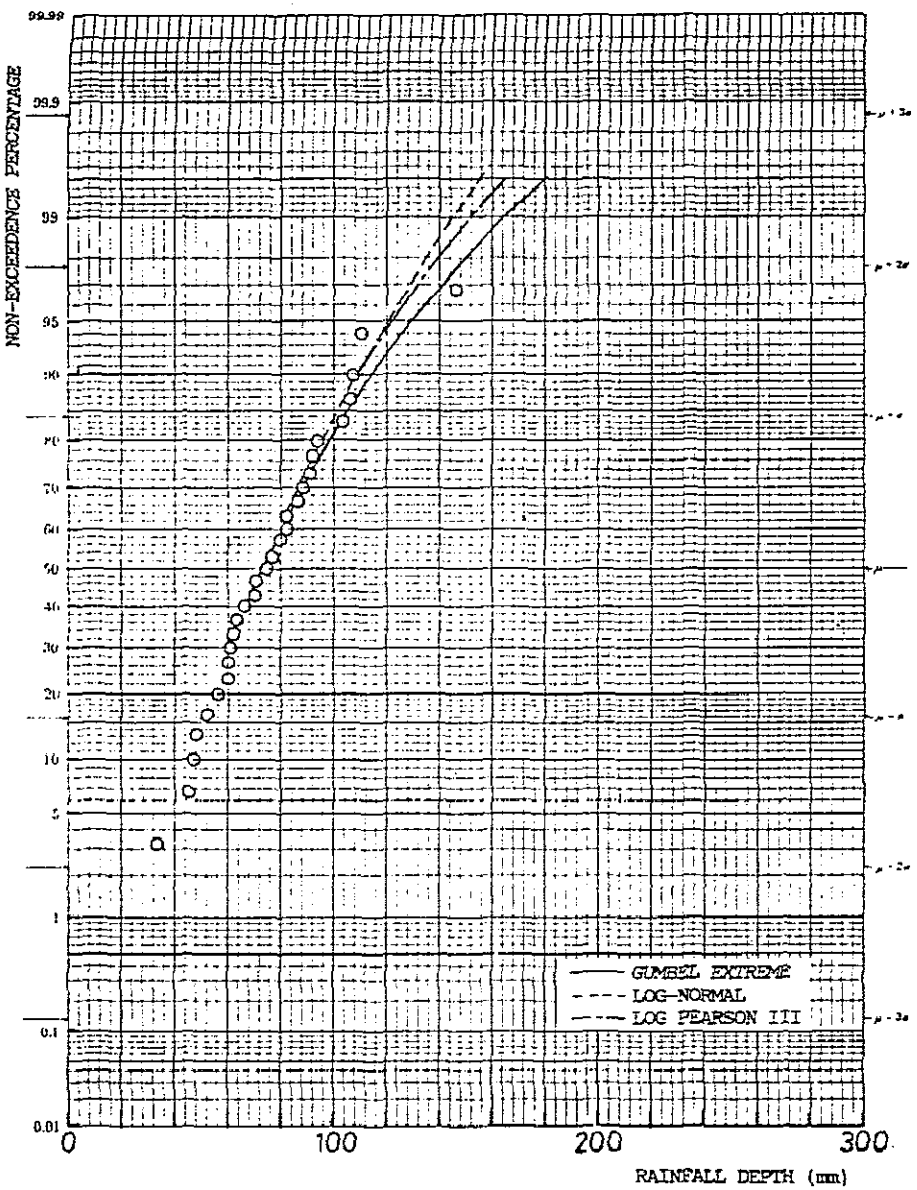
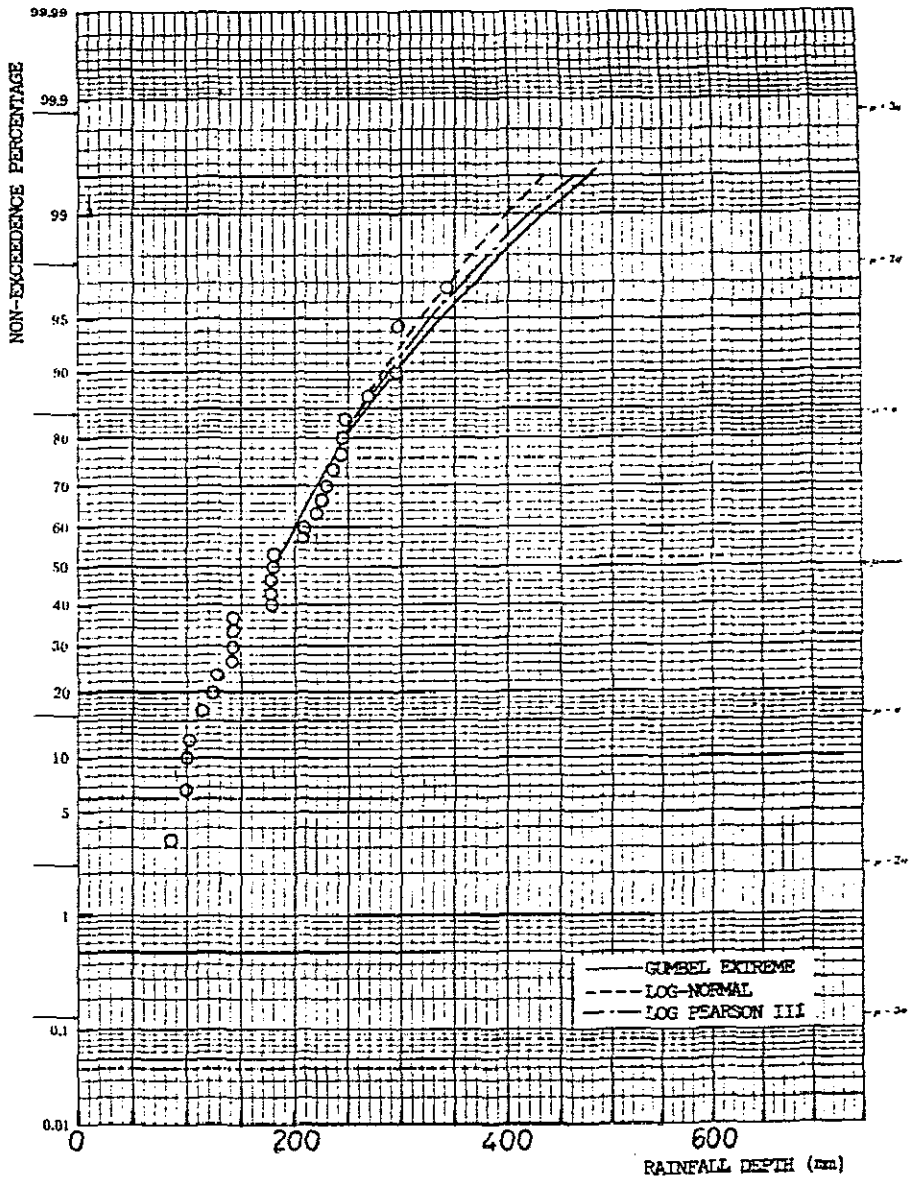
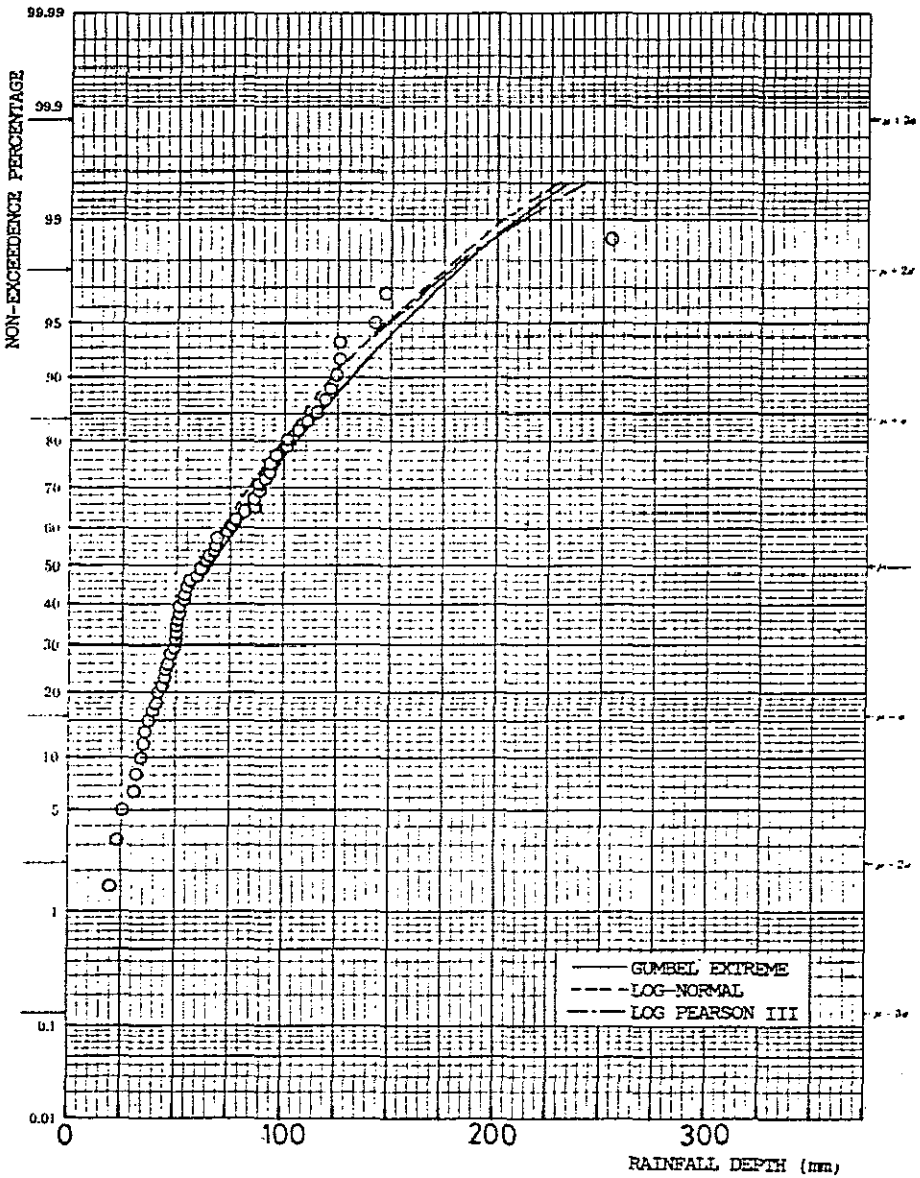


1 Day Annual Maximum

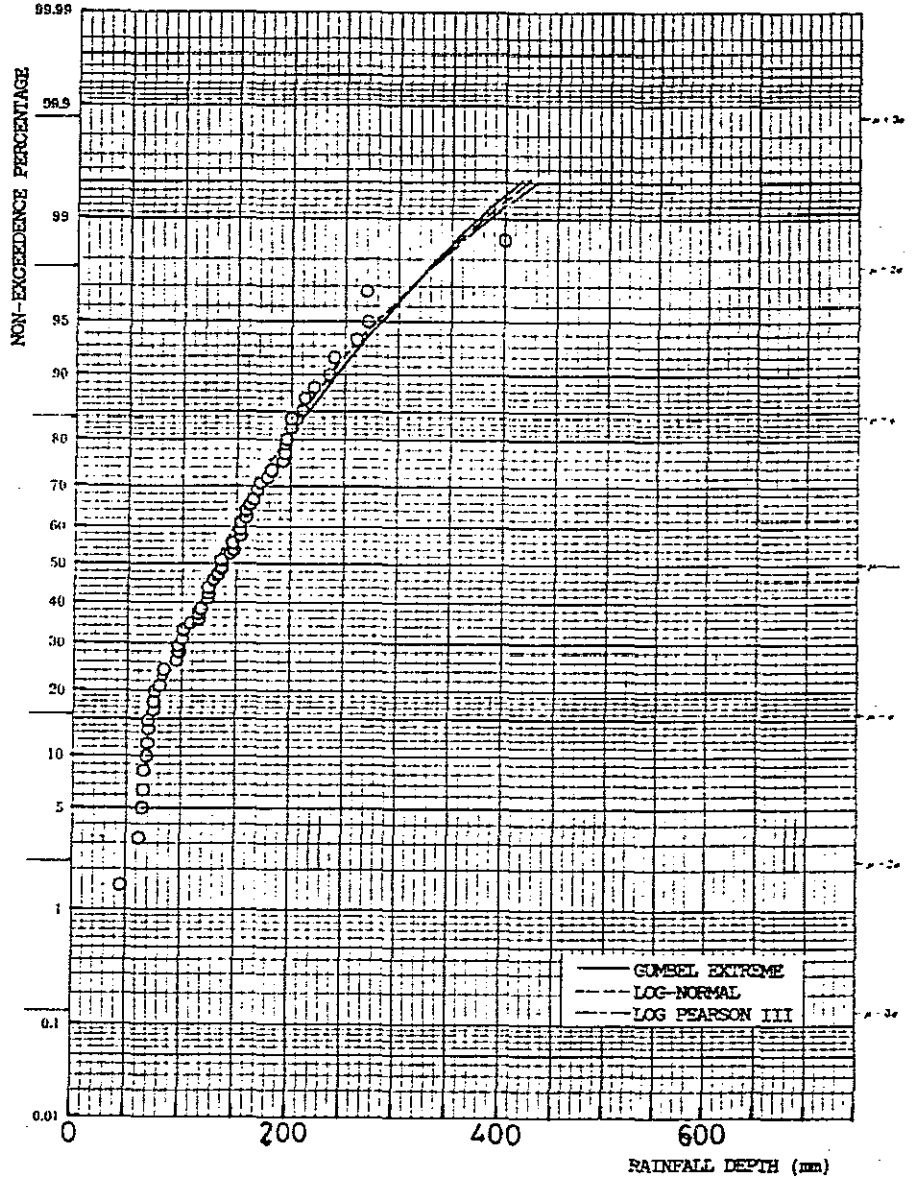


10 Day Annual Maximum

Rainfall Frequency Curve at 9136130 (Nairobi)

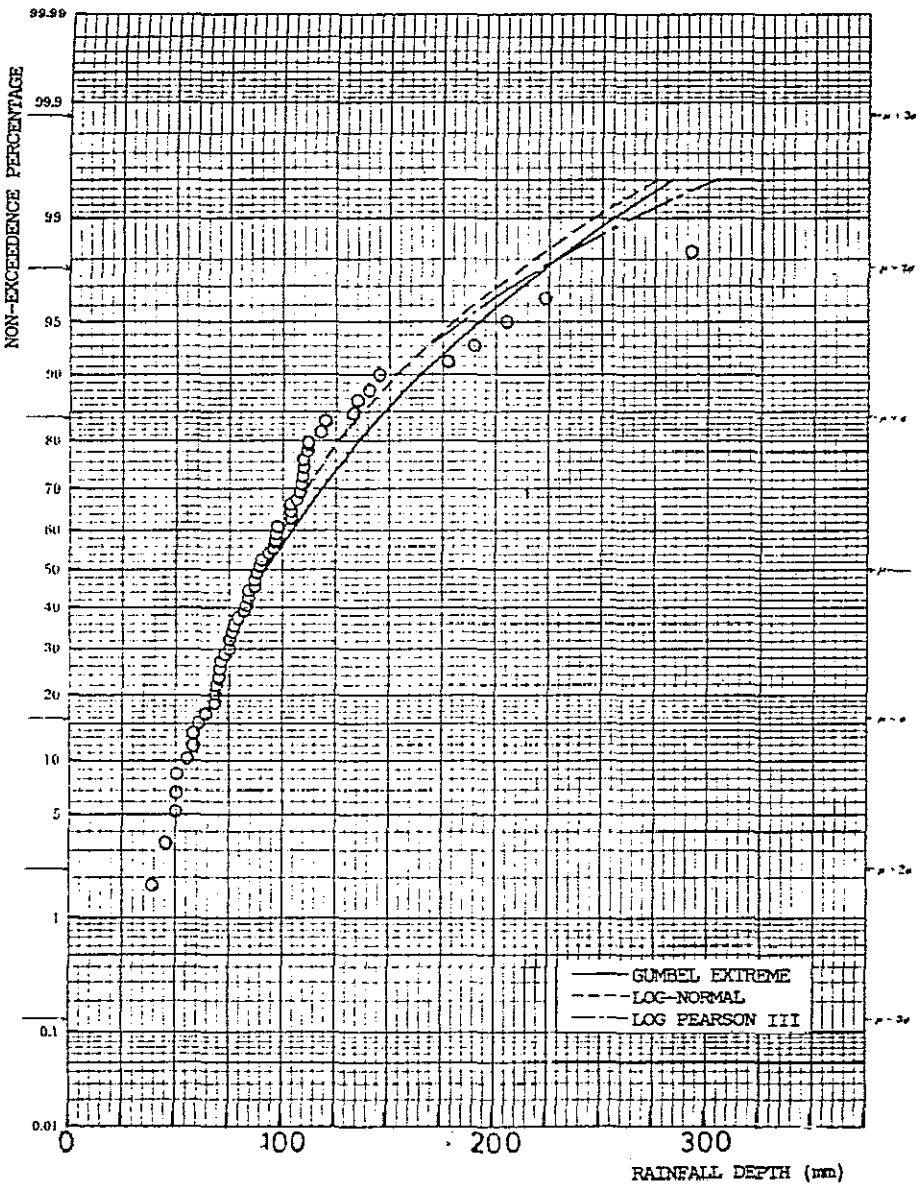


1 Day Annual Maximum

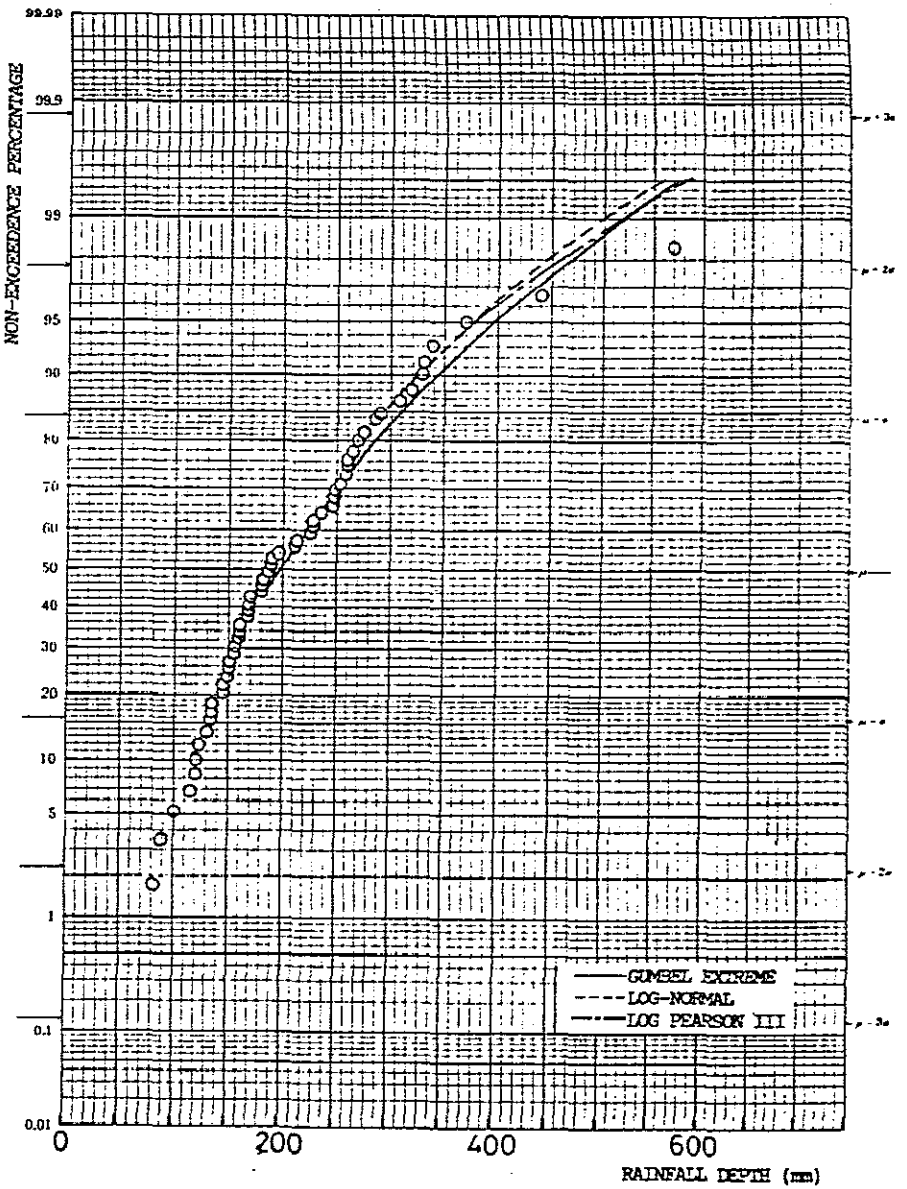


10 Day Annual Maximum

Rainfall Frequency Curve at 9338001 (Voi)



1 Day Annual Maximum



10 Day Annual Maximum

Rainfall Frequency Curve at 9339004 (Kilifi)

APPENDIX B.16

Probable Rainfall Depth for Various Return Period

PROBABLE RAINFALL DEPTH AT GAUGING STATION (1/17)

[Unit:mm]

Station : 8534000 (SAMPLE SIZE : 23)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	96.9	137.6	148.0	156.6	164.5	179.8	186.6	248.2	287.7
10	119.6	176.8	190.1	201.4	209.7	232.1	240.5	329.7	380.5
20	141.4	214.4	230.5	244.4	253.0	282.2	292.1	407.9	469.4
25	148.3	226.4	243.3	258.1	266.8	298.2	308.5	432.6	497.6
50	169.6	263.1	282.8	300.1	309.2	347.2	359.0	509.0	584.5
100	190.7	299.6	321.9	341.8	351.3	395.8	409.1	584.8	670.8

Station : 8535000 (SAMPLE SIZE : 26)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	91.0	109.5	130.7	141.8	145.5	148.2	160.6	181.9	211.5
10	108.3	130.5	159.1	172.2	176.3	179.8	194.8	222.3	263.5
20	124.9	150.5	186.4	201.3	205.8	210.0	227.5	261.1	313.5
25	130.1	156.9	195.1	210.5	215.2	219.6	237.9	273.4	329.3
50	146.3	176.5	221.7	239.0	244.1	249.1	269.9	311.4	378.1
100	162.4	195.9	248.2	267.3	272.7	278.5	301.7	349.0	426.5

Station : 8535001 (SAMPLE SIZE : 23)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	88.8	104.0	121.1	132.1	146.4	153.4	159.0	185.3	211.9
10	110.3	129.7	152.2	166.1	185.9	196.1	203.2	237.1	273.8
20	130.9	154.5	182.1	198.7	223.9	237.0	245.5	286.8	333.1
25	137.4	162.3	191.6	209.0	235.9	249.9	259.0	302.5	352.0
50	157.6	186.5	220.8	240.9	272.9	289.9	300.4	351.1	409.9
100	177.6	210.4	249.7	272.5	309.7	329.6	341.5	399.3	467.5

Station : 8536000 (SAMPLE SIZE : 23)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	81.5	95.9	103.4	106.7	110.5	114.0	124.6	144.1	161.5
10	101.2	119.0	127.2	130.5	134.1	137.3	151.3	175.6	197.4
20	120.1	141.2	150.0	153.3	156.9	159.7	177.0	205.9	231.8
25	126.1	148.3	157.2	160.6	164.1	166.8	185.2	215.5	242.7
50	144.5	170.0	179.5	182.8	186.2	188.6	210.2	245.1	276.3
100	162.8	191.5	201.7	205.0	208.3	210.3	235.1	274.5	309.6

Station : 8536001 (SAMPLE SIZE : 28)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	55.6	70.3	82.9	92.5	102.0	103.6	111.9	131.6	145.4
10	66.4	84.2	101.7	115.0	126.9	128.8	141.0	167.1	184.2
20	76.7	97.7	119.8	136.5	150.8	152.9	168.9	201.1	221.3
25	80.0	101.9	125.5	143.3	158.3	160.6	177.7	211.9	233.1
50	90.1	115.0	143.1	164.3	181.7	184.1	205.0	245.2	269.4
100	100.1	128.0	160.6	185.2	204.8	207.6	232.0	278.2	305.5

Station : 8635000 (SAMPLE SIZE : 59)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	55.2	62.7	69.1	73.8	77.0	81.1	83.9	88.8	95.3
10	67.6	76.4	84.7	90.5	94.3	99.8	103.4	109.3	117.0
20	79.5	89.6	99.7	105.5	110.9	117.9	122.1	128.9	137.8
25	83.3	93.7	104.4	111.5	116.2	123.6	128.0	135.1	144.3
50	95.0	106.6	119.0	127.2	132.5	141.2	146.3	154.3	164.6
100	106.5	119.3	133.5	142.7	148.6	158.6	164.5	173.3	184.8

Station : 8637000 (SAMPLE SIZE : 28)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	63.8	77.6	82.7	85.8	88.1	92.5	103.2	107.0	121.1
10	80.6	99.9	106.4	109.6	112.4	118.3	134.5	138.9	157.4
20	96.6	121.3	129.2	132.3	135.7	143.0	164.5	169.4	192.1
25	101.7	128.0	136.4	139.6	143.1	150.9	174.0	179.1	203.2
50	117.4	148.9	158.7	161.8	165.8	175.1	203.4	208.9	237.1
100	133.0	169.7	180.7	183.9	188.4	199.1	232.5	238.6	270.9

Station : 8638000 (SAMPLE SIZE : 22)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	100.6	144.1	165.4	180.2	186.8	196.2	209.0	232.0	288.7
10	126.0	183.8	212.3	231.3	237.6	248.8	264.4	292.9	366.6
20	150.3	221.8	257.3	280.3	286.2	299.3	317.6	351.3	441.3
25	158.0	233.9	271.6	295.9	301.7	315.3	334.4	369.9	465.0
50	181.8	271.1	315.6	343.8	349.2	364.6	386.4	427.0	537.9
100	205.4	308.0	359.3	391.4	396.5	413.5	437.9	483.6	610.4

Station : 8639000 (SAMPLE SIZE : 53)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	111.6	132.3	158.1	178.2	190.1	205.0	219.2	256.8	294.0
10	140.6	162.6	196.8	222.6	236.6	254.9	273.3	320.3	364.4
20	168.5	191.7	234.0	265.2	281.2	302.7	325.2	381.1	431.9
25	177.4	201.0	245.7	278.7	295.4	317.9	341.7	400.4	453.3
50	204.6	229.4	282.0	320.3	338.9	364.7	392.4	459.8	519.2
100	231.6	257.6	318.0	361.6	382.2	411.1	442.7	518.8	584.7

Station : 8639001 (SAMPLE SIZE : 22)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	95.7	118.8	144.7	155.7	172.0	181.9	192.3	221.6	266.7
10	115.0	143.0	178.2	190.5	210.6	222.3	235.8	271.5	331.5
20	133.6	166.2	210.4	223.9	247.6	261.1	277.5	319.4	393.7
25	139.5	173.6	220.6	234.5	259.4	273.4	290.7	334.6	413.4
50	157.6	196.3	252.0	267.1	295.5	311.3	331.4	381.4	474.2
100	175.6	218.8	283.2	299.5	331.4	348.9	371.8	427.8	534.5

PROBABLE RAINFALL DEPTH AT GAUGING STATION (2/17)

[Unit:mm]

Station : 8641000 (SAMPLE SIZE : 31)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	74.0	82.7	90.3	100.8	106.8	109.7	114.7	129.5	154.3
10	90.8	100.7	110.0	123.1	130.1	133.4	138.8	157.6	190.3
20	107.0	117.9	128.8	144.5	152.6	156.0	162.0	184.6	224.8
25	112.1	123.4	134.8	151.3	159.7	163.2	169.4	193.1	235.7
50	127.9	140.2	153.3	172.2	181.6	185.4	192.0	219.5	269.6
100	143.5	156.9	171.6	192.9	203.3	207.3	214.5	245.7	303.0

Station : 8737000 (SAMPLE SIZE : 49)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	142.5	176.8	197.0	211.8	223.9	239.1	256.0	293.4	357.4
10	172.7	213.0	236.8	253.0	266.0	283.2	304.0	350.0	431.5
20	201.7	247.7	275.0	292.6	306.4	325.5	350.0	404.3	502.5
25	210.9	258.7	287.1	305.1	319.2	338.9	364.6	421.6	525.1
50	239.2	292.7	324.4	343.7	358.7	380.2	409.6	474.7	594.5
100	267.3	326.4	361.4	382.1	397.9	421.2	454.3	527.4	663.5

Station : 8739000 (SAMPLE SIZE : 26)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	86.5	96.7	108.9	122.9	124.8	129.8	137.0	156.1	191.6
10	115.5	127.6	143.3	162.9	164.2	169.6	178.4	204.3	251.4
20	143.3	157.2	176.4	201.4	201.9	207.9	218.1	250.6	308.7
25	152.1	166.6	186.8	213.6	213.9	220.0	230.7	265.2	326.9
50	179.2	195.6	219.1	251.2	250.8	257.4	269.5	310.4	383.0
100	206.2	224.3	251.1	288.5	287.4	294.5	308.0	355.2	438.7

Station : 8740000 (SAMPLE SIZE : 23)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	84.2	94.2	98.5	102.5	113.1	118.3	124.9	144.3	177.5
10	105.7	115.5	119.5	124.0	138.9	143.9	152.5	174.7	217.6
20	126.4	135.9	139.7	144.6	163.6	168.5	179.1	203.8	256.1
25	133.0	142.4	146.1	151.2	171.5	176.3	187.5	213.0	268.4
50	153.2	162.4	165.8	171.4	195.7	200.3	213.5	241.5	306.0
100	173.3	182.2	185.3	191.4	219.7	224.2	239.2	269.7	343.3

Station : 8834009 (SAMPLE SIZE : 49)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	61.8	80.1	92.4	107.0	115.8	123.7	132.3	154.9	197.2
10	70.9	91.5	104.6	123.0	133.3	141.6	151.4	175.6	225.8
20	79.5	102.4	116.3	138.4	150.2	158.7	169.6	195.5	253.2
25	82.2	105.8	120.0	143.3	155.5	164.1	175.4	201.8	261.9
50	90.7	116.5	131.4	158.3	172.0	180.9	193.3	221.2	288.6
100	99.1	127.1	142.7	173.2	188.4	197.5	211.0	240.5	315.2

Station : 8834017 (SAMPLE SIZE : 29)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	64.6	84.0	97.5	110.7	123.0	133.2	140.0	161.6	193.8
10	74.0	95.5	110.5	125.4	138.3	150.1	156.2	180.7	217.1
20	83.0	106.6	123.0	139.5	153.1	166.3	171.7	199.0	239.4
25	85.9	110.1	126.9	143.9	157.8	171.5	176.6	204.8	246.4
50	94.7	121.0	139.1	157.7	172.2	187.4	191.8	222.8	268.2
100	103.4	131.7	151.3	171.4	186.5	203.1	206.8	240.5	289.9

Station : 8836000 (SAMPLE SIZE : 30)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	58.7	73.4	83.9	91.7	102.4	110.0	117.1	134.8	157.9
10	67.7	85.5	97.9	106.8	119.8	129.3	137.7	158.5	184.7
20	76.3	97.0	111.3	121.3	136.6	147.6	157.5	181.1	210.3
25	79.0	100.7	115.5	125.9	141.9	153.6	163.8	188.3	218.5
50	87.4	112.0	128.6	140.1	158.2	171.7	183.2	210.5	243.6
100	95.7	123.2	141.6	154.1	174.4	189.6	202.4	232.5	268.5

Station : 8836001 (SAMPLE SIZE : 29)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	76.1	96.5	107.4	118.2	123.7	129.3	132.9	146.4	167.8
10	91.6	116.7	129.4	142.4	147.3	153.1	156.3	170.7	194.0
20	106.4	136.1	150.5	165.5	170.0	175.9	178.7	194.0	219.1
25	111.1	142.3	157.2	172.9	177.2	183.1	185.9	201.4	227.1
50	125.6	161.3	177.8	195.5	199.3	205.4	207.8	224.2	251.7
100	139.9	180.1	198.2	217.9	221.3	227.5	229.6	246.8	276.0

Station : 8839000 (SAMPLE SIZE : 26)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	82.2	96.7	109.1	121.9	127.5	138.8	140.6	178.1	202.4
10	102.1	121.4	138.0	156.6	163.7	179.9	181.4	237.9	270.6
20	121.2	145.0	165.7	189.9	198.4	219.3	220.5	295.2	336.0
25	127.3	152.5	174.5	200.5	209.4	231.8	232.9	313.4	356.8
50	146.0	175.7	201.6	233.1	243.3	270.3	271.1	369.4	420.7
100	164.5	198.6	228.5	265.4	277.0	308.6	309.1	425.0	484.2

Station : 8840000 (SAMPLE SIZE : 45)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	94.8	108.2	115.4	121.0	127.2	131.0	133.8	148.8	167.8
10	120.6	138.4	147.9	154.3	162.1	166.9	170.1	190.0	214.2
20	145.4	167.4	179.0	186.2	195.7	201.3	204.8	229.5	258.8
25	153.3	176.6	188.8	196.3	206.3	212.2	215.9	242.0	272.9
50	177.6	204.9	219.3	227.5	239.1	245.8	249.9	280.7	316.4
100	201.6	233.0	249.4	258.4	271.6	279.1	283.6	319.0	359.7

PROBABLE RAINFALL DEPTH AT GAUGING STATION (3/17)

[Unit:mm]

Station : 8934008 (SAMPLE SIZE : 60)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	72.5	88.5	102.1	117.5	129.1	142.4	151.9	181.8	225.2
10	83.9	99.8	114.1	131.2	143.4	158.4	168.5	202.2	249.0
20	94.8	110.7	125.7	144.5	157.0	173.7	184.3	221.8	271.9
25	98.3	114.2	129.3	148.7	161.3	178.6	189.4	228.1	279.1
50	108.9	124.8	140.6	161.6	174.7	193.6	204.9	247.2	301.4
100	119.5	135.4	151.8	174.4	187.9	208.5	220.2	266.2	323.5

Station : 8934013 (SAMPLE SIZE : 40)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	82.0	105.9	120.8	138.2	155.3	166.2	186.5	228.1	289.2
10	92.3	120.2	136.3	156.6	176.3	188.8	214.0	262.3	329.1
20	102.2	133.9	151.3	174.3	196.4	210.4	240.4	295.1	367.5
25	105.4	138.3	156.0	179.9	202.8	217.3	248.8	305.6	379.6
50	115.0	151.7	170.6	197.1	222.5	238.5	274.6	337.6	417.0
100	124.6	165.0	185.1	214.2	242.0	259.5	300.3	369.4	454.2

Station : 8934028 (SAMPLE SIZE : 27)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	112.9	144.2	169.5	185.5	204.5	218.6	236.5	288.6	365.8
10	134.1	170.2	198.4	214.2	237.0	252.6	273.6	334.6	421.9
20	154.5	195.1	226.1	241.6	268.2	285.3	309.1	378.7	475.7
25	160.9	203.0	234.9	250.4	278.1	295.6	320.4	392.7	492.8
50	180.8	227.4	262.0	277.2	308.6	327.5	355.2	435.8	545.4
100	200.6	251.6	288.9	303.9	338.9	359.1	389.7	478.6	597.6

Station : 8934030 (SAMPLE SIZE : 25)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	81.3	95.7	108.4	119.7	130.3	140.7	154.7	180.9	221.2
10	91.4	106.9	121.9	132.0	143.6	154.6	170.2	198.2	243.0
20	101.1	117.7	134.8	143.7	156.4	167.9	185.1	214.9	264.0
25	104.2	121.1	138.9	147.5	160.4	172.1	189.8	220.2	270.6
50	113.8	131.6	151.5	159.0	172.9	185.1	204.4	236.5	291.1
100	123.2	142.0	164.0	170.4	185.2	198.0	218.8	252.6	311.4

Station : 8934078 (SAMPLE SIZE : 30)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	86.9	107.1	127.7	144.5	159.4	178.2	194.6	234.2	294.7
10	100.4	120.6	143.1	162.5	179.1	202.1	220.0	263.9	330.4
20	113.4	133.4	157.9	179.8	198.1	225.2	244.4	292.5	364.6
25	117.5	137.5	162.6	185.3	204.1	232.4	252.2	301.5	375.4
50	130.2	150.1	177.0	202.2	222.7	254.9	276.1	329.4	408.9
100	142.8	162.6	191.4	219.0	241.0	277.3	299.8	357.1	442.0

Station : 8934133 (SAMPLE SIZE : 21)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	81.0	107.7	125.5	137.6	156.6	173.8	186.0	234.5	314.1
10	87.1	116.7	135.0	148.0	169.5	190.0	202.6	259.4	351.6
20	92.9	125.3	144.1	158.0	181.8	205.5	218.6	283.2	387.4
25	94.8	128.0	147.0	161.1	185.7	210.5	223.7	290.8	398.8
50	100.5	136.4	155.8	170.9	197.7	225.7	239.3	314.1	433.9
100	106.1	144.7	164.7	180.5	209.7	240.7	254.8	337.3	468.7

Station : 8934134 (SAMPLE SIZE : 22)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	78.5	104.8	119.4	133.5	149.1	160.7	169.5	203.3	270.3
10	89.6	119.3	135.3	149.8	167.2	179.6	188.2	226.8	304.5
20	100.2	133.1	150.4	165.4	184.5	197.8	206.2	249.4	337.3
25	103.6	137.5	155.2	170.3	190.0	203.6	212.0	256.5	347.7
50	114.0	151.0	170.0	185.6	207.0	221.4	229.5	278.6	379.7
100	124.3	164.5	184.7	200.7	223.8	239.0	247.0	300.4	411.5

Station : 8935001 (SAMPLE SIZE : 58)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	83.1	119.6	144.1	161.1	179.6	193.7	215.5	260.6	322.5
10	94.7	140.4	171.4	190.8	214.1	230.3	257.1	312.1	384.6
20	105.7	160.3	197.7	219.4	247.2	265.4	296.9	361.4	444.2
25	109.2	166.6	206.0	228.4	257.7	276.6	309.6	377.1	463.1
50	120.1	186.1	231.6	256.3	290.0	310.9	348.6	425.3	521.3
100	130.8	205.4	257.1	284.0	322.2	344.9	387.2	473.2	579.1

Station : 8935002 (SAMPLE SIZE : 31)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	72.3	99.6	119.1	137.0	153.1	170.1	184.4	225.6	277.7
10	84.3	114.8	137.2	158.1	176.8	198.0	214.5	261.5	321.8
20	95.9	129.4	154.7	178.3	199.5	224.8	243.4	296.0	364.1
25	99.5	134.1	160.2	184.8	206.7	233.3	252.6	307.0	377.5
50	110.8	148.4	177.2	204.6	228.9	259.5	280.8	340.7	418.8
100	122.0	162.6	194.1	224.2	250.9	285.5	308.8	374.2	459.9

Station : 8935010 (SAMPLE SIZE : 59)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	69.5	92.3	112.7	128.3	145.9	157.5	171.6	206.4	263.5
10	79.5	104.9	129.0	146.8	168.1	180.9	197.2	238.3	305.1
20	89.0	117.0	144.6	164.5	189.3	203.4	221.8	268.9	345.0
25	92.0	120.8	149.5	170.2	196.0	210.5	229.6	278.6	357.6
50	101.4	132.6	164.8	187.5	216.7	232.5	253.6	308.4	396.6
100	110.7	144.3	179.9	204.8	237.3	254.3	277.5	338.1	435.2

PROBABLE RAINFALL DEPTH AT GAUGING STATION (4/17)

[Unit:mm]

Station : 8935013 (SAMPLE SIZE : 50)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	153.8	173.4	191.3	203.3	215.3	225.3	236.3	267.6	308.8
10	218.7	237.3	257.0	268.9	280.6	291.5	302.2	333.9	373.5
20	281.0	298.5	319.9	331.7	343.2	354.9	365.3	397.6	436.6
25	300.8	317.9	339.9	351.7	363.1	375.1	385.3	417.7	455.3
50	361.6	377.7	401.4	413.1	424.3	437.1	447.0	479.9	516.0
100	422.0	437.1	462.5	474.1	485.0	498.6	508.3	541.7	576.2

Station : 8935014 (SAMPLE SIZE : 59)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	74.8	105.0	120.5	136.2	148.6	162.6	178.8	209.8	266.9
10	84.7	120.0	137.1	154.6	168.7	184.6	203.4	239.3	308.8
20	94.3	134.5	153.1	172.2	188.0	205.7	227.1	267.5	349.1
25	97.3	139.1	158.2	177.8	194.1	212.4	234.6	276.5	361.9
50	106.6	153.2	173.7	195.0	213.0	233.1	257.7	304.1	401.2
100	115.8	167.2	189.2	212.1	231.7	253.6	280.6	331.5	440.3

Station : 8935016 (SAMPLE SIZE : 45)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	65.8	86.0	101.5	115.7	131.7	142.5	151.8	179.3	214.5
10	76.2	98.8	117.5	133.4	151.6	163.8	174.4	204.5	245.0
20	86.2	111.2	132.9	150.4	170.6	184.2	196.2	228.7	274.4
25	89.3	115.1	137.8	155.8	176.6	190.7	203.1	236.4	283.7
50	99.0	127.1	152.8	172.3	195.2	210.6	224.3	260.1	312.3
100	108.7	139.1	167.7	188.8	213.6	230.4	245.4	283.6	340.7

Station : 8935018 (SAMPLE SIZE : 55)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	79.7	104.1	118.5	138.8	155.8	174.5	184.7	224.0	276.3
10	94.3	123.4	138.9	164.3	186.0	209.4	219.9	268.2	330.1
20	108.4	141.9	158.4	188.8	214.9	242.9	253.6	310.5	381.6
25	112.9	147.8	164.6	196.5	224.0	253.5	264.3	323.9	398.0
50	126.7	165.9	183.7	220.4	252.3	286.2	297.3	365.3	448.3
100	140.3	183.8	202.6	244.2	280.3	318.7	330.0	406.4	498.3

Station : 8935020 (SAMPLE SIZE : 60)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	86.1	115.7	143.3	163.3	184.4	200.7	213.9	253.4	313.8
10	98.4	131.8	163.5	185.4	209.9	228.3	242.9	287.1	356.4
20	110.1	147.3	182.9	206.5	234.4	254.6	270.7	319.4	397.3
25	113.8	152.2	189.0	213.3	242.1	263.0	279.6	329.7	410.3
50	125.3	167.4	208.0	233.9	266.0	288.8	306.7	361.3	450.2
100	136.7	182.4	226.7	254.5	289.8	314.4	333.7	392.6	489.9

Station : 8935025 (SAMPLE SIZE : 27)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	80.8	108.8	139.6	157.9	174.6	189.7	204.1	244.9	289.1
10	94.4	128.8	169.7	192.1	213.4	232.2	251.0	300.2	350.8
20	107.6	147.9	198.7	224.9	250.7	273.1	295.9	353.2	409.9
25	111.7	154.0	207.8	235.3	262.5	286.0	310.2	370.1	428.7
50	124.5	172.7	236.1	267.4	298.9	326.0	354.1	421.9	486.5
100	137.2	191.3	264.1	299.2	335.0	365.6	397.7	473.4	543.9

Station : 8935033 (SAMPLE SIZE : 30)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	68.7	93.0	113.8	128.4	140.9	155.0	168.7	207.1	264.3
10	75.6	103.0	127.0	142.7	156.6	173.5	190.7	234.6	300.0
20	82.3	112.6	139.6	156.4	171.7	191.3	211.8	261.0	334.3
25	84.4	115.7	143.6	160.8	176.4	196.9	218.5	269.3	345.2
50	90.8	125.1	155.9	174.2	191.1	214.3	239.2	295.1	378.7
100	97.3	134.4	168.2	187.4	205.7	231.5	259.7	320.7	412.0

Station : 8935045 (SAMPLE SIZE : 26)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	63.7	91.5	112.0	127.7	141.9	154.4	165.3	196.5	246.8
10	72.6	106.5	131.6	149.1	165.4	179.6	193.2	230.1	291.9
20	81.1	120.9	150.4	169.8	188.1	203.8	219.9	262.4	335.2
25	83.7	125.5	156.3	176.3	195.2	211.5	228.4	272.7	348.9
50	92.1	139.6	174.6	196.4	217.3	235.1	254.6	304.2	391.1
100	100.3	153.6	192.9	216.4	239.3	258.5	280.5	335.6	433.1

Station : 8935062 (SAMPLE SIZE : 26)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	75.3	97.0	108.1	124.2	136.3	151.2	166.4	199.1	247.2
10	87.7	110.3	120.9	137.7	150.6	167.2	186.0	220.8	276.5
20	99.6	123.1	133.1	150.7	164.2	182.6	204.9	241.6	304.6
25	103.4	127.2	136.9	154.8	168.6	187.5	210.9	248.2	313.5
50	115.1	139.7	148.8	167.4	181.9	202.5	229.3	268.6	341.0
100	126.7	152.1	160.7	180.0	195.1	217.4	247.5	288.8	368.3

Station : 8935095 (SAMPLE SIZE : 31)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	76.4	100.6	115.5	127.8	137.6	144.6	153.8	182.6	229.0
10	89.8	117.3	133.6	146.4	157.0	164.9	175.7	206.1	257.3
20	102.6	133.3	150.9	164.2	175.7	184.3	196.7	228.7	284.5
25	106.6	138.4	156.4	169.9	181.6	190.4	203.4	235.8	293.1
50	119.2	154.1	173.4	187.3	199.8	209.4	223.9	257.9	319.6
100	131.6	169.6	190.2	204.6	217.9	228.3	244.2	279.8	346.0

PROBABLE RAINFALL DEPTH AT GAUGING STATION (5/17)

[Unit:mm]

Station : 8935117 (SAMPLE SIZE : 29)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	69.0	92.8	108.0	125.0	141.0	155.2	167.6	197.4	257.8
10	80.2	106.6	122.6	143.8	163.4	181.0	193.8	226.9	300.7
20	90.8	119.8	136.7	161.9	184.9	205.8	219.0	255.3	341.9
25	94.2	124.0	141.2	167.6	191.8	213.6	227.0	264.3	354.9
50	104.7	137.0	155.0	185.2	212.8	237.8	251.7	292.0	395.1
100	115.0	149.8	168.6	202.7	233.7	261.8	276.1	319.5	435.1

Station : 8935133 (SAMPLE SIZE : 28)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	65.7	90.0	105.3	125.0	136.1	148.5	162.3	191.9	237.3
10	74.2	103.6	121.4	144.9	156.6	171.4	187.2	221.9	273.7
20	82.4	116.6	136.8	164.1	176.3	193.3	211.1	250.7	308.6
25	84.9	120.7	141.7	170.2	182.5	200.3	218.6	259.8	319.7
50	92.9	133.4	156.8	188.9	201.7	221.7	242.0	287.9	353.8
100	100.8	146.1	171.7	207.5	220.8	243.0	265.2	315.8	387.7

Station : 8935163 (SAMPLE SIZE : 21)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	79.0	94.6	102.8	109.8	119.0	131.6	134.2	151.1	177.0
10	92.8	109.8	118.7	126.3	135.6	151.0	153.3	173.2	204.3
20	105.9	124.3	133.9	142.0	151.4	169.7	171.6	194.4	230.6
25	110.1	129.0	138.7	147.0	156.5	175.6	177.5	201.1	238.9
50	123.0	143.2	153.6	162.5	172.0	193.8	195.4	221.8	264.5
100	135.8	157.3	168.3	177.7	187.4	211.9	213.1	242.3	290.0

Station : 8936001 (SAMPLE SIZE : 49)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	69.0	86.6	101.8	115.1	121.9	129.6	135.9	156.6	178.2
10	82.0	102.2	121.3	137.2	144.9	153.4	160.6	185.1	209.2
20	94.4	117.2	139.9	158.5	167.0	176.3	184.3	212.5	238.9
25	98.3	121.9	145.9	165.3	174.0	183.5	191.8	221.1	248.3
50	110.4	136.5	164.1	186.1	195.5	205.9	215.0	247.8	277.3
100	122.4	151.0	182.2	206.7	216.9	228.1	237.9	274.3	306.1

Station : 8936006 (SAMPLE SIZE : 25)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	67.6	75.9	87.8	97.0	104.3	112.4	119.8	136.9	154.9
10	79.7	88.2	102.0	113.1	122.1	130.7	139.9	160.7	181.0
20	91.3	100.0	115.6	128.6	139.1	148.2	159.1	183.5	205.9
25	95.0	103.8	119.9	133.5	144.5	153.8	165.2	190.8	213.9
50	106.4	115.3	133.2	148.6	161.1	170.9	184.0	213.1	238.3
100	117.6	126.8	146.4	163.6	177.6	187.9	202.7	235.3	262.5

Station : 8936014 (SAMPLE SIZE : 26)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	72.3	81.2	86.3	94.4	103.7	112.5	120.5	140.7	170.6
10	86.9	94.6	98.8	107.5	117.3	128.2	138.8	162.5	200.5
20	100.8	107.5	110.8	120.1	130.4	143.3	156.3	183.4	229.1
25	105.3	111.6	114.6	124.1	134.5	148.1	161.9	190.0	238.2
50	118.9	124.2	126.3	136.4	147.3	162.8	179.0	210.4	266.2
100	132.4	136.8	137.9	148.6	160.0	177.4	196.0	230.6	294.0

Station : 8936023 (SAMPLE SIZE : 30)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	86.5	111.1	125.8	133.7	142.2	149.9	161.6	188.2	231.6
10	107.7	135.7	152.0	158.9	167.4	174.6	187.9	217.8	270.5
20	128.0	159.3	177.1	183.0	191.5	198.3	213.1	246.2	307.8
25	134.5	166.8	185.1	190.6	199.2	205.9	221.1	255.2	319.7
50	154.3	189.9	209.6	214.2	222.7	229.1	245.7	283.0	356.1
100	174.1	212.8	234.0	237.5	246.2	252.1	270.1	310.5	392.3

Station : 8936026 (SAMPLE SIZE : 23)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	92.4	99.5	114.5	122.3	128.9	135.0	140.6	161.4	192.4
10	115.8	121.6	139.3	147.6	154.9	160.9	167.0	190.5	226.3
20	138.3	142.7	163.2	171.8	179.9	185.8	192.3	218.3	258.9
25	145.4	149.4	170.8	179.5	187.8	193.7	200.3	227.2	269.3
50	167.3	170.1	194.1	203.1	212.2	218.0	225.0	254.4	301.1
100	189.1	190.6	217.2	226.6	236.5	242.1	249.6	281.5	332.8

Station : 8936049 (SAMPLE SIZE : 31)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	58.7	78.5	90.4	101.9	108.3	114.4	125.6	140.4	168.9
10	67.7	92.3	105.7	119.2	125.2	131.5	146.4	162.6	198.3
20	76.2	105.6	120.4	135.7	141.5	147.8	166.4	183.8	226.5
25	78.9	109.6	125.1	141.0	146.6	153.0	172.8	190.6	235.5
50	87.3	122.7	139.5	157.2	162.5	169.0	192.3	211.3	263.0
100	95.5	135.5	153.7	173.2	178.3	184.9	211.7	231.9	290.4

Station : 8936064 (SAMPLE SIZE : 25)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	78.2	104.4	119.9	138.1	148.2	156.6	168.2	188.4	213.8
10	91.5	121.5	140.1	162.2	174.3	184.4	198.4	222.0	251.7
20	104.3	138.0	159.5	185.3	199.3	211.1	227.4	254.3	288.2
25	108.3	143.2	165.7	192.6	207.2	219.5	236.6	264.6	299.7
50	120.8	159.3	184.7	215.2	231.6	245.6	265.0	296.1	335.3
100	133.2	175.2	203.5	237.6	255.8	271.4	293.1	327.4	370.7

PROBABLE RAINFALL DEPTH AT GAUGING STATION (6/17)

[Unit:mm]

Station : 8937002 (SAMPLE SIZE : 31)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	81.7	112.6	127.6	143.1	159.5	166.8	177.5	208.3	255.6
10	95.9	133.3	149.5	166.8	187.2	196.1	208.8	243.8	302.9
20	109.6	153.1	170.4	189.6	213.8	224.1	238.9	277.9	348.2
25	113.9	159.4	177.1	196.9	222.2	233.0	248.4	288.7	362.6
50	127.3	178.8	197.6	219.1	248.2	260.4	277.8	322.0	406.9
100	140.5	198.0	217.9	241.2	274.0	287.7	307.0	355.0	450.9

Station : 8937003 (SAMPLE SIZE : 26)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	74.4	89.4	105.7	130.6	141.9	156.8	164.0	196.5	234.0
10	87.1	103.4	122.6	153.5	168.2	188.0	196.8	235.7	283.6
20	99.4	116.8	138.9	175.4	193.4	218.0	228.3	273.4	331.2
25	103.2	121.0	144.0	182.4	201.4	227.5	238.2	285.4	346.3
50	115.2	134.1	159.9	203.9	226.1	256.7	269.0	322.2	392.8
100	127.0	147.1	175.6	225.2	250.5	285.7	299.5	358.7	439.0

Station : 8937021 (SAMPLE SIZE : 21)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	160.5	243.7	295.4	329.5	347.6	397.2	432.2	498.3	644.8
10	202.5	314.6	385.2	427.6	449.5	513.7	559.5	642.3	837.1
20	242.7	382.6	471.4	521.7	547.3	625.4	681.7	780.3	1021.6
25	255.5	404.2	498.7	551.6	578.3	660.9	720.4	824.1	1080.1
50	294.8	470.7	582.9	643.5	673.8	770.1	839.7	959.0	1260.3
100	333.9	536.7	666.5	734.8	768.7	878.5	958.2	1092.9	1439.2

Station : 8937022 (SAMPLE SIZE : 29)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	53.6	67.7	76.0	85.4	90.9	97.8	102.7	125.5	153.3
10	62.6	78.3	87.7	98.8	105.3	113.1	118.9	146.3	179.9
20	71.3	88.5	98.9	111.5	119.1	127.7	134.3	166.3	205.5
25	74.1	91.8	102.5	115.6	123.5	132.4	139.2	172.6	213.6
50	82.6	101.7	113.4	128.1	137.0	146.7	154.4	192.1	238.7
100	91.0	111.6	124.3	140.5	150.5	160.9	169.4	211.5	263.5

Station : 8937033 (SAMPLE SIZE : 26)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	73.1	89.3	108.0	120.6	134.8	148.4	157.7	180.4	216.3
10	85.1	103.6	126.5	141.6	160.8	177.2	189.1	217.8	263.9
20	96.6	117.3	144.3	161.7	185.8	204.9	219.3	253.7	309.5
25	100.2	121.7	149.9	168.1	193.7	213.6	228.9	265.0	323.9
50	111.5	135.1	167.2	187.7	218.1	240.7	258.3	300.1	368.5
100	122.6	148.4	184.4	207.2	242.3	267.5	287.6	334.9	412.7

Station : 8937035 (SAMPLE SIZE : 29)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	72.8	89.9	100.6	111.0	121.3	128.3	133.3	154.9	176.5
10	87.4	110.0	123.0	136.5	150.0	159.3	164.8	192.0	219.1
20	101.5	129.3	144.6	161.0	177.6	189.1	195.0	227.5	259.9
25	106.0	135.4	151.4	168.7	186.3	198.5	204.6	238.8	272.8
50	119.8	154.3	172.4	192.6	213.3	227.6	234.2	273.6	312.7
100	133.4	172.9	193.3	216.3	240.0	256.5	263.5	308.1	352.2

Station : 8937048 (SAMPLE SIZE : 27)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	68.1	94.1	125.7	144.7	153.7	163.8	171.6	198.1	231.3
10	79.3	114.5	158.5	183.4	193.1	205.9	215.1	249.0	290.7
20	90.1	134.0	189.9	220.4	230.9	246.3	256.9	297.8	347.7
25	93.5	140.1	199.9	232.2	242.9	259.1	270.2	313.3	365.7
50	104.0	159.2	230.5	268.4	279.9	298.5	311.0	361.1	421.4
100	114.4	178.1	261.0	304.3	316.5	337.7	351.6	408.4	476.7

Station : 8937065 (SAMPLE SIZE : 22)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	101.8	139.4	168.7	197.2	218.1	243.6	270.1	333.3	405.7
10	116.7	161.3	196.7	228.7	252.1	283.3	314.6	390.9	477.6
20	131.1	182.2	223.6	258.9	284.8	321.3	357.2	446.2	546.5
25	135.6	188.8	232.2	268.5	295.1	333.4	370.7	463.7	568.4
50	149.6	209.3	258.5	298.0	327.0	370.6	412.4	517.8	635.8
100	163.5	229.6	284.6	327.3	358.7	407.6	453.8	571.4	702.6

Station : 8938000 (SAMPLE SIZE : 20)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	101.3	111.5	135.3	148.8	156.3	158.8	162.2	169.8	188.2
10	126.4	138.3	167.4	183.0	191.2	194.5	197.2	206.0	227.7
20	150.4	164.0	198.2	215.8	224.7	228.7	230.8	240.7	265.6
25	158.1	172.2	208.0	226.2	235.3	239.5	241.5	251.7	277.6
50	181.6	197.3	238.1	258.3	268.0	273.0	274.3	285.7	314.6
100	204.9	222.3	267.9	290.1	300.5	306.2	306.9	319.3	351.4

Station : 9034001 (SAMPLE SIZE : 59)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	83.8	106.1	121.6	138.0	159.1	176.3	193.6	236.5	295.1
10	99.5	123.7	140.0	158.6	186.0	206.5	227.4	277.4	342.2
20	114.6	140.6	157.6	178.3	211.7	235.5	259.9	316.7	387.4
25	119.4	145.9	163.2	184.6	219.9	244.7	270.2	329.2	401.7
50	134.1	162.4	180.4	203.9	245.1	273.0	301.9	367.6	445.9
100	148.7	178.8	197.5	223.1	270.0	301.1	333.4	405.7	489.7

PROBABLE RAINFALL DEPTH AT GAUGING STATION (7/17)

[Unit:mm]

Station : 9034004 (SAMPLE SIZE : 53)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	90.0	102.6	118.6	134.1	146.9	162.5	169.5	194.2	236.8
10	103.6	117.0	135.9	153.8	168.8	187.7	195.6	221.8	270.0
20	116.6	130.7	152.5	172.7	189.8	211.9	220.6	248.2	301.9
25	120.8	135.1	157.7	178.6	196.5	219.5	228.5	256.5	312.0
50	133.5	148.6	173.9	197.1	217.0	243.2	253.0	282.3	343.1
100	146.1	161.9	190.0	215.4	237.4	266.6	277.3	308.0	374.0

Station : 9034008 (SAMPLE SIZE : 46)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	107.2	126.4	144.2	154.3	164.4	175.7	192.6	219.4	254.6
10	131.0	151.6	170.2	180.6	191.1	203.2	223.7	251.3	287.2
20	153.8	175.8	195.2	205.9	216.6	229.5	253.6	281.8	318.5
25	161.0	183.5	203.1	213.9	224.8	237.9	263.1	291.5	328.4
50	183.3	207.1	227.5	238.7	249.7	263.7	292.2	321.4	358.9
100	205.5	230.6	251.7	263.2	274.5	289.2	321.2	351.1	389.2

Station : 9034009 (SAMPLE SIZE : 47)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	181.1	194.7	248.6	259.9	270.1	279.7	293.7	318.9	355.9
10	251.0	263.4	342.3	352.0	362.6	371.9	385.7	409.0	444.7
20	318.0	329.3	432.1	440.5	451.4	460.3	474.1	495.4	530.0
25	339.3	350.2	460.6	468.5	479.6	488.3	502.1	522.8	557.0
50	404.8	414.6	548.5	554.9	566.4	574.7	588.4	607.2	640.3
100	469.8	478.5	635.6	640.6	652.5	660.5	674.1	691.1	723.0

Station : 9034011 (SAMPLE SIZE : 25)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	95.3	115.5	130.7	142.0	151.2	160.1	171.5	208.6	263.7
10	111.8	134.4	149.7	159.8	168.8	177.7	189.6	229.9	294.3
20	127.6	152.5	168.0	176.9	185.7	194.6	207.0	250.4	323.7
25	132.6	158.2	173.8	182.4	191.0	200.0	212.5	256.9	333.1
50	148.1	175.9	191.6	199.1	207.5	216.5	229.5	276.9	361.8
100	163.4	193.4	209.3	215.7	223.9	232.9	246.3	296.8	390.0

Station : 9034021 (SAMPLE SIZE : 25)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	101.4	130.6	162.6	169.2	176.2	191.5	204.8	222.1	277.2
10	124.1	162.2	205.5	212.6	218.2	236.0	252.2	269.3	337.0
20	146.0	192.4	246.7	254.1	258.5	278.7	297.6	314.7	394.5
25	152.9	202.0	259.8	267.3	271.3	292.3	312.1	329.1	412.7
50	174.2	231.5	300.0	307.9	310.6	334.0	356.5	373.4	468.8
100	195.4	260.8	339.9	348.2	349.7	375.5	400.6	417.3	524.5

Station : 9034022 (SAMPLE SIZE : 22)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	101.0	116.9	134.8	150.6	165.6	177.4	185.4	216.5	269.4
10	123.3	139.5	160.0	179.1	197.0	212.0	218.7	253.5	315.6
20	144.6	161.2	184.1	206.5	227.1	245.2	250.6	289.0	359.9
25	151.4	168.1	191.7	215.2	236.7	255.7	260.7	300.3	373.9
50	172.3	189.4	215.3	241.9	266.1	288.2	291.9	335.0	417.2
100	193.1	210.4	238.7	268.4	295.4	320.4	322.8	369.4	460.2

Station : 9034023 (SAMPLE SIZE : 21)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	103.2	139.9	152.7	160.7	171.9	184.3	191.3	216.3	259.2
10	128.3	179.6	192.3	200.5	211.1	224.2	231.0	256.6	302.9
20	152.5	217.7	230.4	238.8	248.7	262.4	269.0	295.3	344.8
25	160.1	229.8	242.5	250.9	260.6	274.6	281.1	307.6	358.1
50	183.7	267.0	279.7	288.2	297.4	312.0	318.3	345.4	399.0
100	207.1	304.0	316.6	325.3	333.8	349.1	355.2	382.9	439.7

Station : 9034025 (SAMPLE SIZE : 30)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	99.1	115.8	129.2	144.8	158.2	174.9	187.8	228.3	280.7
10	114.0	130.6	144.2	160.9	175.0	194.0	208.9	256.2	314.7
20	128.4	144.7	158.5	176.4	191.2	212.3	229.1	283.0	347.4
25	132.9	149.2	163.1	181.3	196.3	218.1	235.5	291.5	357.7
50	146.9	163.1	177.1	196.4	212.1	236.0	255.2	317.7	389.6
100	160.8	176.8	191.0	211.4	227.7	253.8	274.8	343.6	421.3

Station : 9034032 (SAMPLE SIZE : 26)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	89.7	122.3	151.7	176.5	190.3	208.7	228.9	277.6	331.8
10	108.1	141.5	178.7	211.8	227.3	249.5	276.2	337.7	400.4
20	125.7	160.0	204.6	245.6	262.7	288.6	321.5	395.3	466.1
25	131.3	165.8	212.9	256.3	273.9	301.0	335.9	413.6	487.0
50	148.5	183.9	238.2	289.4	308.6	339.2	380.2	469.9	551.2
100	165.7	201.8	263.4	322.2	343.0	377.2	424.3	525.8	615.0

Station : 9034042 (SAMPLE SIZE : 24)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	71.9	88.1	108.7	124.9	138.5	153.1	162.8	201.2	260.5
10	82.3	98.4	122.0	139.4	155.5	172.1	181.4	226.2	291.7
20	92.3	108.4	134.8	153.2	171.7	190.4	199.3	250.1	321.5
25	95.5	111.5	138.9	157.6	176.8	196.2	205.0	257.7	331.0
50	105.2	121.2	151.4	171.2	192.7	214.0	222.4	281.1	360.2
100	114.9	130.8	163.8	184.7	208.4	231.7	239.8	304.3	389.2

PROBABLE RAINFALL DEPTH AT GAUGING STATION (8/17)

[Unit:mm]

Station : 9034045 (SAMPLE SIZE : 21)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	86.5	96.2	105.7	120.3	132.2	147.1	167.2	191.5	233.1
10	103.1	111.2	119.3	137.2	148.9	167.1	193.4	223.3	268.7
20	119.1	125.6	132.4	153.4	164.9	186.4	218.6	253.9	302.9
25	124.2	130.2	136.5	158.5	169.9	192.5	226.6	263.5	313.8
50	139.9	144.3	149.3	174.3	185.5	211.3	251.2	293.4	347.1
100	155.4	158.2	162.0	190.0	201.0	229.9	275.6	323.0	380.3

Station : 9034080 (SAMPLE SIZE : 24)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	90.1	111.1	123.8	136.1	151.6	166.3	184.3	225.3	293.0
10	103.8	125.2	137.9	149.1	165.6	182.0	201.6	242.5	318.4
20	116.9	138.7	151.4	161.5	179.1	197.1	218.2	259.1	342.8
25	121.1	143.0	155.7	165.5	183.4	201.9	223.5	264.3	350.5
50	133.9	156.2	168.9	177.6	196.6	216.6	239.7	280.5	374.3
100	146.6	169.3	182.0	189.7	209.6	231.2	255.8	296.5	397.9

Station : 9034081 (SAMPLE SIZE : 29)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	84.7	108.2	127.7	151.1	159.4	174.7	193.0	225.0	266.3
10	94.4	120.4	142.5	171.5	179.7	197.6	222.2	257.6	298.4
20	103.7	132.0	156.7	191.0	199.1	219.5	250.2	288.9	329.2
25	106.6	135.7	161.3	197.2	205.3	226.5	259.0	298.8	339.0
50	115.7	147.1	175.2	216.3	224.3	248.0	286.4	329.3	369.1
100	124.7	158.4	189.0	235.2	243.1	269.3	313.5	359.7	398.9

Station : 9034086 (SAMPLE SIZE : 21)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	85.1	96.6	106.2	117.7	129.5	138.6	146.2	182.5	227.1
10	100.6	110.5	121.3	134.2	148.4	158.2	165.9	211.2	263.1
20	115.5	123.8	135.8	150.1	166.6	177.0	184.9	238.6	297.7
25	120.2	128.0	140.3	155.1	172.3	183.0	191.0	247.4	308.6
50	134.8	141.1	154.5	170.6	190.1	201.4	209.5	274.2	342.3
100	149.2	154.0	168.5	186.0	207.7	219.6	227.9	300.9	375.8

Station : 9034088 (SAMPLE SIZE : 23)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	115.8	157.1	179.5	203.4	234.6	247.4	281.2	325.0	448.5
10	144.4	197.7	224.3	254.8	294.6	308.5	354.8	403.3	566.8
20	171.8	236.7	267.2	304.2	352.2	367.2	425.5	478.5	680.3
25	180.5	249.0	280.8	319.9	370.5	385.8	447.9	502.3	716.3
50	207.3	287.1	322.8	368.1	426.8	443.1	517.0	575.7	827.2
100	233.9	324.9	364.4	416.0	482.7	499.9	585.5	648.6	937.3

Station : 9035001 (SAMPLE SIZE : 55)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	112.0	133.9	148.3	162.0	176.1	188.6	202.2	232.0	279.9
10	148.7	173.0	188.9	203.0	219.4	231.3	247.2	278.7	330.0
20	184.0	210.5	227.9	242.4	260.9	272.2	290.4	323.5	378.0
25	195.2	222.4	240.2	254.9	274.1	285.1	304.1	337.7	393.3
50	229.6	259.0	278.3	293.4	314.7	325.1	346.3	381.6	440.2
100	263.8	295.4	316.1	331.6	354.9	364.7	388.2	425.0	486.8

Station : 9035002 (SAMPLE SIZE : 56)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	57.6	79.6	93.0	107.3	118.5	129.4	143.2	169.0	210.6
10	64.1	89.6	104.0	119.8	133.0	145.7	161.9	191.5	239.6
20	70.3	99.2	114.5	131.7	147.0	161.4	179.8	213.0	267.4
25	72.3	102.3	117.9	135.5	151.5	166.4	185.5	219.9	276.2
50	78.4	111.7	128.2	147.2	165.1	181.8	203.0	240.9	303.3
100	84.4	121.0	138.4	158.7	178.7	197.0	220.4	261.8	330.3

Station : 9035003 (SAMPLE SIZE : 58)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	71.1	92.3	114.6	130.4	144.5	160.5	178.1	215.3	274.9
10	80.2	103.3	129.0	145.5	160.3	178.3	198.9	238.5	305.6
20	88.9	113.9	142.8	160.0	175.4	195.3	218.9	260.8	335.0
25	91.7	117.2	147.1	164.6	180.2	200.7	225.2	267.9	344.3
50	100.2	127.6	160.6	178.7	195.1	217.3	244.7	289.7	373.1
100	108.7	137.8	174.0	192.7	209.8	233.8	264.0	311.3	401.7

Station : 9035013 (SAMPLE SIZE : 61)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	64.6	84.6	99.6	111.4	120.8	129.6	140.4	167.2	210.6
10	73.2	95.8	112.8	126.2	135.9	145.6	158.3	188.8	238.6
20	81.5	106.5	125.5	140.3	150.5	161.0	175.4	209.6	265.5
25	84.2	109.9	129.5	144.8	155.1	165.9	180.8	216.2	274.0
50	92.3	120.3	141.9	158.6	169.3	181.0	197.5	236.5	300.3
100	100.3	130.7	154.1	172.3	183.4	195.9	214.1	256.6	326.3

Station : 9035018 (SAMPLE SIZE : 40)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	59.2	84.8	101.8	118.1	131.7	143.0	153.8	180.4	223.5
10	67.9	98.7	118.2	138.5	154.8	168.4	180.5	211.4	264.0
20	76.3	112.1	133.9	158.1	177.0	192.7	206.1	241.2	302.9
25	79.0	116.4	138.8	164.3	184.0	200.4	214.2	250.7	315.2
50	87.2	129.4	154.2	183.5	205.7	224.1	239.2	279.8	353.1
100	95.4	142.4	169.4	202.5	227.3	247.7	264.0	308.7	390.8

PROBABLE RAINFALL DEPTH AT GAUGING STATION (9/17)

[Unit:mm]

Station : 9035020 (SAMPLE SIZE : 30)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	64.7	81.5	93.0	104.5	117.0	130.7	141.7	167.4	203.2
10	76.9	94.1	106.2	117.8	132.1	148.3	162.1	191.7	232.4
20	88.5	106.2	118.8	130.5	146.6	165.2	181.8	215.1	260.4
25	92.2	110.0	122.8	134.5	151.2	170.5	188.0	222.4	269.3
50	103.6	121.8	135.1	147.0	165.3	187.0	207.2	245.2	296.7
100	114.9	133.5	147.3	159.4	179.3	203.4	226.3	267.8	323.8

Station : 9035079 (SAMPLE SIZE : 25)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	76.3	92.9	107.6	122.7	132.7	147.7	161.5	196.3	255.1
10	90.2	106.9	123.5	138.4	150.4	167.4	182.7	221.4	288.1
20	103.6	120.3	138.8	153.5	167.5	186.3	203.1	245.5	319.8
25	107.8	124.6	143.7	158.3	172.9	192.3	209.5	253.2	329.8
50	120.8	137.8	158.6	173.1	189.5	210.8	229.4	276.7	360.7
100	133.8	150.8	173.4	187.7	206.0	229.2	249.1	300.1	391.4

Station : 9035085 (SAMPLE SIZE : 23)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	81.7	114.0	145.1	173.2	194.6	212.0	224.8	285.4	353.6
10	98.3	137.8	177.0	212.3	237.7	257.3	271.4	345.3	426.5
20	114.3	160.5	207.7	249.8	278.9	300.8	316.1	402.8	496.5
25	119.3	167.8	217.4	261.7	292.0	314.5	330.2	421.0	518.6
50	134.9	190.0	247.3	298.4	332.3	357.0	373.9	477.2	587.0
100	150.4	212.1	277.0	334.7	372.4	399.1	417.3	532.9	654.9

Station : 9036002 (SAMPLE SIZE : 27)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	55.1	65.0	76.0	87.4	98.1	111.3	119.6	141.0	173.6
10	61.7	73.1	85.4	98.4	110.9	127.9	136.7	162.1	200.3
20	68.1	80.8	94.5	108.9	123.1	143.9	153.1	182.4	226.0
25	70.1	83.2	97.4	112.2	127.0	149.0	158.3	188.8	234.1
50	76.3	90.7	106.3	122.5	138.9	164.6	174.3	208.6	259.2
100	82.4	98.2	115.1	132.6	150.8	180.2	190.2	228.2	284.1

Station : 9036017 (SAMPLE SIZE : 25)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	72.4	88.7	103.5	116.8	130.8	144.8	154.3	184.4	234.8
10	86.3	103.8	120.3	135.7	151.0	168.9	179.6	216.8	275.6
20	99.6	118.2	136.3	153.7	170.5	191.9	203.8	247.9	314.7
25	103.8	122.8	141.4	159.4	176.7	199.2	211.5	257.7	327.1
50	116.8	136.9	157.1	177.1	195.7	221.8	235.2	288.1	365.4
100	129.7	150.9	172.7	194.6	214.6	244.1	258.7	318.2	403.4

Station : 9036020 (SAMPLE SIZE : 31)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	58.6	73.1	82.1	94.6	102.3	114.0	120.2	138.6	171.5
10	67.4	83.3	93.9	109.0	116.9	131.5	138.9	160.2	197.9
20	75.9	93.2	105.2	122.8	130.9	148.2	156.8	180.9	223.2
25	78.6	96.3	108.8	127.2	135.3	153.5	162.5	187.5	231.2
50	86.9	105.9	119.8	140.7	149.0	169.9	180.0	207.7	255.9
100	95.2	115.5	130.8	154.1	162.6	186.1	197.3	227.8	280.4

Station : 9036025 (SAMPLE SIZE : 32)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	54.2	77.4	93.3	109.6	122.7	134.1	146.8	176.5	222.2
10	62.9	89.9	107.5	126.8	142.3	155.0	170.2	204.7	257.4
20	71.3	101.9	121.0	143.3	161.1	175.1	192.5	231.8	291.2
25	73.9	105.7	125.3	148.6	167.0	181.5	199.6	240.3	301.9
50	82.1	117.5	138.6	164.7	185.4	201.2	221.5	266.8	334.9
100	90.2	129.1	151.7	180.7	203.6	220.7	243.2	293.0	367.7

Station : 9036029 (SAMPLE SIZE : 32)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	61.0	76.2	94.7	103.7	114.9	127.0	139.2	162.5	201.2
10	71.4	87.5	110.7	120.3	133.2	147.3	161.7	185.8	230.0
20	81.4	98.4	126.0	136.2	150.7	166.8	183.3	208.1	257.5
25	84.5	101.9	130.8	141.2	156.2	173.0	190.2	215.2	266.3
50	94.3	112.5	145.8	156.7	173.4	192.0	211.3	237.0	293.2
100	103.9	123.1	160.6	172.2	190.4	210.9	232.3	258.7	320.0

Station : 9036032 (SAMPLE SIZE : 32)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	85.0	100.2	114.8	128.3	138.4	151.0	165.9	201.5	268.5
10	106.3	119.8	135.7	150.1	160.5	174.0	191.6	230.6	314.7
20	126.7	138.7	155.7	171.0	181.6	196.0	216.3	258.6	359.0
25	133.2	144.7	162.1	177.6	188.3	203.0	224.1	267.4	373.0
50	153.2	163.1	181.7	198.0	209.0	224.6	248.3	294.7	416.3
100	173.0	181.4	201.2	218.3	229.5	246.0	272.2	321.8	459.3

Station : 9037001 (SAMPLE SIZE : 24)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	96.5	131.3	160.8	175.6	193.9	216.5	231.2	262.0	331.0
10	111.4	153.3	190.8	206.1	225.8	253.1	271.3	303.6	382.8
20	125.6	174.3	219.5	235.4	256.3	288.1	309.7	343.4	432.5
25	130.2	181.0	228.7	244.7	266.0	299.3	321.9	356.0	448.2
50	144.1	201.5	256.8	273.4	295.8	333.6	359.5	395.0	496.8
100	157.9	221.9	284.7	301.8	325.5	367.6	396.8	433.6	545.0

PROBABLE RAINFALL DEPTH AT GAUGING STATION (10/17)

[Unit:mm]

Station : 9037005 (SAMPLE SIZE : 23)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	96.2	118.7	147.9	182.1	204.1	220.2	240.2	278.2	340.3
10	111.2	134.4	169.1	213.2	241.4	260.9	285.7	328.0	400.8
20	125.6	149.4	189.5	243.1	277.2	299.8	329.3	375.7	458.7
25	130.2	154.2	195.9	252.5	288.6	312.2	343.1	390.8	477.1
50	144.3	168.9	215.9	281.7	323.6	350.3	385.7	437.4	533.8
100	158.2	183.5	235.6	310.7	358.3	388.2	428.0	483.7	590.0

Station : 9037007 (SAMPLE SIZE : 25)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	105.9	139.3	168.1	194.5	215.8	236.0	262.0	322.5	416.1
10	121.6	157.5	191.1	224.1	247.9	271.7	306.3	372.4	484.7
20	136.6	175.0	213.1	252.4	278.8	305.9	348.7	420.2	550.6
25	141.4	180.5	220.1	261.4	288.6	316.7	362.2	435.4	571.5
50	156.1	197.6	241.6	289.1	318.7	350.1	403.7	482.1	635.9
100	170.6	214.5	262.9	316.6	348.6	383.3	444.9	528.6	699.8

Station : 9037010 (SAMPLE SIZE : 20)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	89.1	119.6	148.3	173.1	198.8	220.9	238.3	274.0	325.4
10	102.9	137.4	170.9	201.6	233.8	262.5	283.8	322.5	380.5
20	116.3	154.4	192.7	228.9	267.4	302.3	327.3	369.1	433.4
25	120.5	159.9	199.5	237.5	278.0	315.0	341.1	383.8	450.2
50	133.5	176.5	220.8	264.2	310.8	354.0	383.7	429.3	501.9
100	146.4	193.1	241.9	290.7	343.4	392.6	426.0	474.5	553.2

Station : 9037015 (SAMPLE SIZE : 30)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	82.8	130.5	159.0	188.4	216.3	246.8	273.7	347.7	434.6
10	94.1	150.4	182.3	217.7	251.4	288.3	321.1	412.1	513.4
20	104.9	169.6	204.7	245.8	285.1	328.2	366.5	473.9	588.9
25	108.3	175.6	211.9	254.7	295.7	340.8	380.9	493.4	612.9
50	118.8	194.3	233.7	282.2	328.6	379.8	425.3	553.8	686.7
100	129.3	212.9	255.5	309.4	361.3	418.4	469.3	613.7	759.9

Station : 9038000 (SAMPLE SIZE : 24)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	114.6	134.2	148.5	164.1	189.9	199.6	207.8	235.1	289.6
10	137.2	160.0	174.2	194.3	227.5	238.7	248.4	283.3	353.7
20	158.8	184.8	198.8	223.2	263.6	276.2	287.3	329.6	415.2
25	165.7	192.7	206.6	232.4	275.1	288.1	299.7	344.2	434.7
50	186.8	216.9	230.7	260.6	310.3	324.7	337.7	389.4	494.8
100	207.8	240.9	254.6	288.7	345.3	361.1	375.5	434.3	554.5

Station : 9038004 (SAMPLE SIZE : 22)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	90.0	124.7	151.2	161.8	184.2	198.3	205.4	233.3	284.7
10	105.0	147.5	181.1	193.2	224.4	241.8	249.4	281.4	348.2
20	119.4	169.4	209.9	223.2	263.0	283.6	291.6	327.5	409.0
25	124.0	176.3	219.0	232.8	275.3	296.9	305.0	342.1	428.3
50	138.1	197.6	247.1	262.1	313.0	337.7	346.2	387.2	487.8
100	152.0	218.8	275.0	291.3	350.4	378.2	387.1	431.9	546.8

Station : 9038006 (SAMPLE SIZE : 23)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	132.5	170.2	197.4	227.8	262.7	288.0	301.4	338.6	430.2
10	158.1	205.5	241.2	281.6	330.7	365.7	384.2	435.2	566.8
20	182.7	239.4	283.1	333.3	395.8	440.3	463.7	527.8	697.8
25	190.5	250.1	296.4	349.7	416.5	463.9	488.9	557.2	739.3
50	214.6	283.2	337.4	400.2	480.1	536.8	566.6	647.8	867.3
100	238.5	316.0	378.1	450.3	543.3	609.1	643.7	737.7	994.3

Station : 9039000 (SAMPLE SIZE : 29)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	99.6	106.7	120.5	128.8	132.3	138.9	144.8	165.6	193.8
10	122.8	130.9	149.5	159.6	163.0	171.1	178.8	205.9	243.2
20	145.1	154.0	177.3	189.2	192.6	201.9	211.3	244.5	290.5
25	152.1	161.4	186.1	198.6	201.9	211.7	221.6	256.8	305.5
50	173.9	184.1	213.3	227.5	230.8	241.9	253.4	294.5	351.8
100	195.5	206.6	240.2	256.3	259.4	271.9	285.0	332.0	397.7

Station : 9039001 (SAMPLE SIZE : 21)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	95.5	114.5	132.3	138.7	152.7	161.1	163.4	176.0	192.3
10	120.6	144.8	167.0	174.5	190.9	201.2	203.9	219.3	239.1
20	144.7	173.8	200.3	208.8	227.5	239.7	242.7	260.9	283.9
25	152.4	183.0	210.9	219.7	239.2	252.0	255.0	274.1	298.2
50	175.9	211.4	243.5	253.2	275.0	289.6	292.9	314.7	342.0
100	199.3	239.5	275.8	286.5	310.5	326.9	330.6	355.1	385.6

Station : 9134009 (SAMPLE SIZE : 26)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	90.8	115.6	129.4	150.1	164.7	172.7	187.0	231.5	276.2
10	109.5	138.6	154.3	182.4	199.4	208.5	226.1	284.0	339.7
20	127.4	160.6	178.2	213.5	232.7	242.9	263.5	334.4	400.7
25	133.1	167.6	185.8	223.4	243.2	253.8	275.4	350.4	420.0
50	150.7	189.2	209.2	253.7	275.8	287.4	312.1	399.6	479.5
100	168.1	210.5	232.4	283.9	308.1	320.8	348.4	448.5	538.6

PROBABLE RAINFALL DEPTH AT GAUGING STATION (11/17)

[Unit:mm]

Station : 9134010 (SAMPLE SIZE : 24)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	67.4	87.2	104.5	115.5	132.0	147.9	161.5	200.4	259.2
10	75.6	99.0	118.5	130.0	149.5	168.1	184.6	229.8	295.3
20	83.5	110.4	132.0	143.9	166.3	187.4	206.8	257.9	329.9
25	86.0	113.9	136.3	148.3	171.6	193.5	213.8	266.9	340.9
50	93.8	125.0	149.4	161.8	188.0	212.4	235.4	294.4	374.7
100	101.4	136.0	162.5	175.3	204.3	231.1	256.9	321.8	408.3

Station : 9134011 (SAMPLE SIZE : 26)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	80.2	103.2	123.3	140.4	156.4	168.0	182.0	225.9	300.3
10	94.6	122.2	145.9	165.8	185.7	197.8	214.5	268.5	362.4
20	108.4	140.4	167.5	190.2	213.8	226.4	245.7	309.3	422.0
25	112.8	146.2	174.4	197.9	222.7	235.5	255.6	322.3	440.9
50	126.3	164.0	195.5	221.7	250.1	263.4	286.1	362.2	499.1
100	139.7	181.6	216.5	245.3	277.4	291.1	316.4	401.9	556.9

Station : 9135001 (SAMPLE SIZE : 30)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	67.7	89.6	100.1	112.7	125.4	138.6	152.3	186.7	219.2
10	78.4	103.0	114.7	129.6	143.9	159.8	176.8	216.6	253.2
20	88.6	115.9	128.8	145.9	161.7	180.1	200.4	245.4	285.7
25	91.8	120.0	133.2	151.0	167.3	186.6	207.8	254.5	296.0
50	101.8	132.5	147.0	166.9	184.7	206.4	230.8	282.6	327.8
100	111.7	145.0	160.6	182.7	201.9	226.2	253.7	310.5	359.4

Station : 9135008 (SAMPLE SIZE : 21)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	61.1	86.8	101.8	117.3	134.7	151.3	164.1	198.7	233.8
10	69.5	100.0	118.4	136.7	157.6	179.0	194.5	235.2	276.0
20	77.6	112.6	134.4	155.3	179.8	205.6	223.6	270.1	316.5
25	80.2	116.6	139.5	161.2	186.8	214.0	232.8	281.2	329.3
50	88.1	128.9	155.1	179.4	208.4	240.0	261.3	315.4	368.9
100	96.0	141.2	170.6	197.5	229.8	265.8	289.6	349.3	408.2

Station : 9135013 (SAMPLE SIZE : 20)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	84.2	101.2	112.9	123.1	135.7	150.2	161.4	187.9	217.3
10	100.4	119.0	132.0	143.1	157.7	173.9	187.0	216.8	250.6
20	115.9	136.1	150.3	162.4	178.8	196.6	211.6	244.5	282.6
25	120.9	141.5	156.1	168.5	185.5	203.8	219.4	253.3	292.8
50	136.1	158.2	174.0	187.3	206.1	225.9	243.4	280.4	324.1
100	151.2	174.8	191.7	205.9	226.5	247.9	267.3	307.3	355.1

Station : 9136014 (SAMPLE SIZE : 28)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	112.0	147.7	173.0	197.0	220.3	240.8	259.2	315.7	386.5
10	134.0	173.6	202.8	232.5	260.4	284.2	304.7	369.6	452.7
20	155.2	198.4	231.3	266.5	298.8	325.9	348.3	421.3	516.1
25	161.9	206.2	240.4	277.3	311.0	339.1	362.1	437.7	536.3
50	182.5	230.5	268.3	310.5	348.6	379.8	404.7	488.3	598.3
100	203.0	254.5	296.1	343.5	386.0	420.2	447.0	538.5	659.8

Station : 9136121 (SAMPLE SIZE : 33)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	98.8	127.7	144.5	167.7	183.9	198.4	215.2	258.8	319.5
10	120.1	152.2	170.5	198.1	218.2	235.8	256.4	308.7	382.6
20	140.6	175.7	195.5	227.3	251.2	271.8	296.0	356.5	443.1
25	147.0	183.1	203.4	236.6	261.7	283.2	308.6	371.7	462.2
50	167.0	206.1	227.9	265.1	293.9	318.3	347.3	418.5	521.3
100	186.8	228.9	252.1	293.4	325.9	353.2	385.6	464.9	580.0

Station : 9136130 (SAMPLE SIZE : 29)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	97.7	131.1	149.2	162.8	177.7	186.9	207.0	247.5	305.7
10	114.1	154.4	174.9	190.5	208.3	218.6	243.6	292.9	364.6
20	129.8	176.7	199.6	217.2	237.6	249.0	278.7	336.4	421.1
25	134.8	183.7	207.5	225.6	246.9	258.6	289.8	350.3	439.0
50	150.1	205.5	231.6	251.7	275.6	288.3	324.1	392.8	494.2
100	165.3	227.2	255.5	277.5	304.1	317.8	358.2	435.1	549.1

Station : 9136164 (SAMPLE SIZE : 29)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	100.8	133.0	151.5	162.6	185.6	201.0	217.9	254.9	312.8
10	116.9	154.7	175.0	187.3	215.8	235.5	255.6	298.7	367.4
20	132.4	175.5	197.5	210.9	244.8	268.5	291.9	340.7	419.8
25	137.3	182.1	204.6	218.4	254.0	279.0	303.4	354.0	436.4
50	152.4	202.4	226.7	241.5	282.4	311.3	338.8	395.0	487.6
100	167.5	222.6	248.5	264.5	310.6	343.4	373.9	435.8	538.4

Station : 9136167 (SAMPLE SIZE : 27)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	72.6	90.4	101.5	111.0	120.0	127.6	135.1	164.8	191.7
10	86.2	108.0	119.4	131.4	141.3	149.9	158.7	196.1	229.2
20	99.2	124.8	136.5	151.0	161.7	171.3	181.3	226.1	265.1
25	103.3	130.2	142.0	157.2	168.2	178.0	188.5	235.6	276.5
50	116.1	146.6	158.8	176.4	188.1	198.9	210.5	265.0	311.7
100	128.7	163.0	175.4	195.4	207.9	219.7	232.5	294.1	346.6

PROBABLE RAINFALL DEPTH AT GAUGING STATION (12/17)

[Unit:mm]

Station : 9137002 (SAMPLE SIZE : 27)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	88.9	115.9	133.1	145.5	157.8	167.1	184.7	211.1	262.3
10	104.1	135.7	155.9	169.2	183.5	192.7	215.1	245.9	307.2
20	118.6	154.6	177.9	192.1	208.3	217.3	244.4	279.2	350.3
25	123.2	160.6	184.8	199.3	216.1	225.2	253.6	289.8	364.0
50	137.4	179.1	206.2	221.6	240.3	249.2	282.2	322.5	406.1
100	151.5	197.5	227.5	243.7	264.3	273.1	310.5	354.8	447.9

Station : 9137003 (SAMPLE SIZE : 29)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	71.3	90.1	107.4	122.3	135.3	151.7	167.3	189.4	225.9
10	83.8	105.3	126.4	145.1	159.7	180.8	201.0	226.2	271.8
20	95.8	119.9	144.7	167.0	183.2	208.6	233.4	261.5	315.8
25	99.6	124.6	150.5	174.0	190.6	217.4	243.6	272.7	329.7
50	111.3	138.8	168.3	195.4	213.5	244.7	275.3	307.2	372.7
100	123.0	152.9	186.0	216.6	236.2	271.7	306.6	341.4	415.4

Station : 9137006 (SAMPLE SIZE : 26)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	100.1	123.0	145.3	159.3	173.3	187.5	205.7	238.9	296.9
10	121.5	145.1	170.4	185.4	200.2	217.0	238.6	279.0	350.4
20	141.9	166.3	194.4	210.4	226.1	245.2	270.2	317.6	401.8
25	148.4	173.0	202.1	218.3	234.2	254.1	280.3	329.8	418.1
50	168.5	193.7	225.6	242.7	259.5	281.7	311.1	367.5	468.2
100	188.3	214.3	249.0	267.0	284.5	309.1	341.8	404.9	518.0

Station : 9137010 (SAMPLE SIZE : 30)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	136.6	162.2	178.8	195.3	209.4	222.8	240.8	278.2	334.7
10	177.1	202.6	220.6	237.1	250.9	265.3	288.6	329.6	395.3
20	216.0	241.4	260.7	277.2	290.6	306.1	334.4	378.9	453.5
25	228.3	253.7	273.4	289.9	303.2	319.0	349.0	394.5	472.0
50	266.3	291.6	312.5	329.1	342.1	358.9	393.7	442.7	528.9
100	304.0	329.2	351.4	368.0	380.6	398.5	438.2	490.5	585.4

Station : 9137012 (SAMPLE SIZE : 21)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	82.9	118.5	132.8	143.8	152.4	160.0	165.1	184.8	211.2
10	101.4	147.4	161.2	173.4	182.5	190.3	196.3	219.5	249.5
20	119.1	175.1	188.5	201.8	211.4	219.4	226.1	252.7	286.3
25	124.7	183.9	197.1	210.8	220.5	228.6	235.6	263.3	297.9
50	142.0	211.0	223.8	238.6	248.7	257.1	264.8	295.8	333.9
100	159.1	237.9	250.3	266.2	276.7	285.3	293.8	328.1	369.5

Station : 9137013 (SAMPLE SIZE : 28)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	84.6	120.1	141.2	160.6	174.0	191.3	210.2	239.7	278.4
10	99.9	142.9	167.6	190.7	207.6	229.6	254.7	286.3	329.2
20	114.6	164.8	192.9	219.5	239.8	266.3	297.4	331.1	377.9
25	119.3	171.8	200.9	228.7	250.0	277.9	310.9	345.3	393.3
50	133.6	193.1	225.7	256.9	281.5	313.8	352.6	389.0	440.9
100	147.9	214.4	250.2	284.8	312.8	349.4	394.0	432.4	488.2

Station : 9138005 (SAMPLE SIZE : 26)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	109.7	141.8	158.2	181.5	205.0	222.1	251.0	299.5	360.2
10	129.3	166.9	185.7	212.6	242.9	263.4	301.4	359.7	433.1
20	148.0	191.0	212.0	242.4	279.2	303.0	349.8	417.6	503.0
25	153.9	198.6	220.4	251.8	290.7	315.6	365.1	435.9	525.2
50	172.2	222.2	246.2	281.0	326.2	354.3	412.4	492.4	593.6
100	190.4	245.5	271.7	309.9	361.5	392.7	459.3	548.5	661.4

Station : 9138014 (SAMPLE SIZE : 24)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	130.9	145.3	173.8	198.3	228.0	250.7	269.8	332.2	395.5
10	153.8	161.7	195.1	223.1	259.0	287.0	309.6	386.1	459.3
20	175.8	177.5	215.6	246.9	288.7	321.9	347.9	437.8	520.5
25	182.8	182.5	222.0	254.4	298.2	332.9	360.0	454.1	539.9
50	204.3	197.9	242.0	277.6	327.2	367.0	397.4	504.6	599.8
100	225.6	213.1	261.8	300.7	356.0	400.8	434.4	554.8	659.1

Station : 9140005 (SAMPLE SIZE : 23)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	59.1	74.3	87.6	91.5	97.5	102.0	107.3	119.4	145.4
10	69.9	90.1	108.5	112.4	119.0	123.5	129.0	142.5	174.0
20	80.2	105.3	128.5	132.5	139.5	144.2	149.8	164.6	201.5
25	83.4	110.2	134.9	138.9	146.1	150.7	156.4	171.6	210.2
50	93.5	125.0	154.5	158.6	166.2	170.9	176.8	193.2	237.0
100	103.5	139.8	173.9	178.1	186.1	190.9	197.0	214.7	263.7

Station : 9237000 (SAMPLE SIZE : 62)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	87.0	106.1	123.2	138.4	151.5	162.2	174.6	199.1	238.4
10	103.7	125.8	145.1	163.1	178.8	191.5	206.1	236.1	285.3
20	119.7	144.6	166.1	186.8	205.0	219.6	236.3	271.6	330.4
25	124.7	150.6	172.7	194.3	213.3	228.5	245.9	282.9	344.7
50	140.4	169.0	193.3	217.5	238.9	256.0	275.4	317.6	388.7
100	155.9	187.2	213.6	240.5	264.2	283.3	304.7	352.1	432.4

PROBABLE RAINFALL DEPTH AT GAUGING STATION (13/17)

[Unit:mm]

Station : 9237002 (SAMPLE SIZE : 57)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	99.3	132.8	154.6	166.9	183.1	194.7	205.5	227.5	272.5
10	115.8	157.7	184.0	197.9	217.6	231.1	244.0	269.3	324.5
20	131.7	181.5	212.2	227.7	250.7	266.0	280.9	309.3	374.3
25	136.8	189.1	221.2	237.1	261.2	277.1	292.6	322.0	390.2
50	152.3	212.4	248.7	266.2	293.5	311.2	328.8	361.2	438.9
100	167.7	235.6	276.1	295.1	325.7	345.1	364.6	400.1	487.2

Station : 9237003 (SAMPLE SIZE : 53)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	91.5	111.4	135.6	154.2	166.2	177.9	189.8	219.3	256.3
10	105.9	127.8	157.3	180.5	195.9	210.0	224.8	260.7	306.1
20	119.7	143.4	178.2	205.7	224.4	240.8	258.4	300.5	353.9
25	124.1	148.4	184.8	213.7	233.4	250.5	269.0	313.1	369.1
50	137.5	163.7	205.2	238.4	261.2	280.6	301.8	352.0	415.8
100	150.9	178.9	225.4	262.9	288.8	310.5	334.4	390.6	462.2

Station : 9238009 (SAMPLE SIZE : 28)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	117.3	147.1	165.9	182.1	199.5	218.3	230.5	264.1	312.4
10	138.9	174.2	196.0	215.4	237.1	259.9	274.1	316.5	377.1
20	159.5	200.2	224.9	247.4	273.1	299.7	315.8	366.8	439.1
25	166.1	208.5	234.0	257.6	284.6	312.4	329.1	382.7	458.8
50	186.3	233.9	262.3	288.9	319.8	351.3	369.9	431.9	519.4
100	206.4	259.1	290.2	319.9	354.8	389.9	410.4	480.6	579.5

Station : 9239000 (SAMPLE SIZE : 22)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	113.6	131.7	141.0	147.5	161.0	171.2	176.6	200.3	232.9
10	140.8	157.9	166.8	172.4	187.6	199.9	204.9	233.8	273.6
20	166.9	183.1	191.5	196.3	213.2	227.4	231.9	266.0	312.5
25	175.2	191.0	199.3	203.8	221.3	236.2	240.5	276.2	324.9
50	200.7	215.6	223.5	227.1	246.2	263.1	267.0	307.7	363.0
100	226.0	240.0	247.5	250.3	271.0	289.8	293.2	338.9	400.8

Station : 9240001 (SAMPLE SIZE : 52)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	151.1	204.8	233.8	265.8	282.9	302.3	321.3	371.3	448.8
10	181.7	245.7	281.3	320.8	341.0	364.5	389.1	450.0	547.2
20	211.1	284.8	327.0	373.7	396.7	424.1	454.0	525.5	641.6
25	220.4	297.3	341.4	390.4	414.4	443.0	474.6	549.4	671.5
50	249.2	335.5	386.0	442.1	468.8	501.2	538.1	623.1	763.7
100	277.7	373.5	430.3	493.3	522.9	559.1	601.1	696.3	855.2

Station : 9240003 (SAMPLE SIZE : 52)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	122.5	182.3	213.4	232.8	248.2	262.3	278.8	319.3	373.9
10	145.6	219.1	256.4	279.3	296.0	311.0	331.2	378.3	442.2
20	167.7	254.5	297.7	323.9	341.8	357.8	381.4	434.9	507.6
25	174.7	265.7	310.8	338.0	356.4	372.6	397.4	452.8	528.4
50	196.4	300.2	351.1	381.6	401.1	418.3	446.4	508.1	592.4
100	217.8	334.4	391.1	424.9	445.6	463.7	495.2	563.0	655.9

Station : 9240005 (SAMPLE SIZE : 27)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	130.3	189.5	212.6	232.8	245.1	256.8	280.4	314.7	389.7
10	156.8	228.6	253.8	276.6	290.5	302.9	332.5	370.8	465.7
20	182.1	266.1	293.3	318.6	334.0	347.1	382.5	424.5	538.7
25	190.2	278.0	305.8	331.9	347.8	361.1	398.3	441.6	561.8
50	215.0	314.6	344.4	373.0	390.3	404.3	447.2	494.1	633.1
100	239.6	350.9	382.7	413.7	432.5	447.2	495.6	546.2	703.8

Station : 9240012 (SAMPLE SIZE : 22)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	103.8	134.3	144.0	155.4	185.1	199.6	210.8	240.9	278.1
10	125.9	162.5	174.0	187.6	226.5	244.9	258.6	292.2	336.2
20	147.2	189.7	202.7	218.6	266.3	288.3	304.4	341.3	391.9
25	153.9	198.3	211.8	228.4	278.9	302.0	318.9	356.9	409.5
50	174.7	224.8	239.9	258.6	317.8	344.4	363.6	404.9	464.0
100	195.3	251.1	267.8	288.6	356.4	386.5	408.0	452.6	518.0

Station : 9241000 (SAMPLE SIZE : 54)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	151.8	194.7	217.2	233.3	249.9	268.4	283.8	320.8	381.5
10	186.6	238.5	263.8	281.8	300.7	323.4	342.9	388.6	460.6
20	219.9	280.5	308.5	328.3	349.4	376.1	399.5	453.6	536.4
25	230.5	293.8	322.6	343.0	364.8	392.8	417.5	474.2	560.5
50	263.1	334.9	366.3	388.5	412.4	444.4	472.8	537.7	634.6
100	295.4	375.6	409.6	433.6	459.7	495.5	527.7	600.7	708.2

Station : 9337110 (SAMPLE SIZE : 21)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	93.8	122.2	136.6	147.4	154.5	172.7	176.8	194.6	236.5
10	111.0	144.5	160.5	174.5	182.3	205.3	208.7	229.3	282.0
20	127.5	165.9	183.5	200.6	208.9	236.7	239.2	262.6	325.7
25	132.8	172.6	190.8	208.9	217.4	246.6	248.9	273.2	339.5
50	148.9	193.5	213.3	234.4	243.4	277.2	278.8	305.8	382.2
100	165.0	214.2	235.6	259.7	269.2	307.6	308.4	338.1	424.6

PROBABLE RAINFALL DEPTH AT GAUGING STATION (14/17)

[Unit:mm]

Station : 9338001 (SAMPLE SIZE : 60)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	105.2	121.0	132.5	140.5	146.7	160.3	176.6	198.4	227.0
10	130.7	147.5	160.9	169.6	176.0	193.0	215.8	241.3	277.3
20	155.0	173.0	188.1	197.5	204.1	224.3	253.5	282.5	325.6
25	162.8	181.1	196.8	206.4	213.0	234.3	265.4	295.5	341.0
50	186.6	206.0	223.4	233.6	240.5	264.9	302.1	335.8	388.2
100	210.3	230.7	249.8	260.7	267.8	295.3	338.6	375.7	435.0

Station : 9338007 (SAMPLE SIZE : 29)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	84.1	101.2	115.4	128.6	137.6	149.4	155.2	177.8	200.4
10	104.9	125.4	143.4	160.4	170.7	185.9	193.3	221.7	249.7
20	124.8	148.5	170.2	190.9	202.5	220.9	229.9	263.8	297.0
25	131.1	155.9	178.7	200.5	212.5	232.0	241.5	277.2	312.0
50	150.5	178.5	204.9	230.4	243.5	266.2	277.2	318.4	358.3
100	169.8	200.9	230.9	259.9	274.3	300.2	312.7	359.3	404.2

Station : 9338018 (SAMPLE SIZE : 29)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	92.9	107.0	119.4	141.4	152.2	159.9	168.6	194.6	219.8
10	109.8	124.1	139.7	168.7	181.0	190.0	201.8	233.2	261.0
20	126.0	140.5	159.2	194.8	208.6	218.8	233.7	270.2	300.4
25	131.1	145.7	165.4	203.1	217.4	228.0	243.8	282.0	313.0
50	146.9	161.8	184.4	228.7	244.4	256.2	274.9	318.1	351.5
100	162.6	177.7	203.3	254.0	271.1	284.2	305.8	354.0	389.8

Station : 9338022 (SAMPLE SIZE : 22)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	70.1	90.3	96.1	100.3	105.5	112.1	119.5	132.3	155.0
10	81.5	107.5	114.3	118.2	124.5	132.9	143.4	158.4	182.1
20	92.5	124.0	131.7	135.4	142.7	152.9	166.2	183.5	208.0
25	96.0	129.2	137.2	140.8	148.5	159.2	173.5	191.5	216.2
50	106.7	145.4	154.3	157.6	166.3	178.7	195.8	216.0	241.6
100	117.4	161.4	171.2	174.2	183.9	198.1	218.0	240.3	266.7

Station : 9339002 (SAMPLE SIZE : 44)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	95.7	120.2	128.7	139.5	147.1	154.5	162.3	181.2	211.0
10	118.3	148.6	157.7	170.0	178.5	188.0	197.9	220.5	257.6
20	139.9	175.8	185.5	199.2	208.7	220.0	232.1	258.1	302.2
25	146.7	184.4	194.4	208.5	218.3	230.2	243.0	270.1	316.4
50	167.8	211.0	221.6	237.1	247.8	261.5	276.4	306.9	360.0
100	188.8	237.4	248.5	265.5	277.1	292.6	309.6	343.5	403.4

Station : 9339004 (SAMPLE SIZE : 59)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	134.5	165.7	182.3	194.3	208.1	228.6	244.5	283.5	342.8
10	163.7	200.6	217.5	230.1	246.8	272.7	292.2	341.1	413.8
20	191.8	234.1	251.4	264.5	284.0	315.1	338.0	396.3	481.9
25	200.7	244.8	262.1	275.4	295.8	328.5	352.6	413.9	503.5
50	228.2	277.5	295.2	309.0	332.0	369.9	397.3	467.9	570.0
100	255.4	310.0	328.0	342.3	368.1	410.9	441.8	521.5	636.1

Station : 9339006 (SAMPLE SIZE : 26)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	91.5	110.6	121.8	131.8	137.6	143.8	151.8	169.6	188.9
10	110.2	133.6	146.5	158.6	163.6	171.0	179.3	200.6	224.1
20	128.2	155.8	170.2	184.4	188.6	197.2	205.6	230.2	257.8
25	133.9	162.8	177.7	192.6	196.6	205.4	214.0	239.7	268.5
50	151.5	184.4	200.9	217.8	221.0	231.0	239.7	268.7	301.4
100	169.0	205.9	223.9	242.7	245.2	256.3	265.2	297.5	334.1

Station : 9339008 (SAMPLE SIZE : 27)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	139.1	157.9	165.7	171.7	177.7	186.6	191.3	237.7	274.0
10	177.4	198.2	203.8	208.8	214.1	223.3	228.3	288.3	330.0
20	214.1	237.0	240.4	244.4	248.9	258.5	263.7	336.8	383.6
25	225.7	249.3	252.0	255.7	260.0	269.6	275.0	352.2	400.6
50	261.6	287.1	287.7	290.5	294.1	304.0	309.6	399.6	453.0
100	297.2	324.7	323.2	325.0	327.9	338.1	344.0	446.6	505.1

Station : 9339009 (SAMPLE SIZE : 28)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	127.4	162.4	188.2	204.1	216.5	233.9	246.5	274.8	323.4
10	153.9	195.5	222.2	240.0	255.5	277.7	294.1	325.7	382.0
20	179.5	227.2	254.9	274.5	293.0	319.7	339.8	374.5	438.3
25	187.6	237.3	265.3	285.5	304.9	333.0	354.3	389.9	456.1
50	212.5	268.4	297.3	319.2	341.5	374.1	398.9	437.6	511.1
100	237.2	299.2	329.0	352.6	377.8	414.9	443.2	485.0	565.7

Station : 9339013 (SAMPLE SIZE : 25)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	118.2	144.3	166.3	187.0	200.2	220.4	232.6	273.0	333.6
10	144.0	172.6	197.9	222.0	235.7	262.3	275.4	323.9	396.3
20	168.9	199.9	228.2	255.6	269.9	302.5	316.5	372.7	456.4
25	176.7	208.5	237.8	266.2	280.7	315.3	329.5	388.2	475.5
50	201.0	235.1	267.4	299.0	314.0	354.6	369.7	435.9	534.2
100	225.1	261.5	296.8	331.6	347.1	393.7	409.5	483.2	592.5

PROBABLE RAINFALL DEPTH AT GAUGING STATION (15/17)

[Unit:mm]

Station : 9339030 (SAMPLE SIZE : 23)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	102.0	151.9	181.4	212.5	230.3	247.7	261.9	327.4	392.6
10	116.5	177.2	213.8	251.5	272.7	293.8	311.9	394.1	473.7
20	130.5	201.6	245.0	288.8	313.3	338.1	359.8	458.1	551.5
25	134.9	209.3	254.8	300.7	326.2	352.1	375.0	478.4	576.2
50	148.6	233.0	285.2	337.2	365.9	395.4	421.8	540.9	652.3
100	162.1	256.6	315.4	373.4	405.3	438.3	468.3	602.9	727.7

Station : 9339041 (SAMPLE SIZE : 23)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	87.5	111.8	138.4	152.7	174.3	187.1	197.5	232.3	281.1
10	104.3	132.8	166.3	183.2	211.4	226.2	239.2	282.3	341.1
20	120.4	152.9	193.2	212.4	246.9	263.7	279.2	330.2	398.7
25	125.5	159.2	201.7	221.6	258.2	275.6	291.8	345.4	416.9
50	141.3	178.9	228.0	250.2	293.0	312.3	330.9	392.3	473.2
100	156.9	198.4	254.0	278.5	327.5	348.7	369.7	438.8	529.0

Station : 9339045 (SAMPLE SIZE : 22)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	94.7	127.9	144.0	150.4	154.9	174.5	180.3	208.0	263.9
10	109.9	151.7	169.0	174.6	178.6	202.3	208.2	241.2	310.7
20	124.5	174.5	193.1	197.8	201.4	229.0	235.0	273.1	355.7
25	129.1	181.8	200.7	205.1	208.6	237.5	243.5	283.2	369.9
50	143.4	204.1	224.2	227.7	230.9	263.6	269.7	314.4	413.9
100	157.5	226.2	247.5	250.2	253.0	289.5	295.7	345.3	457.5

Station : 9340001 (SAMPLE SIZE : 26)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	139.3	195.0	220.5	231.5	250.4	264.8	270.4	326.8	386.8
10	170.3	242.3	270.4	282.9	304.8	319.3	324.3	394.3	466.0
20	200.1	287.7	318.2	332.1	356.9	371.5	376.0	459.0	542.0
25	209.5	302.1	333.4	347.8	373.4	388.1	392.4	479.5	566.1
50	238.6	346.5	380.2	395.9	424.4	439.1	442.9	542.8	640.3
100	267.4	390.6	426.6	443.7	475.0	489.8	493.1	605.6	714.0

Station : 9340002 (SAMPLE SIZE : 27)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	136.3	198.0	214.5	225.2	247.4	254.5	265.1	334.4	388.8
10	163.4	239.2	255.8	266.5	292.2	298.5	309.7	400.7	466.2
20	189.4	278.7	295.3	306.1	335.2	340.8	352.4	464.2	540.3
25	197.6	291.2	307.9	318.7	348.9	354.2	366.0	484.4	563.8
50	223.0	329.8	346.5	357.4	390.8	395.4	407.8	546.5	636.3
100	248.2	368.1	384.9	395.8	432.5	436.4	449.3	608.1	708.2

Station : 9340005 (SAMPLE SIZE : 26)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	125.8	177.0	195.6	209.3	223.6	238.6	249.7	290.7	356.5
10	154.0	220.1	239.8	254.5	269.8	285.5	297.7	345.6	426.9
20	181.1	261.4	282.3	297.7	314.1	330.5	343.6	398.2	494.4
25	189.7	274.5	295.7	311.5	328.1	344.7	358.2	414.9	515.8
50	216.1	314.9	337.2	353.8	371.4	388.7	403.2	466.3	581.8
100	242.3	355.0	378.3	395.8	414.4	432.4	447.8	517.4	647.3

Station : 9340007 (SAMPLE SIZE : 29)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	123.3	157.6	181.2	206.0	221.7	239.4	249.8	301.1	362.7
10	144.2	181.4	206.9	236.8	255.0	275.4	287.1	349.3	422.3
20	164.2	204.1	231.5	266.2	286.9	309.9	322.8	395.5	479.5
25	170.6	211.4	239.3	275.6	297.0	320.8	334.2	410.2	497.7
50	190.2	233.6	263.3	304.4	328.2	354.6	369.1	455.4	553.6
100	209.6	255.7	287.2	333.0	359.1	388.1	403.8	500.2	609.1

Station : 9340009 (SAMPLE SIZE : 25)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	119.3	159.3	185.5	202.9	224.9	247.4	262.7	306.9	370.7
10	138.9	184.0	214.3	232.4	259.0	286.7	305.1	356.8	432.8
20	157.8	207.7	242.0	260.7	291.6	324.4	345.8	404.7	492.5
25	163.7	215.2	250.8	269.7	302.2	336.4	358.7	419.9	511.4
50	182.2	238.4	277.9	297.4	334.3	373.2	398.4	466.7	569.7
100	200.4	261.4	304.8	324.8	366.1	409.8	437.9	513.2	627.6

Station : 9439000 (SAMPLE SIZE : 45)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	126.8	168.7	197.9	219.6	244.0	267.2	283.6	322.6	382.4
10	151.0	200.0	232.1	258.7	288.7	318.6	339.5	386.8	458.5
20	174.1	230.1	264.8	296.2	331.7	367.8	393.1	448.5	531.6
25	181.5	239.6	275.2	308.1	345.3	383.4	410.1	468.0	554.7
50	204.1	269.0	307.3	344.8	387.2	431.5	462.4	528.3	626.1
100	226.6	298.1	339.1	381.2	428.8	479.3	514.4	588.0	696.9

Station : 9439001 (SAMPLE SIZE : 28)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	147.9	172.1	187.5	197.7	215.5	225.4	233.6	266.0	318.5
10	184.9	210.9	225.4	235.9	256.5	266.7	275.7	312.7	377.0
20	220.4	248.2	261.7	272.5	295.9	306.3	316.2	357.6	433.1
25	231.6	260.0	273.2	284.1	308.4	318.9	329.0	371.8	450.8
50	266.3	296.4	308.7	319.9	346.9	357.6	368.5	415.7	505.7
100	300.7	332.5	344.0	355.4	385.1	396.0	407.7	459.2	560.1

PROBABLE RAINFALL DEPTH AT GAUGING STATION (16/17)

[Unit:mm]

Station : 9439002 (SAMPLE SIZE : 28)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	139.5	180.3	215.8	237.0	262.6	292.5	308.9	344.3	418.8
10	167.1	214.9	257.2	282.3	313.5	351.7	372.9	414.5	504.3
20	193.7	248.2	296.8	325.8	362.3	408.5	434.3	481.8	586.3
25	202.1	258.7	309.4	339.5	377.8	426.5	453.8	503.2	612.3
50	228.1	291.2	348.2	382.0	425.5	482.1	513.8	569.0	692.4
100	253.8	323.4	386.6	424.1	472.8	537.2	573.3	634.3	771.9

Station : 9439003 (SAMPLE SIZE : 21)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	141.5	184.6	210.5	232.3	245.7	265.9	285.7	327.1	415.2
10	170.2	220.3	249.9	272.6	286.1	309.2	333.2	381.3	485.2
20	197.8	254.6	287.7	311.1	324.9	350.7	378.8	433.3	552.4
25	206.5	265.5	299.7	323.4	337.1	363.8	393.3	449.7	573.7
50	233.5	298.9	336.6	361.1	375.0	404.4	437.9	500.5	639.3
100	260.2	332.2	373.3	398.5	412.6	444.6	482.1	550.9	704.5

Station : 9439004 (SAMPLE SIZE : 22)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	130.2	173.2	210.4	230.5	247.5	281.1	297.8	331.9	429.7
10	156.0	202.0	248.5	271.5	290.2	336.5	357.1	396.6	519.3
20	180.8	229.5	285.1	310.8	331.1	389.6	414.0	458.6	605.3
25	188.7	238.3	296.7	323.2	344.1	406.4	432.0	478.3	632.5
50	212.9	265.2	332.5	361.6	384.0	458.3	487.6	539.0	716.5
100	237.0	291.9	368.0	399.7	423.7	509.8	542.7	599.2	799.9

Station : 9439014 (SAMPLE SIZE : 27)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	161.0	195.1	227.5	250.6	269.3	288.5	311.7	344.7	412.6
10	198.9	232.6	271.9	298.6	318.1	341.5	368.6	402.7	482.8
20	235.2	268.6	314.5	344.5	365.0	392.4	423.2	458.2	550.3
25	246.8	280.0	328.0	359.1	379.9	408.5	440.5	475.8	571.7
50	282.3	315.2	369.7	404.0	425.7	458.2	493.8	530.1	637.5
100	317.5	350.0	411.0	448.6	471.1	507.5	546.7	584.0	702.9

Station : 9439015 (SAMPLE SIZE : 29)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	96.1	116.3	130.5	141.1	149.4	163.0	173.2	197.7	243.3
10	115.9	139.0	153.9	166.5	177.4	195.3	207.3	235.8	291.6
20	135.0	160.8	176.4	190.9	204.2	226.2	240.1	272.3	338.0
25	141.0	167.7	183.6	198.7	212.7	236.0	250.5	283.9	352.7
50	159.6	189.0	205.6	222.5	238.9	266.2	282.5	319.6	398.0
100	178.1	210.1	227.4	246.1	265.0	296.2	314.3	355.1	443.0

Station : 9439021 (SAMPLE SIZE : 29)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	106.7	143.2	170.6	192.2	213.4	241.1	255.5	290.4	350.2
10	123.6	168.4	200.5	226.5	252.9	290.3	309.3	353.1	424.9
20	139.8	192.5	229.1	259.3	290.8	337.6	361.0	413.2	496.5
25	144.9	200.1	238.2	269.8	302.8	352.5	377.4	432.3	519.2
50	160.7	223.7	266.1	301.9	339.8	398.7	427.9	491.0	589.3
100	176.4	247.1	293.9	333.8	376.6	444.5	478.0	549.3	658.8

Station : 9439028 (SAMPLE SIZE : 26)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	94.6	122.9	136.4	148.2	159.9	172.7	179.0	200.8	253.9
10	111.0	145.8	159.8	172.6	186.1	201.1	207.7	232.1	297.4
20	126.7	167.8	182.3	196.0	211.3	228.3	235.2	262.2	339.2
25	131.7	174.7	189.4	203.4	219.3	236.9	243.9	271.7	352.4
50	147.1	196.2	211.4	226.3	243.8	263.5	270.7	301.1	393.2
100	162.3	217.5	233.2	249.0	268.2	289.9	297.4	330.3	433.7

Station : 9439031 (SAMPLE SIZE : 20)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	103.5	143.3	167.6	184.7	198.6	215.9	226.8	248.8	302.4
10	122.5	176.0	207.4	228.4	244.2	267.6	280.8	307.3	371.8
20	140.8	207.4	245.7	270.4	288.0	317.1	332.7	363.4	438.3
25	146.6	217.3	257.9	283.7	301.8	332.9	349.1	381.2	459.4
50	164.5	248.0	295.3	324.7	344.6	381.3	399.8	436.1	524.4
100	182.3	278.4	332.4	365.5	387.0	429.4	450.1	490.6	588.9

Station : 9439038 (SAMPLE SIZE : 27)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	135.4	157.3	182.1	210.2	225.1	240.2	251.0	291.9	357.6
10	160.4	185.1	210.5	247.2	265.8	286.0	299.2	349.3	427.3
20	184.3	211.7	237.7	282.7	304.9	329.9	345.4	404.3	494.1
25	191.9	220.2	246.3	294.0	317.2	343.8	360.1	421.8	515.3
50	215.3	246.2	272.9	328.7	355.4	386.7	405.3	475.5	580.6
100	238.5	272.0	299.3	363.2	393.3	429.3	450.1	528.9	645.4

Station : 9439043 (SAMPLE SIZE : 24)

R.P	1 1-DAY	2 2-DAY	3 3-DAY	4 4-DAY	5 5-DAY	6 6-DAY	7 7-DAY	8 10-DAY	9 15-DAY
5	138.0	178.6	202.5	230.4	244.1	261.5	276.1	293.3	360.9
10	168.9	215.3	242.2	274.4	288.4	308.1	324.5	336.5	420.8
20	198.6	250.4	280.2	316.5	330.9	352.8	371.0	377.8	478.2
25	208.1	261.6	292.2	329.9	344.4	367.0	385.7	390.9	496.4
50	237.1	295.9	329.4	371.1	386.0	410.6	431.1	431.3	552.5
100	265.9	330.0	366.2	412.0	427.2	454.0	476.1	471.5	608.2

PROBABLE RAINFALL DEPTH AT GAUGING STATION (17/17)

[Unit:mm]

Station : 9439046 (SAMPLE SIZE : 24)

	1	2	3	4	5	6	7	8	9
R.P	1-DAY	2-DAY	3-DAY	4-DAY	5-DAY	6-DAY	7-DAY	10-DAY	15-DAY
5	98.1	134.5	150.4	166.5	179.6	187.1	206.5	240.8	276.1
10	117.6	163.9	182.9	201.1	216.8	224.2	250.7	293.7	335.6
20	136.2	192.1	214.1	234.4	252.6	259.8	293.1	344.6	392.8
25	142.1	201.0	224.0	244.9	263.9	271.1	306.5	360.7	410.9
50	160.4	228.6	254.4	277.4	298.8	306.0	347.9	410.4	466.7
100	178.5	255.9	284.7	309.7	333.5	340.5	389.0	459.7	522.1

APPENDIX B.17

Isohyetal Map of Probable Rainfall Depth

Fig.

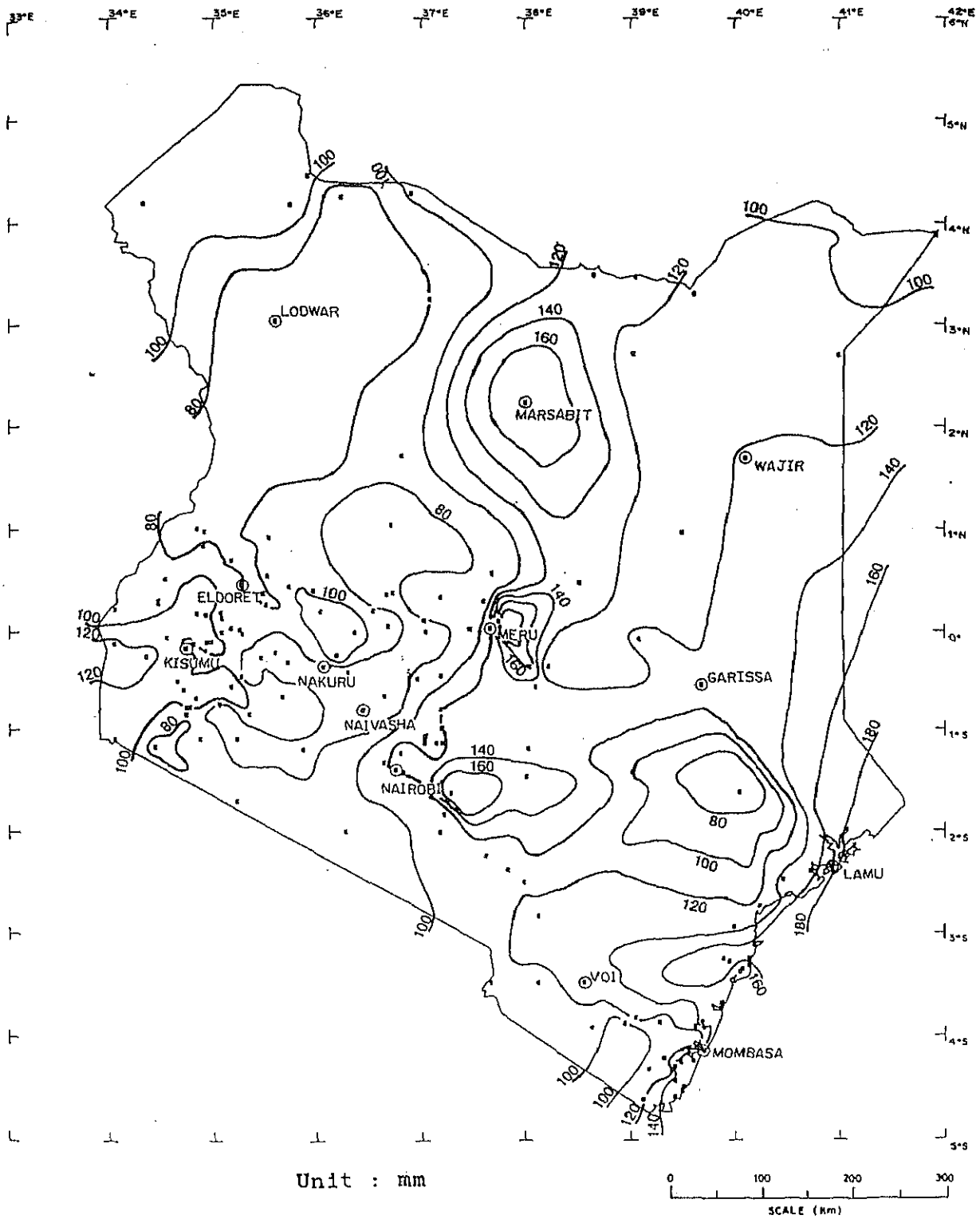


Fig.1.A.1 Isohyetal Map of Probable Rainfall (1/9)
Duration : 1-day
Return Period : 10-year

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

Fig.

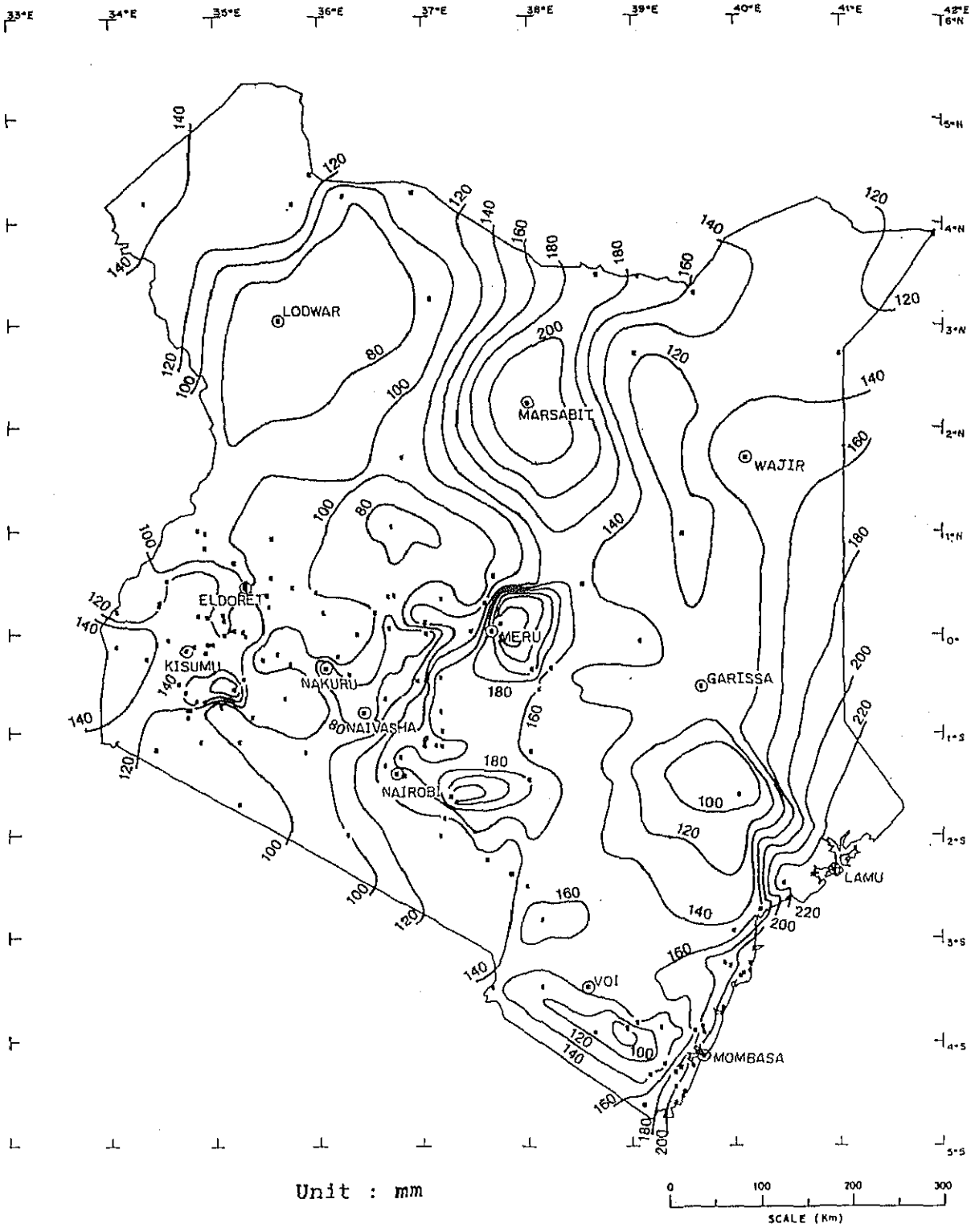


Fig.1.A.2 Isohyetal Map of Probable Rainfall (2/9)
Duration : 1-day
Return Period : 25-year

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Fig.

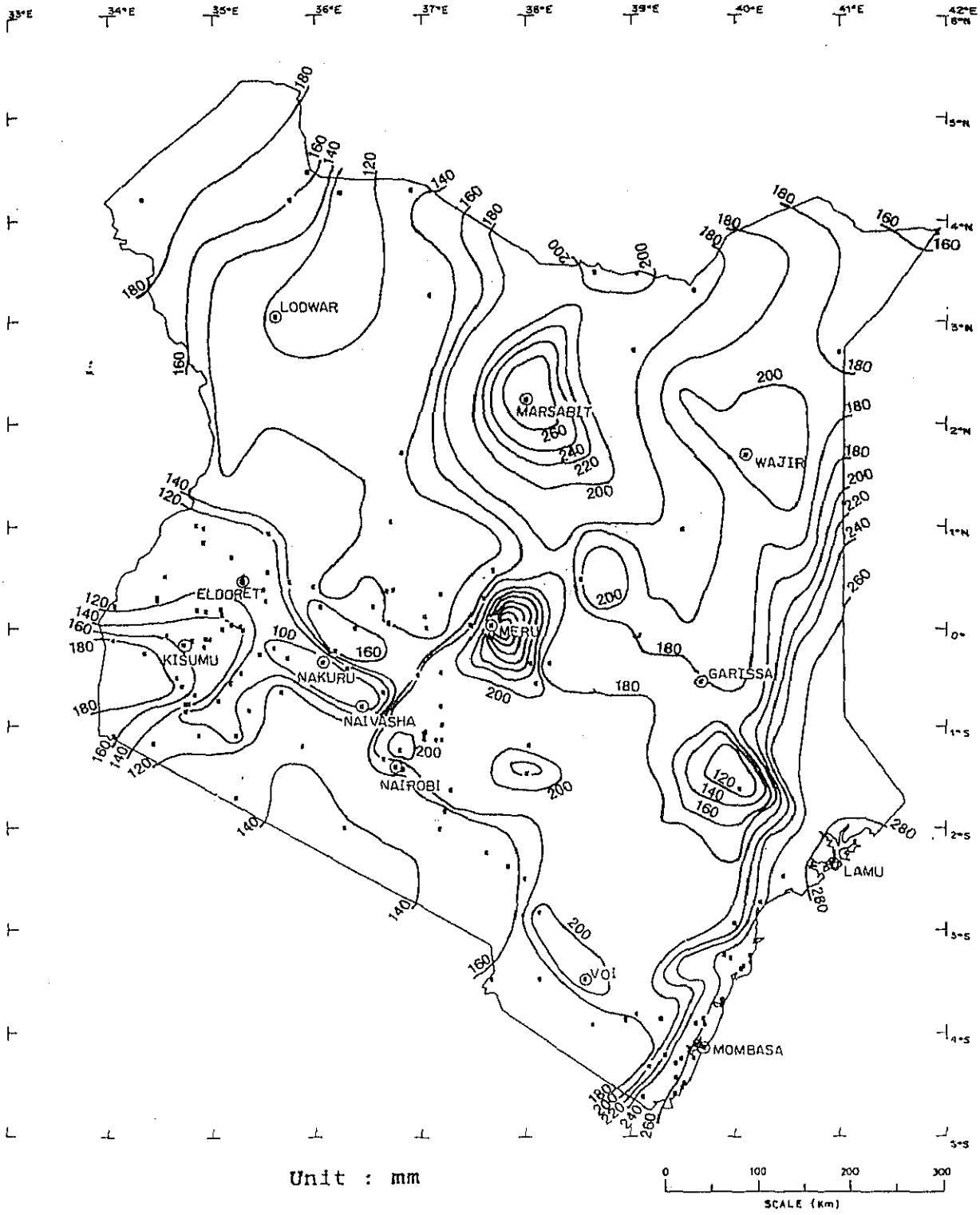

Fig.1.A.3 Isohyetal Map of Probable Rainfall (3/9)
Duration : 1-day
Return Period : 100-year

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Fig.

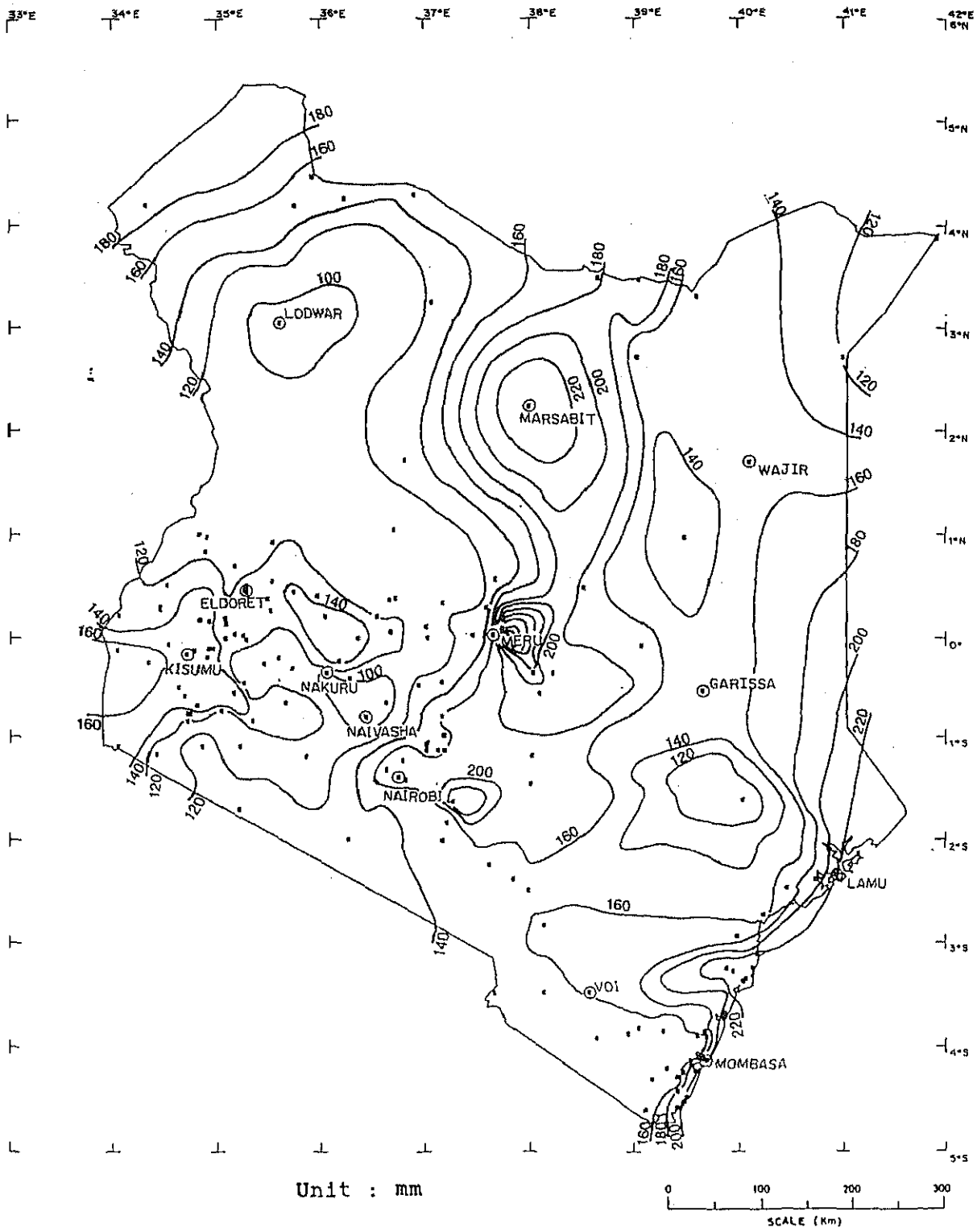

Fig.1.A.4 Isohyetal Map of Probable Rainfall (4/9)
Duration : 3-day
Return Period : 10-year

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Fig.

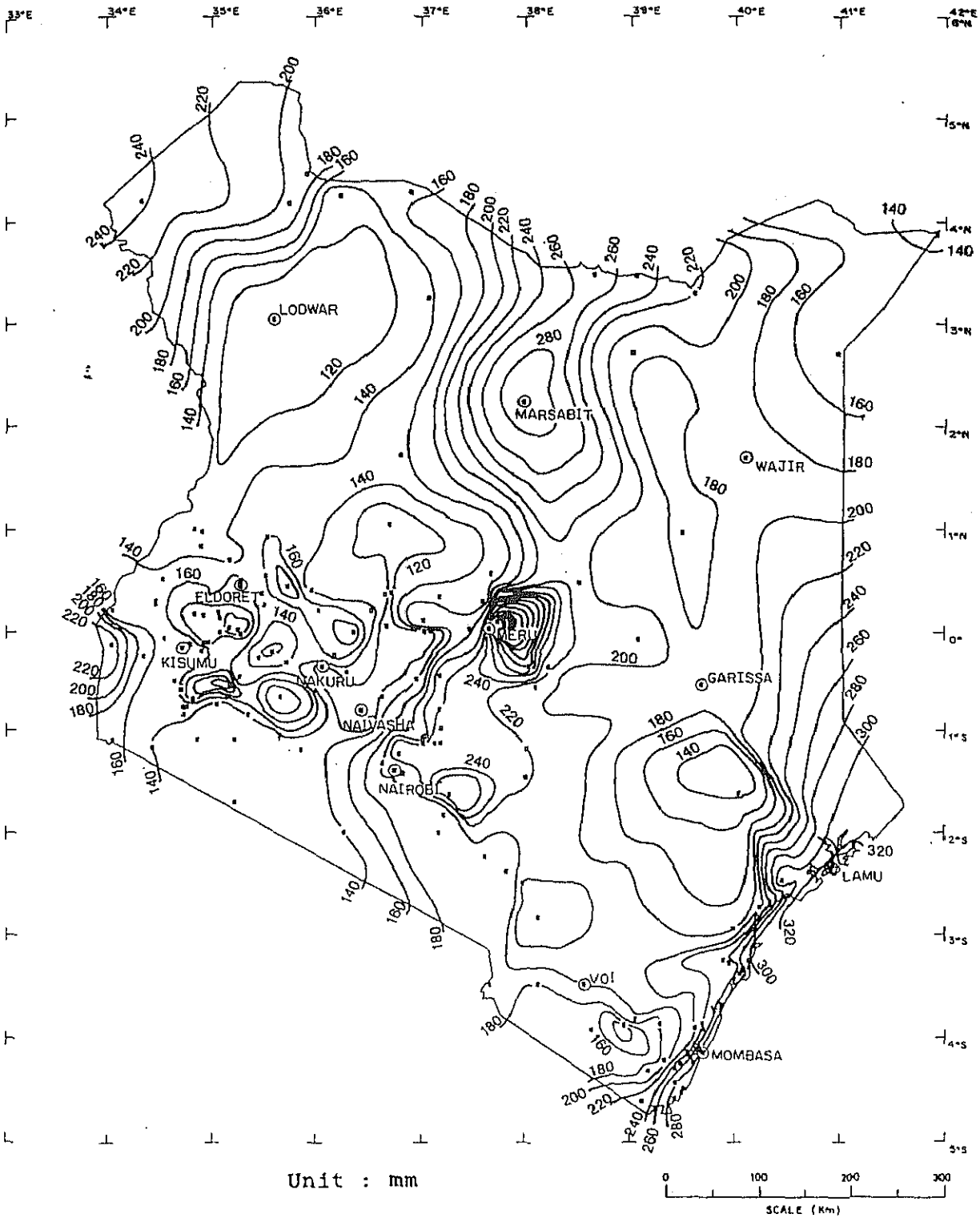

Fig.1.A.5 Isohyetal Map of Probable Rainfall (5/9)
Duration : 3-day
Return Period : 25-year

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Fig.

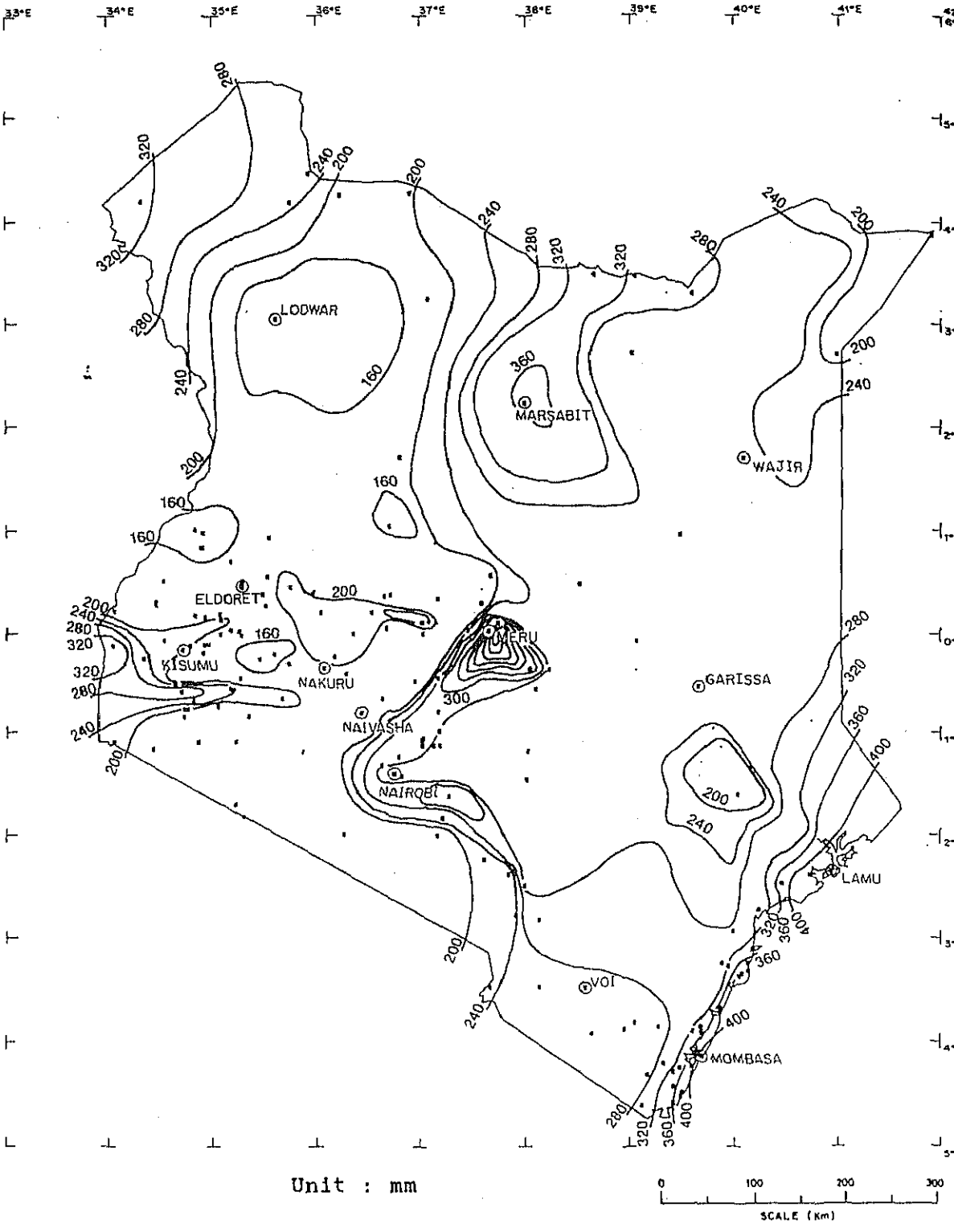

Fig.1.A.6 Isohyetal Map of Probable Rainfall (6/9)
Duration : 3-day
Return Period : 100-year

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JAPAN INTERNATIONAL COOPERATION AGENCY

Fig.

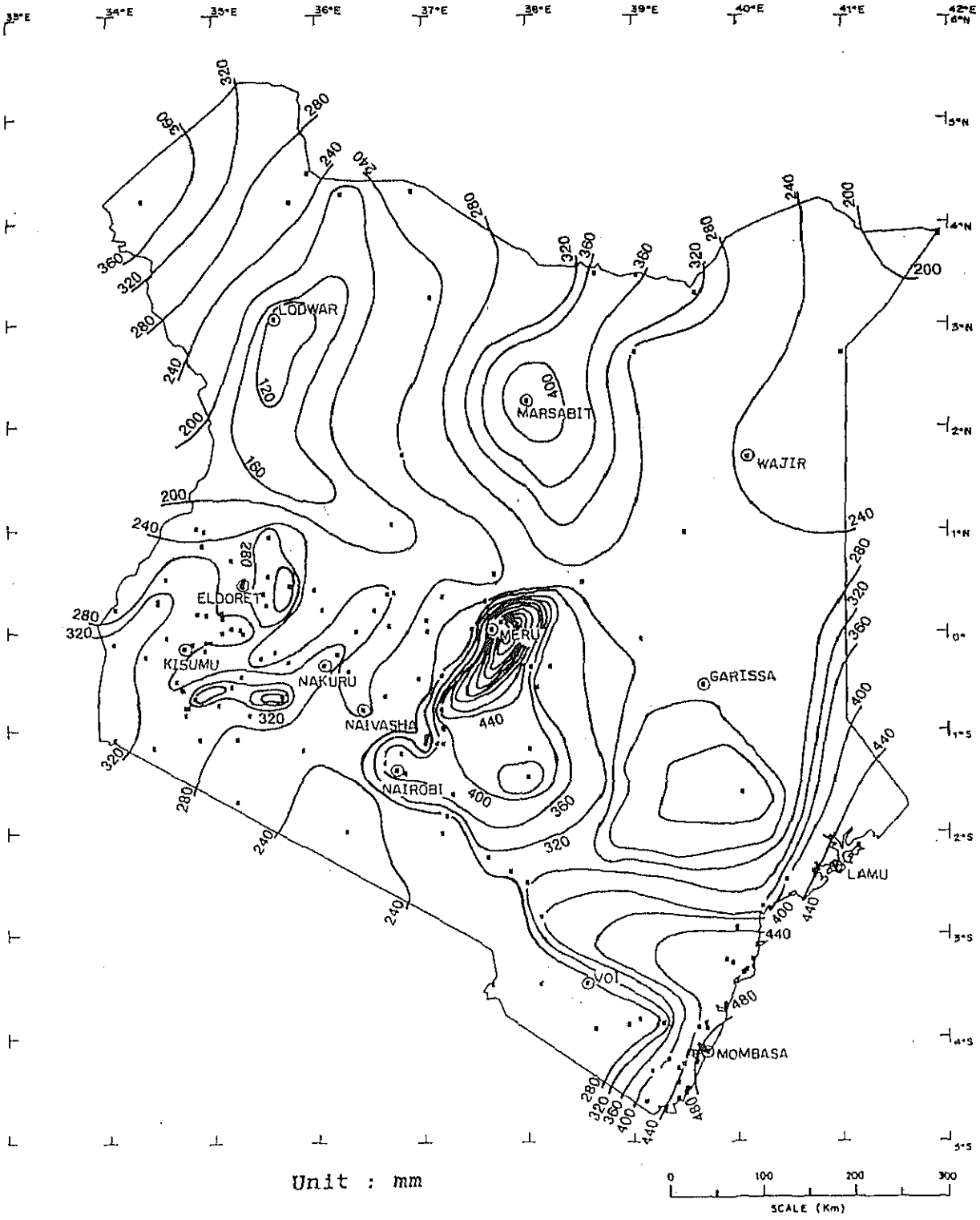

Fig.1.A.7 Isohyetal Map of Probable Rainfall (7/9)
Duration : 15-day
Return Period : 10-year

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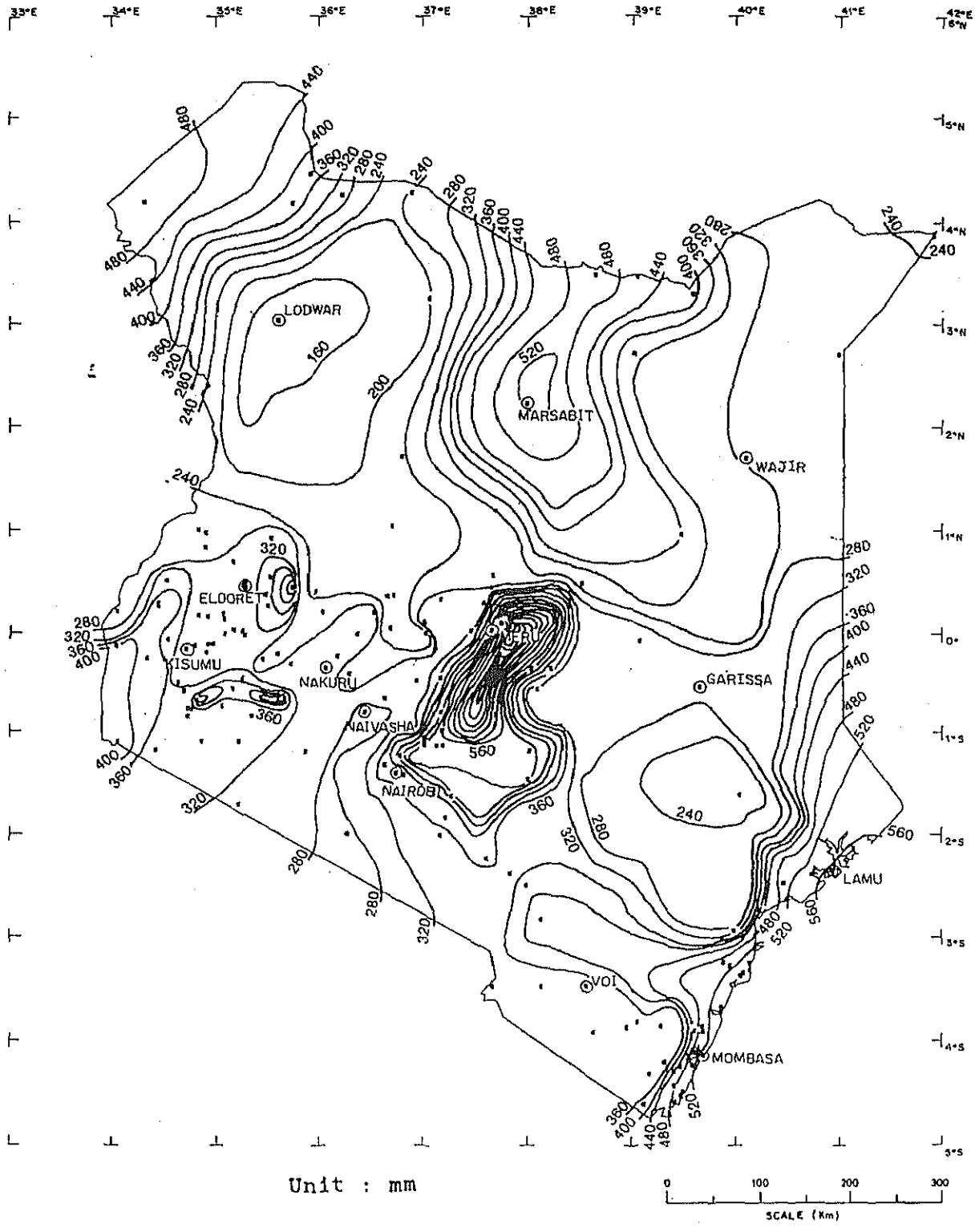

Fig.1.A.8 Isohyetal Map of Probable Rainfall (8/9)
Duration : 15-day
Return Period : 25-year

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Fig.

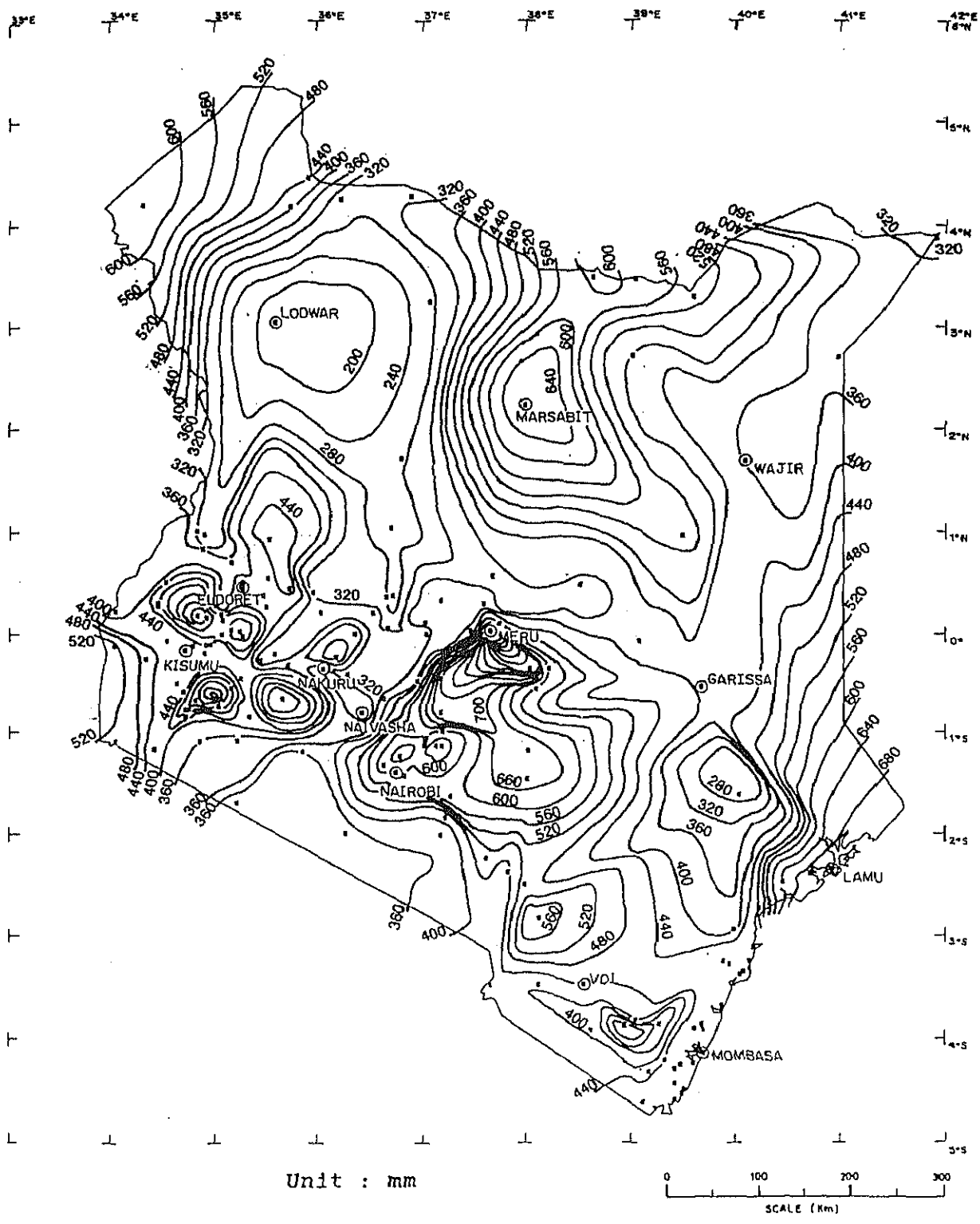

Fig.1.A.9 Isohyetal Map of Probable Rainfall (9/9)
Duration : 15-day
Return Period : 100-year

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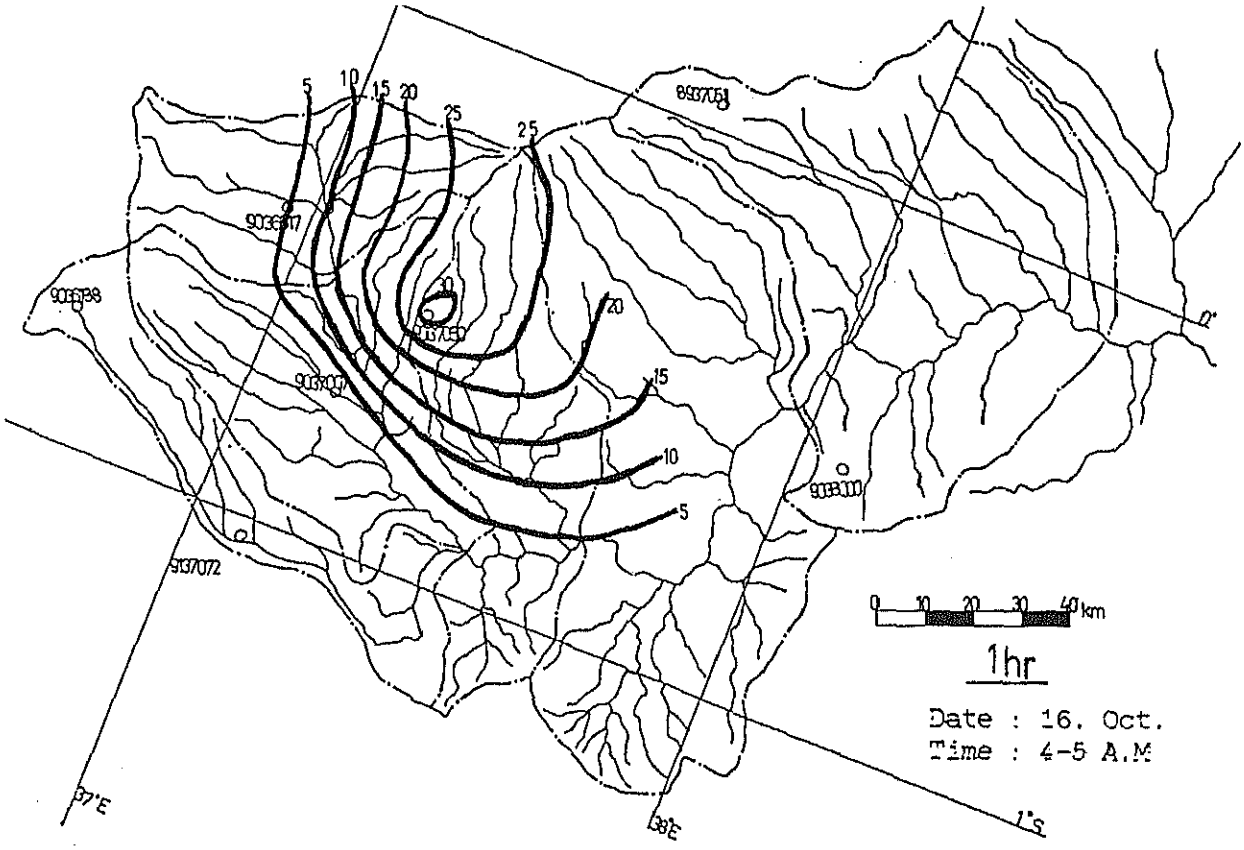
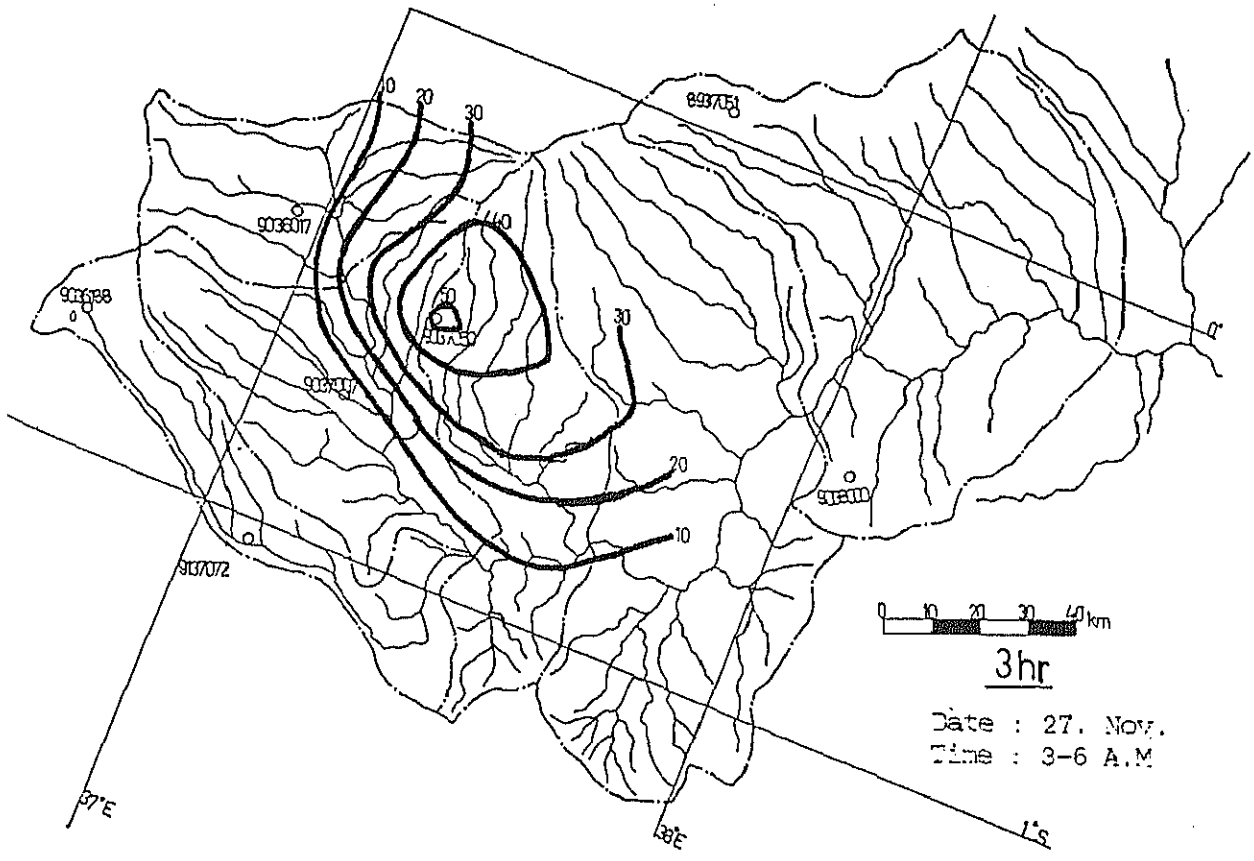
THE NATIONAL WATER MASTER PLAN
JAPAN INTERNATIONAL COOPERATION AGENCY

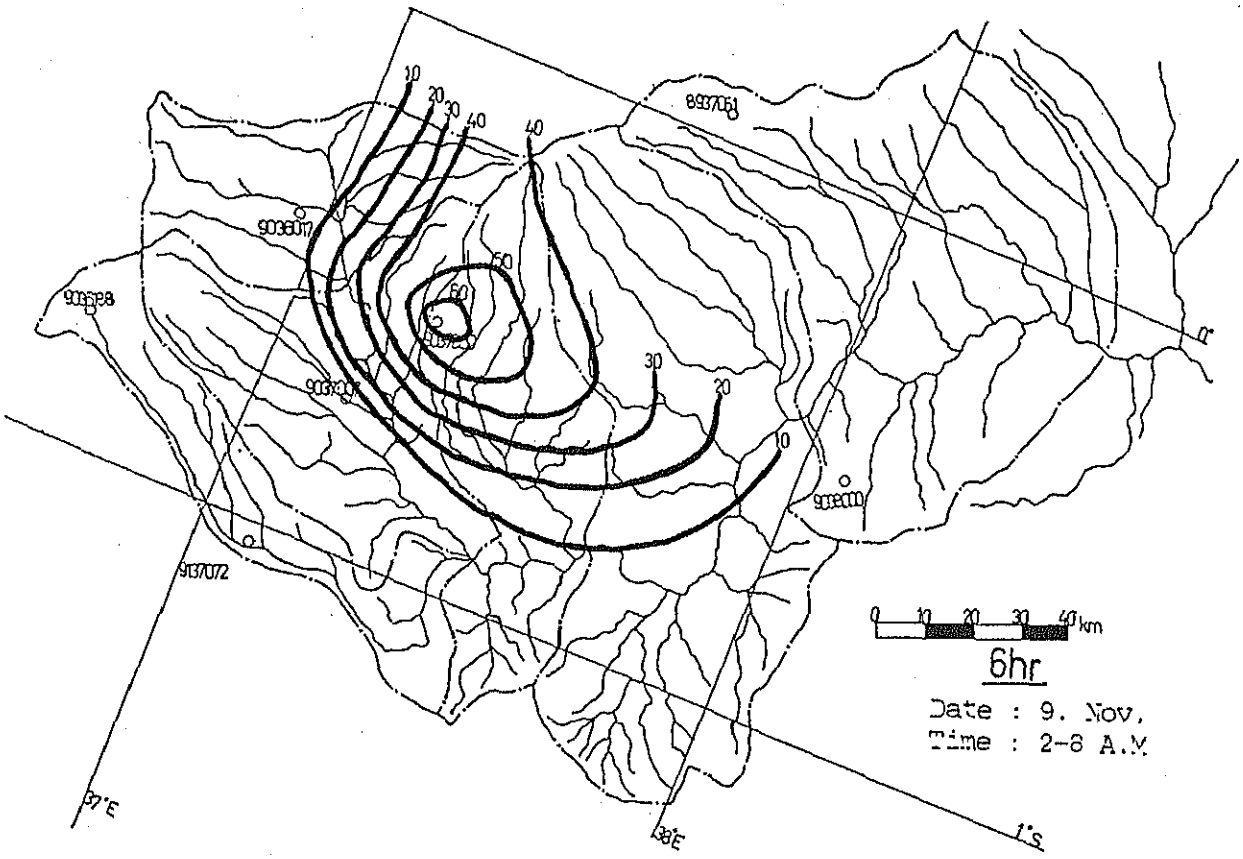
APPENDIX B.18

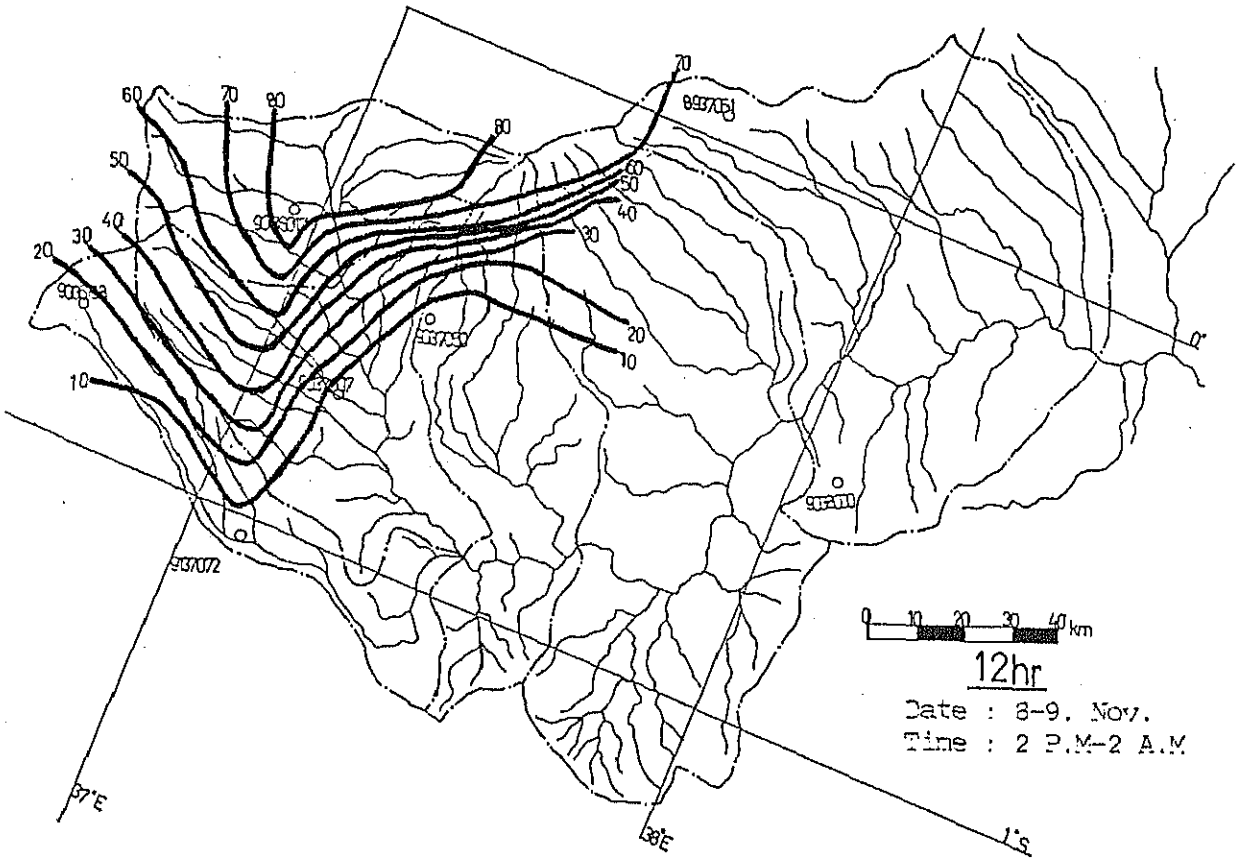
Isohyetal Map of "Uhuru Rain" in Upper Tana River Basin



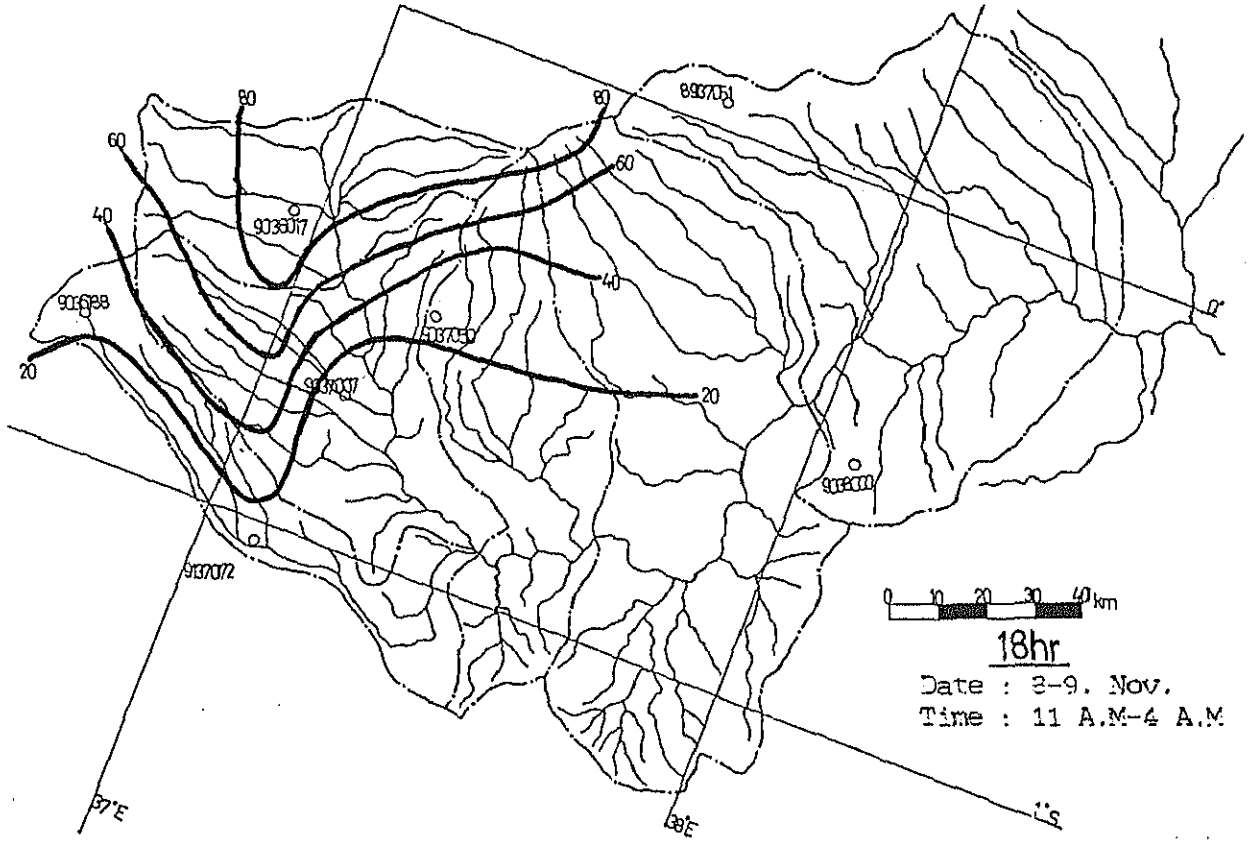


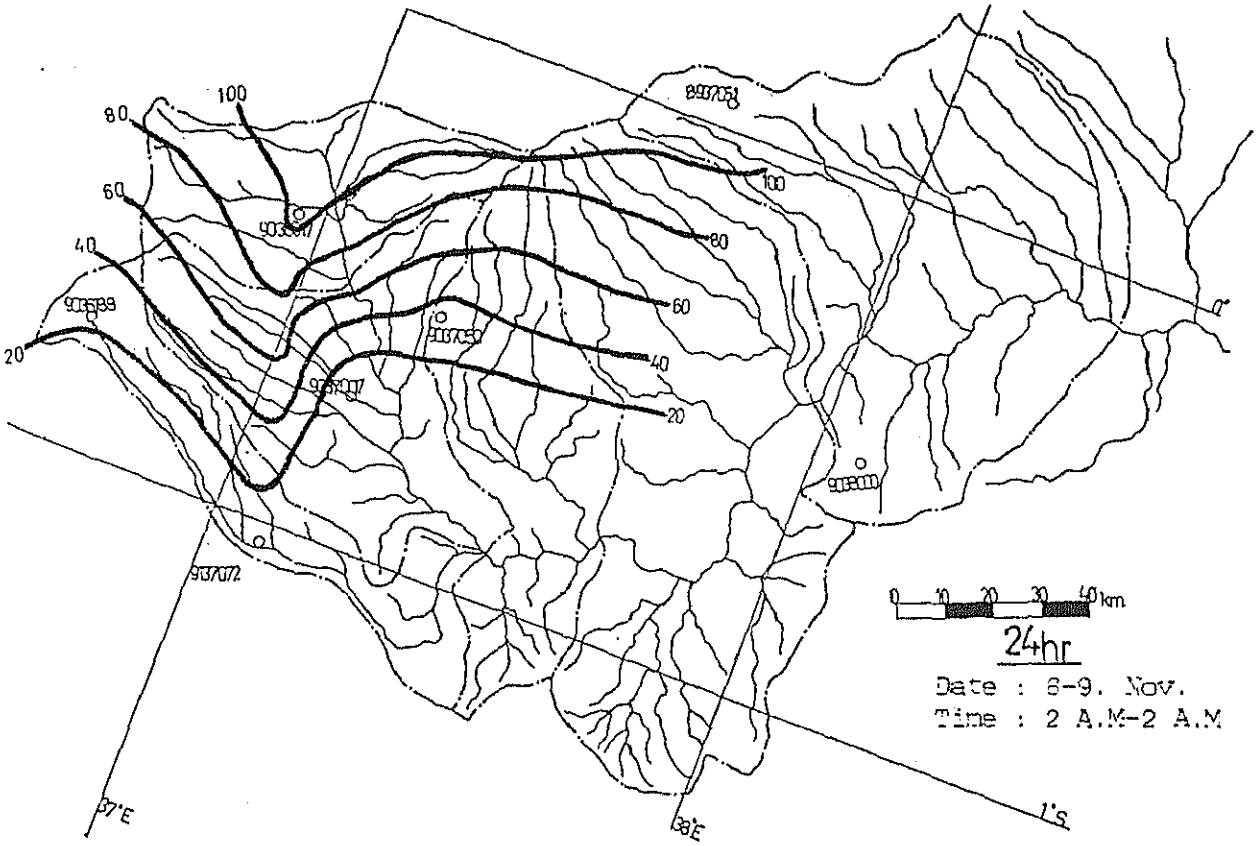
Isohyetal Map, Storm of October and November, 1961, on Upper Reaches of Tana River (1/3)





Isohyetal Map, Storm of October and November, 1961,
on Upper Reaches of Tana River (2/3)





Isohyetal Map, Strom of October and November, 1961,
on Upper Reaches of Tana River (3/3)

APPENDIX B.19

Water Quality Test

(Additional Sampling in the Study Period)

Sampling point : Lake Chala

No.	Item	Unit	Sampling Date		
			25/01/91	21/02/91	21/02/91
1	pH		7.4	7.9	8.0
2	Electrical Conductivity	m.mhos/cm	620.0	270.0	250.0
3	Total Alkalinity (as CaCO3)	mg/l	172	130	124
4	Phenophthalein Alkalinity		12.0	11.5	13.2
5	B.O.D.	mg/l	96.4	51.5	85.5
6	C.O.D.	mg/l	10.0	10.8	11.6
7	Lead	mg/l	N.D.	N.D.	N.D.
8	Copper	mg/l	N.D.	N.D.	N.D.
9	Zinc	mg/l	0.01	N.D.	N.D.
10	T.D.S.	mg/l	579	219	196
11	Potassium	mg/l	10	29	11.5
12	Sodium	mg/l	95.0	11.0	29.0
13	Cadmium	mg/l	0.01	N.D.	N.D.
14	Chromium	mg/l	N.D.	N.D.	N.D.
15	Magnesium	mg/l	22.5	24.0	20.0
16	Chloride	mg/l	112.2	112.2	112.2
17	Fluoride	mg/l	1.12	1.12	1.12
18	Calcium	mg/l	68.80	54.40	49.6
19	Manganese	mg/l	0.10	N.D.	N.D.
20	Mercury	mg/l	N.D.	N.D.	N.D.
21	Arsenic	ppb	0.0006	0.0024	0.0074
22	Iron	mg/l	0.10	0.10	N.D.
23	Sulphate	mg/l	59.52	59.52	32.64
24	Nitrite	mg/l	N.D.	N.D.	N.D.
25	20 min. P.V.		28	30	50

Note : N.D. means "not detected".

Sampling point : SH01 at Daua River

No.	Item	Unit	Sampling Date
			30/11/90
1	pH		6.9
2	Electrical Conductivity	m.mhos/cm	95.0
3	Total Alkalinity (as CaCO3)	mg/l	98
4	Phenophthalein Alkalinity		Nil
5	B.O.D.	mg/l	20.9
6	C.O.D.	mg/l	7.2
7	Lead	mg/l	0.035
8	Copper	mg/l	N.D.
9	Zinc	mg/l	N.D.
10	T.D.S.	mg/l	153
11	Potassium	mg/l	2.4
12	Sodium	mg/l	5.1
13	Cadmium	mg/l	N.D.
14	Chromium	mg/l	N.D.
15	Magnesium	mg/l	1.94
16	Chloride	mg/l	4.47
17	Fluoride	mg/l	3.98
18	Calcium	mg/l	1.01
19	Manganese	mg/l	N.D.
20	Mercury	mg/l	N.D.
21	Arsenic	ppb	3.47
22	Iron	mg/l	0.69
23	Sulphate	mg/l	1.96
24	Nitrite	mg/l	0.025
25	20 min. P.V.		28

Note : N.D. means "not detected".

Sampling point : Lake Jipe

No.	Item	Unit	Sampling Date
			25/01/91
1	pH		7.4
2	Electrical Conductivity	m.mhos/cm	620.0
3	Total Alkalinity (as CaCO3)	mg/l	172
4	Phenophthalein Alkalinity		12.0
5	B.O.D.	mg/l	96.4
6	C.O.D.	mg/l	10.0
7	Lead	mg/l	N.D.
8	Copper	mg/l	N.D.
9	Zinc	mg/l	0.01
10	T.D.S.	mg/l	579
11	Potassium	mg/l	10
12	Sodium	mg/l	95.0
13	Cadmium	mg/l	0.01
14	Chromium	mg/l	N.D.
15	Magnesium	mg/l	22.5
16	Chloride	mg/l	11220.2
17	Fluoride	mg/l	1.12
18	Calcium	mg/l	68.80
19	Manganese	mg/l	0.10
20	Mercury	mg/l	N.D.
21	Arsenic	ppb	0.0006
22	Iron	mg/l	0.10
23	Sulphate	mg/l	59.52
24	Nitrite	mg/l	N.D.
25	20 min. P.V.		28

Note : N.D. means "not detected".

Sampling point : 1LA04 at Mara River

No.	Item	Unit	Sampling Date	
			17/11/90	17/11/90
1	pH		6.6	6.6
2	Electrical Conductivity	m.mhos/cm	115.0	100.5
3	Total Alkalinity (as CaCO3)	mg/l	32	28
4	Phenophthalein Alkalinity		Nil	Nil
5	B.O.D.	mg/l	41.8	96.9
6	C.O.D.	mg/l	6.4	6.4
7	Lead	mg/l	0.053	0.037
8	Copper	mg/l	0.046	N.D.
9	Zinc	mg/l	N.D.	0.015
10	T.D.S.	mg/l	154	440
11	Potassium	mg/l	10	20
12	Sodium	mg/l	21.5	43.0
13	Cadmium	mg/l	N.D.	N.D.
14	Chromium	mg/l	N.D.	N.D.
15	Magnesium	mg/l	0.403	0.139
16	Chloride	mg/l	5.01	3.98
17	Fluoride	mg/l	1.78	4.47
18	Calcium	mg/l	2.30	0.67
19	Manganese	mg/l	N.D.	0.01
20	Mercury	mg/l	N.D.	N.D.
21	Arsenic	ppb	1.47	4.57
22	Iron	mg/l	0.31	1.16
23	Sulphate	mg/l	0.72	0.62
24	Nitrite	mg/l	0.050	0.115
25	20 min. P.V.		32	40

Note : N.D. means "not detected".

Sampling point : Pemba River

No.	Item	Unit	Sampling Date	
			19/12/90	19/12/90
1	pH		5.6	5.9
2	Electrical Conductivity	m.mhos/cm	240.0	250.0
3	Total Alkalinity (as CaCO3)	mg/l	50	55
4	Phenophthalein Alkalinity		Nil	Nil
5	B.O.D.	mg/l	6.0	7.0
6	C.O.D.	mg/l	24.0	18.0
7	Lead	mg/l	N.D.	0.05
8	Copper	mg/l	N.D.	N.D.
9	Zinc	mg/l	N.D.	0.29
10	T.D.S.	mg/l	253	252.5
11	Potassium	mg/l	18	5
12	Sodium	mg/l	112.0	33.0
13	Cadmium	mg/l	N.D.	N.D.
14	Chromium	mg/l	N.D.	N.D.
15	Magnesium	mg/l	7.41	6.17
16	Chloride	mg/l	177.80	316.20
17	Fluoride	mg/l	0.23	0.15
18	Calcium	mg/l	17.15	17.01
19	Manganese	mg/l	N.D.	N.D.
20	Mercury	mg/l		
21	Arsenic	ppb	N.D.	N.D.
22	Iron	mg/l		
23	Sulphate	mg/l	7.20	0.92
24	Nitrite	mg/l	0.020	0.020
25	20 min. P.V.		10	10

Note : N.D. means "not detected".

Sampling point : Ramisi River

No.	Item	Unit	Sampling Date	
			19/12/90	19/12/90
1	pH		6.6	6.8
2	Electrical Conductivity	m.mhos/cm	1150.0	1450.0
3	Total Alkalinity (as CaCO3)	mg/l	190	195
4	Phenophthalein Alkalinity		Nil	Nil
5	B.O.D.	mg/l	6.0	5.0
6	C.O.D.	mg/l	14.0	2.8
7	Lead	mg/l	0.05	0.05
8	Copper	mg/l	N.D.	N.D.
9	Zinc	mg/l	N.D.	N.D.
10	T.D.S.	mg/l	1089	1063
11	Potassium	mg/l	5	18
12	Sodium	mg/l	33.0	114.0
13	Cadmium	mg/l	N.D.	N.D.
14	Chromium	mg/l	N.D.	N.D.
15	Magnesium	mg/l	N.D.	7.72
16	Chloride	mg/l	5623.4	5623.4
17	Fluoride	mg/l	0.75	0.94
18	Calcium	mg/l	25.20	25.14
19	Manganese	mg/l	0.02	0.01
20	Mercury	mg/l		
21	Arsenic	ppb	N.D.	N.D.
22	Iron	mg/l		
23	Sulphate	mg/l	19.57	27.19
24	Nitrite	mg/l	0.045	0.050
25	20 min. P.V.		20	18

Note : N.D. means "not detected".

Sampling point : 3G02 at Tsavo River

No.	Item	Unit	Sampling Date
			20/02/91
1	pH		7.8
2	Electrical Conductivity	m.mhos/cm	420.0
3	Total Alkalinity (as CaCO3)	mg/l	168
4	Phenophthalein Alkalinity		12.5
5	B.O.D.	mg/l	57.0
6	C.O.D.	mg/l	13.2
7	Lead	mg/l	N.D.
8	Copper	mg/l	N.D.
9	Zinc	mg/l	N.D.
10	T.D.S.	mg/l	340
11	Potassium	mg/l	42.5
12	Sodium	mg/l	78.0
13	Cadmium	mg/l	N.D.
14	Chromium	mg/l	N.D.
15	Magnesium	mg/l	21
16	Chloride	mg/l	316.2
17	Fluoride	mg/l	1.41
18	Calcium	mg/l	67.20
19	Manganese	mg/l	N.D.
20	Mercury	mg/l	N.D.
21	Arsenic	ppb	0.0022
22	Iron	mg/l	0.90
23	Sulphate	mg/l	109.44
24	Nitrite	mg/l	0.011
25	20 min. P.V.		40

Note : N.D. means "not detected".

Sampling point : 3HA12 at Lugard's Fall of Athi River

No.	Item	Unit	Sampling Date
			20/02/91
1	pH		7.8
2	Electrical Conductivity	m.mhos/cm	410.0
3	Total Alkalinity (as CaCO3)	mg/l	190
4	Phenophthalein Alkalinity		13.0
5	B.O.D.	mg/l	28.5
6	C.O.D.	mg/l	4.8
7	Lead	mg/l	0.2
8	Copper	mg/l	N.D.
9	Zinc	mg/l	0.05
10	T.D.S.	mg/l	45.3
11	Potassium	mg/l	42.5
12	Sodium	mg/l	78.0
13	Cadmium	mg/l	N.D.
14	Chromium	mg/l	N.D.
15	Magnesium	mg/l	20.0
16	Chloride	mg/l	398.1
17	Fluoride	mg/l	1.12
18	Calcium	mg/l	76.00
19	Manganese	mg/l	N.D.
20	Mercury	mg/l	N.D.
21	Arsenic	ppb	0.0043
22	Iron	mg/l	0.20
23	Sulphate	mg/l	111.40
24	Nitrite	mg/l	0.018
25	20 min. P.V.		28

Note : N.D. means "not detected".

APPENDIX B.20

ESTABLISHMENT

OF

RELIABLE SURFACE WATER DATA GATHERING NETWORK

UPDATED VERSION
OF
EXTENTION OF WATER RESOURCES
DATA GATHERING NETWORK
IN KENYA

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ESTABLISHMENT OF RELIABLE SURFACE WATER DATA GATHERING NETWORK

CHAPTER 1 INTRODUCTION

Surface water data is the basic elements in the planning, design, construction and operation of all water projects, which are of extreme importance to a nation's economy due to their impact on the agricultural, industrial, and social development of the country. Therefore, systematic collection, processing, and analysis of this data are the primary factors in accurate assessment and management of a country's water resources.

Mainly hydrological data is collected for developing and managing the water resources; they also serve operating purposes, such as forecasting flood discharges or stages, monthly and annual discharges for operation of reservoirs and hydro-electric plants, and research work.

Relative to area and population, this country has limited surface water resources with the perennial rivers concentrated in the central and western areas. Therefore, the water resources of Kenya must be determined with sufficient accuracy for conserving, developing and managing these resources efficiently.

The rainfall data as well as the other climatic information are collected and evaluated by the Kenya Meteorological Department, (KMD) while the Surface Water Section of the Ministry of Water Development (MOWD) is responsible for collecting and evaluating data on river flows in Kenya.

The first step in gathering information on the surface water resources of a country is to establish data gathering networks of adequate density. There is no definite procedure for the design of hydrological networks simply because of the varying terrains and problems over the world.

The existing meteo-hydrological data gathering network of Kenya covers the densely populated high rainfall area of the central part of the country fairly well. However, there is considerable need for extension of the network into the semi-arid and arid parts of the country where there are few streams and few gauging stations.

The water level gauging network of Kenya has been extended to cover almost all of the perennial rivers. Although a number of stations were installed by MOWD, at the same time a number of stations are abandoned because of poor maintenance and remoteness. Even the principal stations with long recorded periods such as Garissa at the Tana River (4G01) and Yala Swamp of the Yala River (1FG02), needed rehabilitation works and were rehabilitated in 1990 during the Study.

The demand for reliable surface water data is constantly increasing due to expanding development programs for all types of water resources projects so that careful monitoring

of existing stations and judicious use of the gathered data are made so as to avoid random installation of a large number of stations.

This report, conducted in very close cooperation with hydrologists of the Surface Water Section of the MOWD aims at establishing the reliable hydrological data gathering network for the satisfactory execution of the National Water Master Plan as well as the Five Year Development Plans of Kenya.

Preliminary guideline for the establishment of water quality and suspended load monitoring networks is also included in this report.

CHAPTER 2 CLIMATE

2.1 Land

The Republic of Kenya is situated in East Africa, approximately between the latitudes $5^{o}20'N$ and $4^{o}40'S$ and the longitudes $33^{o}50'E$ and $41^{o}45'E$. It extends from the Indian Ocean and Somalia in the east to Lake Victoria and Uganda in the west and from Sudan and Ethiopia in the north to Tanzania in the south. Its total area is 592,000 km^2, of which 580,000 km^2 is land surface.

In spite of its location astride the equator, Kenya experiences wide variations in climate due to great differences in altitude (Fig. 1). A relatively wet, narrow tropical belt lies along the Indian Ocean coast. Behind the coastline large areas of semi-arid and arid lands stretch. The land then rises steeply to the temperate highland plateau through which the Rift Valley runs. All the mountain ranges in the area have high rainfall while dry tongues are found in the valleys and basins. Another wet area covers western Kenya just east of Lake Victoria.

2.2 Wind Movement

The climate of Kenya is influenced by two monsoon systems. The movement of air masses, between the two high pressure belts in the south and north hemispheres within the intertropical convergence zone (ITCZ), produces two rainy seasons a year at equatorial areas. The longer one, also called "the season of long rains" occurs from March to June.

As shown in Figure 2, from December to March, Kenya is generally under the dominance of the northeast monsoon, when the movement of dry air is in the northerly direction. From March to June the wind comes from the easterly direction bringing moist air from the Indian Ocean and causes heavy rains within the area. In the months from June to September the southeast monsoon is prevalent, during which much of the country is dominated by air inhibiting rainfall and causing low temperatures. From September through November, the wind direction is again from the east, bringing moisture from the end of October to the beginning of January.

2.3 Rainfall

Kenya has a mean annual rainfall of 621 mm which varies from under 200 mm in the arid areas in the north and east to over 2,000 mm on the high mountain ranges (Fig. 3). The annual rainfall generally follows the seasonal pattern, and there are absolutely dry months from August through October in semi-arid and arid lands.

The seasonal variations described above are strongest east of the Rift Valley, in the dry low lands of the north and east, (with two distinct rainy seasons from March through May and from October through December). In the area west of the Rift Valley the seasonal distribution of rainfall is the weakest, with a long and almost continuous rainy season. Most of the rain falls from April to August. September and October are drier months and November is again with high rainfall (Fig. 4).

The variation of annual rainfall is considerable especially in the drier areas. Monthly rainfall is even less reliable than annual rainfall and total lack of rainfall or vast excesses are often experienced at representative rainfall stations (Fig. 5).

2.4 Temperature

The mean temperatures in Kenya are closely related to ground elevation. The annual temperatures variations are generally less than $5^{o}C$ throughout the country. The hourly temperatures, however, differ considerably between day and night. The highest temperatures are recorded in the arid regions of the Northeastern Province along the Somalia Coast and to the west of Lake Turkana where the annual mean daily maximum temperatures can reach $34^{o}C$. The coldest areas are the tops of the mountains where night frost occurs above EL 3,000 m and permanent snow or ice cover on Mt.Kenya about EL 5,000 m (Figure 6).

2.5 Evaporation

The mean annual free-water evaporation in Kenya varies from 1,250 mm in areas at an altitude of 3,000 m, to over 2,500 mm in areas below 300 m. The mean monthly rates vary from 85 mm to 260 mm; generally the months with the highest rate of free-evaporation are the months with least precipitation (Fig. 7).

2.6 Relative Humidity

The relative humidity in Kenya varies between 70-90 % in the coastal belt and at areas with vegetative cover. In arid areas the maximum does not exceed 60-70 %. In the highlands, the minimum varies between 40 % in the dry season, and 60 % in the rainy season (Fig. 8).

2.7 Sunshine Hours

Sunshine is generally experienced throughout the year in all parts of the country, except the eastern-central and southern areas where June to September is a period of prolonged cloudiness.

Sunshine hours are generally related to the longitude of observation point. However, the range of variation of latitude in Kenya astride the equator seems to decrease such latitude effects. Then decrease of sunshine hours by cloud cover might be another factor (Fig. 9).

2.8 Rainy Days

The rainy days was defined as a day with a rainfall of more than 1.0 mm. The numbers of rainy days is closely related to the annual mean rainfall (Fig. 10).

CHAPTER 3 DRAINAGE SYSTEM OF KENYA

3.1 Drainage Area

The drainage system of Kenya is determined by the Great Rift Valley, running approximately north to south, from the flanks of which water flow westwards to Lake Victoria and eastwards to the Indian Ocean. The Rift Valley itself has an internal drainage system.

The drainage systems of Kenya can be mainly defined as follows (Fig. 11).

Drainage Area 1 (Lake Victoria) comprises the whole of the area west of the Rift Valley draining into Lake Victoria by numerous rivers. The Lake Victoria Basin receives good amounts of rainfall, well distributed over the area. It is the only area where rainfall is consistent from the watershed of the catchment to the outfall of the river system. Its water resources, consisting of many perennial rivers and the Lake itself, are better than in most parts of the country.

Drainage Area 2 (Rift Valley) is an area of internal drainage discharging into Lake Turkana in the north and Lake Natron in the south. Within this area there are several internal drainage discharging into a number of smaller lakes. The waters of these lakes are somewhat saline and the only fresh water lake of importance is Lake Naivasha. The flow in dry season of this drainage area is very small.

Drainage Area 3 (Athi/Sabaki River) comprises the southern part of the country east of the Rift Valley, draining the southern slopes of the Aberdare Range and the flanks of the Rift Valley to the south to form the Athi River which in its lower reaches is known as the Sabaki (or Galana) and discharges into the Indian Ocean. An important contribution to the flow in the lower reaches is provided by the Tsavo River.

Drainage Area 4 (Tana River) drains the eastern slopes of the Aberdare Range, the southern slopes of Mount Kenya and the Nyambeni Range, and discharges into the Indian Ocean. This is the largest river in Kenya.

Drainage Area 5 (Ewaso Ngiro River) comprises the northern slopes of the Aberdare Range and Mount Kenya. The river continues to the Lorian Swamp which marks the end of its normal flood flow.

The 3 main river systems east of the Rift Valley have some similar characteristics. Their head waters occur in high rainfall areas of volcanic rocks, in which are the groundwater reservoirs which provide their dry weather flow.

On leaving the volcanic system all three rivers flow through country of bedrocks, the areas being mostly semi-arid and subject to long drought periods. These periods are sometimes followed by heavy storms resulting in high and rapid runoff carrying a heavy load of silt. The tributaries therefore contribute largely to flood and silt conditions in the downstream

reaches of the rivers traversing sedimentary formations, in which they meander, overflow their banks, and occasionally change their course. These sedimentary formations are generally permeable and the rivers lose water gradually by percolation from their beds as well as by evaporation.

3.2 Basin Boundary Map

The existing basin boundary map consisting of 158 subbasin, contains some errors since they were delineated on the basis of a topographic map without contour lines on a scale of 1:50,000. These boundaries were elaborated referring to the latest topographic map with a contour line on a scale of 1:50,000. Some relatively large subbasins were also sub-divided into a few areas for the National Water Master Plan. Finally, 197 subbasins were confirmed. Schematic diagram of subbasins is shown in Figure 12.

CHAPTER 4 EXISTING SURFACE WATER DATA GATHERING NETWORKS

4.1 Background

The greater part of the population of Kenya is concentrated in areas which receive relatively high amounts of rainfall. This is because the majority of population is rural and depends upon agriculture or pastoralism, the productivity of which is profoundly influenced by rainfall.

The mean density of population was estimated at about 27 persons/km^2 in 1979. This number is close to the average for the continent of Africa. However, the range of densities in Kenya is remarkably great. For over a quarter of the country the population density per square km is about one, whereas there are rural areas where the densities reach 500/km^2. Areas with 600 mm of rainfall a year have a median density of about 15/km^2. With increasing rainfall, the average density increases up to a density of 250/km^2 in areas receiving an average of 1,750 mm a year.

4.2 Existing Surface Water Data Gathering Network

4.2.1 Rainfall Gauging Network

Systematic observations of rainfall in Kenya started in 1890. There was a dense network of 2,867 standard raingauges throughout the country in 1990. In the past few decades some stations were closed down due to unreliable records, flood damages, and vandalism. Almost all rainfall gauges are operated and maintained by MOWD and KMD. Geographic distribution of the standard raingauges is shown in Figure 13.

Among the stations, 212 stations have reliable data of more than 20 years, the rest were installed only recently or recorded for a few years. Location map of the 212 stations is shown in Figure 14.

4.2.2 Water Level Gauging Network

The systematic collection of stream flow data was first started in 1921. Lake level observations started in 1908 on Lake Naivasha. In the first years, the emphasis was on low flow observations on the streams of the Kenya Highlands for the planning of water supplies for the farms within the area. Thus the first 8 gauging stations started their operation in 1921 in Kiambu and Nairobi districts (subbasin 3B). Another 3 stations were established in area 3B and 1 station in subbasin 4C on Thika River thereafter in 1920's.

In the early 1930's the network was enlarged and the country was divided into 5 main drainage areas. Within these areas the first stations were established where the farms were concentrated. In later years, gauging stations were also installed at other locations within these drainage areas. Most of the stations were located along the then existing roads, frequently at road bridges for easy access.

In the late 1940's and in the 1950's the network was extended to cover the low potential areas of the country in order to obtain a comprehensive picture of the water regimes of the whole country.

Up to the early 1960's about 500 stations were being operated by the Surface Water Section. A review of the network in 1963 resulted in closing down of some stations. From 1921 to 1986, 923 stations were opened, some of which have been closed.

Distribution of the current (1990) number of river gauging stations by drainage areas operated by the Surface Water Section of the MOWD is shown in Table 1.

Of the stations, 399 stations are now under operation as enumerated below;

Drainage Area	Registered Station (nos.)		
	Operation	Abandoned	Total
1	114	115	229
2	50	103	153
3	74	149	223
4	116	89	205
5	45	68	113
Total	399	524	923

The geographic distribution of the water level gauging stations is shown in Figure 15. The latest information regarding the location, type, drainage area, and years of record of each station which have been closed or in operation until recently have been installed in the new database system of the Computer Service Section of MOWD.

The automatic recorders have their charts replaced weekly or monthly, and give generally more accurate result than manually read gauges. The staff gauges are read once or more, every day. There is wide variation in the skill and thoroughness among the gauge readers employed by MOWD. It is very difficult to evaluate errors introduced through misreadings. Sometimes there is no data from automatic recorders due to instruments failure to function properly, and no observations are received from some manually read stations, resulting in gaps up to several months in records.

4.2.3 Water Quality Monitoring Network

To maintain acceptable water quality in the rivers and lakes in the face of rapid population growth and agricultural/industrial development, the Water Quality and Pollution Control Section of the MOWD is charged with responsibility of a nationwide water quality monitoring program.

The present monitoring network covers all major rivers, lakes, and springs and incorporates 120 sampling points (Fig. 16). Some monitoring points are located at existing

water level gauging stations, the exact locations of the others are not mentioned. But they were grouped into lower, middle, and upper reaches of the rivers.

The data is classified into 20 stations (183 samples) at existing water level gauging stations and 41 groups (416 samples) without exact locations.

4.2.4 Suspended Load Monitoring Network

Suspended load monitoring has been carried out by MOWD intermittently at 277 water level gauging stations. The list of stations and the numbers of data points are enumerated below;

Drainage Area	Station (nos.)	River (nos.)	Sample (nos.)
1	67	58	554
2	52	36	907
3	50	32	1,304
4	90	58	2,447
5	18	13	271
Total	277	195	5,834

The suspended load rating curves (Table 2) were established at 36 stations having more than 30 data points, although those samplings were taken at relatively low discharges. The rating curves is expressed by the following power equation:

$$Qs = a\,Q^b \quad \text{..... (Eq.1)}$$

where, Qs : suspended load (ppm),
Q : daily discharge (m^3/s), and
a and b : constant

Under the study of the National Water Master Plan, all the existing suspended load monitoring data was stored in the newly installed database system of MOWD.

CHAPTER 5 GUIDELINES FOR RELIABLE SURFACE WATER DATA GATHERING NETWORK

5.1 Introduction

There exists no universal procedure for the design of surface water data gathering networks, however, certain recommendations have been compiled based on experience. It is always essential to keep the principal purposes of these networks in view.

The planning of hydrological data gathering networks should be closely related to the physical factors, such as topography, morphology, precipitation, geology, land use, and soil types as well as the population density of the area.

In developing data gathering networks usually two phases are developed, minimum and optimum networks.

(a) Minimum Network.

A network of a minimum numbers of stations, that experience indicates necessary for economic development of the water resources of the country, is established first. It is not possible to define a uniform criterion of density which would be applicable for all the countries of the world, however, some guidelines have been established by experience and will be presented in the following sections.

(b) Optimum Network.

Optimum networks for gathering of water resources data are established after the minimum network is operated for adequate length of time, and additional stations are installed. The purpose of a optimum network is to determine the basic hydrological elements at any point in a country satisfactorily by interpolating data from nearby stations.

5.2 Rainfall Gauging Stations

The minimum network is recommended for pluviometric stations (the total of raingauges: recording, ordinary, totalizing) in Table 3 (Ref.2).

Usually it is difficult to find observers in thinly populated areas where access is poor. Generally, the sparsely settled areas coincide with zones of various climatic extremes such as arid regions or mountain tops. The use of storage type rainfall gauges (such as monthly or longer periods) is recommended at these locations due to little maintenance and infrequent visits that will be required.

The optimum network density of rainfall gauging stations are generally dictated by the physiographical and hydrological conditions, as well as the density of the population, economic activities and other factors.

There are no established density that one can follow to develop an optimum network of rain gauges, due to the reason that optimum network should provide data for purposes not yet apparent, and also account for time and a real variability of rainfall. In establishing the optimum network of raingauges, that would make it possible to interpolate the rainfall amounts at any point in the country, it is important to make the best choice of locations and not multiply the number of stations that require indefinite observations unnecessarily. These stations should be gauging the rainfall at high and low rain areas, as well as areas of mean rainfall and also be adequate to describe seasonal and short period variations in rainfall, gathering data that can be used in a variety of design problems in water resources. The optimum network of raingauges, with the aid of special purpose stations should provide quantitative rainfall data, averages, and extremes that define the statistical distribution of rainfall at any given area within the country.

The rainfall observation stations in a country should be divided into 3 categories, in order not to increase the number of stations that do not require definite observations:

- Principal stations
- Rainfall stations
- Special stations

The principal division of rainfall gauges is also applicable to water level gauges and is described in detail in the next section.

5.3 Water Level Gauging Stations

The minimum recommended network density for river gauging stations is given in Table 4 (Ref.2).

Except for countries with only small rivers, the stations should be equally divided into two categories. The value of drainage area "A" in Table 4, which divides main stream from the small stream network, is defined as follows (Ref. 2):

- for regions of category I : A = 3,000 to 10,000 km^2
- for regions of category II : A = 1,000 to 5,000 km^2
- for regions of category III : A = 5,000 to 20,000 km^2

In general, stations should be sited on all streams where drainage area is "A" or greater. Unless the stream network is highly irregular, the minimum network permits nearly complete coverage of all large streams.

The optimum network density of the streamflow gauging stations are also dictated by the same factors as the rainfall gauging networks, and the same arguments for developing the optimum networks apply here. Considering the variety of design problems encountered in the utilization and control of water, the optimum network should provide enough data to

form a knowledge of the probability distribution of floods, droughts, and runoff volumes on all streams of economic importance.

In establishing an optimum network of stream flow gauging stations, three categories of stations are suggested to be employed in order to economize the cost of the network and also to prevent multiplication of information unnecessarily. The three classes of stations are:

(a) Principal stations:

The principal stations (also called base stations) furnish the basis for statistical studies and, therefore, should be observed continuously and indefinitely.

(b) Secondary station:

The observations at secondary stations should be limited to a few years only. They should operate just long enough to establish a good correlation between their records and those of the base stations or with characteristics of the region. By moving the secondary stations to other locations after a correlation has been established, the whole country can be covered with a dense network based on the principal stations that are operated continuously.

(c) Special stations:

Special stations are established for particular purposes, such as providing data for a project where there was no previous information, and no other developments in the future are expected. After the special stations serve their purpose, they are closed.

5.4 Water Quality Monitoring Station

(1) River Water Monitoring

The appropriate water monitoring program comprises two basic types of stations:

(a) Reference stations:

These stations are sited in the upper catchment of the major rivers and designed to provide baseline data on natural water quality.

(b) Impact station

These stations are sited near to known point sources of pollution and are specially for pollution control purpose. Similar sampling stations are located further downstream of such point sources to access the self-cleansing capacity of the river.

(2) Urban Water Supply Monitoring

Urban water supplies are generally monitored at various intervals depending on population sizes.

Population Size	Sampling Frequency
10,000 over	Daily
5,000 - 10,000	Weekly
1,000 - 5,000	Monthly
50 - 1,000	Every 6 months

5.5 Suspended Load Monitoring

Suspended load monitoring stations are mainly categorized into the following two types:

(1) Principal Station:

Suspended load monitoring is carried out at the principal water level gauging station. At the time of discharge measurement at the station, a few samples are taken. The consistent data shows the variation of suspended load amount due to the change of hydrological characteristics such as deforestration and sediment trap into the reservoir. The accurate suspended load data also contributes to the estimation and verification of soil erosion in the basin.

(2) Special Station:

The data at special stations is used to establish the design criteria of the water-related structures. The station is established at:

- proposed intake site of water supply scheme
- proposed intake site of irrigation scheme
- potential damsite

CHAPTER 6 RECOMMENDATIONS ON RELIABLE SURFACE WATER DATA GATHERING NETWORKS IN KENYA

The existing surface water data gathering networks of Kenya was reviewed and discussions were held with the staff of the Surface Water Section of MOWD. Based on these discussions, the following recommendations were made.

6.1 Rainfall Gauging Stations

Although the Surface Water Section of MOWD operates a certain number of recording and standard type raingauges, collecting and processing the rainfall data and extending the network are under the responsibility of KMD. Concerning the defined plan for the extension of rainfall data gathering network, KMD stated that rainfall gauges are provided on request, unless there is another station within a distance of 8.0 km. This condition indicates that on the average there would be 1 station per 50 km^2. It is recommended that KMD facilitate the plan of their target within the master plan period. However, the Surface Water Section should install new rainfall gauges on the basis of project demands.

While, the relocation and/or rehabilitation should be emphasized on appropriate data collection at the following stations:

(1) In School where additional buildings have been erected,
(2) In the bush where long grass and weeds have grown around the station, and
(3) In Institutions where the location has been rendered unsatisfactory by the development of the area.

6.2 Water Level Gauging Stations

The reliable water level gauging network was planned based on discussion with the Hydrologists from the Surface Water Section.

For last decade, new gauges were generally scheduled to be installed at planned and possible water scheme locations where there were no existing gauges. The other factors that were taken into consideration in selection of gauge sites are:

- Where there is flow across the land boundaries of Kenya. The gauging of these streamflows needs to be reliable in order to provide facts for settling the allocation of water between neighbouring countries, and, where there is outflow into lakes or the ocean, to enable estimation of the overall water balance for Kenya.

- Where discharge varies to a considerable extent; either before or after confluence with major tributaries.

- Gauges were planned to serve all parts of a mountainous area from the high regions to the foothills.

- Streams of small size were selected to be gauged for sampling and research purposes.

- Where a change in hydrological character, such as where the streams leave the hills and enter an alluvial valley or coastal plains, gauges were planned to be installed.

The existing data gathering network was carefully examined, and staff type gauging stations at more important locations with long records and stable channel sections were selected to be upgraded to become reliable water level recording stations. Since it would not be practical to establish all these recording stations at the same time, they were graded in 5 groups of priority as follows;

Priority 1 : Principal stations are defined as the representative station in the perennial river basin with a catchment area of more than 10,000 km^2. The long-recorded and reliable stations were selected per 10,000 km^2. The water level gauging stations for representative lakes of Kenya and major springs were also selected.

Additionally, the operation records of existing large dams are required for the accurate estimation of the available surface water balance in perennial rivers. This data should be collected by MOWD through the government agencies concerning the dam operation.

Priority 2 : Subordinate principal stations are defined as the representative station in the perennial river with a catchment area of more than 3,000 km^2 and the station in the main stream of subbasin.

Priority 3 : Secondary stations are defined as the representative stations in the perennial rivers with a catchment area of more than 1,000 km^2 and the stations in the main tributaries.

Priority 4 : The observatory stations of flood flow are selected for identified flood prone areas. The stations at potential damsites are also selected.

Priority 5 : The remaining existing stations

Appendix B20.1 lists proposed water level gauging stations to be rehabilitated and maintained under each category for all drainage areas.

Each drainage basin was scrutinized together with a questionnaire to the hydrologist in the field offices of MOWD (Appendix B20.2) about the adequacy of the existing network. Some places where a gauge might be needed had to be discarded due to lack of access or absence of gauge reader.

In addition, at the time of current meter measurements at the principal stations (Priorities 1 and 2), a few samples for both water quality and suspended load monitorings should be taken.

CHAPTER 7 RECOMMENDATIONS ON COLLECTION, PROCESSING, AND ADMINISTRATION SURFACE WATER DATA

The collection, processing, and administration of data will have to be improved and expanded in connection to the extension of networks. For data gathering adequate equipment and operating and maintenance facilities are essential. In the appendix section equipment for river gauging work is given together with an itemized list of camping gear to facilitate field work.

The recommendations on collection, processing and administration of reliable surface water data follow.

7.1 Rainfall Data

Presently, all rainfall data is being gathered by KMD. The daily rainfall amounts from standard gauges are reviewed and checked and then stored in a database. The lag time between the collection and computerization of the data should be kept to a minimum. Missing records should be persistently followed up and continuity of records should be maintained.

The charts of the automatic rainfall recorders should be analyzed as soon as they are brought to the office in order to minimize the possibility of misplacement or loss.

7.2 Water Level Data

The water level recorders usually get their strip charts replaced weekly or monthly by the assistant hydrologists in charge. The staff gauges are read by honorary gauge keepers one or more times a day, however, there are periods when no readings are taken for one reason or other. The monthly gauge returns are either collected by the assistant hydrologist in charge, or directly mailed to the Headquarters, and stored in the River Gauging Station ("R.G.S") file. The installation and inspection reports, together with subsequent changes and other information are recorded both in the "D.H." file of the station and in the History Sheets Ledger. Current meter measurements are kept in the "C.M notes" file.

Presently there is a great effort to put the gauge height data on the database system, and to prepare stage-discharge rating tables for all stations. Eventually the gauge heights will be converted into flows by means of a computer.

The recommendations to further improve the water level data gathering network are:

(1) Every station should have its datum tied to a permanent bench-mark, and all the subsequent changes in datum should be noted. It would be advantageous to keep the zero gauge at the same datum if the gauge needs to be replaced.

(2) The river cross section at the gauge location should be taken at the time of installation, and then at least once a year during its period of operation. At unstable channels it many be necessary to take more than one cross section annually.

(3) At locations where flow falls below the zero level of the gauge, another gauge with lower than zero level should be installed and relationship between the two gauges noted.

(4) The gauge keepers do not normally take readings on Sundays, holidays and on paydays when they have to go to the district center to collect their pay. In order to improve the reliability of data, the gauge keepers should keep continuous records, and should be given properly incentives to maximize the output.

(5) The gauge keepers should be trained and instructed to note maximum flood levels.

(6) Hydrologists should visit gauging stations more frequently to check on the operation of recorders. There should be spare recorders and staff gauges at each district office to replace the recorders which are not operating properly, and to install new gauges where the old ones are washed away.

(7) Current meter measurements should be taken more frequently. It would be desirable to have one measurement every month at each station (excepting weirs and very stable channels).

(8) Each current measurement should be immediately plotted on the rating curve on "C.M. Notes". If the new measurement is considerably off from the established curve, the accuracy of the survey should be noted and if necessary a new measurement requested.

(9) When a number of recent current measurements indicate a new trend while plotted on the rating curve, a new cross section of the channel should be taken in order to explain the shift.

(10) The current meters should periodically be calibrated. In order to achieve this, it is necessary to establish a calibration channel together with the related equipment.

(11) Basic quality control checks on data and hydrological analyses can not be carried out due to shortages of skilled staff of the Surface Water Section of the MOWD and the Section is unable to keep pace with the rapidly increasing demands for water resources data from the other government agencies and the private sector. In order to fulfill its obligations, especially with the maintenance of reliable network, the Surface Water Section must be expanded, strengthened, and mobilized. Also, increasing the number of professionals at the Headquarters will make it possible for the Surface Water Section to process and publish water resources data and perform hydrological analysis.

An increase of personnel who essentially work in the field will require a similar increase in the transport fleet. The additional transport requirements of the section over the next five year period are listed in Table 1.7 in Appendix B20.1.

7.3 Water Quality Monitoring

The water quality monitoring program described in the previous chapter falls far short of the desired level of surveillance. The main reasons are:

- financial constraints
- lack of transport
- lack of suitable equipment and maintenance services
- shortage of skilled staff, especially at the District level

The recommendations to further improve the water quality monitoring network are:

(1) Consistent monitoring, at least 4 times a year, should be carried out at principal water level gauging stations.

(2) Through the consistent monitoring, the baseline data on natural water quality of rivers should be obtained.

7.4 Suspended Load Monitoring

Although the suspended load monitoring has been carried out by the Surface Water Section of MOWD, the data was only compiled in their data log books without a quality check.

The recommendations to further improve the suspended load data monitoring network are:

(1) Each suspended load monitoring data should be immediately plotted on their rating curves. If the new monitoring is considerably off from the established curve, the accuracy of the survey should be noted and if necessary a new monitoring requested.

(2) The shortage of monitoring at relatively high flows makes it difficult to establish more accurate rating curves. Almost all the existing monitoring data has been carried out for low flow discharges. The samplings at average flow and medium-high flows should be carried out.

(3) Although the trend analysis for suspended load concentration is useful to estimate the variation of soil erosion rate of catchment, there are only 5 stations with monitoring data of more than 20 years. This data shows that a lot of monitoring had been carried out in the 1960's, while, little monitoring had been carried out after 1970. The consistent sampling of suspended load should be carried out.

REFERENCES

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2. Guide to Hydrometeorological Practices, WMO, Geneva, Switzerland, 1965.

Table 1 Distribution of Water Level Gauging Station in Kenya (1990)

No.	Drainage Area	Catchment Area (sq.km)	Ratio to Total Area (%)	Registered Station (nos.)			Catchment per Station (sq.km)	Type of Gages (nos.)					
				Operation	Abandoned	Total		AS	ASW	S	SW	W	Total
1	Lake Victoria	46,229	8.0	114	115	229	202	18	4	169	38	-	229
2	Rift Valley	130,452	22.5	50	103	153	853	15	3	95	38	2	153
3	Athi River and Coast	66,837	11.5	74	149	223	300	15	5	118	49	36	223
4	Tana River	126,026	21.7	116	89	205	615	19	7	152	18	9	205
5	Ewaso Ngiro and North	210,226	36.3	45	68	113	1,860	7	6	58	30	12	113
	Total	579,770	100.0	399	524	923	628	74	25	592	173	59	923

Note : Type of Gauge
AS : Automatic recorder + Staff gauge
ASW : Automatic recorder + Staff gauge + Weir
S : Staff gauge
SW : Staff gauge + Weir
W : Weir

Table 2 Rating Equation of Suspended Load and Its Volume

No.	Code	River Name	Catchment Area (sq. km)	Annual Mean Discharge (cms)	Rating Equation		Suspended Load	
					a	b	Mean (ppm)	Annual (ton/year)
1	1DA02	Nzoia	8,417	56.6	18.531	0.446	112	212,298
2	1ED01	Lusumu	1,207	27.9	22.686	0.552	142	128,239
3	1GB05	Ainamotua	606	5.2	44.653	0.675	136	28,954
4	1GB07	Kapchure	129	1.1	68.831	0.328	71	2,555
5	1GD01	Nyando	2,598	17.6	136.508	0.623	815	566,362
6	1HA10	Luando	234	3.0	227.405	0.255	301	26,561
7	1JG01	Sondu	3,287	50.0	13.314	0.409	66	107,160
8	2ED02	Lelgel	108	0.5	79.223	1.115	37	799
9	2EE04	Perkerra	1,334	2.8	1197.201	1.010	3,387	390,033
10	2GB01	Malewa	1,430	3.3	19.302	0.736	46	5,637
11	3AA04	Mbagathi	272	1.6	139.713	0.685	193	4,456
12	3BA09	Karyra	44	0.8	368.177	0.737	312	9,124
13	3BA10	Ruaraka	65	1.1	31.142	0.225	32	989
14	3BA22	Nairobi	75	1.3	51.216	0.392	57	2,231
15	3BB10	Riara	41	0.4	144.554	0.219	118	1,474
16	3CB05	Ndarugu	312	4.4	95.369	0.505	202	29,356
17	3DA02	Athi	5,724	23.6	8.220	0.924	153	131,089
18	3F 02	Athi	10,272	33.6	39.338	0.750	549	753,627
19	3HA12	Athi (L. Falls)	25,203	33.2	48.079	0.823	859	2,057,487
20	3J 06	Lumi	451	1.2	210.044	1.663	284	9,020
21	4AA01	Sagana	96	1.1	40.572	0.739	44	1,659
22	4AA05	Sagana	505	5.6	31.183	0.676	100	18,845
23	4AC03	Sagana	282	4.1	21.177	0.763	62	8,405
24	4BC02	Tana-Sagana	2,365	21.0	2.084	1.924	729	999,721
25	4BD01	Mathioya	500	6.6	1.833	1.875	63	20,107
26	4BE01	Maragua	414	11.3	13.671	1.128	211	70,797
27	4CA02	Chania	518	8.2	8.591	0.967	66	22,132
28	4CB04	Thika	316	6.9	23.957	1.020	172	53,063
29	4DD01	Thiba	2,616	33.4	5.181	0.736	69	75,167
30	4F 01	Tana (G. Falls)	16,972	184.4	2.358	1.134	875	6,098,075
31	4F 19	Kazita	1,702	17.9	4.918	1.117	123	82,057
32	4G 01	Tana (Garissa)	32,892	166.0	134.316	0.447	1,320	6,907,451
33	5BC02	Naromoru	83	0.8	21.242	0.422	19	486
34	5BC06	Burgret	98	1.0	36.569	0.588	37	1,130
35	5BE20	Nanyuki	860	1.8	16.823	0.936	29	2,072
36	5E 03	Ewaso N'giro	15,300	21.6	230.284	0.618	1,538	1,045,035

Note: Annual suspended volume was calculated on daily basis by using dimensionless flow duration curve.

Table 3 Minimum Density of Precipitation Station Networks

Type of region		Range of norms minimum network Area in sq/km for 1 station	Range of provisional norms tolerated in difficult conditions (1) Area in sq/km for 1 station
I.	Flat regions of temperate, mediterranean and tropical zones.	600 - 900	900 - 3,000
II.	Mountaninous regions of temperate, mediterranean and tropical zones.	100 - 250	250 - 1,000 (4)
	Small mountainous islands with very irregular precipitations, very dense hydrographic network.	25	
III.	Arid and polar Zones (2)	1,500 - 10,000 (3)	

(1) Last figure of the range should be tolerated only under exceptionally difficult conditions.
(2) Great deserts are not included.
(3) Depending on feasibility.
(4) Under very difficult conditions this may be extended to 2,000 km^2.

Source: Ref. 2

Table 4 Minimum Density of Hydrometric Station Networks

Type of region		Range of norms for minimum network Area in sq/km for 1 station	Range of provisional norms tolerated in difficult conditions (1) Area in sq/km for 1 station
I.	Flat regions of temperate, mediterranean and tropical zones.	1,000 - 2,500	3,000 - 10,000
II.	Mountanínous regions of temperate, mediterranean and tropical zones.	300 - 1,000	1,000 - 5,000 (4)
	Small mountainous islands with very irregular precipitation, very dense stream network.	140 - 300	
III.	Arid and polar Zones (2)	5,000 - 20,000 (3)	

(1) Last figure of the range should be tolerated only for exceptionally difficult conditions.
(2) Great deserts are not included.
(3) Depending on feasibility.
(4) Under very difficult conditions this may be extended to 10,000 km^2.

Source: Ref. 2

Fig.

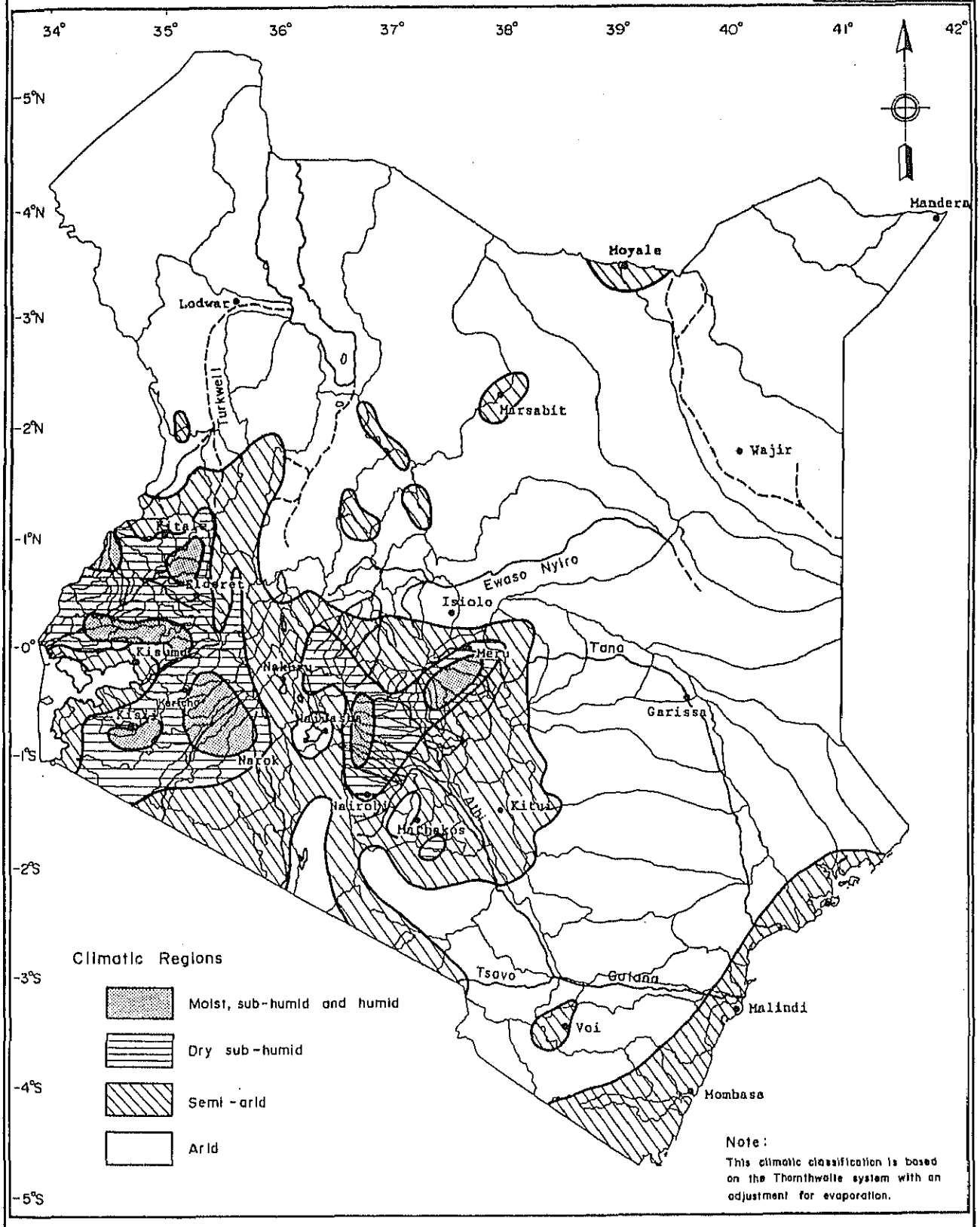

Figure 1 Climatic Regions

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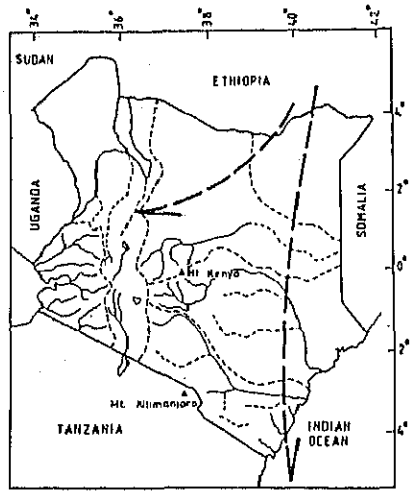
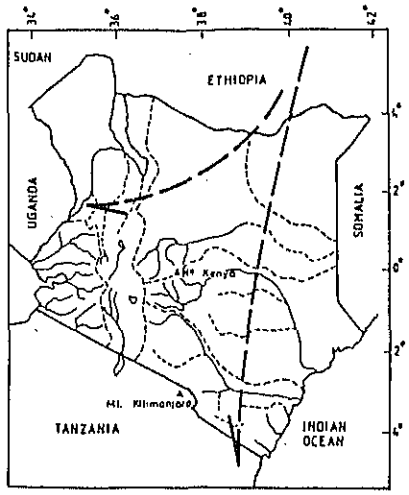
Fig.



JANUARY



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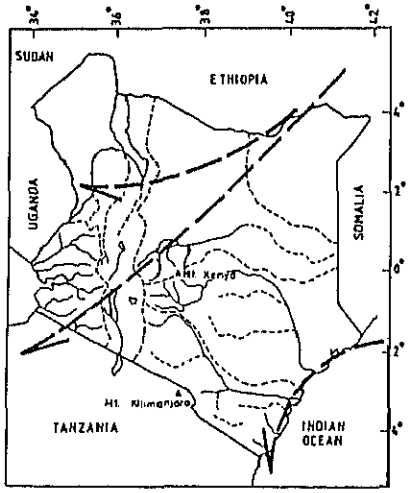

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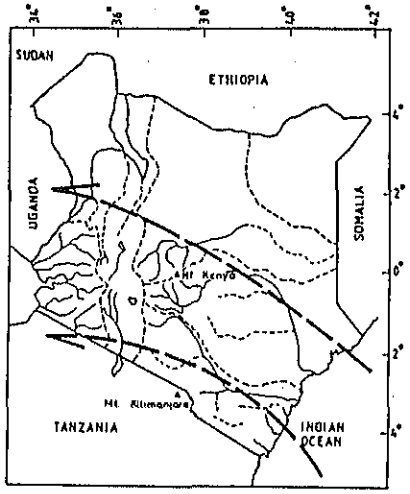

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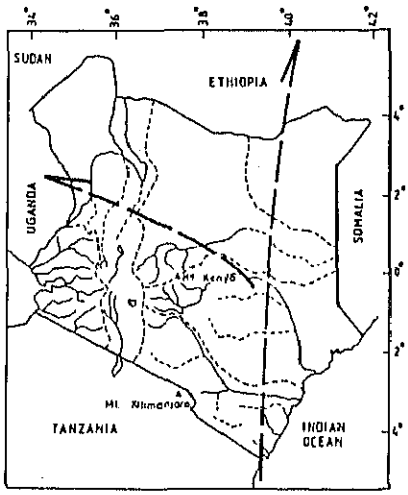

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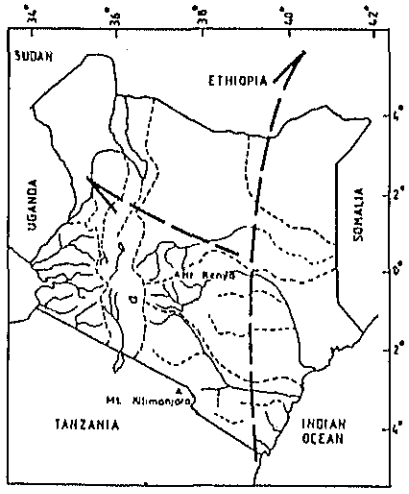

JUNE

Figure 2
Surface Wind Movement (1/2)

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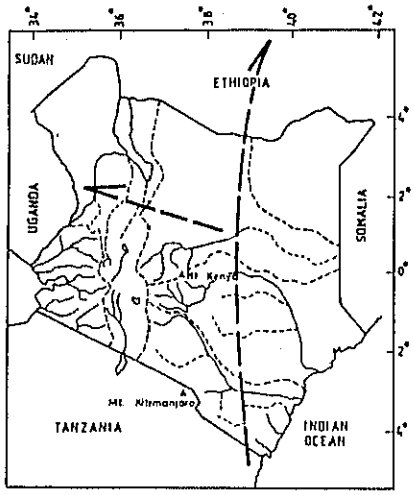
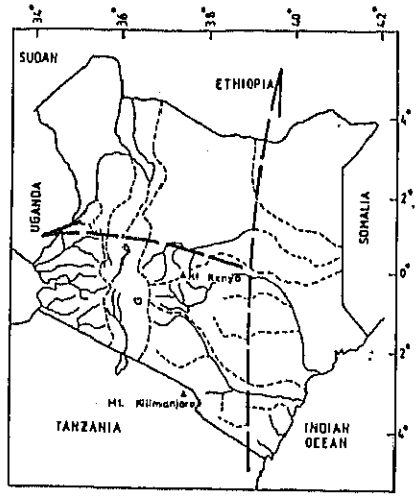
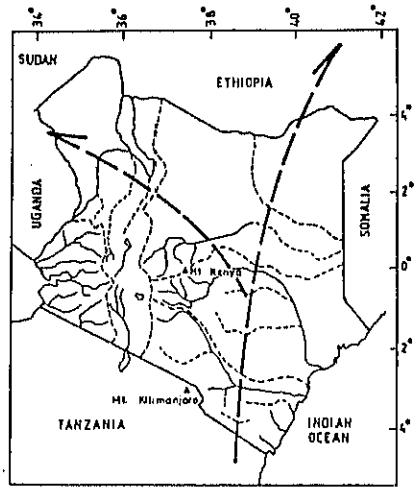
Fig.



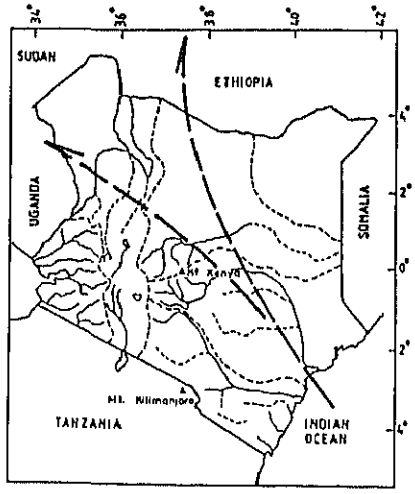
JULY



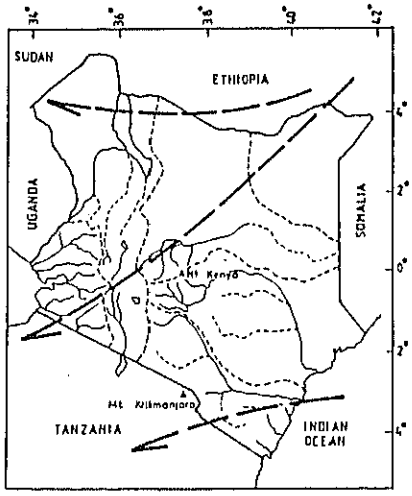
AUGUST



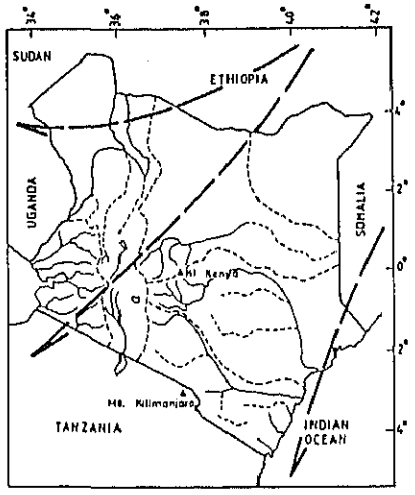
SEPTEMBER



OCTOBER



NOVEMBER



DECEMBER

Figure 2
Surface Wind Movement (2/2)

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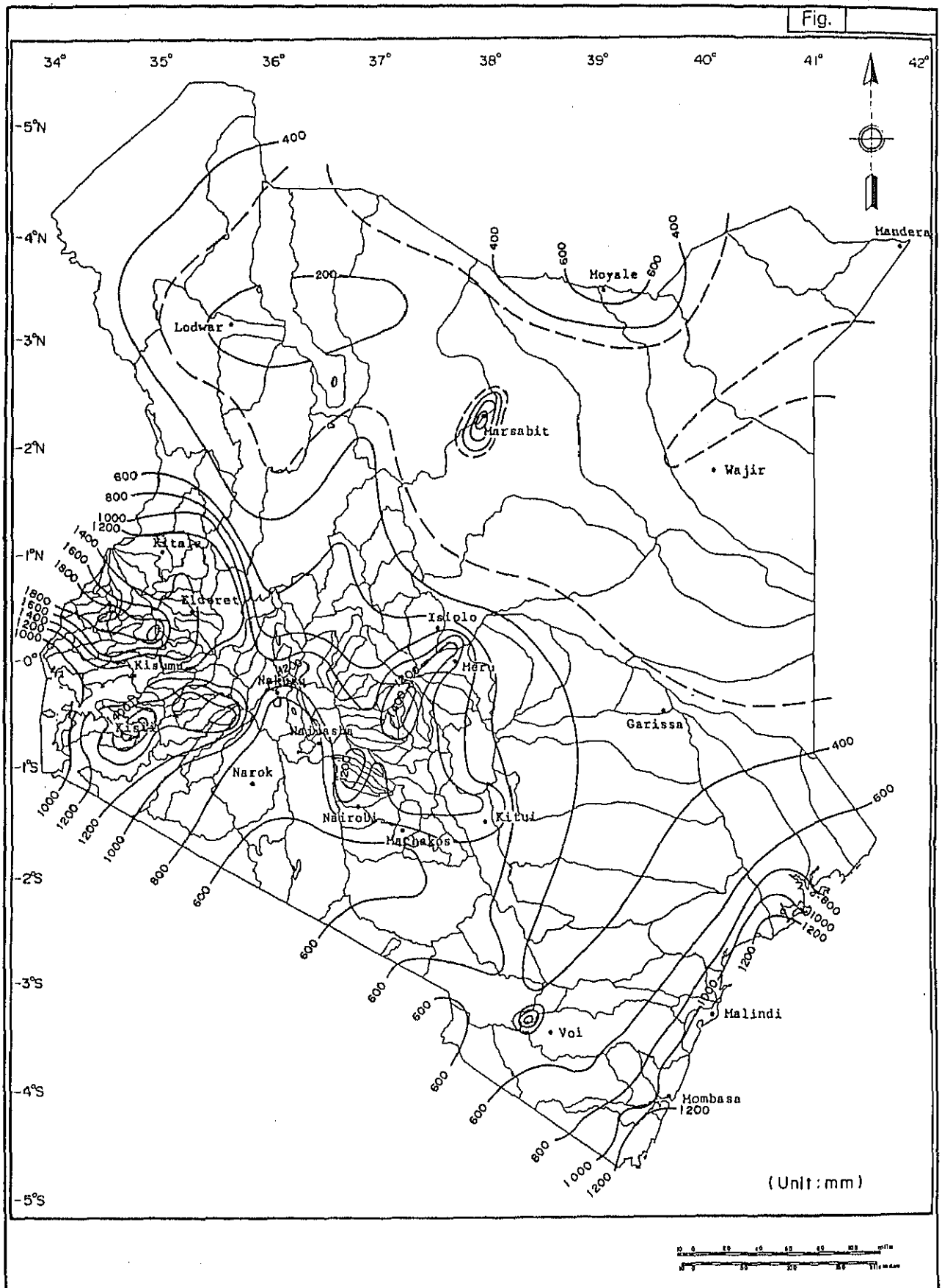

Figure 3 Isohyetal Map of Annual Rainfall Depth

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Fig.

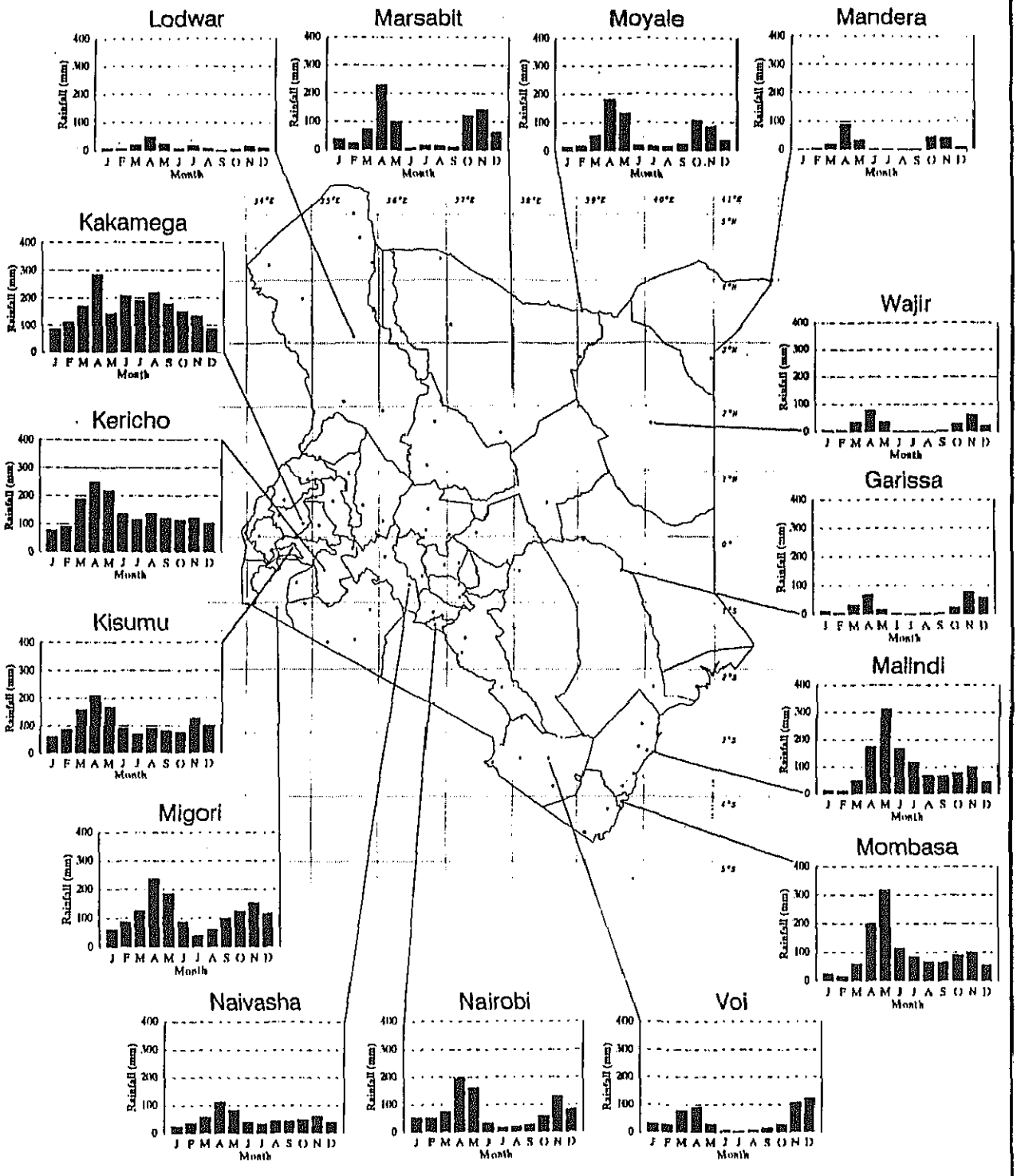

Figure 4 Variation of Monthly Rainfall Depth

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Fig.

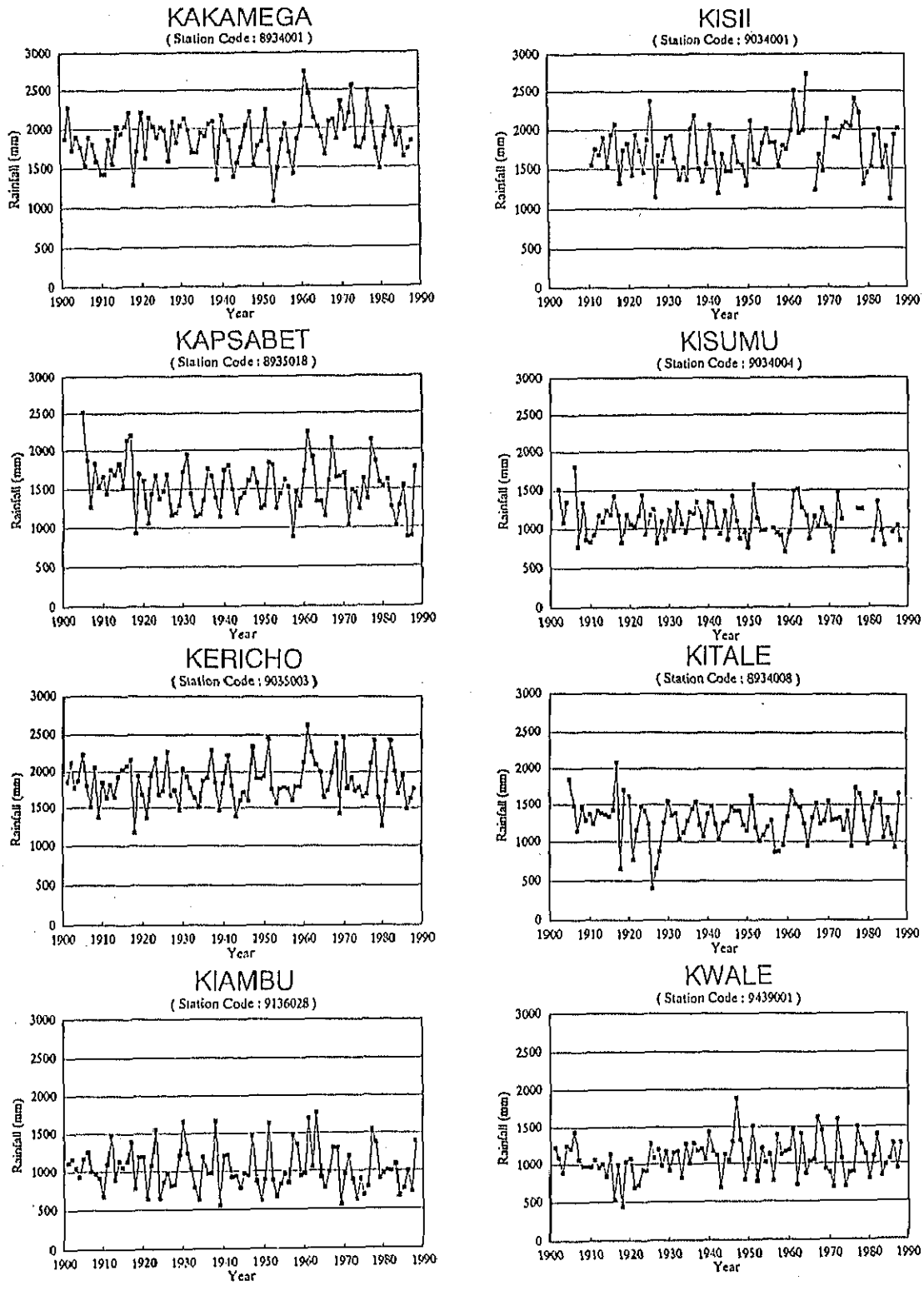

Figure 5 Variation of Annual Rainfall Depth (1/3)

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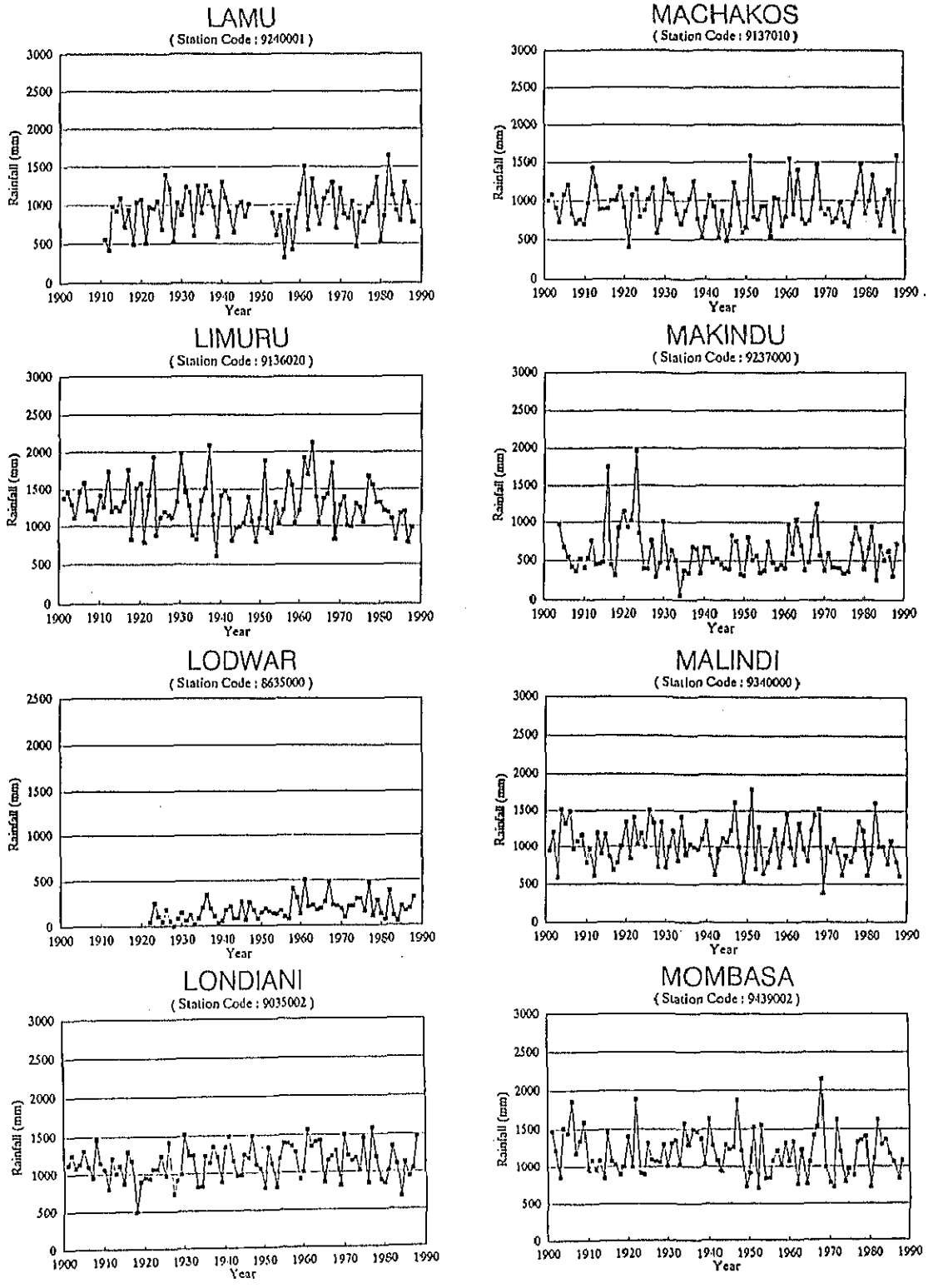

Figure 5 Variation of Annual Rainfall Depth (2/3)

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Fig.

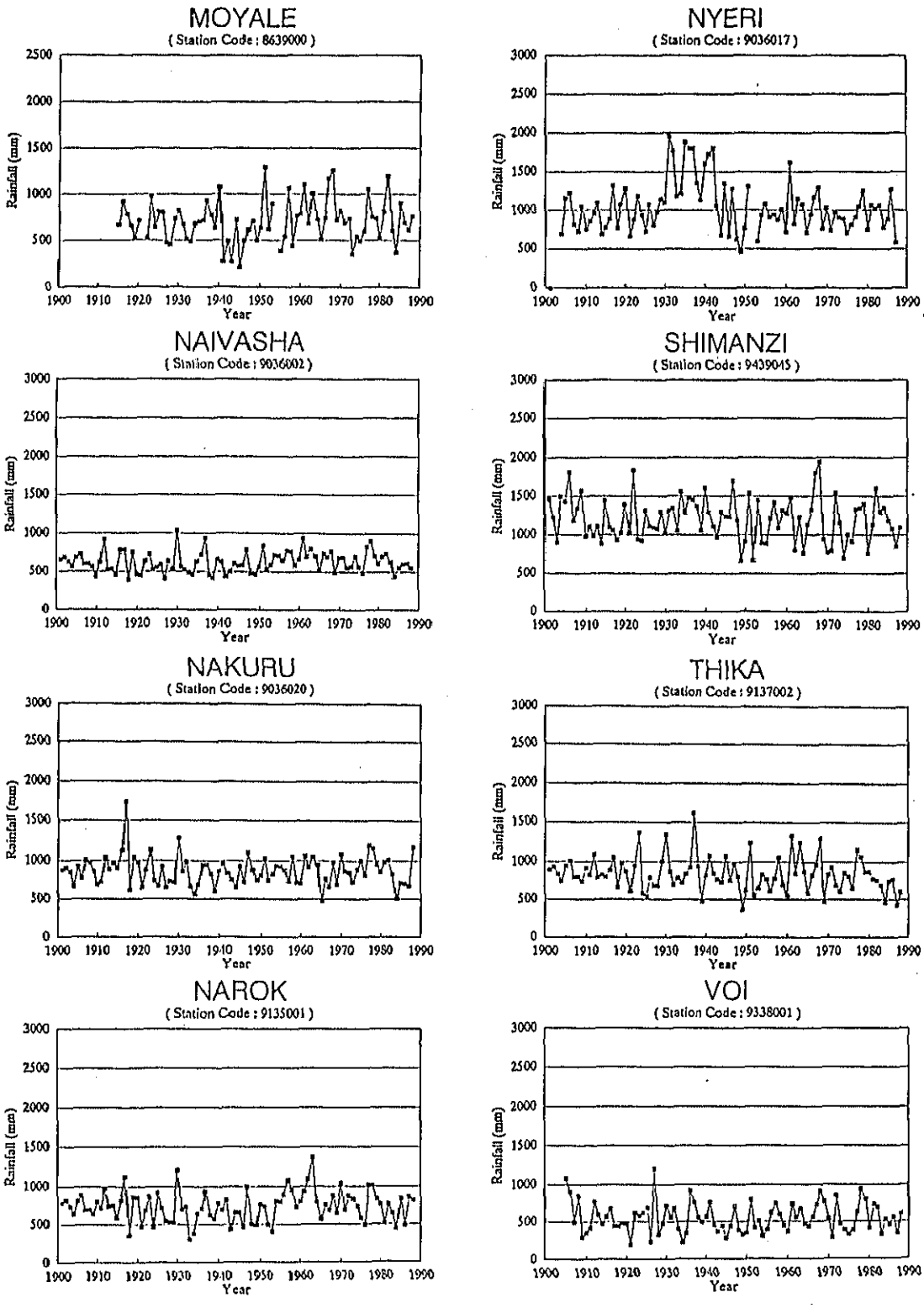

Figure 5 Variation of Annual Rainfall Depth (3/3)

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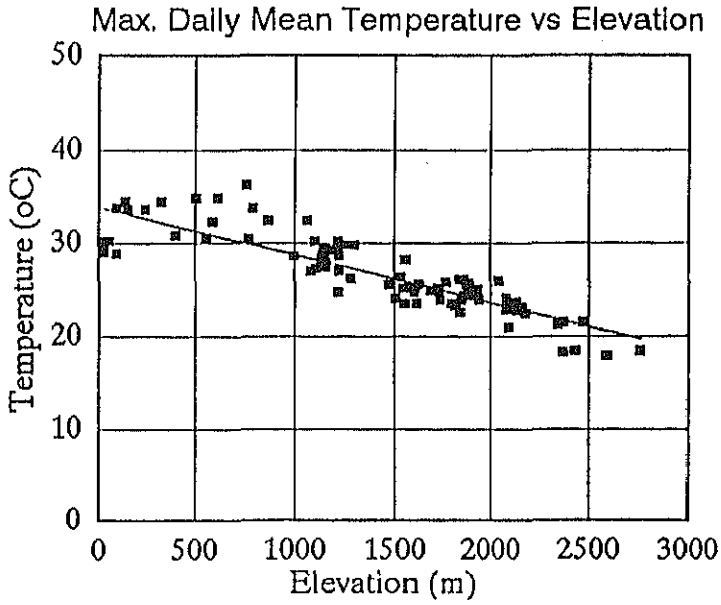
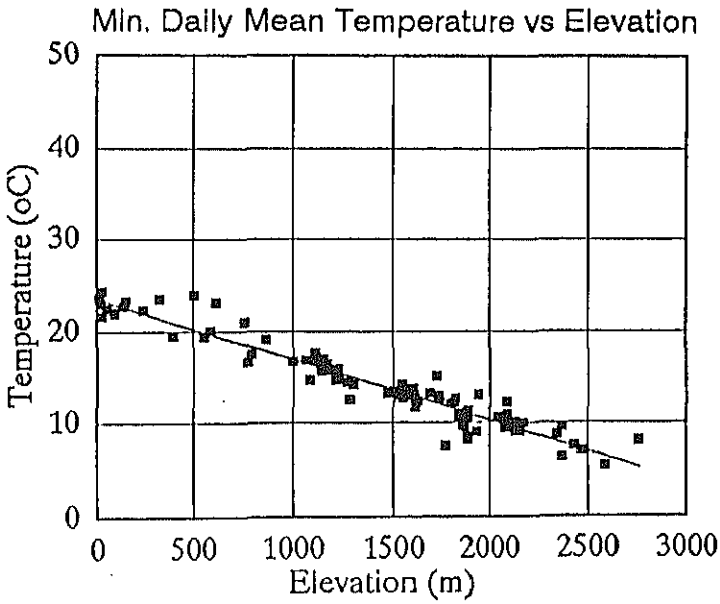
Fig.



T = 33.926 - 0.00517 * H
Nos. of samples : 89
Std. dev. : 2.03
Applicable range : El.16 - El.2,762



T = 23.529 - 0.00663 * H
Nos. of samples : 89
Std. dev. : 1.335
Applicable range : El.16 - El.2,762

Figure 6 Temperature (1/2)

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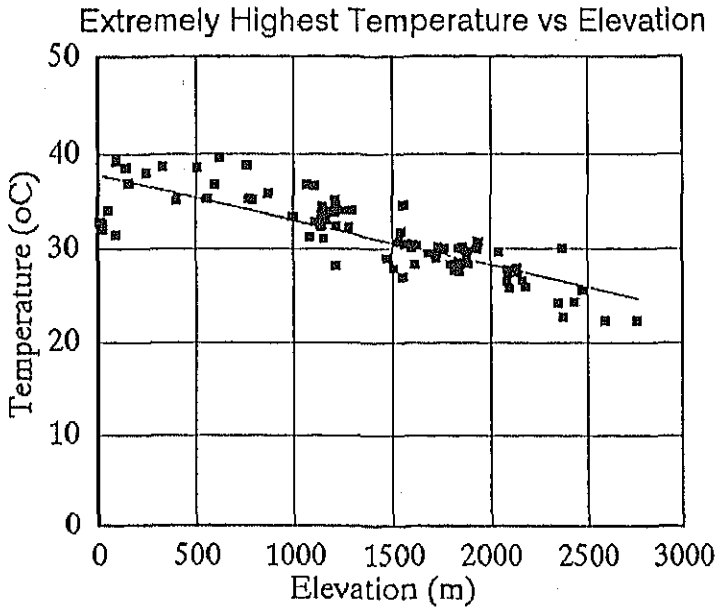
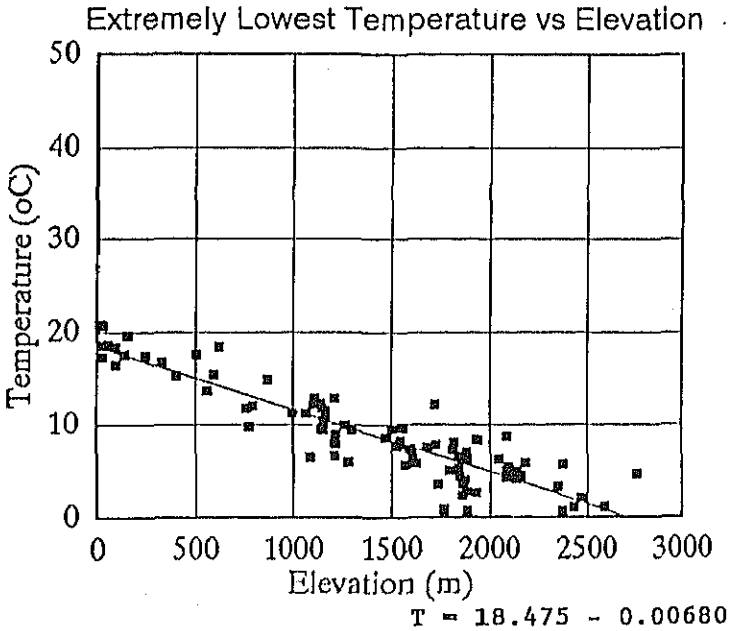
Fig.



T = 37.804 - 0.00475 * H
Nos. of samples : 89
Std. dev. : 2.276
Applicable range : El.16 - El.2,762



T = 18.475 - 0.00680 * H
Nos. of samples : 89
Std. dev. : 2.13
Applicable range : El.16 - El.2,762

Figure 6 Temperature (2/2)

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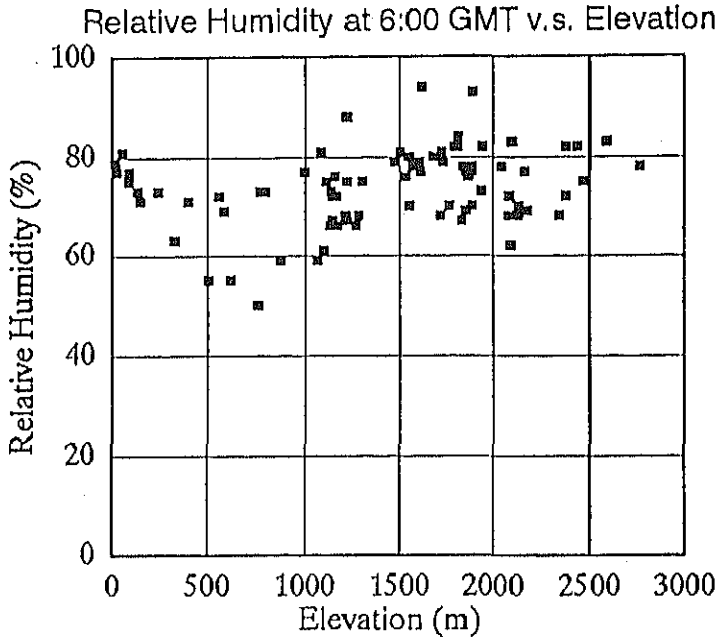
Fig.



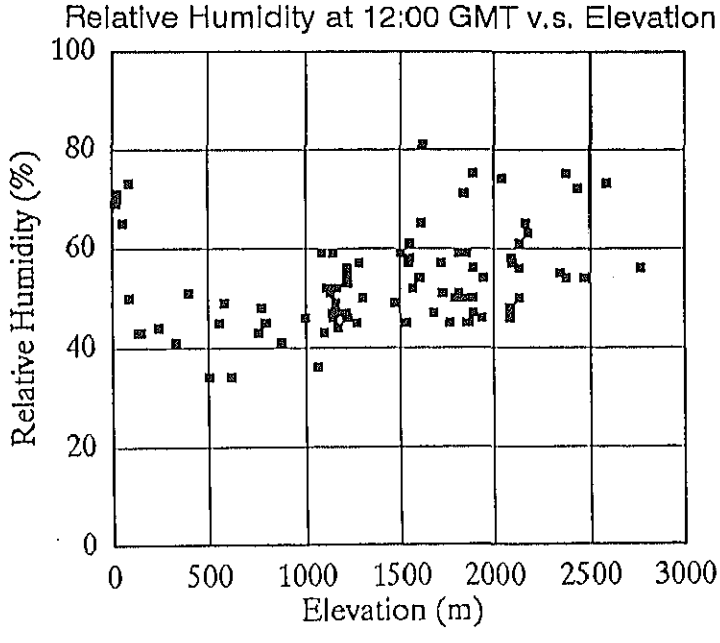


Figure 7 **Relative Humidity**

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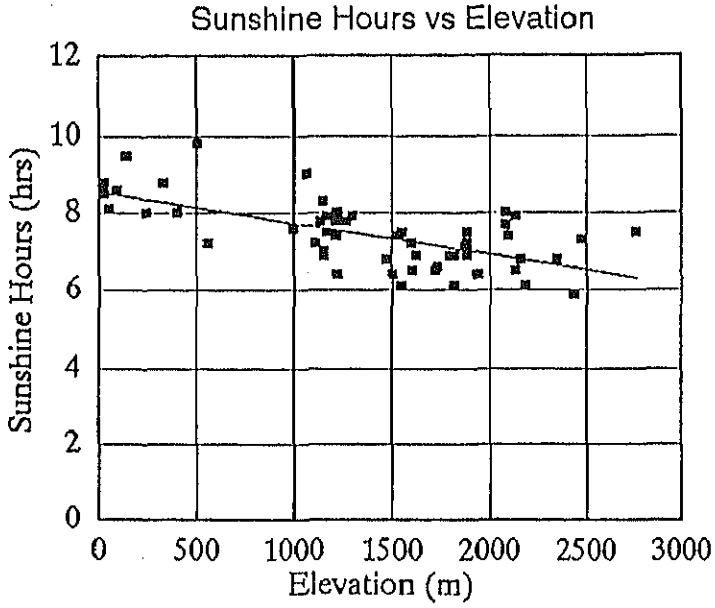
Fig.



SH = 8.557 - 0.00081 * H
Nos. of samples : 56
Std. dev. : 0.650
Applicable range : El.20 - El.2,762

Figure 8 Sunshine Hours

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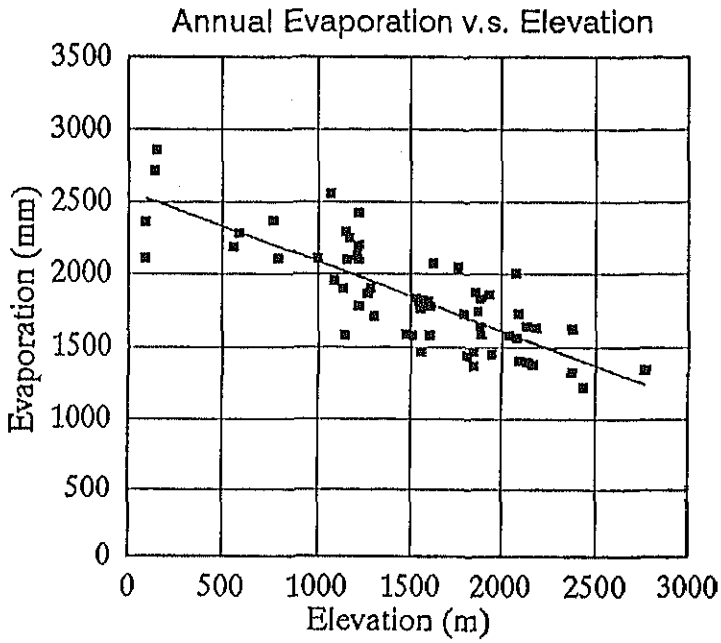
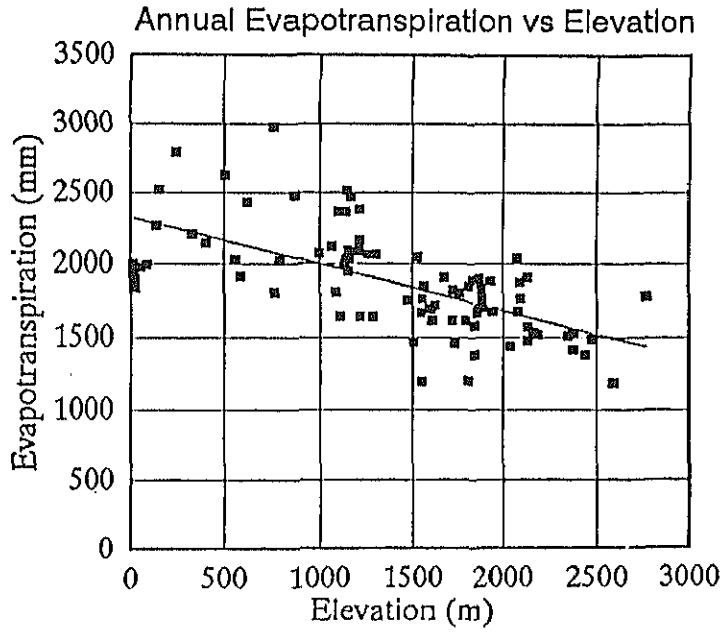
Fig.



Eo = 2,575 - 0.4838 * H
Nos. of samples : 60
Std. dev. : 216
Applicable range : El.91 - El.2,762



ETo = 2,330 - 0.03235 * H
Nos. of samples : 88
Std. dev. : 272
Applicable range : El.16 - El.2,762

Figure 9 Evaporation and Evapotranspiration

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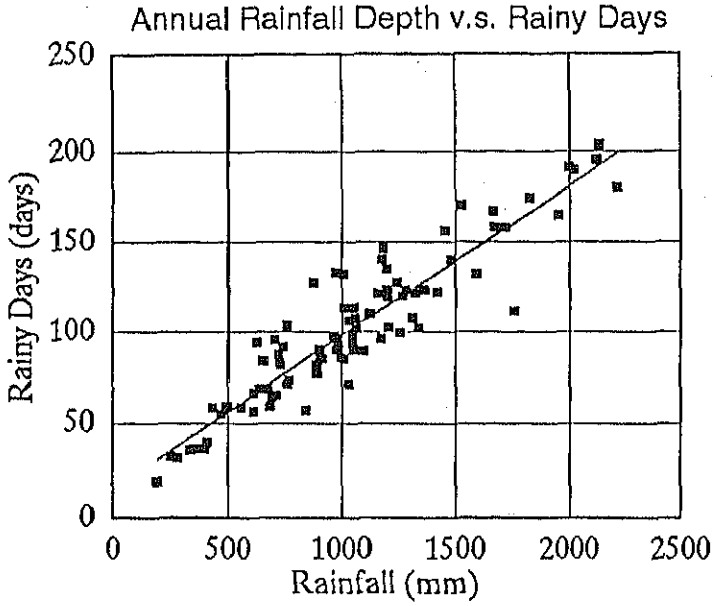
Fig.



NR = 0.083 * R + 15.1
Nos. of samples : 89
Std. dev. : 15.3
Applicable range : 193 - 2,213

Figure 10 Rainy Days

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