

Table A 2.2-23 MONTHLY RAINFALL AT LAUDERDALE GROUP(M306) (Extended)

Year	Extended Data												Annual
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1960	449.6	344.2	164.3	319.3	295.9	193.8	323.6	65.5	726.7	326.4	294.9	74.2	3578.4
1961	258.3	77.0	155.7	257.0	498.1	263.9	192.3	356.6	238.0	429.3	596.4	399.3	3721.9
1962	303.5	161.0	302.5	711.5	713.0	266.4	602.2	341.4	615.2	449.3	602.5	625.9	5694.4
1963	247.9	163.8	221.2	571.0	523.2	514.9	750.1	559.3	563.4	612.1	457.7	548.6	5733.2
1964	270.0	169.2	371.1	338.1	576.6	579.6	726.7	462.5	340.9	153.2	206.8	179.3	4374.0
1965	5.1	4.6	128.3	355.1	587.2	159.8	70.6	247.1	451.4	335.0	412.0	409.4	3165.5
1966	40.1	4.6	515.4	232.4	56.4	158.8	93.0	3.8	669.5	522.2	185.4	284.2	2765.8
1967	215.6	113.0	232.9	298.2	204.2	351.3	159.8	248.7	227.3	814.8	392.2	195.4	3453.4
1968	160.5	49.5	69.6	79.8	127.3	557.5	570.5	135.1	546.9	139.7	131.8	148.8	2717.0
1969	43.4	101.1	292.9	309.1	1265.0	372.9	86.9	294.9	274.3	562.6	335.0	768.5	4701.6
1970	208.8	138.9	419.9	282.4	277.6	246.1	223.0	220.2	201.4	374.1	484.6	195.3	3272.3
1971	264.2	192.0	147.1	398.5	288.8	355.3	279.9	312.7	850.6	193.8	813.3	453.9	4550.1
1972	134.1	69.8	121.2	240.5	837.9	177.5	278.4	260.1	613.9	530.9	634.2	99.8	3998.3
1973	62.7	191.5	576.1	262.9	107.9	339.3	141.0	303.0	114.8	544.3	232.7	381.5	3257.7
1974	11.4	90.4	41.9	263.1	331.7	433.6	430.8	251.0	475.0	214.9	276.4	166.6	2986.8
1975	93.4	159.8	215.4	412.5	431.8	605.5	141.5	304.8	295.4	475.5	423.9	422.4	3981.9
1976	122.4	45.7	253.0	369.7	227.1	67.8	113.8	182.9	56.1	302.8	386.1	428.0	2555.4
1977	6.9	141.7	217.2	343.4	439.7	224.0	73.7	195.0	212.6	330.7	574.8	264.9	3024.6
1978	83.1	245.1	240.8	246.4	707.6	181.9	224.5	411.7	368.3	281.6	723.1	194.8	3908.9
1979	35.8	103.4	55.1	334.0	389.4	284.0	273.2	116.1	483.7	386.1	468.1	350.3	3285.2
1980	36.1	8.9	105.2	252.0	131.6	268.2	219.0	191.3	89.9	229.9	140.0	200.8	1872.9
1981	93.2	159.8	87.6	387.5	274.0	371.2	89.7	317.3	119.7	182.5	371.3	155.3	2609.1
1982	0.0	80.1	236.2	547.4	643.2	851.8	315.4	192.0	62.9	383.6	624.0	87.4	4024.0
1983	117.6	119.1	88.9	41.8	293.3	144.8	122.2	188.6	302.0	124.3	251.8	366.7	2161.1
1984	412.9	140.9	254.7	504.9	257.5	347.3	245.4	0.0	246.1	337.8	529.7	134.4	3411.6
1985	214.9	202.2	311.5	199.4	115.4	771.2	107.8	72.0	107.9	619.7	344.3	319.4	3385.7
1986	129.7	188.8	198.6	463.5	175.0	120.0	100.9	335.8	505.6	254.5	213.4	149.0	2834.8
1987	129.5	0.0	175.0	252.6	173.0	221.7	0.0	413.8	198.6	481.5	192.7	175.1	2413.5
1988	78.7	101.0	310.5	281.7	487.1	315.1	325.6	189.9	734.1	170.4	417.6	181.1	3592.8
1989	118.6	0.0	105.3	315.4	725.7	338.4	656.8	191.7	338.8	504.8	269.6	103.8	3668.9
1990	197.7	159.0	285.7	322.4	464.5	343.6	298.4	179.9	145.0	357.9	322.5	265.2	3341.8
Ave.	146.6	120.2	222.6	328.8	407.3	336.4	265.7	243.4	360.7	375.0	397.1	281.4	3485.2
Max.	449.6	344.2	576.1	711.5	1265.0	851.8	750.1	559.3	850.6	814.8	813.3	763.5	5733.2
Min.	0.0	0.0	41.9	41.8	56.4	67.8	0.0	0.0	56.1	124.3	131.8	74.2	1872.9

Station code : M306

Unit : MM

Table A 2.2-24 MONTHLY RAINFALL AT MAHAWELATENNA(M337) (Extended)

Year	Extended Data												Annual
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1960	277.9	266.0	360.4	399.3	80.3	8.4	168.4	18.5	39.1	302.5	131.3	173.2	2227.3
1961	266.2	68.3	262.9	432.3	149.4	60.7	94.2	75.2	40.4	220.5	294.6	203.7	2168.4
1962	76.7	99.1	265.4	362.2	280.9	31.8	69.8	12.9	129.0	308.4	291.8	157.2	2085.2
1963	274.3	124.7	288.8	462.5	309.4	138.2	63.0	13.7	75.7	381.8	786.9	501.4	3420.4
1964	78.5	115.1	379.0	310.6	90.9	105.9	122.9	12.9	142.7	144.8	59.9	72.9	1636.1
1965	5.6	245.1	207.3	293.6	290.3	57.4	12.7	73.9	90.4	190.2	422.7	280.9	2170.1
1966	165.1	62.7	205.2	394.5	1.8	42.4	38.9	20.3	219.2	445.5	229.4	175.3	2001.3
1967	117.1	127.3	231.9	326.9	147.6	77.7	34.5	64.0	15.8	369.6	467.4	144.3	2124.1
1968	129.8	10.9	159.5	175.3	117.9	76.7	91.7	2.3	75.2	542.5	278.4	234.7	1894.9
1969	32.5	148.8	178.3	185.9	464.6	72.9	3.3	66.6	49.3	462.3	196.6	442.5	2303.6
1970	135.6	168.1	315.2	330.5	160.0	21.8	33.5	7.1	29.7	148.1	388.9	178.8	1917.3
1971	219.5	114.0	349.5	328.2	58.7	143.5	70.9	79.0	242.6	233.2	382.8	157.2	2379.1
1972	46.5	20.6	443.0	144.8	215.6	7.4	72.4	12.9	127.8	319.3	322.3	92.7	1825.3
1973	71.1	0.5	302.8	338.3	118.1	66.3	22.4	35.0	5.3	412.0	270.0	311.7	1953.5
1974	0.0	253.2	131.1	359.9	97.3	75.7	120.9	44.2	98.0	123.7	126.5	419.6	1850.1
1975	92.2	263.7	114.3	240.5	232.4	275.6	31.5	20.3	93.2	61.5	457.2	154.2	2036.6
1976	21.8	68.8	2.3	263.7	78.0	5.8	0.8	52.8	38.3	255.3	218.9	107.4	1113.9
1977	167.6	329.9	265.2	352.8	192.3	59.2	34.3	0.0	36.3	534.2	336.3	3.0	2311.1
1978	65.3	152.1	365.8	269.5	383.5	28.7	63.6	99.3	89.4	335.8	530.4	259.8	2649.2
1979	21.8	11.7	183.6	253.2	245.6	73.2	80.0	37.6	142.5	390.4	289.3	272.5	2801.4
1980	2.0	33.5	130.8	195.3	156.2	55.4	36.6	73.2	28.2	347.7	561.3	26.9	1647.1
1981	8.6	125.2	167.9	132.8	156.5	118.4	39.9	70.4	135.6	53.3	371.3	24.9	1404.8
1982	56.4	0.0	212.8	209.3	320.5	191.8	41.2	4.3	13.6	386.8	450.9	158.1	2045.7
1983	14.4	21.3	108.6	196.6	312.2	18.8	10.7	34.0	70.2	369.3	232.2	203.3	1591.6
1984	270.8	152.8	404.2	397.2	60.5	83.0	92.1	6.9	154.7	123.3	457.9	243.3	2446.7
1985	133.6	197.8	379.8	119.9	321.9	351.2	5.4	10.8	70.1	258.4	334.5	337.7	2521.1
1986	118.0	58.3	262.1	267.2	113.9	50.1	15.8	22.9	87.0	219.5	210.1	137.4	1562.3
1987	72.9	20.8	105.7	332.6	28.9	36.1	12.5	65.0	33.7	190.3	448.9	174.9	1522.3
1988	42.6	92.9	354.3	348.6	183.3	100.0	78.7	123.6	13.3	159.8	35.0	72.8	1604.9
1989	36.9	10.0	157.7	224.1	195.1	89.2	176.2	19.5	46.1	254.7	359.1	24.0	1592.6
1990	81.9	205.0	259.9	227.2	198.1	91.3	24.9	32.2	32.3	290.6	355.0	88.7	1867.1
Ave.	100.1	115.2	243.7	286.3	185.9	84.3	57.1	39.1	79.5	285.0	332.2	188.2	1996.6
Max.	277.9	329.9	443.0	462.5	464.6	351.2	176.2	123.6	242.6	542.5	786.9	501.4	3420.4
Min.	0.0	0.0	2.3	119.9	1.8	5.8	0.8	0.0	5.3	53.3	35.0	3.0	1113.9

Station code : M337

Unit : MM

Table A 2.2-25 MONTHLY RAINFALL AT NAGARAT ESTATE(M408) (Extended)

Year	Extended Data												Annual
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1960	100.8	200.9	304.3	391.2	102.9	31.5	360.7	61.2	184.9	331.0	489.2	159.3	2717.9
1961	172.5	178.3	187.5	311.1	239.3	35.6	66.0	70.6	59.2	426.2	314.7	181.6	2242.6
1962	80.3	50.8	286.3	440.9	278.9	87.4	148.6	90.4	108.5	317.5	308.4	216.7	2414.7
1963	217.7	204.7	131.6	567.7	255.3	132.1	137.7	55.1	158.8	609.1	713.2	324.1	3507.1
1964	156.7	120.7	222.8	216.9	96.0	152.4	167.4	129.0	159.5	213.1	144.5	143.0	1922.0
1965	22.6	34.0	190.5	565.1	460.2	116.1	0.0	152.4	64.3	415.8	451.1	322.3	2794.4
1966	41.7	76.2	217.4	470.7	19.0	74.9	55.7	39.2	44.7	320.0	417.1	239.0	2015.6
1967	87.9	100.8	213.7	247.6	62.9	102.0	41.6	53.7	53.1	589.2	739.8	329.8	2602.1
1968	124.9	86.6	148.6	355.5	163.1	164.8	126.5	79.0	77.7	428.8	242.1	215.9	2214.5
1969	64.5	125.5	221.0	539.0	283.7	60.5	65.3	154.2	99.3	473.3	209.3	473.7	2775.3
1970	191.3	290.8	311.9	467.9	571.5	62.5	84.3	65.0	40.9	204.7	350.3	285.0	2926.1
1971	140.7	125.0	128.8	241.6	69.8	123.3	109.7	184.4	287.5	173.7	296.2	247.1	2133.8
1972	99.8	36.1	202.9	277.4	345.4	46.5	124.2	78.7	236.0	620.8	455.9	107.2	2631.9
1973	35.3	72.9	114.6	392.9	60.7	54.9	39.4	44.2	43.9	419.6	341.9	351.6	1971.9
1974	2.5	166.4	154.4	246.4	144.8	45.7	61.0	67.3	148.6	85.1	163.8	199.4	1485.4
1975	151.1	36.8	121.9	576.3	106.9	217.2	41.9	31.0	239.8	246.1	502.2	340.4	2611.6
1976	214.6	22.9	132.1	798.1	22.9	114.3	38.1	28.2	111.3	594.6	599.7	302.0	2978.8
1977	32.3	132.6	280.9	653.0	311.7	85.8	125.5	100.3	111.0	637.1	590.3	236.0	3346.5
1978	229.4	282.2	388.6	150.1	580.9	22.6	49.8	85.8	110.2	499.7	466.4	123.7	2989.4
1979	37.6	220.7	36.1	225.8	120.9	38.3	42.9	25.1	303.0	705.1	908.0	341.1	3004.6
1980	27.9	56.9	347.7	557.8	66.0	72.1	1.0	11.4	0.0	38.3	308.0	298.0	1785.1
1981	131.3	92.8	171.0	363.2	129.8	144.5	89.8	43.9	162.6	90.9	272.3	129.1	1821.2
1982	44.7	37.3	178.3	362.0	349.2	221.5	43.5	144.1	27.8	391.2	580.6	195.2	2575.4
1983	2.0	33.0	11.2	10.1	25.8	0.3	4.7	5.0	2.5	28.4	43.2	38.3	204.5
1984	26.3	27.8	416.1	556.3	83.2	135.3	159.3	48.8	148.6	103.2	267.8	141.4	2114.1
1985	175.3	178.2	294.4	250.0	202.5	385.3	22.0	50.0	135.5	256.5	230.0	281.5	2461.2
1986	202.7	137.8	104.0	329.5	86.5	146.6	29.0	146.5	74.9	1025.3	163.0	179.0	2624.8
1987	107.0	37.0	228.0	440.7	194.0	85.0	0.0	84.0	55.7	468.0	266.5	59.0	2024.9
1988	5.4	98.2	623.0	916.5	185.0	67.0	98.0	147.3	265.4	41.2	324.7	80.3	2852.0
1989	8.1	28.0	130.0	379.3	116.4	51.7	474.5	308.4	163.5	261.0	309.7	50.0	2280.6
1990	190.8	146.4	263.4	293.4	214.3	108.4	21.6	48.4	30.4	347.1	298.6	229.2	2192.0
Ave.	100.3	110.9	218.2	406.3	191.9	103.0	91.3	84.9	119.6	367.7	379.7	220.0	2394.3
Max.	229.4	290.8	623.0	916.5	580.9	385.3	474.5	308.4	303.0	1025.3	908.0	473.7	3507.1
Min.	2.0	22.9	11.2	10.1	19.0	0.3	0.0	5.0	0.0	28.4	43.2	38.3	204.5

Station code : M408

Unit : MM

Table A 2.2-26 MONTHLY RAINFALL AT WEST HAPUTALE(M624) (Extended)

Year	Extended Data												Annual
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1960	279.9	339.9	168.4	493.8	87.9	4.1	244.3	45.7	120.4	381.3	504.7	111.5	2781.9
1961	252.2	163.3	246.9	300.2	279.7	33.3	52.3	56.4	47.2	406.1	329.2	159.8	2326.6
1962	92.5	70.6	269.2	459.2	216.2	52.6	45.5	97.8	82.6	386.0	333.5	287.8	2343.5
1963	255.8	174.8	351.8	633.2	355.3	90.9	38.6	22.1	231.4	492.3	540.3	282.2	3468.7
1964	118.9	148.8	344.7	469.1	55.5	26.4	97.8	94.7	108.2	102.4	71.1	67.6	1715.2
1965	19.6	105.2	324.9	716.8	353.6	0.0	1.3	86.1	78.2	326.1	360.9	296.4	2669.1
1966	133.9	41.4	268.7	463.0	22.4	29.0	0.0	83.8	206.8	312.4	511.8	257.3	2330.5
1967	152.1	116.3	178.3	206.0	40.1	46.0	11.9	102.9	48.3	398.5	379.0	173.0	1852.4
1968	168.7	24.1	186.4	366.3	109.2	78.0	54.9	22.9	41.2	502.4	188.0	195.1	1937.2
1969	126.5	262.9	172.2	373.4	188.2	30.2	12.9	169.9	71.9	567.2	196.3	464.8	2636.4
1970	135.6	275.3	401.8	539.8	149.4	47.2	26.7	38.1	76.2	204.2	437.6	286.5	2618.4
1971	231.4	276.9	200.4	409.7	18.5	39.9	78.0	117.9	284.0	215.9	136.7	315.7	2325.0
1972	58.9	0.0	257.6	383.5	198.6	37.1	142.0	20.3	156.2	597.2	589.3	176.8	2617.5
1973	14.0	65.8	154.9	313.7	74.4	32.0	16.0	26.2	62.0	297.7	231.1	295.7	1583.5
1974	0.0	103.4	81.8	323.1	219.6	20.8	61.5	37.6	198.7	164.6	345.7	225.2	1782.0
1975	223.9	70.4	237.5	386.7	191.9	87.3	50.3	51.3	180.0	189.9	377.8	243.6	2290.6
1976	283.3	37.5	241.4	444.5	63.4	92.2	20.3	37.8	57.4	343.5	616.0	343.4	2580.7
1977	8.0	143.2	231.6	529.6	261.3	29.9	126.5	64.1	182.6	622.2	474.1	200.4	2873.5
1978	158.6	211.6	332.7	340.9	365.9	6.4	48.0	28.3	89.6	331.4	312.5	146.7	2372.6
1979	33.2	192.0	243.8	380.6	182.1	48.3	66.0	35.6	316.2	492.3	419.9	324.4	2734.4
1980	2.8	65.5	224.8	288.3	222.3	12.2	10.7	28.2	197.6	197.5	301.2	335.1	1866.2
1981	137.9	93.9	210.0	147.7	149.0	51.9	118.4	52.8	129.5	215.2	428.3	86.4	1820.0
1982	34.1	18.0	229.1	182.9	478.3	136.8	31.3	104.2	65.8	320.0	519.2	152.5	2272.2
1983	10.4	39.1	80.7	139.3	216.8	17.4	70.7	17.3	65.3	270.1	310.2	122.5	1359.8
1984	219.3	127.3	458.5	439.7	127.6	43.3	110.3	59.0	157.8	167.7	289.3	142.7	2343.0
1985	105.3	105.9	269.8	243.6	160.5	107.6	35.8	50.3	113.0	270.4	246.3	262.7	1971.2
1986	214.2	36.4	155.7	549.3	347.5	26.4	29.1	102.9	73.0	478.0	134.5	159.4	2306.4
1987	170.4	54.0	262.5	333.1	273.8	8.0	0.0	54.7	264.0	735.0	274.0	295.2	2724.7
1988	30.5	320.0	270.0	558.0	124.5	31.0	69.0	110.5	164.5	29.5	450.0	149.0	2306.5
1989	102.5	51.0	81.0	250.5	272.0	55.0	182.0	103.5	176.0	264.0	196.0	119.5	1853.0
1990	298.2	187.0	263.5	119.0	159.5	27.3	14.5	31.0	147.5	324.8	262.3	225.0	2059.6
Ave.	131.4	126.5	238.7	380.1	192.7	43.5	60.2	63.0	135.3	340.5	347.3	222.7	2282.0
Max.	298.2	339.9	458.5	716.8	478.3	136.8	244.3	169.9	316.2	735.0	616.0	454.8	3468.7
Min.	0.0	0.0	80.7	119.0	18.5	0.0	0.0	17.3	41.2	29.5	71.1	67.6	1359.8

Station code : M624

Table A 2.2-27 MONTHLY RAINFALL AT MAHAWELI ECONOMIC AGENCY (Extended)

Year	Extended Data												Annual
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1960	124.3	220.7	187.6	176.4	52.6	11.0	51.8	17.9	101.0	233.7	319.2	71.8	1578.0
1961	68.6	97.4	139.1	175.5	102.5	36.6	38.4	15.5	77.3	190.4	232.1	113.3	1284.7
1962	149.3	118.3	126.7	190.9	178.3	15.8	30.8	31.0	80.8	236.9	229.0	223.2	1611.0
1963	165.9	199.4	147.5	230.8	194.7	49.8	55.4	17.6	99.1	275.7	431.1	218.4	2085.4
1964	105.8	163.4	118.4	202.7	120.4	31.5	81.9	0.0	71.1	63.2	118.9	57.1	1134.4
1965	0.0	54.9	154.4	120.4	193.8	11.9	15.0	117.9	83.3	273.5	261.1	182.4	1468.6
1966	71.1	61.0	134.2	249.2	5.6	13.0	0.0	0.0	103.9	385.3	182.4	105.9	1312.6
1967	52.1	42.9	28.4	209.0	84.6	28.7	43.7	30.0	104.9	311.1	264.9	48.8	1247.1
1968	286.8	22.4	99.8	100.3	59.7	55.4	38.6	0.0	30.7	250.9	68.3	228.6	1241.5
1969	13.2	72.9	92.7	252.2	235.2	49.3	0.0	132.8	56.5	359.4	119.1	548.1	1931.4
1970	48.8	199.9	51.3	258.4	98.9	7.1	29.2	22.9	43.4	167.4	348.0	210.8	1486.1
1971	169.4	152.9	185.2	264.1	25.9	23.2	57.9	43.2	169.7	268.0	359.9	186.7	1906.1
1972	4.6	0.0	139.2	100.3	188.2	5.1	27.4	31.5	97.8	324.9	261.2	110.2	1290.4
1973	31.5	13.7	421.6	91.4	35.8	93.0	41.9	38.6	50.3	438.9	204.0	368.9	1827.6
1974	0.0	161.3	80.3	237.1	122.0	43.7	51.7	23.6	89.9	99.8	161.0	109.5	1179.9
1975	51.3	158.4	141.6	220.5	194.8	91.9	36.8	10.4	40.6	23.1	338.6	297.4	1603.4
1976	17.8	9.7	179.3	165.9	89.9	0.0	0.5	16.5	52.6	122.9	276.1	164.8	1096.0
1977	0.0	126.8	105.4	255.0	93.0	9.7	2.5	49.0	17.3	301.2	445.8	194.1	1599.8
1978	62.0	104.0	240.0	223.8	324.4	10.2	5.1	0.0	94.2	209.8	373.4	102.4	1749.3
1979	0.0	179.8	0.0	152.7	146.3	23.9	14.4	7.1	164.6	187.0	331.8	209.3	1416.9
1980	0.0	11.7	56.9	193.0	76.0	10.9	0.0	0.0	17.0	161.5	214.6	154.1	905.7
1981	23.9	46.7	75.4	247.4	98.0	34.0	11.4	45.0	109.5	94.5	311.9	98.5	1194.2
1982	1.5	68.1	206.4	153.9	201.1	88.7	32.1	26.2	46.3	278.3	364.9	107.0	1574.5
1983	16.9	14.4	0.0	150.4	196.3	8.7	41.9	15.3	72.8	269.1	96.5	81.2	963.5
1984	185.2	238.3	481.9	213.4	51.2	29.7	31.9	37.8	36.0	139.0	208.7	98.6	1751.7
1985	115.7	75.9	149.7	164.0	201.9	101.6	27.7	32.8	54.6	210.4	189.8	226.5	1550.6
1986	41.8	132.1	211.8	293.8	82.0	19.8	12.6	45.5	99.0	189.9	156.4	112.9	1397.6
1987	45.7	14.2	152.6	165.1	79.5	50.0	0.0	127.5	43.2	329.7	209.3	227.8	1444.6
1988	67.1	162.3	258.8	366.0	25.9	76.5	22.4	49.7	121.2	123.5	313.4	197.9	1789.7
1989	34.8	17.5	55.9	204.4	50.0	45.0	108.9	39.6	117.6	240.8	208.7	44.4	1167.6
1990	104.4	136.9	210.0	132.3	130.0	23.9	30.0	3.3	19.3	290.8	328.0	101.1	1510.0
Ave.	66.4	99.3	149.4	198.7	120.9	35.4	30.3	33.1	76.3	227.6	255.8	168.1	1461.4
Max.	286.8	238.3	481.9	366.0	324.4	101.6	108.9	132.8	169.7	438.9	445.8	548.1	2085.4
Min.	0.0	0.0	0.0	91.4	5.6	0.0	0.0	0.0	17.0	23.1	68.3	44.4	905.7

Unit : MM

Table A 2.2-28 MONTHLY RAINFALL AT SUGAR RESEARCH INSTITUTE IN SEVANAGALA (Extended)

Year	Extended Data												Annual
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1960	101.7	196.4	137.1	202.9	67.8	2.0	87.8	18.6	50.0	296.3	456.8	90.8	1758.2
1961	92.6	87.4	154.2	214.6	121.2	44.3	40.6	71.2	50.8	242.8	283.5	218.8	1622.0
1962	39.9	105.9	145.8	189.8	103.5	8.1	39.2	20.8	103.5	300.1	287.7	124.3	1468.6
1963	93.7	177.6	159.9	225.3	142.2	51.8	36.2	47.1	71.8	348.0	492.0	153.2	1998.8
1964	48.6	145.8	166.2	171.5	61.5	20.4	56.5	29.0	111.6	193.5	28.6	135.4	1168.6
1965	15.9	87.8	144.2	165.5	141.7	6.8	17.4	112.7	80.5	223.1	314.8	231.3	1541.7
1966	53.6	61.1	143.5	201.2	49.5	2.4	24.5	49.9	157.1	390.2	463.8	149.6	1746.4
1967	59.6	87.4	169.7	177.3	54.5	33.8	22.0	25.7	36.2	340.0	332.7	138.9	1477.8
1968	65.0	21.1	128.9	123.6	73.7	52.1	37.0	19.8	71.5	452.8	144.0	196.6	1386.1
1969	51.1	76.8	141.6	127.3	95.7	43.2	15.9	21.1	56.1	400.5	152.2	187.0	1368.5
1970	54.1	157.8	204.7	178.5	84.9	3.7	28.1	12.5	44.4	195.6	390.5	111.6	1466.4
1971	85.7	147.7	169.7	177.7	48.5	35.6	29.3	45.2	171.0	251.1	93.4	164.1	1419.0
1972	28.9	13.5	258.2	112.8	98.6	1.6	70.5	17.3	102.8	307.2	540.3	82.6	1634.3
1973	14.1	116.7	193.4	181.3	64.0	26.1	24.3	37.0	29.9	357.7	185.6	397.6	1638.7
1974	9.5	113.2	173.9	188.9	104.4	31.7	52.9	28.7	85.1	179.7	299.8	216.6	1484.4
1975	83.2	147.6	226.8	146.7	96.7	112.2	33.2	48.2	82.2	133.1	331.5	161.1	1608.5
1976	102.8	21.5	142.9	154.9	61.0	0.0	19.9	14.2	49.5	265.5	566.7	174.8	1573.7
1977	12.1	62.4	217.3	186.4	116.0	12.8	30.2	6.1	48.4	447.3	426.6	204.8	1770.4
1978	61.7	128.6	103.5	156.9	145.1	5.0	39.2	11.0	79.9	318.0	267.0	104.6	1420.5
1979	20.4	120.8	79.4	151.2	94.0	14.5	23.6	0.0	111.5	353.6	373.0	121.9	1463.9
1980	10.4	23.3	108.4	130.7	105.2	8.2	12.3	18.0	43.5	325.7	255.8	135.3	1176.8
1981	68.6	14.2	128.5	94.0	141.2	31.8	0.0	0.0	43.5	126.8	434.7	89.5	1172.8
1982	34.8	25.2	199.8	209.7	242.8	97.8	25.7	81.0	22.4	446.0	470.5	104.9	1860.6
1983	0.0	0.0	38.1	73.9	124.9	0.5	36.1	95.4	59.2	228.8	203.2	342.1	1202.2
1984	88.8	195.6	386.6	146.1	82.3	29.6	47.8	0.0	127.5	142.3	342.0	130.6	1719.2
1985	70.4	81.3	161.4	94.5	95.8	120.1	29.5	8.6	74.6	248.8	309.5	239.3	1533.8
1986	163.9	185.0	203.5	167.7	83.1	1.2	4.1	46.2	64.9	225.6	53.0	22.8	1226.0
1987	17.3	9.5	164.4	238.9	58.0	2.7	0.0	59.8	44.5	244.3	177.6	99.6	1116.6
1988	19.4	153.4	230.6	188.5	66.3	66.4	21.6	57.0	57.5	259.1	346.5	127.0	1593.3
1989	35.0	24.7	85.3	126.3	80.2	31.4	99.1	22.5	81.0	258.3	183.9	36.4	1064.1
1990	116.2	75.9	201.0	129.2	101.2	15.9	23.4	3.6	10.1	376.1	242.0	225.5	1520.1
Ave.	55.6	92.4	168.3	162.4	97.0	29.5	33.2	33.2	71.7	286.9	304.8	158.7	1493.6
Max.	168.9	196.4	386.6	238.9	242.8	120.1	99.1	112.7	171.0	452.8	566.7	397.6	1998.8
Min.	0.0	0.0	38.1	73.9	48.5	0.0	0.0	0.0	10.1	126.8	28.6	22.8	1064.1

Unit : MM

Table A 2.2-29 MONTHLY RAINFALL AT LIYANGAHATOTA (Extended)

Year	Extended Data												Annual
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1960	90.9	179.8	34.0	89.9	44.5	6.6	78.0	2.0	32.8	161.8	95.3	44.2	850.8
1961	79.0	95.5	88.4	110.0	93.2	68.1	142.8	82.3	64.3	222.3	318.5	115.6	1480.0
1962	83.1	97.3	129.0	262.4	136.7	22.4	17.8	46.7	89.7	74.2	208.0	269.2	1436.5
1963	100.1	59.2	43.7	24.1	71.1	39.4	51.8	22.1	62.2	316.2	344.9	173.5	1308.3
1964	85.1	138.4	109.7	44.7	48.8	65.0	33.0	45.2	56.9	31.0	118.6	213.1	989.5
1965	0.0	82.3	62.7	65.0	128.5	0.0	0.0	58.4	70.1	260.9	362.2	223.0	1313.1
1966	48.8	68.8	184.2	215.7	63.3	15.0	10.7	0.0	0.0	0.0	149.6	0.0	756.1
1967	128.8	64.3	39.9	67.1	57.2	61.5	86.9	29.5	61.0	196.9	222.3	55.1	1070.5
1968	135.1	14.5	173.0	61.0	31.0	88.1	49.8	9.4	17.0	195.3	98.0	72.9	945.1
1969	31.5	46.7	88.4	227.1	219.0	69.3	0.0	229.9	20.1	279.2	221.0	290.0	1722.2
1970	80.0	145.4	99.9	126.1	104.7	16.5	18.9	30.1	37.1	65.6	232.8	90.7	1047.8
1971	78.7	135.8	86.0	202.6	73.8	55.9	20.1	45.1	70.6	72.7	230.4	74.4	1146.1
1972	36.6	8.9	80.4	106.8	151.4	9.4	61.3	20.1	66.5	304.1	279.5	81.7	1206.7
1973	18.1	106.5	85.8	87.6	36.7	44.2	15.1	32.6	22.1	122.3	194.6	233.7	999.3
1974	0.8	103.2	67.0	152.0	53.2	51.2	43.7	55.4	54.8	41.5	180.1	267.6	1070.5
1975	18.2	135.7	95.6	151.2	92.7	151.0	24.0	25.4	38.0	56.9	276.3	105.5	1170.5
1976	32.3	16.4	78.6	227.0	81.6	2.8	10.7	22.1	21.2	150.1	166.2	36.7	845.7
1977	0.0	55.1	76.5	192.9	137.9	27.8	21.0	23.5	27.5	319.3	228.2	154.9	1264.6
1978	56.5	117.7	86.2	87.3	154.1	18.1	30.0	72.1	36.2	142.8	231.7	13.9	1046.6
1979	5.0	110.3	77.9	110.5	204.4	29.8	14.4	34.2	64.1	240.5	272.5	130.8	1294.4
1980	8.7	18.2	85.2	142.7	72.5	22.0	3.1	11.4	28.7	61.5	285.4	94.2	833.6
1981	48.4	50.0	83.8	92.1	81.6	51.2	21.1	1.2	49.4	72.2	196.8	61.7	809.5
1982	23.3	8.3	104.4	86.2	58.7	138.3	8.0	13.7	26.0	135.9	355.1	46.5	1004.4
1983	25.2	9.4	62.5	47.7	139.3	10.6	16.6	16.6	43.2	105.6	190.8	169.1	836.6
1984	121.3	196.6	95.2	148.8	44.0	44.2	39.0	14.1	19.3	43.4	271.8	111.9	1149.6
1985	81.6	60.8	97.8	62.9	184.6	159.0	6.4	3.8	31.4	105.7	222.3	231.7	1248.0
1986	39.4	107.8	64.7	109.3	17.7	28.4	4.1	19.9	60.3	231.8	128.8	90.2	902.4
1987	46.2	23.8	74.1	133.2	138.7	33.1	3.4	34.5	35.0	387.8	241.1	122.5	1273.4
1988	40.8	108.1	119.3	235.2	62.6	44.3	33.3	25.4	82.0	0.0	179.4	148.9	1079.9
1989	42.4	3.0	69.2	120.0	86.2	50.3	85.1	16.2	43.4	101.9	235.8	10.0	863.5
1990	73.7	116.4	104.9	101.6	129.4	51.5	8.7	30.0	24.5	138.8	233.5	55.8	1068.8
Ave.	53.5	80.1	88.6	125.5	96.7	47.6	30.9	34.6	43.7	149.6	224.9	122.2	1098.2
Max.	135.1	196.6	184.2	262.4	219.0	159.0	142.8	229.9	89.7	387.8	362.2	290.0	1722.2
Min.	0.0	3.0	34.0	24.1	17.7	0.0	0.0	0.0	0.0	0.0	95.3	0.0	756.1

Station code : A5

Unit : MM

Table A 2.2-30 MONTHLY RAINFALL AT RICE RESEARCH STATION IN AMBALANTOTA (Extended)

Year	Extended Data												Annual
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1960	88.9	87.7	108.9	95.3	58.2	18.7	90.8	45.1	114.6	117.4	252.9	93.1	1171.6
1961	85.9	35.3	100.4	82.3	134.7	66.2	25.2	43.2	77.9	160.7	163.6	101.9	1077.3
1962	36.8	44.2	98.3	87.3	126.1	27.6	43.6	55.2	83.3	105.1	160.4	115.7	983.6
1963	88.0	78.7	101.9	129.0	95.6	90.7	41.2	44.8	111.7	133.7	367.6	158.0	1440.9
1964	37.3	63.4	103.5	75.2	68.8	45.3	47.8	31.2	113.9	113.6	76.5	86.7	863.2
1965	18.4	35.5	97.9	102.6	164.0	25.7	0.0	122.3	106.2	137.9	233.4	157.2	1201.1
1966	59.7	22.6	97.7	130.4	35.8	19.3	22.9	31.2	180.3	173.1	216.0	124.5	1113.5
1967	47.3	35.3	104.4	59.9	69.5	64.7	19.8	54.4	34.8	192.5	381.2	160.2	1224.0
1968	50.5	3.4	93.9	98.3	84.9	91.1	38.7	40.0	70.7	211.9	126.4	115.8	1025.6
1969	25.3	30.2	97.2	111.7	102.3	78.3	25.0	133.8	48.8	192.6	109.6	216.9	1171.7
1970	52.0	68.2	113.4	90.3	61.4	21.2	29.3	48.9	56.3	116.7	181.8	142.6	983.1
1971	73.8	64.3	104.4	107.1	41.1	67.2	34.9	64.6	136.0	151.3	154.1	127.6	1126.4
1972	29.0	0.0	127.1	47.0	126.6	13.0	12.5	70.9	140.1	253.5	110.4	93.5	1023.6
1973	74.7	6.1	104.1	42.7	122.9	184.4	27.9	9.9	22.1	195.8	166.1	232.9	1189.6
1974	10.2	12.4	29.5	93.7	24.4	85.3	9.9	47.2	100.1	39.9	123.4	71.6	647.6
1975	77.7	46.7	185.4	89.9	261.6	188.5	46.7	32.3	31.5	77.2	129.3	213.9	1380.7
1976	72.1	0.0	33.5	66.0	43.4	34.8	0.0	46.0	0.0	192.5	333.5	90.2	912.0
1977	53.1	76.5	18.0	84.1	100.3	15.2	46.0	32.8	57.7	110.7	235.2	215.9	1045.5
1978	23.4	39.1	2.5	47.2	223.8	3.6	25.9	48.0	52.3	181.9	388.4	146.3	1182.4
1979	6.9	13.2	146.3	86.6	62.2	63.5	61.7	19.0	137.7	213.4	258.1	136.9	1205.5
1980	24.4	0.0	20.6	179.6	120.9	43.2	17.8	41.1	20.3	152.9	307.3	67.3	995.4
1981	7.9	22.4	67.1	77.7	61.5	12.7	13.2	59.4	62.0	118.4	60.4	245.4	808.1
1982	6.1	0.8	195.6	88.1	111.2	177.5	135.1	36.6	29.2	272.3	442.7	109.0	1604.2
1983	8.1	5.1	43.4	47.5	80.0	31.5	24.1	151.4	131.8	57.7	67.8	76.2	724.6
1984	99.6	212.8	147.1	162.8	61.2	68.8	80.5	0.0	40.6	175.8	145.8	44.7	1239.7
1985	0.0	53.3	110.7	53.1	86.1	174.7	1.8	41.1	128.3	139.4	115.1	141.7	1045.3
1986	161.5	25.9	212.8	67.3	12.2	4.8	3.0	85.1	93.7	133.1	99.1	63.0	961.5
1987	46.7	16.3	24.4	115.1	56.4	8.4	0.0	138.7	165.9	224.3	160.0	50.5	1006.7
1988	12.7	27.9	62.7	145.5	82.5	69.8	3.8	23.4	163.0	131.2	168.7	62.0	953.2
1989	113.0	40.6	125.7	28.2	21.6	54.9	115.8	78.7	30.7	82.0	45.7	9.1	746.0
1990	60.2	0.0	80.8	68.3	123.4	62.0	15.3	33.8	26.3	145.7	155.3	120.6	891.7
Ave.	50.0	37.7	95.5	89.0	91.1	61.7	34.2	55.2	82.8	151.7	191.5	122.3	1062.8
Max.	161.5	212.8	212.8	179.6	261.6	188.5	135.1	151.4	180.3	272.3	442.7	245.4	1604.2
Min.	0.0	0.0	2.5	28.2	12.2	3.6	0.0	0.0	0.0	39.9	45.7	9.1	647.6

Station code : RRS

Unit : MM

Table A 2.2-31 PROBABLE DAILY RAINFALL AT EACH RAINGAUGE STATION

Return period	Rain-gauge Station										Unit : MM/DAY
	MEA	M337	M060	M624	M408	M041	M100	M008			
1000	215.3	317.2	220.8	249.4	555.0	224.8	267.8	447.4			
500	202.1	292.7	212.5	237.0	504.0	215.4	252.7	409.7			
200	183.5	261.3	201.0	220.1	428.2	202.4	232.8	361.8			
100	169.5	238.3	191.9	207.0	374.0	192.1	217.5	326.9			
75	163.7	228.9	188.0	201.4	352.2	187.6	211.1	312.7			
50	155.5	215.7	182.3	193.4	322.2	181.2	202.0	293.0			
30	145.0	199.4	174.8	183.1	285.7	172.6	190.4	268.5			
20	136.6	186.5	168.5	174.5	257.4	165.5	180.9	249.4			
10	121.9	164.5	156.8	159.0	210.4	152.2	164.1	216.8			
7	114.0	153.0	150.2	150.4	186.6	144.7	154.9	200.0			
5	106.2	142.0	143.4	141.7	164.2	137.0	145.9	183.9			
3	93.5	124.4	131.6	127.0	129.7	123.5	130.8	158.5			
2	81.9	109.1	119.9	112.8	100.7	110.1	116.8	136.5			
1000	33.1	53.2	53.2	41.6	8.8	32.9	53.6	59.4			
500	35.1	55.1	56.9	45.1	11.5	37.3	56.4	61.9			
200	38.2	58.2	62.5	50.5	15.9	43.7	60.7	66.0			
100	41.0	61.1	67.2	55.1	20.0	49.2	64.5	69.8			
75	42.3	62.4	69.4	57.3	22.0	51.7	66.3	71.7			
50	44.4	64.6	72.6	60.5	25.2	55.5	69.0	74.5			
30	47.3	67.7	77.1	65.1	30.0	60.7	72.9	78.8			
20	50.0	70.6	81.0	69.2	34.5	65.2	76.5	82.8			
10	55.6	77.0	88.9	77.6	44.7	74.3	83.8	91.5			
7	59.3	81.2	93.7	82.8	51.6	79.9	88.6	97.3			
5	63.4	86.1	99.0	88.6	59.8	85.9	93.8	104.1			
3	71.8	95.3	108.9	99.9	77.5	97.4	104.4	118.4			
2	81.9	109.1	119.9	112.8	100.7	110.1	116.8	136.5			

Table A 2.2-32 PROBABLE ANNUAL AND MONTHLY AERIAL RAINFALL AT THE UDA WALAWE DAM CATCHMENT

(Direct and indirect drainage basin)

Unit : MM

Return period	Annual	Monthly - basis											
		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1000	3679.8	577.6	593.4	559.8	660.7	659.8	589.2	910.4	863.0	541.1	801.9	748.1	722.2
500	3564.3	519.2	536.5	527.7	636.7	609.9	509.1	757.2	319.7	485.7	764.1	720.3	662.9
200	3406.1	445.3	463.8	484.8	602.9	544.6	414.1	582.7	267.2	416.5	711.6	681.4	586.9
100	3280.7	391.5	410.4	451.7	575.5	495.2	349.5	469.3	230.9	366.8	669.3	649.8	530.9
Probability													
75	3226.9	369.7	388.7	437.7	563.5	474.7	324.4	426.7	216.6	346.8	651.1	635.0	507.9
50	3148.8	339.3	358.2	417.6	546.0	445.6	290.7	370.6	197.1	319.2	624.4	615.7	475.8
30	3046.5	301.9	320.4	391.8	522.5	408.7	251.0	306.5	174.0	285.3	589.1	588.7	435.9
20	2961.1	272.6	290.6	370.7	502.6	379.0	221.5	260.4	156.4	259.1	559.4	565.8	404.2
10	2808.8	223.0	239.6	332.8	464.9	325.7	174.7	190.5	128.1	215.2	503.8	522.4	349.9
7	2714.9	197.4	213.1	311.9	443.0	298.7	152.2	158.6	114.3	192.8	472.0	497.2	321.5
5	2624.3	173.1	187.6	291.0	420.2	271.1	132.0	130.8	101.6	171.7	439.2	471.0	294.2
3	2467.1	134.8	147.1	255.9	379.5	225.9	102.5	92.3	82.7	139.0	381.4	424.3	250.5
2	2312.4	101.7	111.6	222.7	337.9	184.4	79.5	64.3	67.4	111.3	323.3	376.5	212.1
1000	1453.0	-12.4	-17.1	63.4	68.6	9.2	22.3	7.1	25.9	21.4	-26.7	57.5	69.5
500	1500.1	-8.7	-12.7	71.0	85.6	16.4	23.4	7.9	26.8	24.1	-6.1	86.9	74.6
200	1569.8	-2.7	-5.6	82.4	110.1	27.7	25.4	9.4	28.5	28.5	24.2	115.0	82.6
100	1629.8	2.9	1.0	92.5	130.7	37.8	27.5	11.0	30.1	32.7	49.9	138.7	90.0
Probability													
75	1657.0	5.5	4.1	97.1	139.9	42.5	28.5	11.8	30.9	34.7	61.4	149.2	93.5
50	1698.1	9.7	9.0	104.2	153.6	49.9	30.1	13.2	32.2	37.8	78.7	164.9	99.0
30	1755.1	15.9	16.2	114.2	172.3	60.4	32.6	15.3	34.2	42.6	102.5	186.3	107.1
20	1805.7	21.8	23.0	123.3	188.6	70.0	35.2	17.6	35.1	47.1	123.4	205.0	114.6
10	1907.1	34.6	37.6	142.0	220.4	90.4	41.1	23.0	40.5	57.1	164.7	241.4	130.8
7	1969.5	43.3	47.3	153.8	239.4	103.5	45.3	27.1	43.6	63.9	189.8	263.3	141.6
5	2037.5	53.4	58.6	166.9	259.8	118.4	50.6	32.4	47.4	71.9	216.9	286.6	154.0
3	2157.4	74.6	82.1	192.7	297.6	148.4	62.6	45.1	55.8	89.1	267.7	330.0	179.9
2	2312.4	101.7	111.6	222.7	337.9	184.4	79.5	64.3	67.4	111.3	323.3	376.5	212.1
Non-Exceedance													

Table A 2.2-33 PROBABLE ANNUAL AND MONTHLY AERIAL RAINFALL AT THE UDA WALAWE DAM DIRECT CATCHMENT

Return period	Annual	Monthly - basis											
		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1000	5398.9	707.7	670.5	503.0	813.4	577.4	368.8	788.3	341.8	418.1	839.4	803.2	693.2
500	4969.4	620.7	596.6	477.6	762.5	534.0	320.6	643.4	294.8	374.4	796.5	765.0	638.9
200	4432.0	514.3	504.3	443.1	695.5	476.9	262.7	482.0	239.1	320.1	737.3	712.9	568.5
100	4045.3	439.7	438.3	416.1	644.6	433.5	222.8	379.8	201.3	281.4	690.0	671.8	515.8
Probability	75	3889.7	410.1	411.7	404.6	623.4	415.5	207.3	341.9	186.7	669.7	654.2	494.0
of	50	3674.6	369.7	375.2	387.9	593.2	389.8	186.2	292.8	167.0	640.0	628.8	463.3
Exceedance	30	3411.1	321.1	330.5	554.8	357.2	161.1	237.6	143.9	218.5	600.9	595.6	424.6
	20	3206.5	284.1	295.9	348.4	330.9	142.2	198.5	126.8	198.4	568.0	568.0	393.7
	10	2864.1	223.5	238.2	315.7	284.4	112.0	140.8	99.7	165.1	507.1	517.4	340.0
	7	2689.5	193.5	208.9	297.4	259.3	97.3	115.1	86.7	148.2	472.4	489.0	311.4
	5	2524.9	165.7	181.4	279.0	410.1	83.9	93.2	75.0	132.5	436.8	460.2	283.6
	3	2269.2	123.7	138.9	247.3	361.8	64.1	63.7	58.1	108.2	374.4	410.4	238.4
	2	2052.4	89.5	103.0	216.7	317.4	48.3	43.0	44.9	87.8	312.4	361.9	197.7
1000	1345.5	-9.5	-11.5	56.7	123.8	-5.6	6.8	4.7	12.5	24.1	-48.4	100.7	34.9
500	1366.9	-7.0	-8.1	64.9	132.1	1.2	7.7	5.2	13.2	26.0	-27.7	114.6	41.2
200	1401.4	-2.8	-2.7	77.3	144.8	11.8	9.3	6.0	14.3	28.9	2.6	135.2	51.1
100	1434.2	1.3	2.5	88.0	156.3	21.4	10.9	7.0	15.4	31.8	28.5	153.1	60.1
Probability	75	1450.0	3.3	5.1	92.9	161.6	25.8	11.6	16.0	33.2	40.2	161.2	64.3
of	50	1475.1	6.5	9.1	100.4	169.8	32.7	12.9	16.9	35.3	57.8	173.6	70.9
	30	1512.4	11.4	15.0	110.8	181.5	42.5	14.8	18.3	38.6	82.1	180.7	80.5
	20	1548.0	16.1	20.8	120.1	192.3	51.5	16.7	19.7	41.8	103.5	206.0	89.3
Non-Exceedance	10	1626.5	26.7	33.4	138.9	214.8	70.3	21.1	23.1	48.8	146.1	236.8	108.0
	7	1680.0	34.2	42.1	150.5	229.3	82.4	24.2	25.5	53.6	172.1	255.9	120.3
	5	1743.0	43.2	52.3	163.5	245.6	96.1	28.0	28.4	59.3	200.3	275.7	134.3
	3	1877.8	62.9	74.3	188.4	278.4	123.6	36.5	35.2	71.7	253.6	315.8	162.9
	2	2052.4	89.5	103.0	216.7	317.4	156.4	48.3	44.9	87.8	312.4	361.9	197.7

Table A 2.3-1 HISTORIC RUN-OFF DATA AT UDA WALAWE

Station code : 1805 Unit : M3/S

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
1957	—	—	—	—	32.6	28.9	18.0	7.2	5.5	15.1	82.9	80.3	—
1958	43.1	22.9	37.3	49.1	55.0	17.6	11.4	12.7	7.1	16.4	40.9	29.6	343.1
1959	14.9	13.9	14.3	47.7	53.2	43.2	18.0	10.0	13.4	25.3	46.7	53.0	353.6
1960	42.5	45.8	43.8	71.9	26.2	12.8	24.1	7.8	14.1	21.2	40.8	28.9	379.9
1961	30.5	25.1	32.5	41.2	52.1	21.8	—	—	—	—	—	—	—
Ave.	32.8	26.9	32.0	52.5	43.8	24.9	17.9	9.4	10.0	19.5	52.8	48.0	358.9
Max.	43.1	45.8	43.8	71.9	55.0	43.2	24.1	12.7	14.1	25.3	82.9	80.3	379.9
Min.	14.9	13.9	14.3	41.2	26.2	12.8	11.4	7.2	5.5	15.1	40.8	28.9	343.1

HISTORIC RUN-OFF DATA AT TIMBOLKETIYA

Station code : 1807 Unit : M3/S

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
1960	5.89	5.75	2.97	4.59	3.63	1.95	4.11	1.90	3.37	3.60	4.59	2.61	44.96
1961	3.60	2.61	2.46	2.10	3.48	3.17	2.78	3.14	2.72	4.50	8.95	6.63	46.14
1962	4.84	4.22	3.88	7.11	8.69	3.29	2.80	2.01	4.30	4.42	7.90	11.69	55.15
1963	31.66	7.87	3.26	6.97	6.26	4.30	4.33	2.49	4.59	11.44	14.72	8.84	106.73
1964	5.69	3.03	11.21	10.11	5.49	3.77	5.21	4.25	5.75	1.93	3.71	3.17	63.32
1965	0.99	1.08	1.87	4.62	8.44	3.09	0.79	3.03	3.09	4.08	10.39	7.96	49.43
1966	3.63	1.53	5.58	8.81	3.74	2.18	1.81	1.16	4.98	9.01	9.60	5.41	57.44
1967	4.13	2.94	3.77	3.26	2.46	2.15	2.08	2.18	1.25	22.37	10.45	4.59	61.53
Ave.	7.55	3.63	4.38	5.95	5.27	2.99	2.99	2.52	3.76	7.67	8.79	6.36	61.85
Max.	31.66	7.87	11.21	10.11	8.69	4.30	5.21	4.25	5.75	22.37	14.72	11.69	106.73
Min.	0.99	1.08	1.87	2.10	2.46	1.95	0.79	1.16	1.25	1.93	3.71	2.61	44.96

Table A 2.3-2 HISTORIC RUN-OFF DATA AT EMBILIPITIYA

Unit : M3/S

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
1949	56.4	35.3	13.4	32.9	32.1	29.2	28.9	21.0	19.7	25.3	65.8	66.4	477.4
1950	24.5	26.8	43.5	39.7	28.5	22.1	17.3	12.3	29.3	16.2	33.7	23.0	316.9
1951	58.7	37.8	38.4	59.4	26.3	59.0	21.8	7.5	32.0	45.4	107.7	42.1	536.1
1952	53.9	38.7	45.6	115.6	127.5	50.3	20.3	11.1	13.2	38.8	52.6	40.2	607.8
1953	30.1	16.4	55.8	60.4	17.8	12.5	21.1	8.7	10.4	30.7	47.7	60.0	371.6
1954	77.5	48.3	58.7	109.5	54.4	21.4	11.4	14.3	11.0	49.4	51.7	89.5	597.2
1955	63.3	60.3	64.2	85.8	76.1	45.6	20.8	10.4	25.9	14.4	40.5	18.6	525.9
1956	18.8	8.4	26.5	17.6	16.8	24.4	9.5	8.8	12.4	15.4	93.2	36.8	288.6
1957	18.0	24.5	28.0	70.4	46.2	39.6	23.5	8.4	6.3	21.9	109.4	117.4	513.6
1958	65.3	31.9	52.6	63.9	71.4	21.7	14.6	13.5	8.2	20.6	51.6	40.5	455.8
1959	19.5	19.2	19.1	56.7	66.9	57.0	27.2	14.2	19.5	35.4	64.6	61.2	460.5
1960	50.3	54.9	52.2	84.6	36.5	18.7	34.5	11.8	20.4	26.0	48.4	36.2	474.5
1961	36.6	29.2	37.7	43.9	57.5	24.8	20.4	28.0	15.7	34.9	90.1	63.5	482.3
1962	41.5	28.9	40.9	74.4	87.6	29.9	19.9	13.2	21.2	30.2	62.9	58.2	508.8
1963	107.1	50.9	51.6	129.9	95.3	44.1	28.0	20.6	20.8	61.5	111.1	82.0	802.9
1964	50.6	28.9	61.4	68.8	43.2	21.0	20.4	12.9	20.7	18.4	21.8	—	—
1965	9.4	11.1	14.6	—	58.8	25.7	8.7	—	—	—	—	79.1	—
1966	48.0	26.2	49.5	85.5	37.2	18.0	14.8	11.2	57.3	95.1	122.4	100.5	665.7
1967	82.2	28.1	30.6	31.3	26.4	12.6	6.9	6.1	3.9	16.7	75.2	35.5	355.5
1968	37.7	7.6	7.8	29.0	27.4	11.5	20.5	11.4	10.3	9.0	18.2	17.2	207.6
Ave.	47.5	30.7	39.6	68.9	51.7	29.5	19.6	12.9	18.9	31.9	66.8	56.2	480.5
Max.	107.1	60.3	64.2	129.9	127.5	59.0	34.5	28.0	57.3	95.1	122.4	117.4	802.9
Min.	9.4	7.6	7.8	17.6	16.8	11.5	6.9	6.1	3.9	9.0	18.2	17.2	207.6

Table A 2.3-3 HISTORIC RUN-OFF DATA AT MAUARA

Station code : 1809 Unit : M³/S

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
1951	—	—	—	—	—	—	—	—	—	0.00	5.47	3.29	—
1952	3.31	0.11	2.32	12.06	3.12	0.17	0.00	0.00	0.00	0.03	0.23	0.00	21.35
1953	0.00	0.00	8.98	9.26	4.42	0.00	0.00	0.00	0.00	9.23	5.44	2.21	39.54
1954	4.19	4.11	1.22	13.76	2.12	0.08	0.00	0.00	0.00	0.23	2.10	4.08	31.89
1955	1.22	0.59	4.95	14.10	1.84	0.08	0.00	0.00	0.00	0.00	1.13	0.91	24.82
1956	0.40	0.00	0.68	0.17	0.06	0.00	0.00	0.00	0.00	0.00	5.66	0.28	7.25
1957	0.03	0.03	2.41	1.27	1.02	0.17	0.00	0.00	0.00	2.97	10.42	19.03	37.35
1958	4.33	0.25	4.95	1.59	8.92	0.06	0.00	0.00	0.00	0.03	4.64	0.23	25.00
1959	0.00	0.00	0.00	4.81	1.25	0.11	0.00	0.00	0.00	—	—	—	—
1960	—	—	—	—	—	—	—	—	—	—	—	—	—
1961	—	—	—	—	—	—	—	—	—	—	—	—	—
1962	—	—	—	—	—	—	—	—	—	0.03	0.74	1.53	—
1963	0.62	0.20	0.03	0.45	0.57	0.03	0.00	0.00	0.00	8.38	4.08	1.50	15.86
1964	0.88	0.28	0.62	1.33	1.42	0.06	0.00	0.00	0.00	0.08	0.57	0.00	5.24
1965	0.00	0.11	0.11	0.14	0.93	0.00	0.00	0.00	0.00	—	—	—	—
Ave.	1.36	0.52	2.39	5.36	2.33	0.07	0.00	0.00	0.00	1.91	3.68	3.01	23.14
Max.	4.33	4.11	8.98	14.10	8.92	0.17	0.00	0.00	0.00	9.23	10.42	19.03	39.54
Min.	0.00	0.00	0.00	0.14	0.06	0.00	0.00	0.00	0.00	0.00	0.23	0.00	5.24

Table A 2.3-4 EXTENDED RUN-OFF DATA AT EMBLIPITYYA

Unit : M3/S

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
1960	50.3	54.9	52.2	84.6	36.5	18.7	34.5	11.8	20.4	26.0	48.4	36.2	474.5
1961	36.6	29.2	37.7	43.9	57.5	24.8	20.4	28.0	15.7	34.9	90.1	63.5	482.3
1962	41.5	28.9	40.9	74.4	87.6	29.9	19.9	13.2	21.2	30.2	52.9	58.2	508.8
1963	107.1	50.9	51.6	129.9	95.3	44.1	28.0	20.6	20.8	61.5	111.1	82.0	802.9
1964	50.6	28.9	61.4	68.8	43.2	21.0	20.4	12.9	20.7	18.4	21.8	9.6	377.7
1965	9.4	11.1	14.6	91.9	58.8	25.7	8.7	10.2	23.7	31.8	76.9	79.1	441.9
1966	48.0	26.2	49.5	85.5	37.2	18.0	14.8	11.2	57.3	95.1	122.4	100.5	665.7
1967	82.2	28.1	30.6	31.3	26.4	12.6	6.9	6.1	3.9	16.7	75.2	35.5	355.5
1968	37.7	7.6	7.8	29.0	27.4	11.5	20.5	11.4	10.3	9.0	18.2	17.2	207.6
1969	25.2	8.7	28.0	52.1	123.2	19.4	11.9	15.8	10.8	36.8	39.9	23.4	395.2
1970	44.1	34.8	68.3	74.1	66.4	16.8	12.1	10.7	9.7	26.0	115.1	44.2	522.3
1971	85.7	38.6	34.7	36.7	33.4	46.1	19.9	23.0	59.4	14.1	54.6	54.6	500.8
1972	27.7	6.1	41.7	46.6	87.4	13.3	10.5	10.7	30.6	42.8	132.9	33.3	483.6
1973	29.2	4.5	57.6	51.3	27.4	5.7	6.2	10.1	1.2	44.3	50.2	21.0	308.7
1974	19.2	36.6	6.6	23.3	42.2	21.7	17.1	14.7	17.8	11.8	69.9	99.2	385.1
1975	32.5	27.5	28.7	83.1	54.5	64.0	5.4	12.4	10.8	34.6	90.5	2.5	446.5
1976	26.2	5.2	6.8	48.0	28.9	14.3	12.1	12.4	1.3	40.8	154.0	72.2	422.2
1977	50.0	53.8	41.3	66.0	63.2	26.4	23.0	10.1	0.5	35.4	92.1	5.9	467.7
1978	24.7	49.3	52.6	38.2	104.4	17.8	14.3	20.5	22.5	34.2	58.0	40.5	477.0
1979	49.9	36.5	12.0	37.9	53.9	26.4	27.0	12.3	24.0	45.4	45.2	92.7	463.2
1980	21.0	1.0	25.7	48.4	31.4	25.1	22.2	10.8	22.8	8.2	86.8	65.7	369.1
1981	38.1	12.7	16.6	34.9	42.3	36.2	24.2	8.1	28.2	8.2	87.8	2.2	339.5
1982	32.1	25.1	30.1	48.5	84.4	41.6	19.0	10.8	1.7	33.1	127.4	33.0	486.8
1983	22.9	9.8	5.3	14.5	48.2	15.5	12.0	8.6	18.3	1.2	72.5	48.6	277.4
1984	73.0	40.8	80.0	108.9	32.5	27.6	22.2	10.7	14.6	19.3	63.7	37.3	531.6
1985	35.0	24.9	53.0	16.3	49.0	82.3	13.5	9.6	10.3	39.1	54.4	66.7	454.1
1986	44.0	26.2	22.5	74.0	32.0	21.2	16.0	13.3	17.9	59.6	20.6	37.3	384.7
1987	38.5	1.9	14.3	30.1	31.9	9.0	11.3	4.4	10.3	24.2	83.3	55.1	314.3
1988	31.5	46.5	56.0	74.2	58.3	19.5	19.3	15.7	18.2	12.9	95.7	13.8	461.6
1989	23.9	0.5	6.7	20.4	67.9	25.1	23.5	21.3	9.2	33.7	66.8	44.1	343.1
1990	35.1	36.9	46.3	17.1	59.6	31.5	14.0	13.6	6.0	28.7	88.7	44.4	421.9
Ave.	41.1	25.6	34.9	54.5	54.6	26.2	17.1	13.1	17.4	30.9	76.7	45.8	437.8
Max.	107.1	54.9	80.0	129.9	123.2	82.3	34.5	28.0	59.4	95.1	154.0	100.5	802.9
Min.	9.4	0.5	5.3	14.5	26.4	5.7	5.4	4.4	0.5	1.2	18.2	2.2	207.6

Table A 2.3-5 EXTENDED RUN-OFF DATA AT TIMBOLKETIYA

Year	Station code : 1807												Unit : M ³ /S	
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	
1980	5.89	5.75	2.97	4.59	3.53	1.95	4.11	1.90	3.37	3.60	4.59	2.61	45.0	
1981	3.60	2.61	2.46	2.10	3.48	3.17	2.78	3.14	2.72	4.50	8.95	6.63	46.1	
1982	4.84	4.22	3.88	7.11	8.59	3.29	2.80	2.01	4.30	4.42	7.90	11.69	65.2	
1983	31.66	7.87	3.26	6.97	6.26	4.30	4.33	2.49	4.59	11.44	14.72	8.84	106.7	
1984	5.69	3.03	11.21	10.11	5.49	3.77	5.21	4.25	5.75	1.93	3.71	3.17	63.3	
1985	0.99	1.08	1.87	4.62	8.44	3.09	0.79	3.03	3.09	4.08	10.39	7.96	49.4	
1986	3.63	1.53	5.58	8.81	3.74	2.18	1.81	1.16	4.98	9.01	9.60	5.41	57.4	
1987	4.13	2.94	3.77	3.25	2.46	2.15	2.08	2.18	1.25	22.37	10.45	4.59	61.6	
1988	3.47	1.66	2.59	2.70	2.52	4.07	4.12	1.90	3.93	4.90	3.20	3.64	38.7	
1989	1.69	2.58	3.54	4.17	9.04	3.29	1.71	3.24	2.83	6.64	3.87	8.01	50.6	
1970	2.88	3.24	4.44	4.66	3.42	2.44	2.47	2.33	2.42	4.00	6.00	3.55	41.9	
1971	3.84	3.08	3.94	5.13	2.82	3.41	2.94	3.06	6.28	3.95	7.33	4.42	50.2	
1972	2.08	1.71	4.05	3.22	6.19	2.10	2.84	2.54	4.64	5.83	6.04	2.49	43.7	
1973	1.98	2.16	6.28	4.04	2.36	3.28	2.14	2.82	2.00	6.64	4.03	5.35	43.1	
1974	1.39	3.25	2.30	4.62	3.47	3.53	3.72	2.60	3.94	3.03	3.50	4.04	39.4	
1975	2.26	3.56	3.14	4.69	4.65	5.17	2.16	2.68	3.03	3.57	5.99	4.65	45.6	
1976	1.98	1.83	2.98	4.43	2.87	1.64	1.81	2.34	1.90	3.98	4.69	4.04	34.5	
1977	2.03	3.64	3.62	4.98	4.18	2.51	1.78	2.29	2.40	5.80	6.49	3.08	42.8	
1978	2.15	3.28	4.57	4.15	6.79	2.22	2.54	3.38	3.49	4.51	7.60	3.50	48.2	
1979	1.58	2.42	2.29	4.20	4.37	2.85	2.80	1.98	4.43	5.06	5.49	4.53	42.0	
1980	1.50	1.55	2.48	3.78	2.75	2.67	2.37	2.40	1.87	4.18	4.85	2.81	33.2	
1981	1.83	2.64	2.61	4.26	3.59	3.41	1.90	3.05	2.73	2.61	5.35	2.39	36.2	
1982	1.57	1.90	3.83	4.88	5.87	5.81	2.88	2.22	1.81	5.35	6.86	2.68	45.7	
1983	1.93	1.96	2.13	2.80	4.42	2.03	2.02	2.29	3.08	4.21	3.60	3.89	34.4	
1984	4.69	3.32	5.60	5.66	2.79	3.16	2.80	1.50	3.06	3.66	5.98	3.18	45.4	
1985	3.13	3.19	4.60	3.17	3.76	6.16	1.89	1.79	2.24	5.56	4.69	4.72	44.9	
1986	2.47	2.78	3.89	5.25	2.77	2.09	1.85	2.93	4.05	3.87	3.56	2.87	38.4	
1987	2.31	1.48	2.98	4.23	2.42	2.55	1.40	3.69	2.42	5.14	4.60	3.51	36.7	
1988	2.06	2.67	4.86	5.09	4.10	3.26	3.03	2.76	4.75	3.09	4.22	3.03	42.9	
1989	2.08	1.45	2.58	4.19	5.19	3.20	5.04	2.32	3.28	5.19	4.55	2.01	41.1	
1990	2.81	3.26	4.23	3.98	4.43	3.16	2.74	2.20	2.12	4.91	5.15	3.10	42.1	
Ave.	3.7	2.8	3.8	4.7	4.4	3.2	2.7	2.5	3.3	5.4	6.1	4.4	47.0	
Max.	31.7	7.9	11.2	10.1	9.0	6.2	5.2	4.3	6.3	22.4	14.7	11.7	106.7	
Min.	1.0	1.1	1.9	2.1	2.4	1.6	0.8	1.2	1.3	1.9	3.2	2.0	33.2	

Table A 2.3-6 EXTENDED RUN-OFF DATA AT MAU ARA

Station code : 1809												Unit : M3/S	
Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
1960	0.23	0.59	0.00	0.18	0.12	0.00	0.00	0.00	0.00	0.51	0.31	0.08	2.0
1961	0.18	0.33	0.22	0.24	0.29	0.22	0.00	0.00	0.00	0.78	1.14	0.36	3.8
1962	0.27	0.32	0.39	0.89	0.41	0.05	0.00	0.00	0.00	0.03	0.74	1.53	4.6
1963	0.62	0.20	0.03	0.45	0.57	0.03	0.00	0.00	0.00	8.38	4.08	1.50	15.9
1964	0.88	0.28	0.62	1.33	1.42	0.06	0.00	0.00	0.00	0.08	0.57	0.00	5.2
1965	0.00	0.11	0.11	0.14	0.93	0.00	0.00	0.00	0.00	0.95	1.27	0.76	4.3
1966	0.10	0.22	0.63	0.69	0.22	0.01	0.00	0.00	0.00	0.00	0.48	0.00	2.4
1967	0.44	0.18	0.04	0.11	0.14	0.19	0.00	0.00	0.00	0.62	0.69	0.13	2.5
1968	0.46	0.02	0.61	0.15	0.05	0.29	0.00	0.00	0.00	0.55	0.26	0.17	2.6
1969	0.08	0.10	0.26	0.82	0.67	0.22	0.00	0.00	0.00	0.92	0.79	0.97	4.8
1970	0.24	0.49	0.25	0.35	0.33	0.03	0.00	0.00	0.00	0.18	0.76	0.27	2.9
1971	0.20	0.47	0.18	0.66	0.24	0.14	0.00	0.00	0.00	0.17	0.75	0.21	3.0
1972	0.10	0.00	0.12	0.34	0.50	0.00	0.00	0.00	0.00	1.08	0.97	0.26	3.4
1973	0.01	0.40	0.20	0.19	0.07	0.12	0.00	0.00	0.00	0.30	0.65	0.79	2.7
1974	0.00	0.29	0.19	0.44	0.15	0.15	0.00	0.00	0.00	0.09	0.65	0.89	2.9
1975	0.01	0.41	0.31	0.49	0.25	0.47	0.00	0.00	0.00	0.17	0.91	0.34	3.4
1976	0.09	0.01	0.29	0.78	0.27	0.00	0.00	0.00	0.00	0.48	0.56	0.07	2.6
1977	0.00	0.06	0.17	0.61	0.45	0.06	0.00	0.00	0.00	1.05	0.76	0.59	3.8
1978	0.17	0.39	0.17	0.22	0.44	0.03	0.00	0.00	0.00	0.42	0.70	0.00	2.5
1979	0.00	0.41	0.21	0.32	0.70	0.06	0.00	0.00	0.00	0.79	0.96	0.39	3.8
1980	0.00	0.03	0.26	0.47	0.20	0.04	0.00	0.00	0.00	0.08	0.90	0.34	2.3
1981	0.16	0.12	0.24	0.29	0.24	0.13	0.00	0.00	0.00	0.24	0.62	0.21	2.3
1982	0.04	0.00	0.31	0.24	0.08	0.45	0.00	0.00	0.00	0.37	1.23	0.09	2.8
1983	0.06	0.00	0.18	0.08	0.41	0.00	0.00	0.00	0.00	0.25	0.65	0.57	2.2
1984	0.35	0.70	0.20	0.42	0.12	0.11	0.00	0.00	0.00	0.10	0.89	0.33	3.2
1985	0.25	0.14	0.22	0.18	0.59	0.47	0.00	0.00	0.00	0.30	0.74	0.77	3.7
1986	0.08	0.38	0.13	0.31	0.00	0.06	0.00	0.00	0.00	0.82	0.41	0.28	2.5
1987	0.13	0.06	0.23	0.38	0.52	0.09	0.00	0.00	0.00	1.46	0.77	0.40	4.0
1988	0.12	0.37	0.31	0.78	0.15	0.11	0.00	0.00	0.00	0.00	0.68	0.54	3.1
1989	0.13	0.00	0.19	0.37	0.24	0.14	0.00	0.00	0.00	0.28	0.78	0.00	2.1
1990	0.23	0.36	0.29	0.29	0.41	0.14	0.00	0.00	0.00	0.42	0.78	0.16	3.1
Ave.	0.2	0.2	0.2	0.4	0.4	0.1	0.0	0.0	0.0	0.7	0.9	0.4	3.6
Max.	0.9	0.7	0.6	1.3	1.4	0.5	0.0	0.0	0.0	8.4	4.1	1.5	15.9
Min.	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	2.0

Table A 2.3-7 RUN-OFF AT THE SAMANALAWEWA DAM SITE ESTIMATED BY CEB

Year	Station Code : 1806												Annual
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1960	52.5	63.1	64.5	93.3	45.0	24.4	39.4	17.4	34.5	34.0	49.0	41.8	558.9
1961	40.2	31.2	40.7	48.2	77.4	38.6	32.9	50.9	25.4	41.5	86.8	76.3	590.1
1962	50.6	27.8	35.6	66.6	94.3	39.9	28.7	19.0	32.4	36.4	56.5	57.9	545.7
1963	65.1	51.5	53.6	96.7	73.4	61.7	37.8	26.5	28.0	78.7	98.0	77.1	748.1
1964	61.9	40.3	66.4	53.4	54.6	37.3	37.8	28.1	40.7	24.4	29.5	28.1	502.5
1965	19.3	15.5	24.1	63.5	102.3	40.7	14.5	23.0	20.5	50.4	98.0	74.7	546.5
1966	47.7	31.2	38.6	74.1	39.9	20.0	13.9	9.1	78.5	54.4	86.8	64.8	559.0
1967	35.1	35.1	50.9	39.9	32.9	28.8	17.1	20.1	8.6	58.1	67.1	62.9	456.6
1968	41.2	22.0	24.9	52.1	42.1	50.5	24.1	17.1	25.2	52.2	57.3	53.6	463.3
1969	32.4	21.8	28.4	66.1	79.0	64.0	47.4	34.6	17.9	43.1	46.9	56.0	537.6
1970	49.2	41.5	63.3	74.0	54.0	20.6	21.4	15.6	18.5	40.7	73.2	58.8	530.8
1971	48.0	39.1	48.5	70.3	48.0	43.3	25.9	17.1	63.8	45.3	75.7	66.8	591.8
1972	34.5	16.6	93.4	78.4	91.1	15.9	36.2	23.4	47.3	60.5	91.9	48.9	638.1
1973	24.6	20.8	32.9	66.9	27.7	24.6	15.0	28.8	12.0	48.3	55.1	78.2	434.9
1974	34.4	25.0	42.5	76.1	40.6	46.3	50.4	46.6	39.4	33.3	37.3	51.3	523.2
1975	33.5	26.3	49.1	97.2	62.5	111.7	33.7	41.2	49.8	38.2	75.0	51.1	669.3
1976	32.7	15.5	16.0	56.9	27.7	10.8	9.2	9.2	4.4	47.1	74.5	83.5	387.5
1977	30.9	25.1	45.9	74.6	97.3	41.9	30.8	24.6	12.3	53.3	76.5	67.7	580.9
1978	40.0	34.1	66.6	52.3	84.9	22.3	27.9	63.9	24.2	44.9	74.9	57.9	593.9
1979	31.9	30.6	28.1	47.6	61.9	31.5	38.0	49.0	59.6	49.6	81.3	71.0	580.1
1980	27.1	15.8	25.1	58.6	43.5	25.2	21.3	15.4	11.0	26.2	63.9	64.2	397.3
1981	38.4	19.7	24.7	51.9	39.6	41.9	23.0	15.0	21.4	28.5	59.5	41.7	405.3
1982	26.3	14.1	24.9	49.3	54.9	82.1	34.8	23.0	5.7	38.1	82.1	54.7	490.0
1983	26.2	14.0	15.2	34.5	43.0	8.8	7.8	8.3	10.1	16.1	49.0	107.1	340.1
1984	85.4	49.4	123.7	132.5	45.8	34.7	35.6	9.9	13.2	25.5	62.5	41.8	660.0
1985	42.4	33.8	44.0	47.6	49.1	127.0	37.8	14.2	11.2	60.8	68.9	89.5	626.3
1986	60.3	32.1	32.4	92.2	45.8	14.8	7.6	18.8	19.2	31.3	17.9	26.8	399.2
1987	26.5	15.1	24.8	51.2	54.7	23.1	14.3	17.3	13.6	44.8	69.3	51.0	410.7
1988	28.9	26.1	66.5	100.7	57.8	46.9	33.4	31.1	51.3	30.7	60.9	49.1	583.4
1989	27.9	12.8	19.3	44.9	52.5	47.3	39.6	34.0	22.8	38.1	66.5	57.7	463.4
Ave.	39.8	28.2	43.8	67.1	57.4	40.9	27.9	25.1	27.6	42.5	66.4	60.4	527.2
Max.	85.4	63.1	123.7	132.5	102.3	127.0	50.4	63.9	78.5	78.7	98.0	107.1	748.1
Min.	19.3	12.8	15.2	34.5	27.7	8.8	7.6	8.3	4.4	16.1	17.9	26.8	340.1

Table A 2.3-8 EXTENDED RUN-OFF DATA AT UDA WALAWE (1)

Year	(without Samanalawewa Dam Case)												Annual
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1960	42.5	45.8	43.8	71.9	26.2	12.8	24.1	7.8	14.1	21.2	40.8	28.9	379.9
1961	30.5	25.1	32.5	41.2	52.1	21.8	16.2	22.0	12.6	27.2	69.2	49.0	399.4
1962	32.2	22.7	31.8	57.3	67.3	23.4	15.8	10.7	16.8	23.7	48.5	44.9	395.1
1963	82.1	39.4	39.9	99.5	73.2	34.2	22.0	16.4	16.5	47.5	85.2	63.0	618.9
1964	39.2	22.7	47.4	53.0	33.5	16.7	16.2	10.5	16.4	14.7	17.3	8.0	295.6
1965	7.8	9.1	11.8	70.6	45.4	20.2	7.3	8.5	18.7	24.9	59.2	60.8	344.3
1966	37.2	20.6	38.3	55.7	29.0	14.4	11.9	9.2	44.3	73.0	93.8	77.1	514.5
1967	63.2	22.1	24.0	24.5	20.8	10.3	5.9	5.3	3.7	13.4	57.9	27.7	278.8
1968	29.4	6.5	6.6	22.7	21.5	9.4	16.3	9.4	8.5	7.5	14.5	13.8	166.1
1969	19.9	7.3	22.0	40.3	94.4	15.4	9.7	12.7	8.9	28.7	31.0	18.5	308.8
1970	34.2	27.2	52.6	57.0	51.2	13.5	9.9	8.8	8.1	20.5	88.2	34.3	405.5
1971	65.9	30.0	27.1	28.6	26.1	35.7	15.8	18.2	45.9	11.4	42.2	42.2	389.1
1972	21.8	5.3	32.4	36.1	67.1	10.8	8.7	8.8	24.0	33.2	101.7	26.0	375.9
1973	22.9	4.1	44.5	39.7	21.5	5.0	5.4	8.4	1.6	34.4	38.9	16.7	243.1
1974	15.3	28.5	5.7	22.2	32.8	17.2	13.7	11.9	14.2	9.7	53.8	76.1	301.1
1975	25.4	21.6	22.5	63.9	42.1	49.4	4.8	10.1	8.9	27.0	69.5	2.6	347.8
1976	20.6	4.7	5.9	37.2	22.7	11.6	9.9	10.1	1.7	31.7	117.8	55.6	329.5
1977	38.7	41.6	32.1	50.9	48.7	20.8	18.2	8.4	1.1	27.6	70.7	5.2	364.0
1978	19.5	38.2	40.7	29.7	80.1	14.2	11.6	16.3	17.8	26.7	44.8	31.5	371.1
1979	38.6	28.4	9.8	29.5	41.7	20.8	21.2	10.0	18.9	35.2	35.1	71.2	360.4
1980	16.7	1.5	20.2	37.5	24.6	19.8	17.6	8.9	18.0	6.9	66.7	50.6	289.0
1981	29.7	10.4	13.3	27.2	32.9	28.2	19.1	6.9	22.1	6.9	67.5	2.4	266.6
1982	25.1	19.8	23.6	37.6	64.9	32.3	15.1	8.9	2.0	25.9	97.6	25.8	378.6
1983	18.1	8.1	4.7	11.7	37.3	12.5	9.8	7.2	14.6	1.6	55.8	37.6	219.0
1984	56.2	31.7	51.5	84.3	25.4	21.7	17.6	8.8	11.8	15.4	49.1	29.1	412.6
1985	27.3	19.6	41.0	13.1	38.0	63.3	11.0	8.0	8.5	30.4	42.1	51.4	353.7
1986	34.2	20.6	17.9	57.0	25.0	16.8	12.9	10.8	14.3	46.0	16.4	29.1	301.0
1987	30.0	2.1	11.6	23.6	25.0	7.5	9.3	4.0	8.5	19.1	64.0	42.6	247.3
1988	24.6	36.1	43.3	57.1	45.0	15.5	15.4	12.6	14.5	10.5	73.5	11.2	359.3
1989	18.9	1.1	5.8	16.2	52.3	19.8	18.6	16.9	7.7	26.3	51.5	34.2	269.3
1990	27.4	28.8	35.9	13.7	45.0	24.6	11.3	11.0	5.3	22.5	68.1	34.5	329.1
Ave.	32.1	20.3	27.4	42.6	42.4	20.6	13.6	10.6	13.9	24.2	59.1	35.5	342.4
Max.	82.1	45.8	61.5	99.5	94.4	63.3	24.1	22.0	45.9	73.0	117.8	77.1	618.9
Min.	7.8	1.1	4.7	11.7	20.8	5.0	4.8	4.0	1.1	1.6	14.5	2.4	166.1

Table A 2.3-8 EXTENDED RUN-OFF DATA AT UDA WALAWE (2)

Station code : 1805 (without Samanalawewa Dam Case) Unit : MCM

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
1960	113.8	114.8	117.3	186.4	70.2	33.2	64.5	20.9	36.5	56.8	105.8	77.4	997.6
1961	81.7	60.7	87.0	106.8	139.5	56.5	43.4	58.9	32.7	72.9	179.4	131.2	1050.7
1962	86.2	54.9	85.2	148.5	180.3	60.7	42.3	28.7	43.5	63.5	125.7	120.3	1039.8
1963	219.9	95.3	106.9	257.9	196.1	88.6	58.9	43.9	42.8	127.2	220.8	168.7	1627.0
1964	105.0	56.9	127.0	137.4	89.7	43.3	43.4	28.1	42.5	39.4	44.8	21.4	778.9
1965	20.9	22.0	31.6	183.0	121.6	52.4	19.6	22.8	48.5	66.7	153.4	162.8	905.3
1966	99.6	49.8	102.6	170.3	77.7	37.3	31.9	24.6	114.8	195.5	243.1	206.5	1353.7
1967	169.3	53.5	64.3	63.5	55.7	26.7	15.8	14.2	9.6	35.9	150.1	74.2	732.8
1968	78.7	16.3	17.7	58.8	57.6	24.4	43.7	25.2	22.0	20.1	37.6	37.0	439.1
1969	53.3	17.7	58.9	104.5	252.8	39.9	26.0	34.0	23.1	76.9	80.4	49.6	817.1
1970	91.6	65.8	140.9	147.7	137.1	35.0	26.5	23.6	21.0	54.9	228.6	91.9	1064.6
1971	176.5	72.6	72.6	74.1	69.9	92.5	42.3	48.7	119.0	30.5	109.4	113.0	1021.1
1972	58.4	13.3	86.8	93.6	179.7	28.0	23.3	23.6	62.2	88.9	263.6	69.6	991.0
1973	61.3	9.9	119.2	102.9	57.6	13.0	14.5	22.5	4.1	92.1	100.8	44.7	642.6
1974	41.0	68.9	15.3	57.5	87.9	44.6	36.7	31.9	36.8	26.0	139.4	203.8	789.8
1975	68.0	52.3	60.3	165.6	112.8	128.0	12.9	27.1	23.1	72.3	180.1	7.0	909.5
1976	55.2	11.8	15.8	96.4	60.8	30.1	26.5	27.1	4.4	84.9	305.3	148.9	867.2
1977	103.7	100.6	86.0	131.9	130.4	53.9	48.7	22.5	2.9	73.9	183.3	13.9	951.7
1978	52.2	92.4	109.0	77.0	214.5	36.8	31.1	43.7	46.1	71.5	116.1	84.4	974.8
1979	103.4	68.7	26.2	76.5	111.7	53.9	56.8	26.8	49.0	94.3	91.0	190.7	949.0
1980	44.7	3.8	54.1	97.2	65.9	51.3	47.1	23.8	46.7	18.5	172.9	135.5	761.5
1981	79.5	25.2	35.5	70.5	88.1	73.1	51.2	18.5	57.3	18.5	175.0	6.4	698.9
1982	67.2	47.9	63.2	97.5	173.8	83.7	40.4	23.8	5.2	69.4	253.0	69.1	994.2
1983	48.5	19.6	12.6	30.3	99.9	32.4	26.2	19.3	37.8	4.3	144.6	100.7	576.2
1984	150.5	79.4	164.7	218.5	68.0	56.2	47.1	23.6	30.6	41.2	127.3	77.9	1085.0
1985	73.1	47.4	109.8	34.0	101.8	164.1	29.5	21.4	22.0	81.4	109.1	137.7	931.3
1986	91.6	49.8	47.9	147.7	67.0	43.5	34.6	28.9	37.1	123.2	42.5	77.9	791.7
1987	80.4	5.1	31.1	61.2	67.0	19.4	24.9	10.7	22.0	51.2	165.9	114.1	653.0
1988	65.9	90.5	116.0	148.0	120.5	40.2	41.2	33.7	37.5	28.1	190.5	30.0	942.2
1989	50.6	2.7	15.5	42.0	140.1	51.3	49.8	45.3	20.0	70.4	133.5	91.6	712.8
1990	73.4	69.7	96.2	35.5	123.2	63.8	30.3	29.5	13.7	60.3	176.5	92.4	864.5
Ave.	86.0	49.7	73.5	110.4	113.5	53.5	36.5	28.3	36.0	64.9	153.2	95.2	900.5
Max.	219.9	114.8	164.7	257.9	252.8	164.1	64.5	58.9	119.0	195.5	305.3	206.5	1627.0
Min.	20.9	2.7	12.6	30.3	55.7	13.0	12.9	10.7	2.9	4.3	37.6	6.4	439.1

Table A 2.3-9 EXTENDED RUN-OFF DATA AT UDA WALAWE DIRECT CATCHMENT

Year	(with Samanalawewa Dam Case)												Annual
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1960	61.3	51.7	52.8	93.1	25.2	8.8	25.1	3.5	2.0	22.8	56.3	35.6	438.7
1961	41.5	29.5	46.3	58.6	62.1	17.9	10.5	8.0	7.3	31.4	92.6	54.9	460.6
1962	35.6	27.1	49.6	81.9	86.0	20.8	13.6	9.7	11.1	27.1	69.2	62.4	494.1
1963	154.8	43.8	53.3	161.2	122.7	26.9	21.1	17.4	14.8	48.5	122.8	91.6	878.9
1964	43.1	16.6	60.6	84.0	35.1	6.0	5.6	0.2	1.8	15.0	15.3	11.3	294.6
1965	1.6	6.5	7.5	119.5	19.3	11.7	5.1	0.2	28.0	16.3	55.4	88.1	359.2
1966	51.9	18.6	64.0	96.2	37.8	17.3	18.0	15.5	36.3	141.1	156.3	141.7	794.7
1967	134.2	18.4	13.4	23.6	22.8	1.6	3.2	0.2	1.0	6.4	83.0	11.3	319.1
1968	37.5	5.5	6.3	6.7	15.5	1.6	19.6	8.1	1.0	6.4	9.7	11.3	129.2
1969	20.9	5.5	30.5	38.4	173.8	1.6	3.2	0.2	5.2	33.8	33.5	11.3	357.9
1970	42.4	24.3	77.6	73.7	83.1	14.4	5.1	8.0	2.5	14.2	155.4	33.1	533.8
1971	128.5	33.5	24.1	3.8	21.9	49.2	16.4	31.6	55.2	6.4	33.7	46.2	450.5
1972	23.9	5.5	6.3	15.2	88.6	12.1	3.2	0.2	14.9	28.4	171.7	20.7	390.7
1973	36.7	5.5	86.3	36.0	29.9	1.6	3.2	0.2	1.0	43.8	45.7	11.3	301.2
1974	6.6	43.9	6.3	3.8	47.3	1.6	3.2	0.2	1.0	6.4	102.1	152.5	374.9
1975	34.5	26.0	11.2	68.4	50.3	16.3	3.2	0.2	1.0	34.1	105.1	11.3	361.6
1976	22.5	5.5	6.3	39.5	33.1	19.3	17.3	17.9	1.0	37.8	230.8	65.4	496.4
1977	72.8	75.5	40.1	57.3	33.1	12.0	17.9	0.2	1.0	20.6	106.8	11.3	448.6
1978	12.2	58.3	42.4	24.7	129.6	14.5	3.2	0.2	21.9	26.6	41.2	26.5	401.3
1979	71.5	38.1	6.3	28.9	49.8	22.4	18.8	0.2	1.0	44.7	9.7	119.7	411.1
1980	17.6	5.5	29.0	38.6	22.4	26.1	25.8	8.4	35.7	6.4	109.0	71.3	395.8
1981	41.1	5.5	10.9	18.6	48.5	31.2	28.2	3.5	35.9	6.4	115.5	11.3	356.6
1982	40.9	33.8	38.3	48.2	118.9	1.6	5.6	0.8	1.0	31.3	170.9	14.4	505.7
1983	22.3	5.6	6.3	3.8	56.9	23.6	18.4	11.0	27.7	6.4	95.6	11.3	288.9
1984	65.1	30.0	41.0	86.0	22.2	21.5	11.5	13.7	17.4	15.7	54.8	36.1	425.0
1985	30.7	13.6	65.8	3.8	52.7	37.1	3.2	7.2	10.8	20.6	40.2	48.2	333.9
1986	31.3	17.7	15.5	55.5	21.2	28.7	27.0	10.1	17.9	91.9	24.6	51.1	392.5
1987	53.9	5.5	6.3	10.0	12.3	1.6	10.6	0.2	3.4	6.4	96.6	63.1	269.9
1988	37.0	64.4	49.5	47.3	62.7	1.6	7.8	2.6	1.0	6.4	129.6	11.3	421.2
1989	22.7	5.5	6.3	3.8	87.6	4.0	10.2	11.3	1.0	32.3	67.0	33.9	285.6
Ave.	46.6	24.2	32.0	47.7	55.7	15.2	12.2	6.4	12.0	27.9	87.0	45.7	412.4
Max.	154.8	75.5	86.3	161.2	173.8	49.2	28.2	31.6	55.2	141.1	230.8	152.5	878.9
Min.	1.6	5.5	6.3	3.8	12.3	1.6	3.2	0.2	1.0	6.4	9.7	11.3	129.2

Unit : MCM

Table A 2.4-1 WATER SAMPLING LOCATION

Sample No.	Location
1	Well near Mr.Samarasinghe's House
2	Well near Mr.G.Heensingho's House
3	Well near Mr.Nandorise's House
4	Well near Mr.P.P.Don Anadare's House
5	Well near Mr.G.K.P.Gunapala's House (sampling was impossible in July 1992 due to drought)
6	Well near Mr.L.Sirisena's House
7	Beginning point of Left Bank Main Canal at Uda Walawe Dam
8	Walawe River near Moraketiya Bridge
9	Downstream of Liyangastota Anicut
10	Walawe River near Ambalantota Bridge
11	Paper Company Waste Water Aerating Pond
12	Sugar Company Waste Water Aerating Pond (survey was done July 1992 only)

Table A 2.4-2 ANALYSIS OF WATER SAMPLES (1) (November 1991)

Sample No.	Date	Time	Atmospheric Temp (°C)	Water Temp (°C)	Water depth (cm)	Sampling depth (cm)	Velocity	External Appearance	Smell	S.A.R.	Adj.SAR
1	13.11.91	12.00	34.5	29.5	23	23	-	cloudy	no odour	3.79	23.95
2	13.11.91	12.30	35.0	30.0	15	15	-	clear	no odour	3.18	21.94
3	13.11.91	1.00	36.5	31.0	6	6	-	cloudy	no odour	0.87	6.08
4	13.11.91	1.45	33.5	30.0	75	75	-	clear	no odour	3.69	26.61
5	13.11.91	2.20	33.0	29.0	100	100	-	clear	no odour	4.38	31.57
6	14.11.91	11.15	30.0	26.0	150	150	-	clear	no odour	0.29	2.09
7	14.11.91	8.00	30.0	26.5	600	150	high	clear	no odour	0.05	0.29
8	13.11.91	10.00	34.0	26.5	201	150	low	muddy	no odour	0.38	2.12
9	13.11.91	5.20	30.0	29.0	50	50	high	muddy	no odour	0.50	2.80
10	14.11.91	11.45	33.0	27.0	200	150	low	muddy	no odour	0.44	2.45
11	14.11.91	10.00	33.0	32.0	-	-	-	blackish oily	unpleasant odour	3.71	16.36

Table A 2.4-2 ANALYSIS OF WATER SAMPLES (2) (November 1991)

Sample No.	PH	Conductance (°C)	S.S. (mg dm ⁻³)	D.O. (mg dm ⁻³)	HCO ⁻ (mg dm ⁻³)	CL ⁻ (mg dm ⁻³)	F ⁻ (mg dm ⁻³)	NO ₃ -N (mg dm ⁻³)	Ca ⁺² (mg dm ⁻³)	Mg ⁺ (mg dm ⁻³)	Na ⁺ (mg dm ⁻³)
1	7.4	1360	54.0	56.78	739	115	1.50	0.362	95	16	153
2	7.9	1973	99.0	70.90	650	342	1.80	0.916	116	28	146
3	8.0	738	101.0	76.86	484	69	0.85	0.195	64	90	44
4	8.3	1039	53.0	69.96	696	46	6.90	1.172	46	47	150
5	8.5	1045	139.0	50.19	582	60	3.10	0.375	44	24	145
6	8.1	395	132.0	47.68	264	14	0.29	0.647	57	262	25
7	7.1	115	73.0	107.29	80	7	0.23	0.481	17	330	4
8	7.5	178	138.0	105.40	126	9	0.31	0.332	27	44	14
9	7.6	207	128.0	100.38	135	12	0.34	0.572	34	28	17
10	7.3	236	100.0	101.64	150	15	0.37	0.512	34	60	19
11	6.5	589	190.0	35.45	193	90	0.13	0.812	32	8	89
Standard	6.5	3500			1200	1.5	10	240	140		
	~9.9										

Note: Standard is the maximum permissible level of Sri Lanka standard

Table A 2.4-3 ANALYSIS OF WATER SAMPLES (1) (July 1992)

Sample No.	Date	Time	Atmospheric Temp (°C)	Water Temp (°C)	Water depth (cm)	Sampling depth (cm)	Velocity	External Appearance	Smell	S.A.R.	Adj.SAR
1	22.7.92	2.33	35	30	-	-	-	muddy	-	5.12	29.40
2	22.7.92	3.08	38	29	-	-	-	clear	-	6.22	38.65
3	22.7.92	3.46	37	30	750	-	-	clear	-	0.397	2.55
4	22.7.92	4.14	36	29	-	-	-	clear	-	12.64	80.79
6	23.7.92	12.52	36	29	-	-	-	very clear	-	2.392	14.45
7	23.7.92	3.45	-	-	-	-	high	clear	-	0.306	1.83
8	22.7.92	5.50	34	29	-	201	low	clear	-	0.419	2.63
9	23.7.92	12.42	36	30	-	-	low	clear	-	0.642	3.60
10	23.7.92	11.40	39	29	-	-	-	clear	-	1.352	6.75
11	22.7.92	11.20	34	34	-	-	high	cloudy	odour	0.735	-
12	23.7.92	10.35	35	30	-	-	-	muddy	-	-	-

Table A 2.4-3 ANALYSIS OF WATER SAMPLES (2) (July 1991)

Sample No.	PH	Conductance (µs)	S.S. (mg dm ⁻³)	D.O. (mg dm ⁻³)	HCO ⁻ (mg dm ⁻³)	CL ⁻ (mg dm ⁻³)	F ⁻ (mg dm ⁻³)	NO ₃ -N (mg dm ⁻³)	Ca+2 (mg dm ⁻³)	Mg+ (mg dm ⁻³)	Na+ (mg dm ⁻³)
1	7.2	1814	703	113.82	1009	173.50	1.5	0.6236	121.84	15.55	255.0
2	7.5	1457	196	113.82	897	461.0	1.8	4.3880	163.52	50.56	355.0
3	8.1	899	153	84.55	579	69.86	1.8	0.1386	86.57	41.81	18.0
4	8.5	1502	62	74.79	878	58.14	9.2	1.7090	16.03	13.61	285.0
6	7.5	1906	45	97.56	617	259.00	1.3	0.1617	144.28	58.34	135.0
7	9	179	70	152.84	150	6.816	0.25	0.2079	19.23	5.83	6.2
8	8.9	277	51	149.59	224	5.964	0.46	0.2310	28.85	11.66	10.7
9	8.2	328	89	149.50	243	10.224	0.49	0.3464	25.65	11.66	15.8
10	7.2	885	76	123.57	318	133.764	0.51	0.1848	32.06	31.11	45.0
11		517	-	65.04	93	8.52	0.08	0.4157	38.47	25.28	24.0
12		30700	-	-	-	-	0.29	-	-	-	1000.0
S.	6.5 ~9.9	3500			1200	1.5	10	240	140		

Note: No.5 well has no water to be collected due to drought.
S. is the maximum permissible level of Sri Lanka Standard.

Table A 2.4-3 ANALYSIS OF WATER SAMPLES (3) (July 1992)

Sample No.	Coliform/E. Coli	Microbiological Analysis MPN (in 100 cm ³ of original water sample)
1	-	-
2	+	5
3	+	13
4	+	17
6	-	-
7	-	-
8	-	-
9	+	900

FIGURES

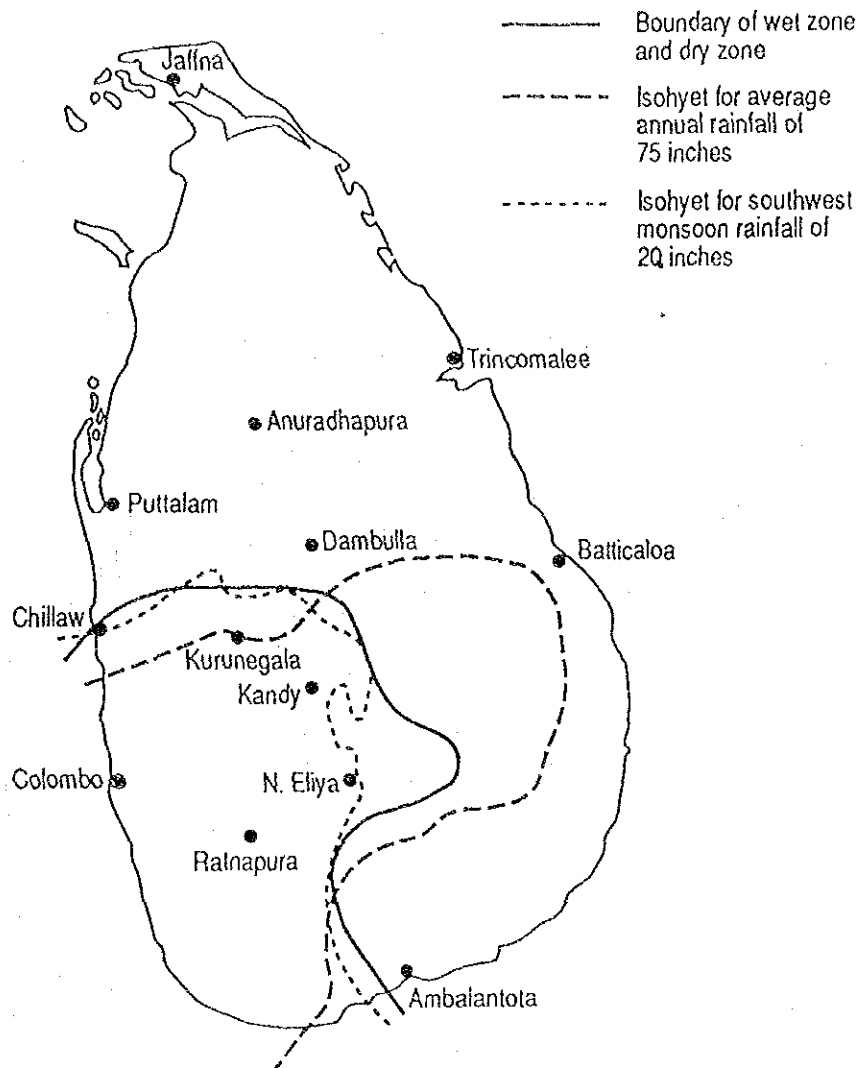


Fig. A 2.1-1 BOUNDARY OF WET ZONE AND DRY ZONE

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF LANDS, IRRIGATION AND MAHAWELE DEVELOPMENT
THE FEASIBILITY STUDY ON WALAWE IRRIGATION UPGRADING AND EXTENSION PROJECT
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig.A 2.2-1 CHRONOGRAM OF RAINFALL STATIONS (2)

===== daily-basis
 ----- monthly-basis

CODE	STATION	Historic Data Period											
		1 9 0	1 9 1	1 9 2	1 9 3	1 9 4	1 9 5	1 9 6	1 9 7	1 9 8	1 9 9	1 9 0	1 9 1
M145	Galle Met	1907.1											1990.12
M153	Ginnihiriya					1944.1						1975.1	
M165	Haki Era												
M231	Kandy Survey Office	1907.1									1956.12		
M262	Keenagala Ella	1907.1											1988.12
M306	Lauderdale Group					1949.10					1960.11		1988.4.31
M337	Mahawelatenna										1954.12		1985.12.31
M345	Mawarella Estate										1949.10		1985.7
		1907.1											1988.12

Fig.A 2.2-1 CHRONOGRAM OF RAINFALL STATIONS (4)

===== daily-basis
 ----- monthly-basis

CODE	STATION	Historic Data Period											
		1 9 0	1 9 1	1 9 2	1 9 3	1 9 4	1 9 5	1 9 6	1 9 7	1 9 8	1 9 9	1 9 0	1 9 1
	012345678901234567890123456789012345678901234567890123456789012												
SRI	Sugar Research Institute in Sevanagala											1981. 1. 1	1990. 12. 31
MEA	Mahaweli Economic Agency											1954. 3. 1	1991. 10. 17
ARS	Agriculture Research Station Angunukolapelassa											1985. 1. 1	1990. 12. 31
RRS	Rice Research Station in Ambalantota											1972. 4. 4	1990. 5. 31
EMB	Embilipitiya											1907. 1	1990. 12
AMB	Ambalantota											1907. 1	1990. 11
HAM	Hambantota											1907. 1	1990. 12
A5	Liyangahatota											1913. 1	1969. 11

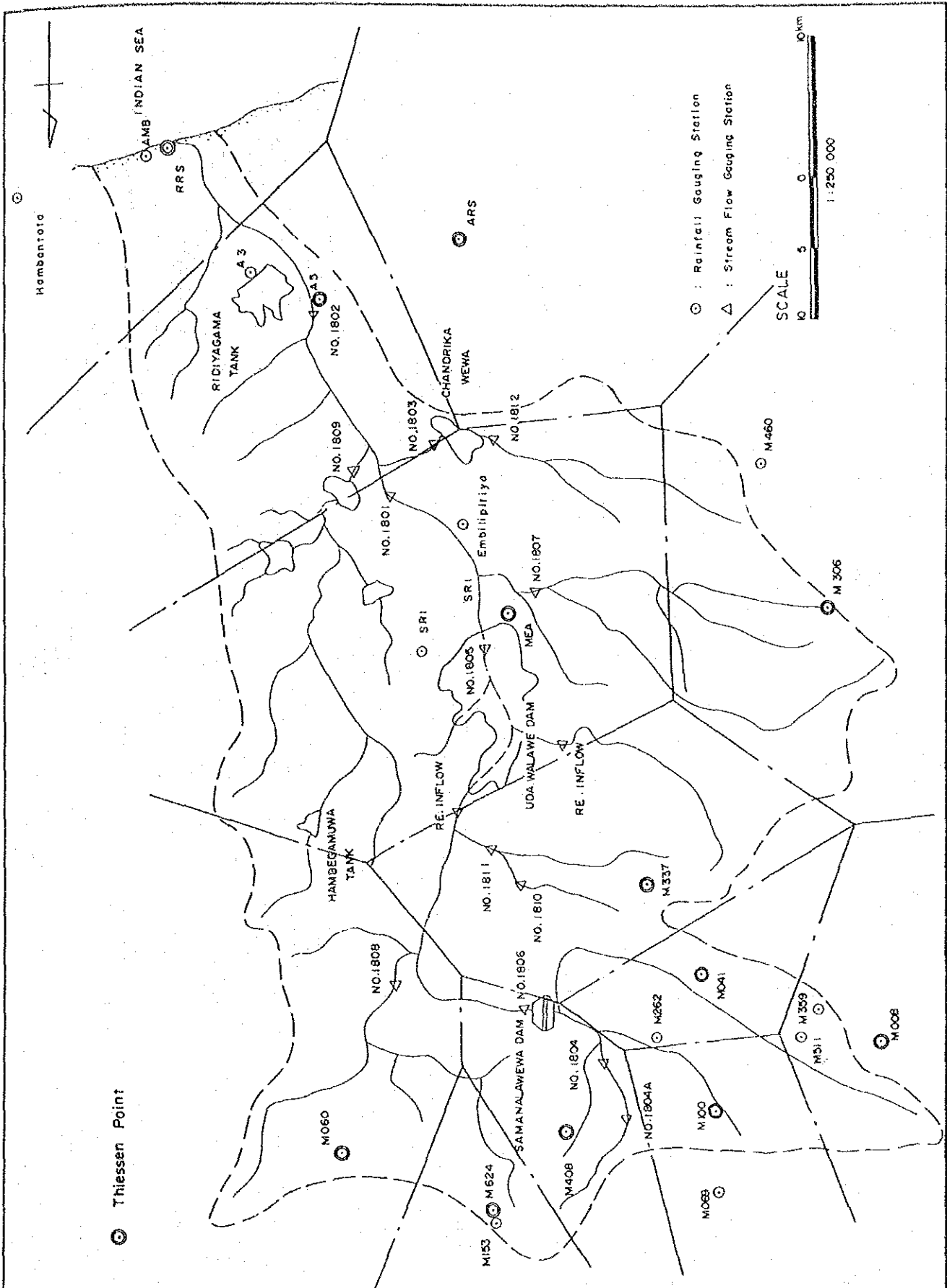


Fig.A 2.2-3

THIESSEN POLYGON

GOVERNMENT OF DEMOCRATIC SOCIALIST
 REPUBLIC OF SRI LANKA
 MINISTRY OF LANDS, IRRIGATION AND MAHAWELI DEVELOPMENT

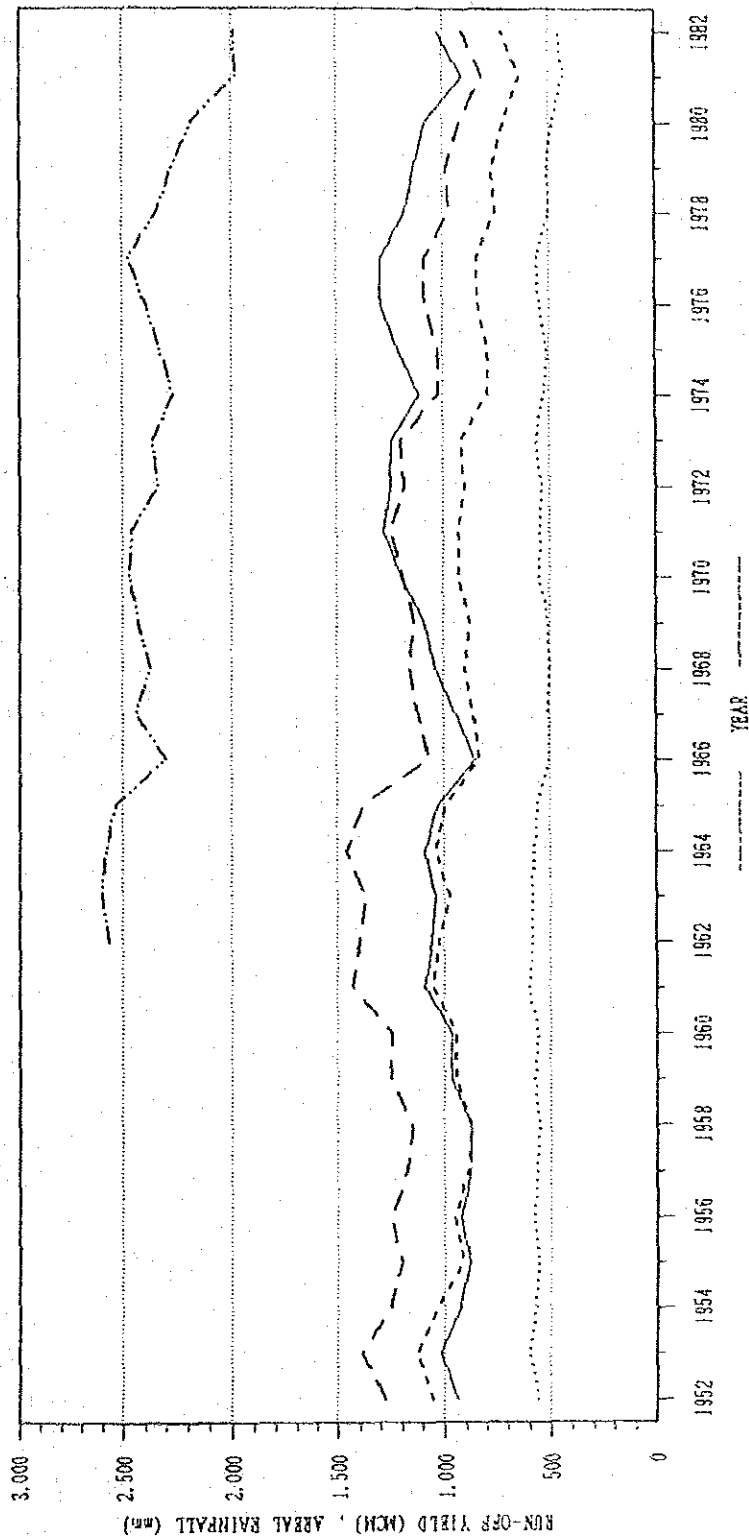
THE FEASIBILITY STUDY ON
 WALAWE IRRIGATION UPGRADING AND
 EXTENSION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig.A 2.3-1 CHRONOGRAM OF STREAM FLOW GAUGING STATIONS (I)

===== daily-basis
 ----- monthly-basis

CODE	STATION	Historic Data Period											
		1	1	1	1	1	1	1	1	1	1	1	1
1801	Embilipitiya	1	9	0	1	2	3	4	5	6	7	8	9
1802	Liyanagahatota	1	9	0	1	2	3	4	5	6	7	8	9
1803	Halmillaketiya	1	9	0	1	2	3	4	5	6	7	8	9
1804	Belihul oya	1	9	0	1	2	3	4	5	6	7	8	9
1804 -A	Belihul oya	1	9	0	1	2	3	4	5	6	7	8	9
1805	Uda Walawe	1	9	0	1	2	3	4	5	6	7	8	9
1806	Samanalawewa	1	9	0	1	2	3	4	5	6	7	8	9
1807	Timbolketiya	1	9	0	1	2	3	4	5	6	7	8	9



ADB REPORT RUN-OFF CEB REPORT RUN-OFF AREAL RAINFALL

Fig. A 2.3-2

MOVING AVERAGE OF ANNUAL RUNOFF

GOVERNMENT OF DEMOCRATIC SOCIALIST
 REPUBLIC OF SRI LANKA
 MINISTRY OF LANDS, IRRIGATION AND MAHAWELE DEVELOPMENT

THE FEASIBILITY STUDY ON
 WALAWE IRRIGATION UPGRADING AND
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JAPAN INTERNATIONAL COOPERATION AGENCY

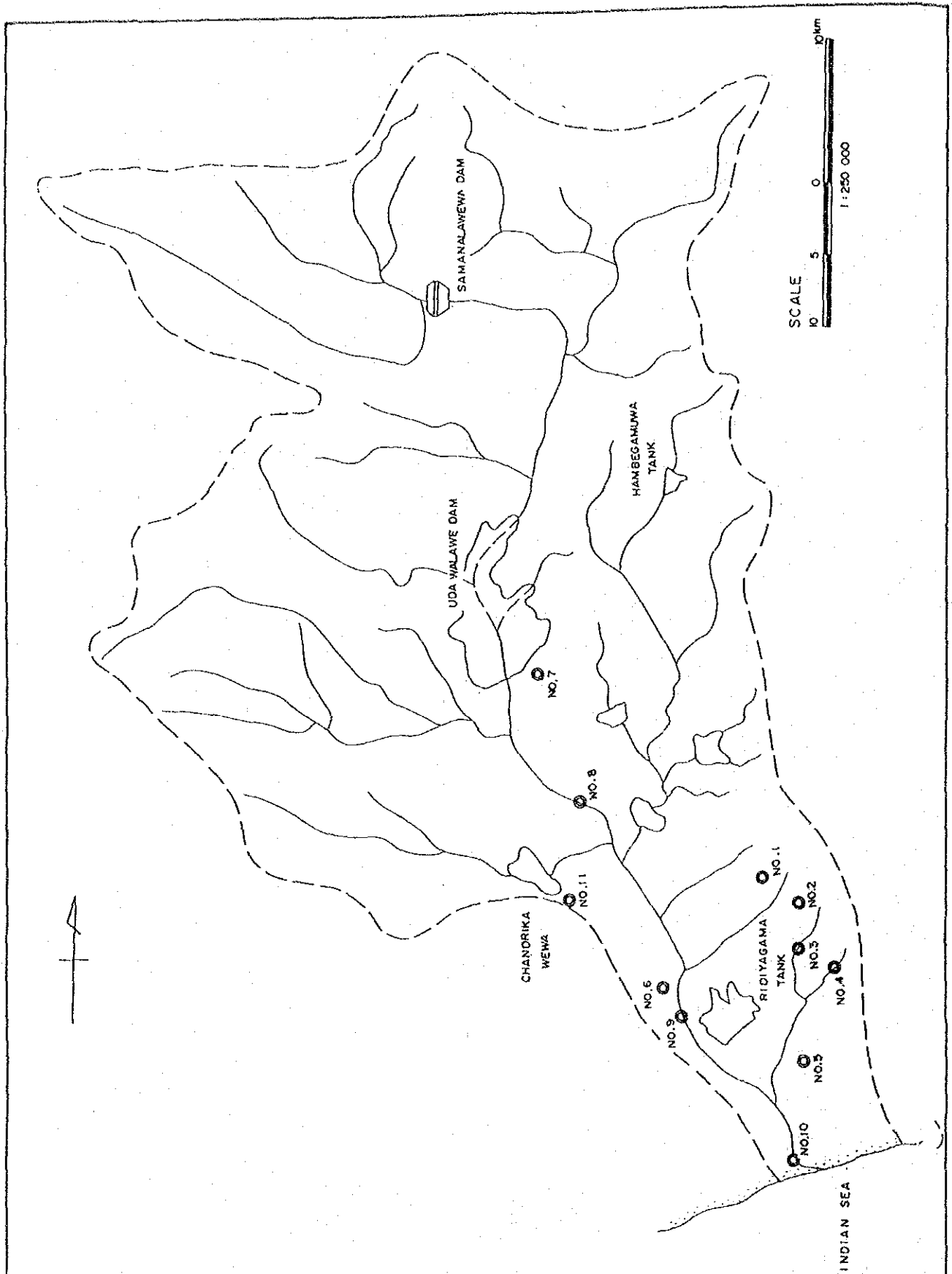


Fig.A 2.4-1 SAMPLING SITE OF WATER FOR WATER QUALITY ANALYSIS

GOVERNMENT OF DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF LANDS, IRRIGATION AND MAHAWELEI DEVELOPMENT
THE FEASIBILITY STUDY ON WALAWE IRRIGATION UPGRADING AND EXTENSION PROJECT
JAPAN INTERNATIONAL COOPERATION AGENCY

Annex - III

Soils and Land Use

ANNEX III SOILS AND LAND USE

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 - 3.1.3 Soil distribution in the Study area
- 3.2 Present Land Use Condition
- 3.3 Land Use Plan in the Study Area
 - 3.3.1 Land capability classification and evaluation method
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ANNEX III SOILS AND LAND USE

3.1 Soil

3.1.1 Introduction

The soil study aims at identifying major soil groups and their distribution in the study area to evaluate the endowed land resources, and also examining the irrigation suitability of each soil group through the review of the past studies and present investigations.

The soil maps of Sri-Lanka is based on soil survey carried out by the Land Use Division of the Irrigation Department in collaboration with Hunting Survey Corporation under the National Soil Survey Program. Mapping of the south-eastern region in connection with the Uda-Walawe scheme was carried out at a reconnaissance level on 1:40,000 aerial photograph using one inch to the mile topographic sheets as base maps in 1963.

Soil classification system of Sri-Lanka has come the Soil Survey Manual USDA, 1951 and FAO Soil Bulletin No.32, 1979. Soil classification of this study was also based on these systems.

The land capability analysis was, however Japanese standard, FAO and USBR Framework were investigated, finally based on the criteria of modified USBR method which considered to be more practical in the study area.

3.1.2 Major soil groups and characteristics

Major soil groups: the soil in the study area occur in catenary sequence in the undulating landscapes. The well, moderately and imperfectly drained Reddish Brown Earth Soils (RBE) occur on the foothill, rolling mantled plain, upper to lower slopes of undulating mantled plains. The poorly drained Alluvial soils and Low Humic Clay soils occur in the river levees of flat plains along with the Walawe Gauge and its tributaries. A schematic diagram of landscape, slope and soil was presented by Land Use Division of the Irrigation Department as given in Fig. A3.1-1.

The soil and landscape relationship in the intermountain valley bottoms is illustrated in the same Fig. A3.1-1. Big river, as like Walawe gauge, form natural river levees on both side of river. However, river levee was never seen on the side of small streams in the intermountain valley bottoms, it is considered that the small streams in the intermountain valley bottoms are not rivers, those are gullies. Therefore, soil and landscape relationship in the intermountain valley bottom should be subdivided from the schematic diagram (1) into the schematic diagram (2).

There are six soil associations in the study area, namely, (1) Walawe Association Undulating phase, (2) Walawe Association Rolling phase, (3) Ranna Association, (4) Malabotu Association, (5) Siyambala Association, and (6) Rock Knob Plain or Rock Outcrop. Rock Knob or Rock outcrop is undefined soil type. Of these, Walawe Undulating (Wa), Walawe Rolling (WaR), Ranna (Ra) are Reddish Brown Earth Soils. Malabotu (Ma) and Siyambala (Si) belong to the Low Humic Clay Soils.

Walawe Undulating, Walawe Rolling and Malabotu Associations occur over Sevanagala and Old area. Ranna and Siyambala Associations extend over the entire Extension area. Undefined soil type, lock outcrop are distributed over the study area. The major characteristics and distribution of each soil mapping units are as follows:

- Walawe Association Undulation Phase (Map symbol, Wa)

This soil is a well-drained, deep, reddish brown, moderately fine textured soil well-defined stone layer in the middle. The lower portion of the soil is generally gravelly and contains inclusions of foldspathic and other undecomposed rock. There is usually over 50 to 60 cm of good soil above the stone layer, which is only infrequently thick enough to hinder root penetration. This soil is hard but friable when wet condition.

- Walawe Association Rolling Phase (Map symbol, WaR)

The characteristics of this soil is the same that of Walawe Association Undulating phase. The main difference is the greater erosion hazard in comparison with Walawe Association undulating phase, because it occur on steeper land.

- Ranna Association (Map symbol, Ra)

The Ranna association occur in similar situation to the Walawe Associations. Its main distinction from other two Walawe Association lies in its slightly higher in exchangeable sodium content.

- Malabotu Association (Map symbol, Ma)

The Malabotu Association occur in the flat plain along with Walawe Ganga and intermountain valley bottom in the Sevanagala and Old area. This soil has a high natural fertility and very slight erosion hazard. Also it has little or no stone and gravel in it. For a considerable part of the year, however, it is saturated with moisture and will, therefore, not support most crops other than paddy.

- Siyambala Association (Map symbol, Si)

Siyambala soil is a moderately deep, moderately fine textured soil that is impermeable to water. The color is very dark greyish brown on the surface and olive brown or olive lower down horizon, the sub-surface horizon is undulated and very hard when dry. The soil occur in the flat plain along with Walawe Ganga and its tributaries. The slightly high sodium content may be attributed to the wash from the higher parts of the slopes on which occurs the Ranna Association.

- Undefined Slope Complexes (Map symbol, Un)

These are soils on steep slopes, are isolated hillocks of shallow soils of rock knob plains. They should be strictly left under forest and bush or grassland.

Characteristics of the soil: In order to grasp the major characteristics of the soils, soil survey was carried out during the middle of October to the end of November 1991 (first phase), and middle of June to the middle of August 1992 (second phase). The soil survey was done through field reconnaissance, test pit and soil check stick putting emphasis on the comparatively lower gradient of landscape for irrigation development purpose. Location of surveysites are shown in Fig. A3.1-2.

In parallel with field survey, 124 soil samples were taken from 52 selected sites to assess physico-chemical property of soil samples. All samples were analyzed by the laboratory of the Land Use Division of the Irrigation Department. The analysis was performed in accordance with the method specified in the standards or their equivalent method. Test items executed were tabulated follows:

1. PH

Measurement of PH is made on a 1:2.5, soil: water suspension, equilibrated for 1 hour, and measured with a combination of electrode using KCl gel.

2. EC (Electrical Conductivity)

Measurement of EC is made on extract from 1:50, soil: water equilibrated for 24 hours and value of EC are quoted in mmho-cm at 25°C.

3. CEC (Cation Exchangeable Capacity)

1-N ammonium acetate buffered at pH 7.0 is used for measurement of exchangeable cation. The results are indicated as me/100 g of soils (over dry basis).

4. Exchangeable Cations

Exchangeable calcium, magnesium, potassium and sodium are measured by using 1-N ammonium acetate extraction at pH 7.0. Exchangeable cations are indicated as the milligram equivalent of the cations per liter of solution (1:5 soil: water).

5. Total Nitrogen

Micro Kjeldahl Method is applied for the measurement of the total Nitrogen (the Catalytic Oxidation of organic and Chemically combined N).

6. CaCO₃

CaCO₃ is determined by titration. The soil is boiled with 1-N HCl. The excess acid is titrated versus 1-N NaOH using phenolphthalein as an indicator.

7. Soil Moisture

15.0, 3.0, 0.5 bar moisture are determined by gravimetric and centrifugal method.

8. Apparent Specific Gravity

The unit is indicated in meq per liter soil solution.

9. Available Phosphorus

Available phosphorus are determined by Olsen's method of bicarbonate extraction.

10. Particle Size Distribution

Particle size distribution are measured by pipette method, and the textures are indicated based on the USDA System.

According to the particle size distribution analysis, sandy clay loam is dominant, followed by sandy clay, clay, sand in soil textural class in the survey area as shown in Fig. A3.1-3 entitled textural class.

The analytical results of physico-chemical property of soils were classified by criteria according to the FAO system (Framework for land evaluation, FAO 1976 and 1979a). The each criteria applied for the evaluation of soil are listed as below.

- (1) Thickness of top soil. Top soil is the first horizon where plant roots can easily penetrate, and generally corresponds to the plowed layer. The classes are grouped according to the thickness of top soils as follows (when effective depth of soil is placed to Class 4, this factor is also placed to Class 4);

Thickness of Top Soil (cm)	Class	
	Paddy	Upland
more than 25	1	1
25 - 15	1	2
less than 15	2	3

- (2) Effective depth of soil is the depth up to bedrock, hard pan and gravel layer which plant root can not penetrate. The classes are grouped, according to thickness of the effective soil depth, as follows:

Thickness of Top Soil (cm)	Class	
	Paddy	Upland
more than 100	1	1
50 - 100	1	2
25 - 50	2	3
15 - 25	3	3
less than 15	4	4

- (3) Acidity (pH) is evaluated by pH value

pH	Criteria	Class	
		Paddy	Upland
more than 6.0	weak	1	1
5.0 - 6.0	medium	2	2
4.5 - 3.0	strong	3	3
less than 4.5	very strong	3	4

- (4) Electrical Conductivity (EC) measurement are used as indication of total quantity of soluble salt in ions. The following relationships are adopted to assess soluble salt in soils;

$$ECe = 6.4 \times EC_{1:5} \text{ (soil: water, Talsma, 1968, Loveday et al, 1972)}$$

USDA Soil Class	EC _{1:5}	Note
0 Salt free	0 - 0.3	Salinity effects are mostly negligible
1 Slightly saline	0.6 - 1.3	Yield of many crops restricted
2 Moderately saline	1.3 - 2.3	Only tolerant crops yield satisfactorily
3 Strongly saline	> 2.3	Only very tolerant crop yield satisfactorily

Source: Adopted from FAO/Unesco 1973, Booker Tropical Soil Manual.

- (5) Cation Exchangeable Capacity (CEC) measurement are commonly made as part of the overall assessment of the potential fertility. The FAO (1977a) quote CEC value of 8 to 10 meq per 100 g of soil as indicative minimum value in the top of soil for

satisfactorily production under irrigation, provided that other factors are favourable. Any CEC value of <4 meq per 100 g of soil indicate a agree of infertility normally unsuitable for irrigated agriculture. Soil fertility is evaluated by the combination of CEC meq and base saturation degree (%).

CEC	Class
more than 20 meq/100 g	high
6 - 20 meq/100 g	medium
less than 6 meq/100 g	low

(6) Base saturation degree (%)

Base Saturation	Class
more than 50%	good
30 - 50%	medium
less than 30%	poor

(7) Soil hardness

Criteria	Compactness
more than 26 mm/cm ²	compact
26 mm - 10 mm/cm ²	medium
less than 10 mm/cm ²	loose

(8) Soil texture

Content of Clay	Content of Sand	Class
more than 25%	-	very fine
15 - 25%	-	fine
less than 15%	less than 85%	medium
less than 15%	more than 85%	coarse

The result of each analysis items are summarized as follows:

- The depth of top soil is good enough for cultivation about 40% of the test pits was classified into Class 1 for both paddy and upland. 45% belongs to Class 1 for paddy and Class 2 for upland crop cultivation. Remaining 10% was less than 15 cm of the depth of top soil.
- The pH value ranges from 5.6 to 9.3. Upper Andarawewa tank, Pit Number P-2.1 shows 9.3 in pH value. Near the intake of Mahasittarakala Lewaya showed also high pH value of 8.6. Another pit sites were normal in pH.
- In soil texture, the Pit Number P-2.1: upper Andarawewa tank, Pit Number P-8.1: Mahasittarakala Lewaya site and Pit Number P-7.1: near Karagan Lewaya are less

than 15% clay content and more than 80% of sand content, these soils were classified into coarse. Another soils were classified into fine to very fine textured soil.

- The area where the EC value over the limited line of 2.3 mmho-cm is Pit Number P-11 located at the near intake of the Mahasittarakala Lawaya. EC value in this pit shows 4.0. This area may be effected by sea water.
- Low soil fertility, less than 6 meq per 100 g in EC were seen in Pit Number P-7.1, P-7.3 and P-8.1, located at the Karagan Lewaya (P-7) and Mahasittarakala Lewaya (P-8).

The result of soil profile observation are detailed in Table A3.1-1, entitled information on site sampled. Analytical results of physico-chemical property are given in Table A3.1-2.

3.1.3 Soil distribution in the Study area

Walawe Undulating Phase, Walawe Rolling Phase and Malabotu Associations occur over Northern part of the study area consisting of Sevanagala, Kiriibbanwewa and Suriyawewa areas. Ranna and Siyambala Association are extended in the entire Extension area.

The areawise soil distribution of the study area are below. The soil map presented according to the classification is given on Fig. A3.1-4.

(Unit: ha)

Soil	Sevanagara Area	Kiriibbanwewa Area	Suriyawewa Area	Extension Area	Total	(%)
Walawe Undulating	3,340	2,070	940	0	6,350	20
Walawe Rolling	230	1,550	1,210	0	2,990	9
Ranna 0	0	390	12,780	13,180	41	
Malabotu	1,630	1,730	920	0	4,280	14
Siyambala	0	0	770	1,880	2,650	8
Undefined	240	610	850	1,030	2,730	8
Total	5,440	3,960	5,080	15,700	32,180	100

3.2 Present Land Use Condition

The present land use condition of the Study area is defined based on the aerial photographs and available topographic maps on a scale of 1 to 50,000 as well as check survey in the filed. The Study area of 32,180 ha is divided into 3 sub-areas for the convenient of the study, namely (i) Sevanagala sugar corporation area of about 5,440 ha in gross, (ii) Old area of 11,040 ha (Kiriibanwewa irrigation block area of about 6,000 ha, Suriyawewa block in the Old area (Northern part of the Mahaweligoda river) of 5,040 ha), and (iii) Extension area of 15,700 ha. The sub-area of items of (i) to (ii) are located in the Old area of the Study area. The study on land use and land capability is concentrated into the Study area except Sevanagala sugar area, since the area is considered as individual sector for the agricultural development and the area has been developed separately from the other sub-areas. The present land use condition of the Study area is summarized as below.

(Unit: ha)

Land Use	Sevanagala Area	Old Area	Extension Area	Total Area	(%)
(1) Homestead	1,800	2,490	200	4,490	14
(2) Sugarcane	1,120	0	0	1,120	3
(3) Paddy (Irr.)	370	2,540	0	2,910	9
(4) Paddy (Rain)	0	70	260	330	1
(5) Upland (Irr.)	0	360	0	360	1
(6) Upland/Chena	985	2,180	2,520	5,685	18
(7) Others	485	1,810	200	2,495	8
(8) Open forest	620	260	740	1,620	5
(9) Plantation	0	0	20	20	-
(10) Forest reserve	0	0	960	960	3
(11) Shrub	0	605	9,900	10,915	33
(12) Livestock farm	0	25	410	425	1
(13) Barrenland/Rockyland	60	700	490	1,250	4
Total	5,440	11,040	15,700	32,180	100

The present land use in the study area very much characterized by geographical location in the area since, relief, hydorography distribution of irrigation water, soils, etc. As seen in the Table, the homesteads covered 4,490 ha or 14% of the total land are distributed naturally, on the well grained land. About 1,120 ha of land is using for sugar production at near the intake of L.B.C. The extent of 2,910 ha, or about 9% of the total land are utilize for paddy cultivation. In the Sevanagala and Old area are existing under the irrigation condition.

In the Extension area, there are 17 minor irrigation tanks. According to the information of Agrarian Service Center in Ambalantota, total commanding area of these tanks is estimated at about 260 ha but irrigation water supply is not stable for the tank area. It is classified that the area under tank is rainfed agricultural land. The western boundary of the Extension area, there are large extent of homesteads of settlers of Ridiyagama Irrigation Schemes. Area is extensively used for shifting chena cultivation. About 20 ha of land in the end of southern part of the Extension area has been cultivated with cashew under Sri Lanka Cashew Corporation.

In the unirrigated homestead area, annual crops such as pulses, vegetables, maize and chillies are the most commonly cultivated in Maha season. The settlements are relatively new, and with the establishment of permanent crops such as banana, mango and other fruit trees in the homesteads, the area available for annual cropping will decline over the next few years.

The livestock farm with area of 25 ha is existing near the Mahagama Tank and 960 ha of forest reservation area is located at Northern area of Ridiyagama Tank. The plantation of forest exists at the Southern end part of the Extension area.

Land use condition in the Study area is rather complicated under different circumstances of topography, soil and existence of irrigation facilities, present land use map is given in Figure (DRAWING).

3.3 Land Use Plan in the Study Area

3.3.1 Land capability classification and evaluation method

The land classification should be used properly according to circumstances of natural and socio-economical conditions of the study area. For assessment of land resources, criteria for the classification of land capability used a specification of modified USBR system which was used in Sri Lanka.

The framework of the system is basically five (5) classes rating wetland rice and upland crops. Limitation on suitability of land due to drainage soil depth, associated gravel depth and slopes are indicated by the symbols "s", "d" and "t" refer to depth, drainage, and topography (slope), either individually and collectively. The definition of these land class groups are as follows:

A. LHG and imperfectly drain RBEs

- (i) 5d/1; 5d/2t; 5d/3t : rice only
- (ii) 3d/1 : wet-tolerance upland crops strongly preferred, dry foot crops are feasible but drainage would be required.
- (iii) 3d/2t : wet-tolerance upland crops are preferred, dry foot crop would be feasible with drainage.

B. Well drained RBEs

- (i) 1/2s; 1/3st; 2pt/3st : upland crop preferred, wet-tolerance upland crops are feasible but percolation losses would be high.
- (ii) 2t/6st; 3tp/6st : upland crops and house lots.
- (iii) 6pt/6st; 6pt/6tp : shallow, steeply sloping land.

The specification criteria is shown in Table A3.3-1. Schematic diagram of gradient of landscape and land capability relationship is given on Fig. A3.3-1 and Table A3.3-2.

C. Irrigable land

Land that are the most suitable irrigation farming, being capable of producing sustained and relatively high yield of a wide range of climatically suited crop at reasonable cost. The land have gently slopes; less than 4% gradient of landscape. The soils are deep and of medium to fairly fine texture with mellow, open structure allowing easy penetration of roots, air and water and having free drainage and good available moisture capacity. These soils are free from accumulating of soluble salts. Both soil and topographic conditions are such that no specific farm drainage requirement are anticipated, minimum erosion will result from irrigation and land development can be accomplished at relatively low cost.

D. Non-irrigable land

Land in this class include those failing to meet the minimum requirement of the class described above. They comprise land with excessive slope or dissection, with inadequate drainage and very variable soils, or with a liability to flooding. Under the envisaged development program, these lands are not consider to have sufficient repayment capacity to warrant irrigation.

3.3.2 Land class distribution and mapping units

As already indicated in the previous chapter, the entire study area of 32,180 ha consists of 5,440 ha of Savanagala sugar corporation area, 11,040 ha of Old area and 15,700 ha of Extension area. Study on land capability was concentrated on the land of about 17,100 ha comprising the whole Extension area of 15,700 ha and possible extension area in Suriyawewa irrigation block of about 1,400 ha to assess the agricultural land resources and possible extension of the irrigation area. It is noted that whole savanagala sugar corporation area of 5,440 ha and about 1,410 ha of the Old area were developed for sugar cultivation, fully for the irrigated paddy field and other purpose. The possible irrigation extension area in the Suriyawewa block is located at the western end of the existing Beddewewa branch canal and the right bank of Mahaweligoda river.

The land capability classification was undertaken to evaluate the land resource in the objective area of 17,100 ha. The land classes were defined using basically the system of the U.S. Bureau of Reclamation and specifications were modified to fit the purpose of irrigation development as described above. The land capability classification was not made to each small soil groups such as soil series but to each terrain unit composed of several soil units. The terrain units were then classified into three classes of arable land, Classes 1, 2, and 3. The Class 4, limited arable land and the Class 6, non-arable land. The class 3 belongs to Low Humic Clay Soils (LHG) and the Classes 1, 2, and 4, belong to Reddish Brown Earth Soils (RBE). In the course of grouping, land capability for upland was given higher priority than the lowlands when the same rating was given to the land. Gradient of landscape is one of the most critical factor for the assessment of the land capability classification in the objective area from the view point of gravity irrigation development.

The areas classified in land capability classification are as follows:

(Unit: ha)

Land Class	Map Unit	Beddewewa	Extension	Total Area
1	U-1	270	4,530	4,800
2	U-2	440	7,880	8,320
3	P	520	1,750	2,270
4	U-3	200	790	990
6	N	0	750	750
Total		1,430	15,70	17,130

Note: U-1 Suitable irrigated upland crops
 U-2 Suitable rain-fed upland crops
 P Suitable irrigated paddy
 U-3 Marginally suitable upland crops
 N Not suitable cultivation

Land capability map is given on Figure (DRAWING).

3.3.3 Land utilization types

In this chapter, land are being evaluated with regard to their suitability for certain agricultural and forestry enterprises. These enterprises when defined in terms of parameters like type of produce, labour use, power sources, infrastructure requirements, technical knowledge, technology employed, etc., are referred to as land utilization types. The land utilization type, therefore, lays down a set of technical specification for a kind of land use, whether these specifications are in accordance with current practices or refer to a potential improved setting which might be widely adapted for future.

The land utilization types described below, based on paddy, wet-tolerance upland crops, irrigated upland crops, rainfed upland crops and steeper and hilly land utilization.

Paddy:

As well known in Sri Lanka, Low Humic Clay Soils (LHG) are suitable only for paddy production. For other upland crop production, LHG soils are not suitable due to poor drainability in their own characteristics. As described in the previous chapter, LHG soils are distributed in the flat plain along with Walawe Ganga and intermountain valley bottom less than 2% gradient of landscape. The limit of land utilization for paddy production is less than 2% gradient of landscape.

Wet-tolerance crops:

Moderately or imperfectly well-drained RBE soils may be found at the edge of soil boundary between LHG and RBE. As like Class 3d/1 and 3d/2t would be used for wet-tolerance crops production such as onions, shallot, sorghum and or fodder crops for stall-fed cattle.

Upland irrigated crops:

RBE soil zone between 2% to 4% gradient of landscape in the survey area would be allotted to grow sugar cane, banana, B. Onions, vegetables, etc. for commercial production and domestic consumption. This is typical irrigated annual upland crops type.

Rain-fed upland:

Out of the RBE soil zone, the lands between 4% to 6% gradient of landscape would be used for rainfed upland perennial crops such as pepper, cardamon, cinnamon, etc. on bench terraces in moderately sloping land. Cowpea, soya beans, green gram, maize, sorghum, kurakkan, cassava and vegetables would be grown during Maha. Gingelly and millets would be planted during the short wet Yala season. Their land would also be used to settler's house lots and public facilities.

Steeper or hilly lands:

The land located at more than 6% gradient of landscape would be better to use for fodder crop such as Napia grass, fruit trees such as mongo, soursop, papaya, avocado, passion fruit, citrus, jack fruit, etc., as forest trees, teak, ipil-ipil, eucaly, etc. These are categorized as posture type, fruit type and forest type inland utilization.

3.3.4 Proposed land use plan

(1) Basic concept and objective area for the land use plan

Following basic concept is applied for the land use planning aiming at; (i) the maximum utilization of the available water resources for the Left Bank Area, and (ii) realization of suitable land use in conformity with the soil characteristics:

- (i) Crop diversification from paddy to other field crops (OFC) in the existing paddy fields on porous soils in the old area. It is planned that about 30% of the existing paddy field on RBE soils is changed into upland fields.
- (ii) Allotment of paddy fields only for LHG soils in principle in the new irrigation development area.

- (iii) Allotment of fire wood forest and pasture land near villages which will be created newly with project condition in the Extension area. It is considered that the pasture land will produce fodder of animals for agricultural production. (Firewood forests are taken for 690 ha for 22 villages with an average of 30 ha per village.)
- (iv) Forest reserve area at Madunagala of 960 ha proposed by MEA and the land for the livestock farm at the northern part of the Lidiyagama tank of 410 ha are remained as the government plan. An area of 20 ha in the southern most sector of the Extension area is allocated to Sri Lanka Cashew Corporation. So the area for them are excluded from the project area.
- (v) Exclusion of southern end part of the area from the lower gradient area due to existence of sandy and gravelly soils with some salinity.

Although the Study area is extending over 32,180 ha, an objective area of the land use planning is set at 26,740 ha, which area has been and would be developed by MASL and the Government agency, considering that the Sevanagala sugar area of 5,540 ha has developed individually within their area and they have their own development plan. The study area of the land use plan is therefore divided into three sub-areas, namely Kiriibanwewa block area, Suriyawewa block in the Old area, and the Extension area.

(2) Crop Diversification Plan in the Existing Irrigation Area

Table A3.3-3 shows distribution of soils in the Existing irrigation area. The table indicate that LHG soil located in 1,560 ha or 54% of total irrigation area. But, paddy is planted in the 2,600 ha or 90% of the area under present condition. As mentioned above, it is planed that about 30 % of the existing paddy field on RBE soils is changed into upland fields. The crop diversification plan is shown Table A3.3-4 and summarized below.

(Unit: ha)

Soil Type	Present condition	with project condition	Balance
Kiriiban wewa			
1. Paddy	1,340	1,040	-300
2. OFCs	140	440	300
Total	1,480	1,480	
Suriya wewa			
1. Paddy	1,260	740	-520
2. OFCs	160	680	520
Total	1,420	1,420	

(3) Proposed land use plan in the new developed area

The land use plane was done based on the basic concept considering distribution of soil and farm economy of new settler. The proposed land use plan is shown Table A3.3-5 and and summarized as follows:

(Unit: ha)

Land Use	Sevanagala Area	Old Area	Extension Area	Total Area	(%)
Homestead	1,800	2,490	1,200	4,930	
Sugarcane	1,120	820	2,180	4,120	
Irrigated paddy	370	2,220	2,320	4,910	
Irrigated onion	0	240	390	630	
Irrigated banana	0	400	210	610	
Irrigated vegetable	0	260	240	500	
Upland (chena)	985	1,030	1,120	3,135	
Others	620	1,990	1,160	3,770	
Plantation	0	0	20	20	
Livestock farm	0	25	410	435	
Shrub/Pasture	0	605	4,310	4,915	
Open/Firewood	485	260	690	1,435	
Forest reserve	0	0	960	960	
Barrenland/Rock	60	700	490	1,250	
Total	5,440	11,040	15,700	32,180	

The extent of approximately 1,800 ha of homestead, 1,120 ha of sugar cane, 370 ha of irrigated paddy fields, 985 ha of upland, 485 ha of open forest or firewood, 60 ha of barrenland and others 620 ha will be left under the existing conditions in the Sevanagala area. In the Old area, 2,490 ha of homestead will be no change, and about 1,230 ha at the place of the end part of the B.B.C and existing irrigation area of about 490 ha, the total 1,720 ha will be used for sugar cane, B.onions, banana, vegetables, etc., and 1,030 ha of rain-fed upland will be left, and 1,990 ha of land will be allotted to canals, roads, and miscellaneous purpose. Remaining 1,590 ha in the Old area will be used for 25 ha of livestock farm, 605 ha of shrub and pasture, 260 ha of open-firewoods. 700 ha of rock knob area will be left under the present conditions.

The extent of about 1,200 ha of land will be required for homestead, 2,180 ha of sugar cane, 390 ha of B. onions, 210 ha of banana, 240 ha of vegetables will be introduced on the RBE soils and 2,320 ha of paddy will be developed on the LHG soils in the Extension area. The rain-fed upland of 1,120 ha will be used for the upland crops at the places of more than 4% gradient of landscape. 1,160 ha of land will be provided for the canals, roads and miscellaneous purpose. The extent of 20 ha of plantation, 410 ha of the livestock farm, 960 ha of forest reservation, 490 ha of outcrop area will be left under the existing conditions. The extent of 4,310 ha will be left as the shrub and pasture land in the Extension area.

Proposed land use map is given on Figure (DRAWING).

3.4 Recommendation

- (1) The soil and landscape relationship in the survey area is already described in section 3.3.1. The study results show that the soil boundary between RBE and LHG soils is at the place of 2% gradient of landscape. RBE soil is distributing on upper area from 2% line in gradient of landscape and lower areas from 2% line are covered by LHG soil. Through many experiences of irrigation project in Sri-Lanka, it is already made clear that LHG soil is only suitable for paddy cultivation due to ill-permeability in soil characteristics, whereas, RBE soil is not suitable for paddy cultivation due to lot of water requirement caused by large percolation losses. Therefore, it is recommended that the paddy field reclamation on the RBE soils should strictly be obviated the necessity of obviated the necessity of doing it.

- (2) The pit site at the lot No.747 Bahirawewa Settlement about 1.5 km south of Mahagawa tank showed 5.3-8.0 mmho-cm in EC, Na contain of 1.4%. In the 1.0 km upper area of the Andarawewa tank, Pit No. P-2 gave the results of pH value of 8.6 to 9.3, EC 1.4-2.3 mmho-cm, and Na content of 5.7 to 11.3%, these figures seems to be doubtful in suitability for irrigation farming. Mahasittarakala Lewaya and Karangana Lewaya areas are very coarse in soil texture. Soluble salt content was 1.8 mmho-cm in the Karangana Lewaya and 4.0 mmho-cm in the Mahasittarakala Lewaya areas. It is recommended that prior to start the detail design works re-check soil survey should be made at list 4 sites mentioned above.
- (3) Karangana Lewaya and Mahasittarakala Lewaya areas are excluded from the irrigation development area due to very coarse in soil texture with salinity. However, these areas may be unable to provide a habitat for birds, animals, forest migrant birds, etc. These areas will have to be examined to study the relationship between ground situation and habitat for birds and animal. It is therefore, recommended that these areas should be left under the existing condition till completion of study on suitability of these areas whether these areas are suitable or not as sanctuary.

TABLES

Table A3.1-1 INFORMATION ON THE SITE SAMPLED (1/15)

1. Information on the Site:		1. Information on the Site:	
a. Profile Number:	P-1.1	a. Profile Number:	P-1.2
b. Soil Name:	Siyambala	b. Soil Name:	Ranna
c. High Category Classification:	Low Humic Clay	c. High Category Classification:	Reddish Brown Earth
d. Date of Examination:	June 10, 1992	d. Date of Examination:	June 10, 1992
e. Location:	Right side of paddy field at the downstream of the Mahawelligoda tank.	e. Location:	At a distant of 100 m from the pit number P-1.1.
f. Land Form:	Intermountain valley bottom.	f. Land Form:	Gently slope to the hill 2% gradient of landscape.
g. Land Use:	Rainfed paddy field, no crop at present.	g. Land Use:	Grass land
2. Information on the Soil:		2. Information on the Soil:	
a. Parent Material:	Local alluvium and colluvium.	a. Parent Material:	Hornblend-biotite gneiss
b. Drainage:	Class 2, imperfectly drained.	b. Drainage:	Class 4, well drained
c. Moisture Condition in Profile:	Moist below 80 cm	c. Moisture Condition in Profile:	Moist below 80 cm
d. Depth of Groundwater Table:	Unknown	d. Depth of Groundwater Table:	Unknown
e. Presence of Surface Stone, Rock, Outcrop:	None	e. Presence of Surface Stone, Rock, Outcrop:	None
f. Evidence of Erosion:	None	f. Evidence of Erosion:	Slightly gully erosion
g. Presence of Salt or Alkali:	Unknown	g. Presence of Salt or Alkali:	None
3. Brief Description on the Soil:	Sandy loam to sandy clay loam in texture, developed on local alluvium and colluvium. Depth of top soil 30 cm with fine texture.	3. Brief Description on the Soil:	There is no gravelly horizon, soil color change into brown. Sandy clay loam in texture, friable structure when wet.
4. Profile Description:		4. Profile Description:	
0 - 30 cm	Grayish brown, 7.5 YR 4/2, sandy clay loam with soil hardness 35 mm/cm ² , soil is very hard.	0 - 60 cm	Brown, 7.5 YR 4/3, soil hardness 32 mm/cm ² .
30 - 80 cm	Yellowish brown 2.5 Y 6/6, sandy clay loam, the soil hardness 33 mm/cm ² , below 80 cm from surface is gravelly horizon.	60 - 100 cm	Reddish brown 5 YR 4/8 there is no gravel, soil color change into reddish brown, soil hardness 32 mm/cm ² .

Table A3.1-1 INFORMATION ON THE SITE SAMPLED (2/15)

1. Information on the Site:		1. Information on the Site:	
a. Profile Number:	P-2.1	a. Profile Number:	P-2.2
b. Soil Name:	Siyambala	b. Soil Name:	Siyambala
c. High Category Classification:	Low Humic Clay Soil	c. High Category Classification:	Low Humic Clay Soil
d. Date of Examination:	June 11, 1992	d. Date of Examination:	June 11, 1992
e. Location:	1.0 km upper area of the Andarawewa tank.	e. Location:	At a distant of 100 m left side of the Pit Number P-2.1.
f. Land Form:	Flat Plain near tank reservoir.	f. Land Form:	Flat plain
g. Land Use:	Grass land	g. Land Use:	Grass land
2. Information on the Soil:		2. Information on the Soil:	
a. Parent Material:	Local alluvium and colluvium.	a. Parent Material:	Local alluvium and colluvial.
b. Drainage:	Class 2, imperfectly drain.	b. Drainage:	Class 2, imperfect drain
c. Moisture Condition in Profile:	Moist below 40 cm from surface.	c. Moisture Condition in Profile:	Moist below 100 cm
d. Depth of Groundwater Table:	Unknown	d. Depth of Groundwater Table:	Unknown
e. Presence of Surface Stone, Rock, Outcrop:	None	e. Presence of Surface Stone, Rock, Outcrop:	None
f. Evidence of Erosion:	None	f. Evidence of Erosion:	None
g. Presence of Salt or Alkali:	None	g. Presence of Salt or Alkali:	None
3. Brief Description on the Soil:		3. Brief Description on the Soil:	
Sandy clay loam with light brown gray 7.5 YR 7/2, dull yellowish 10 YR 6/2 and grayish yellow 10 YR 6/2, in color, developed on local.		Sandy clay loam with dark brown and grayish yellow in color, developed on local alluvial and colluvium with medium soil fertility.	
4. Profile Description:		4. Profile Description:	
0 - 40 cm	Sandy clay loam, light brown gray 7.5 YR 7/2, soil hardness 32 mm/cm ² , pH 8.6.	0 - 60 cm	Sandy clay loam with dark brown 10 YR 3/3 in color, pH 6.3, soil hardness 24 mm.
40 - 55 cm	Sandy clay loam, dull yellowish 10 YR 5/5 soil hardness 23 mm/cm ² , pH 9.0.	60 - 100 cm	Sandy clay loam with grayish yellow 10 YR 4/4, in color, pH 8.6 soil hardness 28 mm.
55 - 100 cm	Sandy clay loam Grayish Yellow 10 YR 6/2 soil hardness 23 mm/cm ² , pH 9.3.		

Table A3.1-1 INFORMATION ON THE SITE SAMPLED (3/15)

1. Information on the Site:		
a. Profile Number:	P-2.3	P-3.1
b. Soil Name:	Ranna	Siyambala
c. High Category Classification:	Reddish Brown Earth	Low Humic Clay
d. Date of Examination:		June 12, 1992
e. Location:	At a distant of 100 m left side from the Pit Number P-2.2.	500 m downstream of the Karawagas Tank.
f. Land Form:	Gently slope to hill	Valley bottom
g. Land Use:	Grass land	Fallow land
2. Information on the Soil:		
a. Parent Material:	Horublend-biotite gneiss	Local Alluvial and Colluvial
b. Drainage:	Class 4, well drain	Imperfectly drain
c. Moisture Condition in Profile:	Moist below 100 cm	Moist below 40 cm
d. Depth of Groundwater Table:	Unknown	1.5 m
e. Presence of Surface Stone, Rock, Outcrop:	None	None
f. Evidence of Erosion:	Slightly gully erosion	None
g. Presence of Salt or Alkali:	None	None
3. Brief Description on the Soil:	Sandy clay loam from gland surface to 100 cm depth, below 100 m occur sand, content of clay is only 5%.	Sandy clay loam and loamy sand with grayish brown in color, fine texture, friable in soil structure, fertile in top-soil but not fertile below 30 cm from surface.
4. Profile Description:		
0 - 10 cm	Sandy clay loam with brown in color 7.5 YR 4/3, fine texture with 25% of clay content, friable in soil structure, pH 7.5 soil hardness 35 mm/cm ² .	Sandy clay loam, grayish brown 7.5 YR 4/2 in color, fine textured soil with 34% clay, pH 5.6.
10 - 100 cm	Sandy clay loam with dull reddish brown 5 YR 4/4 in color, five texture with 36% of clay content, friable in soil structure, soil hardness 35 mm/cm ² .	Loamy sand, grayish brown in color, medium textured soil with 11% clay content, pH 6.5, soil hardness 25 mm/cm ² .
over 100 cm	Sand soil.	Sandy clay loam, grayish brown 5 YR 5/2 in color, fine textured soil with 25% clay content, pH 6.7 soil hardness 34 mm/cm ² .

Table A3.1-1 INFORMATION ON THE SITE SAMPLED (4/15)

1. Information on the Site:	
a. Profile Number:	P-3.2
b. Soil Name:	Ranna
c. High Category Classification:	Reddish Brown Earth
d. Date of Examination:	June 12, 1992
e. Location:	At a distant of 100 m right from the Pit Number P-3.1.
f. Land Form:	Slightly slope to hill
g. Land Use:	Grass land
2. Information on the Soil:	
a. Parent Material:	Horublend-biotite gneiss
b. Drainage:	Class 4 well drain
c. Moisture Condition in Profile:	Moist below 60 cm
d. Depth of Groundwater Table:	Unknown
e. Presence of Surface Stone, Rock, Outcrop:	None
f. Evidence of Erosion:	Slightly gully erosion
g. Presence of Salt or Alkali:	None
3. Brief Description on the Soil:	
Sandy clay loam developed on horublend-biotite gneiss with very fine to five textured soil friable in soil structure, medium fertile soil.	
4. Profile Description:	
0 - 60 cm	Sandy clay loam, grayish brown 5 YR 4/2 in color, very hard soil with 34 mm/cm ² in hardness tester, friable in soil structure, pH 5.9.
60 - 100 cm	Sandy clay loam, grayish brown 5 YR 3/3 in color, very hard soil with 33 mm/cm ² , medium in soil fertility, pH 6.2.
1. Information on the Site:	
a. Profile Number:	P-3.3
b. Soil Name:	Ranna
c. High Category Classification:	Reddish Brown Earth
d. Date of Examination:	June 12, 1992
e. Location:	At a distant of 100 cm right from the Pit Number P-3.2.
f. Land Form:	Top of hill
g. Land Use:	Grass land
2. Information on the Soil:	
a. Parent Material:	Horublend-biotite gneiss
b. Drainage:	Class 4 well drain
c. Moisture Condition in Profile:	Unknown
d. Depth of Groundwater Table:	Rock outcrop in places
e. Presence of Surface Stone, Rock, Outcrop:	Slightly gully erosion
f. Evidence of Erosion:	None
g. Presence of Salt or Alkali:	None
3. Brief Description on the Soil:	
Shallow in soil depth, stony in the top of hill, sandy clay and sandy clay loam developed on parent material, medium soil fertility.	
4. Profile Description:	
0 - 30 cm	Sandy clay loam, grayish brown 5 YR 4/3 in color, soil hardness 33 mm/cm ² , very friable in structure, medium soil fertility with 6.5 in CEC.
30 - 50 cm	Sandy clay loam, grayish brown 5 YR 3/3 in color, soil hardness 35 mm/cm ² , very friable in structure, medium soil fertility with 9.1 in CEC.
over 50 cm	Stone

Table A3.1-1 INFORMATION ON THE SITE SAMPLED (5/15)

1. Information on the Site:	
a. Profile Number:	P-4.1
b. Soil Name:	Siyambala
c. High Category Classification:	Low Humic Clay
d. Date of Examination:	June 12, 1992
e. Location:	Downstream of Mahawewa Tank, 400 m east from 10 mile point on the main road.
f. Land Form:	Flat plain of the valley bottom.
g. Land Use:	Bush
2. Information on the Soil:	
a. Parent Material:	Local alluvial and colluvium
b. Drainage:	Class 2, imperfectly drain
c. Moisture Condition in Profile:	Moist below 50 cm
d. Depth of Groundwater Table:	Unknown
e. Presence of Surface Stone, Rock, Outcrop:	None
f. Evidence of Erosion:	None
g. Presence of Salt or Alkali:	None
3. Brief Description on the Soil:	
0 - 10 cm	Sandy clay loam, medium soil fertility, no gravel and stone, very hard soil with 34-36 mm/cm ² in hardness tester.
10 - 100 cm	Sandy clay loam brownish gray 7.5 YR 4/2 in color, fine in soil texture but friable in structure when wet, soil hardness 36 mm/cm ² . Sandy clay loam dull brown 7.5 YR 5/1 in color, fine texture, friable in structure when wet, no gravel and stone, soil hardness 35 mm/cm ² .
1. Information on the Site:	
a. Profile Number:	P-4.2
b. Soil Name:	Siyambala
c. High Category Classification:	Low Humic Clay
d. Date of Examination:	June 13, 1992
e. Location:	At a distant of 100 m right side from Pit Number P-4.1.
f. Land Form:	Flat plain
g. Land Use:	Fallow land
2. Information on the Soil:	
a. Parent Material:	Local alluvial and colluvium
b. Drainage:	Class 2, imperfectly drain
c. Moisture Condition in Profile:	Moist below 80 cm
d. Depth of Groundwater Table:	2.5 m from gland surface
e. Presence of Surface Stone, Rock, Outcrop:	None
f. Evidence of Erosion:	None
g. Presence of Salt or Alkali:	None
3. Brief Description on the Soil:	
0 - 25 cm	Sandy clay loam, grayish brown 7.5 YR 5/2 in color, very fine in soil texture, friable in structure when wet condition, pH 7.2.
25 - 50 cm	Sandy clay loam, dull brown 7.5 YR 5/3 in color, very fine in soil texture, friable in soil structure, when wet, pH 7.6.
50 - 100 cm	Sandy clay loam, grayish brown 7.5 YR 4/2 in color, very fine in soil texture, friable in structure, when wet, soil hardness 34 mm/cm ² .

Table A3.1-1 INFORMATION ON THE SITE SAMPLED (6/15)

1. Information on the Site:		
a. Profile Number:	P-4.3	P-5.1
b. Soil Name:	Ranna	Siyambala
c. High Category Classification:	Reddish Brown Earth	Low Humic Clay
d. Date of Examination:	June 13, 1992	June 15, 1992
e. Location:	At a distant of 100 right side from the Pit Number P-4.2.	Lower Maha Ara, 2.5 km north from the Kudawarawa tank, opposite side of junction leading to Karanbagala Achaecological Area.
f. Land Form:	Gentle convey slope to the hill	Flat to gently slope to hill
g. Land Use:	Houseyard	Bush
2. Information on the Soil:		
a. Parent Material:	Hornblend-biotite gneiss	Local alluvial and colluvium
b. Drainage:	Class 4, well drain	Class 2, Imperfectly drain
c. Moisture Condition in Profile:	Moist below 45 cm	Moist below 35 cm
d. Depth of Groundwater Table:	2.5 m	Unknown
e. Presence of Surface Stone, Rock, Outcrop:	None	None
f. Evidence of Erosion:	None	Gently gully erosion
g. Presence of Salt or Alkali:	None	None
3. Brief Description on the Soil:	Sandy clay loam developed on gently convex slope, medium in soil fertility, suitable for homestead.	Soil slightly excel in clay content, non-sticky and non-plastic, soil color move towards the brownish to grayish yellow, high to medium in soil fertility.
4. Profile Description:		
0 - 45 cm	Sandy clay loam dark brown 7.5 YR 3/3 in color, moist below 45 cm, slightly sticky in wet condition, fine in texture, pH 6.4 soil hardness 34 mm/cm ² .	Clay loam, brownish 7.5 YR 5/1 in color, non-sticky, non-plastic, very fine in texture, hard soil with 36 mm/cm ² slightly acid with pH 6.2.
45 - 100 cm	Sand clay loam, grayish brown 5 YR 5/2 in color, slightly sticky in wet, fine in soil texture, soil hardness 33 mm/cm ² , pH 6.5.	Sandy clay loam, dull brown 7.5 YR 5/4 in color, non-sticky, non-plastic, 34 mm/cm ² in soil hardness, slightly alkaline with pH 7.6.
65 - 100 cm		Sandy clay, grayish yellow brown, 10 YR 5/2 in color, slightly sticky, slightly plastic, slightly alkaline with pH 7.6.

Table A3.1-1 INFORMATION ON THE SITE SAMPLED (7/15)

1. Information on the Site:	
a. Profile Number:	P-5.2
b. Soil Name:	Siyambala
c. High Category Classification:	Low Humic Clay
d. Date of Examination:	June 15, 1992
e. Location:	At a distant of 100 m right side from the Pit Number P-5.1.
f. Land Form:	Gently convex slope
g. Land Use:	Bush
2. Information on the Soil:	
a. Parent Material:	Local alluvial and colluvium
b. Drainage:	Class 2, imperfect drain
c. Moisture Condition in Profile:	Moist below 50 cm
d. Depth of Groundwater Table:	Unknown
e. Presence of Surface Stone, Rock, Outcrop:	None
f. Evidence of Erosion:	Slightly gully erosion
g. Presence of Salt or Alkali:	None
3. Brief Description on the Soil:	
Very fine textured and medium fertilized soil, non-sticky, non-stony, fluctuated in soil reaction as like pH 6.2 in surface, 8.4 in lower horizon.	
4. Profile Description:	
0 - 15 cm	Sandy clay loam, grayish yellow 10 YR 4/2 in color, very fine in texture non-sticky, non-plastic, soil hardness 34 mm/cm ² , pH 6.2, medium in fertility.
15 - 100 cm	Sandy clay loam, dull yellowish 10 YR 5/3 in color, very fine textured soil, 30 mm/cm ² in soil hardness, alkaline soil with pH 8.4.
1. Information on the Site:	
a. Profile Number:	P-5.3
b. Soil Name:	Siyambala
c. High Category Classification:	Low Humic Clay
d. Date of Examination:	June 15, 1992
e. Location:	At a distant of 100 m right side from the Pit Number P-5.2.
f. Land Form:	Gently convex slope to hill
g. Land Use:	Bush
2. Information on the Soil:	
a. Parent Material:	Local alluvial and colluvium
b. Drainage:	Class 2, perfectly drain
c. Moisture Condition in Profile:	Moist below 50 cm
d. Depth of Groundwater Table:	Unknown
e. Presence of Surface Stone, Rock, Outcrop:	None
f. Evidence of Erosion:	Slightly gully erosion
g. Presence of Salt or Alkali:	None
3. Brief Description on the Soil:	
Very fine in texture and medium in fertility, slightly sticky and plastic, slightly acid in each horizon.	
4. Profile Description:	
0 - 35 cm	Sandy clay loam, dark brown 10 YR 3/3 in color, very fine in texture with soil hardness 33 mm/cm ² , non-sticky, non-plastic, pH 6.7.
35 - 50 cm	Sandy clay loam, grayish brown 7.5 YR 4/2 in color, very fine in texture with soil hardness 29 mm/cm ² , slightly sticky, slightly plastic, pH 6.3.
50 - 100 cm	Sandy clay loam, grayish yellow 10 YR 4/2 in color, very fine in texture with soil hardness 24 mm/cm ² , slightly sticky, slightly plastic, pH 6.3.

Table A3.1-1 INFORMATION ON THE SITE SAMPLED (8/15)

1. Information on the Site:		1. Information on the Site:	
a. Profile Number:	P-6.1	a. Profile Number:	P-6.2
b. Soil Name:	Siyambala	b. Soil Name:	Ranna
c. High Category Classification:	Low Humic Clay	c. High Category Classification:	Reddish Brown Earth
d. Date of Examination:	June 16, 1992	d. Date of Examination:	June 16, 1992
e. Location:	Right side of the Keruwalawewa Tank, 1.5 km east from 9 mile point on the main road.	e. Location:	At a distant of 100 m right side from the Pit Number P-6.1.
f. Land Form:	Gently slope to hill	f. Land Form:	Gently slope to hill
g. Land Use:	Grass land	g. Land Use:	Grass land
2. Information on the Soil:		2. Information on the Soil:	
a. Parent Material:	Local alluvial and colluvium	a. Parent Material:	Hornblend-biotite gneiss
b. Drainage:	Class 2, Imperfectly drain	b. Drainage:	Class 4, well drain
c. Moisture Condition in Profile:	Moist below 80 cm	c. Moisture Condition in Profile:	Moist below 80 cm
d. Depth of Groundwater Table:	Unknown	d. Depth of Groundwater Table:	Unknown
e. Presence of Surface Stone, Rock, Outcrop:	None	e. Presence of Surface Stone, Rock, Outcrop:	None
f. Evidence of Erosion:	Slightly sheet erosion	f. Evidence of Erosion:	Slightly sheet erosion
g. Presence of Salt or Alkali:	None	g. Presence of Salt or Alkali:	None
3. Brief Description on the Soil:		3. Brief Description on the Soil:	
This pit locates at edge of the small intermountain valley bottom with slightly poor clay content, medium in fertility, weak in soil reaction and compact in soil hardness.		Sandy to sandy clay loam developed on convex slope to the hill. Fine textured soil, medium in fertility shallow depth of top-soil, marginally suitable rainfed upland crop.	
4. Profile Description:		4. Profile Description:	
0 - 50 cm	Sandy loam, dull yellowish brown 10 YR 4/3 in color, non-sticky, non-plastic, medium in fertility, fine textured soil.	0 - 15 cm	Sandy loam, dull yellowish brown 10 YR 4/3 in color, medium in fertility, friable in structure, when wet, compact with 33 mm/cm ² in hardness.
50 - 100 cm	Sandy clay loam, grayish brown 7.5 YR 4/2 in color, slightly sticky and plastic below 80 cm from gland surface, very fine in texture, medium in soil fertility.	15 - 50 cm	Sandy clay loam, brown 7.5 YR 4/3 in color in color, medium in fertility, friable in structure when wet, compact with 36 mm/cm ² in hardness.
		50 - 100 cm	Sandy clay loam dull yellowish brown 10 YR 4/3 in color, medium in fertility, friable in structure, when wet compact with 34 mm/cm ² in hardness.

Table A3.1-1 INFORMATION ON THE SITE SAMPLED (9/15)

1. Information on the Site:	
a. Profile Number:	P-6.3
b. Soil Name:	Ranna
c. High Category Classification:	Reddish Brown Earth
d. Date of Examination:	June 16, 1992
e. Location:	At a distant of 100 m right side from the Pit Number P-6.2.
f. Land Form:	Near the top of convex
g. Land Use:	Bush stony land
2. Information on the Soil:	
a. Parent Material:	Hornblend-biotite gneiss
b. Drainage:	Class 4, well drain
c. Moisture Condition in Profile:	Moist below 40 cm
d. Depth of Groundwater Table:	Unknown
e. Presence of Surface Stone, Rock, Outcrop:	In places
f. Evidence of Erosion:	Eroded by rain & wind
g. Presence of Salt or Alkali:	None
3. Brief Description on the Soil:	Pit site locates on the small scale of the rock-outcrop covering shallow depth of surface soil, the site is not suitable for cultivation.
4. Profile Description:	
0 - 15 cm	Sandy loam, brown 7.5 YR 4/3 in color, fine in soil texture, friable in soil structure when wet condition.
15 - 45 cm	Sandy loam, brown 7.5 YR 4/3 in color, fine in soil texture, friable in soil structure when wet condition, sandy and stony below 45 cm soil depth from the ground surface.
1. Information on the Site:	
a. Profile Number:	P-7.1
b. Soil Name:	Siyambala
c. High Category Classification:	Low Humic Clay
d. Date of Examination:	June 17, 1992
e. Location:	Under the Galwakkada Tank, near inter of the Karagan Lewaya.
f. Land Form:	Flat plain
g. Land Use:	Rainfed upland
2. Information on the Soil:	
a. Parent Material:	Local alluvial and colluvium
b. Drainage:	Class 2, Imperfectly drain
c. Moisture Condition in Profile:	Moist below 20 cm
d. Depth of Groundwater Table:	Unknown
e. Presence of Surface Stone, Rock, Outcrop:	None
f. Evidence of Erosion:	None
g. Presence of Salt or Alkali:	Negligible
3. Brief Description on the Soil:	Below 40 cm depth of horizon shows slightly higher EC value than surface horizon, it may be considerable effected by sea water.
4. Profile Description:	
0 - 40 cm	Loamy sand, dull yellow orange, 10 YR 6/3 in color, fine soil texture with low class in fertility, no contain exchangeable Na, pH 5.7.
40 - 100 cm	Sandy clay loam, grayish yellow very fine soil texture with medium in soil fertility but high exchangeable Na content in comparison with surface horizon, pH 6.0.

Table A3.1-1 INFORMATION ON THE SITE SAMPLED (10/15)

1. Information on the Site:		
a. Profile Number:	P-7.2	P-7.3
b. Soil Name:	Siyambala	Siyambala
c. High Category Classification:	Low Humic Clay	Low Humic Clay
d. Date of Examination:	June 17, 1992	June 17, 1992
e. Location:	At a distant of 100 m down stream of the Pit Number P-7.1.	At a distant of 100 m down stream from the Pit Number P-7.2.
f. Land Form:	Flat plain	Flat plain
g. Land Use:	Rainfed upland	Rainfed upland
2. Information on the Soil:		
a. Parent Material:	Local alluvial and colluvium	Local alluvial and colluvium
b. Drainage:	Class 2. Imperfectly drain	Class 2. Imperfectly drain
c. Moisture Condition in Profile:	Moist below 20 cm	Moist below 55 cm
d. Depth of Groundwater Table:	Unknown	Unknown
e. Presence of Surface Stone, Rock, Outcrop:	None	None
f. Evidence of Erosion:	None	None
g. Presence of Salt or Alkali:	Negligible	Salt saline
3. Brief Description on the Soil:	The soil characteristic is the same from ground surface till 100 cm depth of horizon.	Near the sea side, almost the same mentioned in Pit Site P-7.2, but slightly saline, high EC value of P-1.1 in comparison with P-7.2 and P-7.1.
4. Profile Description:		
0 - 100 cm	Sandy clay loam, brown, 10 YR 4/3 in color, very fine in soil texture with fine in fertility, exchangeable Na content 0.17 meq., pH 6.6.	Loamy sand, grayish yellow 10 YR 6/2 fine in soil texture, low in soil fertility.
55 - 100 cm		Sandy clay, grayish orange 5 Y 5/2 in color, very fine soil texture, high in soil fertility rather high contain of exchangeable Na in comparison with the Pit Site of P-7.1 and P-7.2.

Table A3.1-1 INFORMATION ON THE SITE SAMPLED (11/15)

1. Information on the Site:	
a. Profile Number:	P-8.1
b. Soil Name:	Siyambala
c. High Category Classification:	Low Humic Clay
d. Date of Examination:	June 18, 1992
e. Location:	Downstream from the Riyangaswewa Tank, near the inlet of Mahasittarakala Lewaya.
f. Land Form:	Flat plain
g. Land Use:	Rainfed upland
2. Information on the Soil:	
a. Parent Material:	Local alluvial and colluvium
b. Drainage:	Class 2, Imperfectly drain
c. Moisture Condition in Profile:	Moist below 55 cm
d. Depth of Groundwater Table:	Unknown
e. Presence of Surface Stone, Rock, Outcrop:	None
f. Evidence of Erosion:	None
g. Presence of Salt or Alkali:	Negligible
3. Brief Description on the Soil:	
Near the sea side of Mahasittara Kala Lewaya, low clay content in surface horizon, low pH value with 5.9, marginally suitable for cultivation.	
4. Profile Description:	
0 - 55 cm	Loamy sand, grayish yellow brown, 10 YR 5/2 in color, very low fertility, coarse in soil texture.
55 - 100 cm	Sandy clay loam, grayish olive 7.5 YR 5/3 in color, very fine in soil texture.
1. Information on the Site:	
a. Profile Number:	P-8.2
b. Soil Name:	Siyambala
c. High Category Classification:	Low Humic Clay
d. Date of Examination:	June 18, 1992
e. Location:	At a distant of 100 m downstream from the Pit Number P-8.1.
f. Land Form:	Flat plain
g. Land Use:	Rainfed upland
2. Information on the Soil:	
a. Parent Material:	Local alluvial and colluvium
b. Drainage:	Class 2, Imperfectly drain
c. Moisture Condition in Profile:	Moist below 45 cm
d. Depth of Groundwater Table:	Unknown
e. Presence of Surface Stone, Rock, Outcrop:	None
f. Evidence of Erosion:	None
g. Presence of Salt or Alkali:	Slightly saline
3. Brief Description on the Soil:	
Slightly higher clay content in compersion with P-8.1 site.	
4. Profile Description:	
0 - 45 cm	Sandy clay, grayish yellow brown 10 YR 5/2 in color, very fine in texture compact in hardness, medium in soil fertility.
45 - 100 cm	Sandy clay loam, dark grayish yellow 2.5 Y 4/3 in color, exchangeable Na, 0.4 meq, medium in soil fertility, high EC value of 16.6.

Table A3.1-1 INFORMATION ON THE SITE SAMPLED (12/15)

1. Information on the Site:		1. Information on the Site:	
a. Profile Number:	P-8.3	a. Profile Number:	P-9.1
b. Soil Name:	Siyambala	b. Soil Name:	Siyambala
c. High Category Classification:	Low Humic Clay	c. High Category Classification:	Low Humic Clay
d. Date of Examination:	June 18, 1992	d. Date of Examination:	June 19, 1992
e. Location:	At a distant of 100 m downstream from the Pit Number P-8.2.	e. Location:	1.5 km north from the rivermouth of the Mahaweligoda river.
f. Land Form:	Flat plain	f. Land Form:	Flat plain
g. Land Use:	Rainfed upland	g. Land Use:	Rainfed paddy field (fallow)
2. Information on the Soil:		2. Information on the Soil:	
a. Parent Material:	Local alluvial and colluvium	a. Parent Material:	Local alluvial and colluvium
b. Drainage:	Class 2, Imperfectly drain	b. Drainage:	Class 2, Imperfectly drain
c. Moisture Condition in Profile:	Moist below 40 cm	c. Moisture Condition in Profile:	Moist below 30 cm
d. Depth of Groundwater Table:	Unknown	d. Depth of Groundwater Table:	Unknown
e. Presence of Surface Stone, Rock, Outcrop:	None	e. Presence of Surface Stone, Rock, Outcrop:	None
f. Evidence of Erosion:	None	f. Evidence of Erosion:	None
g. Presence of Salt or Alkali:	None	g. Presence of Salt or Alkali:	None
3. Brief Description on the Soil:		3. Brief Description on the Soil:	
The same as described in P-8.3.		Very fine textured soil with more than 50% of clay content, high value in soil fertility, suitable for paddy cultivation.	
4. Profile Description:		4. Profile Description:	
0 - 40 cm	Sandy clay loam, dark grayish yellow, 2.5 Y 5/2 very fine in textured soil, medium in fertility, soil hardness 35 mm/cm ² .	0 - 100 cm	Clay grayish yellow brown 10 YR 4/2, very fine in texture, high in soil fertility, slightly acid with 6.1 in pH value, compact soil with 35 mm/cm ² in soil hardness tester.
40 - 100 cm	Sandy clay loam, grayish olive, 7.5 Y 4/2, very fine in texture, medium in fertility soil hardness 34 mm/cm ² .		

Table A3.1-1 INFORMATION ON THE SITE SAMPLED (13/15)

<p>1. Information on the Site:</p> <p>a. Profile Number: P-9.2</p> <p>b. Soil Name: Siyambala</p> <p>c. High Category Classification: Low Humic Clay</p> <p>d. Date of Examination: June 19, 1992</p> <p>e. Location: At a distant of 100 m north side from the site of Pit Number P-9.1.</p> <p>f. Land Form: Gentle convex slope</p> <p>g. Land Use: Bush</p>		<p>1. Information on the Site:</p> <p>a. Profile Number: P-9.3</p> <p>b. Soil Name: Walawe Rolling</p> <p>c. High Category Classification: Reddish Brown Earth</p> <p>d. Date of Examination: June 19, 1992</p> <p>e. Location: At a distant of 100 m north of the Pit Site P-9.2.</p> <p>f. Land Form: Top of convex</p> <p>g. Land Use: Grass land</p>	
<p>2. Information on the Soil:</p> <p>a. Parent Material: Local alluvial and colluvium</p> <p>b. Drainage: Class 2. Imperfectly drain</p> <p>c. Moisture Condition in Profile: Moist below 60 cm</p> <p>d. Depth of Groundwater Table: Unknown</p> <p>e. Presence of Surface Stone, Rock, Outcrop: None</p> <p>f. Evidence of Erosion: None</p> <p>g. Presence of Salt or Alkali: None</p> <p>3. Brief Description on the Soil: Fine textured soil with 34-35% of clay content, high to medium in soil fertility, but this site is at soil boundary of LNG soil.</p>		<p>2. Information on the Soil:</p> <p>a. Parent Material: Hornblende-biotite gneiss</p> <p>b. Drainage: Class 4, Well drain</p> <p>c. Moisture Condition in Profile: Moist below 30 cm</p> <p>d. Depth of Groundwater Table: Unknown</p> <p>e. Presence of Surface Stone, Rock, Outcrop: Stony in places</p> <p>f. Evidence of Erosion: Slightly gully erosion</p> <p>g. Presence of Salt or Alkali: None</p> <p>3. Brief Description on the Soil: Stony and gravelly soils, not suitable for cultivation</p>	
<p>4. Profile Description:</p> <p>0 - 60 cm Clay loam, brown block, 10 YR 5/2 in color, very fine in textured soil, medium in fertility, pH value 6.4.</p> <p>60 - 100 cm Sandy clay loam, dark olive brown 2.5 Y 3/3 in color, very fine textured soil, medium in fertility, slightly higher pH value with 8.2.</p>		<p>4. Profile Description:</p> <p>0 - 30 cm Sandy clay loam, grayish brown 5 YR 4/2 in color, friable in soil structure when wet condition.</p> <p>0 - 50 cm Sandy clay, grayish brown 7.5 YR 4/2 in color, very fine in texture, friable in structure when wet condition.</p> <p>Over 50 cm Stony and very gravelly soil.</p>	

Table A3.1-1

INFORMATION ON THE SITE SAMPLED (14/15)

1. Information on the Site:	1. Information on the Site:
a. Profile Number: P-9.4	a. Profile Number: P-10
b. Soil Name: Walawe Rolling	b. Soil Name: Siyambaala
c. High Category Classification: Reddish Brown Earth	c. High Category Classification: Low Humic Clay
d. Date of Examination: June 19, 1992	d. Date of Examination: June 19, 1992
e. Location: At a distant of 100 m north from the Pit P-9.3.	e. Location: Downstream of the Kudaandara Tank, 1.5 km east from 12 mile point on the main road.
f. Land Form: Summit of hilly land	f. Land Form: Flat plain in the valley bottom
g. Land Use: Grass land	g. Land Use: Rainfed upland
2. Information on the Soil:	2. Information on the Soil:
a. Parent Material: Hornblende-biotite gneiss	a. Parent Material: Local alluvial and colluvium
b. Drainage: Class 4, Well drain	b. Drainage: Class 2, imperfectly drain
c. Moisture Condition in Profile: Moist below 50 cm	c. Moisture Condition in Profile: Moist below 50 cm
d. Depth of Groundwater Table: Unknown	d. Depth of Groundwater Table: Unknown
e. Presence of Surface Stone, Rock, Outcrop: Gravelly and stony	e. Presence of Surface Stone, Rock, Outcrop: Gravelly and stony
f. Evidence of Erosion: Sully erosion	f. Evidence of Erosion: None
g. Presence of Salt or Alkali: None	g. Presence of Salt or Alkali: None
3. Brief Description on the Soil: Gravelly and stony soil, sandy clay with 40% clay content, below 50 cm of the pit big stone was found big stone.	3. Brief Description on the Soil: Very fine textured soil with 45% of clay content, medium in soil fertility, slightly alkaline soil.
4. Profile Description: 0 - 50 cm Sandy clay, grayish brown 7.5 YR 4/2 in color, very friable in soil structure when wet medium in soil fertility.	4. Profile Description: 0 - 100 cm Clay soil, dark grayish, 2.5 Y 4/2 in color, non-sticky, non-plastic, compact with 34 mm/cm ² hardness, weak soil reaction.

Table A3.1-1 INFORMATION ON THE SITE SAMPLED (15/15)

1. Information on the Site:	
a. Profile Number:	P-11
b. Soil Name:	Siyambala
c. High Category Classification:	Low Humic Clay
d. Date of Examination:	June 19, 1992
e. Location:	At a distant of 1.0 km west from the 1 mile point on the main road, near Walawe.
f. Land Form:	Flat
g. Land Use:	Bush
2. Information on the Soil:	
a. Parent Material:	Local alluvial and colluvium
b. Drainage:	Class 2, imperfectly drain
c. Moisture Condition in Profile:	Moist below 40 cm
d. Depth of Groundwater Table:	Unknown
e. Presence of Surface Stone, Rock, Outcrop:	None
f. Evidence of Erosion:	None
g. Presence of Salt or Alkali:	None
3. Brief Description on the Soil:	
Very fine in texture and medium in soil fertility, soil reaction is weak with pH 6.9, but very high EC value with 25.6.	
4. Profile Description:	
0 - 100 cm	Sandy clay loam. 2.5 YR 5/2 in color, very fine structured soil, medium fertility, non-sticky, non-plastic, neutral in pH, EC 25.6.

Table A3.1-2 ANALYTICAL RESULTS OF PYSICO-CHEMICAL PROPERTY (1/4)

Mapping Unit	Profile No.	Depth cm.	Sand	Silt	Clay	pH	EC	CEC	Ca	Mg	Na	K	CaCO ₃ %	Phase-I
														Ave. P ppm
Un	E-4	0-27	76.6	8.8	14	7.3	0.2	12.4	0.01	0.01	0.01	0.01	0.4	6
		27-	68.4	4.2	25.8	7.6	0.2	19	0.01	0.01	0.02	0	0.2	5
Ra	E-5	0-18	64.3	8.3	27.5	8	0.8	27.4	0.02	0.02	0.01	0.16	1.1	336
		18-32	52.6	10.6	36.7	7.1	0.2	28.5	0.03	0.01	0.01	0.05	0.4	57
		32-	50	22.2	27.9	8.1	1.2	25.5	0.01	0	0.01	0.16	0.5	17
Si	E-6	0-8	64	9.8	24.7	7.4	0	22.2	0.02	0.02	0.11	0	0.4	4
		8-18	55.7	5.9	37.3	7.4	0.2	26.7	0.02	0.01	0.01	0.01	0.6	3
		18-44	45	7.4	47.4	6.9	0.2	30.8	0.02	0.01	0.07	0.01	0.4	3
Si	E-7	0-19	74	9.6	16.5	6.8	0.8	15.6	0.04	0.03	0.01	0.08	0.5	16
		19-21	64.5	9.6	25.6	7.2	0.8	21.3	0.07	0.01	0.04	0.02	0.5	4
		21-55	56.6	5.2	37.4	7.1	0.6	20.9	0.03	0.03	0.19	0.01	0.6	3
		55-	56.1	9.8	34.3	6.5	1	27.7	0.07	0.07	0.33	0.01	1.1	2
Si	E-8	0-22	66	11.5	21.6	7.2	0.2	18.8	0.02	0.01	0.01	0.01	0.5	3
		22-55	54.1	9.2	35	7.2	0.2	20.8	0.02	0.01	0.01	0	0	1
Ra	E-9	0-13	77.1	10.3	13.3	6.7	0.1	16.3	0.01	0.01	0.01	0.02	3.2	3
		13-16	97.7	5.5	12.7	6.6	0.8	10	0.06	0.03	0.04	0	0.3	2
		16-28	82.3	5.2	13.1	7	0.1	9.5	0.01	0.02	0.01	0	0.1	3
		28-	60.5	7	33	7.3	0.2	21.3	0.01	0.03	0.02	0	0.4	4
Ra	E-10	0-75	60.3	7.5	31.8	7.7	0.3	23.8	0.03	0.02	0.02	0	0.6	3
		75-	52.1	5.9	41.2	7.9	0.2	24.8	0.05	0.02	0.03	0	0.8	2
Si	E-11	0-15	72.1	10.1	17.2	7.7	0.2	23.7	0.02	0.01	0.01	0.01	0.9	6
		15-18	46.5	8.4	44.4	7.1	0.5	28.2	0.03	0.02	0.1	0.01	1	1
		18-65	52	11.2	37.3	7.2	1.8	34.2	0.16	0.08	0.62	0.01	3.9	2
		65-	64.5	9	26.2	7.3	7.6	25.8	0.47	0.55	1.8	0.01	0.5	1
Ra	E-12	0-17	81.1	7.9	10.6	7.5	0.4	14.8	0.25	0.01	0.01	0.01	0	11
		17-21	67.1	12.3	20.4	7.3	0.4	21.5	0.03	0.01	0.04	0.01	0	3
		21-	63.5	3.9	31.9	6.9	0.1	23.4	0.01	0.01	0.02	0	0.2	2
Un	E-14	0-20	71.6	7.8	20.6	7.4	0.2	20.4	0.07	0.02	0.01	0.05	1.4	49
		20-30	54.5	4.7	39.4	6.9	0.2	26.2	0.01	0.01	0.02	0.01	0.2	2
		30-	54.3	7.8	37.5	6.7	0.1	25.6	0.02	0.01	0.01	0	0.2	2
Si	E-15	0-22	77.7	6.6	15.6	6.5	0.4	12.8	0.03	0.02	0.01	0.01	0.8	3
		22-31	69.2	8.2	22.8	7.3	0.2	20	0.01	0.01	0.02	0	0	3
		31-	53.3	8.5	37.5	7.1	0.2	26.9	0.01	0.01	0.01	0	0.3	1

Walawe Agricultural Development Project

Table A3.1-2 ANALYTICAL RESULTS OF PHYSICO-CHEMICAL PROPERTY (2/4)

Mapping Unit	Profile No.	Depth cm	Sand	Silt	Clay	pH	EC	CEC	Ca	Mg	Na	K	CaCo3 %	Phase-I
														Ave. P ppm
Un	E-4	0-27	76.6	8.8	14	7.3	0.2	12.4	0.01	0.01	0.01	0.01	0.4	6
		27-	68.4	4.2	25.8	7.6	0.2	19	0.01	0.01	0.02	0	0.2	5
Ra	E-5	0-18	64.3	8.3	27.5	8	0.8	27.4	0.02	0.02	0.01	0.16	1.1	336
		18-32	52.6	10.6	36.7	7.1	0.2	28.5	0.03	0.01	0.01	0.05	0.4	57
		32-	50	22.2	27.9	8.1	1.2	25.5	0.01	0	0.01	0.16	0.5	17
Si	E-6	0-8	64	9.8	24.7	7.4	0	22.2	0.02	0.02	0.11	0	0.4	4
		8-18	55.7	5.9	37.3	7.4	0.2	26.7	0.02	0.01	0.01	0.01	0.6	3
		18-44	45	7.4	47.4	6.9	0.2	30.8	0.02	0.01	0.07	0.01	0.4	3
Si	E-7	0-19	74	9.6	16.5	6.8	0.8	15.6	0.04	0.03	0.01	0.08	0.5	16
		19-21	64.5	9.6	25.6	7.2	0.8	21.3	0.07	0.01	0.04	0.02	0.5	4
		21-55	56.6	5.2	37.4	7.1	0.6	20.9	0.03	0.03	0.19	0.01	0.6	3
		55-	56.1	9.8	34.3	6.5	1	27.7	0.07	0.07	0.33	0.01	1.1	2
Si	E-8	0-22	66	11.5	21.6	7.2	0.2	18.8	0.02	0.01	0.01	0.01	0.5	3
		22-55	54.1	9.2	35	7.2	0.2	20.8	0.02	0.01	0.01	0	0	1
Ra	E-9	0-13	77.1	10.3	13.3	6.7	0.1	16.3	0.01	0.01	0.01	0.02	3.2	3
		13-16	97.7	5.5	12.7	6.6	0.8	10	0.06	0.03	0.04	0	0.3	2
		16-28	82.3	5.2	13.1	7	0.1	9.5	0.01	0.02	0.01	0	0.1	3
		28-	60.5	7	33	7.3	0.2	21.3	0.01	0.03	0.02	0	0.4	4
Ra	E-10	0-75	60.3	7.5	31.8	7.7	0.3	23.8	0.03	0.02	0.02	0	0.6	3
		75-	52.1	5.9	41.2	7.9	0.2	24.8	0.05	0.02	0.03	0	0.8	2
Si	E-11	0-15	72.1	10.1	17.2	7.7	0.2	23.7	0.02	0.01	0.01	0.01	0.9	6
		15-18	46.5	8.4	44.4	7.1	0.5	28.2	0.03	0.02	0.1	0.01	1	1
		18-65	52	11.2	37.3	7.2	1.8	34.2	0.16	0.08	0.62	0.01	3.9	2
		65-	64.5	9	26.2	7.3	7.6	25.8	0.47	0.55	1.8	0.01	0.5	1
Ra	E-12	0-17	81.1	7.9	10.6	7.5	0.4	14.8	0.25	0.01	0.01	0.01	0	11
		17-21	67.1	12.3	20.4	7.3	0.4	21.5	0.03	0.01	0.04	0.01	0	3
		21-	63.5	3.9	31.9	6.9	0.1	23.4	0.01	0.01	0.02	0	0.2	2
Un	E-14	0-20	71.6	7.8	20.6	7.4	0.2	20.4	0.07	0.02	0.01	0.05	1.4	49
		20-30	54.5	4.7	39.4	6.9	0.2	26.2	0.01	0.01	0.02	0.01	0.2	2
		30-	54.3	7.8	37.5	6.7	0.1	25.6	0.02	0.01	0.01	0	0.2	2
Si	E-15	0-22	77.7	6.6	15.6	6.5	0.4	12.8	0.03	0.02	0.01	0.01	0.8	3
		22-31	69.2	8.2	22.8	7.3	0.2	20	0.01	0.01	0.02	0	0	3
		31-	53.3	8.5	37.5	7.1	0.2	26.9	0.01	0.01	0.01	0	0.3	1

Wairua Agricultural Development Project

Table A3.1-2 ANALYTICAL RESULTS OF PHYSICO-CHEMICAL PROPERTY (3/4)

Phase-II

Pit No. Depth	Sand	Silt	Clay	pH	EC	CFC	EXCHANGEABLE				CaCO ₃	AV. P ppm
							Ca	Mg	Na	K		
P-1-1 0-30 30-80	65.7	5.63	28.54	6.6	0.04	9.69	7.64	1.72	0.04	0.29	1.21	2.00
	63.73	4.42	30.96	7.9	0.1	10.82	8.35	2.26	0.16	0.05	1.22	1.00
P-1-2 0-60 60-100	57.85	5.91	34.65	6.7	0.06	9.98	8.14	1.01	0.01	0.82	0.72	1.00
	58.82	11.83	29.73	7.3	0.04	8.41	7.38	0.67	0.07	0.29	0.51	1.00
P-2-1 0-40 40-55 55-100	70.39	1.25	28.79	8.6	1.4	9.48	2.72	2.66	4	0.1	0.62	1.00
	62.96	4.53	33.03	9	2.3	13.71	3.86	4.02	5.66	0.17	4.03	1.00
	58.69	8.12	32.3	9.3	1.6	15.01	2.4	1.15	11.34	0.12	4.54	0.00
P-2-2 0-60 60-100	67.41	9.48	21.85	6.3	3.5	10.47	4.52	5.38	0.2	0.37	0.51	8.00
	68.53	5.51	26.26	8.6	1.6	11.24	1.23	0.43	9.48	0.1	0.72	1.00
P-2-3 0-10 10-100 over 100	71.73	4.38	25.02	7.2	0.06	7.46	5.94	1.02	25.02	0.49	0	2.00
	60.68	3.59	36.33	6.9	0.06	8.6	7.5	0.55	36.33	0.23	0.41	0.00
	901.47	4.34	5.13	6.3	0.1	3.15	2.48	0.55	5.13	0.02	0.79	1.00
P-3-1 0-25 25-40 40-100	52.5	12.97	34.42	5.6	0.36	18.9	12.23	5.53	0.35	0.79	18.9	24.00
	87.42	1.4	10.97	6.5	0.07	4.59	3.09	1.09	0.23	0.18	4.59	15.00
	68.79	4.33	25.48	6.7	0.24	7.7	5.29	1.58	0.52	0.31	7.7	2.00
P-3-2 0-60 60-100	244.93	6.24	27.78	5.9	0.06	6.95	5.73	0.94	0.1	0.18	0.4	1.00
	60.6	16.83	23.18	6.2	0.08	7.65	5.4	2.07	0.1	0.08	0	1.00
P-3-3 0-60 60-100	61.92	8.03	29.18	6.3	0.04	6.72	4.67	1.58	0.06	0.41	1.92	7.00
	52.2	7.13	41.89	6.7	0.12	9.14	6.64	2.24	0.11	0.15	0.82	3.00
P-4-1 0-10 10-100	61.81	16.4	22.2	6.7	0.08	13.18	7.95	4.4	0.2	0.63	1.23	7.00
	56.95	13.4	29.53	7.4	1	15.64	9.32	7.34	0.59	0.39	1.41	1.00
P-4-2 0-25 25-50 50-100	58.7	14.32	26.61	7.2	0.4	17.32	11.16	4.02	0.27	1.87	1.51	2.00
	52.1	17.32	28.98	7.6	0.28	11.92	6.74	4.54	0.33	0.31	1.22	1.00
	57.07	14.87	28.55	6.8	0.32	15.52	8.13	6.59	0.61	19	0.11	1.00
P-4-3 0-45 45-100	62.44	11.56	25.92	6.4	0.26	9.25	6.23	2.61	0.09	0.32	0.6	3.00
	64.43	12.45	23.1	6.5	0.34	7.55	4.49	2.73	0.15	0.18	0	2.00
P-5-1 0-35 35-65 65-100	41.55	20.7	38.2	6.2	0.26	22.28	16.42	3.8	0.15	1.91	1.54	*
	65	7	27.5	7.6	0.32	10.1	6.51	2.98	0.42	0.19	0.6	7.00
	52.61	9.84	35.75	7.6	1.2	14.87	6.43	5.24	2.99	0.21	1.84	0.00
P-5-2 0-15 15-100	61.05	11.85	26.13	6.20	0.34	9.94	5.67	2.07	0.20	2.00	0.61	*
	60.28	8.52	30.85	8.40	0.42	10.12	4.28	3.47	1.55	0.82	1.00	8.00
P-5-3 0-35 35-50 50-100	61.53	8.50	29.99	6.70	0.26	13.18	8.91	3.60	0.09	0.58	1.20	10.00
	63.08	8.79	27.72	6.30	0.22	11.25	7.43	3.08	0.09	0.65	0.30	*
	67.92	3.99	26.62	6.30	0.22	9.23	6.33	2.13	0.07	0.70	0.61	*

Table A3.1-2

ANALYTICAL RESULTS OF PHYSICO-CHEMICAL PROPERTY (4/4)

Phase-II

Pit No. Depth	Sand	Silt	Clay	pH	EC	CEC	EXCHANGEABLE				CaCO ₃	Av. P ppm
							Ca	Mg	Na	K		
P-6-1 0-50 50-100	74.72 67.54	9.09 5.19	15.59 27.34	6.90 6.70	0.25 0.24	8.76 10.86	5.97 6.68	1.93 3.38	0.11 0.16	0.66 0.64	0.98 0.69	32.00 4.00
P-6-2 0-15 15-55 55-100	78.36 67.93 62.10	1.52 3.59 7.62	17.45 27.80 29.82	7.20 6.90 6.90	0.26 0.24 0.28	7.19 7.49 12.14	4.61 3.78 6.79	1.56 3.10 3.95	0.19 0.20 0.91	0.83 0.41 0.49	0.49 0.50 0.81	9.00 2.00 0.00
P-6-3 0-15 15-40	69.99 63.99	9.49 5.95	19.82 31.95	7.00 6.70	0.08 0.10	9.40 11.25	6.84 9.65	1.54 1.35	0.07 0.08	0.95 0.17	0.99 0.65	15.00 1.00
P-7-1 0-40 40-100	84.03 61.35	5.40 5.20	10.14 32.59	5.70 6.00	0.04 0.24	3.50 11.76	2.43 4.37	0.92 5.73	0.00 1.52	0.15 0.14	0.00 0.00	1.00 0.00
P-7-2 0-100	60.47	6.73	32.75	6.60	0.06	9.41	6.91	2.11	0.17	0.22	0.11	0.00
P-7-3 0-55 55-100	80.56 56.33	5.31 5.06	13.17 43.29	6.00 7.80	1.80 1.40	4.47 18.66	2.19 7.34	2.07 8.51	0.05 2.56	0.16 0.25	0.10 0.99	0.00 0.00
P-8-1 0-55 55-100	85.69 60.06	3.62 8.34	11.08 30.83	5.90 8.60	0.04 0.38	3.06 19.55	2.23 11.42	0.55 0.54	0.08 2.48	0.20 0.11	0.43 0.78	1.00 0.00
P-8-2 0-45 45-100	64.98 54.96	5.90 4.89	38.26 24.45	6.90 6.70	0.18 2.60	13.70 9.87	7.75 4.50	5.19 4.96	0.80 0.36	0.25 0.05	0.66 0.54	0.00 0.00
P-8-3 0-40 40-100	64.98 54.96	8.93 12.05	25.59 32.70	7.30 7.30	0.26 0.80	10.66 13.30	6.31 6.62	3.85 5.96	0.37 0.62	0.13 0.10	0.44 1.32	0.00 2.00
P-9-1 0-100	11.02	33.48	55.34	6.10	0.36	28.56	19.48	7.44	1.19	0.45	0.82	63.00
P-9-2 0-60 60-100	45.71 56.52	20.50 8.53	34.64 33.74	6.40 8.20	0.20 1.80	17.73 10.27	12.21 7.58	3.33 2.28	0.38 0.35	1.81 0.06	0.77 1.44	71.00 7.00
P-9-3 0-30 30-50	64.83 41.58	13.87 11.13	20.45 46.02	7.60 6.40	0.12 0.04	11.53 12.11	9.83 8.45	0.83 2.80	0.08 0.11	0.79 0.75	0.53 0.56	* *
P-9-4 0-100	44.03	13.65	40.96	6.20	0.10	8.20	6.64	1.26	0.11	0.19	0.66	*
P-10	38.10	17.04	45.57	7.50	0.28	19.83	8.57	8.67	1.66	0.93	1.12	10.00
P-11	51.84	17.64	29.93	6.90	4.00	14.62	3.17	3.12	8.13	0.20	0.66	0.00

Table A3.3-1 SPECIFICATION OF CRITERIA FOR LAND CAPABILITY

Land Classification for Upland Field on RBE Soils									
Soil type (Drainage)	Soil Depth Phase	Associated Gravel Depth (P)	SLOPE PHASE (t)						
			0-2%	2-3%	3-4%	4-6%		>6%	
RBEs, Well Drained	d:vd>120cm	90>cm	1	1	2t	3t	6t		
	md90-120	60-90	1	2pt	3pt	6pt	6pt		
	ms60-90	30-60	3p	3pt	6pt	6pt	6pt		
	s<60	<30	6p	6pt	6pt	6pt	6pt		
RBEs, Imperfectly Drained	d:vd>120cm	>90cm	3d	3d	3dt	6dt	-		
	md90-120	60-90	3dp	3dp	6dtp	6dtp	-		
	ms60-90	30-60	6dp	6dp	6dpt	6dpt	-		
Land Classification for Paddy Field on LHG Soils									
Soil type (Drainage)	Soil Depth Phase	Associated Depth(P)	SLOPE PHASE (t)						
			0-2%	2-3%	3-4%	4-6%		>6%	
LHG (Poorly Drained)	d:vd>120cm	>90cm	1	-	-	-	-		

Note: p, d and t refer to depth, drainage and topography (slope) subclasses respectively.
Subclasses 6p, 6pt etc. are marginally downgraded.

Table A3.3-2 DUAL SYSTEM OF LAND CLASSIFICATION

Paddy Field Classes

		/1	2t	2s	2p	3t	3st	3pt	6t	6st
Upland Classes	1/						*			
Suitable	2Pt						*			
	2t									*
	3tp									*
Marginally	3p									
Suitable	3pt						*			
	3t									*
	3d									
	3dt					*				
Doubtful	5d	*	*	*						
Suitability	5dt				*					
	6dt								*	
Unsuitable	6tp									*
for Upland	6pt									*
Crop Irrigation	6t									*
	6tp									*
	6p				*					
	6pt							*		*

s: Subscript Denote Limitation
t: Topography
p: Profile Depth Suitable Soil
d: Drainage
s: Sand (Sandy Texture)

Table A3.3-3

DISTRIBUTION OF SOILS

Area				(Unit : ha)
	LHG (poor)	RBE (mod)	RBE (well)	Total
A. EXISTING IRRIGATION AREA				0.70434783
1 Old Area				
(1) Kiriibanwewa Block				
- Command of LBMC	470	350	80	900
- Command of Mahagama	520	60	0	580
Sub-total	990 (67%)	410 (28%)	80 (5%)	1,480 (100%)
(2) Suriyawewa Block				
- Left bank of BBC	320	300	190	810
- Right of BBC and command of LBMC	250	210	150	610
Sub-total	570 (40%)	510 (36%)	340 (24%)	1,420 (100%)
Total - A	1,560 (54%)	920 (32%)	420 (14%)	2,900 (100%)
B. POSSIBLE IRRIGATION EXTENSION AREA				
1 Old area				
(1) End of BBC	440 (42%)	230 (22%)	370 (36%)	1,040 (100%)
2 Extension area				
(1) North area	860	600	1,420	2,880
(2) South area	630	550	1,280	2,460
Sub-total	1,490 (28%)	1,150 (22%)	2,700 (51%)	5,340 (100%)
Total - B	1,930 (30%)	1,380 (22%)	3,070 (48%)	6,380 (100%)
TOTAL (A + B)	3,490 (38%)	2,300 (25%)	3,490 (38%)	9,280 (100%)