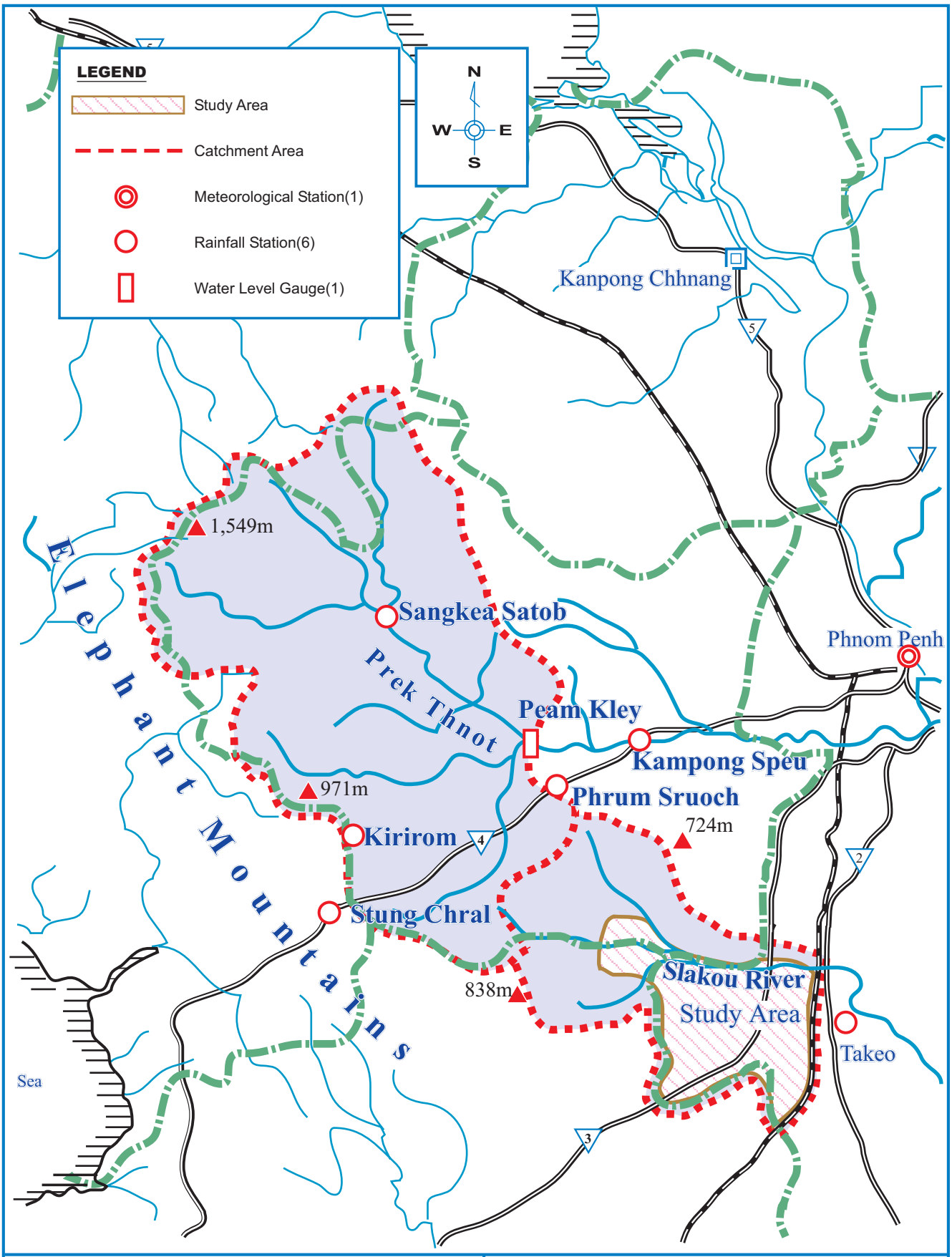
Figures



The Study on The Rehabilitation and Reconstruction of Agricultural Production System in The Slakou River Basin, The Kingdom of Cambodia

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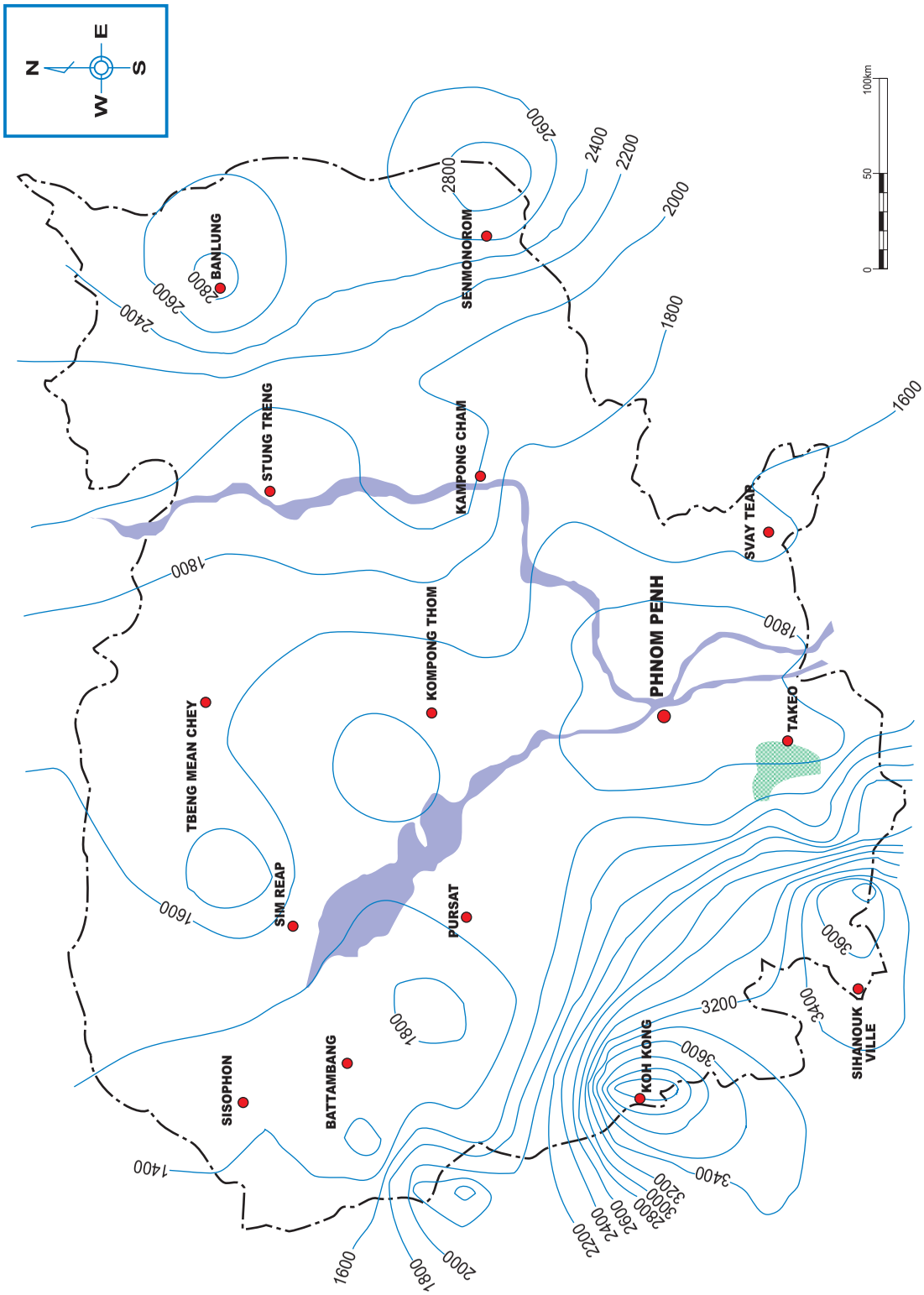
Figure B-1

Location of Meteorological Station and Water Level Gauge Station



Source: Annex A Hydrology of Final Report for Irrigation Rehabilitation Study in Cambodia
Mekong Secretariat, June 1994

The Study on The Rehabilitation and Reconstruction of Agricultural Production System in The Slakou River Basin, The Kingdom of Cambodia	Figure B-2 Isohyetal Map
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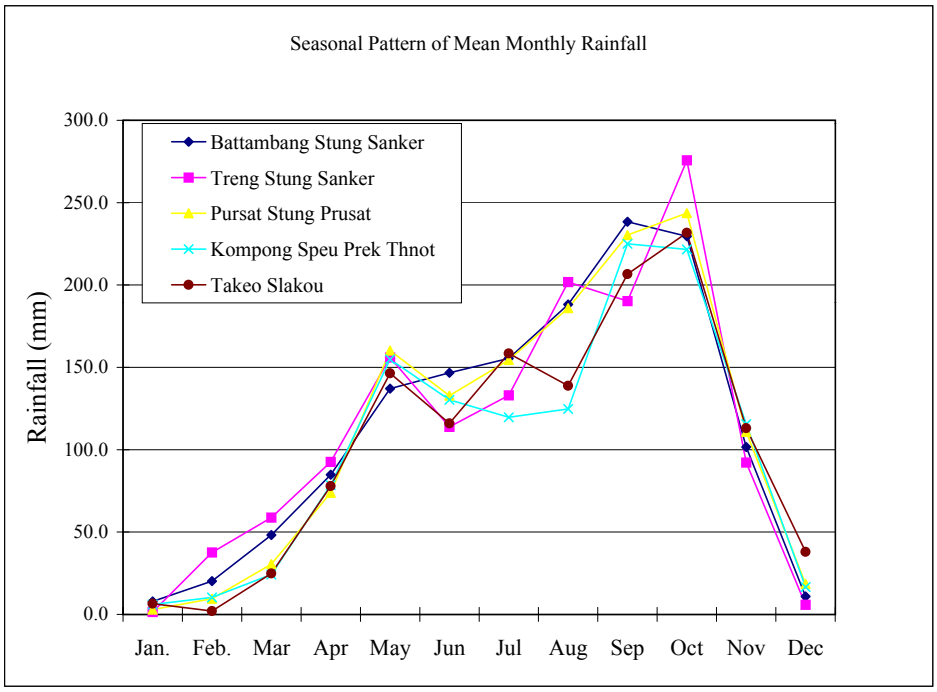

Station	Jan.	Feb.	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual *	Annual#	Period of Record
Battambang	7.9	20.2	48.2	84.8	137.1	146.7	155.4	188.2	238.4	229.6	101.6	10.9	1347.0	1369.0	1928-92
Treng	1.5	37.6	58.8	92.6	156.0	113.9	133.0	201.8	190.2	275.7	92.2	5.8	1410.9	1359.1	1962-66
Pursat	2.9	9.5	30.5	73.8	160.2	132.8	154.5	185.9	230.3	243.7	110.8	18.5	1385.0	1351.0	1913-92
Kompong Speu	6.0	10.3	24.2	78.5	154.9	130.3	119.7	124.7	225.0	221.6	115.5	16.6	1211.0	1227.0	1931-91
Takeo	6.5	2.0	24.9	77.9	146.4	116.0	158.5	138.8	206.6	231.7	113.1	38.0	1258.0	1260.0	1912-85

*: Mean of annual rainfall values
#: Sum of mean monthly rainfall
Source: Data were derived from Annex A Hydrology of Final Report for Irrigation Rehabilitation Study in Cambodia, Mekong Secretariat June 1994.

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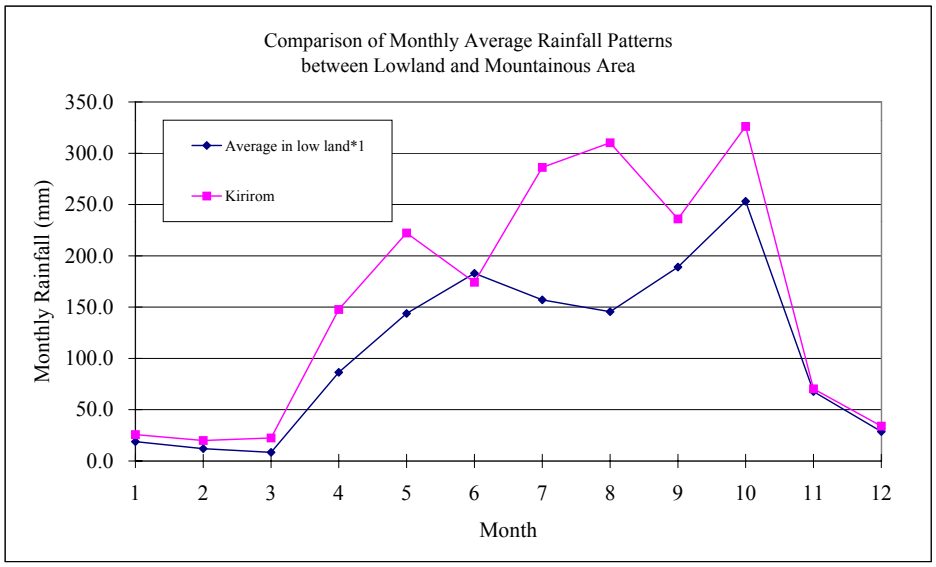
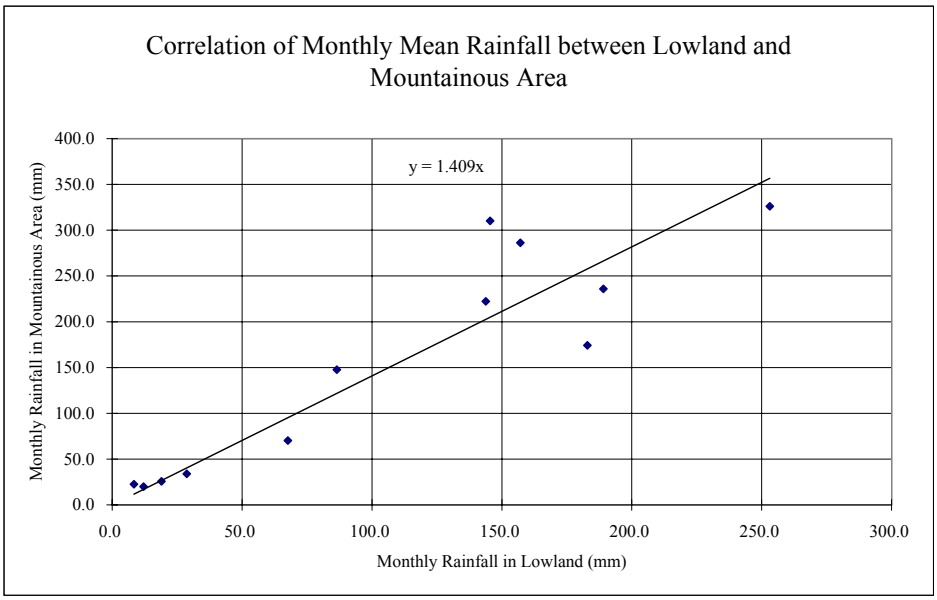
Figure B-3
Seasonal Pattern of Monthly Rainfall of Long Term Period in Low Land





Unit:mm

Year	Jan.	Feb.	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average in low land*1	19.0	12.1	8.4	86.5	143.8	182.9	157.1	145.5	189.1	253.1	67.6	28.7	1292.8
Kirirom	25.8	20.0	22.5	147.7	222.2	174.2	286.2	310.2	235.9	326.1	70.3	34.0	1875.0

Note: Average rainfalls for four years from 1966 to 1969. *1 : Average of those at Kampong Spueu and Phnom Srouch

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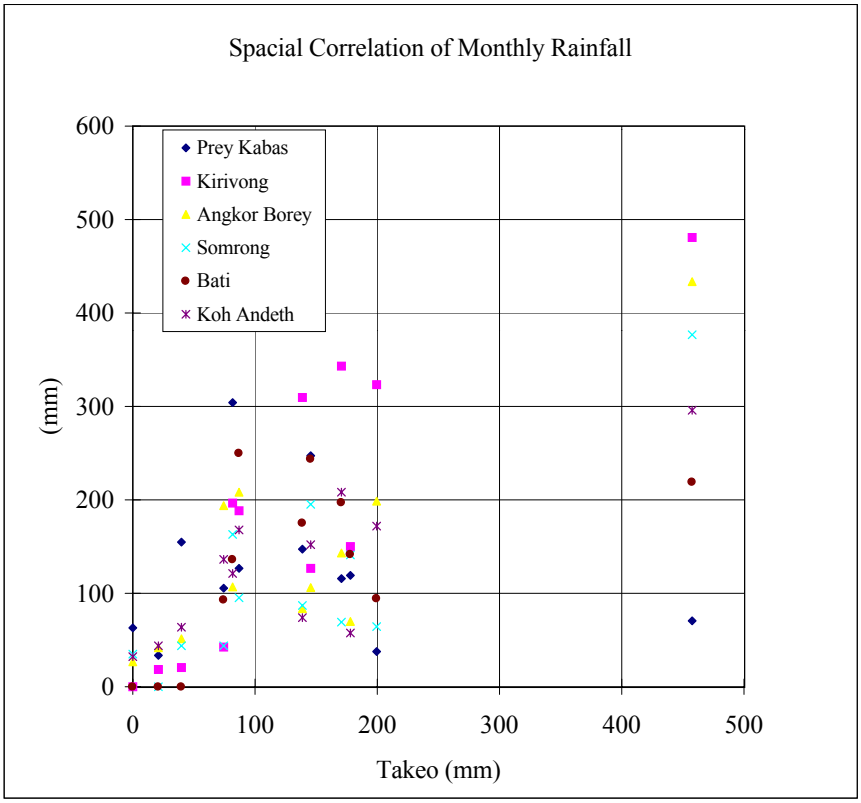
Figure B-4
Seasonal Patterns of Monthly Average Rainfall at Lowland (Kompong Spueu and Phnom Srouch) and at Mountain Area (Kirirom)



Monthly Rainfall in Takeo Province in 2000

Unit:mm

Name of Station	Jan.	Feb.	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Distance from Takeo
Takeo	21.0	0.0	40.0	87.0	74.2	145.7	81.8	170.9	199.5	457.5	138.6	177.9	1594.1	
Prey Kabas	33.5	63.0	155.1	127.0	105.5	247.1	304.1	116.0	37.6	70.8	147.2	119.1	1526.0	30km north-east
Kirivong	18.5	0.0	20.5	188.6	42.2	126.8	196.6	342.9	323.0	480.6	309.5	150.1	2199.3	40km south
Angkor Borey	41.6	26.4	51.3	208.5	193.8	106.2	106.6	143.2	198.5	433.5	83.6	69.9	1663.1	20km east
Somrong	-	35.0	43.5	95.0	44.0	195.0	163.0	69.0	64.5	377.0	87.0	141.0	1314.0	20km north
Bati	-	-	-	250.0	93.0	243.8	136.2	197.0	94.6	218.9	175.5	141.9	1550.9	30km north
Koh Andeth	44.0	32.0	64.0	168.0	136.0	152.0	121.0	208.0	172.0	296.0	74.0	57.3	1524.3	30km south east

Source: MOWRAM, Takeo

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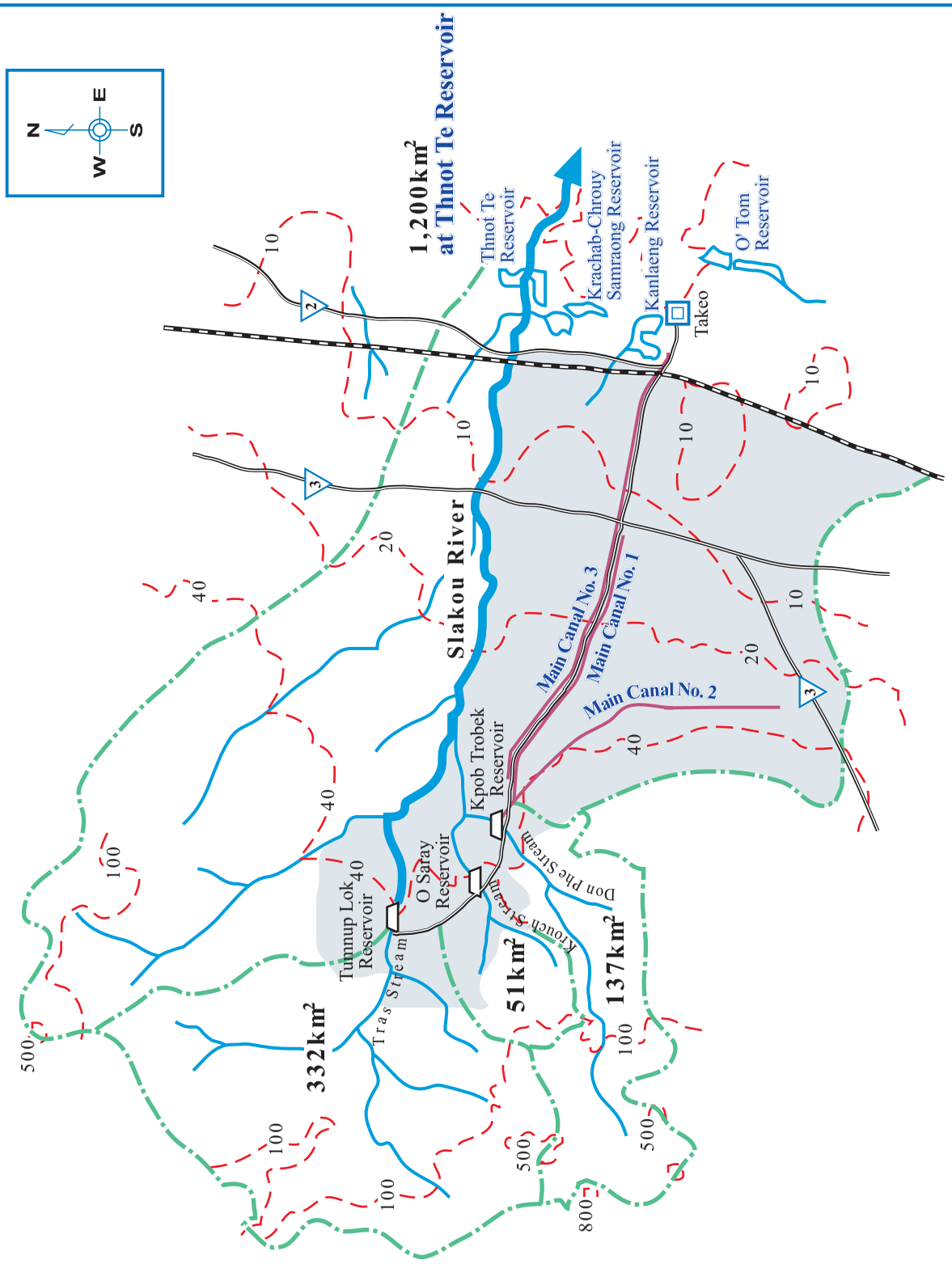
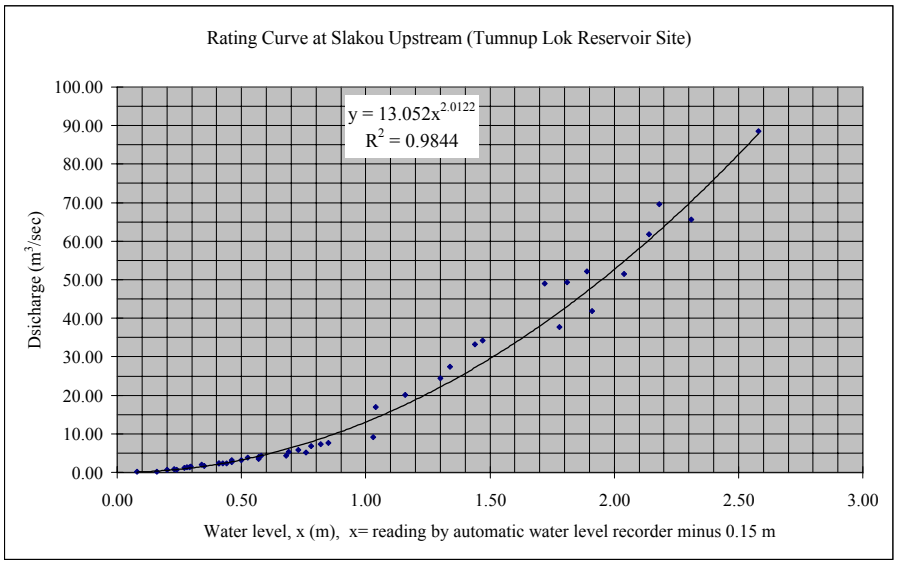
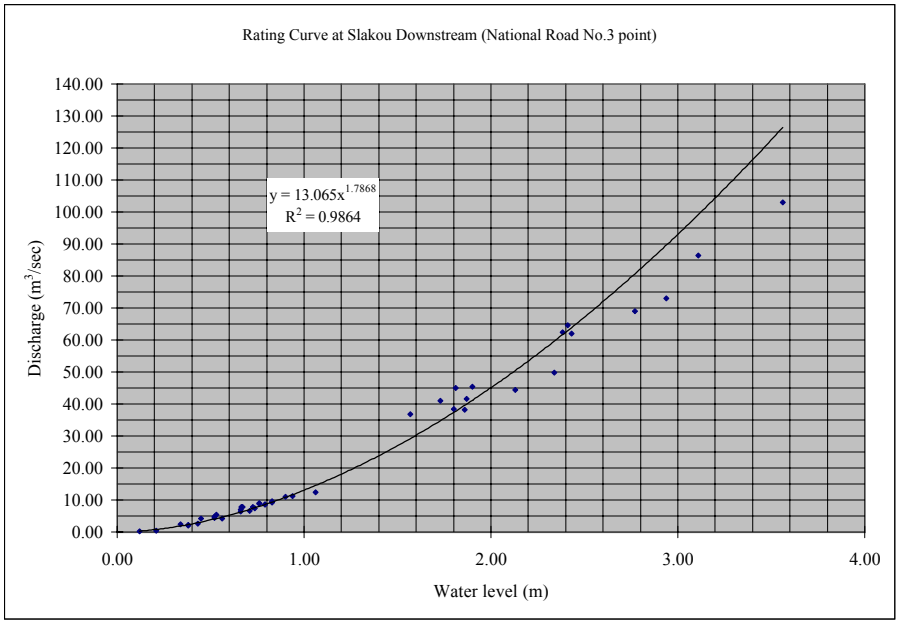
Figure B-5
Spacial Correlation of Monthly Rainfall in Low Land in Takeo Province



The Study on The Rehabilitation and Reconstruction of Agricultural Production System in The Slakou River Basin, The Kingdom of Cambodia	Figure B-6
Japan International Cooperation Agency	Slakou River System

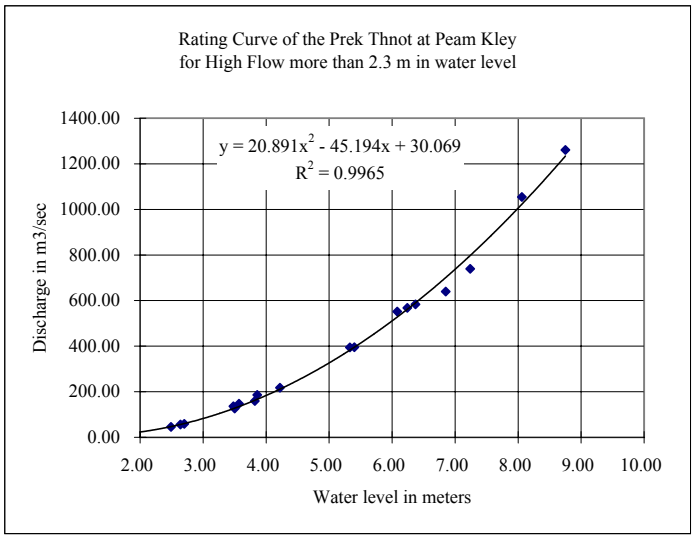




The Study on The Rehabilitation and Reconstruction of Agricultural Production System in The Slakou River Basin, The Kingdom of Cambodia	Figure B-7 Rating Curves for the Slakou Upstream (Tumnup Lok Reservoir Site) and the Slakou Downstream (National Road No. 3)
Japan International Cooperation Agency	

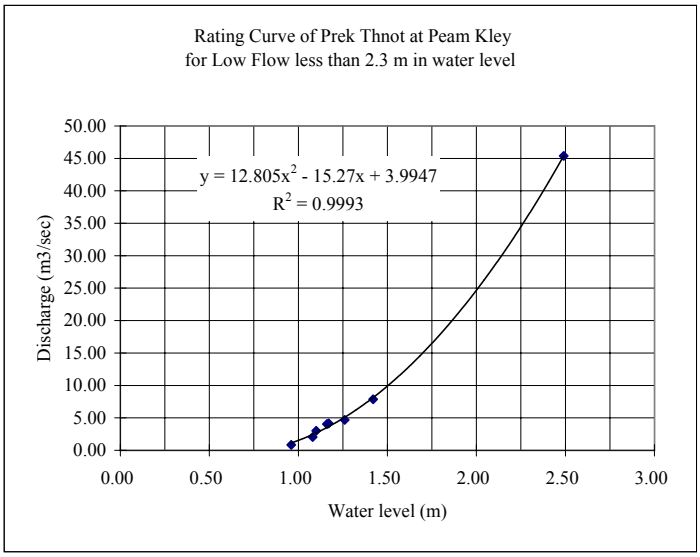
Flow Measurement Records

N	Date	H=m	Q=m3/sec
1	16-Jan-98	0.96	0.83
2	28-Feb-01	1.08	2.05
3	15-Dec-97	1.10	3.00
4	21-Feb-97	1.16	4.04
5	28-Jan-97	1.17	4.15
6	15-Jan-97	1.26	4.69
7	1-Mar-97	1.42	7.88
8	30-Aug-96	2.49	45.39
9	2-Sep-96	2.64	56.10
10	4-Dec-96	2.70	58.85
11	12-Sep-96	3.50	126.73
12	16-Oct-96	3.48	136.04
13	10-Sep-96	3.57	147.35
14	18-Oct-96	3.82	159.66
15	9-Sep-96	3.86	186.22
16	24-Oct-96	4.22	217.93
17	7-Nov-96	5.33	394.81
18	7-Apr-96	5.40	395.00
19	29-Oct-99	6.08	551.84
20	28-Oct-99	6.24	567.72
21	5-Nov-96	6.37	583.17
22	4-Nov-99	6.85	639.89
23	2-Nov-99	7.24	739.62
24	18-Oct-00	8.06	1054.86
25	17-Oct-00	8.75	1260.84



Low Flow Records

N	Date	H=m	Q=m3/sec
2	16-Jan-98	0.96	0.83
3	28-Feb-01	1.08	2.05
4	15-Dec-97	1.10	3.00
5	21-Feb-97	1.16	4.04
6	28-Jan-97	1.17	4.15
7	15-Jan-97	1.26	4.69
8	1-Mar-97	1.42	7.88
9	30-Aug-96	2.49	45.39



The Study on The Rehabilitation and Reconstruction of Agricultural Production System in The Slakou River Basin, The Kingdom of Cambodia

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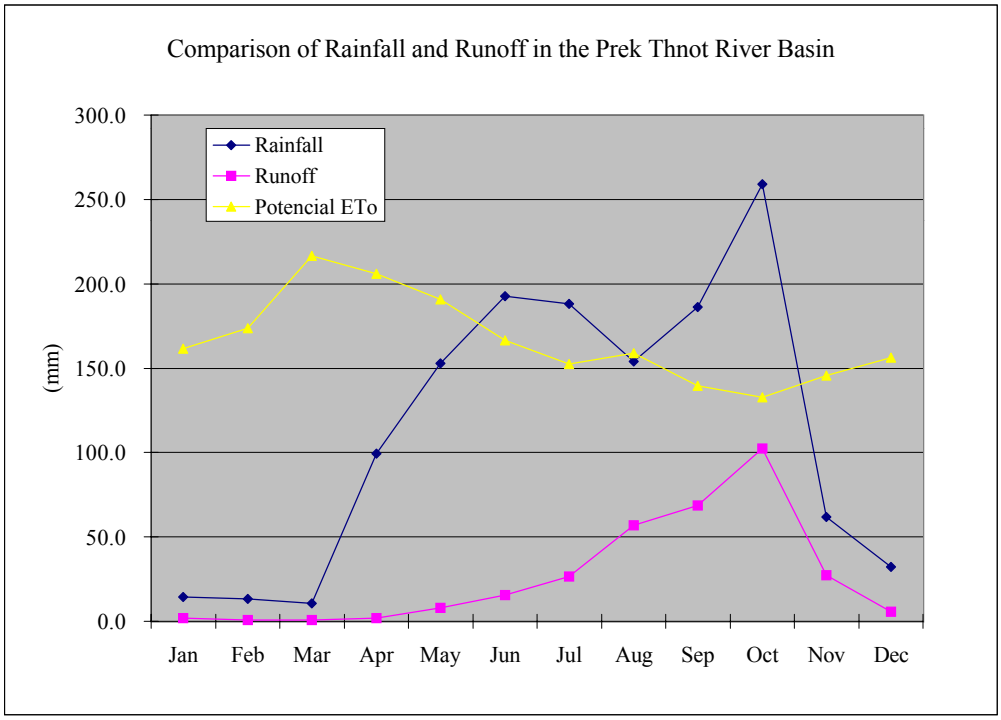
Figure B-8
Discharge Measurement Records and Flow Rating Curves of Prek Thnot River at Peam Kley



unit: mm

Item	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall	14.6	13.1	10.7	99.5	152.7	192.7	188.3	154.0	186.3	259.2	61.6	32.2
Runoff	1.9	0.9	0.6	2.0	7.8	15.5	26.5	56.7	68.5	102.4	27.4	5.6
Potencial ETo	162	174	216	206	191	167	153	159	140	133	146	156

Rainfall and runoff are averages for four years from 1966 to 1969. ETo was estimated by the modified Penman.

The Study on The Rehabilitation and Reconstruction of Agricultural Production System in The Slakou River Basin, The Kingdom of Cambodia	Figure B-9 Comparison of Monthly Rainfall and Runoff in the Prek Thnot River Basin
Japan International Cooperation Agency	

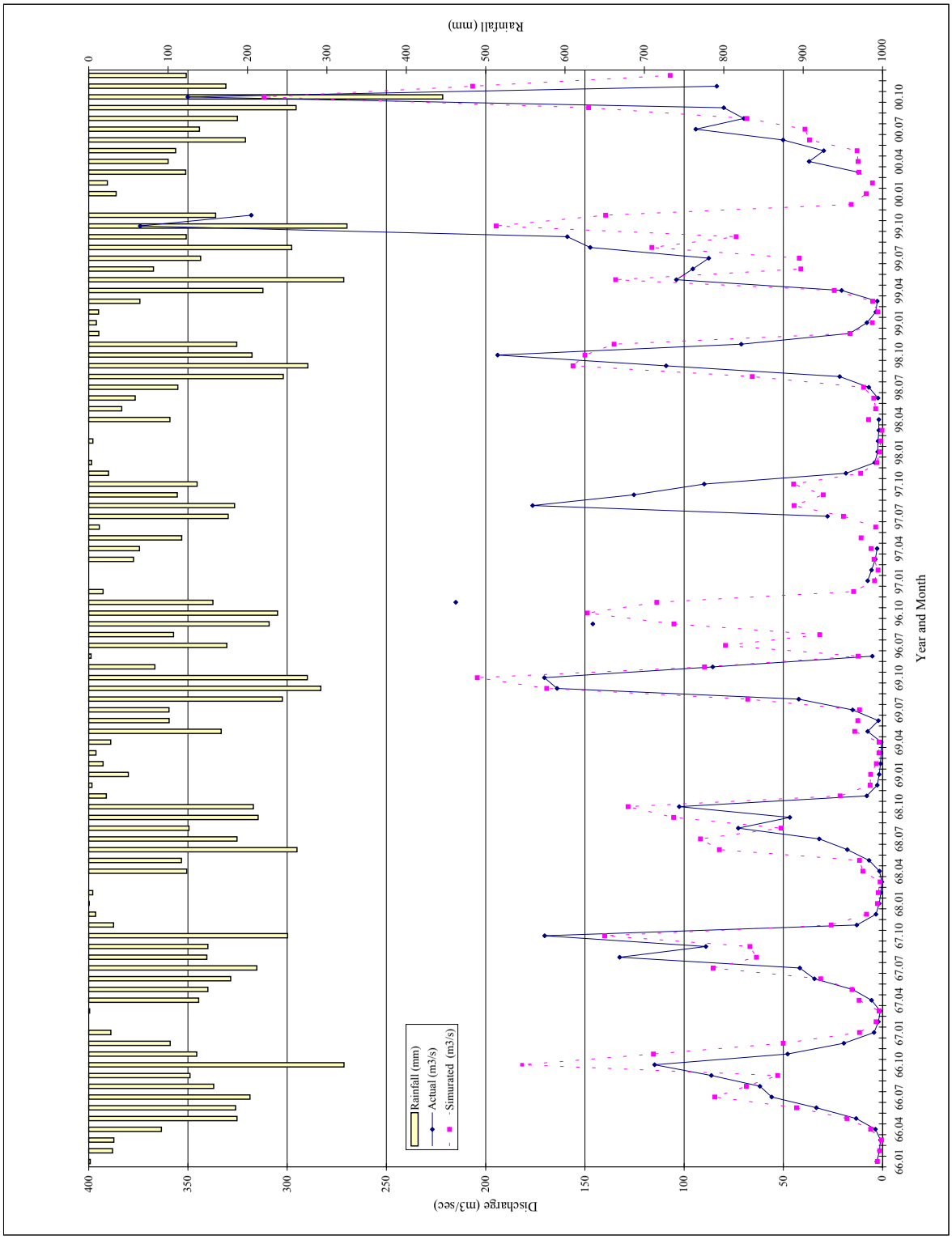


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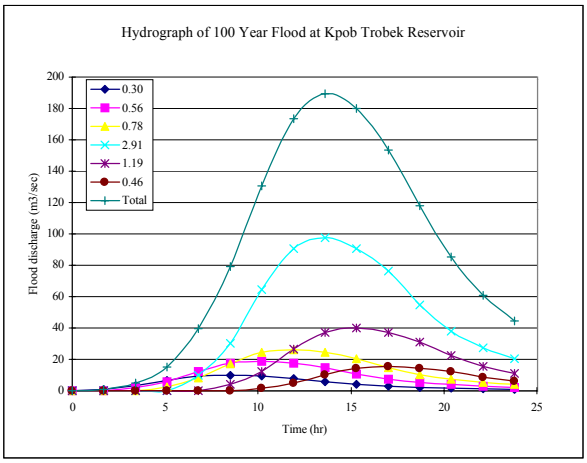
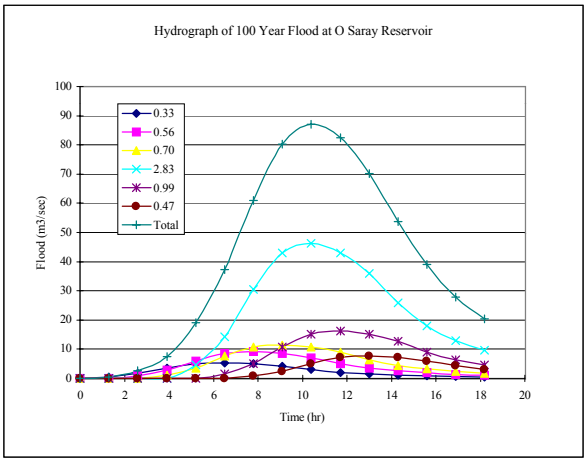
Figure B-10
Comparison between Actual Runoff and Simulated Runoff by Rainfall Distribution Method in Prek Thnot River



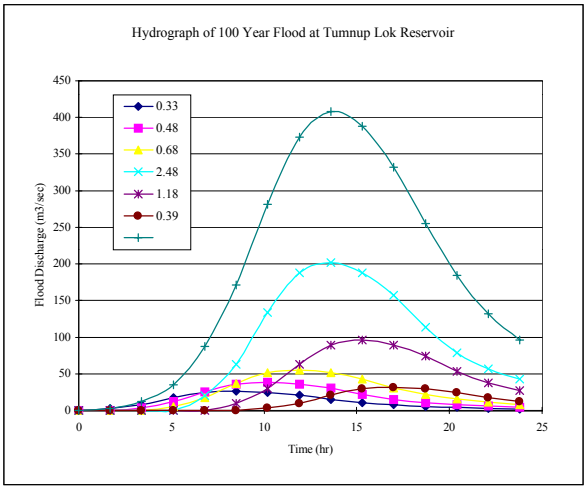
KpobTrobek Reservoir

Time hr	Sub-Storm						Total
	0.30	0.56	0.78	2.91	1.19	0.46	
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.7	1.0	0.0	0.0	0.0	0.0	0.0	1.0
3.4	3.1	1.9	0.0	0.0	0.0	0.0	5.0
5.1	6.6	5.8	2.6	0.0	0.0	0.0	15.0
6.8	9.3	12.4	8.1	9.8	0.0	0.0	39.6
8.5	9.9	17.5	17.3	30.3	4.0	0.0	79.0
10.2	9.3	18.8	24.3	64.4	12.4	1.6	130.8
11.9	7.8	17.5	26.2	90.8	26.4	4.8	173.4
13.6	5.6	14.7	24.3	97.6	37.1	10.2	189.6
15.3	3.9	10.6	20.4	90.8	39.9	14.4	180.0
17.0	2.8	7.3	14.6	76.1	37.1	15.5	153.6
18.7	2.1	5.3	10.2	54.7	31.2	14.4	117.8
20.4	1.5	4.0	7.3	38.1	22.4	12.1	85.3
22.1	1.1	2.8	5.5	27.3	15.6	8.7	61.0
23.8	0.8	2.1	3.9	20.5	11.2	6.1	44.5



O Saray Reservoir

Time hr	Sub-Storm						Total
	0.33	0.56	0.70	2.83	0.99	0.47	
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.3	0.5	0.0	0.0	0.0	0.0	0.0	0.5
2.6	1.7	0.9	0.0	0.0	0.0	0.0	2.6
3.9	3.5	2.8	1.1	0.0	0.0	0.0	7.5
5.2	5.0	6.0	3.6	4.6	0.0	0.0	19.2
6.5	5.3	8.5	7.6	14.3	1.6	0.0	37.3
7.8	5.0	9.1	10.7	30.5	5.0	0.8	61.0
9.1	4.2	8.5	11.5	43.0	10.7	2.4	80.2
10.4	3.0	7.1	10.7	46.2	15.1	5.1	87.1
11.7	2.1	5.1	9.0	43.0	16.2	7.1	82.5
13.0	1.5	3.6	6.4	36.0	15.1	7.7	70.3
14.3	1.1	2.6	4.5	25.9	12.6	7.1	53.8
15.6	0.8	1.9	3.2	18.0	9.1	6.0	39.0
16.9	0.6	1.4	2.4	12.9	6.3	4.3	27.9
18.2	0.4	1.0	1.7	9.7	4.5	3.0	20.4



Tumnup Lok Reservoir

Time hr	Sub-Storm						Total
	0.33	0.48	0.68	2.48	1.18	0.39	
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.7	2.7	0.0	0.0	0.0	0.0	0.0	2.7
3.4	8.2	3.9	0.0	0.0	0.0	0.0	12.1
5.1	17.5	12.0	5.5	0.0	0.0	0.0	35.1
6.8	24.7	25.6	17.1	20.2	0.0	0.0	87.6
8.5	26.6	36.1	36.4	62.7	9.6	0.0	171.3
10.2	24.7	38.8	51.3	133.4	29.7	3.2	281.0
11.9	20.7	36.1	55.2	188.0	63.2	9.8	372.9
13.6	14.9	30.2	51.3	202.1	89.0	20.8	408.4
15.3	10.4	21.7	43.0	188.0	95.7	29.3	388.1
17.0	7.4	15.1	30.9	157.7	89.0	31.5	331.6
18.7	5.6	10.9	21.5	113.2	74.6	29.3	255.1
20.4	4.0	8.1	15.5	78.8	53.6	24.6	184.6
22.1	2.9	5.8	11.6	56.6	37.3	17.6	131.9
23.8	2.1	4.3	8.3	42.5	26.8	12.3	96.2

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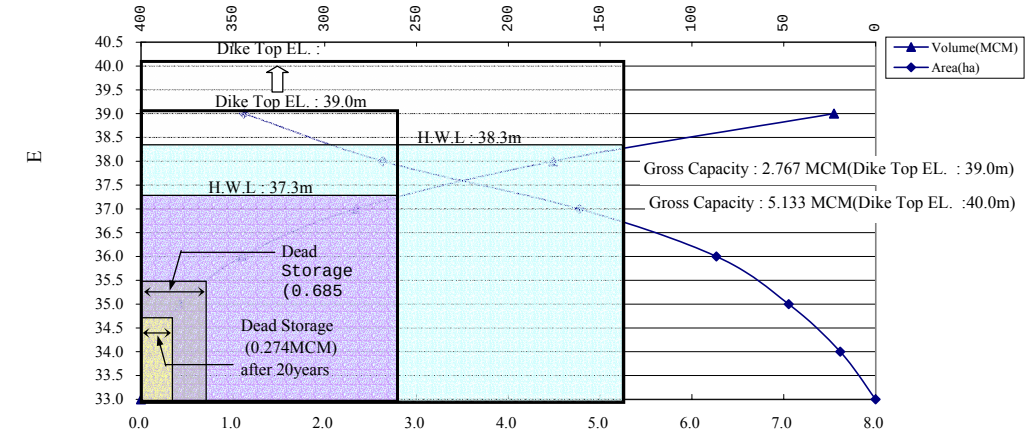
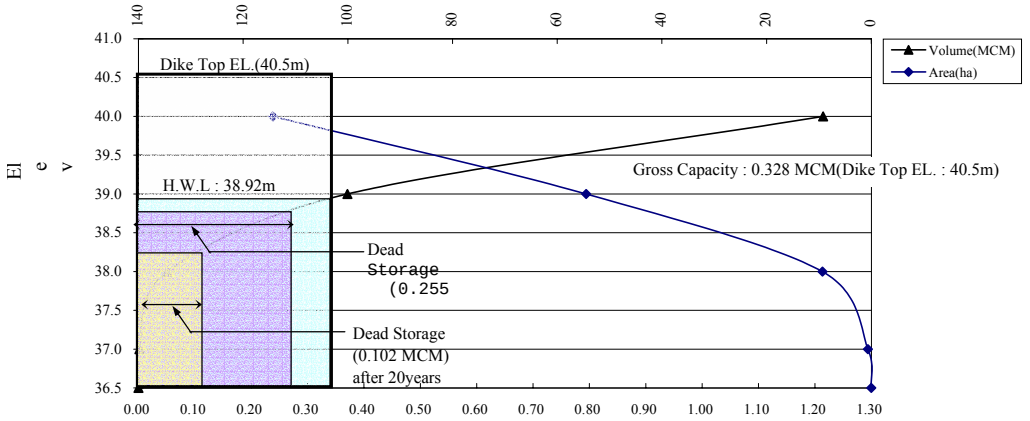
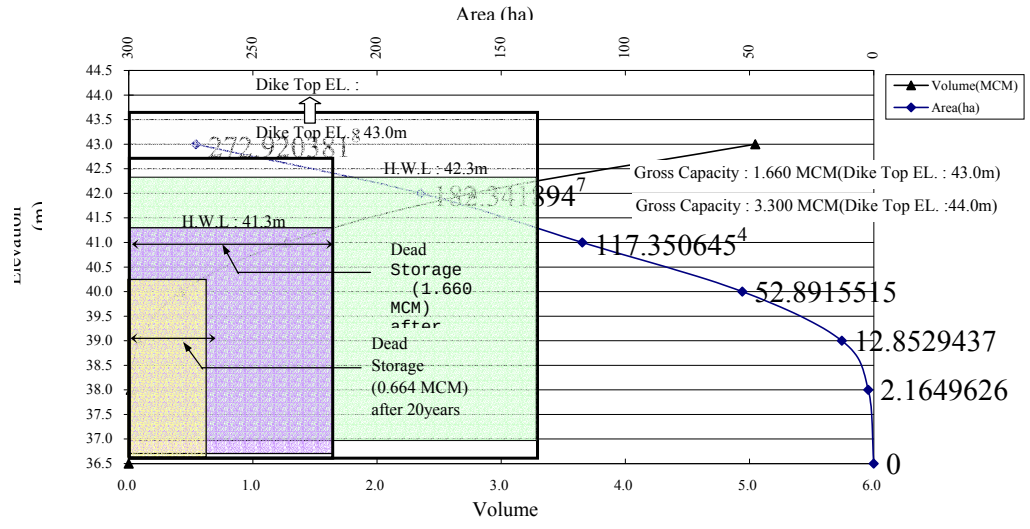
Figure B-11
100 Year Probable Sub-storm Hydrographs and Composite Hydrograph at the Three Reservoirs



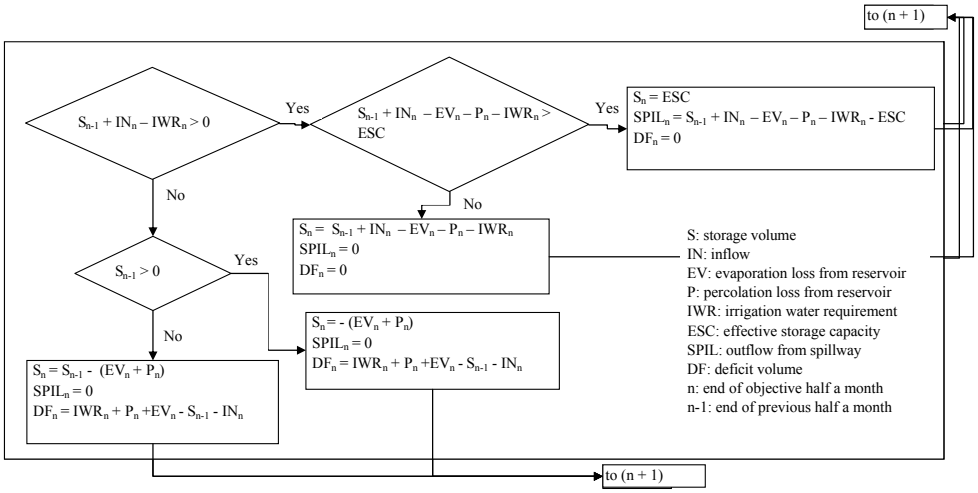




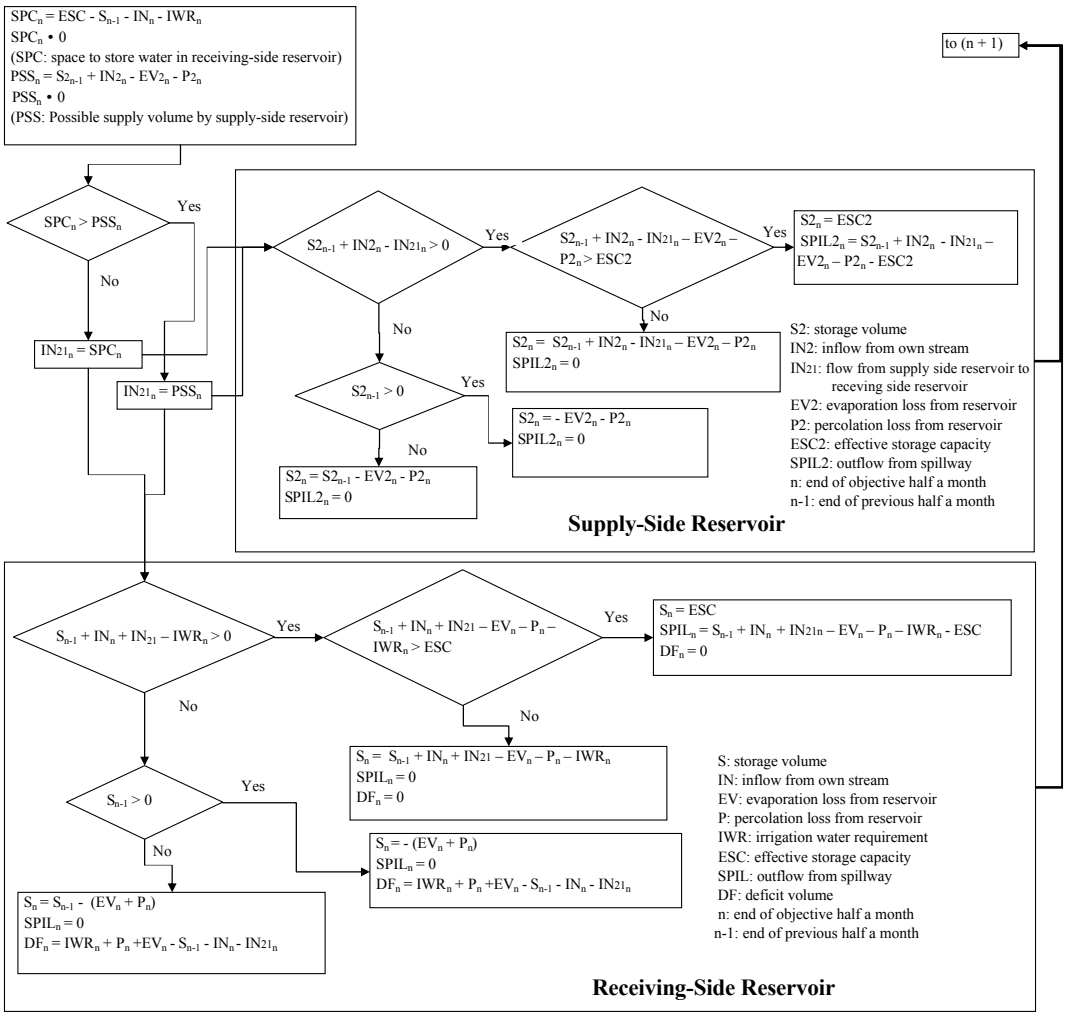
Tumnup Lok Reservoir

The Study on The Rehabilitation and Reconstruction of Agricultural Production System in The Slakou River Basin, The Kingdom of Cambodia	Figure B-12 Storage Volume and Area Curves of Kpob Trobek, O Saray &Tumnup Lok Reservoirs
Japan International Cooperation Agency	

Water Balance Calculation in Single Reservoir



Water Balance Calculation in Connection of Two Reservoirs



The Study on The Rehabilitation and Reconstruction of Agricultural Production System in The Slakou River Basin, The Kingdom of Cambodia	Figure B-13
Japan International Cooperation Agency	Chart of Water Balance Calculation Process