6.5	4.9	9.4
12	3.4	4.8	5.5	11.0	16.3	9.4	11.2	17.5	14.2	8.4	6.5	4.9	9.4
13	1.2	1.5	1.5	3.1	4.4	2.7	3.2	4.4	3.7	2.4	2.0	1.6	2.6
14	4.7	6.3	7.1	14.2	20.8	12.2	14.4	21.9	17.9	10.9	8.6	6.6	12.1
15	7.7	9.4	10.1	18.9	27.0	16.8	19.5	28.9	24.5	16.0	13.1	10.1	16.8
16	1.1	1.4	1.4	2.9	4.1	2.5	2.9	4.1	3.4	2.3	1.9	1.5	2.5
17	8.9	10.9	11.6	21.8	31.1	19.3	22.5	33.1	28.0	18.4	15.1	11.6	19.3
18	1.6	1.9	1.9	2.8	3.7	2.6	2.9	4.1	3.1	2.3	2.1	2.0	2.6
19	10.5	12.8	13.4	24.6	34.8	21.9	25.4	37.1	31.1	20.7	17.2	13.6	21.9
20	1.1	1.3	1.3	1.8	2.5	1.7	1.9	2.7	2.1	1.6	1.4	1.3	1.7
21	11.6	14.1	14.7	26.4	37.3	23.6	27.3	39.8	33.2	22.3	18.6	14.9	23.6

Fig.

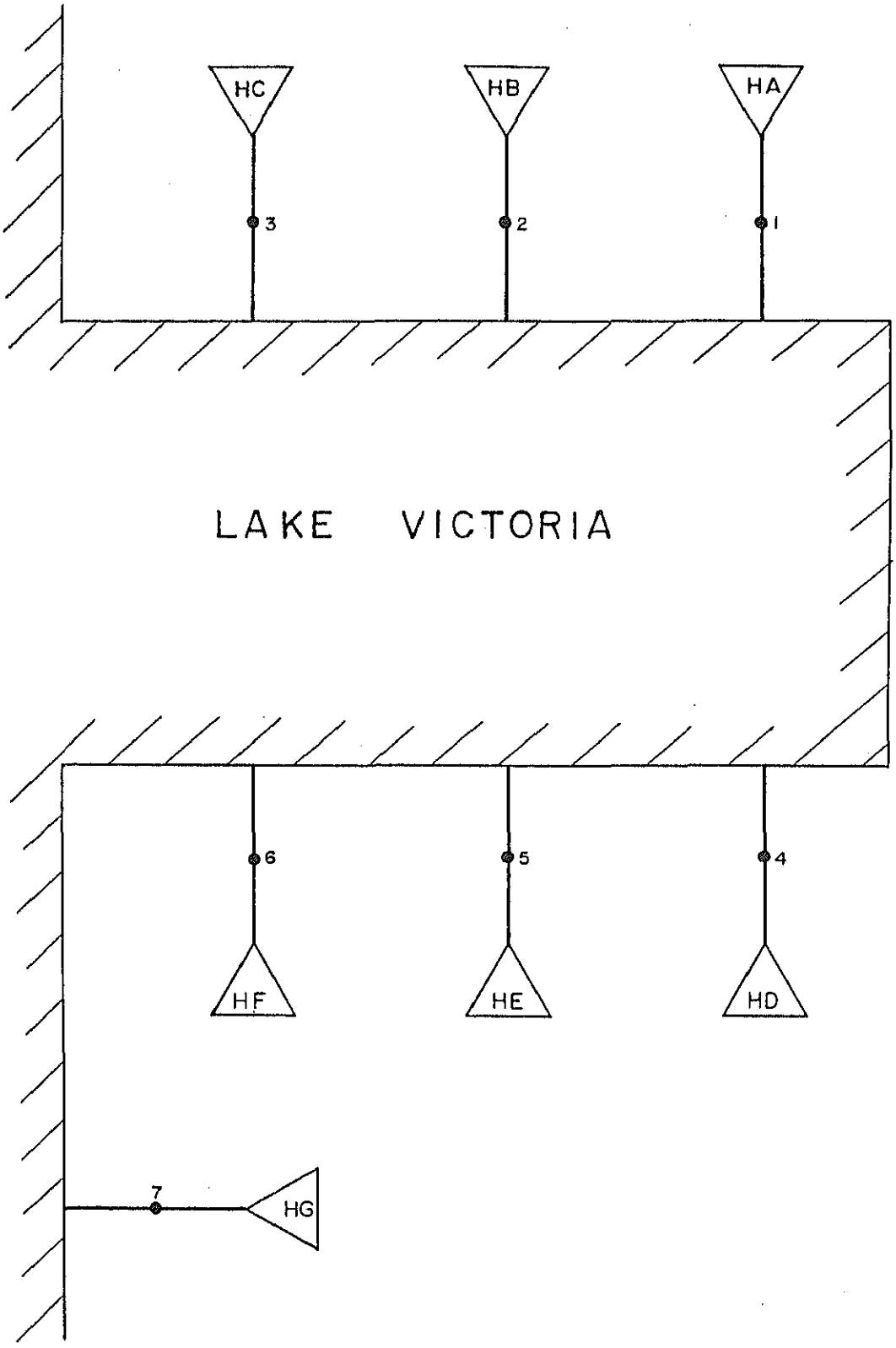

Figure B.10.5

Shore of Lake Victoria

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Table B10.5 Naturalized Mean Monthly Discharge
in the Shore of Lake Victoria

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	6.7	6.7	7.5	13.4	18.6	14.9	11.2	11.9	12.6	9.7	9.0	8.9	10.9
2	4.6	5.2	5.7	11.7	15.0	12.2	6.6	8.2	10.2	8.1	7.7	6.5	8.5
3	3.1	3.0	3.6	7.7	9.7	7.1	3.8	5.1	6.4	5.5	5.0	4.0	5.3
4	3.8	3.0	5.7	12.9	24.2	15.8	7.5	9.4	10.9	9.1	7.2	6.6	9.7
5	3.3	2.7	5.0	11.9	21.9	13.0	6.0	8.0	9.5	8.3	6.6	6.0	8.5
6	3.1	2.4	4.1	11.7	20.4	8.5	3.8	6.5	7.7	7.8	6.2	5.8	7.3
7	1.2	.9	1.5	4.3	7.3	3.0	1.3	1.9	2.2	2.5	2.3	2.3	2.6

Fig.

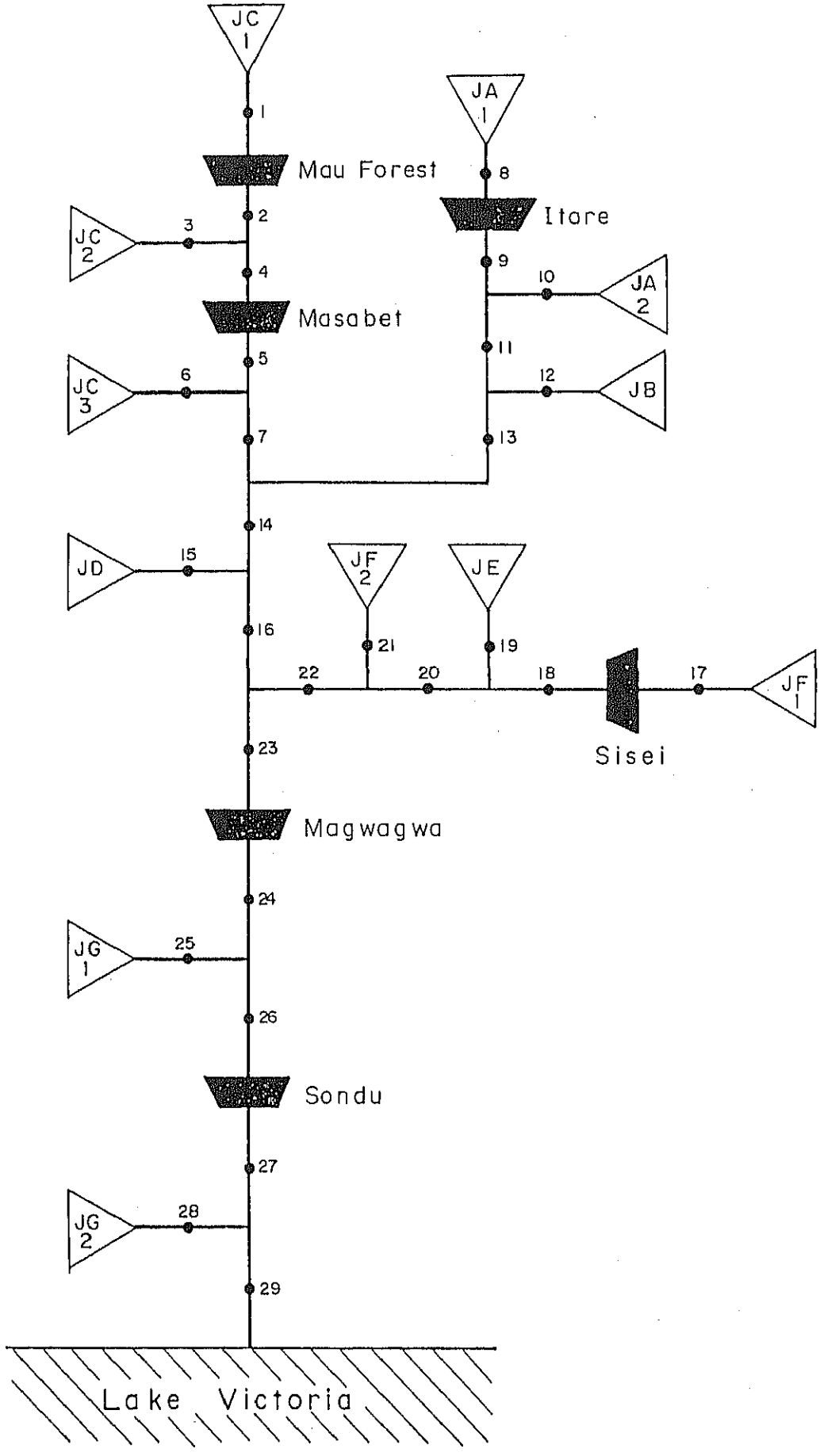

Figure B.10.6

Sondu River Basin

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Table B10.6 Naturalized Mean Monthly Discharge in the Sondu River

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	.3	.3	.2	.5	1.5	1.2	.9	1.1	1.3	.7	.5	.5	.8
2	.3	.3	.2	.5	1.5	1.2	.9	1.1	1.3	.7	.5	.5	.8
3	.7	.5	.5	1.0	3.0	2.5	1.8	2.3	2.7	1.4	1.1	1.1	1.6
4	1.1	.8	.7	1.4	4.4	3.8	2.7	3.4	4.0	2.1	1.6	1.6	2.3
5	1.1	.8	.7	1.4	4.4	3.8	2.7	3.4	4.0	2.1	1.6	1.6	2.3
6	1.6	1.1	1.1	2.1	6.5	5.5	3.9	4.9	5.9	3.1	2.4	2.4	3.4
7	3.3	2.6	2.5	4.2	11.6	9.9	7.2	8.9	10.5	5.9	4.7	4.7	6.3
8	1.2	1.0	1.9	4.2	6.0	5.7	5.2	6.9	6.3	2.8	2.2	2.4	3.8
9	1.2	1.0	1.9	4.2	6.0	5.7	5.2	6.9	6.3	2.8	2.2	2.4	3.8
10	3.6	2.9	5.8	12.7	18.2	17.3	15.7	21.0	19.2	8.6	6.7	7.3	11.6
11	5.0	4.1	7.8	17.0	24.4	23.2	21.1	28.2	25.7	11.6	9.1	9.9	15.6
12	2.1	1.8	3.6	6.9	8.5	7.8	6.1	8.3	8.1	4.3	3.6	4.2	5.4
13	7.1	5.9	11.4	24.0	32.9	31.0	27.2	36.5	33.8	15.9	12.7	14.1	21.0
14	10.4	8.5	13.9	28.2	44.5	40.9	34.3	45.4	44.4	21.8	17.4	18.8	27.4
15	1.7	1.2	1.1	2.2	6.9	5.8	4.1	5.2	6.2	3.3	2.5	2.5	3.6
16	12.3	9.9	15.3	30.7	51.6	47.0	38.7	50.8	50.8	25.4	20.2	21.6	31.2
17	2.7	2.1	1.9	10.1	15.1	11.4	7.8	6.9	10.0	6.5	11.0	10.8	8.0
18	2.7	2.1	1.9	10.1	15.1	11.4	7.8	6.9	10.0	6.5	11.0	10.8	8.0
19	2.8	2.3	1.7	7.4	8.5	6.5	3.2	3.0	5.3	3.2	10.9	14.0	5.7
20	5.5	4.4	3.6	17.5	23.6	17.9	11.0	9.9	15.4	9.7	21.9	24.8	13.8
21	2.1	1.6	1.4	8.1	12.1	9.1	6.2	5.5	8.0	5.2	8.8	8.6	6.4
22	7.7	6.1	5.1	25.7	35.7	27.0	17.3	15.5	23.4	14.9	30.7	33.5	20.2
23	20.0	16.0	20.3	56.4	87.3	74.0	56.0	66.3	74.3	40.3	50.9	55.2	51.4
24	20.0	16.0	20.3	56.4	87.3	74.0	56.0	66.3	74.3	40.3	50.9	55.2	51.4
25	1.4	1.0	.9	1.8	5.7	4.8	3.4	4.3	5.1	2.7	2.1	2.1	2.9
26	21.3	17.0	21.3	58.2	93.0	78.8	59.4	70.6	79.4	43.1	53.0	57.3	54.4
27	21.3	17.0	21.3	58.2	93.0	78.8	59.4	70.6	79.4	43.1	53.0	57.3	54.4
28	1.1	.8	.7	1.4	4.4	3.7	2.6	3.3	4.0	2.1	1.6	1.6	2.3
29	22.4	17.8	22.0	59.6	97.4	82.6	62.0	73.9	83.4	45.2	54.7	58.9	56.7

Fig.

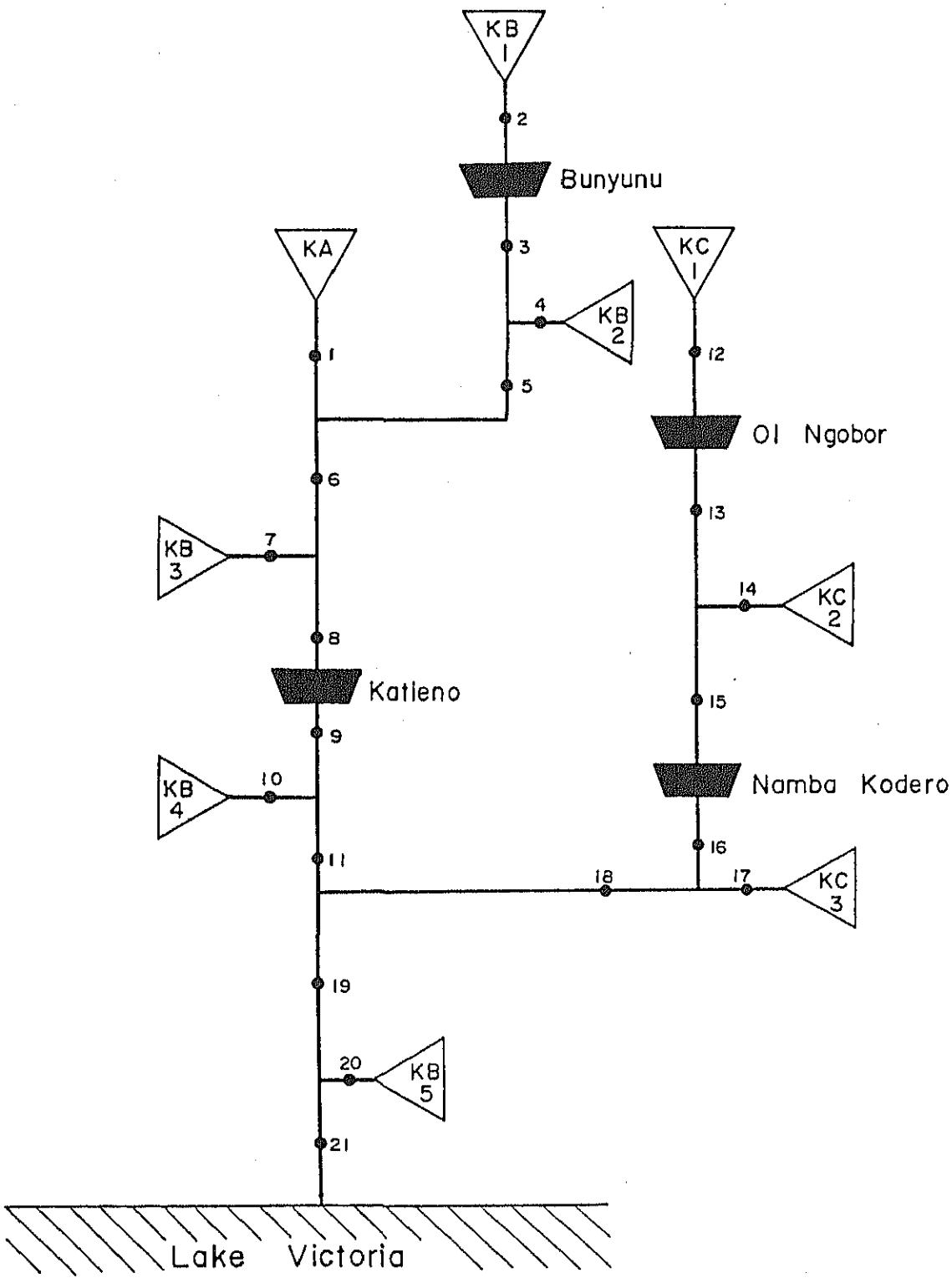

Figure B.10.7

Gucha (Kuja) River Basin

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Table B10.7 Naturalized Mean Monthly Discharge in the Gucha River

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	1.8	4.1	6.1	13.1	21.0	9.6	3.9	3.0	5.4	4.0	6.9	5.1	7.0
2	.5	.4	.7	1.7	2.9	1.6	.6	.9	1.2	1.1	1.0	1.0	1.1
3	.5	.4	.7	1.7	2.9	1.6	.6	.9	1.2	1.1	1.0	1.0	1.1
4	2.8	2.2	3.7	9.3	16.3	8.7	3.5	5.0	6.5	6.0	5.4	5.6	6.3
5	3.3	2.6	4.3	11.0	19.2	10.2	4.1	5.8	7.7	7.1	6.4	6.6	7.4
6	5.2	6.7	10.4	24.1	40.3	19.9	8.0	8.9	13.0	11.1	13.3	11.7	14.4
7	7.4	5.9	9.6	24.5	42.8	22.7	9.2	13.0	17.1	15.9	14.3	14.6	16.4
8	12.6	12.6	20.0	48.7	83.1	42.6	17.2	21.9	30.1	27.0	27.5	26.3	30.8
9	12.6	12.6	20.0	48.7	83.1	42.6	17.2	21.9	30.1	27.0	27.5	26.3	30.8
10	2.6	2.1	3.4	8.7	15.2	8.1	3.3	4.6	6.1	5.6	5.1	5.2	5.8
11	15.3	14.7	23.4	57.4	98.3	50.7	20.5	26.5	36.1	32.6	32.6	31.5	36.6
12	4.7	5.0	8.7	21.6	21.3	7.2	2.6	1.5	2.4	2.1	4.1	7.6	7.4
13	4.7	5.0	8.7	21.6	21.3	7.2	2.6	1.5	2.4	2.1	4.1	7.6	7.4
14	5.8	6.2	10.7	26.6	26.3	8.8	3.2	1.8	3.0	2.6	5.1	9.4	9.1
15	10.4	11.2	19.4	48.2	47.6	16.0	5.8	3.3	5.4	4.7	9.2	17.0	16.5
16	10.4	11.2	19.4	48.2	47.6	16.0	5.8	3.3	5.4	4.7	9.2	17.0	16.5
17	.5	.5	.9	2.2	2.2	.7	.3	.2	.3	.2	.4	.8	.8
18	10.9	11.8	20.3	50.4	49.8	16.7	6.0	3.5	5.6	4.9	9.7	17.8	17.3
19	26.2	26.4	43.7	107.8	148.1	67.4	26.5	30.0	41.8	37.6	42.3	49.3	53.9
20	1.7	1.3	2.2	5.6	9.7	5.2	2.1	3.0	3.9	3.6	3.2	3.3	3.7
21	27.9	27.8	45.9	113.3	157.8	72.5	28.6	33.0	45.7	41.2	45.5	52.6	57.6

Fig.

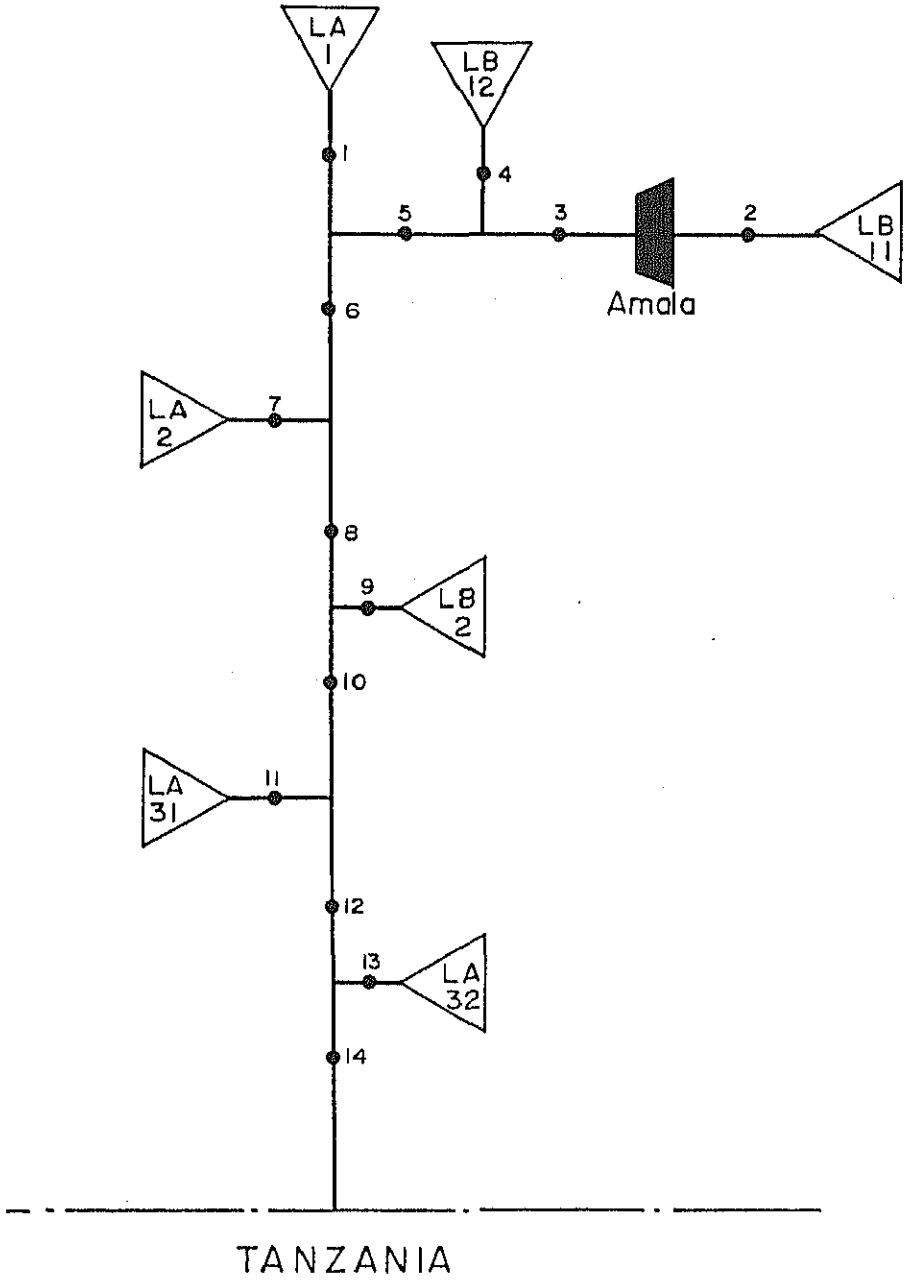

Figure B.10.8

Mara River Basin

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Table B10.8 Naturalized Mean Monthly Discharge in the Mara River

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	3.6	4.0	5.9	20.5	26.3	16.2	16.2	19.1	21.6	12.9	7.9	8.4	13.5
2	1.9	2.2	3.1	10.0	11.5	7.2	6.7	8.1	9.0	5.6	4.1	4.6	6.2
3	1.9	2.2	3.1	10.0	11.5	7.2	6.7	8.1	9.0	5.6	4.1	4.6	6.2
4	4.0	4.5	6.4	20.5	23.6	14.7	13.8	16.5	18.5	11.4	8.4	9.4	12.6
5	5.9	6.6	9.5	30.4	35.1	21.8	20.5	24.6	27.5	17.0	12.5	14.0	18.8
6	9.5	10.6	15.5	50.9	61.4	38.0	36.7	43.7	49.1	29.9	20.4	22.3	32.3
7	3.8	3.0	5.1	11.7	9.5	3.8	1.7	1.2	1.3	1.2	2.1	4.9	4.1
8	13.3	13.6	20.6	62.6	70.9	41.8	38.3	44.8	50.4	31.0	22.5	27.2	36.4
9	10.4	8.1	13.8	31.6	25.7	10.2	4.5	3.1	3.5	3.1	5.6	13.2	11.1
10	23.7	21.8	34.3	94.2	96.6	52.0	42.9	48.0	53.8	34.2	28.1	40.4	47.5
11	2.4	1.9	3.2	7.4	6.0	2.4	1.1	.7	.8	.7	1.3	3.1	2.6
12	26.1	23.7	37.6	101.6	102.6	54.4	43.9	48.7	54.7	34.9	29.5	43.5	50.1
13	8.6	6.8	11.4	26.1	21.3	8.5	3.8	2.6	2.9	2.6	4.7	10.9	9.2
14	34.7	30.4	49.0	127.7	123.9	62.8	47.7	51.3	57.5	37.5	34.2	54.4	59.3

Fig.

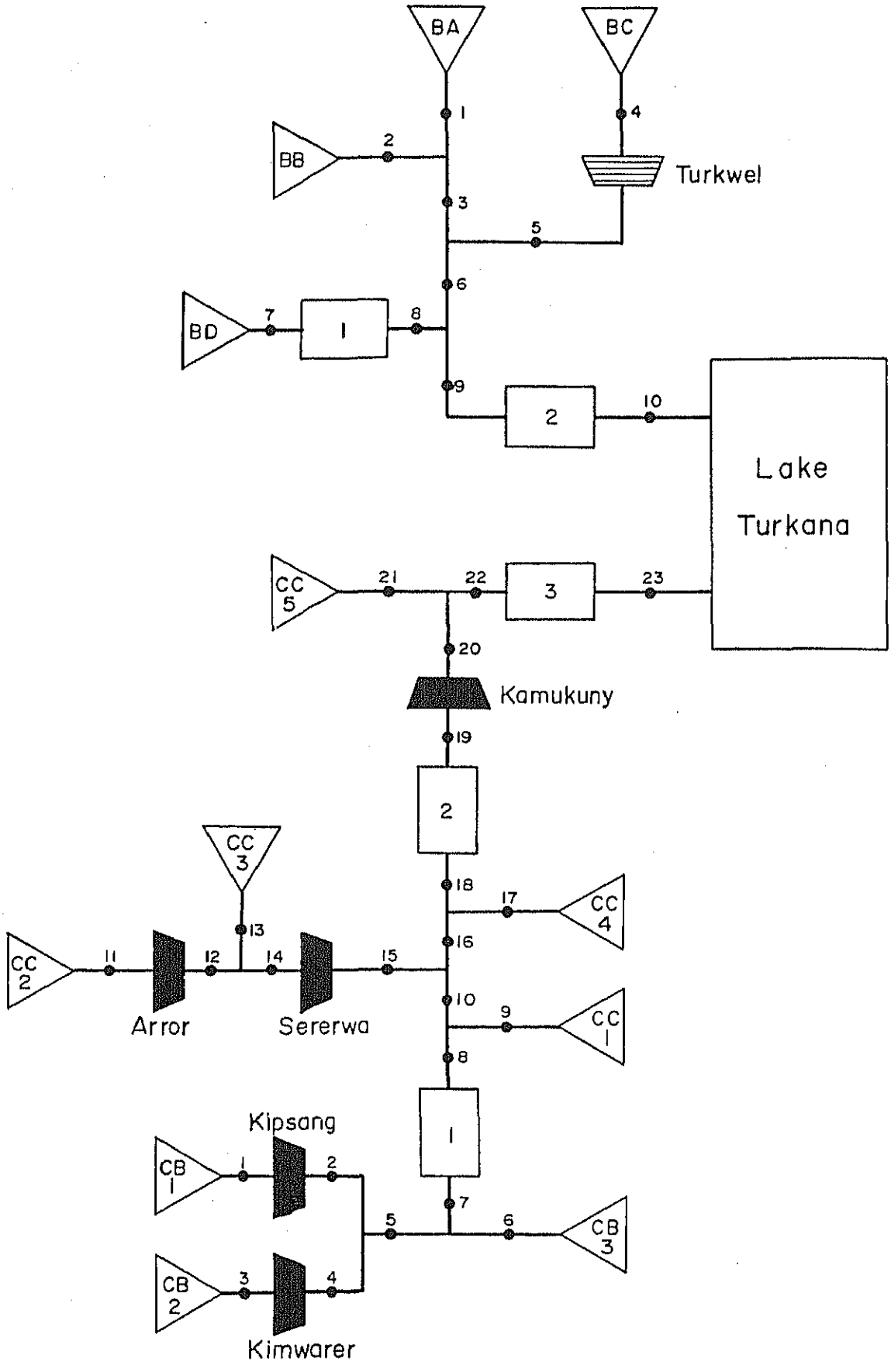

Figure B.10.9

Turkwel and Kerio River Basins

THE STUDY
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JAPAN INTERNATIONAL COOPERATION AGENCY

Table B10.9.1 Naturalized Mean Monthly Discharge in the Turkwel River

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	3.8	3.3	4.3	5.8	7.0	5.7	9.9	8.9	6.7	6.0	6.9	4.3	6.0
2	5.5	5.3	6.2	9.3	9.1	7.2	10.3	10.3	7.5	6.4	7.5	5.9	7.5
3	9.3	8.6	10.5	15.1	16.1	12.9	20.2	19.2	14.1	12.4	14.4	10.1	13.6
4	8.8	8.8	11.1	17.8	18.3	13.5	22.4	21.5	13.3	11.6	15.2	9.1	14.3
5	8.8	8.8	11.1	17.8	18.3	13.5	22.4	21.5	13.3	11.6	15.2	9.1	14.3
6	18.1	17.5	21.6	32.9	34.4	26.4	42.6	40.8	27.4	24.0	29.6	19.2	27.9
7	5.7	5.7	6.9	11.5	4.8	4.4	4.3	3.9	4.0	4.3	13.7	12.7	6.8
8	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	18.3	17.5	21.6	32.9	34.4	26.4	42.6	40.8	27.4	24.0	29.6	19.2	27.9
10	8.7	8.3	10.4	16.3	17.1	12.9	21.3	20.3	13.4	11.6	14.6	9.2	13.7

Table B10.9.2 Naturalized Mean Monthly Discharge in the Kerio River

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	.4	.4	.4	.9	1.0	.6	.7	1.0	.7	.8	1.5	.6	.7
2	.4	.4	.4	.9	1.0	.6	.7	1.0	.7	.8	1.5	.6	.7
3	.9	.9	1.1	2.1	2.5	1.4	1.6	2.4	1.6	1.8	3.6	1.4	1.8
4	.9	.9	1.1	2.1	2.5	1.4	1.6	2.4	1.6	1.8	3.6	1.4	1.8
5	1.3	1.2	1.5	3.0	3.5	2.0	2.2	3.4	2.3	2.6	5.1	1.9	2.5
6	12.7	13.8	19.6	40.8	41.6	42.2	49.4	58.8	34.6	21.5	31.8	25.6	32.7
7	13.9	15.1	21.1	43.8	45.1	44.2	51.7	62.2	36.9	24.0	36.9	27.5	35.2
8	12.3	13.4	18.8	39.2	40.3	39.5	46.3	55.7	33.0	21.5	33.0	24.5	31.5
9	2.1	2.3	3.3	6.8	6.9	7.0	8.3	9.8	5.8	3.6	5.3	4.3	5.5
10	14.4	15.7	22.1	46.0	47.3	46.6	54.5	65.6	38.8	25.0	38.3	28.8	36.9
11	.2	.2	.2	.5	.5	.3	.3	.5	.3	.4	.8	.3	.4
12	.2	.2	.2	.5	.5	.3	.3	.5	.3	.4	.8	.3	.4
13	.8	.8	1.0	2.0	2.3	1.3	1.5	2.3	1.5	1.7	3.4	1.3	1.7
14	1.0	1.0	1.3	2.4	2.8	1.6	1.8	2.8	1.8	2.1	4.2	1.6	2.0
15	1.0	1.0	1.3	2.4	2.8	1.6	1.8	2.8	1.8	2.1	4.2	1.6	2.0
16	15.5	16.7	23.3	48.5	50.1	48.2	56.4	68.3	40.6	27.1	42.5	30.4	39.0
17	1.3	1.3	1.6	2.7	1.1	1.0	1.0	.9	.9	1.0	3.2	3.0	1.6
18	16.8	18.0	25.0	51.2	51.2	49.2	57.4	69.2	41.5	28.1	45.7	33.4	40.6
19	12.9	13.9	19.3	39.9	40.0	38.4	44.8	54.2	32.4	21.8	35.7	25.9	31.6
20	12.9	13.9	19.3	39.9	40.0	38.4	44.8	54.2	32.4	21.8	35.7	25.9	31.6
21	2.3	2.3	2.8	4.7	2.0	1.8	1.8	1.6	1.6	1.8	5.6	5.2	2.8
22	15.2	16.2	22.1	44.7	42.0	40.3	46.6	55.8	34.0	23.6	41.2	31.1	34.4
23	9.2	9.8	13.6	28.0	26.3	25.2	29.3	35.2	21.2	14.5	25.8	19.4	21.5

Fig.

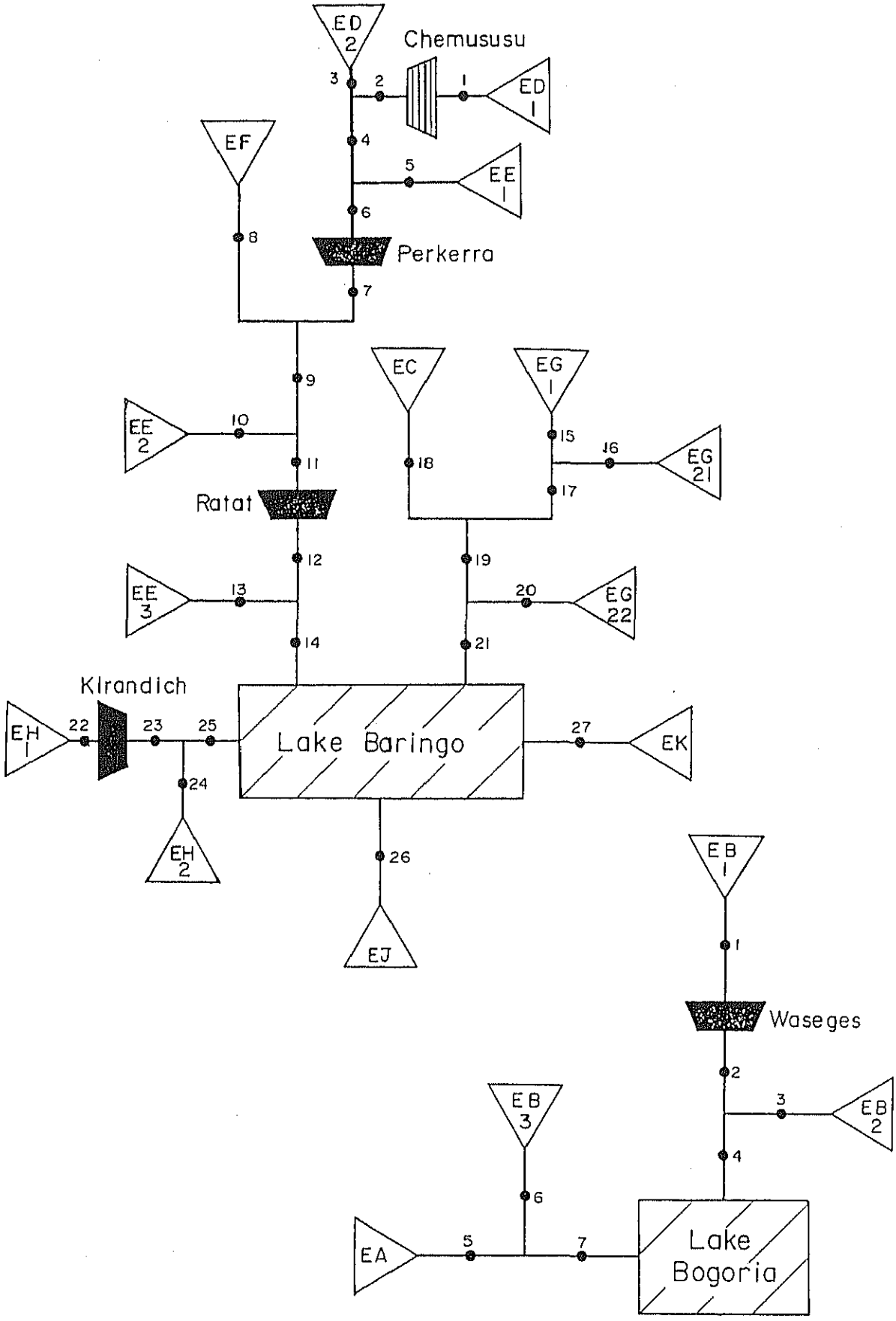

Figure B.10.10

Lakes Baringo and Bogoria

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Table B10.10.1 Naturalized Mean Monthly Discharge in the Lake Baringo River

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	.1	.2	.2	.3	.3	.2	.3	.4	.3	.2	.3	.3	.3
2	.1	.2	.2	.3	.3	.2	.3	.4	.3	.2	.3	.3	.3
3	.8	.9	1.0	1.6	1.8	1.2	1.4	2.3	1.7	.9	1.8	2.0	1.5
4	1.0	1.1	1.2	1.9	2.2	1.5	1.7	2.7	2.0	1.2	2.2	2.4	1.8
5	.2	.2	.2	.4	.4	.3	.3	.5	.4	.2	.4	.4	.3
6	1.2	1.3	1.4	2.3	2.6	1.7	2.1	3.2	2.4	1.4	2.6	2.8	2.1
7	1.2	1.3	1.4	2.3	2.6	1.7	2.1	3.2	2.4	1.4	2.6	2.8	2.1
8	.9	1.0	1.1	1.7	2.0	1.3	1.6	2.5	1.8	1.0	2.0	2.2	1.6
9	2.1	2.3	2.5	4.0	4.6	3.1	3.7	5.7	4.3	2.5	4.6	5.0	3.7
10	.4	.4	.5	.8	.9	.6	.7	1.1	.8	.5	.9	1.0	.7
11	2.5	2.7	3.0	4.8	5.5	3.7	4.4	6.8	5.1	2.9	5.5	6.0	4.4
12	2.5	2.7	3.0	4.8	5.5	3.7	4.4	6.8	5.1	2.9	5.5	6.0	4.4
13	.8	.9	1.0	1.6	1.8	1.2	1.4	2.2	1.7	.9	1.8	2.0	1.4
14	3.3	3.6	4.0	6.4	7.3	4.9	5.8	9.0	6.8	3.9	7.3	8.0	5.9
15	.9	1.0	1.1	1.8	2.1	1.4	1.6	2.5	1.9	1.1	2.1	2.3	1.7
16	1.0	1.1	1.3	2.0	2.3	1.5	1.8	2.8	2.2	1.2	2.3	2.5	1.9
17	2.0	2.2	2.4	3.8	4.4	2.9	3.5	5.4	4.1	2.3	4.4	4.8	3.5
18	2.0	2.2	2.4	3.8	4.3	2.9	3.5	5.3	4.1	2.3	4.4	4.8	3.5
19	4.0	4.3	4.8	7.7	8.7	5.9	6.9	10.7	8.1	4.7	8.8	9.5	7.0
20	1.9	2.1	2.3	3.7	4.2	2.8	3.4	5.2	4.0	2.3	4.3	4.7	3.4
21	5.8	6.4	7.2	11.4	12.9	8.7	10.3	16.0	12.1	6.9	13.0	14.2	10.4
22	.1	.1	.1	.1	.2	.1	.1	.2	.1	.1	.2	.2	.1
23	.1	.1	.1	.1	.2	.1	.1	.2	.1	.1	.2	.2	.1
24	1.3	1.4	1.6	2.6	2.9	1.9	2.3	3.6	2.7	1.5	2.9	3.2	2.3
25	1.4	1.5	1.7	2.7	3.1	2.0	2.4	3.8	2.9	1.6	3.1	3.4	2.5
26	3.2	3.5	3.9	6.3	7.2	4.8	5.7	8.9	6.7	3.8	7.3	7.9	5.8
27	1.4	1.5	1.7	2.7	3.1	2.0	2.4	3.8	2.9	1.6	3.1	3.4	2.5

Table B10.10.2 Naturalized Mean Monthly Discharge in the Lake Bogoria Basin

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	1.0	1.1	1.2	1.9	2.2	1.5	1.7	2.7	2.0	1.1	2.2	2.4	1.8
2	1.0	1.1	1.2	1.9	2.2	1.5	1.7	2.7	2.0	1.1	2.2	2.4	1.8
3	.4	.4	.5	.7	.8	.6	.7	1.0	.8	.4	.8	.9	.7
4	1.4	1.5	1.7	2.7	3.1	2.0	2.4	3.8	2.8	1.6	3.1	3.3	2.5
5	.9	1.0	1.2	1.9	2.1	1.4	1.7	2.6	2.0	1.1	2.1	2.3	1.7
6	.3	.3	.3	.6	.6	.4	.5	.8	.6	.3	.6	.7	.5
7	1.2	1.4	1.5	2.4	2.8	1.9	2.2	3.4	2.6	1.5	2.8	3.0	2.2

Fig.

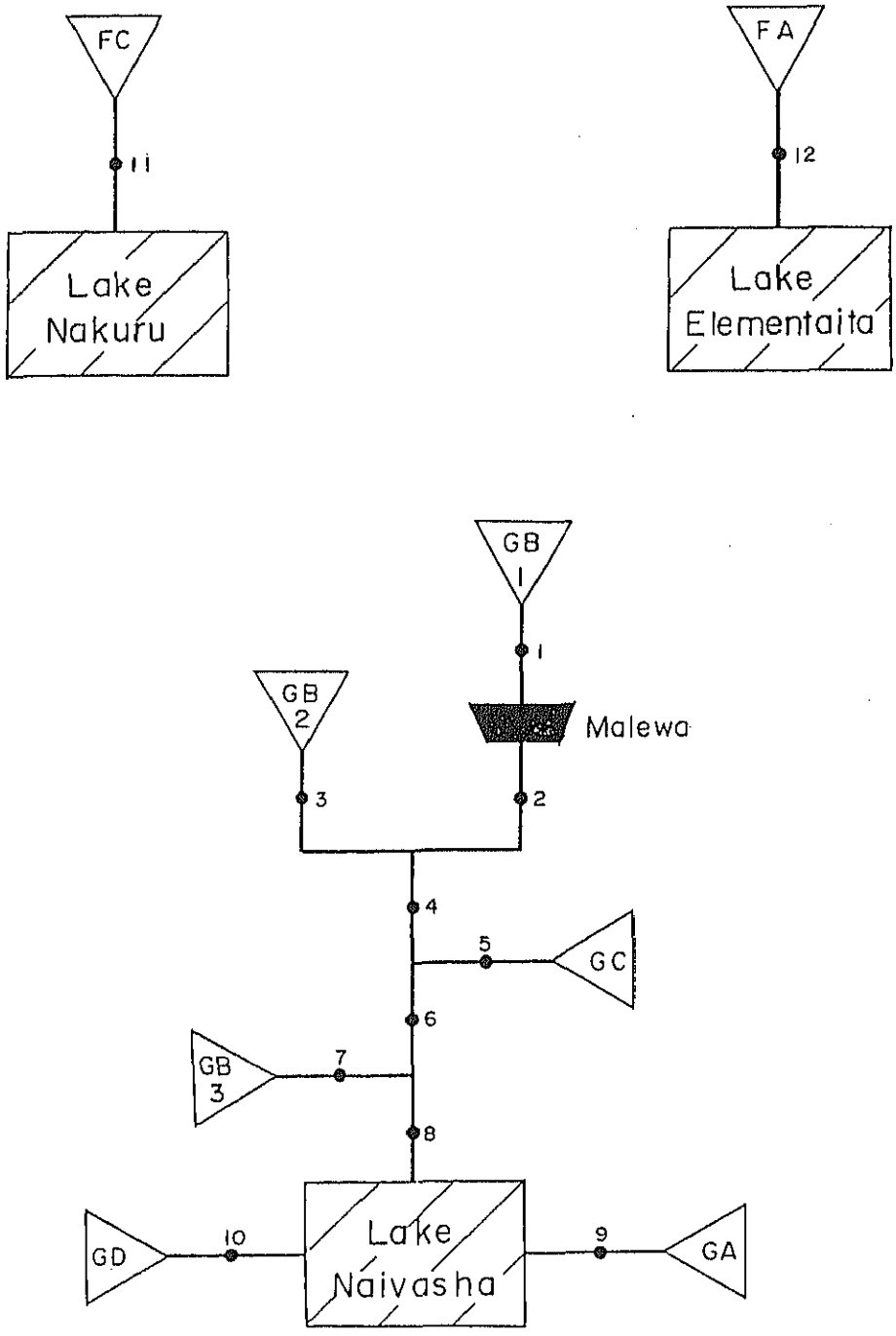

Figure B.10.11

Lakes Naivasha, Elementaita and Nakuru

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JAPAN INTERNATIONAL COOPERATION AGENCY

Table B10.11 Naturalized Mean Monthly Discharge
in the Lakes Nakuru, Elmentaita and Naivasha Basins

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	.7	.6	.8	1.9	4.1	2.3	2.5	3.7	3.6	2.5	2.2	1.4	2.2
2	.7	.6	.8	1.9	4.1	2.3	2.5	3.7	3.6	2.5	2.2	1.4	2.2
3	.2	.1	.2	.5	1.0	.6	.6	.9	.9	.6	.5	.3	.5
4	.9	.7	.9	2.4	5.1	2.8	3.2	4.6	4.5	3.1	2.8	1.7	2.7
5	1.2	.9	1.3	3.3	6.6	3.7	3.8	4.7	5.1	4.1	3.7	2.1	3.4
6	2.1	1.6	2.2	5.8	11.7	6.5	7.0	9.3	9.5	7.2	6.5	3.8	6.1
7	.2	.2	.3	.6	1.2	.7	.7	1.0	1.0	.7	.6	.4	.6
8	2.3	1.8	2.5	6.3	12.9	7.2	7.8	10.4	10.5	7.9	7.1	4.3	6.8
9	.7	.8	.9	1.5	1.6	1.1	1.3	2.0	1.5	.9	1.7	1.8	1.3
10	2.8	3.1	3.4	5.4	6.1	4.2	4.9	7.5	5.7	3.3	6.2	6.7	4.9
11	3.5	3.8	4.3	6.8	7.8	5.2	6.2	9.6	7.3	4.1	7.8	8.6	6.3
12	1.3	1.5	1.6	2.5	2.9	2.0	2.3	3.6	2.7	1.6	2.9	3.2	2.3

Fig.

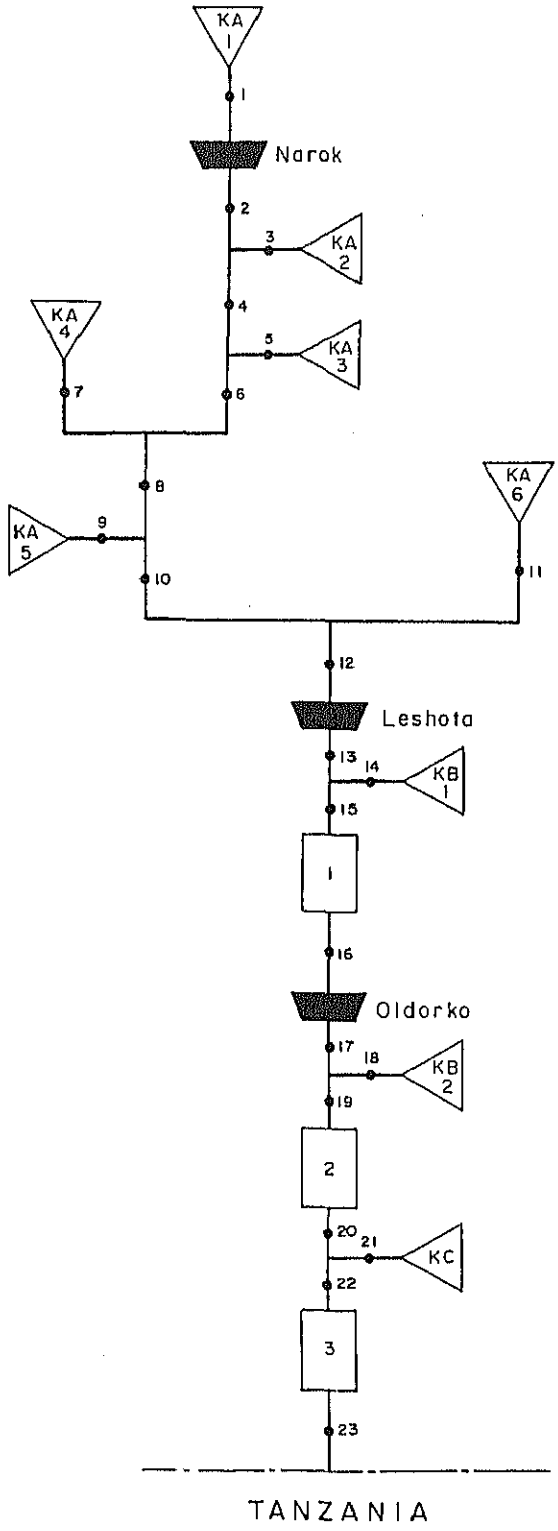

Figure B.10.12

Ewaso N'giro (south) River Basin

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THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Table B10.12 Naturalized Mean Monthly Discharge in the Ewaso N'giro (South) River

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	2.4	2.1	2.4	4.6	5.6	2.5	2.5	2.5	2.3	1.8	2.5	3.0	2.8
2	2.4	2.1	2.4	4.6	5.6	2.5	2.5	2.5	2.3	1.8	2.5	3.0	2.8
3	.8	.6	.8	1.4	1.8	.8	.8	.8	.7	.6	.8	.9	.9
4	3.3	2.9	3.4	6.1	7.6	3.4	3.4	3.4	3.2	2.5	3.5	4.1	3.9
5	1.4	1.2	1.4	2.6	3.3	1.4	1.4	1.4	1.3	1.0	1.5	1.7	1.6
6	4.7	4.1	4.8	8.8	10.8	4.8	4.8	4.9	4.5	3.5	5.0	5.8	5.5
7	4.6	2.8	4.4	14.9	16.4	5.2	6.3	10.1	8.6	4.0	10.4	6.2	7.8
8	9.3	6.9	9.1	23.7	27.1	10.0	11.1	14.9	13.1	7.5	15.4	12.0	13.4
9	.4	.4	.4	.8	.3	.3	.3	.3	.3	.3	.9	.8	.4
10	9.7	7.2	9.6	24.5	27.5	10.3	11.4	15.2	13.3	7.8	16.3	12.9	13.8
11	5.9	4.8	5.4	9.0	12.5	6.4	5.6	7.2	8.2	6.3	6.1	7.4	7.1
12	15.6	12.0	15.0	33.4	40.0	16.7	17.0	22.4	21.5	14.1	22.4	20.3	20.9
13	15.6	12.0	15.0	33.4	40.0	16.7	17.0	22.4	21.5	14.1	22.4	20.3	20.9
14	.3	.3	.3	.5	.2	.2	.2	.2	.2	.2	.6	.6	.3
15	15.8	12.3	15.3	33.9	40.2	16.9	17.2	22.5	21.7	14.3	23.0	20.8	21.2
16	14.2	11.0	13.8	30.7	36.3	15.2	15.5	20.3	19.6	12.9	20.7	18.8	19.1
17	14.2	11.0	13.8	30.7	36.3	15.2	15.5	20.3	19.6	12.9	20.7	18.8	19.1
18	.4	.4	.6	.9	.4	.4	.3	.3	.3	.3	1.1	1.0	.5
19	14.7	11.4	14.3	31.6	36.7	15.6	15.8	20.6	19.9	13.2	21.8	19.8	19.6
20	13.9	10.8	13.5	30.0	34.8	14.7	15.0	19.5	18.9	12.5	20.6	18.8	18.6
21	.9	.9	1.0	1.7	.7	.7	.6	.6	.6	.6	2.1	1.9	1.0
22	14.8	11.7	14.6	31.7	35.6	15.4	15.6	20.1	19.5	13.1	22.7	20.7	19.6
23	11.3	8.9	11.2	24.8	27.8	11.9	12.0	15.6	15.1	10.0	17.6	16.0	15.2

Fig.

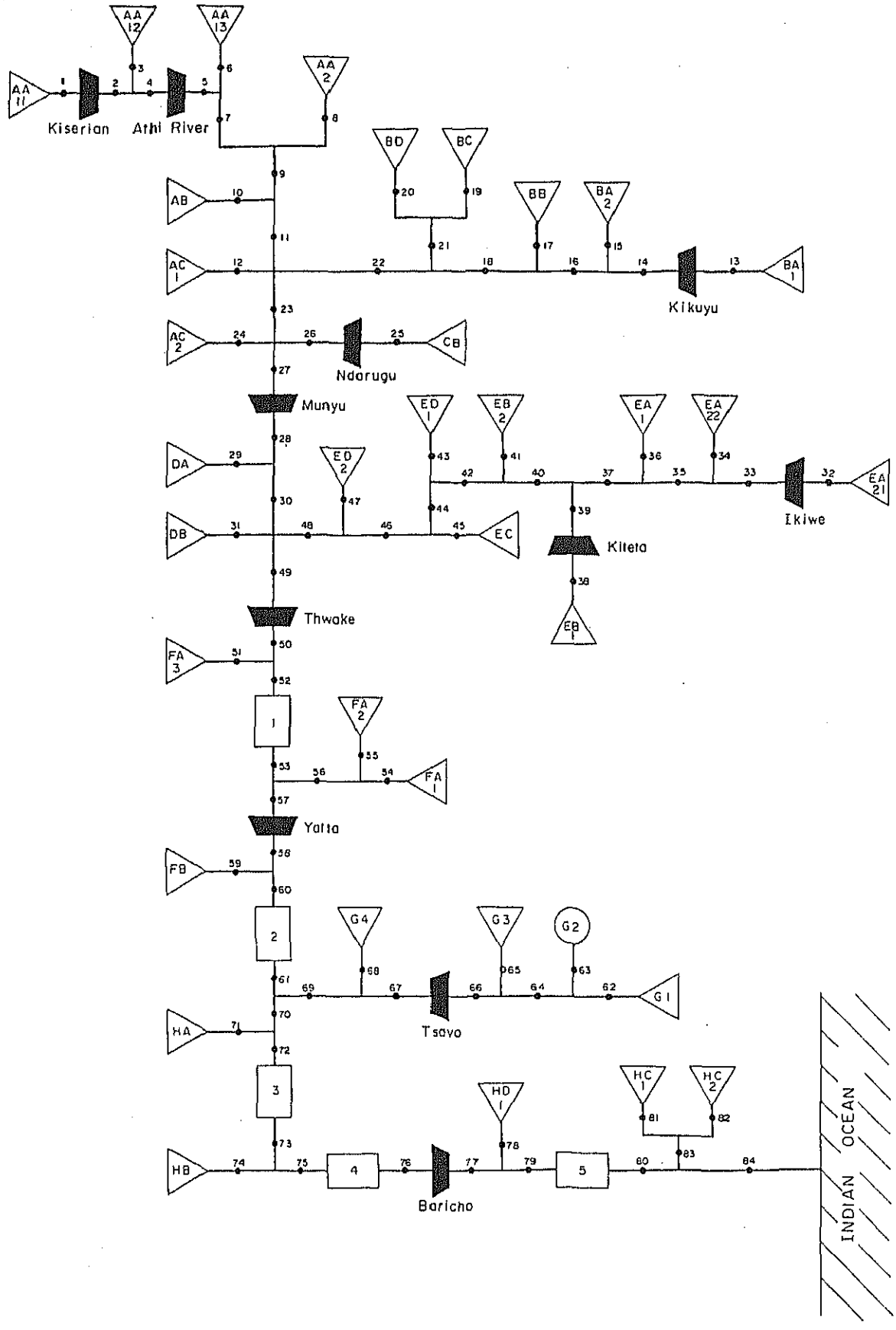

Figure B.10.13

Athi River Basin

THE STUDY
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JAPAN INTERNATIONAL COOPERATION AGENCY

Table B10.13 Naturalized Mean Monthly Discharge in the Athi River

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	.1	.1	.1	.3	.3	.1	.0	.0	.0	.0	.3	.2	.1
2	.1	.1	.1	.3	.3	.1	.0	.0	.0	.0	.3	.2	.1
3	.7	.4	.6	1.9	2.5	.6	.2	.1	.1	.1	2.5	1.3	.9
4	.8	.5	.7	2.2	2.8	.7	.2	.1	.1	.1	2.9	1.5	1.0
5	.8	.5	.7	2.2	2.8	.7	.2	.1	.1	.1	2.9	1.5	1.0
6	.2	.1	.2	.6	.7	.2	.1	.0	.0	.0	.7	.4	.3
7	1.1	.7	.9	2.8	3.5	.9	.3	.2	.1	.1	3.6	1.9	1.3
8	.4	.3	.3	1.1	1.4	.3	.1	.1	.1	.1	1.4	.7	.5
9	1.5	.9	1.2	3.9	4.9	1.2	.4	.3	.2	.2	5.1	2.6	1.9
10	3.7	2.3	3.0	9.8	12.6	3.0	1.0	.6	.3	.3	12.9	6.5	4.7
11	5.2	3.2	4.2	13.6	17.5	4.2	1.4	.9	.5	.5	18.0	9.1	6.5
12	.5	.3	.4	1.2	1.6	.4	.1	.1	.0	.0	1.6	.8	.6
13	.2	.2	.2	.5	.8	.4	.3	.2	.2	.2	.4	.4	.3
14	.2	.2	.2	.5	.8	.4	.3	.2	.2	.2	.4	.4	.3
15	1.9	1.5	1.7	4.5	7.3	3.3	2.4	1.8	1.7	1.7	4.0	3.3	2.9
16	2.4	2.0	2.1	5.3	8.4	4.0	2.9	2.3	2.2	2.2	4.7	3.9	3.5
17	1.0	.9	.9	1.9	2.9	1.5	1.2	1.0	.9	.9	1.7	1.5	1.4
18	3.4	2.8	3.1	7.2	11.3	5.5	4.1	3.3	3.1	3.2	6.4	5.4	4.9
19	1.5	1.3	1.4	3.2	5.0	2.4	1.8	1.5	1.4	1.4	2.9	2.4	2.2
20	.9	.7	.8	1.5	2.1	1.4	1.1	.9	.8	.7	1.6	1.1	1.1
21	2.4	2.0	2.2	4.7	7.1	3.9	2.9	2.4	2.2	2.1	4.4	3.5	3.2
22	5.8	4.9	5.2	11.8	18.5	9.3	7.0	5.7	5.2	5.3	10.9	8.9	8.2
23	11.4	8.4	9.8	26.7	37.5	13.9	8.6	6.7	5.8	5.8	30.4	18.8	15.3
24	1.4	.9	1.1	3.7	4.7	1.1	.4	.2	.1	.1	4.8	2.4	1.7
25	1.9	1.2	1.5	7.6	10.4	3.8	2.2	1.4	1.1	1.2	4.0	3.6	3.3
26	1.9	1.2	1.5	7.6	10.4	3.8	2.2	1.4	1.1	1.2	4.0	3.6	3.3
27	14.7	10.4	12.4	38.0	52.6	18.8	11.1	8.3	7.1	7.2	39.2	24.9	20.4
28	14.7	10.4	12.4	38.0	52.6	18.8	11.1	8.3	7.1	7.2	39.2	24.9	20.4
29	.5	.4	.5	1.4	2.2	1.0	.6	.4	.3	.3	1.5	.8	.8
30	15.3	10.8	12.8	39.4	54.8	19.8	11.7	8.8	7.4	7.5	40.7	25.6	21.2
31	.5	.3	.4	1.4	2.2	1.0	.5	.4	.3	.3	1.5	.7	.8
32	.2	.2	.3	.8	.7	.3	.2	.2	.1	.1	.6	.4	.3
33	.2	.2	.3	.8	.7	.3	.2	.2	.1	.1	.6	.4	.3
34	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
35	.2	.2	.3	.9	.7	.3	.2	.2	.1	.2	.6	.4	.3
36	.3	.2	.3	1.1	.9	.4	.3	.2	.2	.2	.7	.5	.4
37	.5	.4	.6	2.0	1.5	.8	.5	.4	.3	.3	1.3	.9	.8
38	.0	.0	.0	.2	.1	.1	.0	.0	.0	.0	.1	.1	.1
39	.0	.0	.0	.2	.1	.1	.0	.0	.0	.0	.1	.1	.1
40	.5	.4	.6	2.1	1.7	.8	.5	.4	.3	.4	1.4	1.0	.8
41	.4	.3	.5	1.6	1.3	.6	.4	.3	.2	.3	1.1	.7	.7
42	.9	.7	1.1	3.8	3.0	1.5	.9	.7	.5	.6	2.5	1.7	1.5
43	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0	.1	.1	.0
44	1.0	.7	1.1	3.9	3.0	1.5	.9	.7	.6	.7	2.6	1.8	1.5
45	.3	.3	.4	1.5	1.1	.6	.3	.2	.2	.2	1.0	.6	.6
46	1.3	1.0	1.6	5.3	4.2	2.0	1.3	.9	.7	.9	3.6	2.4	2.1
47	.2	.1	.2	.7	.6	.3	.2	.1	.1	.1	.5	.3	.3
48	1.5	1.1	1.8	6.0	4.8	2.3	1.5	1.1	.8	1.0	4.0	2.7	2.4
49	17.2	12.2	15.0	46.8	61.8	23.1	13.6	10.2	8.5	8.8	46.2	29.0	24.4
50	17.2	12.2	15.0	46.8	61.8	23.1	13.6	10.2	8.5	8.8	46.2	29.0	24.4
51	.2	.2	.2	.3	.1	.1	.1	.1	.1	.1	.4	.3	.2
52	17.4	12.4	15.2	47.1	61.9	23.2	13.8	10.3	8.6	8.9	46.6	29.4	24.6
53	15.7	11.2	13.7	42.9	56.4	21.0	12.4	9.3	7.7	8.0	42.4	26.7	22.3
54	1.5	1.5	1.8	2.9	1.3	1.2	1.1	1.0	1.1	1.1	3.5	3.2	1.8
55	.6	.6	.7	1.2	.5	.5	.5	.4	.4	.5	1.4	1.3	.7
56	2.1	2.1	2.5	4.1	1.8	1.6	1.6	1.5	1.5	1.6	4.9	4.6	2.5
57	17.8	13.3	16.2	47.0	58.2	22.7	14.1	10.8	9.2	9.6	47.3	31.2	24.8
58	17.8	13.3	16.2	47.0	58.2	22.7	14.1	10.8	9.2	9.6	47.3	31.2	24.8
59	.9	.9	1.1	1.8	.8	.7	.7	.6	.6	.7	2.2	2.0	1.1
60	18.7	14.1	17.3	48.8	58.9	23.4	14.7	11.4	9.9	10.3	49.5	33.3	25.9
61	14.1	10.6	13.0	37.4	45.2	17.7	11.0	8.4	7.3	7.6	37.9	25.3	19.6
62	1.6	1.6	2.0	3.3	1.4	1.3	1.3	1.1	1.1	1.2	3.9	3.7	2.0
63	3.5	3.4	3.5	3.4	3.5	3.4	3.5	3.6	3.5	3.5	3.4	3.4	3.5
64	5.1	5.0	5.5	6.7	4.8	4.7	4.8	4.7	4.7	4.8	7.3	7.1	5.4
65	.9	.9	1.0	1.7	.7	.7	.6	.6	.6	.6	2.1	1.9	1.0
66	6.0	5.9	6.6	8.4	5.5	5.3	5.4	5.3	5.3	5.4	9.4	9.0	6.5
67	6.0	5.9	6.6	8.4	5.5	5.3	5.4	5.3	5.3	5.4	9.4	9.0	6.5
68	.1	.1	.1	.2	.1	.1	.1	.1	.1	.1	.2	.2	.1
69	6.5	6.5	7.2	9.1	6.1	5.9	6.0	5.9	5.8	6.0	10.1	9.7	7.1
70	20.6	17.0	20.2	46.5	51.3	23.6	17.0	14.3	13.1	13.6	48.0	35.0	26.7
71	.5	.5	.6	.9	.4	.4	.4	.4	.4	.4	1.1	1.0	.6
72	21.1	17.6	20.8	47.4	51.7	24.0	17.4	14.7	13.5	14.0	49.0	36.0	27.3
73	20.0	16.6	19.7	45.0	49.1	22.8	16.5	13.9	12.8	13.2	46.5	34.2	25.9
74	1.4	1.4	1.6	2.5	1.2	1.2	1.1	1.1	1.1	1.1	2.9	2.7	1.6
75	21.4	18.0	21.3	47.5	50.3	23.9	17.6	14.9	13.8	14.4	49.5	36.9	27.5
76	15.5	12.9	15.4	34.8	36.9	17.3	12.7	10.7	9.8	10.2	36.3	27.0	20.0
77	15.5	12.9	15.4	34.8	36.9	17.3	12.7	10.7	9.8	10.2	36.3	27.0	20.0
78	.3	.3	.3	.6	.2	.2	.2	.2	.2	.2	.6	.6	.3
79	15.8	13.3	15.8	35.4	37.2	17.6	12.9	10.9	10.1	10.5	37.0	27.6	20.4
80	14.1	11.8	14.1	31.7	33.3	15.7	11.5	9.7	8.9	9.3	33.1	24.7	18.1
81	.9	.9	1.0	1.6	.8	.7	.7	.7	.7	.7	1.8	1.7	1.0
82	.8	.8	.9	1.4	.7	.6	.6	.6	.6	.6	1.6	1.5	.9
83	1.6	1.6	1.9	2.9	1.4	1.4	1.3	1.3	1.3	1.3	3.4	3.2	1.9
84	15.7	13.4	16.0	34.6	34.7	17.0	12.8	10.9	10.2	10.6	36.5	27.9	20.0

Fig.

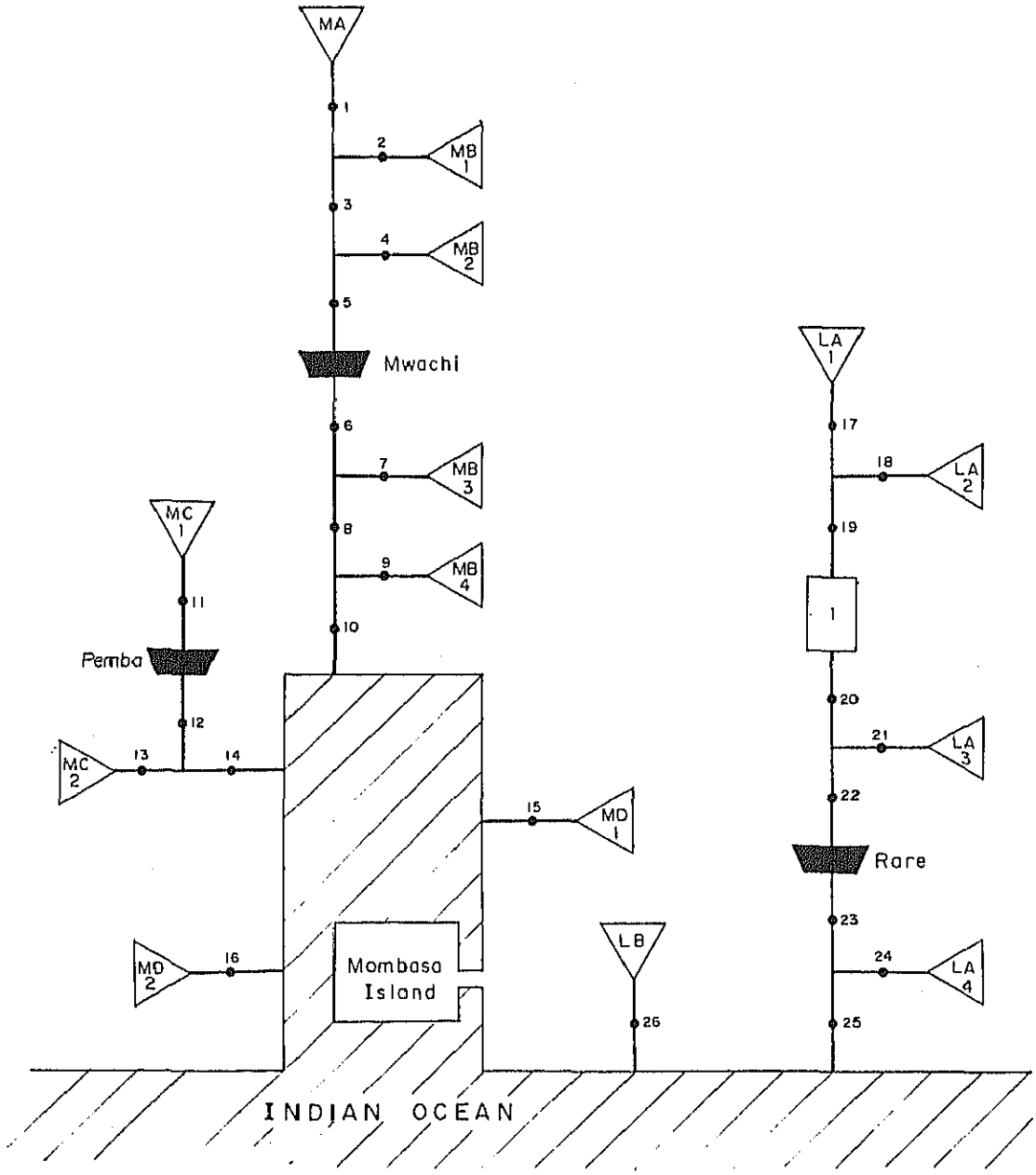


Figure B.10.14

Pemba, Mwachi and Rare River Basins

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Table B10.14 Naturalized Mean Monthly Discharge in the Rare, Pemba and Mwachi Rivers

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	2.3	2.8	3.4	6.5	2.3	2.1	1.8	1.6	1.6	1.8	5.3	6.2	3.1
2	1.4	.8	.7	1.1	.8	.5	.3	.2	.2	.3	.6	2.1	.7
3	3.7	3.5	4.1	7.6	3.0	2.6	2.0	1.7	1.8	2.0	5.9	8.3	3.9
4	4.8	2.8	2.4	3.9	2.6	1.8	.9	.6	.6	1.1	1.9	7.4	2.6
5	8.5	6.3	6.5	11.5	5.6	4.3	2.9	2.3	2.4	3.1	7.8	15.7	6.4
6	8.5	6.3	6.5	11.5	5.6	4.3	2.9	2.3	2.4	3.1	7.8	15.7	6.4
7	.4	.2	.2	.3	.2	.2	.1	.1	.1	.1	.2	.6	.2
8	9.0	6.5	6.7	11.9	5.8	4.5	3.0	2.3	2.5	3.2	8.0	16.3	6.6
9	1.0	.6	.5	.8	.6	.4	.2	.1	.1	.2	.4	1.6	.5
10	10.1	7.2	7.3	12.8	6.5	4.9	3.2	2.5	2.7	3.5	8.5	18.0	7.3
11	3.9	2.2	2.0	3.2	2.1	1.4	.7	.4	.5	.9	1.5	6.0	2.1
12	3.9	2.2	2.0	3.2	2.1	1.4	.7	.4	.5	.9	1.5	6.0	2.1
13	.8	.5	.4	.6	.4	.3	.1	.1	.1	.2	.3	1.2	.4
14	4.8	2.7	2.4	3.8	2.6	1.7	.9	.6	.6	1.0	1.9	7.2	2.5
15	5.8	3.3	2.9	4.7	3.1	2.1	1.0	.6	.8	1.3	2.3	8.8	3.0
16	.8	.4	.4	.6	.4	.3	.1	.1	.1	.2	.3	1.2	.4
17	.6	.7	.9	1.5	.6	.6	.5	.5	.5	.5	1.3	1.5	.8
18	1.3	1.5	1.9	3.6	1.3	1.1	1.0	.9	.9	1.0	3.0	3.4	1.7
19	1.9	2.3	2.8	5.1	1.9	1.7	1.5	1.3	1.3	1.5	4.3	4.9	2.5
20	.1	.1	.3	1.2	.0	.0	.0	.0	.0	.0	.9	1.2	.3
21	6.8	3.8	3.4	5.5	3.7	2.5	1.2	.8	.9	1.5	2.7	10.3	3.6
22	6.9	4.0	3.7	6.7	3.7	2.5	1.2	.8	.9	1.5	3.6	11.5	3.9
23	6.9	4.0	3.7	6.7	3.7	2.5	1.2	.8	.9	1.5	3.6	11.5	3.9
24	4.8	2.7	2.4	3.9	2.6	1.7	.9	.5	.6	1.0	1.9	7.3	2.5
25	11.7	6.7	6.1	10.6	6.3	4.2	2.1	1.3	1.5	2.5	5.5	18.8	6.4
26	3.6	2.1	1.9	3.0	2.0	1.4	.8	.5	.6	.9	1.5	5.4	2.0

Fig.

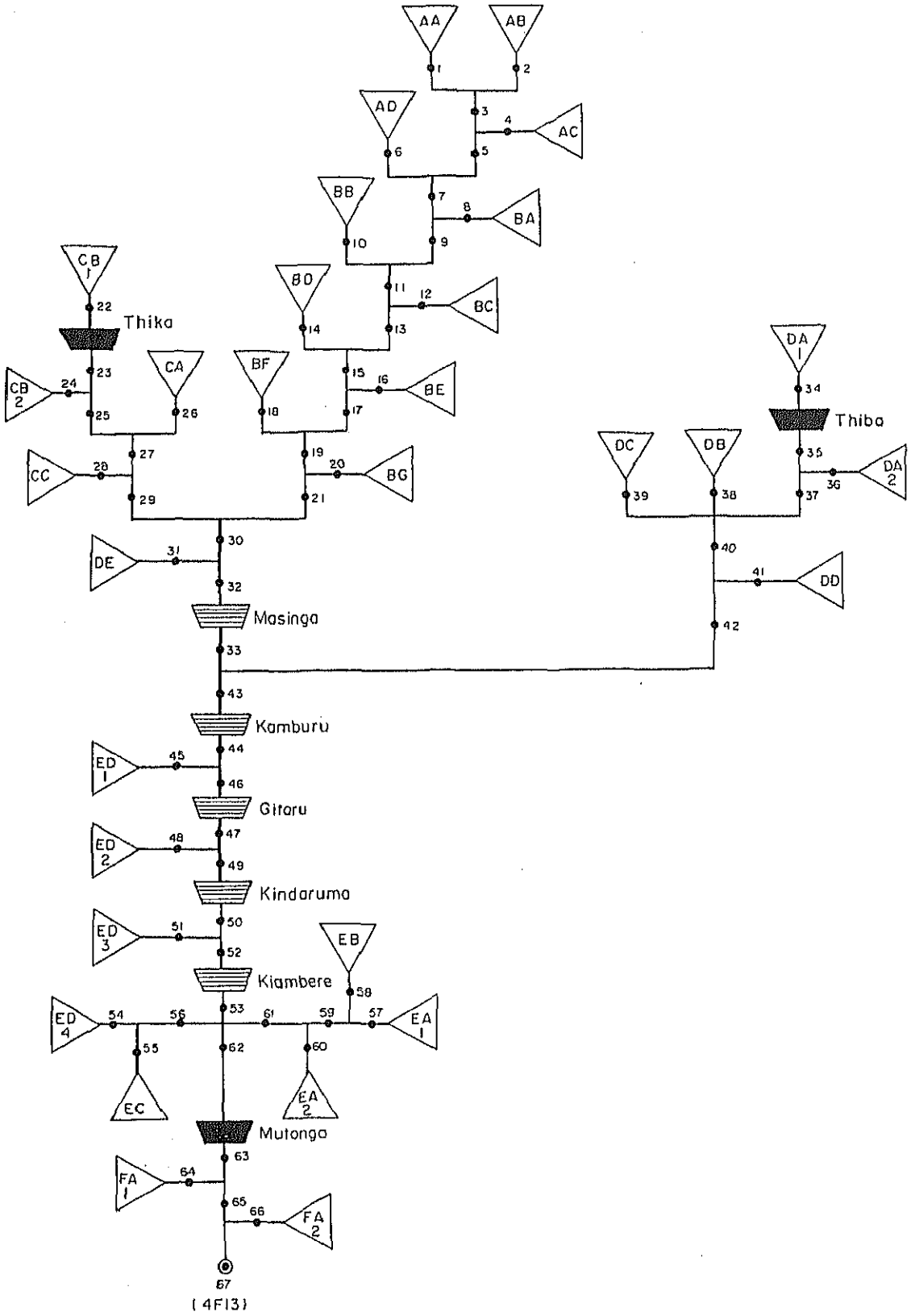


Figure B.10.15

Upper Tana River Basin

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN
JAPAN INTERNATIONAL COOPERATION AGENCY

Table B10.15 Naturalized Mean Monthly Discharge in the Upper Tana River

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	2.0	1.8	2.0	4.5	4.8	2.1	1.6	2.0	1.8	2.7	4.5	2.7	2.7
2	2.2	2.0	2.3	5.5	5.9	2.4	1.8	2.3	1.9	3.2	5.5	3.2	3.2
3	4.2	3.8	4.4	9.9	10.7	4.5	3.4	4.3	3.7	5.9	10.0	5.9	5.9
4	4.2	3.7	3.7	8.1	13.9	7.6	5.1	3.9	3.3	4.6	7.7	5.7	6.0
5	8.5	7.7	8.2	18.2	24.8	12.2	8.7	8.4	7.2	10.7	17.9	11.9	12.0
6	4.5	4.0	4.0	8.6	14.5	8.0	5.4	4.3	3.6	4.9	8.1	6.1	6.3
7	13.1	11.7	12.2	26.8	39.3	20.2	14.1	12.7	10.8	15.6	26.0	18.0	18.4
8	2.4	2.1	2.1	6.0	10.4	5.1	2.9	2.8	2.2	3.5	6.4	4.4	4.2
9	15.5	13.8	14.3	32.8	49.7	25.3	17.1	15.5	13.0	19.2	32.5	22.4	22.6
10	3.0	2.6	2.6	5.3	8.8	5.0	3.5	2.8	2.4	3.2	5.1	3.9	4.0
11	18.4	16.4	17.0	38.1	58.5	30.3	20.6	18.3	15.4	22.4	37.5	26.3	26.6
12	1.7	1.5	1.5	4.3	7.4	3.6	2.1	2.0	1.5	2.5	4.6	3.1	3.0
13	20.3	18.1	18.6	42.5	66.1	34.1	22.8	20.4	17.1	25.0	42.3	29.6	29.7
14	12.3	10.4	12.3	20.7	33.5	19.4	13.9	12.1	11.0	13.2	19.5	15.1	16.1
15	32.6	28.4	30.9	63.2	99.6	53.4	36.7	32.5	28.1	38.2	61.8	44.7	45.8
16	8.0	6.1	8.0	16.5	29.4	15.1	9.6	7.8	6.7	8.9	15.3	10.8	11.9
17	41.0	34.9	39.3	80.1	129.4	69.0	46.7	40.8	35.2	47.6	77.5	55.9	58.1
18	5.8	4.5	5.8	11.5	20.2	10.6	6.8	5.7	4.9	6.4	10.7	7.7	8.4
19	46.7	39.4	45.1	91.6	149.7	79.6	53.5	46.5	40.0	54.0	88.3	63.6	66.5
20	6.4	4.8	6.4	13.2	23.5	12.1	7.7	6.3	5.3	7.1	12.3	8.7	9.5
21	53.1	44.2	51.6	104.8	173.2	91.7	61.2	52.7	45.4	61.1	100.5	72.3	76.0
22	1.5	1.1	1.2	3.7	6.8	3.5	2.1	1.4	1.1	1.3	3.0	2.5	2.4
23	1.5	1.1	1.2	3.7	6.8	3.5	2.1	1.4	1.1	1.3	3.0	2.5	2.4
24	2.5	1.9	2.0	6.3	11.6	5.9	3.6	2.4	1.9	2.2	5.2	4.2	4.1
25	4.5	3.5	3.7	10.5	18.9	9.9	6.1	4.3	3.5	3.9	8.7	7.1	7.1
26	6.9	5.5	5.7	15.3	27.0	14.4	9.1	6.6	5.4	6.0	12.8	10.5	10.4
27	11.4	9.0	9.3	25.8	45.9	24.3	15.3	10.9	8.9	9.9	21.5	17.6	17.5
28	10.7	8.0	8.4	26.7	48.9	25.0	15.0	10.2	7.9	9.0	21.9	17.6	17.5
29	24.5	19.3	20.1	54.8	97.1	51.7	32.6	23.4	19.1	21.2	45.7	37.5	37.3
30	77.6	63.5	71.7	159.6	270.3	143.4	93.7	76.1	64.5	82.4	146.2	109.8	113.2
31	3.8	2.9	3.0	9.5	17.4	8.9	5.3	3.6	2.8	3.2	7.8	6.3	6.2
32	81.4	66.4	74.7	169.1	287.8	152.3	99.1	79.7	67.3	85.6	154.0	116.1	119.5
33	87.9	76.5	86.5	153.4	272.1	150.1	100.7	82.1	71.5	87.6	149.2	118.2	119.6
34	1.0	.9	.8	2.1	3.8	2.4	1.6	1.4	1.2	2.0	2.6	1.5	1.8
35	1.0	.9	.8	2.1	3.8	2.4	1.6	1.4	1.2	2.0	2.6	1.5	1.8
36	2.8	2.4	2.1	6.1	11.4	7.1	4.6	3.8	3.3	5.7	7.8	4.4	5.1
37	4.3	3.7	3.3	8.6	15.5	9.8	6.5	5.6	4.8	8.1	10.9	6.3	7.3
38	2.4	2.0	1.8	5.2	9.6	5.9	3.9	3.3	2.8	4.8	6.6	3.7	4.3
39	2.2	1.9	1.8	4.4	7.8	5.0	3.4	2.9	2.5	4.1	5.5	3.3	3.7
40	8.9	7.7	6.8	18.1	32.9	20.8	13.8	11.7	10.2	17.0	23.0	13.3	15.3
41	2.4	2.0	1.8	5.1	9.5	5.9	3.8	3.2	2.7	4.8	6.5	3.7	4.3
42	14.0	12.3	11.3	25.9	45.1	29.4	20.3	17.6	15.6	24.5	32.2	19.6	22.3
43	101.9	88.8	97.8	179.3	317.2	179.4	120.9	99.7	87.1	112.0	181.3	137.9	141.9
44	105.9	95.1	103.6	171.3	305.9	177.3	121.3	102.7	92.6	112.8	177.8	138.6	142.1
45	.6	.4	.5	1.4	1.9	.8	.4	.4	.2	.6	1.7	1.0	.8
46	106.5	95.5	104.1	172.7	307.9	178.0	121.7	103.1	92.8	113.4	179.6	139.6	142.9
47	106.7	95.5	104.4	172.5	307.6	177.9	121.6	103.2	92.8	113.3	179.5	139.8	142.9
48	1.2	.8	1.0	3.0	4.0	1.5	.8	.9	.5	1.2	3.6	2.1	1.7
49	108.0	96.3	105.4	175.4	311.5	179.4	122.4	104.0	93.3	114.6	183.1	141.9	144.6
50	108.2	96.3	105.5	175.3	311.2	179.4	122.4	104.1	93.3	114.5	183.0	142.1	144.6
51	9.2	6.2	7.3	22.0	29.6	11.5	5.7	6.4	3.5	9.2	26.6	15.6	12.7
52	117.4	102.5	112.8	197.2	340.8	190.9	128.1	110.5	96.8	123.7	209.6	157.6	157.3
53	117.7	104.1	114.4	195.2	339.6	190.4	128.1	110.5	96.9	123.6	209.6	157.6	157.3
54	2.0	1.3	1.5	4.7	6.3	2.4	1.2	1.4	.7	2.0	5.6	3.3	2.7
55	3.3	2.5	2.8	7.0	10.9	4.6	2.8	2.5	2.0	3.7	8.5	5.1	4.6
56	5.3	3.8	4.3	11.6	17.1	7.1	4.0	3.9	2.7	5.7	14.1	8.4	7.3
57	4.0	2.8	3.2	7.4	10.5	4.9	3.0	2.8	2.2	4.1	9.4	5.6	5.0
58	6.7	5.0	5.6	13.9	21.6	9.2	5.6	5.1	4.0	7.5	16.9	10.1	9.3
59	10.6	7.8	8.9	21.3	32.1	14.2	8.6	7.8	6.3	11.6	26.3	15.7	14.2
60	.6	.4	.4	1.1	1.6	.7	.4	.4	.3	.6	1.4	.8	.7
61	11.3	8.2	9.4	22.5	33.8	15.0	9.0	8.3	6.6	12.2	27.7	16.6	15.0
62	134.3	116.0	128.1	229.4	390.5	212.4	141.1	122.7	106.2	141.5	251.5	182.6	179.7
63	134.3	116.0	128.1	229.4	390.5	212.4	141.1	122.7	106.2	141.5	251.5	182.6	179.7
64	2.8	2.1	2.4	5.4	7.6	3.3	2.0	1.9	1.3	3.1	6.6	4.0	3.5
65	137.4	118.3	130.8	235.0	398.4	216.0	143.4	124.8	107.8	144.9	258.3	186.8	183.5
66	5.6	4.1	4.8	10.6	14.9	6.5	4.0	3.7	2.5	6.2	13.0	8.0	7.0
67	143.4	122.9	136.0	246.1	413.8	222.9	147.8	129.0	110.8	151.5	271.7	195.3	190.9

Fig.

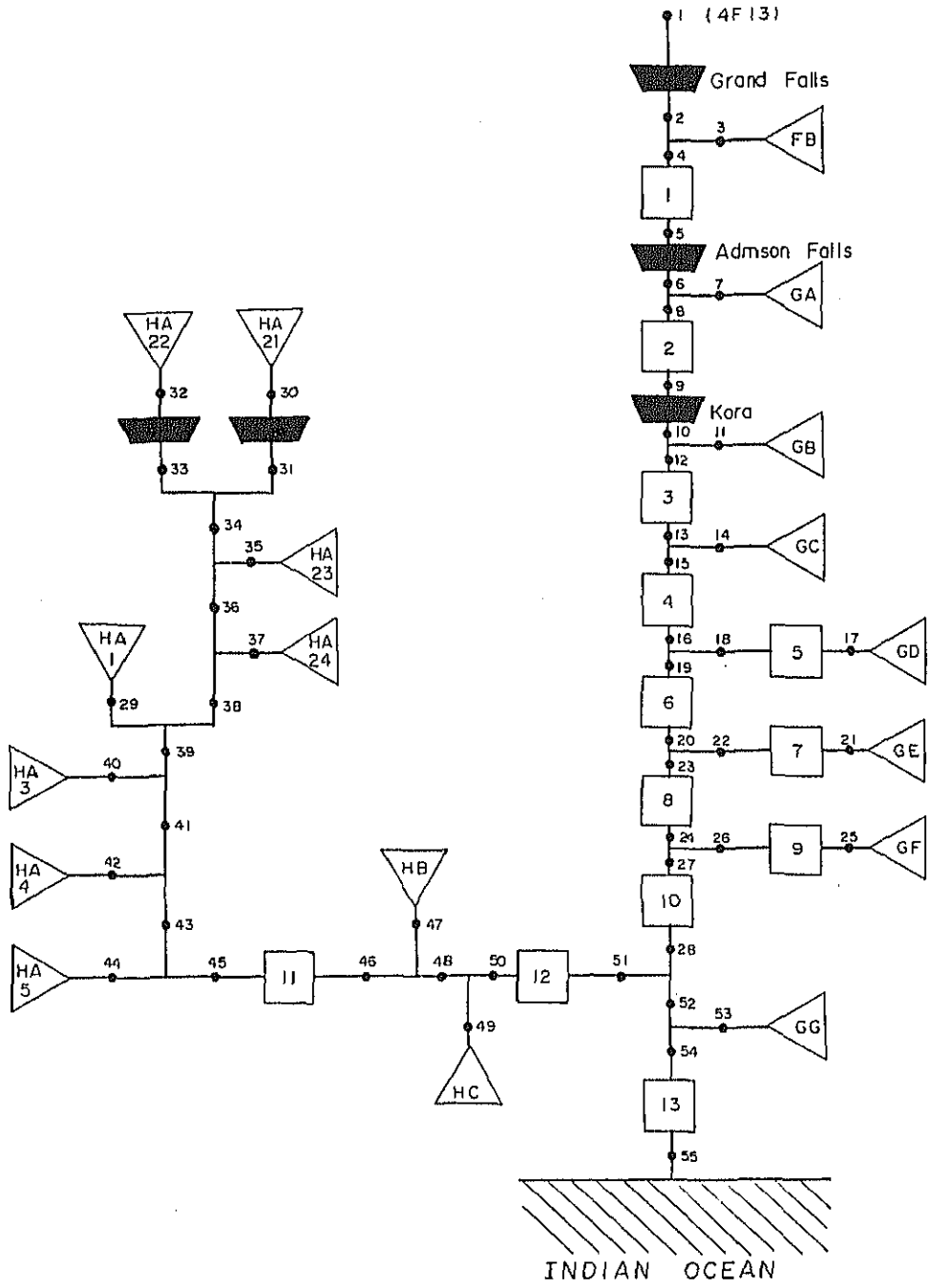


Figure B.10.16

Lower Tana River Basin

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Table B10.16 Naturalized Mean Monthly Discharge in the Lower Tana River

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	143.4	122.9	136.0	246.1	413.8	222.9	147.8	129.0	110.8	151.5	271.7	195.3	190.9
2	143.4	122.9	136.0	246.1	413.8	222.9	147.8	129.0	110.8	151.5	271.7	195.3	190.9
3	1.7	1.7	2.1	3.4	1.4	1.3	1.3	1.2	1.2	1.3	4.1	3.8	2.0
4	146.4	125.9	139.4	250.8	416.5	225.6	150.4	131.4	113.3	154.1	277.1	200.3	194.3
5	140.1	121.3	133.6	235.5	386.9	212.4	143.7	126.4	109.8	147.1	259.5	189.3	183.8
6	140.1	121.3	133.6	235.5	386.9	212.4	143.7	126.4	109.8	147.1	259.5	189.3	183.8
7	1.7	1.7	2.0	3.4	1.4	1.3	1.3	1.2	1.2	1.3	4.0	3.8	2.0
8	141.7	123.0	135.6	238.9	388.3	213.7	145.0	127.5	110.9	148.4	263.5	193.1	185.8
9	138.5	120.6	132.7	231.2	373.6	207.2	141.6	125.0	109.2	144.9	254.7	187.5	180.6
10	138.5	120.6	132.7	231.2	373.6	207.2	141.6	125.0	109.2	144.9	254.7	187.5	180.6
11	2.3	2.4	2.9	4.8	2.0	1.9	1.8	1.6	1.6	1.8	5.7	5.3	2.8
12	140.9	123.0	135.6	236.0	375.6	209.0	143.4	126.6	110.8	146.7	260.4	192.8	183.4
13	132.8	117.0	128.1	216.5	339.5	192.8	135.0	120.2	106.3	137.8	238.0	178.5	170.2
14	.8	.8	.9	1.6	.7	.6	.6	.5	.6	.6	1.9	1.8	.9
15	134.8	119.1	130.4	219.4	341.4	194.7	136.9	122.1	108.1	139.7	241.2	181.5	172.4
16	129.4	115.0	125.3	206.6	317.9	184.0	131.3	117.7	105.0	133.9	226.4	172.0	163.7
17	3.2	3.2	3.9	6.4	2.7	2.5	2.4	2.2	2.2	2.4	7.7	7.1	3.8
18	1.5	1.5	2.0	3.7	1.2	1.1	1.1	.9	.9	1.1	4.5	4.1	2.0
19	130.9	116.6	127.3	210.2	319.1	185.1	132.4	118.7	106.0	134.9	230.9	176.1	165.7
20	115.9	103.5	112.8	184.3	278.1	162.6	117.1	105.3	94.4	119.4	202.1	154.9	145.9
21	5.0	5.0	6.1	10.2	4.2	3.9	3.8	3.5	3.5	3.8	12.1	11.3	6.0
22	2.4	2.4	3.0	5.5	1.9	1.7	1.7	1.5	1.5	1.7	6.6	6.1	3.0
23	118.3	105.9	115.8	189.7	280.0	164.3	118.8	106.8	95.9	121.1	208.7	161.0	148.9
24	111.4	99.9	109.1	177.8	261.6	154.2	111.9	100.7	90.6	114.0	195.4	151.1	139.8
25	6.6	6.7	8.1	13.5	5.6	5.2	5.1	4.6	4.7	5.1	16.0	14.9	8.0
26	2.8	2.8	3.6	6.5	2.3	2.1	2.0	1.8	1.8	2.0	7.9	7.3	3.6
27	114.2	102.8	112.7	184.3	263.9	156.2	113.9	102.5	92.4	116.0	203.3	158.3	143.4
28	102.7	92.7	101.4	164.0	233.6	139.4	102.4	92.4	83.6	104.2	180.6	141.3	128.2
29	.4	.4	.5	.8	.3	.3	.3	.3	.3	.3	.9	.9	.5
30	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
31	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
33	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
34	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
35	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
36	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
37	.2	.2	.2	.4	.2	.2	.2	.1	.1	.2	.5	.4	.2
38	.3	.3	.3	.5	.2	.2	.2	.2	.2	.2	.6	.5	.3
39	.7	.7	.8	1.3	.6	.5	.5	.5	.5	.5	1.5	1.4	.8
40	.4	.4	.4	.8	.3	.3	.3	.3	.3	.3	.9	.8	.4
41	1.0	1.0	1.2	2.0	.9	.8	.8	.7	.7	.8	2.4	2.2	1.2
42	.3	.3	.3	.5	.2	.2	.2	.2	.2	.2	.6	.6	.3
43	1.3	1.3	1.6	2.6	1.1	1.0	1.0	.9	.9	1.0	3.0	2.8	1.5
44	1.1	1.1	1.4	2.3	.9	.9	.9	.8	.8	.9	2.7	2.5	1.4
45	2.4	2.4	2.9	4.8	2.0	1.9	1.9	1.7	1.7	1.9	5.7	5.3	2.9
46	1.3	1.3	1.6	3.0	1.0	.9	.9	.8	.8	.9	3.6	3.3	1.6
47	3.9	3.9	4.7	7.9	3.3	3.0	3.0	2.7	2.7	3.0	9.4	8.7	4.7
48	5.1	5.2	6.4	10.9	4.3	4.0	3.8	3.5	3.5	3.8	13.0	12.1	6.3
49	2.8	2.8	3.5	5.8	2.4	2.2	2.2	2.0	2.0	2.2	6.8	6.4	3.4
50	8.0	8.0	9.8	16.6	6.7	6.2	6.0	5.4	5.5	6.0	19.9	18.4	9.7
51	3.8	3.8	4.9	8.7	3.1	2.8	2.7	2.4	2.4	2.7	10.6	9.8	4.8
52	106.5	96.5	106.3	172.7	236.7	142.2	105.1	94.8	86.0	107.0	191.1	151.0	133.0
53	3.0	3.0	3.7	6.2	2.6	2.4	2.3	2.1	2.1	2.3	7.4	6.8	3.7
54	109.6	99.6	110.0	178.9	239.2	144.6	107.5	96.9	88.1	109.3	198.5	157.9	136.7
55	95.3	86.9	95.6	153.3	203.7	124.6	93.5	84.7	77.3	95.0	169.7	135.7	117.9

Fig.

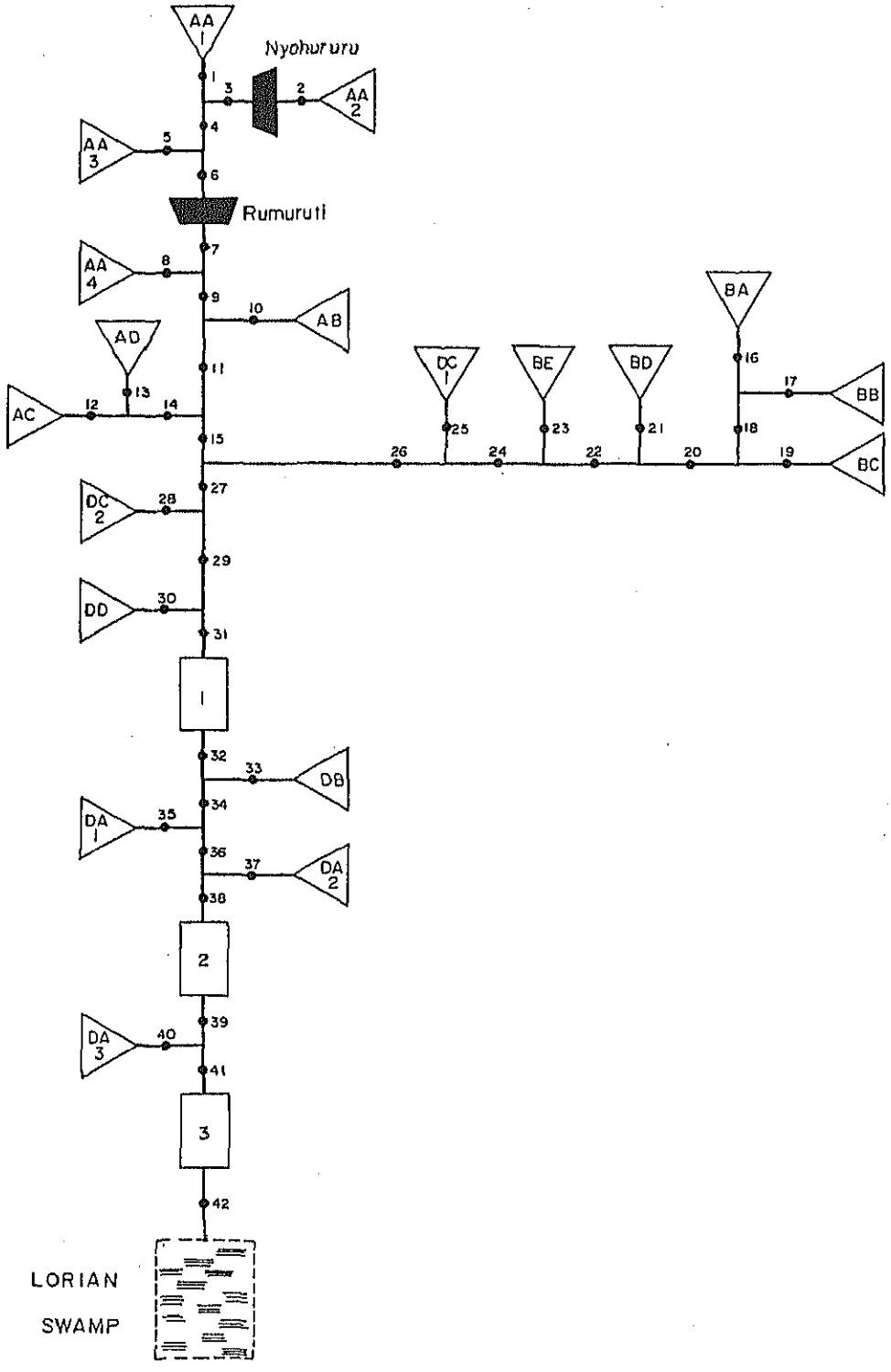


Figure B.10.17

Ewaso N'giro (north) River Basin

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Table B10.17 Naturalized Mean Monthly Discharge
in the Ewaso N'giro (North) River

(Unit:cms)

Node	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
1	.1	.1	.0	.1	.1	.1	.2	.3	.2	.1	.3	.2	.1
2	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.1	.0	.0
3	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.1	.0	.0
4	.1	.1	.1	.2	.2	.1	.2	.3	.3	.1	.3	.2	.2
5	.3	.2	.2	.5	.5	.3	.6	1.0	.8	.3	1.0	.7	.5
6	.5	.3	.3	.7	.7	.4	.8	1.3	1.0	.4	1.4	1.0	.7
7	.5	.3	.3	.7	.7	.4	.8	1.3	1.0	.4	1.4	1.0	.7
8	.4	.3	.2	.6	.6	.3	.7	1.1	.9	.3	1.2	.8	.6
9	.9	.6	.5	1.3	1.4	.7	1.6	2.5	2.0	.8	2.7	1.8	1.4
10	.4	.3	.2	.5	.6	.3	.6	1.0	.8	.3	1.1	.8	.6
11	1.3	.9	.7	1.9	1.9	1.0	2.2	3.5	2.8	1.2	3.8	2.6	2.0
12	.7	.5	.4	1.1	1.2	.6	1.4	2.2	1.7	.7	2.3	1.6	1.2
13	.4	.3	.2	.6	.6	.3	.7	1.1	.8	.3	1.1	.8	.6
14	1.1	.8	.6	1.7	1.8	.9	2.1	3.3	2.6	1.0	3.5	2.4	1.8
15	2.4	1.7	1.3	3.6	3.7	1.9	4.3	6.8	5.3	2.2	7.3	5.0	3.8
16	.8	.6	.5	1.3	1.1	.6	.5	.6	.5	.5	1.3	1.1	.8
17	1.5	1.2	1.1	2.3	2.1	1.2	1.1	1.2	1.1	1.1	2.4	2.0	1.5
18	2.3	1.9	1.6	3.6	3.2	1.8	1.6	1.8	1.7	1.6	3.7	3.1	2.3
19	4.4	3.3	2.8	7.3	6.4	3.3	2.8	3.1	2.8	2.8	7.6	6.1	4.4
20	7.0	5.4	4.7	11.1	9.9	5.4	4.6	5.1	4.8	4.7	11.6	9.4	7.0
21	.7	.8	.8	2.2	2.3	1.0	.8	1.0	.9	1.1	2.8	2.0	1.4
22	7.7	6.2	5.5	13.3	12.2	6.3	5.4	6.1	5.7	5.8	14.3	11.5	8.3
23	1.5	1.7	1.7	4.2	4.3	1.9	1.5	2.1	1.9	2.1	5.3	3.9	2.7
24	9.2	7.9	7.2	17.5	16.5	8.2	6.9	8.2	7.6	7.9	19.6	15.4	11.0
25	.4	.5	.5	1.3	1.4	.6	.4	.6	.6	.6	1.7	1.2	.8
26	9.7	8.4	7.7	18.8	17.9	8.8	7.4	8.8	8.1	8.6	21.3	16.6	11.8
27	12.1	10.1	9.0	22.4	21.6	10.7	11.7	15.6	13.4	10.8	28.6	21.6	15.6
28	.9	1.0	1.0	2.8	2.9	1.2	.9	1.3	1.2	1.4	3.6	2.6	1.7
29	13.0	11.1	10.1	25.2	24.5	12.0	12.6	17.0	14.7	12.1	32.2	24.3	17.4
30	1.9	2.2	2.2	5.9	6.1	2.6	2.0	2.8	2.5	2.9	7.6	5.5	3.7
31	15.1	13.4	12.3	31.2	30.8	14.6	14.7	19.8	17.2	15.1	39.8	29.9	21.2
32	13.3	11.9	10.9	27.8	27.4	12.9	13.0	17.6	15.3	13.4	35.6	26.6	18.8
33	1.1	.9	1.0	3.2	2.8	1.4	1.2	1.8	1.5	1.6	4.7	2.8	2.0
34	14.4	12.8	11.9	31.0	30.3	14.3	14.3	19.4	16.8	15.0	40.2	29.4	20.8
35	.8	.7	.8	2.5	2.3	1.1	.9	1.5	1.2	1.3	3.8	2.2	1.6
36	15.3	13.5	12.7	33.6	32.6	15.4	15.2	20.9	18.1	16.3	44.0	31.7	22.5
37	.4	.3	.4	1.2	1.1	.5	.5	.7	.6	.6	1.8	1.1	.8
38	15.7	13.9	13.1	34.8	33.7	16.0	15.7	21.6	18.7	16.9	45.9	32.8	23.2
39	14.4	12.8	12.0	32.2	31.1	14.7	14.4	19.9	17.2	15.6	42.4	30.3	21.4
40	.6	.5	.5	1.8	1.5	.7	.6	1.0	.8	.9	2.6	1.5	1.1
41	15.0	13.3	12.6	33.9	32.7	15.5	15.1	21.0	18.0	16.5	45.0	31.9	22.5
42	6.9	6.0	5.7	16.5	15.9	7.1	6.9	9.9	8.4	7.6	22.2	15.5	10.7

APPENDIX B.11

Annual Mean Discharge and Minimum Monthly Discharge

Fig.

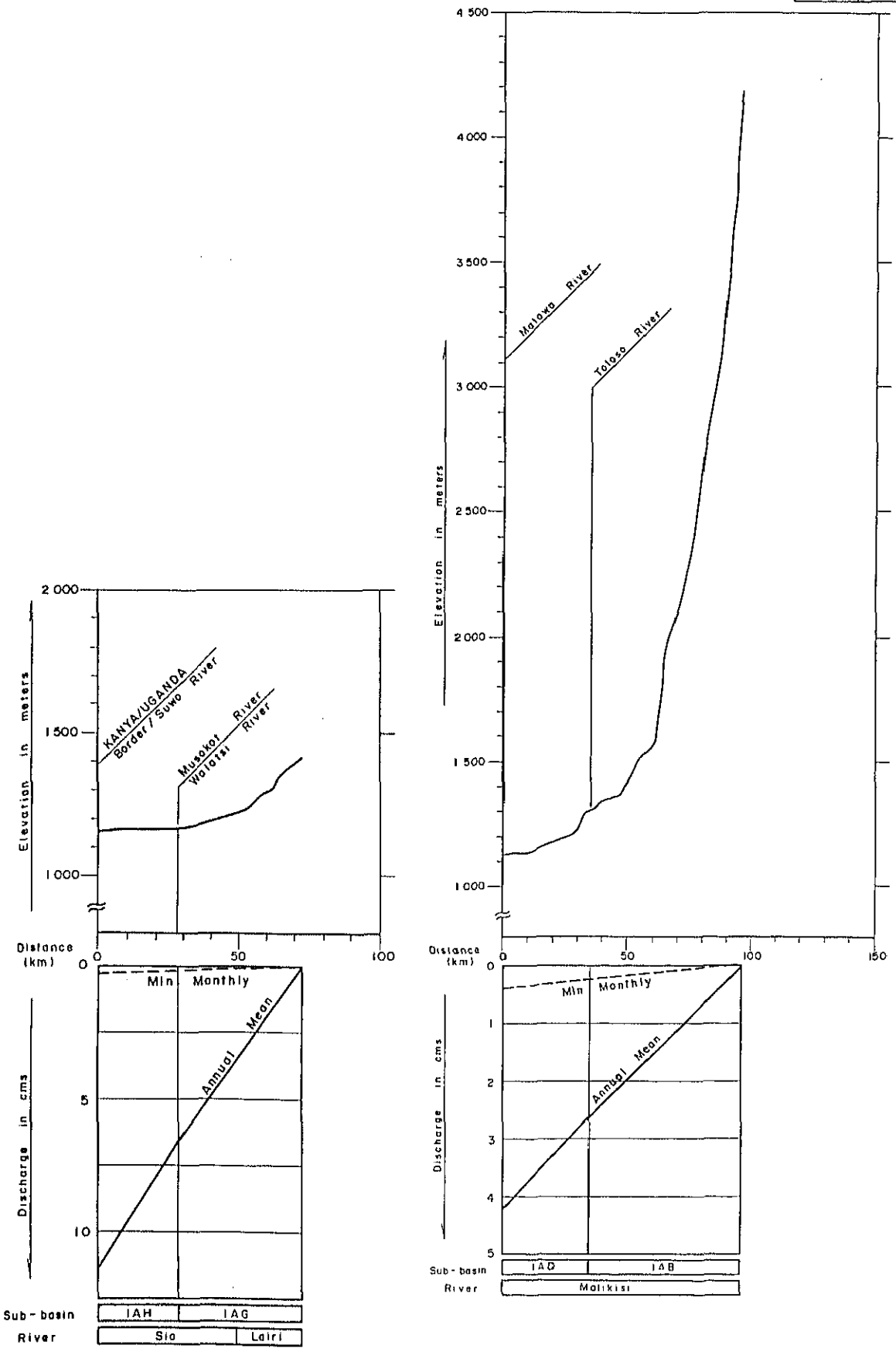
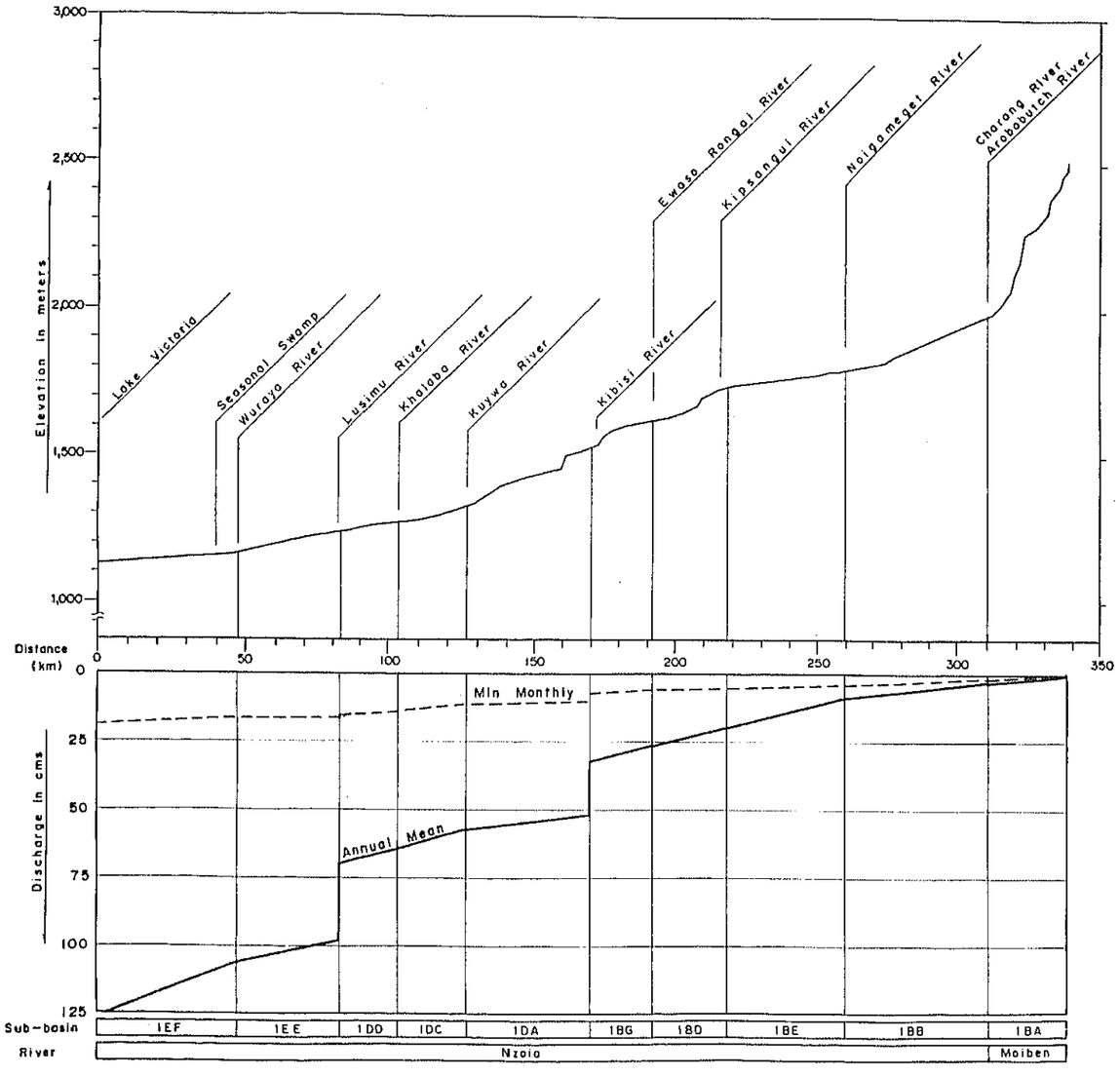


Figure B.11.1 Sio and Malikisi Rivers

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig.



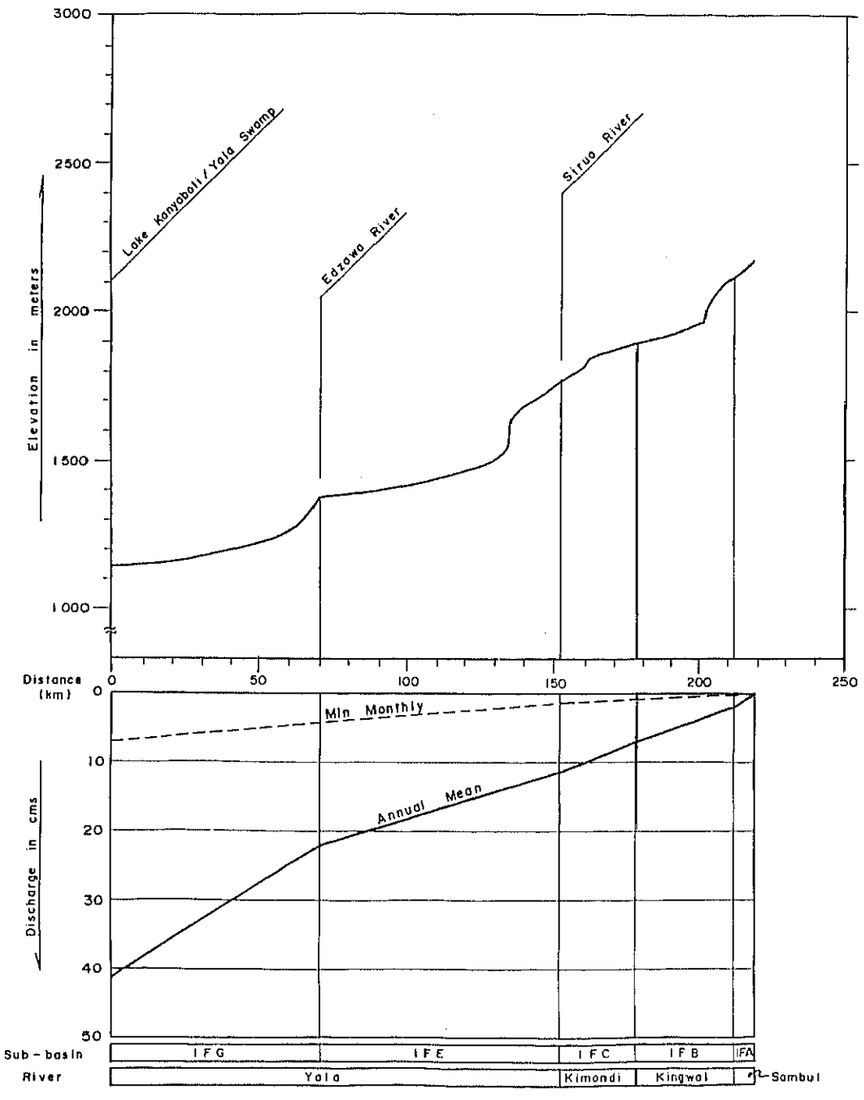
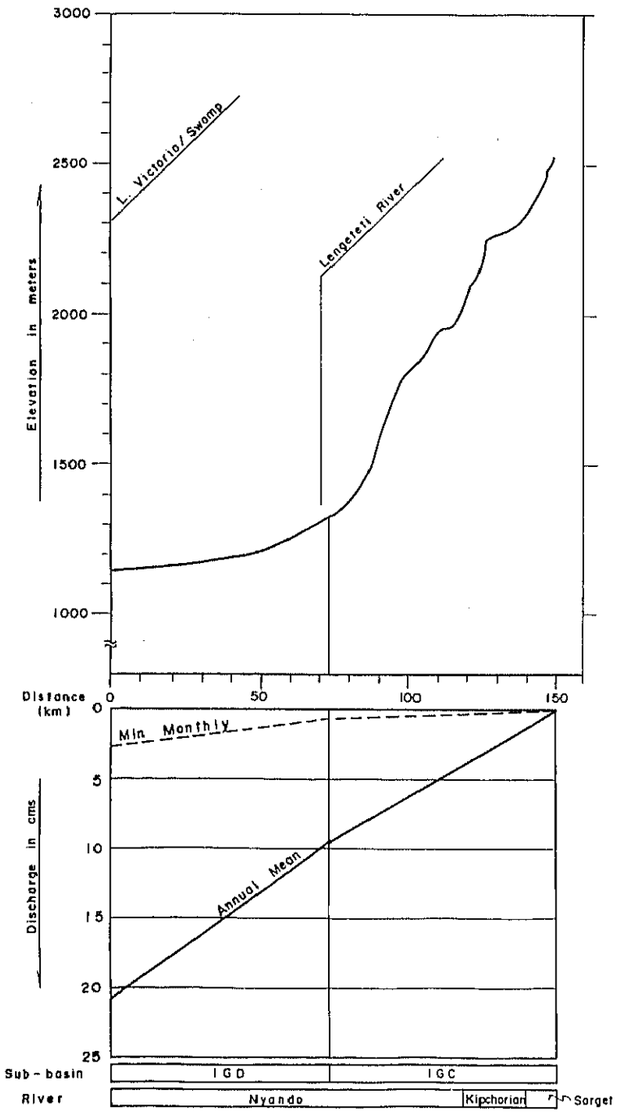


Figure B.11.2 Nzoia and Yala Rivers

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig.



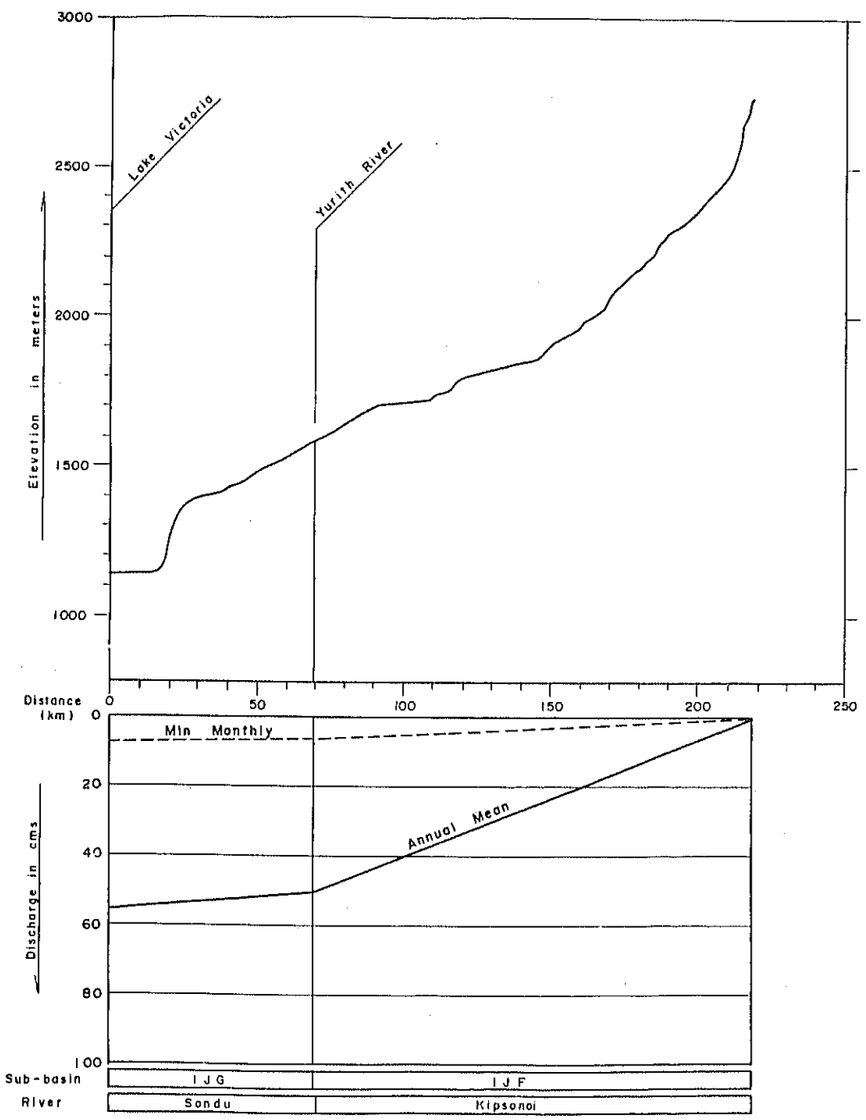
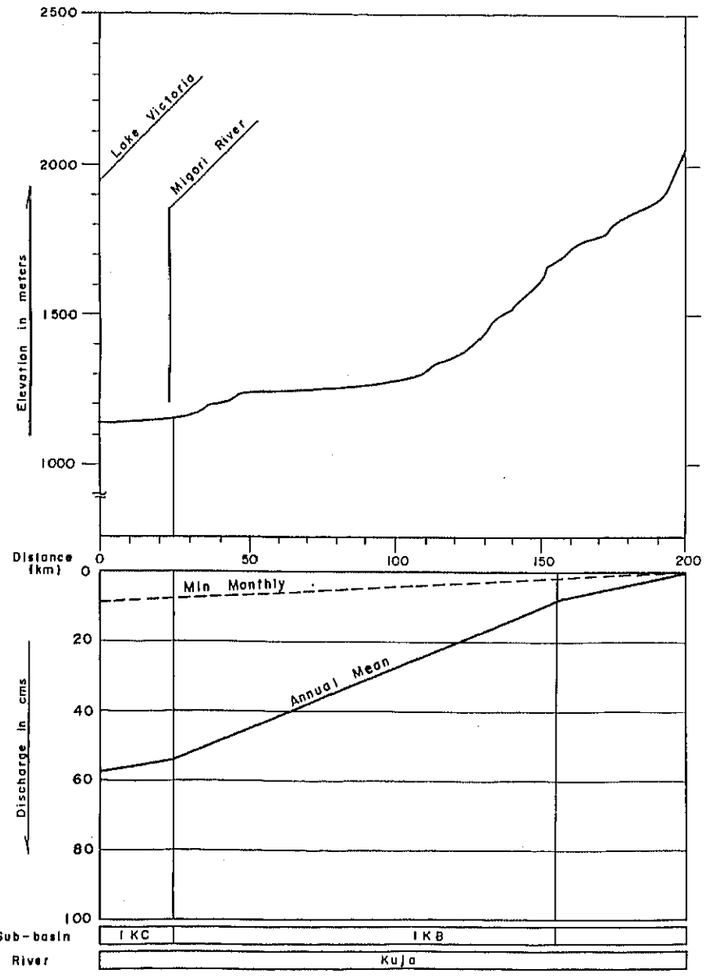


Figure B.11.3 Nyando and Sondu Rivers

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig.



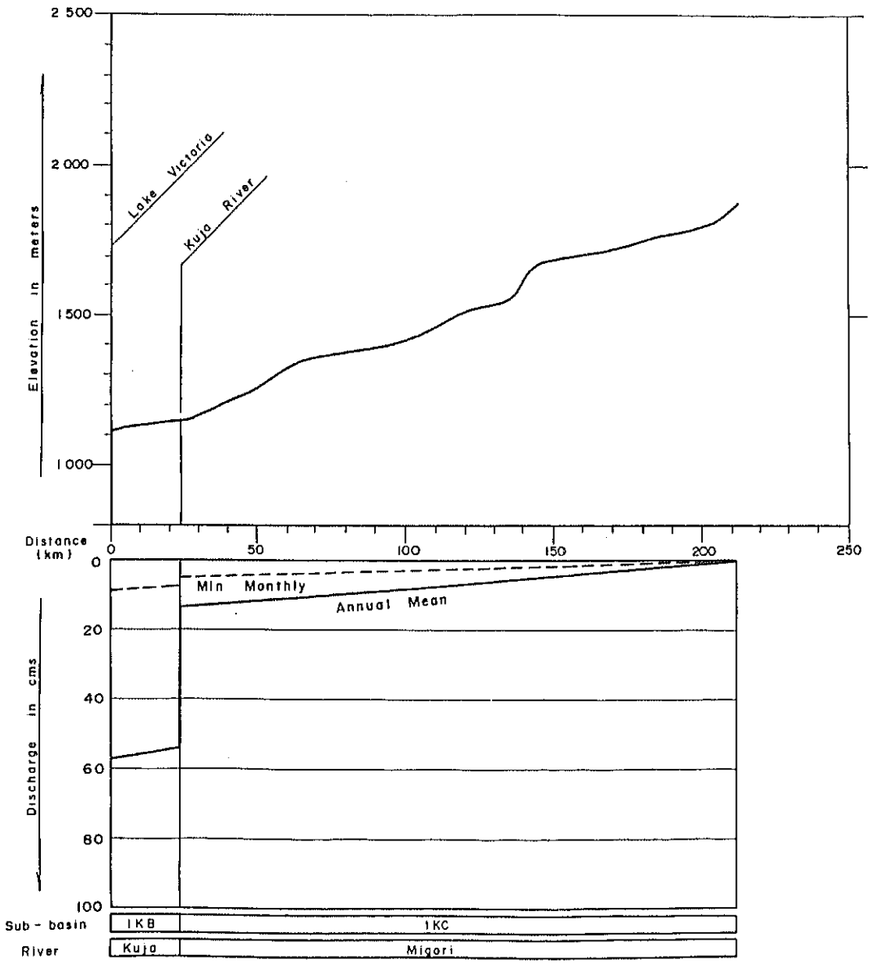


Figure B.11.4 Kuja and Migori Rivers

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig.

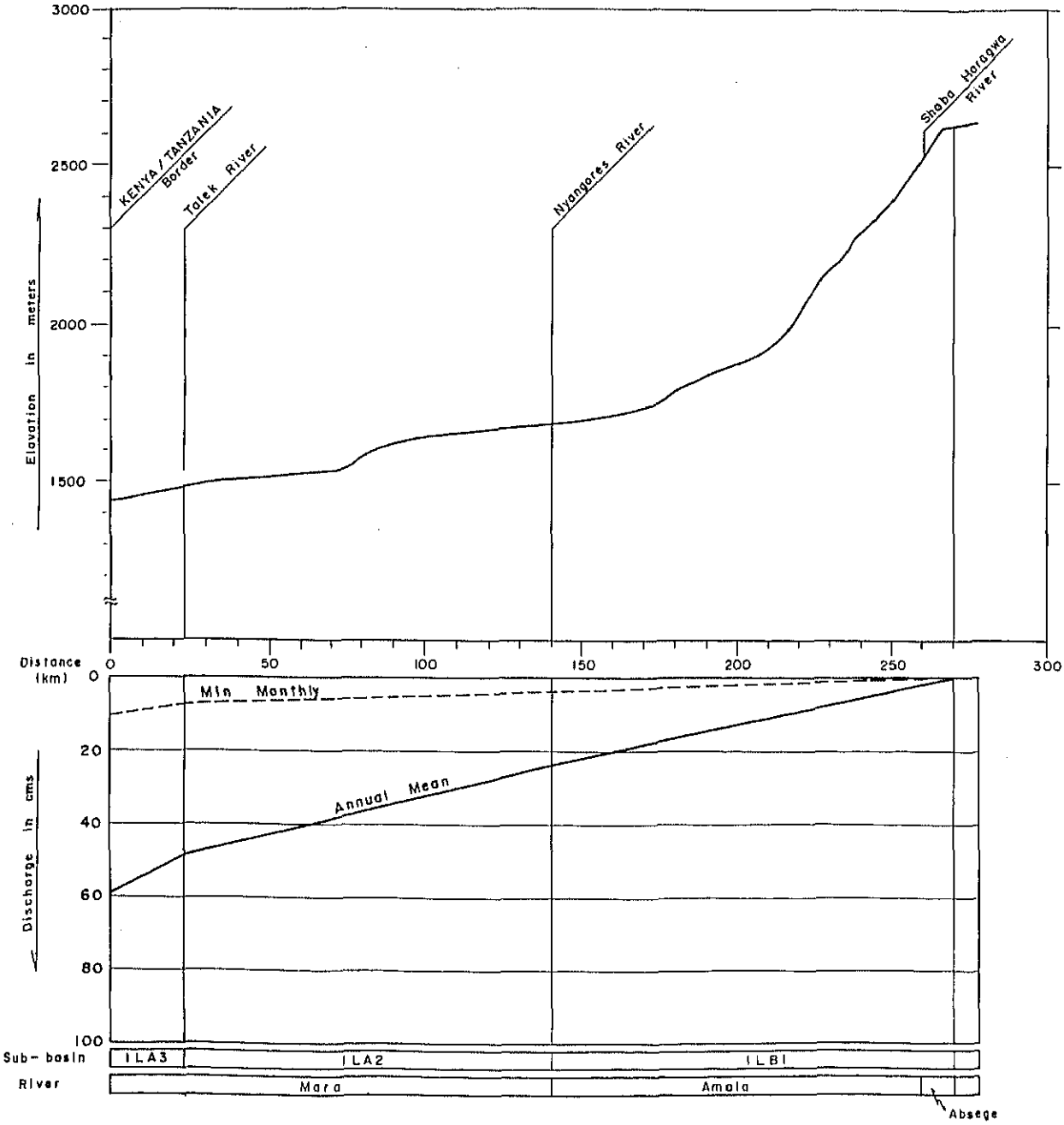


Figure B.11.5 Mara River

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig.

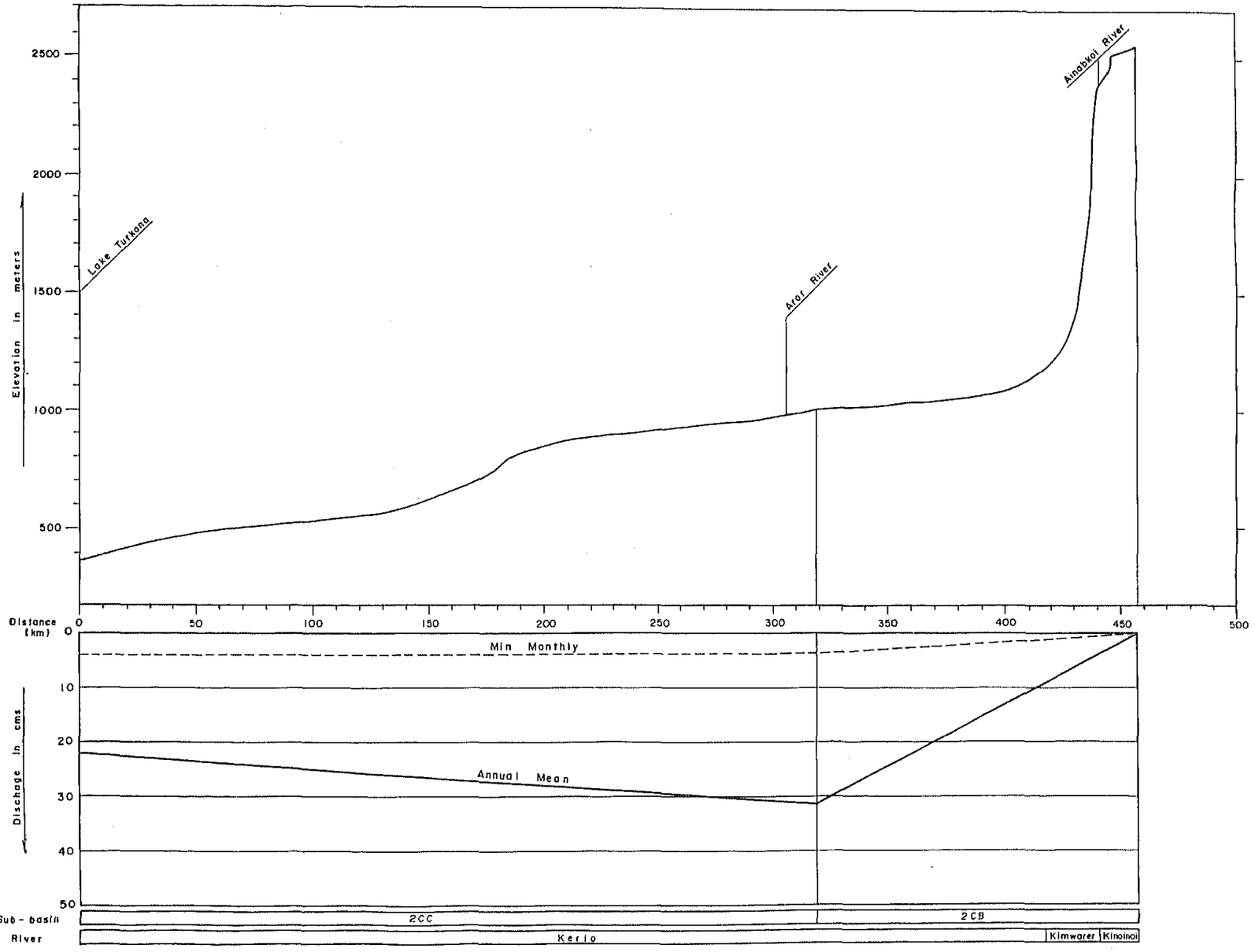


Figure B.11.6 Kerio River

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig.

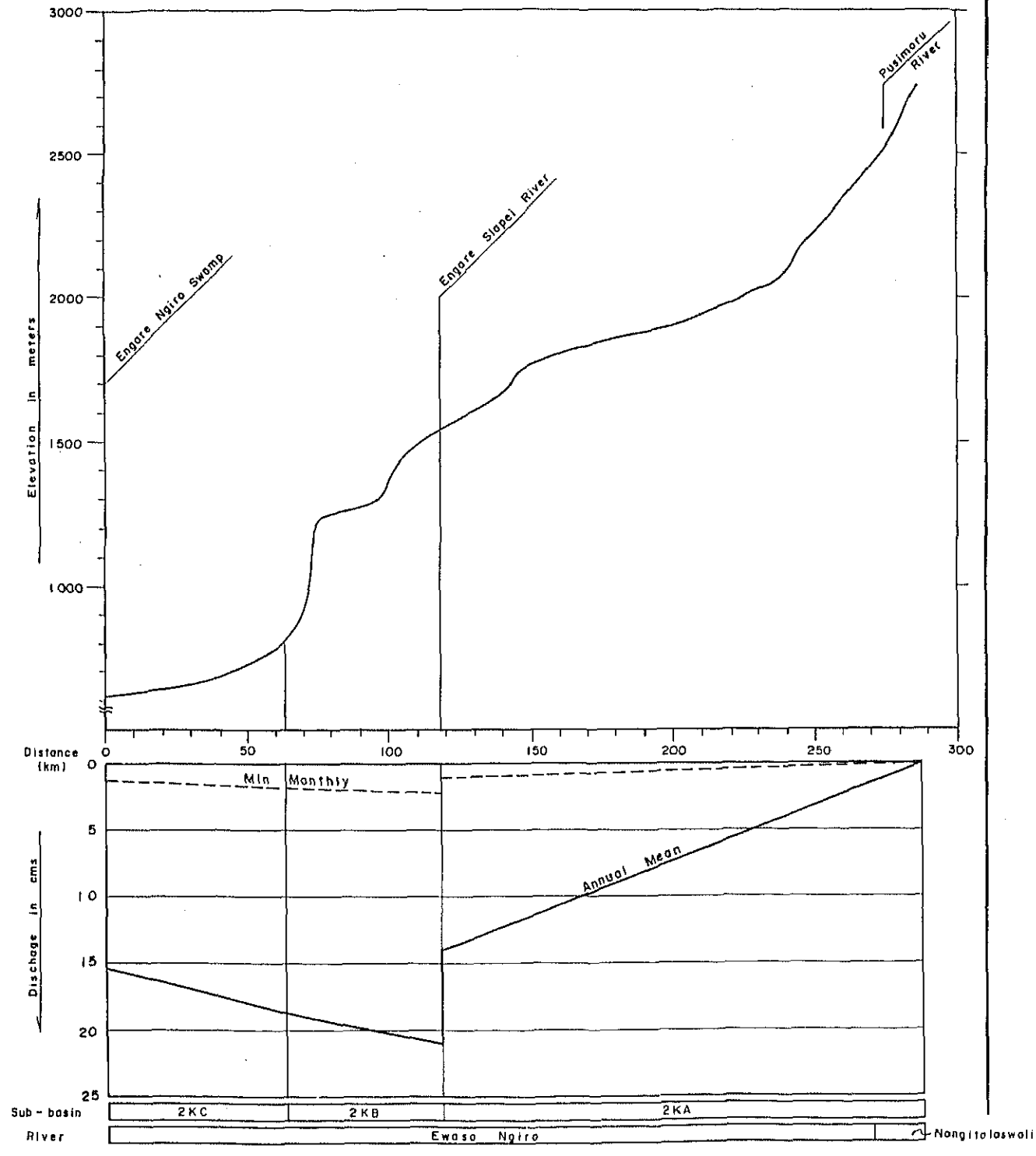


Figure B.11.7 Ewaso Ngiro (South) River

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig.

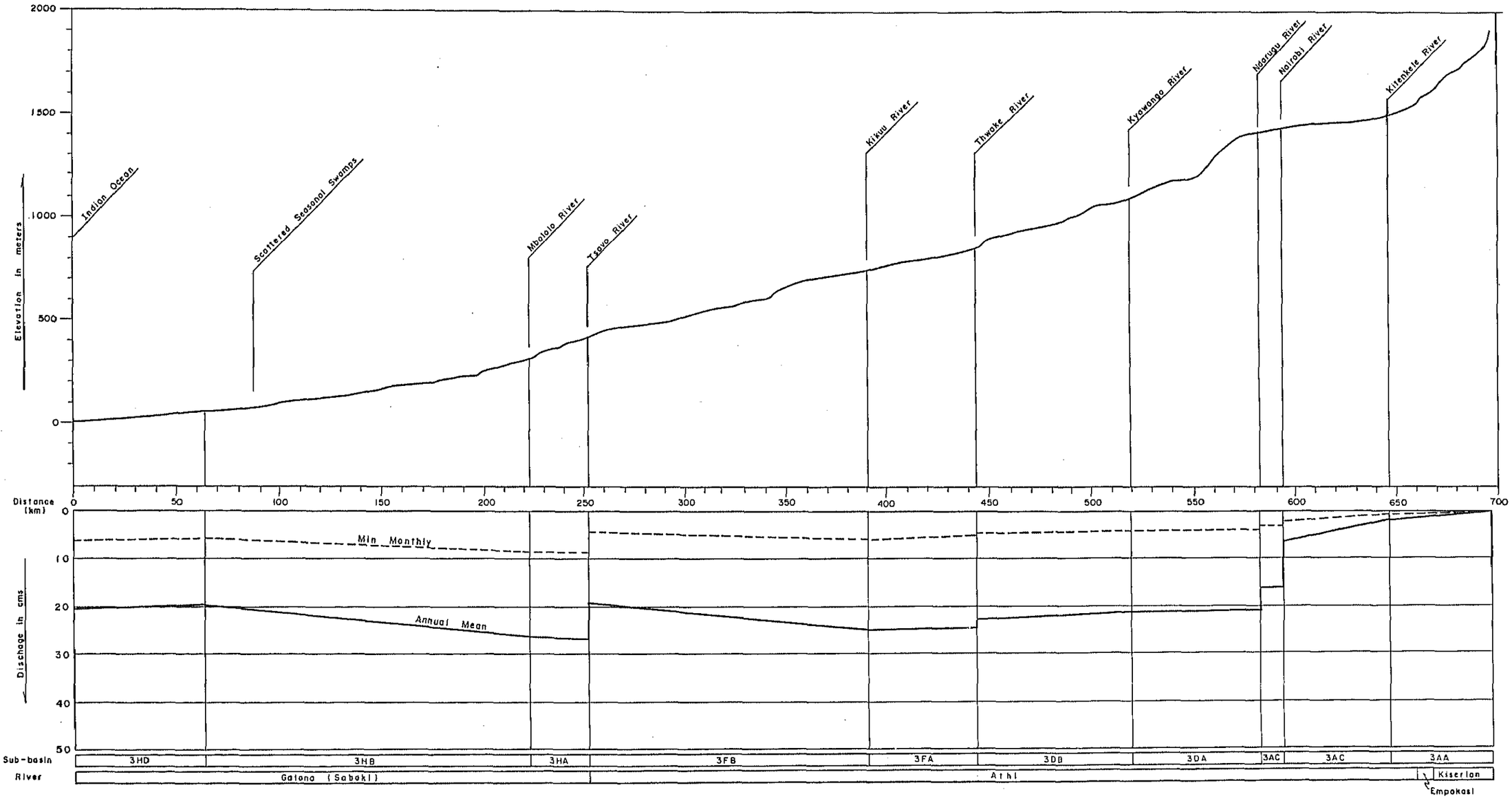


Figure B.11.8 Athi River

THE STUDY
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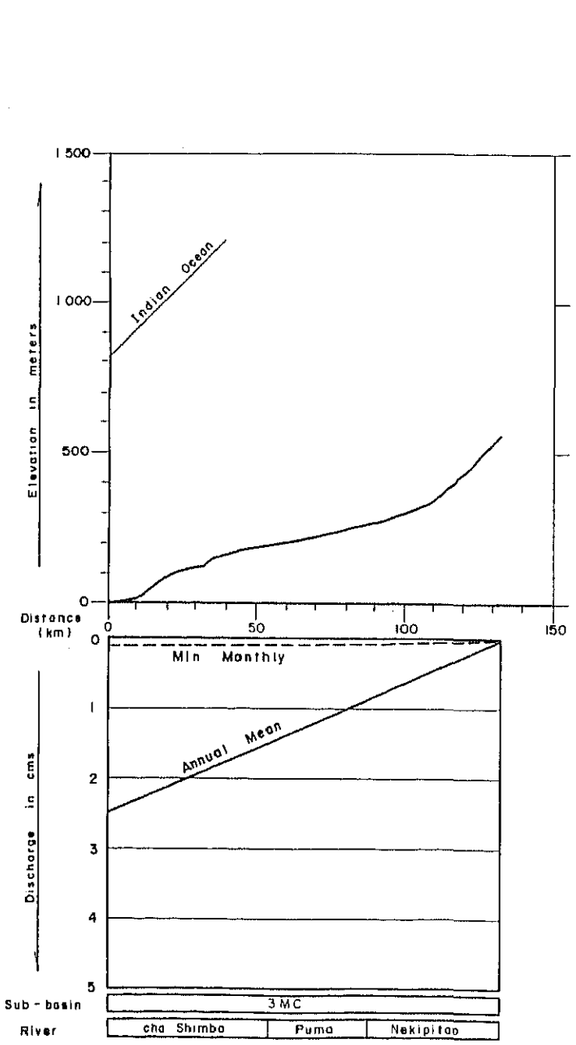
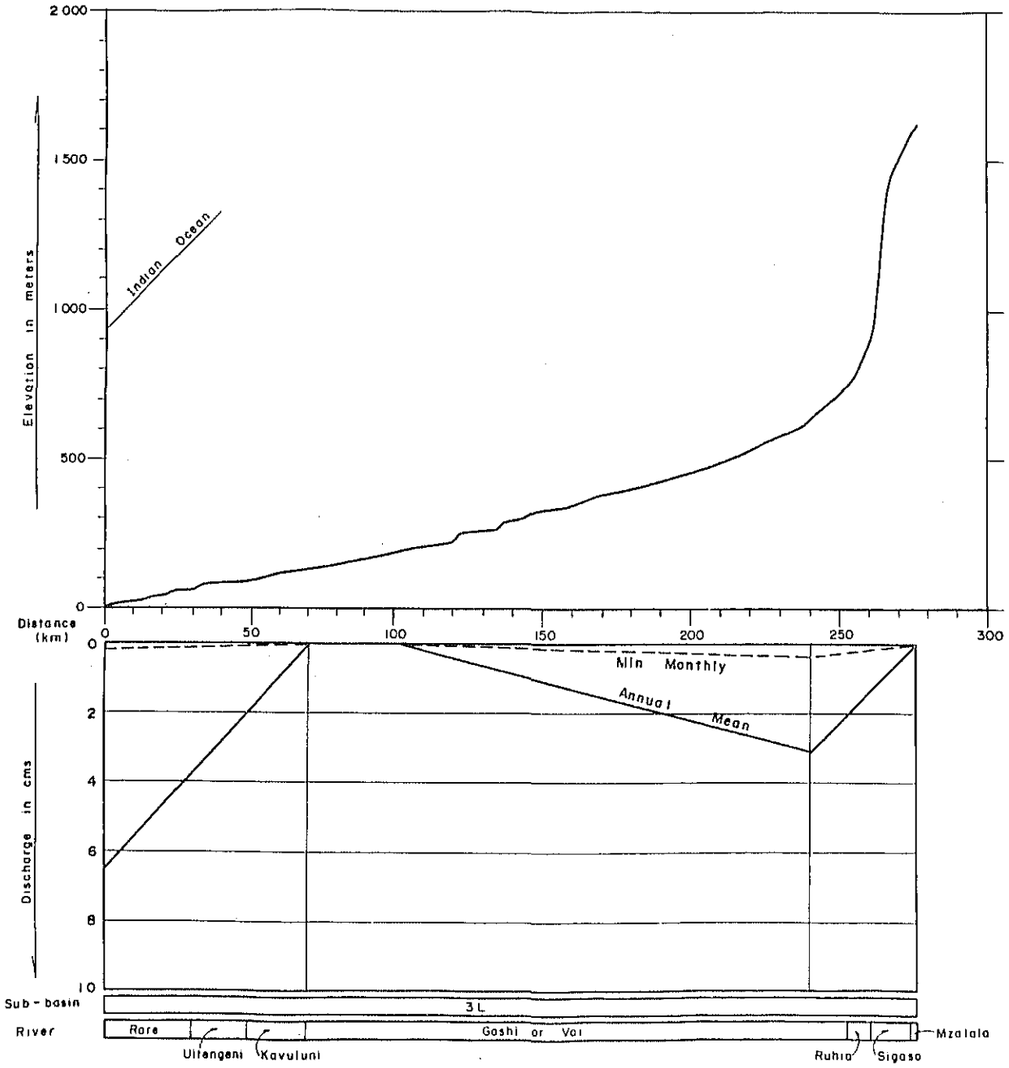
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig.





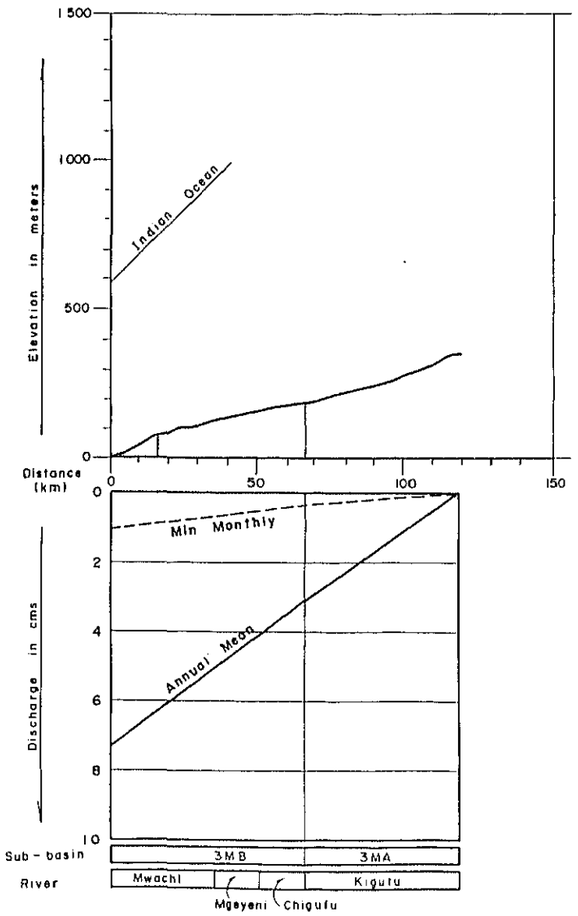


Figure B.11.9 Simba, Rare and Mwachi Rivers

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig.

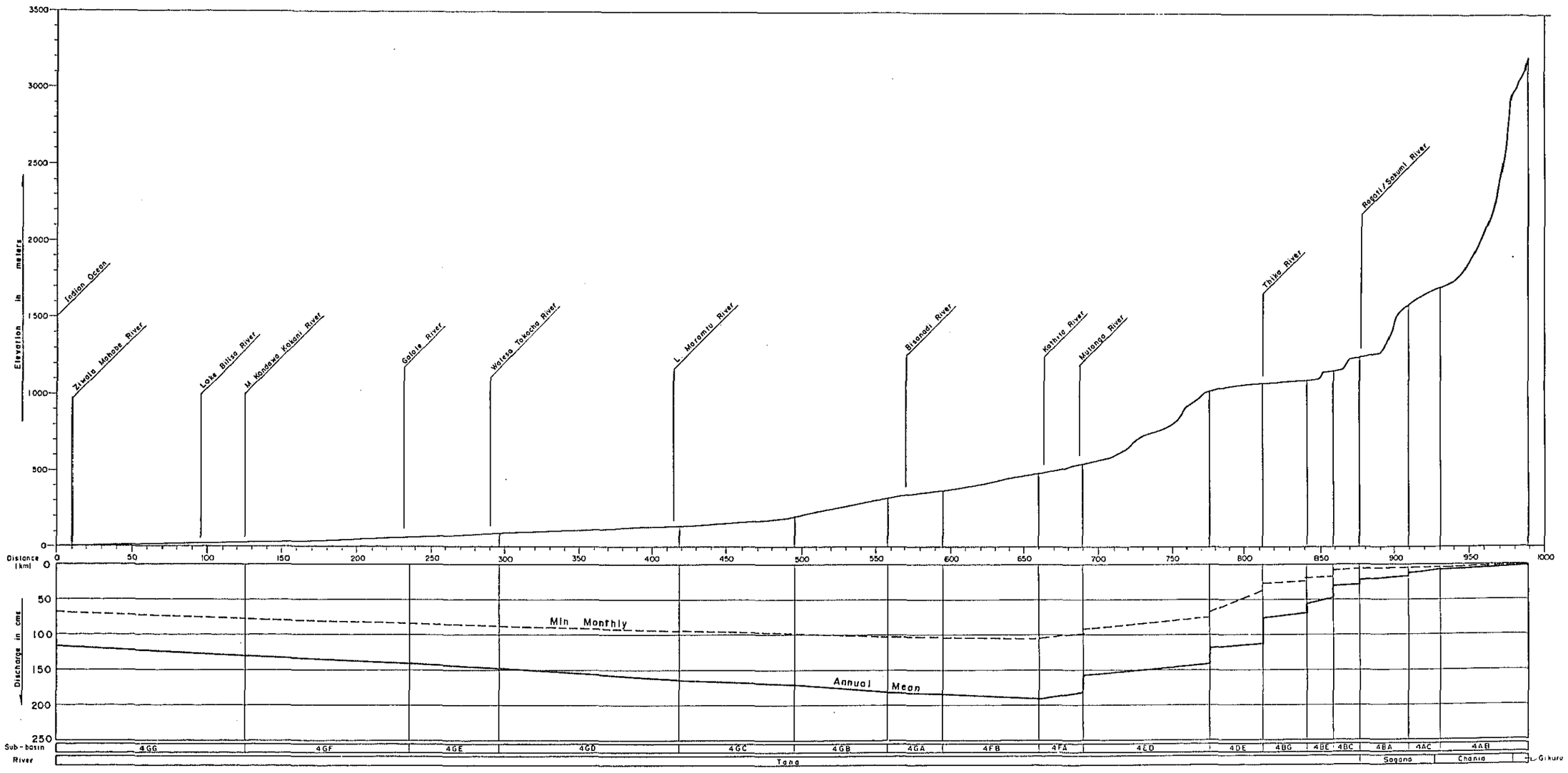


Figure B.11.10 Tana River

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig.

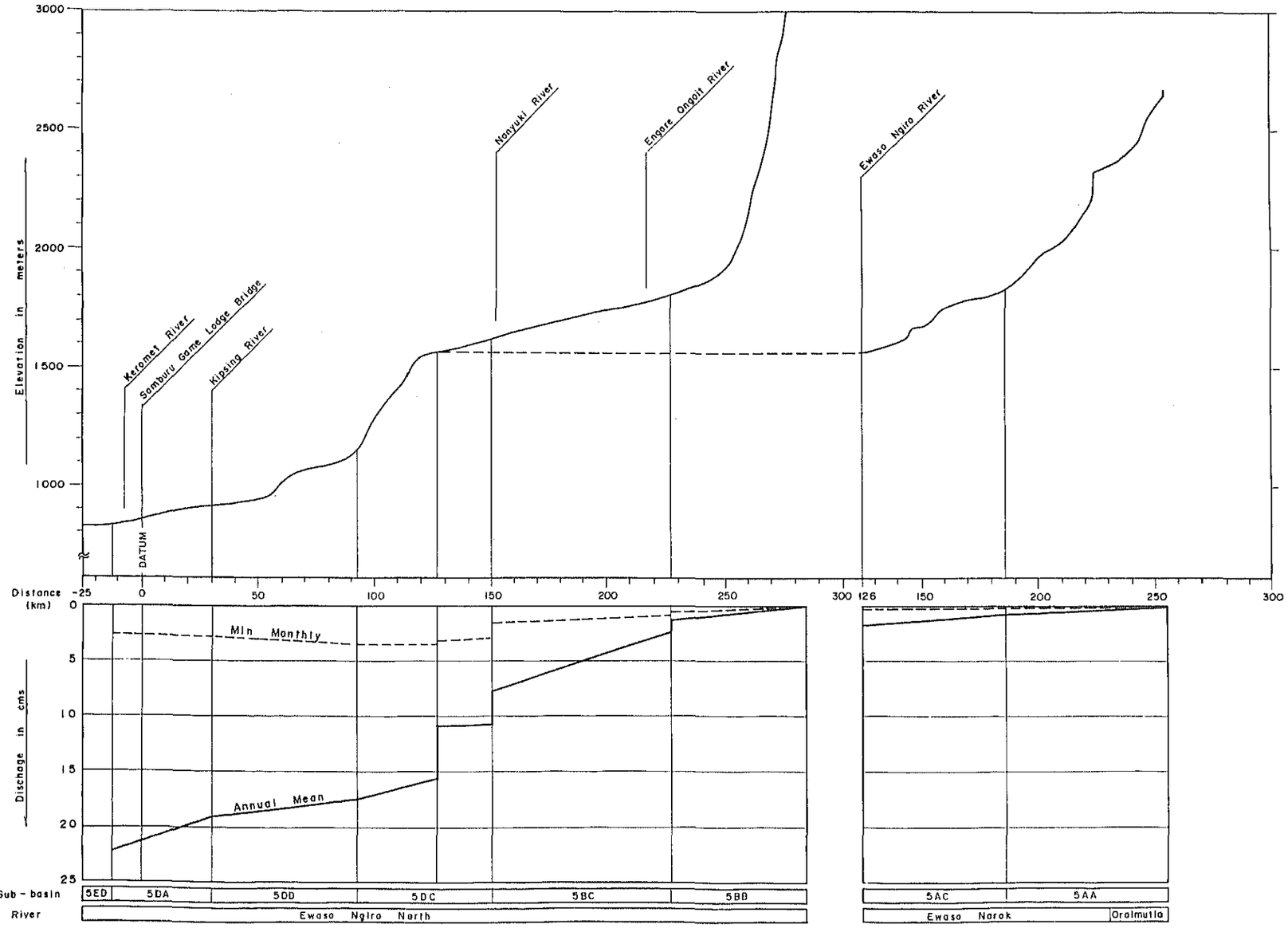


Figure B.11.11 Ewaso Ngiro (North) River

THE STUDY
ON
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

APPENDIX B.12

Annual Maximum Discharge

Record of Annual Maximum Discharges (Drainage Area 1 - 1/5)

Year	1AH1(Sio) [1,450 sq km] Month	Date	Discharge (CMS)	1BA1(Moiben) [262 sq km] Month	Date	Discharge (CMS)	1BC1(Noigameget) [684 sq km] Month	Date	Discharge (CMS)	1BG4(Kassowai) [54 sq km] Month	Date	Discharge (CMS)
1950										7	20	2
1951										12	13	3
1952										8	23	1
1953										6	26	1
1954										8	13	2
1955										9	26	2
1956										5	22	2
1957										8	26	2
1958										8	25	2
1959	4	30	38				9	16	9	8	20	2
1960	5	5	41				5	31	15	8	31	2
1961	11	25	45	11	19	39	9	5	22	11	18	7
1962	5	4	48	5	12	2	5	14	18	8	7	7
1963	4	25	45	4	30	5	5	1	22	8	17	3
1964	8	3	46	8	12	5	8	11	26	8	10	11
1965	5	10	45	11	8	1	5	11	10	11	5	2
1966	4	23	45	8	31	4	4	27	22	4	19	4
1967	11	29	51	5	11	20	7	24	22	11	20	5
1968				11	27	23	8	22	18	8	21	2
1969				9	14	4	9	15	18	9	15	2
1970	4	22	69	8	25	12	8	26	21	8	29	3
1971	5	23	56	8	16	6	7	22	20	8	25	4
1972	11	21	57	11	14	6	7	10	15	7	5	3
1973	5	30	47	8	14	2	9	29	10	8	11	4
1974	5	16	49	8	24	4	9	2	18	11	7	3
1975	4	25	50	8	24	5	8	21	21	7	28	7
1976				8	2	2	7	10	16	8	10	2
1977	5	9	52	11	15	38	11	25	25	10	26	10
1978	5	12	73	10	5	5	3	15	21	8	16	3
1979	5	30	62	4	10	8	4	12	16	8	13	3
1980	5	14	47	5	15	4	6	30	9	8	30	2
1981	4	22	60	4	16	7	4	15	20	8	15	3
1982	11	30	63	11	10	17	11	11	20	8	3	10
1983	5	25	61	8	20	7	10	24	30	8	31	12
1984	6	2	51	7	18	1	11	19	9	12	10	1
1985	5	6	69	5	16	35	5	20	14	5	6	6
1986	5	23	53	9	21	2	6	13	16	4	15	3
1987	6	16	46	6	13	5	6	8	9	6	6	2
1988	5	14	52	8	22	3	10	6	10	8	7	4
1989	5	14	41	8	30	4	6	16	8	8	10	2

Year	1BG5(Rongai) [34 sq km] Month	Date	Discharge (CMS)	1BG6(Ewaso Rongai) [530 sq km] Month	Date	Discharge (CMS)	1CA2(Sergoit) [717 sq km] Month	Date	Discharge (CMS)	1CB5(Sosiani) [697 sq km] Month	Date	Discharge (CMS)
1949	9	1	0.5									
1950	7	18	0.5									
1951	12	13	1.7									
1952	5	8	0.4									
1953	8	10	0.4									
1954	8	12	0.6									
1955	9	12	0.3									
1956	10	20	0.4									
1957	5	28	0.2									
1958	8	14	0.3									
1959	8	20	0.4									
1960	8	26	0.6	8	29	82	9	17	7	9	1	15
1961	11	24	1.4	11	25	87	11	28	41	11	17	21
1962	8	18	0.6	7	17	29	8	4	30	5	12	19
1963	5	29	0.7	5	1	36	5	4	28	5	12	20
1964	8	8	1.6	8	8	32	8	5	34	8	5	23
1965	10	6	0.4	11	8	8	1	5	1	1	4	3
1966	11	8	1.3	9	2	14	9	9	37	9	9	20
1967	8	9	1.3	8	22	35	5	11	36	5	12	23
1968	8	1	0.6	6	22	12	8	21	39	8	22	28
1969	9	15	0.4	9	16	18	9	12	15	9	11	5
1970	9	11	0.4	8	25	27	8	29	33	8	25	20
1971	9	3	0.9	8	28	39	8	25	17	9	4	18
1972	11	6	0.7	7	6	17	8	22	14	8	23	12
1973	8	13	0.3	8	16	13	8	20	10	8	21	6
1974	8	24	0.5	9	18	10	9	2	15	9	2	13
1975	8	11	0.8	8	19	32	8	8	35	8	13	32
1976	8	6	0.7	9	4	14	9	4	24	9	4	8
1977	11	24	1.9	11	24	76	5	10	51	5	10	36
1978	8	18	0.9	8	21	18	8	18	33	8	19	21
1979	8	15	0.7	8	15	17	8	14	25	8	14	16
1980	7	11	0.7	5	15	5	5	16	7	5	24	9
1981	4	16	1.2	3	31	23	8	14	34	8	14	34
1982	8	3	1.9	8	25	19	12	2	9	12	4	18
1983	9	2	2.5	9	20	23	8	18	38	8	31	32
1984	7	4	0.3	1	17	6	8	10	1	9	29	3
1985	5	9	2.1	5	14	26	5	23	3	5	23	8
1986	9	18	0.8	9	19	6	7	28	4	7	31	7
1987	5	29	0.8	5	13	6	6	12	25	6	12	10
1988	10	6	1.5	8	8	35	7	22	15	7	25	12
1989	4	11	0.6	9	5	7	7	31	9	8	21	8

Record of Annual Maximum Discharges (Drainage Area 1 - 2/5)

Year	1CC1 (Onyokie) [588 sq km] Month	Date	Discharge (CMS)	1CE1 (Kipkarren) [2,440 sq km] Month	Date	Discharge (CMS)	1DA2 (Nzoia) [8,417 sq km] Month	Date	Discharge (CMS)	1DB1 (Kuywa) [446 sq km] Month	Date	Discharge (CMS)
1947							8	30	327			
1948	9	3	27	8	31	181	9	6	183			
1949	9	20	12	8	8	64	9	14	143			
1950	9	26	14	8	13	232	8	31	127			
1951	8	30	78	10	5	271	8	23	215			
1952				7	29	181						
1953	8	15	3	8	12	26	8	16	71			
1954	8	24	18	8	23	100	9	10	148			
1955	8	19	19	8	30	194	9	9	173			
1956	7	25	59	7	27	158	8	22	180			
1957	8	28	73	8	8	82	8	30	134			
1958	8	29	15	10	12	206	8	26	123			
1959	9	11	15	9	1	75	9	5	119			
1960	9	17	37	9	17	78	9	1	142			
1961	12	14	286	11	26	368	11	29	668			
1962	9	24	27	9	2	129	8	18	200			
1963	8	14	71	5	11	140	5	12	292			
1964	7	31	145	8	16	213	8	9	277			
1965	1	5	2	1	5	12	10	27	47	10	26	19
1966	9	10	27	9	10	103	9	11	184	11	10	49
1967	7	25	26	5	11	145	8	27	195	5	11	89
1968	8	22	52	8	22	127	8	22	239	7	26	73
1969	9	16	5	9	14	41	9	15	118	9	16	37
1970	9	8	32	8	25	162	8	25	295	8	24	40
1971	8	1	12	8	31	74	9	3	243	8	28	42
1972	8	22	22	8	22	69	7	17	180	10	31	28
1973	9	25	6	8	25	26	9	26	169	8	11	9
1974	9	10	9	8	24	49	9	1	121	10	26	22
1975	10	6	80	9	18	237	8	24	303	5	19	75
1976	9	3	27	9	3	55	8	30	102	9	9	28
1977	5	5	163	7	2	242	11	25	538	11	28	137
1978	8	15	80	8	16	150	8	4	283	11	2	26
1979	8	13	33	8	14	106	8	15	180	2	12	16
1980	7	8	16	7	8	52	5	24	92	5	16	22
1981	8	12	130	8	15	141	8	15	242	4	25	95
1982	12	3	39	12	4	96	11	29	206	11	29	101
1983	8	12	102	8	24	238	8	25	267	9	12	44
1984	1	3	1	9	14	8	8	7	52	5	21	14
1985	8	22	12	9	2	41	5	17	130	5	16	33
1986	9	23	1	7	30	35	7	31	63	9	22	10
1987	6	12	9	6	11	136	6	12	134	11	18	31
1988				10	4	40	10	4	282	9	27	186
1989							7	28	120	5	14	16

Year	1DD1 (Nozoia) [10,142 sq km] Month	Date	Discharge (CMS)	1EB2 (Isiukhu) [359 sq km] Month	Date	Discharge (CMS)	1EE1 (Nzoia) [11,849 sq km] Month	Date	Discharge (CMS)	1FC1 (Kimondi) [909 sq km] Month	Date	Discharge (CMS)
1963	5	13	634	5	26	20	5	3	595			
1964	8	6	385	4	25	15	8	6	374			
1965	10	25	104	4	30	16	11	9	131	11	6	14
1966	11	29	270	4	23	20	4	25	277	9	11	65
1967	5	10	297	5	11	23	5	12	290	8	21	41
1968	8	22	263	5	23	11	8	14	332	8	21	39
1969	9	14	169	9	12	11	5	11	194	9	16	28
1970	8	24	515	9	28	22	8	27	416	8	26	57
1971				8	14	30	9	4	320	8	31	102
1972	10	26	270	8	2	23	11	14	362	6	30	62
1973	9	27	168	9	19	20	9	27	235	8	18	65
1974	9	4	145	11	22	24	9	24	191	9	1	27
1975	9	18	439	9	18	43	8	23	490	8	19	122
1976	9	6	207	8	31	20	9	6	201	9	8	29
1977	11	26	715	7	12	36	11	26	595	11	21	152
1978	9	4	325	5	16	30	5	13	345	5	3	122
1979	6	17	169	10	9	36	8	16	205	8	16	278
1980	5	16	145	6	6	24	7	2	150	5	18	134
1981	4	17	351	4	22	29	9	23	385	8	16	278
1982	11	29	439	5	31	30	11	29	382	6	18	117
1983	8	24	490	9	7	31	8	25	337	10	8	97
1984	7	27	124	7	13	16	4	27	100	7	25	18
1985	5	21	226	7	26	26	5	18	267	8	28	32
1986	9	22	104	5	21	15	4	26	135	8	24	8
1987	6	12	145	6	16	28	6	13	170	8	25	18
1988	10	6	378	4	29	36				9	26	62
1989	6	18	139	8	26	30				8	21	26

Record of Annual Maximum Discharges (Drainage Area 1 - 3/5)

Year	1FE1(Yala) [1,896 sq km] Month	Date	Discharge (CMS)	1FE2(Yala) [1,577 sq km] Month	Date	Discharge (CMS)	1FF2(Zaaba) [47 sq km] Month	Date	Discharge (CMS)	1FF3(Edzawa) [262 sq km] Month	Date	Discharge (CMS)
1959							5	13	5			
1960							4	15	15			
1961	11	29	115	11	28	181	11	8	8			
1962	1	10	92	8	19	75	6	16	5			
1963	5	16	93	5	13	107	4	24	17	12	3	32
1964	8	6	90	8	4	103	4	20	12	4	25	49
1965	4	29	29	11	4	20	4	15	3	3	29	11
1966	4	27	77	4	27	49	4	24	4	4	26	26
1967	11	22	52	8	10	33	4	26	14	11	29	33
1968	4	29	75	8	22	57	5	21	4	4	29	25
1969	8	20	34	9	9	42	5	7	3	8	19	46
1970	8	27	69	8	27	57	1	11	3	4	2	16
1971	8	26	85	9	1	95	4	23	5	5	18	19
1972	11	15	60	7	1	40	9	28	1	7	26	25
1973	8	18	54	9	26	121	11	6	3	1	18	23
1974	9	24	47	6	17	61	9	22	5	7	5	23
1975	8	21	83	10	27	96	4	16	15	6	25	32
1976	9	4	59	9	5	84	9	4	22	6	17	32
1977	11	26	148	11	22	254	5	7	10	7	12	22
1978	5	13	275	10	3	176	4	10	26	4	11	54
1979				8	16	306	4	28	9	5	12	24
1980	9	8	80	8	29	96	5	4	9	5	17	15
1981	8	17	664	8	16	226	4	4	9	4	13	83
1982	12	6	360	12	5	139	5	14	4	11	29	34
1983	10	10	355	10	8	163	4	29	3	4	28	21
1984	8	6	74	8	9	36	4	12	2	7	23	43
1985	4	25	100	8	23	76	4	16	3	4	15	24
1986	5	21	13	8	23	13	3	21	4	3	11	24
1987	11	16	81	6	15	33	7	3	3	5	18	26
1988	5	1	365	5	11	115	5	16	4	4	26	53
1989				8	30	55	5	23	4			

Year	1FG1(Yala) [2,388 sq km] Month	Date	Discharge (CMS)	1FG2(Yala) [2,864 sq km] Month	Date	Discharge (CMS)	1GB3(Ainamotua) [1,300 sq km] Month	Date	Discharge (CMS)	1GB6(Mbogo) [67 sq km] Month	Date	Discharge (CMS)
1947	5	9	139									
1948	9	11	54									
1949	9	23	49									
1950	9	5	51									
1951	5	22	84									
1952	5	13	137									
1953	5	7	27									
1954	8	23	54									
1955	9	4	87									
1956	8	29	75							5	24	4
1957	5	22	65							6	5	3
1958	9	4	63							5	14	6
1959	10	6	53	10	7	47				4	20	4
1960	9	13	86	9	13	76				3	21	3
1961	11	28	175	11	26	258				11	28	16
1962	5	12	121	8	20	82				1	8	5
1963	5	14	120	12	5	127				4	27	3
1964	8	6	112	4	24	129				4	24	4
1965	4	30	44	11	7	75				4	22	1
1966	4	27	103	4	28	107				4	25	4
1967	11	29	70	11	29	90				11	27	3
1968	4	29	139	4	30	167	4	27	96	4	26	9
1969	8	19	67	3	25	86	2	26	118	1	26	4
1970	8	27	89	8	27	90	3	28	138	7	6	6
1971	9	2	122	9	2	100	4	22	30	6	29	4
1972	5	3	84	11	15	97	6	5	74	11	10	5
1973	7	30	32	9	28	80	5	29	41	5	29	3
1974	7	16	67	7	6	73	7	24	58	4	9	10
1975	8	27	47	4	24	69	10	4	98	7	7	4
1976	9	6	67	9	5	73	5	22	15	7	19	3
1977	11	26	123	11	26	133	11	19	539	11	24	6
1978	5	12	114	5	13	176	4	11	60	5	15	6
1979	8	17	140	8	17	162	2	12	320	6	19	5
1980	8	28	48	5	17	59	4	18	66	4	18	4
1981	8	18	100	8	18	113	4	18	30	4	13	2
1982	12	6	89	11	29	99	12	3	80	5	31	6
1983	9	11	97	9	11	118				8	21	5
1984	4	27	63	4	27	85				11	27	6
1985	8	15	70	5	18	126				5	15	14
1986	4	27	46	4	26	81	7	14	11	5	21	3
1987	11	17	47	5	18	68	6	8	19	5	24	12
1988	5	2	88	10	2	110	4	19	20			
1989	6	14	54	6	7	73	10	14	11			

Record of Annual Maximum Discharges (Drainage Area 1 - 4/5)

Year	1GC5(Masaita) [251 sq km] Month	Date	Discharge (CMS)	1GD3(Nyando) [2,625 sq km] Month	Date	Discharge (CMS)	1GD4(Nyando) [2,520 sq km] Month	Date	Discharge (CMS)	1GD7(Nyando) [1,419 sq km] Month	Date	Discharge (CMS)
1956							3	31	66			
1957							5	30	65			
1958							5	15	66			
1959							11	3	28			
1960							4	2	61			
1961							11	24	328			
1962							5	11	396	4	23	433
1963							5	13	292	5	12	227
1964	9	5	261				4	18	385	4	24	161
1965	1	2	1				4	22	31	4	28	61
1966	8	30	144				4	25	84	9	11	78
1967	7	26	240				5	24	113	5	23	253
1968	4	27	135	3	9	75	4	27	150	4	27	106
1969	9	9	1	2	26	63	2	26	43	6	2	10
1970	8	18	63	5	10	192	4	24	67	4	24	37
1971	8	31	94	6	29	112	9	3	45	5	17	97
1972	7	3	2	11	10	229	11	13	57	11	10	54
1973	9	26	34	2	17	159	5	29	37	2	16	197
1974	8	26	13	4	9	284	4	9	171	7	1	306
1975	9	1	71	7	27	169	9	1	92	8	31	245
1976	8	24	10	7	11	69	9	8	20	7	15	21
1977	11	24	61	11	24	394	11	24	391	5	3	442
1978	3	15	16	4	13	193	5	9	41	4	10	262
1979	2	19	3	2	12	354	2	12	179	2	8	131
1980	5	17	6	4	18	189	5	17	53	4	15	89
1981	8	15	16	5	15	151	5	16	105	8	15	53
1982	12	7	88	12	2	225	12	2	112			
1983	10	9	18	10	7	119	8	30	49	10	10	33
1984	7	26	1	11	15	37	9	6	14	11	15	10
1985				4	13	412	9	10	24	5	18	63
1986	8	22	3	5	2	129	9	12	46	6	17	10
1987	6	11	2	6	8	127	6	8	42	6	11	32
1988	10	1	61	4	23	633	8	15	64	8	7	120
1989	10	18	3	4	8	190	4	7	45	6	13	52

Year	1HA1(Oruba) [62 sq km] Month	Date	Discharge (CMS)	1HA4(Kibos) [117 sq km] Month	Date	Discharge (CMS)	1HA14(Awach) [104 sq km] Month	Date	Discharge (CMS)	1JD9(Yurith) [1,586 sq km] Month	Date	Discharge (CMS)
1929				5	1	9						
1930				5	9	10						
1931				2	16	7						
1932												
1933				9	1	5						
1934				5	8	6						
1935				5	20	15						
1936				6	21	15						
1937				4	2	25						
1938				7	5	10						
1939				7	12	3						
1940				4	27	15						
1941				12	8	10						
1942				5	21	10						
1943				4	29	7						
1944				11	28	10						
1945				6	11	17						
1946				12	10	10						
1947				5	28	15						
1948				7	24	8						
1949				8	10	5						
1950				4	16	13						
1951				4	19	54						
1952				4	25	13						
1953				4	14	7						
1954				5	2	11						
1955				5	12	11						
1956				8	30	5						
1957				5	2	13						
1958				7	15	10						
1959	11	3	5	11	3	13						
1960	11	17	3	4	26	8						
1961	11	27	274	11	10	14						
1962	5	17	98	5	20	14						
1963	5	9	150	4	28	15	4	24	11			
1964	4	24	7	4	24	17	4	24	71			
1965	5	3	4	4	29	6	5	8	8			
1966	4	25	4	4	25	15	4	25	28			
1967	11	27	3	12	2	13	12	2	10			
1968	4	29	5	3	6	14	4	29	19			
1969	2	10	2	6	17	5	2	25	4	9	19	49
1970	4	24	8	11	6	8	3	31	3	8	27	92
1971	5	18	3	5	17	9	4	3	21	9	6	125
1972	11	20	2	8	23	6	10	21	19	2	23	69
1973	1	16	2	1	20	6	5	4	16	6	12	55
1974	9	2	3	9	18	10	7	3	8	7	14	91
1975	7	25	3	7	27	13	8	18	6	9	3	143
1976	5	22	2	4	24	6	4	24	5	9	2	86
1977	5	6	8	11	24	18	4	7	16	11	26	158
1978	5	8	3	5	12	16	5	12	14	3	30	133
1979	4	12	3	5	9	14	2	12	7	8	19	76
1980	11	22	1	5	25	13	5	26	5	7	6	53
1981	10	12	2	7	17	13	4	6	8			
1982	11	9	1	11	30	32	11	30	8			
1983	8	24	1	8	21	12	4	27	10	9	13	89
1984	4	26	1				7	23	5	8	29	25
1985	5	29	2				4	15	12	5	27	80
1986	3	7	9	8	29	6	4	26	3	9	6	26
1987	11	9	2	6	16	10	3	16	5	8	9	55
1988	5	5	53	4	23	27	4	24	13	5	16	90
1989	4	22	16	5	27	11	2	10	12			

Record of Annual Maximum Discharges (Drainage Area 1 - 5/5)

Year	1JF4(Kipsonoi) [73 sq km] Month	Date	Discharge (CMS)	1JG1(Sondu) [3,287 sq km] Month	Date	Discharge (CMS)	1KB3(Kuja) [1,114 sq km] Month	Date	Discharge (CMS)	1KB1A(Kuja) [3,115 sq km] Month	Date	Discharge (CMS)
1946				8	18	119						
1947				5	1	518						
1948				9	1	88						
1949				9	1	75						
1950				9	19	75						
1951				4	25	191						
1952				5	14	195						
1953				5	3	22						
1954				6	9	105						
1955				9	30	103						
1956				9	9	127						
1957				6	5	175						
1958				5	15	130						
1959				5	26	93						
1960				4	21	105						
1961	11	27	54	11	27	462						
1962	9	13	3	5	10	289						
1963	5	2	5	6	3	297						
1964	9	19	5	4	24	467						
1965	9	10	1	5	2	122	5	2	51	5	23	104
1966	9	2	7	4	30	171	4	22	56	4	28	176
1967	7	6	4	5	22	115	12	1	118	12	1	284
1968	5	1	8	4	30	328	4	30	170	4	27	118
1969	9	16	1	2	3	137	2	2	86	5	16	73
1970				4	25	166	4	27	74	4	13	88
1971				9	8	140	5	31	44	4	27	86
1972				11	22	101	11	26	40	11	28	370
1973				6	9	129	1	20	64	6	15	165
1974				7	9	187	4	14	85	4	16	512
1975				9	4	155	5	2	41	4	27	255
1976				9	7	111	9	5	47	5	31	135
1977	11	30	21	5	4	223	5	8	137	5	7	1595
1978	9	1	32	3	25	37	3	24	131	3	25	1022
1979	8	14	8	5	14	127	4	11	83	5	13	217
1980	7	31	2	7	5	89	7	1	39	5	23	573
1981	8	14	16	4	14	239	4	18	110	4	19	359
1982	8	25	5	12	4	294				12	2	705
1983	11	15	7	9	11	149				5	2	210
1984	1	3	1	12	12	99	12	14	32	1	24	84
1985	8	28	2	4	17	167	4	14	81	5	27	783
1986	8	29	4	5	4	50	4	28	83	4	23	382
1987	6	11	2	6	12	199	5	1	78	5	2	600
1988	8	15	10	5	5	234						
1989	8	10	5	5	14	18						

Year	1KB5(Kuja/Migori) [6,600 sq km] Month	Date	Discharge (CMS)	1KC3(Migori) [3,046 sq km] Month	Date	Discharge (CMS)	1LA3(Nyangores) [679 sq km] Month	Date	Discharge (CMS)
1951				4	21	368			
1952				4	29	462			
1953				5	4	56			
1954				5	10	164			
1955				5	11	164			
1956				5	25	245			
1957				6	5	442			
1958				5	15	422			
1959				3	23	93			
1960				4	4	152			
1961				5	13	326			
1962				5	9	481			
1963				12	12	326			
1964				4	26	1288	4	25	36
1965				12	28	97	5	13	20
1966				3	26	631	4	27	33
1967				11	29	191	5	10	23
1968				4	29	515	5	5	37
1969	5	16	230	2	13	214	5	15	17
1970	5	2	324	6	17	297	4	26	40
1971	4	27	336	5	18	515	8	31	33
1972	11	28	300	1	2	199	8	30	16
1973	1	17	432	1	17	1190			
1974	4	14	535	4	9	1140	9	26	21
1975	4	27	207	7	26	137	7	28	28
1976	6	8	230	7	19	268	9	5	19
1977	5	7	565	5	8	790	5	11	36
1978	3	26	590	3	25	671	3		37
1979	4	12	414	4	11	266	5	14	29
1980	4	20	262	4	20	363	6	30	22
1981	4	18	409	5	16	423	5	9	36
1982	6	2	442	11	30	560	12	4	43
1983	5	8	243	1	25	63	9	6	21
1984	12	9	137	12	8	110	10	14	10
1985	4	17	498	4	16	747	4	10	28
1986	4	22	256	5	8	266	2	18	12
1987	6	13	283	4	30	274	6	12	35
1988	4	19	571	4	27	1180	5	19	32
1989	4	14	255	2	9	201			

Record of Annual Maximum Discharges (Drainage Area 2)

Year	2C5(Arror) [185 sq km] Month	Date	Discharge (CMS)	2C7(Ndo) [893 sq km] Month	Date	Discharge (CMS)	2EC3(Rongai) [48 sq km] Month	Date	Discharge (CMS)	2EF3(Esageri) [60 sq km] Month	Date	Discharge (CMS)	2FC5(Njoro) [125 sq km] Month	Date	Discharge (CMS)	2GA3(Gilgil) [136 sq km] Month	Date	Discharge (CMS)	2GB4(Wanjohi) [152 sq km] Month	Date	Discharge (CMS)	2GC4(Turasha) [695 sq km] Month	Date	Discharge (CMS)	2K3(Narok) [869 sq km] Month	Date	Discharge (CMS)
1956							8	11	1.8				8	23	11				9	6	11	9	7	49			
1957							9	22	1.2				8	29	3				5	30	6	6	1	17			
1958							9	9	1.0				5	15	6				7	19	12	5	14	66			
1959							5	23	0.7	7	28	0.6	9	5	2	9	10	4	9	2	7	5	25	14	5	25	15
1960							8	31	0.6	4	19	0.1	8	31	3	9	10	5	8	18	4	10	3	7	9	24	33
1961	10	25	26				11	28	17.0	11	27	7.0	11	27	12	11	26	12	11	29	12	11	18	122	11	27	715
1962	5	19	10				1	5	2.9	1	8	1.0	1	1	3	9	24	7	9	13	11	10	26	23	1	3	82
1963	12	2	12				5	28	0.2				12	19	3	4	28	15				5	28	66	5	30	160
1964	8	7	13							8	4	1.8	4	27	9	4	24	10				4	24	52	4	25	534
1965	11	5	12	4	27	26	1	4	0.2	6	25	0.1	5	14	0.3	11	20	1				5	8	13	5	2	4
1966	4	14	11	4	26	26	4	18	0.6	4	25	1.5				9	5	8				9	4	27	9	5	29
1967	10	19	20	11	30	59	12	1	1.3	5	13	0.7	7	21	5	7	24	2				5	12	63	7	19	17
1968	11	25	67	4	30	105	4	11	7.3	4	27	4.2	4	26	11	4	26	7				4	4	41	4	26	204
1969	4	22	14	3	29	4	9	12	0.3	2	23	0.3	5	11	1	5	16	5				10	17	16	2	13	15
1970	4	22	10	4	26	26	4	26	2.9	4	24	3.8	5	31	4	9	28	7				4	25	30	5	30	66
1971	11	5	12	5	10	13	8	28	3.0	8	25	0.8	8	29	8	8	28	12				8	31	23	8	31	77
1972	10	31	11	5	5	16				6	27	0.2	11	10	2	8	24	5				11	27	15	8	22	17
1973	9	6	4	8	27	13				9	28	0.3	9	23	1	9	29	3				8	11	7	9	26	6
1974				8	29	28	7	10	0.9	7	5	4.1				9	9	4	8	31	4	9	9	51	7	8	42
1975	8	14	8	8	6	18	7	26	2.4	6	22	0.8				8	26	8	9	6	6	8	24	26	8	24	63
1976	7	7	5	5	31	13	7	20	1.0	8	9	1.1	9	1	3	9	3	4	7	26	2	9	6	9	9	2	47
1977	11	23	30	11	22	71	11	24	2.4	1	4	4.1	11	27	6	7	7	11				5	3	69	11	25	64
1978	10	3	7	3	16	118	3	15	2.4	3	20	1.3	9	6	4	7	8	8				4	6	65	3	26	182
1979	4	9	20	2	21	26	2	6	1.4	2	15	2.4				7	2	6	8	14	5	2	13	31	5	11	23
1980	5	23	3	5	19	25	5	14	0.3	5	16	0.4	5	14	5	7	3	1	5	8	4	5	9	22	4	22	11
1981	4	14	6	4	15	25	9	28	0.8	4	16	0.3				7	30	8	8	15	9	4	16	56	8	12	16
1982	11	8	18	12	3	39	12	6	3.2	11	26	0.8				12	4	6	8	17	2	12	2	3	12	13	16
1983	11	6	16				8	23	0.8							8	31	4	4	28	4	10	22	25	9	12	57
1984	11	16	3				11	15	0.2				7	23	0.3	12	14	1	10	11	4	10	13	7	4	27	1
1985	4	29	6				4	22	0.8				5	27	1	8	5	6	7	27	5				5	23	38
1986	4	24	32				9	19	0.3							7	25	8	5	2	8				9	20	5
1987	11	9	19				6	9	0.6							6	11	1	6	10	9				6	1	4
1988	5	3	10	7	12	62	8	15	2.8							4	25	6	9	24	8				4	30	191
1989	12	31	58	8	7	42	4	29	0.9							5	19	6	1	31	10				4	26	69

Record of Annual Maximum Discharges (Drainage Area 3)

Year	3AA4(Mbagathi) [272 sq km] Month	Date	Discharge (CMS)	3BA29(Nairobi) [75 sq km] Month	Date	Discharge (CMS)	3BA32(Nairobi) [1,942 sq km] Month	Date	Discharge (CMS)	3CB5(Ndarugu) [312 sq km] Month	Date	Discharge (CMS)
1956				5	7	1						
1957	5	26	40	5	14	28				5	15	26
1958	5	13	23	5	14	15				5	14	35
1959	5	22	3	5	16	2				11	25	18
1960	5	5	1	5	2	7				4	19	10
1961	11	20	394							11	18	33
1962	1	4	35							1	4	33
1963	6	4	9	4	27	13				4	30	43
1964	4	23	91	4	18	3				4	29	31
1965	5	1	33	12	15	1				4	21	9
1966	4	26	41	4	21	3	5	5	164	5	4	28
1967	5	21	22	5	6	3	5	9	254	5	9	26
1968	12	3	22	12	3	13	12	3	521	12	7	30
1969	3	26	1	5	15	1	5	13	74	5	14	11
1970	4	23	27	4	23	12	5	12	84	5	12	44
1971	5	21	92	5	17	9	12	22	22	12	31	24
1972	6	4	10	11	10	3	12	1	14	11	20	34
1973	4	19	4	4	22	4	1	9	12	1	10	3
1974				5	1	2	7	10	49	9	13	25
1975	10	30	8	4	18	2	4	18	10	5	27	21
1976	12	31	15	5	24	3	5	24	7	4	24	8
1977	1	2	4	4	29	11	5	3	245	5	4	64
1978				3	25	11	3	28	245	4	20	64
1979				2	23	3	5	9	98	5	11	64
1980				5	14	5	11	18	116	5	8	47
1981	5	15	207	4	16	11	5	10	124	4	13	43
1982	12	4	49	12	4	6	11	26	58	12	4	42
1983				4	27	4	4	28	89	5	11	58
1984				10	24	1	1	1	10			
1985				4	16	2	5	22	71			
1986				5	8	4	12	8	33	5	8	40
1987							6	8	42			
1988				4	26	1				4	28	26
1989				12	27	2				5	14	25

Year	3DA2(Athi) [5,724 sq km] Month	Date	Discharge (CMS)	3F2(Athi) [10,132 sq km] Month	Date	Discharge (CMS)	3G2(Tsavo) [7,252 sq km] Month	Date	Discharge (CMS)
1956				11	17	323	1	15	28
1957	5	15	390	4	26	257	4	15	7
1958	5	15	581	5	15	486			
1959	5	22	60	11	29	249	3	26	38
1960	4	8	41	3	27	122	4	3	38
1961	11	15	563	11	15	1800	11	21	374
1962	1	4	663	1	4	590	1	5	141
1963	5	28	663	12	9	493	11	23	30
1964	4	28	430	1	3	217	1	3	11
1965	4	30	101	11	22	269	11	15	20
1966	4	28	206	4	29	148	3	24	15
1967	5	11	620	4	14	574	4	14	141
1968	4	30	592	4	30	470	12	7	53
1969	11	26	78	11	13	143	11	22	19
1970	4	24	261	4	24	364	12	4	122
1971	5	18	306	4	27	751	4	21	67
1972	7	6	65	5	12	187	11	7	28
1973							12	18	38
1974	4	14	207	3	31	465	11	5	55
1975				4	17	877	4	25	30
1976				11	28	282	11	27	98
1977	4	4	563	4	10	877	11	29	88
1978	3	27	458	5	25	2110	3	19	41
1979	5	9	163	3	5	496			
1980	5	7	216	5	8	202	11	17	45
1981	5	15	656	4	13	721	4	6	88
1982	12	4	656	12	4	877	12	1	104
1983	12	28	114	4	29	211	12	6	38
1984	1	1	114	4	11	132	10	24	34
1985	4	17	329	4	17	496	12	27	110
1986	5	3	382	12	7	1080	11	4	25
1987	5	2	118				4	27	14
1988	5	18	752	4	27	619	11	25	179
1989	5	11	316	4	8	491	12	8	51

Record of Annual Maximum Discharges (Drainage Area 4 - 1/2)

Year	4AA5(Sagana) [505 sq km] Month	Date	Discharge (CMS)	4AA7(Upper Sagana) [41 sq km] Month	Date	Discharge (CMS)	4AC3(Sagana) [282 sq km] Month	Date	Discharge (CMS)	4AD1(Gura) [430 sq km] Month	Date	Discharge (CMS)
1948							10	28	29			
1949							5	30	17			
1950							4	14	108			
1951							12	9	123			
1952							5	9	30			
1953							4	3	45			
1954												
1955												
1956							4	28	127	4	28	75
1957				10	29	25	4	24	66	5	11	60
1958				5	3	17	5	10	61	5	5	68
1959	5	5	14	7	2	5	5	26	35	4	17	35
1960	4	12	18	11	17	18	5	5	35	5	6	39
1961	11	9	142	10	27	41	10	16	129	11	9	82
1962	1	5	38	4	15	15	5	10	84	5	11	72
1963	6	4	57	4	23	18	4	29	171	5	3	76
1964	4	9	105	4	9	13	4	18	164	4	25	70
1965	4	30	14	4	29	11	11	11	54	11	4	76
1966	4	22	37	10	29	9	4	22	106	4	25	93
1967	11	30	75	5	11	11	5	12	77	5	12	61
1968	4	26	83	11	24	15	4	16	309	4	26	88
1969	5	8	23	5	8	15	5	9	100	5	16	66
1970	4	25	42				4	25	157	5	2	49
1971	5	7	10	5	8	6	5	8	34	5	10	57
1972	10	30	24	10	30	6	10	30	79	11	27	76
1973	11	10	20	5	23	8	5	28	39	4	18	57
1974	6	3	12	4	20	8	4	13	27	11	9	96
1975	5	22	29	4	29	10	5	16	27	4	22	40
1976	11	8	12	5	10	4	9	1	22	5	27	27
1977	4	14	17	4	9	10	5	3	81	4	9	87
1978	4	5	14	4	6	9	4	26	45	5	3	92
1979	1	29	45	2	6	14	5	24	50	5	29	69
1980	5	12	35				5	12	50	4	10	69
1981	5	9	18				5	16	25	5	20	78
1982	4	8	51				5	24	59	5	20	97
1983	5	10	14				5	10	31	5	10	54
1984	11	13	13				11	8	19	11	28	27
1985	4	15	11				4	17	52	5	17	87
1986	5	2	35				5	19	44	4	24	80
1987	11	26	7				6	8	15	11	13	54
1988	4	25	57				4	25	101	4	20	63
1989	11	30	13				11	30	60	11	27	53

Year	4BB1(Ragati) [254 sq km] Month	Date	Discharge (CMS)	4BC2(Tana-Sagana) [2,365 sq km] Month	Date	Discharge (CMS)	4BE2(Tana P.S) [3,672 sq km] Month	Date	Discharge (CMS)	4CA2(Chania) [518 sq km] Month	Date	Discharge (CMS)
1946										11	8	26
1947										5	9	132
1948										10	31	18
1949										4	22	13
1950										4	19	24
1951										6	8	53
1952										5	12	71
1953										5	4	20
1954										6	3	39
1955										10	23	9
1956				4	24	325				4	29	56
1957				5	14	168				5	14	86
1958				5	5	191				5	5	63
1959	5	1	19	5	5	94	5	4	180	5	24	29
1960	4	16	12	5	5	86	5	5	157	5	5	23
1961	11	18	38	11	9	456	11		883	11	14	115
1962	1	5	13	5	10	140	5	15	362	5	14	94
1963	5	6	36	4	29	272	4		883	4	29	109
1964	4	24	19	4	24	245	4		883	4	25	99
1965	11	3	16	11	4	133	11	4	883	5	8	58
1966	4	12	20	4	26	160	4	25	624	4	28	113
1967	5	8	27	5	10	229	5	14	602	11	5	55
1968	5	31	17	4	24	271	4	27	711	12	5	78
1969	5	9	21	5	9	132	5	9	359	5	17	25
1970	5	6	14	4	26	135	4	24	629	5	11	31
1971	5	10	11	5	9	96	5	18	214	7	2	24
1972	5	26	15	10	31	134	10	31	240	11	27	42
1973	5	24	12	5	29	87	4	26	153			
1974	5	2	7	11	2	79	5	2	142	4	18	27
1975	5	23	17	5	16	214	5	16	364	5	17	17
1976	5	27	4	5	26	68	5	25	138	5	25	11
1977	5	9	21	5	4	204	5	3	608	5	10	88
1978	3	18	32	5	4	185	4	15	618	5	3	92
1979	5	30	31	5	24	204	6	2	488	6	3	49
1980	5	12	10	5	16	129	5	16	347	5	16	59
1981	5	14	26	5	18	198				5	18	96
1982	11	23	37	5	23	384				5	23	60
1983	4	26	32	5	3	156				5	3	50
1984	11	16	14	12	12	72				11	28	13
1985	5	20	19	5	18	212				5	16	66
1986	5	26	32	5	26	145						
1987	6	9	28	6	15	48						
1988	4	26	53	5	2	429						
1989	10	16	9	12	6	103						

Record of Annual Maximum Discharges (Drainage Area 4 - 2/2)

Year	4CB4(Thika) [316 sq km] Month	Date	Discharge (CMS)	4DC2(Rupingazi) [404 sq km] Month	Date	Discharge (CMS)	4DC3(Rupingazi) [197 sq km] Month	Date	Discharge (CMS)	4EA7(Mutonga) [1,880 sq km] Month	Date	Discharge (CMS)
1956	4	30	57									
1957	5	17	67	5	21	66						
1958	5	16	67	5	15	43						
1959	5	26	25	4	18	32						
1960	11	17	29	11	4	39						
1961	11	20	74	11	9	110						
1962	5	11	61	10	24	69						
1963	4	30	61	5	11	64						
1964	4	25	72	4	23	42						
1965	5	21	26	11	4	43						
1966	4	29	57	11	5	63				10	31	334
1967	5	11	46	5	8	130				5	8	365
1968	12	5	67	12	5	135				12	4	470
1969	5	17	25	5	9	34	11	24	13	11	24	98
1970	4	24	48	4	29	51	4	24	23	4	26	134
1971	5	17	54	5	3	36	5	7	20	4	20	95
1972	11	19	45	10	30	73	10	18	34	5	12	55
1973	4	25	16	6	16	51	4	18	35	4	23	82
1974	4	18	65	7	9	46	7	9	14	4	25	110
1975	5	25	27	5	22	64	5	22	26	11	21	134
1976	11	30	21	5	17	39	5	17	21	11	8	76
1977	5	16	51	4	28	71	5	20	24	4	9	123
1978	4	14	73	5	4	63	5	11	27	4	10	208
1979	6	2	41	5	24	69	5	29	29	4	25	360
1980	11	18	23	5	8	40	10	29	14	11	5	174
1981	5	16	60	5	20	66	5	20	25	4	18	282
1982	5	27	42	10	12	39	10	19	30	11	2	408
1983	5	4	22	5	10	38	4	27	18	5	10	91
1984	11	28	16	11	12	26	4	25	10	11	8	100
1985	4	19	52	11	13	28	5	17	27	5	16	137
1986	5	8	49	5	15	22	5	19	47	5	8	80
1987	6	8	12	9	1	27	5	28	31			
1988	4	27	47	5	12	26	11	18	31			
1989	5	15	48	4	7	14						

Year	4F10(Kazita) [878 sq km] Month	Date	Discharge (CMS)	4F13(Grand Falls) [17,179 sq km] Month	Date	Discharge (CMS)	4G1(Garissa) [32,892 sq km] Month	Date	Discharge (CMS)
1934							5	22	481
1935							12	5	364
1936							4	23	631
1937							5	25	893
1938							12	10	448
1939							4	19	364
1940							5	4	782
1941							4	18	1470
1942							5	2	910
1943							12	21	681
1944							12	6	467
1945							11	28	360
1946							11	4	682
1947							5	16	1209
1948				11	7	578	5	1	447
1949				1	1	190	4	26	251
1950				4	17	698	5	27	507
1951				4	7	1571	4	19	1195
1952				5	14	459	5	17	479
1953				11	19	1154	11	21	467
1954				5	22	585	5	28	660
1955				5	9	319	5	11	360
1956				4	29	1101	5	4	1441
1957				5	16	835	5	20	932
1958				5	16	1048	5	20	1031
1959				5	4	418	5	5	498
1960				11	17	426	10	27	890
1961							11	21	3561
1962	4	24	481				5	19	705
1963	11	15	432	11	15	3579	5	2	1245
1964	4	18	137	4	17	3929	4	28	1152
1965	4	29	43	5	12	739	11	7	559
1966	4	13	385	4	29	2676	11	9	957
1967	11	28	168	5	11	1965	5	14	1599
1968	12	3	157	12	4	2916	12	6	1976
1969	11	24	85	5	10	518	5	21	459
1970	4	11	135	4	25	1175	4	27	728
1971	11	29	68	5	21	1614	5	4	925
1972	11	6	178	11	6	1161	11	17	875
1973	4	18	16	4	23	1127	4	25	481
1974	4	25	78	3	27	722	4	4	501
1975	5	16	54	4	15	861	4	27	496
1976	4	24	44	11	20	804	9	1	396
1977	12	21	118	4	11	1688	4	12	1472
1978	4	15	133	4	26	1580	4	18	1229
1979	11	10	194	5	10	1478	11	13	1116
1980	11	10	147	5	6	532	11	11	422
1981	4	16	89	3	23	994	3	24	815
1982	4	8	68	11	4	779	11	3	1034
1983	4	21	75	4	27	733	5	13	690
1984	10	31	204	4	25	1470	11	16	925
1985	4	30	118	4	17	773	3	30	622
1986	12	10	204	4	29	702	12	10	1025
1987	11	18	110	4	15	210	5	4	289
1988	11	17	150	4	27	1495	4	30	1453
1989	12	4	59	4	5	1113	11	23	1073

Record of Annual Maximum Discharges (Drainage Area 5)

Year	5AA1(Ewaso Narok) [577 sq km] Month	Date	Discharge (CMS)	5AC8(Ewaso Narok) [3,290 sq km] Month	Date	Discharge (CMS)	5BC4(Ewaso Ngiro) [1,870 sq km] Month	Date	Discharge (CMS)	5BC8(Engare Ngobit) [256 sq km] Month	Date	Discharge (CMS)
1947	9	4	12									
1948	8	11	10									
1949	9	12	9									
1950	8	14	7									
1951	12	14	16									
1952	8	23	4									
1953	8	21	2									
1954	9	5	15									
1955	9	3	13									
1956	2	19	13									
1957	6	30	6									
1958	7	28	30	7	31	290				5	5	6
1959	9	5	5	5	31	11				1	27	5
1960	8	31	12	8	31	11	12	23	9	4	7	2
1961	12	29	105	12	30	493	4	10	30	12	14	101
1962	1	2	53	1	1	147	5	11	16	1	4	90
1963	8	27	12	12	29	39	12	27	91	12	25	80
1964	7	31	19	8	21	42	4	26	79	4	23	25
1965	1	5	3	1	1	19	4	30	10	1	4	4
1966	9	10	15	9	2	29	11	8	72	4	30	2
1967	7	24	15	5	11	61	11	29	76	5	11	10
1968	4	27	29	4	30	138	4	24	127	4	24	112
1969	9	15	6	9	25	4	3	27	25	11	21	4
1970	8	28	9	9	1	9	4	27	18	1	24	10
1971	8	25	13	9	1	44	8	24	26	12	25	24
1972	8	23	5	5	6	14	2	11	26	2	9	24
1973	9	1	5	9	5	8	11	12	16	1	17	2
1974	9	2	6	8	25	12	11	12	12	8	24	6
1975	9	5	20	9	6	127	9	6	13	7	22	12
1976	9	6	10	9	9	12	12	25	15	7	10	2
1977	11	23	21	5	8	59	4	16	51	11	17	12
1978	7	17	8	8	23	17	12	16	20	1	20	12
1979	2	5	15	2	7	154	2	6	56	2	4	58
1980	8	29	2	5	14	8	5	9	10	11	14	4
1981	8	13	12	4	17	136	5	10	20	4	2	208
1982	12	2	22	12	6	24	11	3	17	11	30	44
1983	8	24	10	8	31	28	12	30	17	12	28	67
1984	8	8	1	1	1	2	11	15	8	11	15	4
1985	7	26	6	5	9	21	4	15	13	4	15	10
1986	9	18	4	5	4	15	4	29	18	12	10	10
1987	6	10	10									

Year	5BE4(Sirimon) [62 sq km] Month	Date	Discharge (CMS)	5BE20(Nanyuki) [860 sq km] Month	Date	Discharge (CMS)	5D5(Ewaso Ngiro) [4,561 sq km] Month	Date	Discharge (CMS)	5E5(Ewaso Ngiro) [15,300 sq km] Month	Date	Discharge (CMS)
1949										4	21	165
1950										4	18	211
1951										4	5	662
1952										1	2	29
1953										6	24	88
1954										12	2	178
1955										4	15	189
1956										4	29	134
1957	11	5	9							12	3	271
1958	2	12	11							5	15	189
1959	11	24	8				7	25	47	11	24	196
1960	5	2	12	11	17	24	11	18	25	11	17	160
1961	4	11	18	10	26	60	11	19	255	11	9	1897
1962	1	3	8	1	3	35	1	5	229	1	6	323
1963	11	15	33	12	8	77	12	27	216	12	9	413
1964	4	18	8	4	18	51	4	20	145	4	17	358
1965	10	21	3	11	17	18	11	21	22	4	29	86
1966	11	1	13	11	8	60	11	1	113	11	1	347
1967	5	8	18	11	26	87	11	27	194	5	8	494
1968	11	25	22	4	24	103	12	6	216	4	25	650
1969	11	21	4	11	24	14	2	25	39	11	22	89
1970	4	25	3	4	25	18	4	27	29			
1971	9	27	5	8	19	21	8	19	90	4	19	231
1972	11	6	3	6	26	17	2	12	35	11	6	314
1973	9	25	3	9	24	31	9	27	49	11	9	219
1974	8	31	5	7	9	22	7	8	37	11	19	153
1975	6	24	5	8	16	28	9	5	47	4	24	365
1976	5	21	6	6	24	15	5	28	43	10	9	158
1977	11	7	7				4	15	121	5	8	558
1978	10	26	7	11	2	20	11	1	45	4	9	211
1979	2	1	6	1	30	50	2	6	93	1	30	179
1980	11	12	3	5	8	12				5	22	178
1981	3	26	39	4	16	26	4	17	95	3	30	588
1982	11	2	30	12	3	20	10	22	79	10	17	600
1983	8	19	3				4	29	47	8	22	130
1984				11	16	12	12	14	21	11	15	323
1985				4	10	17	4	17	90	4	13	233
1986				6	16	24	4	1	72	12	7	465
1987							6	9	73	6	10	194
1988										4	27	1190

APPENDIX B.13

Frequency Analysis for Annual Maximum Discharge

Probable Flood at Ganging Station (Drainage Area 1 - 1/3)

STATION: 1AH1 River: Sio
C.A: 1,450 sq km (Sample Size: 28)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	60	66	72	74	80	86
Log-normal(Iwai)	59	64	69	70	75	79
Log Pearson III	59	64	69	71	76	80

unit: CMS

STATION: 1BA1 River: Moiben
C.A: 262 sq km (Sample Size: 29)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	19	27	34	36	43	50
Log-normal(Iwai)	13	22	34	38	54	75
Log Pearson III	13	21	32	37	54	77

unit: CMS

STATION: 1BC1 River: Noigameget
C.A: 684 sq km (Sample Size: 31)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	22	26	30	31	35	38
Log-normal(Iwai)	22	25	28	29	32	34
Log Pearson III	22	26	29	31	34	38

unit: CMS

STATION: 1BG4 River: Kassowai
C.A: 54 sq km (Sample Size: 40)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	6	8	10	10	12	14
Log-normal(Iwai)	5	7	10	11	14	17
Log Pearson III	5	7	9	10	13	17

unit: CMS

STATION: 1BG5 River: Rongai
C.A: 34 sq km (Sample Size: 41)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	1.3	1.7	2.1	2.2	2.5	2.9
Log-normal(Iwai)	1.2	1.6	2	2.2	2.7	3.3
Log Pearson III	1.2	1.6	2	2.2	2.8	3.4

unit: CMS

STATION: 1BG6 River: Ewaso Rongai
C.A: 530 sq km (Sample Size: 30)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	44	59	73	77	91	104
Log-normal(Iwai)	37	54	74	81	106	134
Log Pearson III	37	52	70	77	98	123

unit: CMS

STATION: 1CA2 River: Sergoit
C.A: 717 sq km (Sample Size: 30)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	35	44	53	56	65	74
Log-normal(Iwai)	34	44	54	57	67	77
Log Pearson III	38	60	87	98	134	179

unit: CMS

STATION: 1CB5 River: Sosiani
C.A: 697 sq km (Sample Size: 30)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	25	31	37	39	45	51
Log-normal(Iwai)	24	30	36	38	44	51
Log Pearson III	24	33	42	45	55	67

unit: CMS

STATION: 1CC1 River: Onyokie
C.A: 588 sq km (Sample Size: 39)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	93	131	166	178	213	247
Log-normal(Iwai)	67	111	167	188	263	356
Log Pearson III	70	125	200	233	347	497

unit: CMS

STATION: 1CE1 River: Kipkarren
C.A: 2,440 sq km (Sample Size: 41)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	193	247	298	315	365	415
Log-normal(Iwai)	185	243	303	323	385	451
Log Pearson III	192	279	377	416	538	678

unit: CMS

STATION: 1DA2 River: Nzoia
C.A: 8,417 sq km (Sample Size: 42)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	296	374	448	471	544	616
Log-normal(Iwai)	274	334	392	410	465	520
Log Pearson III	272	346	421	448	529	615

unit: CMS

STATION: 1DB1 River: Kuywa
C.A: 446 sq km (Sample Size: 25)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	88	118	147	156	184	212
Log-normal(Iwai)	71	103	140	153	198	249
Log Pearson III	70	103	142	157	208	269

unit: CMS

STATION: 1DD1 River: Nzoia
C.A: 10,142 sq km (Sample Size: 26)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	440	554	663	698	805	910
Log-normal(Iwai)	405	522	645	686	819	961
Log Pearson III	404	521	643	688	824	972

unit: CMS

STATION: 1EB2 River: Isiukhu
C.A: 359 sq km (Sample Size: 27)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	32	37	43	44	50	55
Log-normal(Iwai)	31	35	38	39	42	45
Log Pearson III	32	37	42	43	48	53

unit: CMS

STATION: 1EE1 River: Nzoia
C.A: 11,849 sq km (Sample Size: 25)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	419	511	600	628	715	801
Log-normal(Iwai)	402	488	571	597	680	763
Log Pearson III	402	495	586	618	714	812

unit: CMS

Probable Flood at Ganging Station (Drainage Area 1 - 2/3)

STATION: 1FC1 River: Kimondi
C.A: 909 sq km (Sample Size: 25)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	145	195	243	258	305	352
Log-normal(Iwai)	118	175	243	267	351	448
Log Pearson III	118	177	245	272	360	461

unit: CMS

STATION: 1FE1 River: Yala
C.A: 1,896 sq km (Sample Size: 27)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	263	362	458	488	581	674
Log-normal(Iwai)	194	302	437	487	666	883
Log Pearson III	183	280	404	455	631	856

unit: CMS

STATION: 1FE2 River: Yala
C.A: 1,577 sq km (Sample Size: 29)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	163	212	259	274	320	365
Log-normal(Iwai)	147	202	263	284	354	431
Log Pearson III	147	205	267	291	366	449

unit: CMS

STATION: 1FF2 River: Zaaba
C.A: 47 sq km (Sample Size: 31)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	13	17	21	22	26	30
Log-normal(Iwai)	12	18	26	29	40	53
Log Pearson III	11	15	21	23	29	37

unit: CMS

STATION: 1FF3 River: Edzawa
C.A: 262 sq km (Sample Size: 26)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	45	56	66	69	79	89
Log-normal(Iwai)	41	50	60	63	72	82
Log Pearson III	41	51	61	65	76	88

unit: CMS

STATION: 1FG1 River: Yala
C.A: 2,388 sq km (Sample Size: 43)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	112	134	156	163	184	205
Log-normal(Iwai)	109	130	150	156	176	195
Log Pearson III	109	132	153	161	183	206

unit: CMS

STATION: 1FG2 River: Yala
C.A: 2,864 sq km (Sample Size: 31)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	141	169	197	205	232	259
Log-normal(Iwai)	131	157	184	193	221	250
Log Pearson III	130	156	185	195	226	261

unit: CMS

STATION: 1GB3 River: Ainamotua
C.A: 1,300 sq km (Sample Size: 19)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	215	307	394	422	508	593
Log-normal(Iwai)	133	224	347	393	567	787
Log Pearson III	130	220	342	394	584	841

unit: CMS

STATION: 1GB6 River: Mbogo
C.A: 67 sq km (Sample Size: 32)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	8	11	13	13	16	18
Log-normal(Iwai)	8	12	16	18	24	30
Log Pearson III	7	10	12	12	15	17

unit: CMS

STATION: 1GC5 River: Masaita
C.A: 251 sq km (Sample Size: 25)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	119	169	217	232	279	326
Log-normal(Iwai)	76	162	305	366	618	989
Log Pearson III	76	170	326	401	698	1147

unit: CMS

STATION: 1GD3 River: Nando
C.A: 2,625 sq km (Sample Size: 22)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	337	437	534	564	659	752
Log-normal(Iwai)	295	391	494	528	641	762
Log Pearson III	294	395	501	541	664	797

unit: CMS

STATION: 1GD4 River: Nyando
C.A: 2,520 sq km (Sample Size: 34)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	207	282	354	377	448	517
Log-normal(Iwai)	155	236	335	372	501	655
Log Pearson III	151	235	345	390	552	762

unit: CMS

STATION: 1GD7 River: Nyando
C.A: 1,419 sq km (Sample Size: 27)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	241	325	496	432	511	589
Log-normal(Iwai)	203	307	430	474	625	801
Log Pearson III	207	337	500	568	796	1076

unit: CMS

STATION: 1HA1 River: Oruba
C.A: 62 sq km (Sample Size: 31)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	71	109	145	157	192	228
Log-normal(Iwai)	15	35	69	85	153	259
Log Pearson III	13	33	80	105	256	601

unit: CMS

STATION: 1HA4 River: Kibos
C.A: 117 sq km (Sample Size: 58)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	19	24	28	30	34	39
Log-normal(Iwai)	17	20	24	25	28	32
Log Pearson III	16	21	26	27	33	39

unit: CMS

Probable Flood at Ganging Station (Drainage Area 1 - 3/3)

STATION: 1HA14 River: Awach
C.A: 104 sq km (Sample Size: 27)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	24	33	42	45	53	61
Log-normal(Iwai)	18	24	31	34	42	50
Log Pearson III	17	25	35	39	52	69

unit: CMS

STATION: 1JD3 River: Yurith
C.A: 1,586 sq km (Sample Size: 18)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	118	145	171	180	205	230
Log-normal(Iwai)	113	135	154	160	179	196
Log Pearson III	115	144	173	184	215	247

unit: CMS

STATION: 1JF4 River: Kipsonoi
C.A: 73 sq km (Sample Size: 22)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	21	29	38	40	48	56
Log-normal(Iwai)	13	22	34	38	55	77
Log Pearson III	12	21	33	38	56	82

unit: CMS

STATION: 1JG1 River: Sondu
C.A: 3,287 sq km (Sample Size: 44)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	262	334	404	427	495	563
Log-normal(Iwai)	241	313	388	412	491	574
Log Pearson III	246	334	427	462	571	689

unit: CMS

STATION: 1KB3 River: Kuja
C.A: 1,114 sq km (Sample Size: 21)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	112	138	163	171	196	220
Log-normal(Iwai)	105	130	157	165	193	222
Log Pearson III	105	129	154	162	188	215

unit: CMS

STATION: 1KB1A River: Kuja
C.A: 3,115 sq km (Sample Size: 23)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	718	974	1219	1297	1536	1774
Log-normal(Iwai)	556	861	1244	1386	1891	2504
Log Pearson III	551	840	1194	1337	1823	2423

unit: CMS

STATION: 1KB5 River: Kuja/Migori
C.A: 6,600 sq km (Sample Size: 21)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	484	577	669	698	787	876
Log-normal(Iwai)	466	541	609	630	692	753
Log Pearson III	465	554	638	667	752	838

unit: CMS

STATION: 1KC3 River: Migori
C.A: 3,046 sq km (Sample Size: 39)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	692	907	1113	1178	1380	1579
Log-normal(Iwai)	610	857	1134	1230	1553	1914
Log Pearson III	611	867	1148	1257	1598	1983

unit: CMS

STATION: 1LA3 River: Nyangores
C.A: 679 sq km (Sample Size: 24)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	36	42	49	51	57	63
Log-normal(Iwai)	36	40	43	44	47	50
Log Pearson III	36	43	49	51	58	64

unit: CMS

Probable flood at Ganging Station (Drainage Area 2)

STATION: 2C5 River: Arror
C.A: 185 sq km (Sample Size: 28)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	30	40	50	53	62	72
Log-normal(Iwai)	24	33	44	47	60	74
Log Pearson III	23	33	45	50	65	83

unit: CMS

STATION: 2C7 River: Ndo
C.A: 893 sq km (Sample Size: 20)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	66	88	109	115	135	156
Log-normal(Iwai)	57	85	118	130	172	221
Log Pearson III	56	79	105	115	147	183

unit: CMS

STATION: 2EC3 River: Rongai
C.A: 48 sq km (Sample Size: 31)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	5	7	9	10	12	13
Log-normal(Iwai)	3	4	6	7	9	12
Log Pearson III	3	4	7	8	12	17

unit: CMS

STATION: 2EF3 River: Esageri
C.A: 60 sq km (Sample Size: 23)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	3	5	6	6	7	8
Log-normal(Iwai)	2	4	6	7	9	12
Log Pearson III	2	4	6	7	11	15

unit: CMS

STATION: 2FC5 River: Njoro
C.A: 125 sq km (Sample Size: 23)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	8	10	13	13	16	18
Log-normal(Iwai)	7	10	13	14	17	21
Log Pearson III	7	12	17	19	26	34

unit: CMS

STATION: 2GA3 River: Gilgil
C.A: 136 sq km (Sample Size: 31)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	9	12	14	14	17	19
Log-normal(Iwai)	9	11	13	14	16	19
Log Pearson III	9	13	17	19	23	29

unit: CMS

STATION: 2GB4 River: Wanjohi
C.A: 152 sq km (Sample Size: 21)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	10	12	14	15	17	19
Log-normal(Iwai)	9	11	13	13	15	16
Log Pearson III	9	12	15	15	18	21

unit: CMS

STATION: 2GC4 River: Turasha
C.A: 695 sq km (Sample Size: 29)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	59	77	94	100	117	134
Log-normal(Iwai)	53	72	93	100	123	149
Log Pearson III	53	78	107	118	154	195

unit: CMS

STATION: 2K3 River: Narok
C.A: 869 sq km (Sample Size: 31)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	224	329	429	461	558	655
Log-normal(Iwai)	118	220	370	430	663	978
Log Pearson III	119	227	382	453	707	1055

unit: CMS

Probable Flood at Ganging Station (Drainage Area 3)

STATION: 3AA4 River: Mbagathi
C.A: 272 sq km (Sample Size: 22)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	132	195	254	273	332	390
Log-normal(Iwai)	68	130	223	261	408	610
Log Pearson III	69	136	235	280	448	681

unit: CMS

STATION: 3BA29 River: Nairobi
C.A: 75 sq km (Sample Size: 31)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	11	15	19	20	24	28
Log-normal(Iwai)	9	13	19	20	27	35
Log Pearson III	9	13	19	21	29	39

unit: CMS

STATION: 3BA32 River: Nairobi
C.A: 1,942 sq km (Sample Size: 22)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	216	300	381	407	486	565
Log-normal(Iwai)	160	264	399	450	633	860
Log Pearson III	161	274	420	483	695	965

unit: CMS

STATION: 3C55 River: Ndarugu
C.A: 312 sq km (Sample Size: 30)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	47	58	69	72	83	93
Log-normal(Iwai)	46	56	66	69	79	88
Log Pearson III	48	65	84	91	112	135

unit: CMS

STATION: 3DA2 River: Athi
C.A: 5,724 sq km (Sample Size: 30)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	550	709	861	910	1059	1206
Log-normal(Iwai)	530	711	696	958	1155	1362
Log Pearson III	548	797	1079	1189	1539	1939

unit: CMS

STATION: 3F2 River: Athi
C.A: 10,132 sq km (Sample Size: 30)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	930	1232	1521	1613	1896	2177
Log-normal(Iwai)	769	1075	1421	1541	1947	2404
Log Pearson III	762	1077	1436	1575	2027	2555

unit: CMS

STATION: 3G2 River: Athi
C.A: 7,252 sq km (Sample Size: 32)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	129	177	222	237	281	326
Log-normal(Iwai)	97	142	194	212	276	348
Log Pearson III	96	144	201	224	299	389

unit: CMS

Probable Flood at Ganging Station (Drainage Area 4)

STATION: 4AA5 River: Sagana
C.A: 505 sq km (Sample Size: 31)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	62	83	103	109	129	148
Log-normal(Iwai)	49	73	103	113	152	197
Log Pearson III	48	71	99	111	150	198

unit: CMS

STATION: 4AA7 River: Upper Sagana
C.A: 41 sq km (Sample Size: 22)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	20	26	31	33	38	44
Log-normal(Iwai)	18	23	28	30	35	41
Log Pearson III	18	23	28	30	37	43

unit: CMS

STATION: 4AC3 River: Sagana
C.A: 282 sq km (Sample Size: 40)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	120	158	194	205	241	276
Log-normal(Iwai)	102	140	183	197	246	300
Log Pearson III	101	141	186	204	260	324

unit: CMS

STATION: 4AD1 River: Gura
C.A: 430 sq km (Sample Size: 34)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	83	96	108	112	124	136
Log-normal(Iwai)	83	92	100	103	110	116
Log Pearson III	85	98	110	115	127	139

unit: CMS

STATION: 4BB1 River: Ragati
C.A: 254 sq km (Sample Size: 31)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	31	38	45	48	55	62
Log-normal(Iwai)	30	36	43	45	52	59
Log Pearson III	30	38	46	50	59	68

unit: CMS

STATION: 4BC2 River: Tana-Sagana
C.A: 2,365 sq km (Sample Size: 34)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	268	335	399	419	482	544
Log-normal(Iwai)	249	319	391	415	492	574
Log Pearson III	249	316	383	407	479	555

unit: CMS

STATION: 4BE2 River: Tana P.S
C.A: 3,672 sq km (Sample Size: 22)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	719	907	1086	1143	1319	1494
Log-normal(Iwai)	687	876	1065	1126	1319	1518
Log Pearson III	689	921	1164	1255	1533	1835

unit: CMS

STATION: 4CA2 River: Chania
C.A: 518 sq km (Sample Size: 39)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	83	106	127	134	155	176
Log-normal(Iwai)	80	105	130	138	165	193
Log Pearson III	81	111	145	157	196	240

unit: CMS

STATION: 4CB4 River: Thika
C.A: 316 sq km (Sample Size: 34)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	61	74	86	90	101	113
Log-normal(Iwai)	61	71	79	81	89	95
Log Pearson III	62	78	93	99	115	132

unit: CMS

STATION: 4DC2 River: Rupingazi
C.A: 404 sq km (Sample Size: 33)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	78	96	115	120	138	156
Log-normal(Iwai)	72	92	113	120	143	167
Log Pearson III	72	90	107	114	133	152

unit: CMS

STATION: 4DC3 River: Rupingazi
C.A: 197 sq km (Sample Size: 20)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	33	39	45	47	53	59
Log-normal(Iwai)	32	37	41	42	45	48
Log Pearson III	32	38	44	46	52	57

unit: CMS

STATION: 4EA7 River: Mutonga
C.A: 1,880 sq km (Sample Size: 21)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	303	392	478	505	589	673
Log-normal(Iwai)	257	354	463	502	631	778
Log Pearson III	256	354	468	512	658	831

unit: CMS

STATION: 4F10 River: Kazita
C.A: 878 sq km (Sample Size: 28)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	246	323	397	421	493	565
Log-normal(Iwai)	216	308	413	450	577	721
Log Pearson III	214	296	384	418	523	639

unit: CMS

STATION: 4F13 River: Tana Grand Falls
C.A: 17,179 sq km (Sample Size: 40)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	1877	2433	2967	3137	3658	4176
Log-normal(Iwai)	1665	2268	2929	3157	3910	4743
Log Pearson III	1663	2244	2859	3091	3801	4576

unit: CMS

STATION: 4G1 River: Tana Garissa
C.A: 32,892 sq km (Sample Size: 56)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	1283	1625	1953	2057	2377	2695
Log-normal(Iwai)	1148	1454	1770	1875	2209	2562
Log Pearson III	1136	1471	1831	1965	2386	2856

unit: CMS

Probable Flood at Ganging Station (Drainage Area 5)

STATION: 5AA1 River: Ewaso Narok
C.A: 577 sq km (Sample Size: 41)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	29	40	51	55	65	76
Log-normal(Iwai)	20	29	39	42	53	66
Log Pearson III	21	30	41	45	58	74

unit: CMS

STATION: 5AC8 River: Ewaso Narok
C.A: 3,290 sq km (Sample Size: 29)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	159	231	299	320	387	453
Log-normal(Iwai)	93	182	315	371	588	892
Log Pearson III	87	163	276	327	522	801

unit: CMS

STATION: 5BC4 River: Ewaso Ngiro
C.A: 1,870 sq km (Sample Size: 27)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	60	81	101	107	127	146
Log-normal(Iwai)	45	67	94	104	139	182
Log Pearson III	44	67	98	110	156	216

unit: CMS

STATION: 5BC8 River: Engare Ngobit
C.A: 256 sq km (Sample Size: 29)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	74	106	136	146	176	205
Log-normal(Iwai)	43	82	140	164	257	386
Log Pearson III	42	82	145	174	290	466

unit: CMS

STATION: 5BE4 River: Sirimon
C.A: 62 sq km (Sample Size: 27)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	19	26	33	35	41	47
Log-normal(Iwai)	15	23	33	37	51	69
Log Pearson III	15	22	32	36	49	66

unit: CMS

STATION: 5BE20 River: Naryuki
C.A: 860 sq km (Sample Size: 25)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	57	74	91	96	112	128
Log-normal(Iwai)	46	64	86	93	119	148
Log Pearson III	46	65	87	96	126	163

unit: CMS

STATION: 5D5 River: Ewaso Ngiro
C.A: 4,561 sq km (Sample Size: 28)

Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	153	200	246	260	305	349
Log-normal(Iwai)	131	184	243	263	333	411
Log Pearson III	130	185	246	271	349	440

unit: CMS

STATION: 5E5 River: Ewaso Ngiro
C.A: 15,300 sq km (Sample Size: 39)

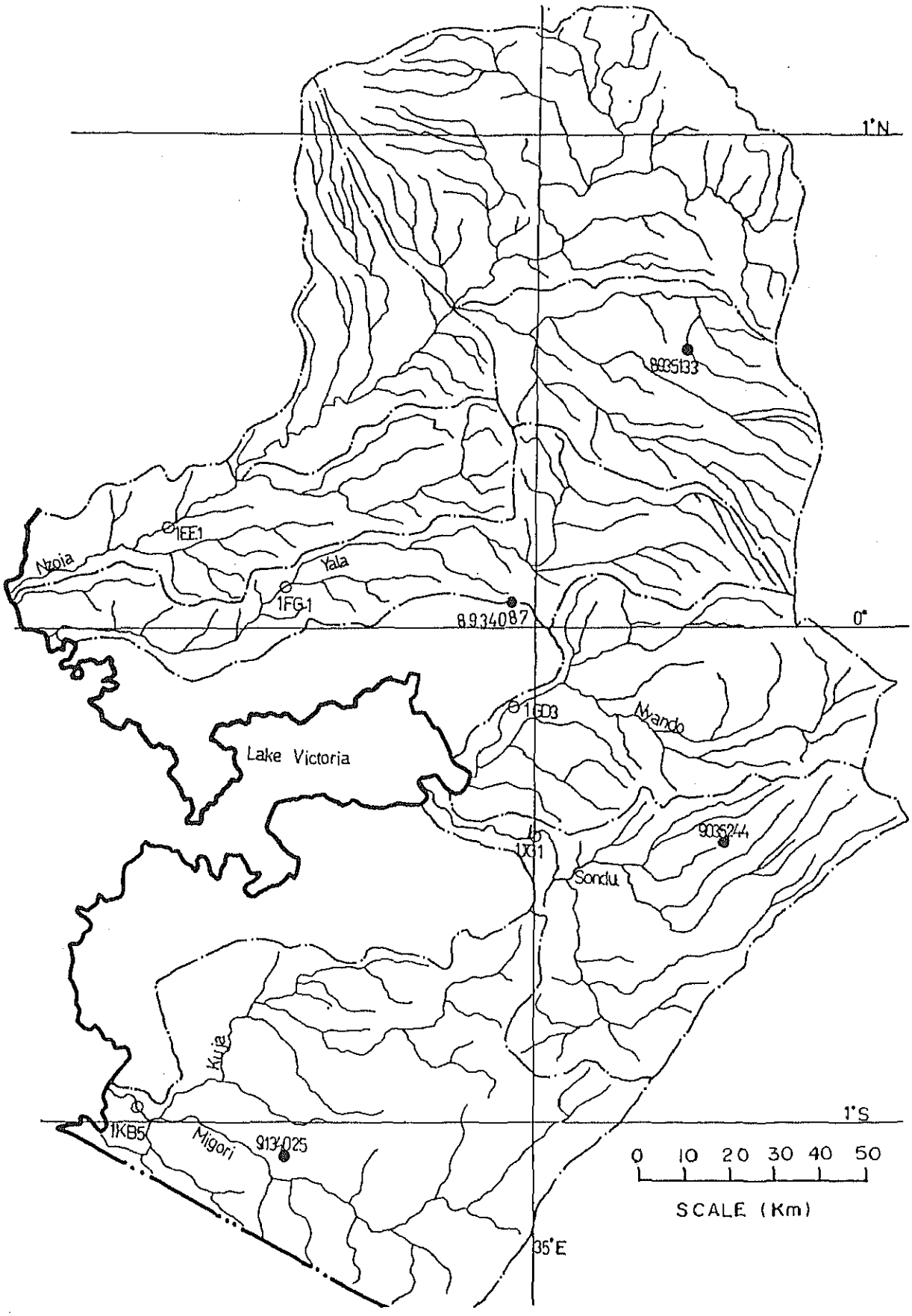
Recurrence Interval (Years)	5	10	20	25	50	100
Gumbel Extreme	627	849	1062	1130	1338	1545
Log-normal(Iwai)	485	678	892	967	1216	1495
Log Pearson III	485	684	906	991	1262	1569

unit: CMS

APPENDIX B.14

Flood Hydrograph and Hyetograph

Fig.



Location Map of Gauging Stations in Lake Victoria Basin

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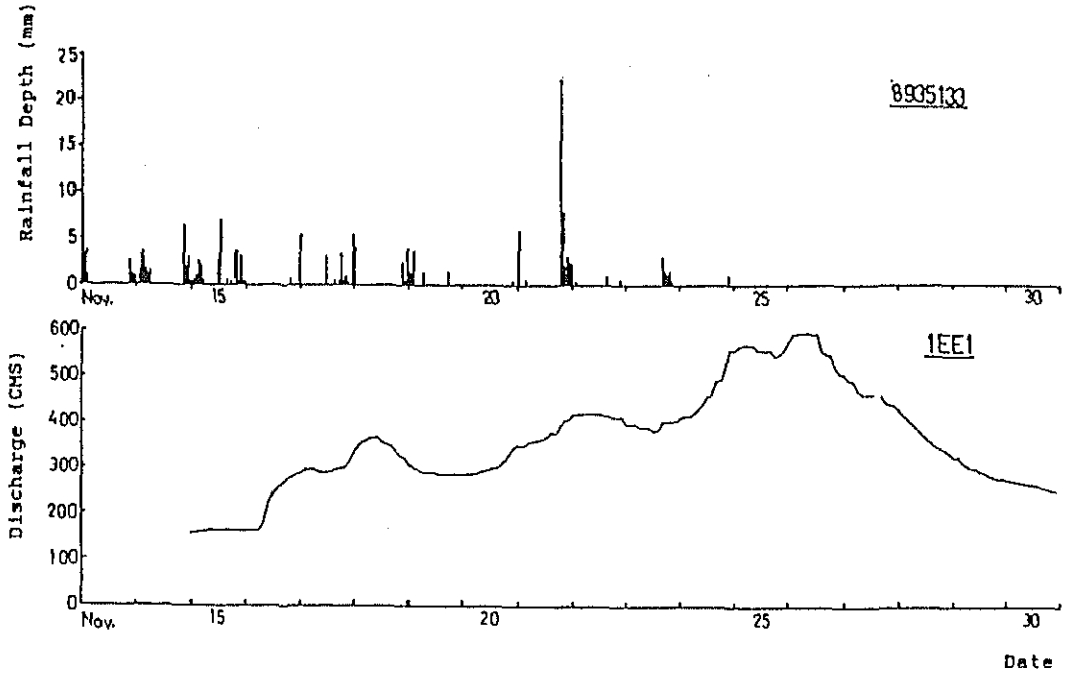
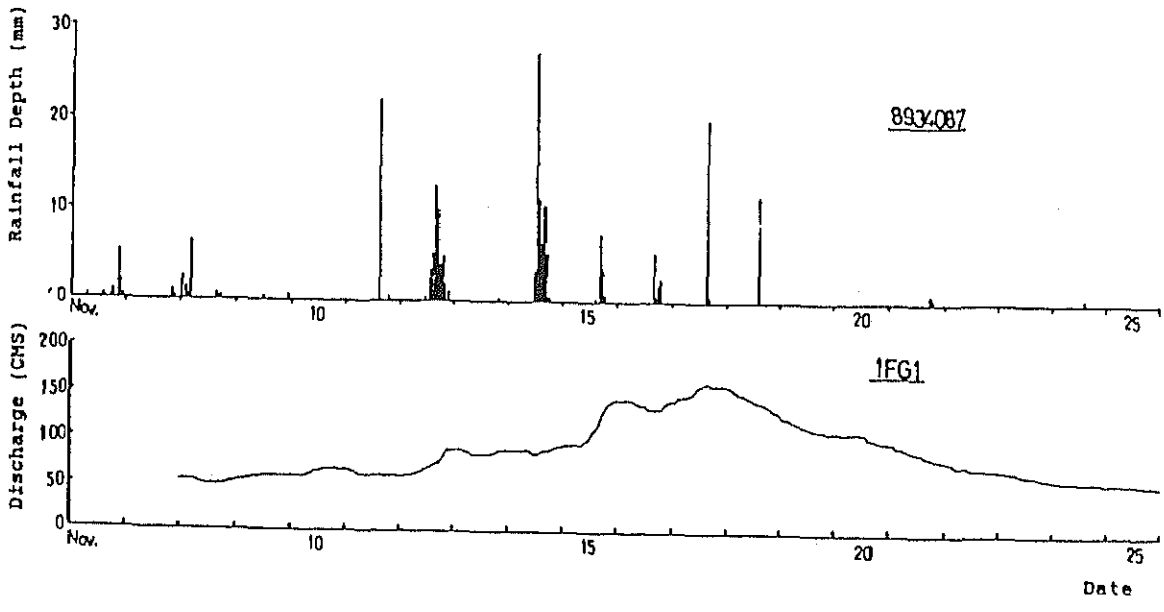
Fig.



Hyetograph and Hydrograph during Flood in Nzoia River, 1977 Storm



Hyetograph and Hydrograph during Flood in Yala River, 1979 Storm

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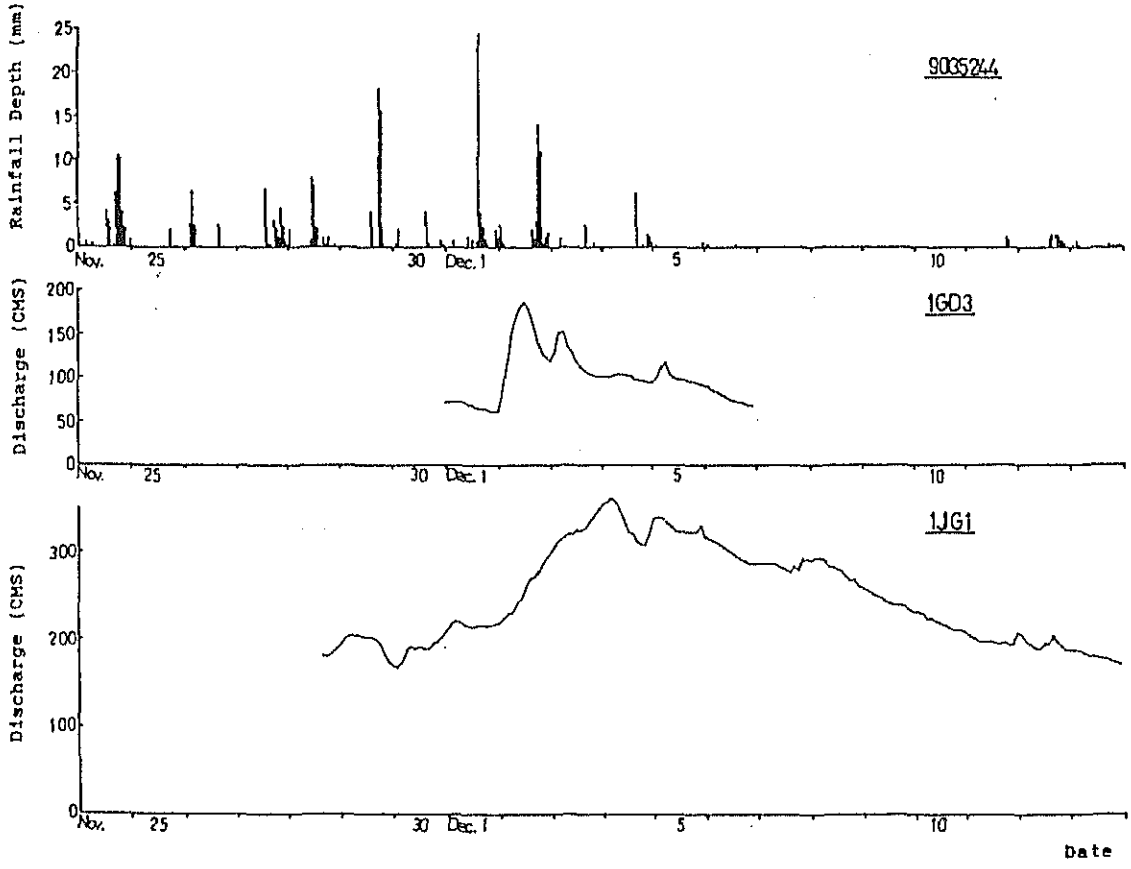
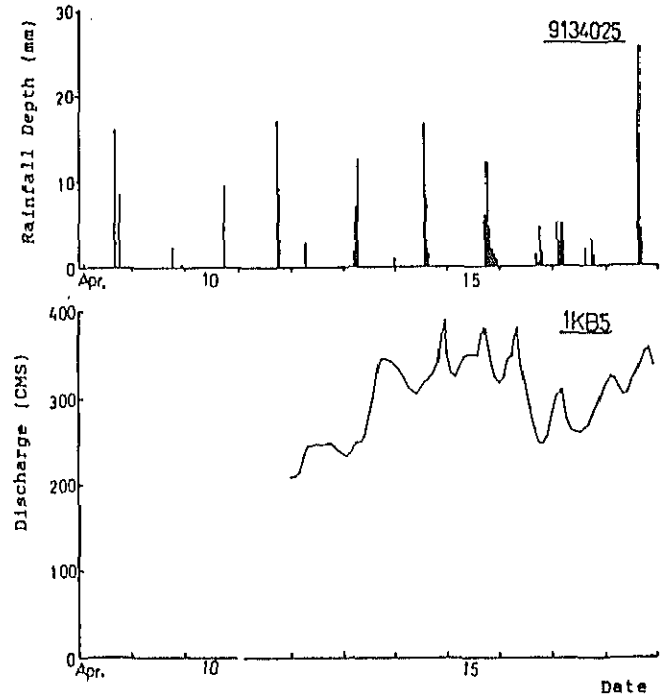
Fig.

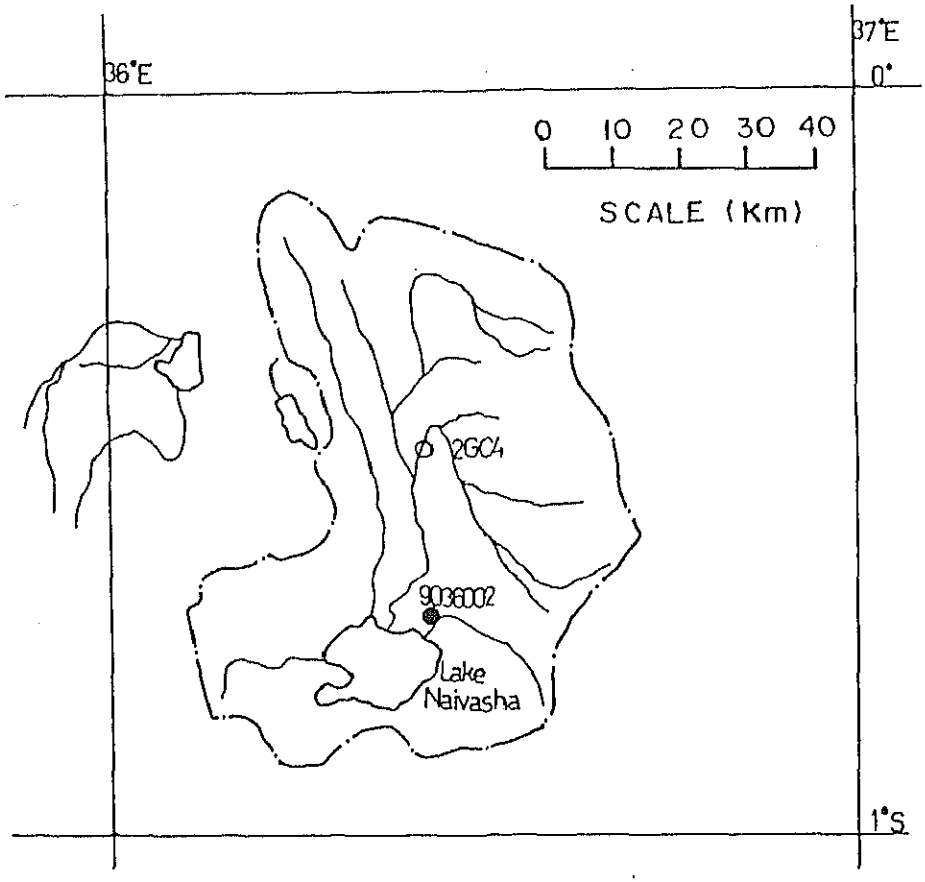


Hyetograph and Hydrograph during Flood in Nyando and Sondu River, 1982 Storm

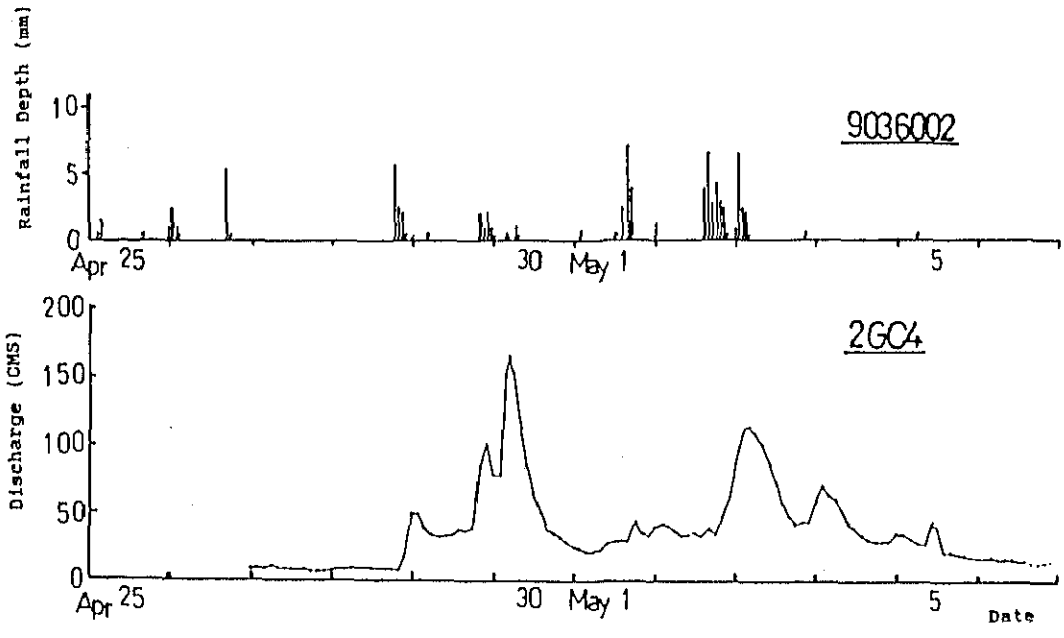


Hyetograph and Hydrograph during Flood in Kuja River, 1985 Storm

Fig.



Location Map of Gauging Stations in Lake Naivasha Basin
(Rift Valley)



Hyetograph and Hydrograph during Flood in Turasha River, 1977 Storm

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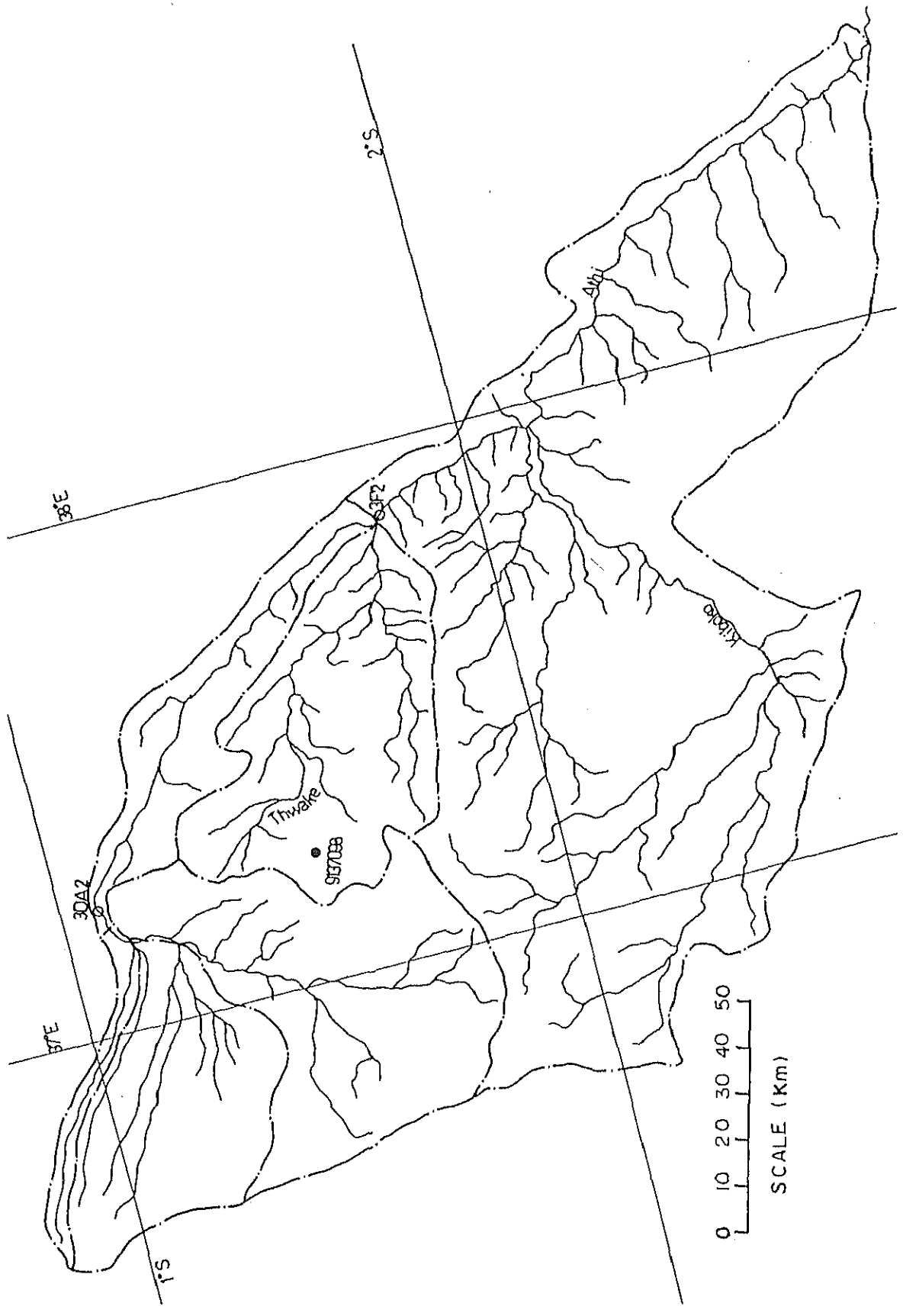
Fig.



Location Map of Gauging Stations in Upper Athi Basin

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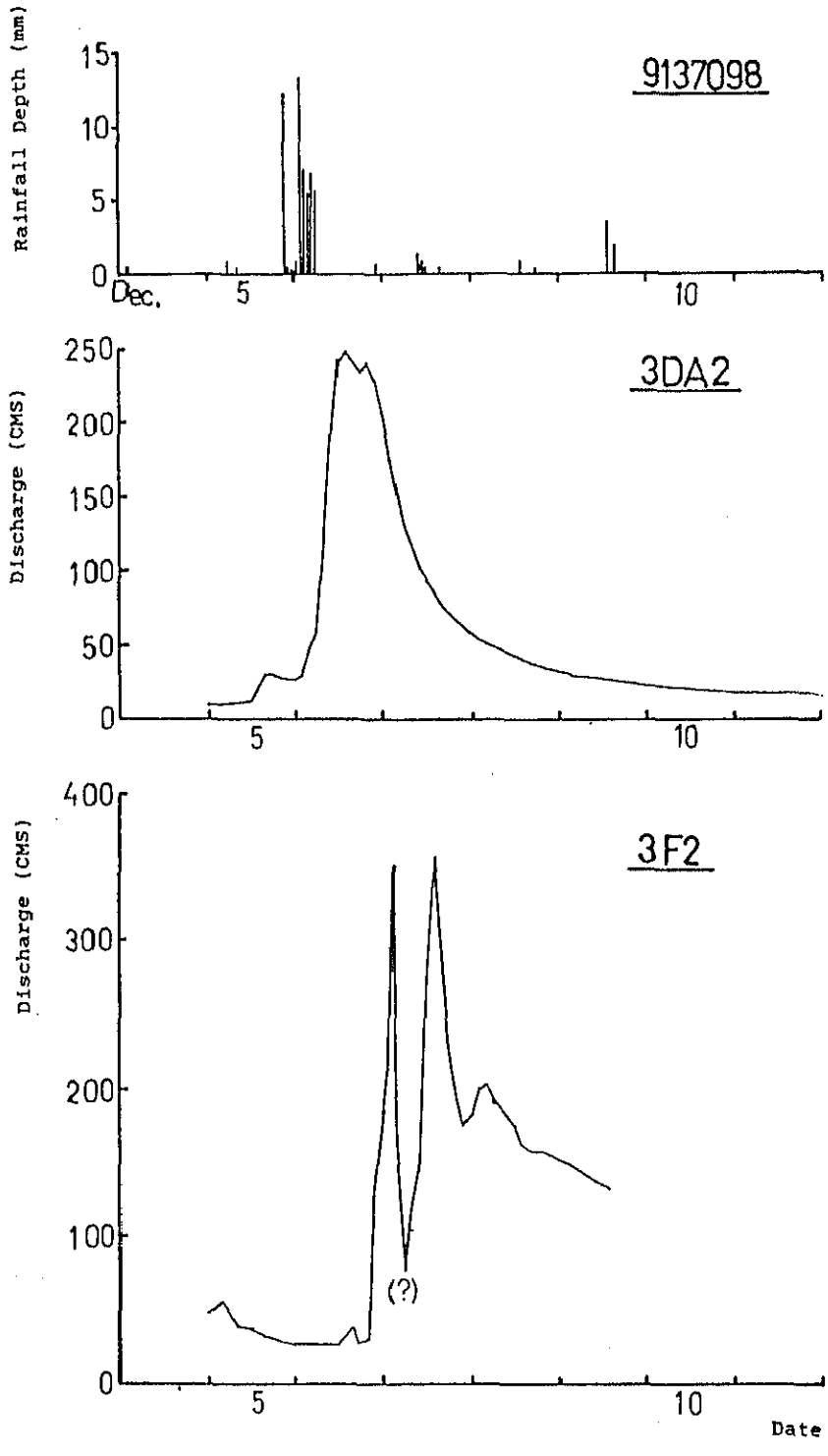
Fig.



Hyetograph and Hydrograph during Flood in Athi River, 1986 Storm

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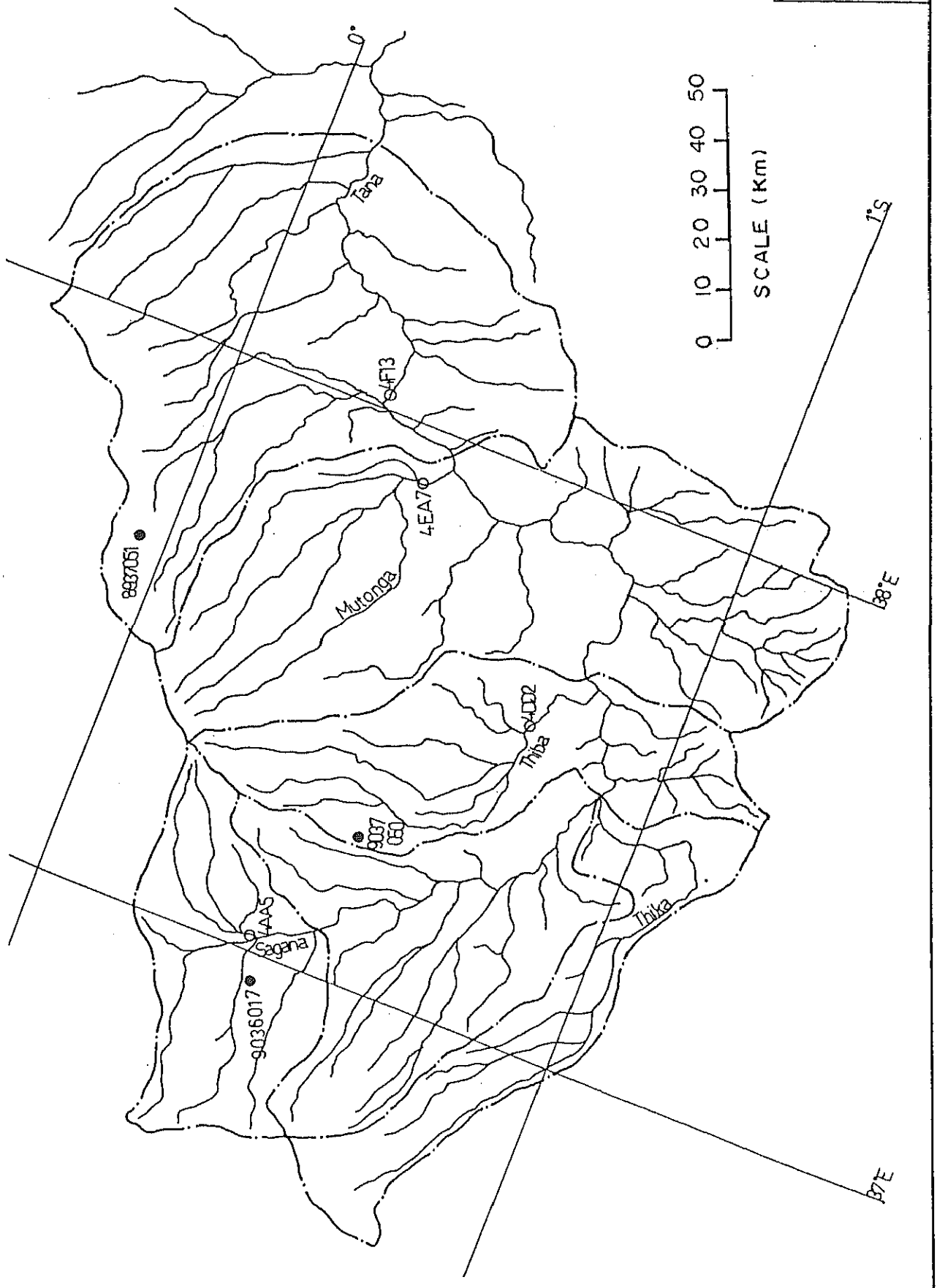
Fig.



Location Map of Gauging Stations in Upper Tana Basin

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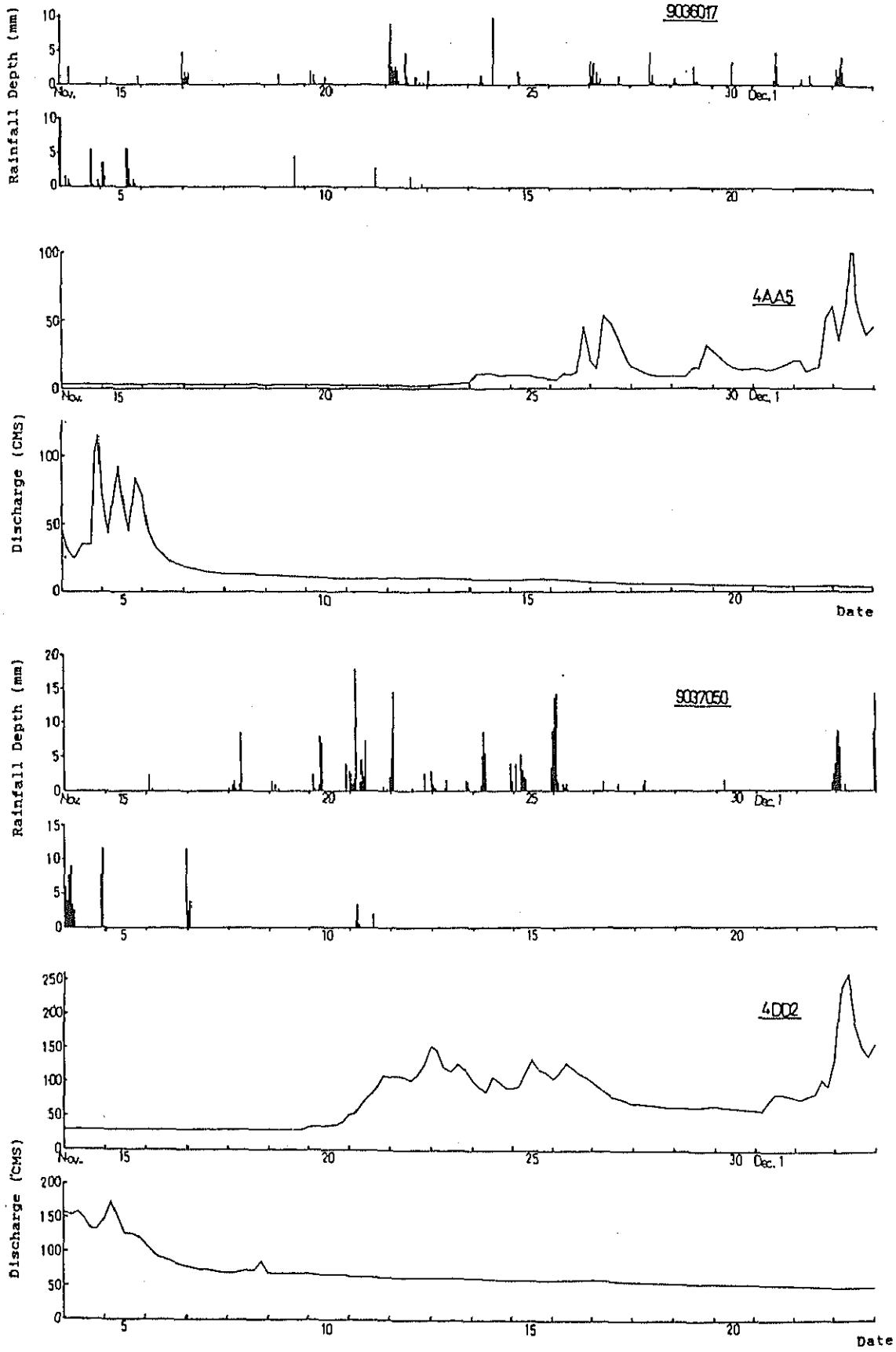
Fig.



Hyetograph and Hydrograph during Flood in Tana River, 1968 Storm

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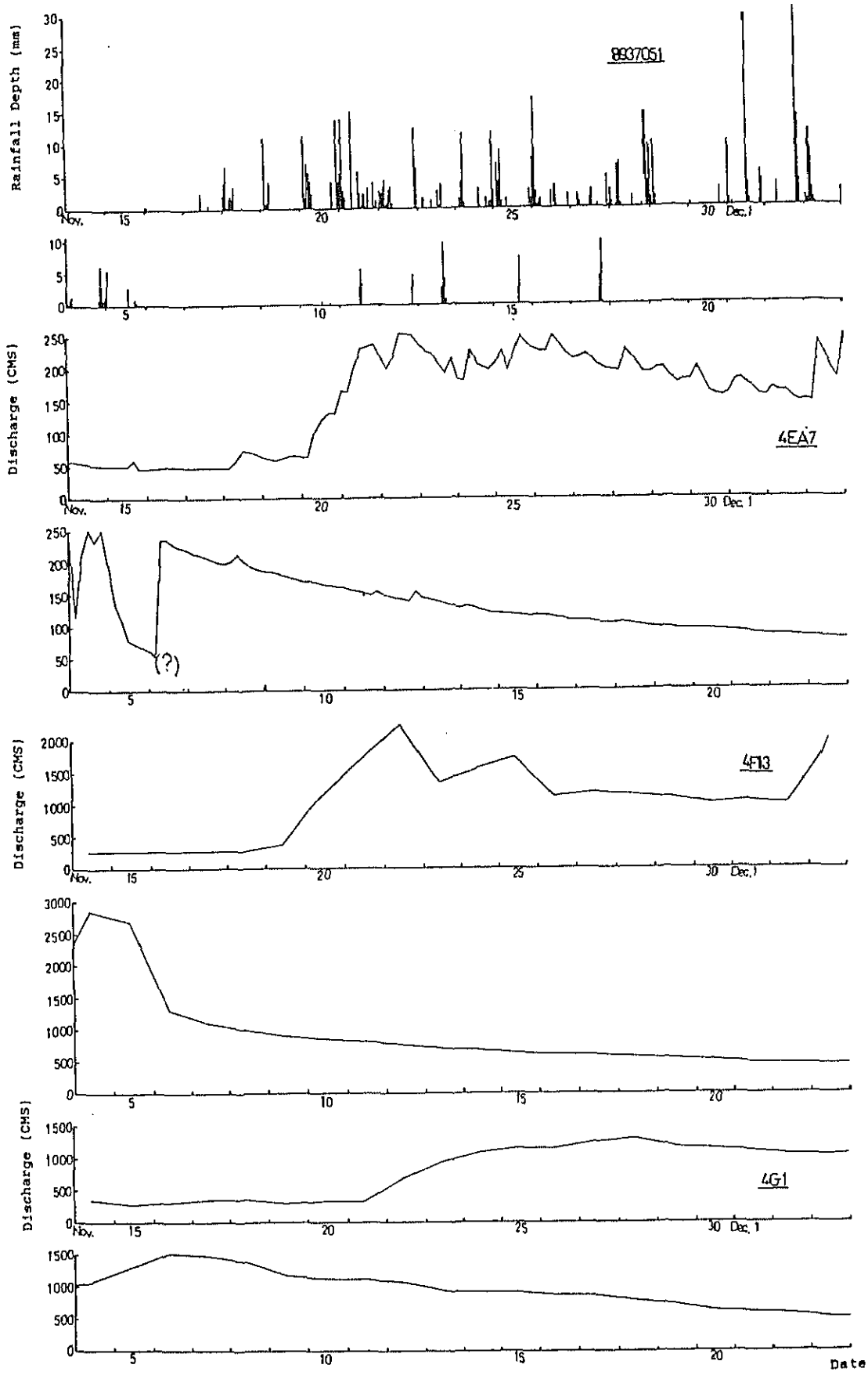
Fig.



Hyetograph and Hydrograph during Flood in Tana River, 1968 Storm

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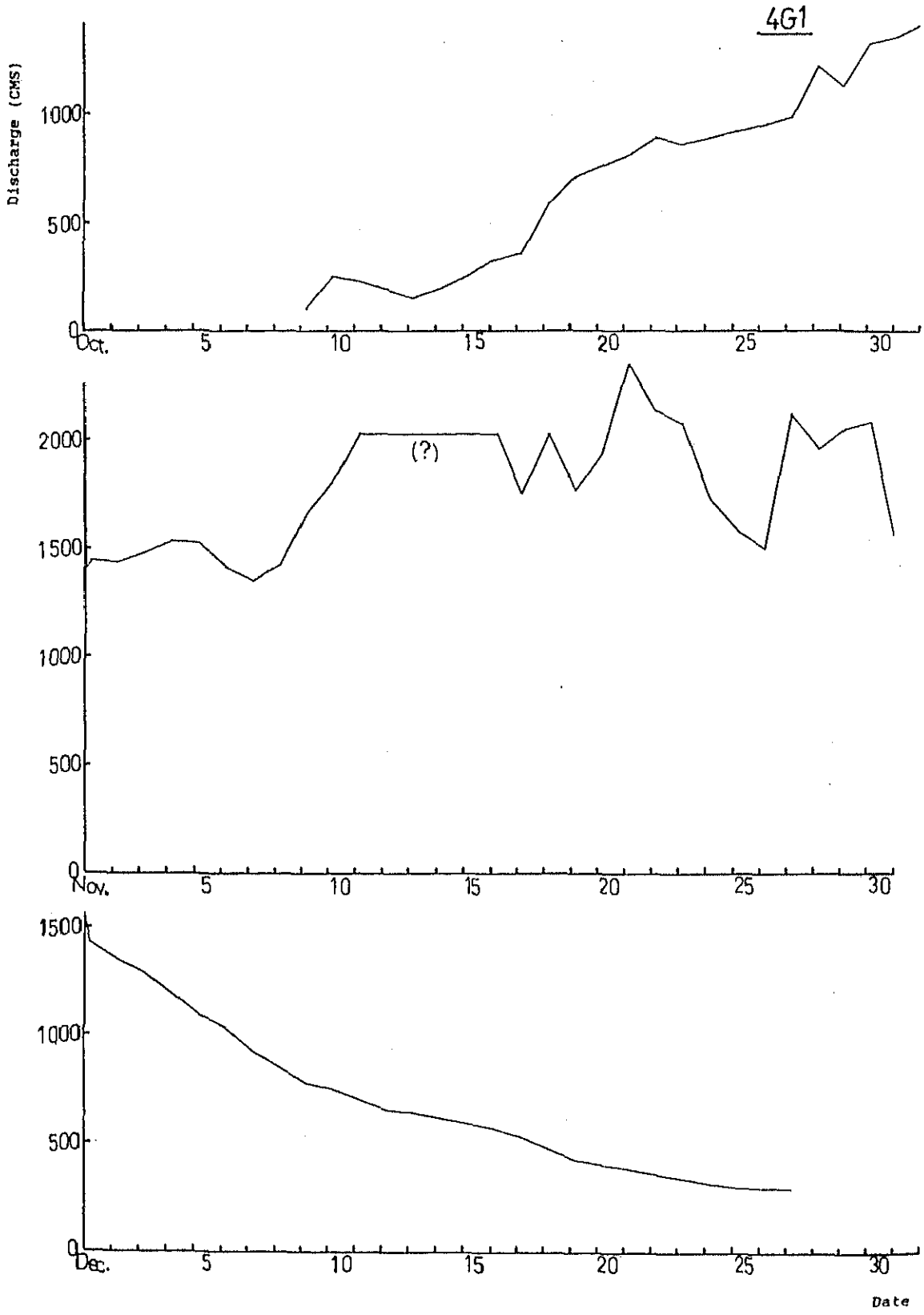
Fig.



Hydrograph during Flood in Tana River, 1961 Storm

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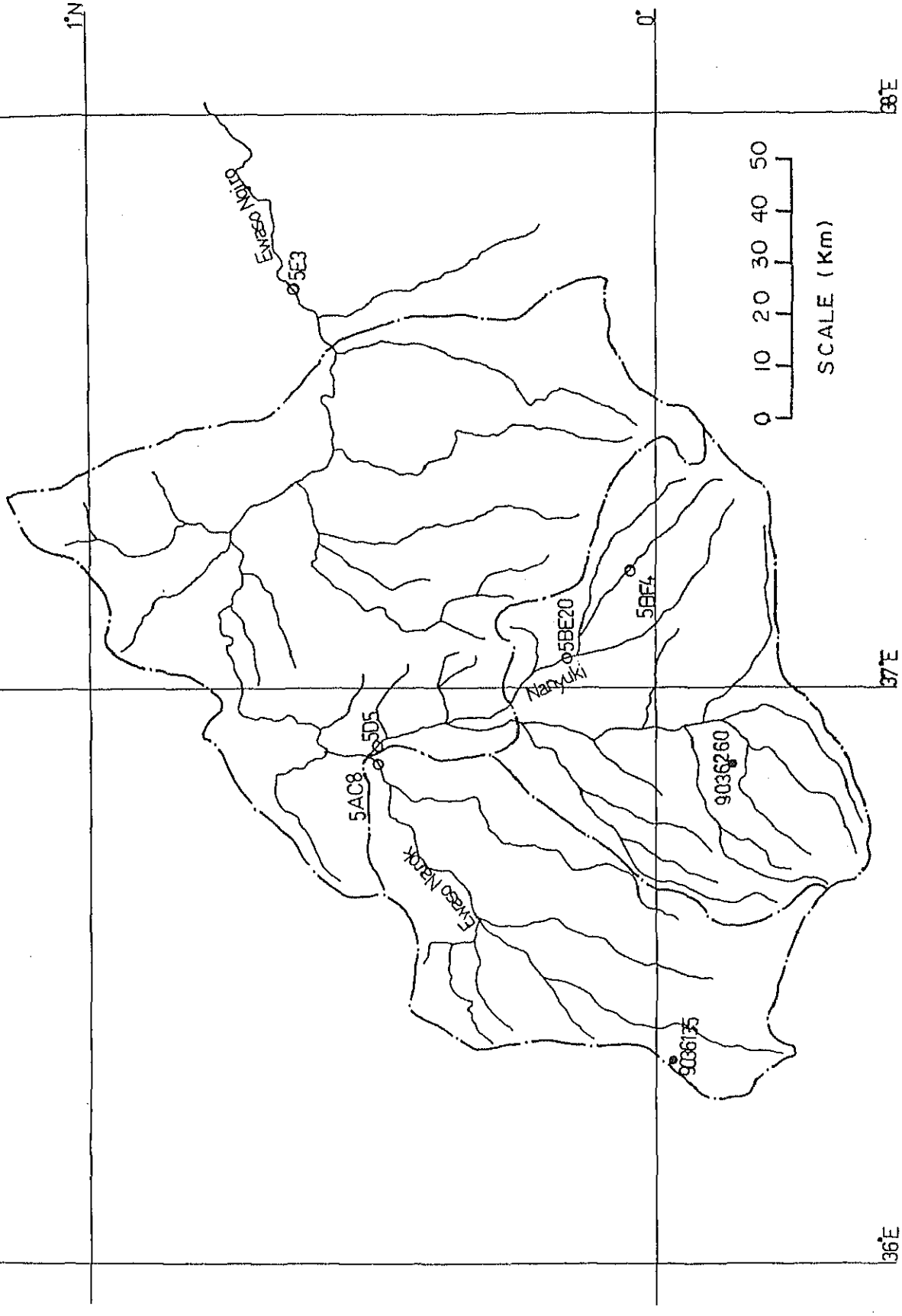
Fig.



Location Map of Gauging Stations in Upper Ewaso Ngiro Basin

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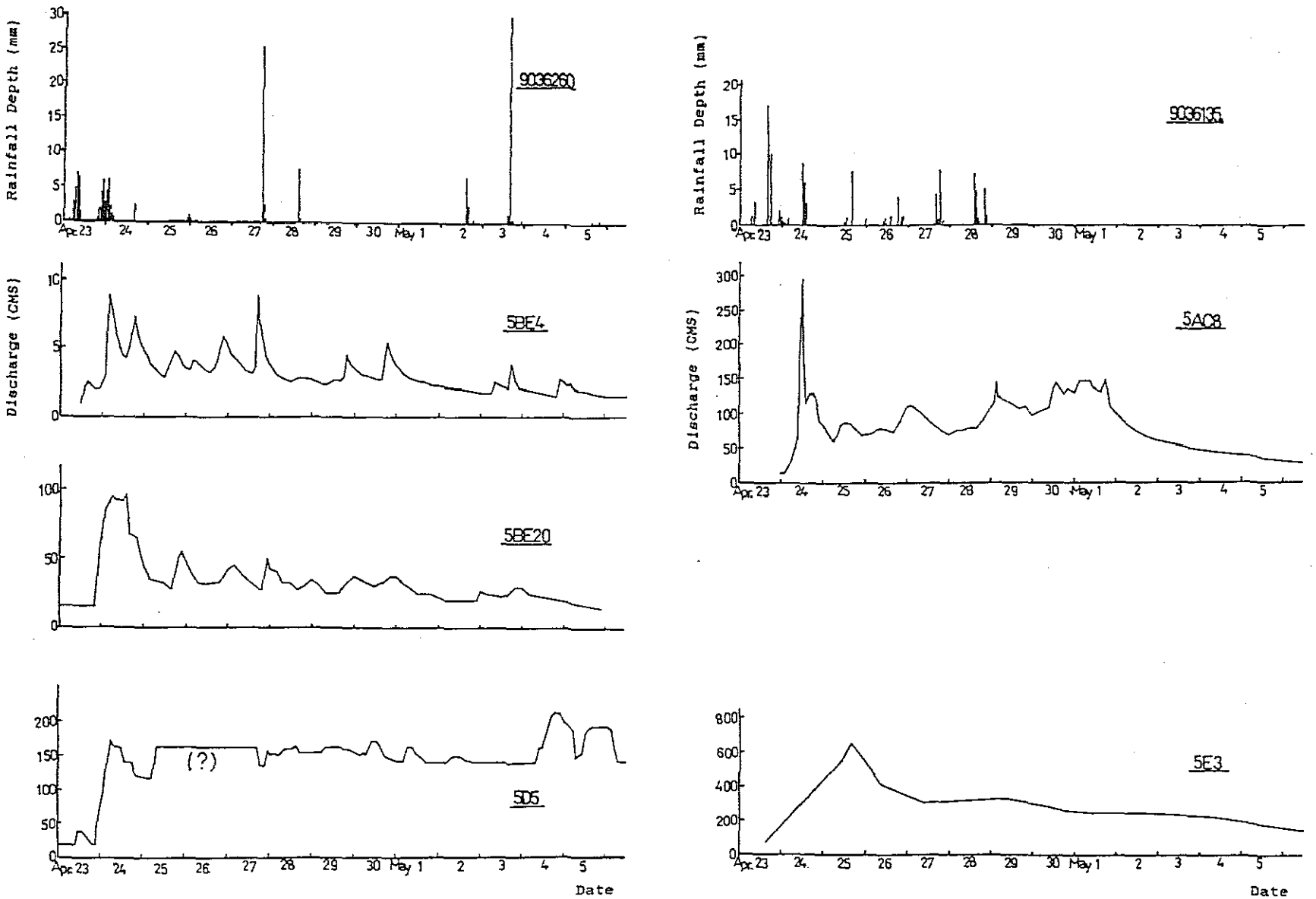

Hyetograph and Hydrograph during Flood in Ewaso Ngiro River, 1968 Storm

Fig.

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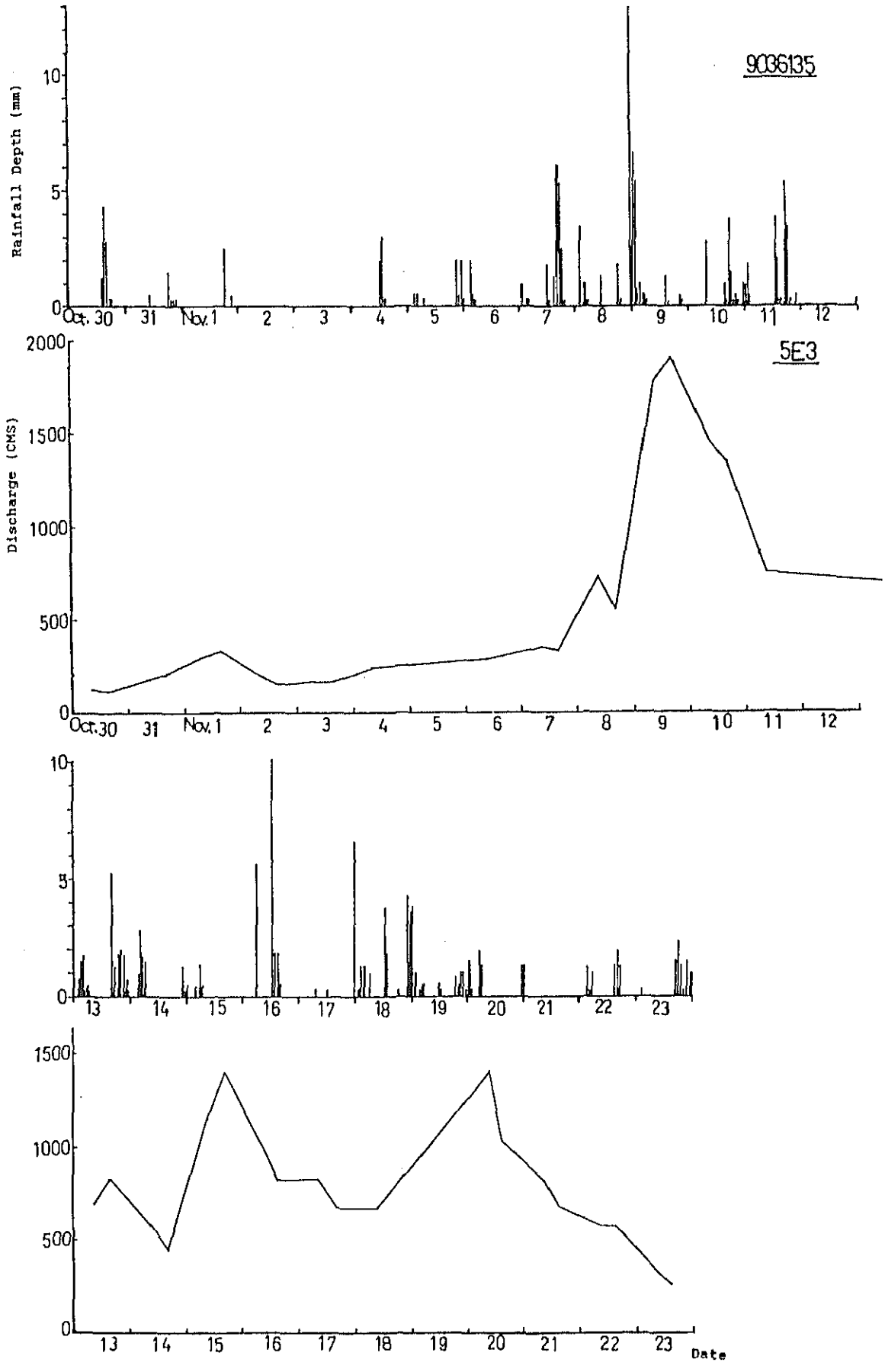
B.14-12

Fig.



Hyetograph and Hydrograph during Flood in Ewaso Ngiro River, 1961 Storm

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APPENDIX B.15

Probable Storm Rainfall

Probable Rainfall Depth for Selected Station (1/2)

Gauging Station: 8635000(Lodwar)
Rainfall : 1Day Annual Maximum
Sample Size : 59
Unit : mm

Recurrence Interval (Years)	Gumbel Extrem	Log-normal (Iwai Metod)	Log Pearson TypeIII
2	36.5	35.8	34.9
5	55.2	54.1	54.4
10	67.6	66.5	68.7
20	79.5	78.5	82.9
30	86.4	85.6	91.9
50	95.0	94.5	103.4
100	106.5	106.7	119.4
200	118.0	119.1	136.4
500	133.2	136.0	163.6

Gauging Station: 9035002(Londiani)
Rainfall : 10Day Annual Maximum
Sample Size : 56
Unit : mm

Recurrence Interval (Years)	Gumbel Extrem	Log-normal (Iwai Metod)	Log Pearson TypeIII
2	134.3	135.5	135.3
5	168.2	166.9	166.7
10	190.6	186.3	186.3
20	212.1	204.0	204.1
30	224.5	214.0	214.5
50	239.9	226.1	227.2
100	260.8	242.3	243.9
200	281.6	258.1	260.5
500	309.0	278.6	285.1

Gauging Station: 8635000(Lodwar)
Rainfall : 10Day Annual Maximum
Sample Size : 59
Unit : mm

Recurrence Interval (Years)	Gumbel Extrem	Log-normal (Iwai Metod)	Log Pearson TypeIII
2	57.9	57.5	53.9
5	88.8	88.3	89.8
10	109.3	108.6	117.2
20	128.9	127.8	145.4
30	140.2	138.9	163.6
50	154.3	152.7	187.3
100	173.3	171.4	220.9
200	192.3	190.2	257.1
500	217.3	215.3	316.8

Gauging Station: 9136130(Nairobi)
Rainfall : 1Day Annual Maximum
Sample Size : 29
Unit : mm

Recurrence Interval (Years)	Gumbel Extrem	Log-normal (Iwai Metod)	Log Pearson TypeIII
2	73.0	73.9	73.1
5	97.7	95.5	95.5
10	114.1	108.7	109.8
20	129.8	120.7	122.9
30	138.8	127.4	130.8
50	150.1	135.5	140.4
100	165.3	146.3	153.1
200	180.5	156.7	165.7
500	200.6	170.3	184.9

Gauging Station: 9035002(Londiani)
Rainfall : 1Day Annual Maximum
Sample Size : 56
Unit : mm

Recurrence Interval (Years)	Gumbel Extrem	Log-normal (Iwai Metod)	Log Pearson TypeIII
2	47.7	48.8	48.2
5	57.6	57.7	57.6
10	64.2	62.6	63.2
20	70.5	66.8	68.1
30	74.1	69.0	70.9
50	78.6	71.6	74.3
100	84.7	75.0	78.7
200	90.8	78.1	82.9
500	98.9	82.0	89.1

Gauging Station: 9136130(Nairobi)
Rainfall : 10Day Annual Maximum
Sample Size : 29
Unit : mm

Recurrence Interval (Years)	Gumbel Extrem	Log-normal (Iwai Metod)	Log Pearson TypeIII
2	178.8	179.8	177.3
5	247.5	242.5	242.5
10	292.9	282.0	285.6
20	336.4	318.7	325.9
30	361.5	339.4	350.2
50	392.8	364.9	380.5
100	435.1	398.9	421.0
200	477.2	432.5	462.1
500	532.8	476.7	525.1

Probable Rainfall Depth for Selected Station (2/2)

Gauging Station: 9338001(Voi)
Rainfall : 1Day Annual Maximum
Sample Size : 60
Unit : mm

Recurrence Interval (Years)	Gumbel Extrem	Log-normal (Iwai Metod)	Log Pearson TypeIII
2	65.8	65.0	64.2
5	105.2	98.8	98.6
10	130.7	122.5	123.7
20	155.0	146.1	148.7
30	169.1	160.1	164.4
50	186.6	178.0	184.6
100	210.3	202.8	212.8
200	233.8	228.5	242.6
500	264.9	263.9	290.6

Gauging Station: 9339004(Kilifi)
Rainfall : 10Day Annual Maximum
Sample Size : 58
Unit : mm

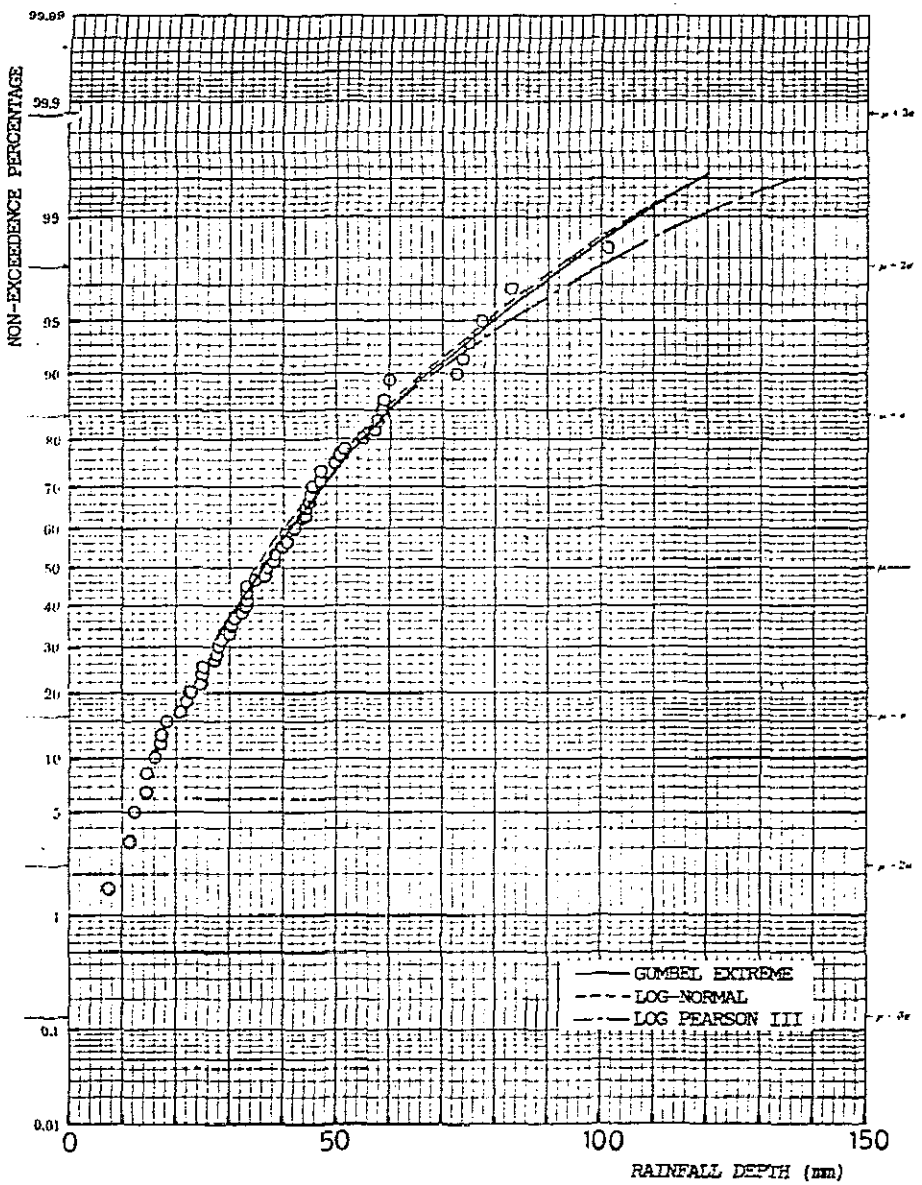
Recurrence Interval (Years)	Gumbel Extrem	Log-normal (Iwai Metod)	Log Pearson TypeIII
2	197.7	194.8	193.3
5	284.3	272.6	271.4
10	341.6	325.7	326.6
20	396.6	377.7	381.0
30	428.3	408.2	414.8
50	467.8	446.7	458.1
100	521.2	499.8	518.4
200	574.4	554.0	581.6
500	644.5	627.9	681.5

Gauging Station: 9338001(Voi)
Rainfall : 10Day Annual Maximum
Sample Size : 60
Unit : mm

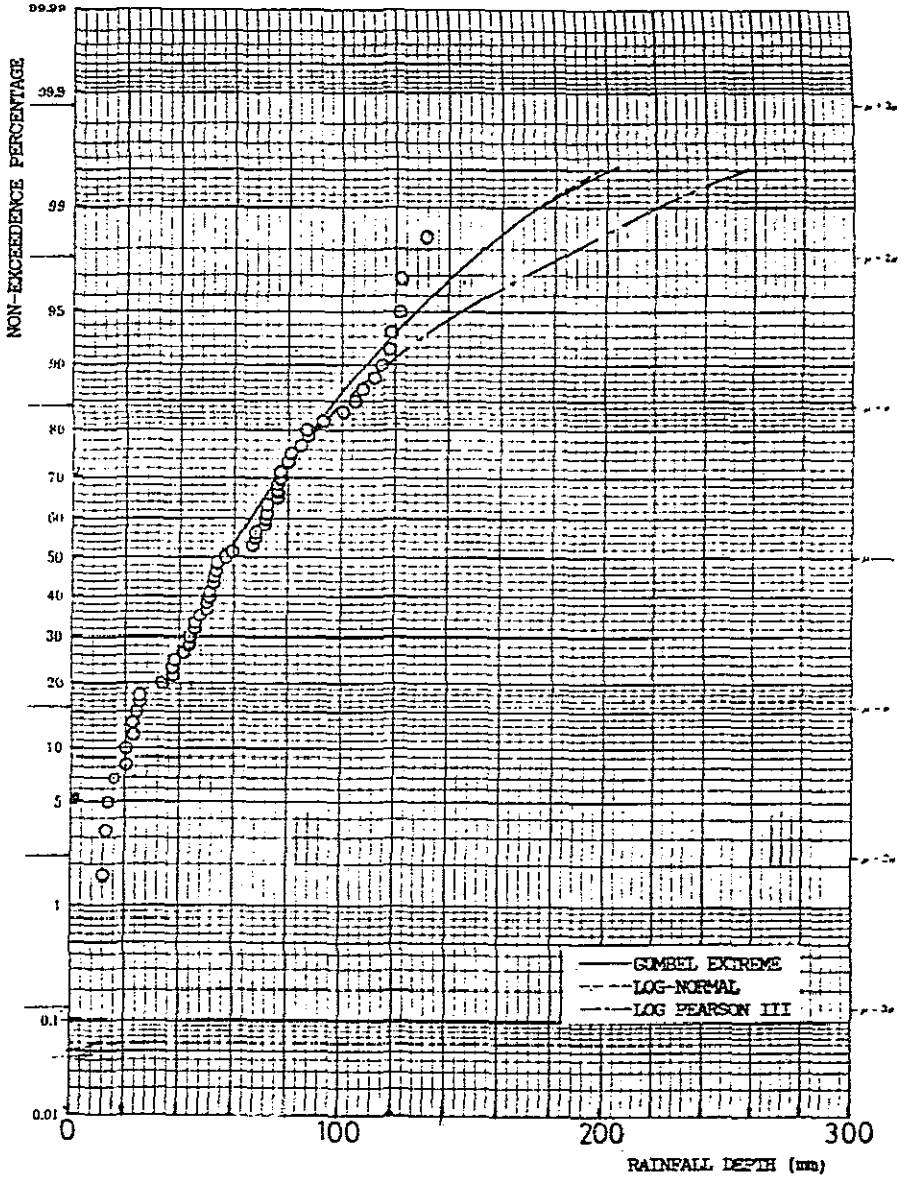
Recurrence Interval (Years)	Gumbel Extrem	Log-normal (Iwai Metod)	Log Pearson TypeIII
2	133.6	130.5	130.0
5	198.4	192.3	192.3
10	241.3	235.1	236.0
20	282.5	277.4	278.3
30	306.2	302.3	304.6
50	335.8	334.0	337.9
100	375.7	377.8	383.5
200	415.4	423.0	430.8
500	467.9	484.8	505.5

Gauging Station: 9339004(Kilifi)
Rainfall : 1Day Annual Maximum
Sample Size : 58
Unit : mm

Recurrence Interval (Years)	Gumbel Extrem	Log-normal (Iwai Metod)	Log Pearson TypeIII
2	91.6	89.3	88.1
5	135.7	126.8	125.8
10	164.8	153.5	154.3
20	192.8	180.3	183.9
30	208.9	196.3	202.9
50	229.1	216.9	228.0
100	256.2	245.7	264.2
200	283.3	275.6	303.8
500	319.0	317.2	368.3

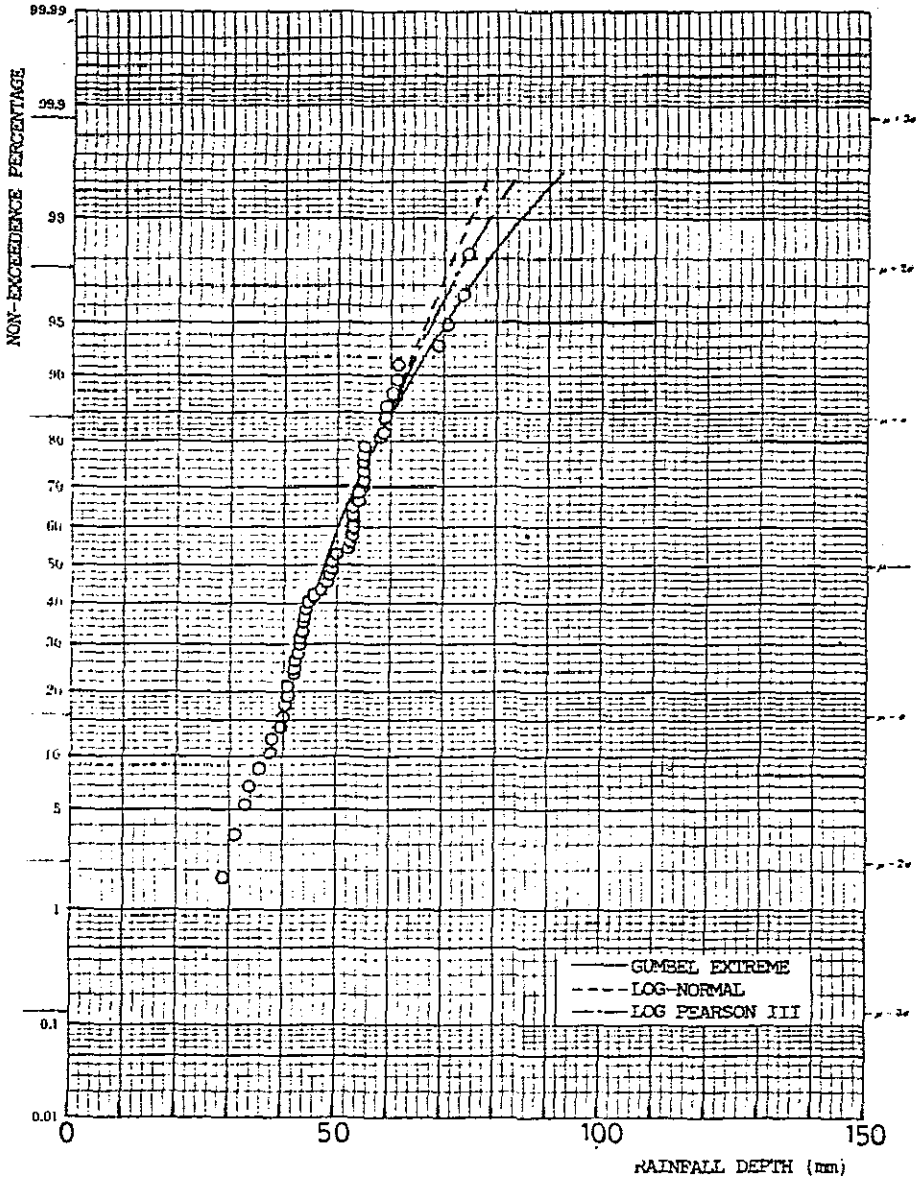


1 Day Annual Maximum

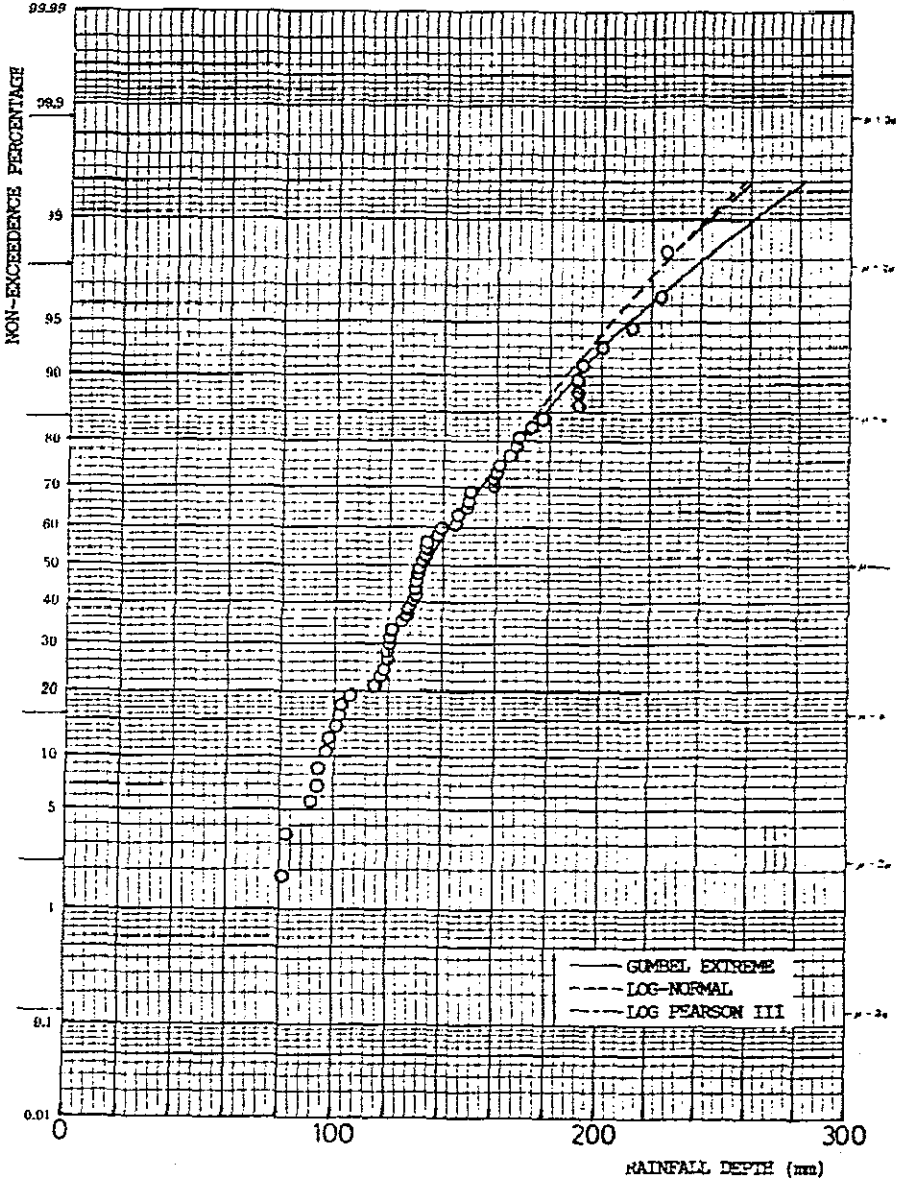


10 Day Annual Maximum

Rainfall Frequency Curve at 863500 (Lodwar)



1 Day Annual Maximum



10 Day Annual Maximum

Rainfall Frequency Curve at 9035002 (Londiani)