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JENERANG RIVER FLOOD CONTROL PROJECT (PHASE II)

DATA BOOK
(Hydrology)

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JAPAN INTERNATIONAL COOPERATION AGENCY

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Preface

The data compiled in this data book are prepared for the JENEBERANG RIVER FLOOD CONTROL PROJECT (PHASE II) which is conducted by the Government of Indonesia under the technical cooperation of the Japan International Cooperation Agency, JICA, in a period from February 1981 to August 1981

The data book includes the following 7 information tabulated below ;

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Comments

There are two P.M.A's meteorologic stations in the study area; i.e, Bonto Sunggu and Bonto Bili stations. The Bonto Sunggu station is located in the southern part of the Sungguminasa bridge and has four years records. The Bonto Bili station is located at just downstream of the proposed Bili-Bili dam site, however, available period of the data is less than one year. Regarding to the locations, they are shown in the location map of rainfall stations (See 2. Rainfall data).

The installed instruments works properly, however, the maximum thermometer of Bonto Bili is improper.

Mean monthly figures of the meteorologic data are compiled in Table 1.1 in which the figures at Bonto Bili are estimated on the basis of correlation between Bonto Sunggu. The correlations utilized are shown in Fig. 1.1.

Table. 1.1 Mean Monthly Meteorologic data

(A) Bonto Sunggu station

Item	Unit	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean	
Temperature (7 a.m) (Max.) (Min.)	°C	26.5	26.1	26.4	27.1	26.7	26.9	26.1	26.2	26.8	27.3	27.7	26.9	26.7	
		29.6	29.4	29.2	31.5	32.0	31.1	31.0	32.0	33.3	33.9	33.9	32.0	30.0	31.3
		23.3	22.8	22.4	22.7	21.4	22.6	21.1	20.3	20.3	20.8	20.8	22.7	23.4	22.0
Relative humidity	%	93.3	94.3	94.0	92.9	92.7	92.3	90.0	91.9	88.5	87.6	89.8	93.0	91.7	
Wind Velocity	m/s	1.3	0.9	0.7	0.6	0.7	0.8	0.7	0.8	1.0	1.2	1.1	1.1	0.9	
Sun-shine hour	hr.	4.2	4.4	5.6	7.0	7.5	5.9	7.7	9.2	10.0	8.9	5.8	4.2	6.7	
Evaporation	mm/day	3.9	3.9	4.5	5.1	5.1	5.2	5.8	6.8	7.9	8.0	6.5	5.8	5.7	

(B) Bonto Billi station

Item	Unit	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean	
Temperature (7 a.m) (Max.) (Min.)	°C	22.6	22.2	22.5	23.2	22.8	23.0	22.2	22.3	23.0	23.4	23.8	23.0	22.8	
		25.7	25.5	25.3	27.6	28.1	27.2	27.1	28.1	29.5	30.0	30.0	28.1	26.1	27.4
		23.3	22.8	22.4	22.7	21.4	22.6	21.1	20.3	20.3	20.8	20.8	22.7	23.4	22.0
Relative humidity	%	93.5	94.5	94.0	92.2	92.5	92.0	89.5	91.6	87.5	86.5	89.0	92.8	91.3	
Wind Velocity	m/s	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	
Sun-shine hour	hr.	3.6	3.8	5.0	6.5	7.0	7.0	7.2	8.9	9.7	8.5	5.4	3.6	6.4	
Evaporation	mm/day	4.3	4.3	5.0	5.6	5.6	5.7	6.5	7.7	8.9	9.0	7.3	6.5	6.4	

Table. 1.2 Monthly mean meteorologic data at Bonto Sunggu station

(A) Temperature at 7 a.m

(°C)

Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1977	-	-	-	-	-	-	-	26.0	26.7	27.0	27.9	26.9	-
1978	26.7	26.2	26.7	26.9	27.5	26.5	26.6	26.7	26.9	27.3	27.0	26.5	26.8
1979	26.0	26.1	26.7	27.4	26.7	26.9	24.8	25.6	27.2	27.5	28.1	26.5	26.6
1980	26.7	26.1	25.7	27.0	26.0	27.3	26.8	26.3	26.5	27.5	27.6	26.4	26.7
Mean	26.5	26.1	26.4	27.1	26.7	26.9	26.1	26.2	26.8	27.3	27.7	26.9	26.7

(B) Maximum Temperature

(°C)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1977	-	-	-	-	-	-	-	32.4	34.2	35.4	33.7	30.6	-
1978	29.9	29.2	30.4	31.2	31.6	30.2	30.2	31.5	32.0	32.8	31.1	29.7	30.8
1979	29.3	29.3	30.3	31.7	32.1	31.2	31.0	32.1	33.5	33.9	33.1	30.3	31.5
1980	29.7	29.8	27	31.5	32.2	32.0	31.7	31.9	33.5	33.4	32.2	29.3	31.2
Mean	29.6	29.4	29.2	31.5	32.0	31.1	31.0	32.0	33.3	33.9	32.0	30.0	31.3

(C) Minimum Temperature

(°C)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1977	-	-	-	-	-	-	-	19.5	19.1	18.5	22.0	23.2	-
1978	23.5	23.2	23.0	22.6	23.4	22.7	22.8	21.8	21.7	21.8	22.8	23.3	22.7
1979	22.7	22.8	23.1	23.0	21.2	22.5	18.6	19.1	20.7	21.2	23.0	23.4	21.8
1980	22.7	22.3	21.1	22.4	19.7	22.5	21.8	20.6	19.5	21.6	22.9	23.5	21.8
Mean	23.3	22.8	22.4	22.7	21.4	22.6	21.1	20.3	20.3	20.8	22.7	23.4	22.0

(D) Relative humidity

(%)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1977	-	-	-	-	-	-	-	93.0	89.0	86.0	92.0	96.0	-
1978	95.0	97.0	95.0	96.0	96.0	96.0	95.0	96.0	91.0	89.0	92.0	93.0	94.3
1979	94.0	94.0	94.1	91.6	90.0	90.0	87.0	90.4	87.1	88.4	85.0	90.0	90.1
1980	91.0	92.0	93.0	91.0	92.0	91.0	88.0	88.0	87.0	87.0	90.0	93.0	90.3
Mean	93.3	94.3	94.0	92.9	92.7	92.3	90.0	91.9	88.5	87.6	89.8	93.0	91.7

-Continued-

(E) Wind velocity

(Km/day)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1977	-	-	-	-	-	-	-	77	100	124	107	90	-
1978	118	74	53	53	57	61	53	64	73	92	83	102	74
1979	113	75	62	54	66	61	48	62	87	100	88	114	78
1980	108	93	69	59	63	77	81	82	90	102	87	86	83
Mean	113	81	61	55	62	66	61	71	88	105	91	98	79

(F) Sun-shine hour

(hour)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1977	-	-	-	-	-	-	-	9.6	10.2	10.5	7.6	4.2	-
1978	4.3	4.8	5.8	7.0	6.8	6.7	5.7	7.8	7.0	8.1	0.3	4.2	5.7
1979	4.7	4.8	4.8	7.4	7.6	8.3	8.4	10.1	8.7	8.3	7.4	4.5	6.7
1980	3.5	3.5	6.3	6.7	8.2	7.6	9.0	9.1	9.9	8.6	7.9	3.8	7.0
Mean	4.2	4.4	5.6	7.0	7.5	7.5	7.7	9.2	10.0	8.9	5.8	4.2	6.7

(G) Evaporation

(mm/day)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1977	-	-	-	-	-	-	-	-	-	8.8	5.9	7.1	-
1978	-	3.9	-	-	-	-	-	-	-	-	-	-	-
1979	-	-	4.3	5.1	5.1	4.7	5.5	6.6	7.6	-	-	-	-
1980	3.9	-	4.7	-	5.0	5.6	6.1	6.9	8.2	7.2	7.0	4.5	-
Mean	3.9	3.9	4.5	5.1	5.1	5.2	5.8	6.8	7.9	8.0	6.5	5.8	5.9

Table. 1.3 Monthly mean meteorologic data at Bonto Billi station.

(A) Temperature at 7 a.m (°C)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1980	-	-	-	-	-	23.3	-	22.3	22.4	23.4	23.9	-	-

(B) Maximum Temperature (°C)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1980	-	-	-	-	-	24.7	23.2	23.9	24.6	24.8	24.8	-	24.3

(C) Minimum Temperature (°C)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1980	-	-	-	22.4	22.3	21.8	21.0	20.6	20.1	22.0	22.9	-	-

(D) Relative humidity (°C)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1980	-	-	-	-	93.6	89.0	89.0	86.0	75.0	83.0	88.0	-	-

(E) Wind velocity (Km/day)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1980	-	-	-	-	7.5	-	9.3	10.0	12.0	13.0	12.0	-	-

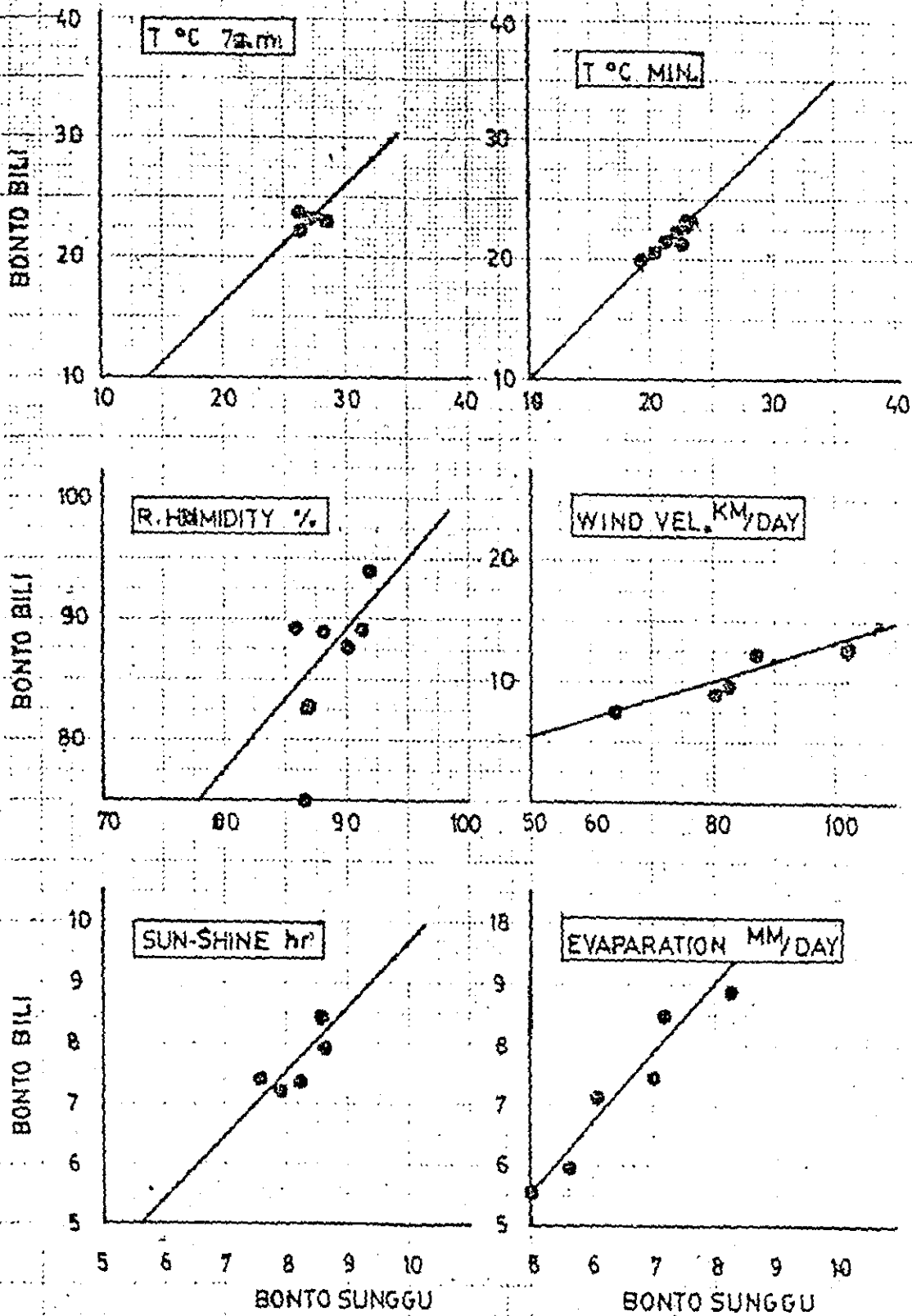
(F) Sun-shine hour (hour)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1980	-	-	-	-	7.4	7.4	8.6	8.7	9.6	8.4	7.3	-	-

(G) Evaporation (mm/day)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1980	-	-	-	-	-	5.4	6.0	7.1	8.9	8.5	7.5	-	-

FIG 1.1 CORRELATION BONTO SUNGGU VS. BONTO BILI



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Comments

Rainfall stations are almost placed in the coastal area and only one station is installed in the mountainous area of the Jeneberang river basin; i.e. Malino station.

The monthly rainfall records at 24 stations are collected, however, the record length is rather short. Their locations are shown in Fig. 2.1 and the isohyetal map of annual rainfall is given in Fig. 2.2

Table. 2.1 Monthly mean rainfall in and around study area

(mm)

REF. NO	STATION	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1	Salojirang	858	702	586	241	170	117	78	31	87	189	352	682	4093
2	Batu Basmi	642	388	629	259	215	119	67	24	81	73	403	577	3477
4	Ujung Pandang	688	513	384	109	67	61	0	2	0	5	37	640	2506
5	S e n r e	747	730	394	274	146	87	29	21	56	141	328	561	3514
6	Sungguminasa	679	596	464	151	113	55	43	11	39	76	242	614	3083
7	Borongloe	789	720	333	215	136	74	14	23	31	118	183	563	3201
8	Kampili	675	467	298	138	82	79	42	22	43	95	202	421	2564
9	Intake Billi-Billi	835	798	405	255	139	77	77	30	32	65	340	623	3676
11	M a l i n o	836	754	632	419	268	180	229	44	67	121	456	694	4700
12	Julu Bori	634	677	433	179	106	44	22	9	36	43	178	441	2802
14	Mandalle	789	713	311	94	119	66	30	12	21	52	165	696	3068
15	Bontokassi (BB IV)	539	578	355	117	65	37	21	6	15	62	157	499	2451
16	Campegaya	974	608	388	131	186	54	32	11	25	56	149	656	3270
17	Maccini Baji	771	674	417	176	108	48	27	16	55	64	208	436	3002
18	Kaleba Jeng	779	658	387	191	157	87	21	12	41	56	179	611	3179
19	Tamalayang	848	439	387	175	115	62	23	12	42	56	174	465	2798
20	Bonto Salang	799	803	439	128	58	51	21	6	28	59	178	566	3136
21	Bonto Langkasa	819	609	332	133	79	61	14	3	9	16	125	509	2707
22	Sanro Bone	531	438	196	138	65	54	14	5	13	21	65	304	1844
23	Tetebatu Cambaya	1089	964	521	227	145	101	24	15	27	93	241	831	4278
24	Palleko (RPL II)	869	541	247	196	83	41	26	14	22	15	175	443	2672
25	B a j e n s (BPL V)	775	522	307	167	107	42	13	3	37	8	213	459	2653
26	Jenemarung	887	793	1114	234	71	78	26	24	24	243	225	396	4115
27	Langkasa	718	574	177	106	112	44	32	4	4	21	142	376	2310

Table 2.2 Monthly rainfall in and around study area (1)

Year	River basin : Maros												Total
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1971	476	580	632	157	111	297	49	25	66	507	162	609	3671
1972	1136	524	339	67	28	0	0	12	0	9	98	361	2574
1973	837	129	446	395	155	81	102	59	208	55	858	628	3953
1974	458	806	581	123	134	35	123	79	158	285	493	603	3878
1975	518	313	532	516	120	97	145	48	230	351	527	726	4123
1976	922	602	460	11	61	156	3	0	0	293	427	704	3639
1977	1606	1873	605	413	260	213	0	44	0	0	139	601	5754
1978	873	870	749	280	349	231	374	43	229	216	422	920	3064
1979	1286	770	1120	313	340	144	2	0	1	59	184	665	4884
1980	595	664	474	162	37	6	1	11	0	145	158	761	3014
Mean	858	702	586	241	170	117	78	31	87	189	352	682	4093

Year	River basin : Maros												Total
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1971	383	551	602	125	168	292	108	3	79	617	250	452	3630
1972	1051	324	812	214	0	0	0	0	0	10	122	313	2846
1973	495	122	241	427	943	50	118	65	208	91	651	465	2876
1974	446	659	369	138	3	36	129	36	83	356	348	318	2921
1975	455	264	374	401	113	178	133	10	115	255	611	617	3527
1976	827	418	503	36	40	92	2	0	0	206	472	548	3144
1977	802	129	468	611	187	241	30	25	0	0	330	641	3464
1978	681	427	282	275	335	277	186	68	258	32	490	792	4103
1979	730	418	480	208	265	49	4	0	1	59	435	622	3271
1980	670	731	409	268	132	3	0	40	17	109	300	792	3471
Mean	64	368	629	259	215	119	67	24	81	73	403	577	3477

Table 2.2 Monthly rainfall in and around study area (2)

Year	Station: Ujung Pandang				River basin : Tallo				Ref. No.4 (mm)				
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1971													
1972													
1973													
1974													
1975													
1976													
1977													
1978													
1979	-	537	297	109	107	106	0	0	0	9	176	574	-
1980	688	488	471	110	26	16	0	4	0	0	97	706	2606
Mean	688	513	384	109	67	61	0	2	0	5	37	640	2506

Year	Station : Senre				River basin : Tallo				Ref. No.5 (mm)				
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1971													
1972													
1973													
1974													
1975	-	-	-	-	-	-	-	70	170	413	673	489	-
1976	869	655	567	92	0	42	0	12	0	126	356	389	3108
1977	1100	1535	411	489	139	122	0	13	0	0	233	740	4782
1978	426	417	340	271	281	150	146	23	165	37	284	761	3301
1979	580	479	402	251	274	104	0	0	0	18	106	342	2556
1980	760	563	246	265	33	15	0	8	0	248	316	642	3096
Mean	747	730	394	274	146	87	29	21	56	141	328	561	3514

Table 2.2 Monthly rainfall in and around study area (3)

Year	River basin : Jeneberang												Total
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1971	615	663	1319	-	-	11	12	2	85	-	-	-	-
1972	-	-	-	-	-	-	-	-	-	-	-	-	-
1973	581	40	272	146	80	4	28	1	78	21	573	-	-
1974	218	-	548	42	68	27	172	25	95	147	189	547	-
1975	513	306	403	168	72	31	76	32	95	252	382	517	2847
1976	834	524	382	5	46	45	0	0	0	87	328	445	2696
1977	1395	1473	195	268	21	55	0	0	0	0	114	510	4031
1978	546	518	284	221	350	166	95	34	0	56	164	658	3092
1979	695	728	430	103	144	143	0	0	0	14	112	668	3057
1980	708	513	336	254	117	13	0	0	0	25	74	948	2988
Mean	679	596	464	151	113	55	43	11	39	76	242	614	3083

Year	River basin : Jeneberang												Total
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1971	-	-	-	-	-	-	-	-	-	-	-	-	-
1972	-	-	-	-	-	-	-	-	-	-	-	-	-
1973	-	-	-	-	-	-	-	-	-	-	-	-	-
1974	-	-	-	-	96	37	65	83	95	387	392	483	-
1975	-	-	456	39	44	39	1	0	0	185	223	391	2641
1976	716	547	278	473	37	83	0	24	0	0	119	347	3944
1977	1280	1303	282	346	288	109	-	23	59	15	119	670	2904
1978	479	514	293	44	246	168	0	0	0	6	152	669	3045
1979	744	723	356	169	102	7	0	3	28	110	102	817	2936
1980	729	513	335	215	136	74	14	23	31	118	185	563	3201
Mean	789	720	464	151	113	55	43	11	39	76	242	614	3083

Table 2.2 Monthly rainfall in and around study area (4)

Year	River basin I Jeneberang												Total
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1971	-	-	-	134	72	141	63	-	-	-	-	385	-
1972	935	494	383	69	15	-	-	-	-	-	-	-	-
1973	-	-	-	-	-	-	-	-	-	-	-	-	-
1974	-	-	-	-	-	-	-	94	203	327	452	-	-
1975	362	345	310	381	99	24	82	13	154	326	513	2678	
1976	658	379	341	26	37	14	8	0	98	255	309	2125	
1977	976	618	128	107	12	82	0	41	0	84	393	2441	
1978	470	388	209	212	232	170	140	41	109	44	333	2906	
1979	647	627	385	84	135	120	0	28	13	34	69	2657	
1980	674	419	330	86	50	0	0	11	14	58	18	1907	
Mean	675	467	298	138	82	79	42	22	43	95	202	421	2564

Station : Intake Billi-Billi River basin : Jeneberang Ref. No.9 (mm)

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1971	-	-	-	-	-	-	-	-	-	52	616	593	-
1972	-	-	-	-	-	-	-	-	-	188	264	401	2820
1973	-	-	-	-	-	-	-	-	-	0	258	540	4459
1974	-	-	-	-	-	-	-	-	-	134	322	664	3858
1975	-	-	-	49	73	78	80	55	0	0	239	745	3587
1976	746	496	390	442	36	81	0	24	0	0	339	790	3388
1977	1177	1527	374	209	379	101	303	52	150	13	340	623	3676
1978	610	584	538	249	134	122	0	0	7	0	0	0	-
1979	877	676	369	325	70	0	0	15	0	0	0	0	-
1980	764	703	405	255	139	77	77	30	32	65	0	0	-
Mean	835	798	405	255	139	77	77	30	32	65	0	0	-

Table 2.2 Monthly rainfall in and around study area (5)

Station: Malino		River basin : Jeneberang												Ref. No.11 (mm)	
Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total		
1971	676	889	886	284	274	383	182	7	110	281	841	478	5291		
1972	1624	566	273	221	63	0	0	0	0	0	352	340	3439		
1973	532	315	491	440	292	88	243	112	241	16	730	-	-		
1974	-	-	-	-	-	-	-	-	-	-	-	-	-		
1975	621	621	558	573	275	205	63	64	23	194	472	615	4284		
1976	861	783	837	228	287	-	-	-	-	-	187	508	-		
1977	-	1463	663	475	294	261	14	41	0	0	275	811	-		
1978	765	655	378	371	236	237	272	111	154	155	446	987	4767		
1979	771	589	821	287	278	134	26	0	4	70	170	671	7039		
1980	835	908	758	868	488	129	32	12	0	252	610	1124	5085		
Mean	836	754	632	419	268	180	229	44	67	121	456	694	4700		

Station : Julu Bori		River basin : Bonda												Ref. No.12 (mm)	
Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total		
1971	-	-	-	-	-	-	-	-	-	-	-	-	-		
1972	-	-	-	-	-	-	-	-	-	-	-	-	-		
1973	-	-	-	-	-	-	-	-	-	-	-	-	-		
1974	-	-	-	-	-	-	-	-	-	-	-	-	-		
1975	-	-	-	456	81	12	51	24	172	135	471	494	1893		
1976	656	408	512	25	61	9	5	0	0	27	47	236	1986		
1977	394	1320	250	202	36	58	0	14	0	0	76	273	2623		
1978	635	460	381	220	307	60	72	14	32	28	180	534	2923		
1979	743	700	669	33	87	114	0	0	3	12	121	541	3023		
1980	741	496	351	134	64	10	0	0	5	55	168	566	2590		
Mean	634	677	433	179	106	44	22	9	36	43	178	441	2802		

Table 2.2 Monthly rainfall in and around study area (6)

Station: Mandalle		River basin : West Coastal area												Ref.No.14	(mm)
Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total		
1971															
1972															
1973															
1974															
1975	-	-	-	0	40	60	45	25	105	253	343	663	-		
1976	745	457	378	1	37	19	0	0	0	41	301	700	2679		
1977	799	1307	238	159	55	72	0	5	0	0	66	401	3102		
1978	542	588	301	201	434	99	135	38	21	10	123	768	3260		
1979	869	498	278	47	147	123	0	0	0	3	108	623	2696		
1980	992	712	359	154	4	23	0	0	0	0	49	1020	3309		
Mean	789	713	311	94	119	66	30	12	21	52	165	696	3068		

Station: Bonto Kassi		River basin : West Coastal area												Ref.No.15	(mm)
Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total		
1971															
1972															
1973															
1974															
1975	-	-	-	170	45	39	18	27	73	334	289	536	-		
1976	276	295	324	2	46	24	10	0	0	12	255	524	1778		
1977	1028	1209	383	144	35	84	0	0	0	0	-	248	-		
1978	391	430	334	175	166	47	98	7	14	25	108	646	2441		
1979	289	587	361	33	80	24	0	0	0	0	99	472	1945		
1980	711	369	359	174	15	0	0	0	0	0	30	573	2231		
Mean	539	578	355	117	65	37	21	6	15	62	157	499	2451		

Table 2.2. Monthly rainfall in and around study area (mm)

Station: Campsaya													
Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1971													
1972													
1973													
1974													
1975	-	-	-	-	27	74	36	45	137	304	339	727	-
1976	1041	346	335	7	34	14	5	0	0	17	240	451	2490
1977	1736	1337	325	149	43	74	0	5	0	0	29	324	4022
1978	427	284	338	249	202	57	119	5	2	5	110	1468	2886
1979	829	605	363	34	206	96	0	0	6	0	153	550	2846
1980	833	466	531	212	4	7	0	7	0	8	18	416	2502
Mean	974	608	388	131	86	54	32	11	25	56	149	656	3270

Station i Maccini Beji													
Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1971													
1972													
1973													
1974													
1975	-	-	-	398	93	16	78	46	255	261	475	709	-
1976	761	416	443	11	28	16	3	0	0	76	343	351	2448
1977	959	1312	318	226	30	65	0	14	0	0	104	178	3206
1978	588	537	241	197	370	57	95	37	77	44	163	686	3092
1979	914	609	494	63	67	131	0	0	0	0	66	42	1892
1980	634	494	591	160	58	0	0	0	0	0	95	650	2097
Mean	771	674	417	176	108	48	29	16	55	64	208	436	3002

Table 2.2 Monthly rainfall in and around study area (8)

Station: Kaleba, Jeng		River basin : Gumanti										Ref. No. 18 (mm)		
Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total	
1971														
1972														
1973														
1974														
1975				449	61	85	13	22	170	244	326	768	-	
1976	627	432	564	42	357	168	10	0	0	54	252	348	2852	
1977	1218	1270	317	167	47	93	0	23	0	0	100	302	3537	
1978	567	495	224	167	298	58	92	25	76	29	225	713	2969	
1979	810	515	393	91	145	104	0	0	0	8	105	637	2908	
1980	672	574	433	228	36	9	9	0	0	0	67	894	2922	
Mean	779	658	387	191	157	87	21	12	41	56	179	611	3179	

Station : Tamalayang		River basin : Gumanti										Ref. NO. 19 (mm)		
Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total	
1971														
1972														
1973														
1974														
1975				332	78	22	22	22	170	236	-	575	-	
1976	759	357	380	37	53	18	6	0	0	39	216	413	2778	
1977	1299	198	292	147	55	-	0	0	8	0	207	204	2410	
1978	495	522	328	165	297	51	105	35	67	27	232	650	2974	
1979	962	534	475	113	154	201	0	0	3	22	167	650	3191	
1980	723	585	456	253	48	14	0	0	0	8	47	294	2428	
Mean	848	439	387	175	115	62	23	12	42	56	174	465	2798	

Table 2.2 Monthly rainfall in the Guntanti study area (9)

Station : Bonto Salang		River basin : Guntanti												Ref. No. 20 (mm)		
Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total			
1971																
1972																
1973																
1974																
1975	-	-	-	341	31	44	40	22	132	305	408	841	-			
1976	808	481	743	65	0	15	6	0	0	12	265	441	2836			
1977	1299	1327	342	139	31	95	0	0	0	0	119	303	3655			
1978	432	1125	345	167	168	31	80	13	19	12	127	632	3151			
1979	783	530	322	51	155	111	0	0	13	4	65	611	2323			
1980	677	550	439	0	22	8	0	0	0	15	84	578	2373			
Mean	799	803	439	128	58	51	21	6	28	59	178	566	3136			

Station : Pt. Langkasa		River basin : Guntanti												Ref. No. 21 (mm)		
Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total			
1971																
1972																
1973																
1974																
1975																
1976	746	359	748	65	5	21	11	0	0	21	249	465	2090			
1977	1150	1302	351	165	54	93	0	0	15	2	110	335	3577			
1978	561	371	395	212	216	57	59	11	27	45	170	693	2817			
1979	980	601	364	30	87	121	0	0	4	4	68	574	2833			
1980	659	411	399	189	36	10	0	0	0	7	15	479	2205			
Mean	819	609	332	133	79	61	14	3	9	16	123	509	2707			

Station: Sambre Bone River basin : Gumentl Ref. No. 22 (mm)

Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1971													
1972													
1973													
1974													
1975	-	-	-	293	35	0	4	24	22	20	-	38	-
1976	37	319	0	13	0	13	0	0	0	0	35	314	731
1977	861	1172	401	118	33	47	0	0	0	0	97	173	2902
1978	366	40	214	122	171	84	71	3	53	105	87	522	1838
1979	901	325	341	60	72	62	6	0	0	0	97	371	2235
1980	487	331	23	217	11	8	0	0	0	0	70	404	1551
Mean	531	438	196	138	65	54	14	5	13	21	65	304	1844

Station : Pote Betu Gambaya River basin : Pappa

Ref. No. 23 (mm)

Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1971													
1972													
1973													
1974													
1975	-	-	-	350	54	37	42	53	130	323	360	886	-
1976	1056	538	729	27	54	70	1	0	0	136	423	795	3829
1977	1658	1831	386	340	63	40	0	22	0	0	191	448	4979
1978	774	720	398	251	389	288	98	11	27	21	259	114	4350
1979	1103	963	628	151	129	155	0	0	0	8	114	760	4011
1980	850	766	362	243	180	11	0	0	0	65	94	983	3654
Mean	1089	964	521	227	145	101	24	15	27	93	241	831	4278

Station: Palleko (B.PL II)												River basin i Pappa				Ref. No. 24 (mm)		
Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total					
1971																		
1972																		
1973																		
1974																		
1975	-	-	-	423	141	0	13	29	77	-	280	-	-					
1976	392	0	0	0	0	11	5	0	1	23	250	369	1051					
1977	1252	1414	319	228	60	102	0	23	0	0	219	372	3989					
1978	526	537	286	161	250	73	136	29	40	25	138	775	2976					
1979	1405	324	305	186	40	55	0	0	11	14	73	124	2537					
1980	774	430	321	174	4	3	0	0	0	12	90	573	2381					
Mean	869	541	247	196	83	41	26	14	22	15	175	443	2672					

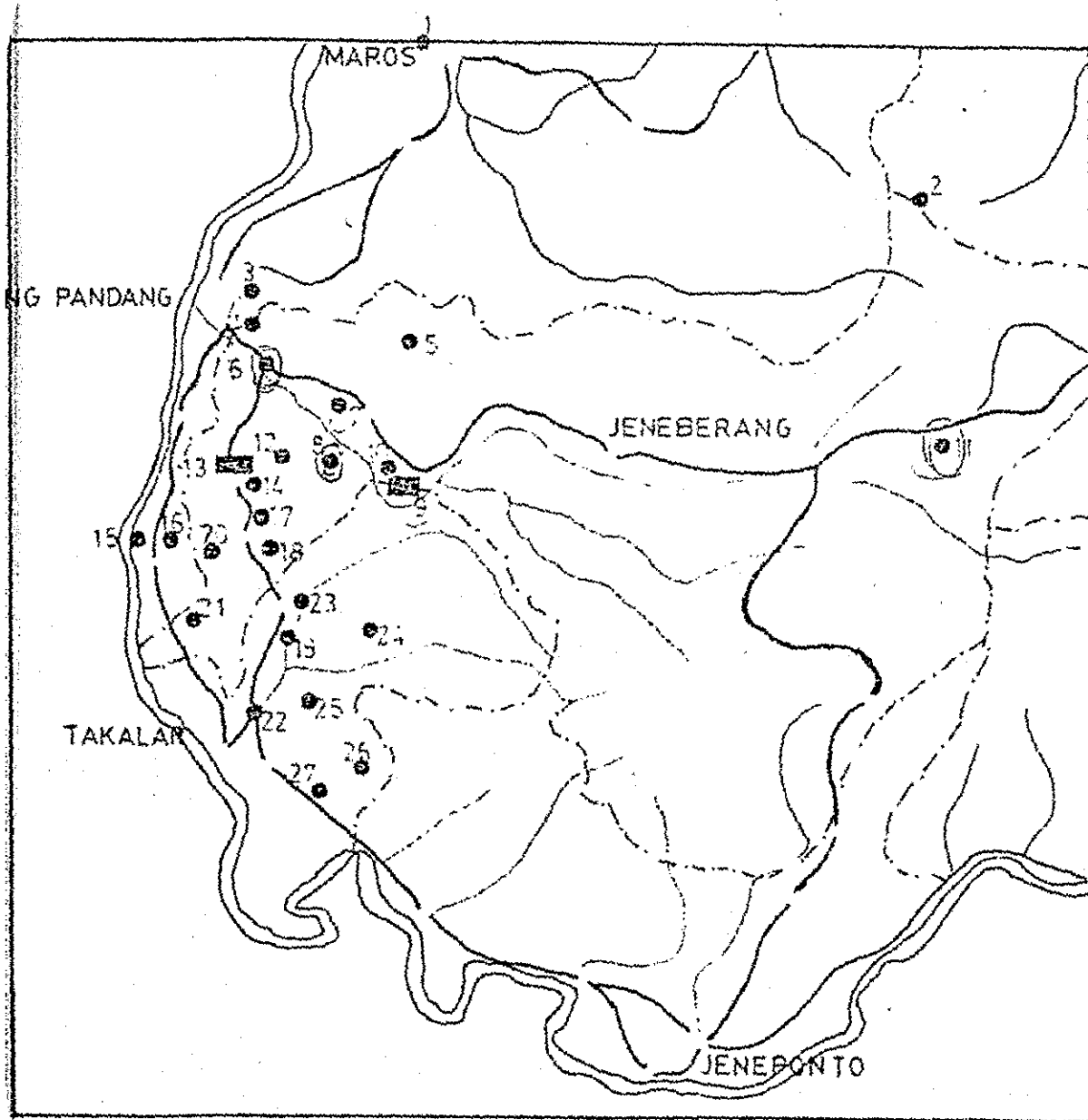
Station i Bajeng												River basin i Pappa				Ref. No. 25 (mm)		
Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total					
1971																		
1972																		
1973																		
1974																		
1975	-	-	-	294	90	1	9	5	78	15	220	442	-					
1976	828	281	283	43	26	40	8	0	78	16	220	372	2195					
1977	875	1145	289	205	89	70	0	6	0	0	159	333	3171					
1978	693	284	283	229	277	36	57	7	62	10	295	441	808					
1979	793	395	380	23	105	83	3	0	0	2	248	437	2469					
1980	682	502	297	204	53	22	0	0	4	0	133	725	2622					
Mean	775	520	307	167	107	42	13	3	37	8	213	459	2653					

Table 2.2 Monthly rainfall in and around study area (12)

Station: Jenomarring		River basin : Sanrangang										Ref. No. 26 (mm)	
Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1971													
1972													
1973													
1974													
1975													
1976	530	390	236	504	37	19	24	81	80	325	470	563	3259
1977	2236	2142	4505	190	69	114	0	11	0	0	138	288	9693
1978	541	587	273	150	98	98	106	22	36	767	227	494	3399
1979	670	501	393	141	105	159	0	0	0	23	46	290	2328
1980	458	343	159	185	45	0	0	12	0	0	243	345	1790
Mean	887	793	1114	234	71	78	26	24	24	243	225	396	4115

Station: Lengkeke		River basin : Sanrangang										Ref. No. 27 (mm)	
Year	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1971													
1972													
1973													
1974													
1975	-	-	-	-	-	-	-	-	-	53	261	538	-
1976	886	398	0	90	32	8	46	0	0	27	350	344	2181
1977	1067	1101	263	134	95	70	0	12	0	0	39	224	3005
1978	394	453	200	67	259	58	111	5	20	37	123	433	2160
1979	530	159	303	63	115	84	0	0	0	9	32	341	1636
1980	709	756	117	176	55	0	0	0	0	0	42	-	1855
Mean	718	574	177	106	112	44	32	4	4	21	142	376	2310

FIG 2.1 LOCATION MAP OF RAINFALL STATION



○ RAINFALL STATION AND REF. NO.

▣ METEOROLOGIE STATION

REF. NO.9 : BONTO SUNGGU

REF. NO.13 : BONTO BILI

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Comments

The stream stage records are collected above listed 12 sites.

Their location and the available data periods are shown in Fig. 3.1 and 3.2, respectively. Note that the stream stage at the Sungguminasa station is not properly read especially in flood times.

Table 3.1 Stream stage records at Tamalate (1)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Tamalate					1979	
N	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1								0.42	0.43	0.41	0.44	1.02	
2								0.41	0.44	0.44	0.41	1.12	
3								0.39	0.45	0.42	0.43	1.38	
4								0.49	0.44	0.59	0.43	1.38	
5								0.48	0.42	0.61	0.42	1.27	
6								0.48	0.43	0.49	0.44	1.11	
7								0.75	0.45	0.49	0.44	1.15	
8								0.73	0.41	0.24	0.44	1.47	
9								0.48	0.45	0.48	0.44	1.30	
10								0.73	0.43	0.46	0.47	1.42	
11								0.48	0.44	0.49	0.46	1.02	
12								0.71	0.45	0.48	0.47	1.45	
13								0.72	0.41	0.47	0.47	1.17	
14								0.46	0.43	0.45	0.79	1.10	
15								0.45	0.45	0.47	0.67	1.02	
16								0.47	0.44	0.46	0.45	1.00	
17								0.45	0.44	0.45	0.65	1.38	
18								0.73	0.44	0.45	0.64	1.55	
19								0.48	0.41	0.44	0.66	1.47	
20								0.48	0.40	0.45	0.77	1.57	
21								0.48	0.43	0.44	0.64	1.32	
22								0.48	0.43	0.43	0.61	1.07	
23								0.46	0.43	0.45	0.58	1.12	
24								0.67	0.43	0.56	0.64	1.47	
25								0.45	0.44	0.55	0.68	1.50	
26								0.45	0.42	0.47	0.76	1.53	
27								0.44	0.42	0.46	0.85	1.67	
28								0.45	0.43	0.49	0.83	1.30	
29								0.48	0.42	0.43	0.79	1.37	
30								0.44	0.42	0.42	0.83	1.32	
31								0.44		0.43		1.28	
TOTAL								16.03	12.93	14.37	17.60	40.30	
AVERAGE								0.52	0.43	0.46	0.59	1.30	

Table. 3.1 Stream stage records at Tamalate (2)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Tamalate					1980	
N	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1	1.38	0.49	1.75	0.52	0.62	0.78	0.58	0.45	0.32	0.25	0.75	1.60	
2	1.18	0.45	0.78	0.45	0.55	0.82	0.55	0.40	0.31	0.27	0.57	1.37	
3	1.30	0.64	0.55	0.43	0.85	0.76	0.57	0.45	0.35	0.25	0.68	1.35	
4	1.33	0.52	0.42	0.50	0.90	0.80	0.58	0.43	0.35	0.25	0.70	1.35	
5	1.47	1.06	0.42	0.65	1.00	0.77	0.50	0.45	0.32	0.25	0.65	1.58	
6	1.57	0.88	0.45	0.77	0.58	0.80	0.49	0.43	0.33	0.25	0.53	1.35	
7	1.77	1.05	0.46	0.88	0.87	0.72	0.63	0.45	0.37	0.27	0.56	1.25	
8	2.17	1.29	0.60	0.80	0.52	0.73	0.56	0.40	0.38	0.25	0.55	1.23	
9	2.83	1.16	0.85	0.73	0.45	0.71	0.51	0.33	0.30	0.25	0.55	1.53	
10	2.27	0.81	1.18	0.68	0.42	0.67	0.55	0.35	0.30	0.28	0.60	1.68	
11	1.73	1.28	0.65	0.88	0.48	0.63	0.53	0.40	0.30	0.25	0.88	1.42	
12	0.95	1.33	0.75	0.83	0.42	0.72	0.55	0.37	0.30	0.25	0.85	1.55	
13	0.43	2.14	0.88	0.88	0.38	0.66	0.51	0.35	0.30	0.25	0.87	1.95	
14	0.49	1.83	1.25	0.83	0.43	0.62	0.55	0.40	0.33	0.43	0.60	2.08	
15	0.46	1.60	1.21	0.70	0.40	0.37	0.51	0.40	0.30	0.42	0.50	1.57	
16	0.47	1.38	1.63	0.83	0.40	0.69	0.51	0.40	0.28	0.47	0.53	1.35	
17	0.43	1.58	0.71	1.00	0.31	0.63	0.51	0.37	0.27	0.47	0.68	1.17	
18	1.16	1.11	1.43	1.12	0.35	0.53	0.53	0.38	0.28	0.48	0.92	1.18	
19	1.97	0.84	1.23	0.90	0.42	0.79	0.55	0.35	0.28	0.53	0.87	1.28	
20	1.27	0.74	1.01	0.33	0.30	0.75	0.50	0.35	0.27	0.68	0.95	1.40	
21	1.10	0.91	1.01	0.93	0.37	0.63	0.52	0.35	0.30	0.66	0.93	1.57	
22	0.88	0.93	0.78	0.87	0.36	0.62	0.46	0.32	0.27	0.75	0.97	1.92	
23	0.75	1.31	0.80	0.73	0.48	0.65	0.43	0.33	0.25	0.60	0.82	1.67	
24	0.60	1.03	0.75	0.62	0.52	0.72	0.50	0.37	0.25	0.55	0.95	2.30	
25	0.53	0.93	0.88	0.67	0.90	0.59	0.50	0.35	0.25	0.62	0.98	2.07	
26	0.43	1.41	1.13	0.83	0.70	0.60	0.45	0.33	0.25	0.55	1.15	1.75	
27	0.47	1.06	0.88	0.83	0.42	0.67	0.45	0.33	0.25	0.66	1.40	1.58	
28	0.51	1.31	0.53	1.00	0.40	0.62	0.50	0.33	0.25	0.66	0.97	1.42	
29	0.48	0.98	0.81	0.87	0.45	0.65	0.46	0.35	0.25	0.70	1.48	1.23	
30	0.47		0.63	1.05	0.58	0.60	0.38	0.32	0.25	0.78		2.06	
31	0.44		0.47		0.90		0.43	0.35		0.70		2.00	
TOTAL	33.29	32.07	26.94	23.61	16.84	20.70	15.85	11.64	8.91	14.03	24.42	49.11	
AVERAGE	1.07	1.10	0.87	0.79	0.54	0.69	0.51	0.38	0.30	0.45	0.81	1.58	

Table 3.2 Stream stage records at Sungguminasa (1)

River System		River				Observatory					Year	
JENEBERANG		JENEBERANG				SUNGGUMINASA					1979	
N	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1							0.60	0.28	0.20	0.20	0.25	0.81
2							0.63	0.29	0.20	0.20	0.25	1.12
3							0.66	0.28	0.20	0.20	0.26	1.23
4							0.66	0.27	0.20	0.20	0.27	1.43
5							0.65	0.27	0.20	0.23	0.27	1.27
6							0.65	0.27	0.20	0.23	0.28	1.13
7							0.63	0.27	0.20	0.23	0.30	1.29
8							0.64	0.27	0.20	0.24	0.31	1.44
9							0.52	0.27	0.20	0.24	0.33	1.67
10							0.50	0.27	0.20	0.24	0.35	1.44
11							0.50	0.26	0.20	0.24	0.35	1.20
12							0.42	0.26	0.20	0.24	0.34	1.13
13							0.40	0.26	0.20	0.25	0.35	1.36
14							0.38	0.26	0.20	0.25	0.35	1.41
15							0.44	0.26	0.20	0.25	0.37	1.25
16							0.37	0.26	0.20	0.25	0.38	1.11
17							0.34	0.26	0.20	0.25	0.40	1.21
18							0.38	0.26	0.20	0.25	0.41	0.99
19							0.35	0.25	0.20	0.25	0.39	1.35
20							0.32	0.25	0.20	0.25	0.41	1.56
21							0.33	0.25	0.20	0.25	0.43	1.66
22							0.34	0.25	0.20	0.25	0.45	1.46
23							0.32	0.25	0.20	0.25	0.47	1.34
24							0.31	0.25	0.20	0.25	0.49	1.22
25							0.33	0.25	0.20	0.25	0.51	1.36
26							0.32	0.25	0.20	0.25	0.53	1.68
27							0.32	0.25	0.20	0.25	0.58	1.97
28							0.31	0.25	0.20	0.25	0.64	1.46
29							0.32	0.25	0.20	0.25	0.67	1.49
30							0.30	0.25		0.25	0.68	1.26
31							0.30	0.25		0.25		1.17
TOTAL							13.55	8.07	6.00	7.43	12.07	41.48
AVERAGE							0.44	0.26	0.20	0.24	0.40	1.34

Table 3.2 Stress stage records at Sungguminasa (11)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Sungguminasa					1980	
M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1	1.23	1.27	1.48	1.04		0.78	0.25	0.20			0.05		
2	1.20	1.25	1.52	1.00		0.76	0.25	0.20			0.05		
3	1.28	1.18	1.42	0.95		0.97	0.25	0.20			0.05		
4	1.38	1.27	1.35	0.89		0.83	0.25	0.20			0.06		
5	1.55	1.35	1.32	0.95		1.02	0.25	0.19			0.08		
6	1.64	1.42	1.35	1.01	NO	1.26	0.24	0.16			0.10		
7	1.62	1.48	1.43	0.73	ON	1.27	0.23	0.15			0.11		
8	1.68	1.50	1.46	1.13		1.12	0.22	0.15			0.15		
9	1.69	1.59	1.51	0.97	PA	1.06	0.20	0.15			0.15		
10	2.05	2.04	1.78	1.13	VA	1.19	0.20	0.12			0.18		
11	2.29	2.17	2.03	1.22		1.08	0.20	0.10	NO		0.23		
12	1.60	2.41	1.61	1.27		0.99	0.20	0.10	ON		0.16		
13	1.81	2.52	1.49	1.10		0.91	0.20	0.10	WA		0.24		
14	1.50	2.58	1.37	1.10		0.84	0.20	0.10	TE	0.05	0.29		
15	1.51	2.47	1.28	1.32		0.92	0.19	0.10	BE	0.05	0.26		
16	1.45	2.67	1.57	1.29		0.94	0.18	0.10		0.05	0.25		
17	1.65	1.92	2.09	1.38		0.89	0.17	0.10		0.05	0.25		
18	1.95	1.68	2.29	1.40		0.88	0.17	0.10		0.05	0.28		
19	2.16	1.58	2.46	1.53	1.01	0.68	0.16	0.10		0.05	0.31		
20	2.47	1.50	1.67	1.49	0.98	0.67	0.15	0.07		0.05	0.35		
21	2.75	1.37	1.53	1.33	0.96	0.73	0.15	0.05		0.05	0.40		
22	2.34	1.34	1.39	1.24	0.92	0.65	0.15	0.05		0.05	0.34		
23	2.03	1.30	1.30	1.14	1.04	0.62	0.15	0.05		0.05	0.29		
24	1.55	1.45	1.43	1.06	0.87	0.73	0.15	0.05		0.05	0.33		
25	1.43	1.54	1.35	1.03	0.86	1.07	0.14	0.05		0.05	0.38		
26	1.37	1.65	1.26	0.95	0.79	0.75	0.12	0.05		0.06	0.40		
27	1.28	1.56	1.20	0.93	0.79	0.65	0.10	0.05		0.07	0.41		
28	1.12	1.45	1.19	1.03	0.92	0.59	0.10	0.05		0.08	0.56		
29	1.07	1.55	1.13	1.18	0.84	0.52	0.10	0.05		0.10	0.52		
30	1.19		1.07	1.23	0.79	0.55	0.10	0.05		0.10	0.54		
31	1.25		1.06		0.77		0.10	0.05		0.10			
TOTAL	51.07	49.06	46.39	34.03		25.92	5.52	3.24			7.77		
AVERAGE	1.65	1.69	1.55	1.13		0.86	0.18	0.10			0.26		

Table. 3.3 Stream stage records at Gowa Paper mill Intake (1)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Gows paper mill intake					1977	
NO	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1	1.50	-	2.10	1.65	1.00	0.40	0.40	0.30	0.40	0.40	0.40	1.10	
2	1.60	-	2.00	1.55	0.90	0.40	0.40	0.40	0.40	0.40	0.40	0.95	
3	1.65	-	1.90	1.50	0.85	0.33	0.40	0.40	0.40	0.40	0.40	1.00	
4	2.10	-	1.80	1.50	0.80	0.30	0.40	0.45	0.40	0.40	0.40	1.15	
5	2.05	-	2.10	1.50	0.90	0.30	0.25	0.45	0.40	0.40	0.40	0.90	
6	2.60	-	2.10	1.40	0.80	0.20	0.30	0.40	0.40	0.40	0.40	0.80	
7	3.20	-	2.90	1.40	0.50	0.20	0.30	0.40	0.40	0.40	0.40	0.75	
8	3.40	-	2.30	2.00	0.65	0.30	0.50	0.30	0.40	0.40	0.40	0.80	
9	2.75	2.00	2.10	2.40	0.90	0.35	0.60	0.30	0.40	0.40	0.40	1.10	
10	2.50	2.65	1.80	2.50	0.70	0.40	0.60	0.40	0.40	0.40	0.40	1.10	
11	2.55	2.40	1.65	3.15	0.60	0.40	0.60	0.40	0.40	0.40	0.40	1.10	
12	2.80	2.90	1.50	2.20	0.60	0.30	0.60	0.40	0.40	0.40	0.40	0.90	
13	1.80	3.15	1.75	1.95	0.60	1.50	0.60	0.40	0.40	0.40	0.40	0.80	
14	1.53	3.40	1.90	1.90	0.60	1.55	0.60	0.40	0.40	0.40	0.40	1.10	
15	1.50	3.60	1.80	1.90	0.60	1.25	0.50	0.35	0.40	0.40	0.40	1.10	
16	1.33	3.65	1.65	1.85	0.60	1.00	0.50	0.30	0.40	0.40	0.40	1.43	
17	1.30	3.65	1.70	1.60	1.10	0.90	0.45	0.30	0.40	0.40	0.40	1.23	
18	1.40	2.70	2.10	1.60	1.15	1.70	0.40	0.30	0.40	0.40	0.40	1.52	
19	2.05	2.50	1.75	1.70	0.60	1.30	0.40	0.30	0.40	0.40	0.40	1.55	
20	2.10	2.45	1.70	1.55	0.60	1.20	0.40	0.30	0.40	0.40	0.60	1.25	
21	2.00	2.15	1.60	1.55	0.60	1.00	0.40	0.30	0.40	0.40	0.60	1.00	
22	2.80	2.60	1.60	1.50	0.70	0.80	0.40	0.30	0.40	0.40	0.60	1.40	
23	3.05	3.35	1.60	1.40	0.60	0.80	0.40	0.30	0.40	0.40	0.80	1.65	
24	3.80	3.25	1.60	1.25	0.60	0.45	0.40	0.35	0.40	0.40	0.70	1.23	
25	2.85	3.20	1.65	0.60	0.50	0.40	0.40	0.40	0.40	0.40	0.75	1.10	
26	2.35	3.15	1.60	0.50	0.50	0.40	0.45	0.40	0.40	0.40	0.50	1.10	
27	2.00	2.80	1.50	0.40	0.40	0.40	0.50	0.40	0.40	0.40	0.50	1.20	
28	1.80	2.65	1.50	0.33	0.40	0.40	0.50	0.40	0.40	0.40	0.75	1.30	
29	1.65		1.60	1.00	0.40	0.40	0.50	0.40	0.40	0.35	0.90	1.28	
30	1.80		1.60	1.00	0.40	0.40	0.45	0.40	0.40	0.40	-	1.33	
31	1.90		1.70	-	0.40	-	0.30	0.40	-	0.40	-	1.50	
TOTAL													
AVERAGE													

Table. 3.3 Stream stage records at Gowa Paper mill Intake (3)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Gowa paper mill intake					1979	
D	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		1.05	0.90	1.07	0.93	1.20	0.50	0.57	0.40	0.40	0.40	0.40	0.97
2		1.17	2.00	0.73	0.90	1.10	0.53	0.72	0.40	0.40	0.40	0.40	1.40
3		1.23	1.40	0.70	0.80	1.35	0.60	0.70	0.40	0.40	0.50	0.38	2.00
4		1.10	0.92	1.12	0.80	1.30	0.65	0.60	0.40	0.40	0.50	0.40	1.20
5		1.03	1.00	0.70	0.80	1.27	0.63	0.60	0.40	0.40	0.50	0.40	0.83
6		1.65	0.60	1.00	0.86	1.03	1.14	0.60	0.40	0.40	0.50	0.40	0.83
7		2.68	0.60	1.85	1.03	1.55	0.80	0.60	0.40	0.40	0.50	0.40	1.15
8		3.23	0.60	1.15	1.57	1.10	0.77	0.60	0.40	0.40	0.50	0.40	1.78
9		2.17	0.60	1.80	1.13	0.90	0.83	0.60	0.40	0.40	0.50	0.40	1.37
10		2.40	0.60	1.28	1.03	0.80	0.70	0.60	0.40	0.40	0.50	0.40	1.32
11		3.43	1.00	1.60	0.87	0.80	0.70	0.47	0.40	0.40	0.50	0.40	1.29
12		2.38	1.07	1.75	0.80	1.20	0.70	0.47	0.40	0.40	0.50	0.48	1.33
13		1.53	0.95	1.33	0.73	0.97	0.60	0.40	0.40	0.40	0.50	0.60	1.03
14		0.95	1.03	1.80	0.67	1.17	0.60	0.40	0.40	0.40	0.50	0.50	0.92
15		0.93	1.55	1.30	0.60	0.83	0.62	0.50	0.40	0.40	0.50	0.50	0.77
16		1.10	1.13	0.83	0.60	0.80	0.60	0.40	0.40	0.40	0.50	0.50	0.88
17		1.00	0.70	0.87	0.60	0.70	0.60	0.40	0.40	0.40	0.50	0.50	1.19
18		1.00	0.70	0.73	0.60	0.60	0.53	0.40	0.40	0.40	0.50	0.50	1.43
19		0.90	0.90	0.78	0.60	0.60	0.53	0.40	0.40	0.40	0.50	0.50	1.43
20		0.87	1.00	0.80	0.60	0.60	0.60	0.40	0.40	0.40	0.50	0.50	1.31
21		0.80	0.70	0.95	0.90	0.60	0.60	0.40	0.40	0.40	0.40	0.50	1.15
22		1.13	0.60	1.05	1.42	0.60	0.60	0.40	0.40	0.40	0.47	0.50	0.87
23		0.95	0.63	1.00	1.07	0.60	0.50	0.40	0.40	0.40	0.53	0.50	1.15
24		0.75	0.93	0.80	1.00	0.60	0.50	0.40	0.40	0.40	0.60	0.50	1.18
25		0.71	0.93	0.63	1.15	0.60	0.50	0.40	0.40	0.40	0.60	0.63	0.92
26		0.66	2.34	0.98	1.36	0.60	0.50	0.40	0.40	0.40	0.60	0.60	1.26
27		0.70	1.60	1.00	1.23	0.53	0.50	0.40	0.40	0.40	0.60	0.60	1.25
28		0.65	-	1.00	0.87	0.60	0.50	0.40	0.40	0.40	0.60	0.62	0.93
29		0.65	-	1.48	0.87	0.60	0.50	0.40	0.40	0.40	0.50	0.63	1.00
30		0.60	-	1.44	0.97	0.53	0.50	0.40	0.40	0.40	0.43	0.89	1.23
31		0.60	-	1.15	0.50	-	0.40	0.40	0.40	0.40	-	-	1.35
TOTAL													
AVERAGE													

Table. 3.3 Stream stage records at Gowa Paper mill Intake (4)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Gowa paper mill intake					1980	
D	H	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		0.87	0.60	1.16	0.60	0.70	0.50	0.50	0.50	0.50	0.50	0.50	0.85
2		0.80	0.60	1.05	0.50	0.63	0.50	0.50	0.50	0.50	0.50	0.50	0.80
3		0.87	0.60	1.08	0.50	0.70	0.50	0.50	0.50	0.50	0.50	0.50	0.80
4		1.20	0.88	1.25	0.53	1.00	0.50	0.50	0.50	0.50	0.41	0.50	0.98
5		1.58	0.60	1.05	0.98	0.76	0.50	0.55	0.50	0.50	0.50	0.50	1.16
6		1.65	1.86	0.91	0.83	0.70	0.50	0.50	0.50	0.50	0.50	0.50	1.00
7		1.90	2.13	0.85	0.80	0.66	0.50	0.50	0.50	0.50	0.50	0.50	1.00
8		2.63	1.68	0.90	1.18	0.63	0.50	0.50	0.50	0.50	0.50	0.56	1.17
9		2.93	1.13	1.49	0.90	0.70	0.50	0.50	0.50	0.50	0.50	0.56	1.13
10		2.36	1.07	1.30	0.95	0.67	0.50	0.50	0.50	0.50	0.50	0.73	1.30
11		2.13	1.00	1.00	0.82	0.65	0.50	0.50	0.50	0.50	0.50	0.76	1.17
12		1.27	2.45	0.60	0.77	0.57	0.50	0.50	0.50	0.50	0.50	0.63	1.25
13		1.07	2.93	0.75	0.66	0.65	0.50	0.50	0.50	0.50	0.50	0.60	1.99
14		1.03	2.13	1.71	1.45	0.60	0.50	0.50	0.50	0.50	0.50	0.50	1.82
15		1.00	2.10	1.43	1.20	0.60	0.50	0.50	0.50	0.50	0.50	0.50	1.36
16		1.47	1.95	0.96	1.23	0.60	0.50	0.50	0.50	0.50	0.50	0.41	0.90
17		1.00	1.88	1.94	1.50	0.60	0.50	0.50	0.50	0.50	0.50	0.35	0.85
18		1.40	1.57	1.61	0.93	0.60	0.50	0.50	0.50	0.50	0.50	0.65	1.00
19		2.93	1.22	1.28	0.83	0.60	0.75	0.50	0.50	0.50	0.50	0.74	1.42
20		2.78	1.13	1.61	0.74	0.43	0.73	0.50	0.50	0.50	0.50	0.50	1.54
21		2.91	1.40	1.50	0.67	0.40	0.66	0.50	0.50	0.50	0.70	0.63	1.50
22		1.75	1.42	1.36	0.73	0.40	0.60	0.50	0.50	0.50	0.63	0.60	1.00
23		1.35	1.75	1.05	1.03	0.60	0.60	0.50	0.50	0.50	0.60	0.50	1.30
24		1.13	1.57	1.06	0.67	0.90	0.60	0.50	0.50	0.50	0.60	0.57	2.18
25		1.05	1.33	0.91	0.87	0.83	0.60	0.50	0.50	0.50	0.60	0.80	1.50
26		0.88	1.60	0.85	0.75	0.67	0.60	0.50	0.50	0.50	0.60	0.87	1.02
27		0.75	1.43	0.73	0.88	0.63	0.50	0.50	0.38	0.50	0.60	1.20	1.06
28		0.70	1.51	1.01	1.05	0.63	0.50	0.50	0.50	0.50	0.60	0.87	0.90
29		0.67	1.37	1.06	1.23	0.60	0.50	0.50	0.50	0.50	0.90	0.97	1.13
30		0.63	-	0.96	1.00	0.60	0.50	0.50	0.50	0.50	0.65	1.10	1.35
31		0.60	-	-	-	0.50	-	0.50	0.50	-	0.50	-	-
TOTAL													
AVERAGE													

Table. 3.3 Stream stage records at Gowa Paper mill Intake (5)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Gowa paper mill intake					1981	
M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1	1.27	0.80	1.17										
2	1.00	0.80	1.95										
3	0.90	0.66	1.00										
4	0.80	1.05	0.80										
5	0.80	0.96	0.73										
6	1.20	0.78	0.70										
7	2.27	1.33	0.70										
8	1.73	2.20	0.70										
9	1.36	1.63	0.70										
10	1.55	1.65	0.77										
11	2.66	1.91	0.70										
12	1.50	2.18	0.70										
13	0.96	1.47	0.70										
14	0.95	1.14	0.70										
15	0.80	1.15	0.53										
16	0.95	1.20											
17	1.00	1.03											
18	1.66	0.90											
19	1.13	0.90											
20	0.73	0.86											
21	0.87	0.80											
22	1.10	0.70											
23	1.45	0.70											
24	0.81	0.70											
25	0.90	0.70											
26	1.73	0.77											
27	1.90	1.92											
28	1.87	1.30											
29	1.60	-											
30	1.49												
31	0.97												
TOTAL													
AVERAGE													

Table 3.4 Stream stage records at Kapali weir (1)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Kapali weir					1971	
N	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1	17.03	17.05	17.00	17.13	16.65	16.98	16.88	16.38	15.93	15.98	16.80	17.13	
2	17.05	17.15	16.98	17.10	16.65	16.93	16.93	16.33	15.95	16.15	16.85	16.98	
3	17.03	17.15	16.95	17.05	16.60	16.88	16.88	16.23	15.93	16.28	16.85	17.08	
4	17.00	17.19	16.93	16.95	16.68	16.83	16.83	16.18	15.95	16.28	16.90	17.35	
5	16.95	17.20	17.03	16.98	16.65	16.83	16.78	16.20	16.03	16.23	16.93	17.20	
6	16.93	17.15	17.03	17.00	16.55	16.95	16.75	16.20	16.23	16.13	16.83	17.15	
7	17.00	17.20	17.00	16.90	16.70	17.00	16.73	16.18	16.16	16.05	16.90	17.13	
8	17.08	17.25	17.05	16.90	16.75	17.05	16.70	16.16	16.03	16.05	16.90	17.08	
9	17.10	17.18	17.23	16.95	16.80	17.00	16.70	16.15	16.00	16.00	16.95	17.05	
10	17.08	17.10	17.55	17.08	16.83	16.95	16.70	16.10	15.98	16.00	16.93	17.03	
11	17.03	17.05	17.38	17.05	16.88	16.98	16.65	16.03	15.95	16.05	17.13	17.00	
12	17.00	17.05	17.33	17.05	16.90	17.00	16.65	16.05	15.95	16.05	17.03	17.00	
13	17.00	17.10	17.33	17.05	16.85	16.95	16.60	16.03	15.95	16.05	16.93	16.90	
14	16.90	17.08	17.43	17.00	16.90	16.93	16.65	16.00	15.93	15.98	16.90	17.00	
15	16.88	17.03	17.43	16.95	16.95	16.93	16.60	15.95	15.90	15.95	16.85	17.08	
16	16.85	17.00	17.90	16.90	16.95	16.95	16.63	15.93	15.93	15.98	16.88	17.08	
17	16.95	16.95	17.40	16.88	17.00	17.00	16.65	16.00	15.95	15.95	16.95	16.98	
18	16.93	16.95	17.23	16.85	17.05	17.03	16.70	16.00	15.95	16.03	17.03	16.95	
19	17.03	17.05	17.33	16.85	16.95	17.00	16.68	15.95	15.93	16.63	17.20	16.90	
20	17.13	17.05	17.15	16.93	16.95	16.98	16.65	15.95	15.90	16.58	17.25	16.93	
21	17.18	17.23	17.10	16.85	17.00	16.93	16.65	15.95	15.85	16.50	17.28	16.95	
22	17.13	17.20	17.13	16.80	17.00	16.93	16.70	15.95	15.88	16.60	17.23	16.98	
23	17.10	17.18	17.18	16.85	16.90	17.00	16.70	15.93	15.88	16.65	17.05	16.93	
24	17.15	17.13	17.13	16.85	16.90	17.00	16.70	15.90	15.85	16.60	17.03	16.90	
25	17.20	17.10	17.08	16.80	16.95	16.93	16.70	15.95	15.83	16.65	17.00	16.95	
26	17.30	17.13	17.05	16.80	16.93	16.93	16.65	15.95	15.80	16.65	17.10	16.95	
27	18.48	17.18	17.00	16.75	16.90	16.93	16.60	15.95	15.85	16.73	17.10	16.93	
28	17.33	17.18	16.95	16.75	17.03	17.03	16.93	15.98	15.88	16.83	17.15	16.85	
29	17.25		16.95	16.70	17.00	17.00	16.70	16.18	15.90	16.80	17.05	16.83	
30	17.18		17.00	16.70	16.95	16.93	16.68	16.13	15.95	16.85	17.00	17.05	
31	17.15		17.03		16.93								
TOTAL													
AVERAGE													

Table 3.4 Stream stage records at Kampili weir (2)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Kampili weir					1972	
N	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1	18.13	17.13	17.05	17.08	16.93	17.00	15.91	15.67	15.67	15.67	15.66	16.61	
2	18.03	17.08	17.00	17.13	16.90	16.04	16.80	15.67	15.66	15.65	15.66	16.63	
3	18.80	17.05	16.95	17.13	16.88	16.05	15.89	15.67	15.66	15.66	15.67	16.65	
4	18.05	17.10	17.05	17.03	16.90	16.11	15.89	15.67	15.66	15.66	15.68	16.67	
5	17.33	17.03	17.03	16.98	16.95	16.11	15.89	15.67	15.66	15.66	15.68	16.69	
6	18.20	17.08	17.08	17.00	16.95	17.10	15.89	15.67	15.66	15.66	15.68	16.70	
7	17.60	17.03	17.15	17.08	17.03	16.15	15.88	15.67	15.66	15.66	15.69	16.68	
8	17.15	17.05	17.13	17.08	17.00	16.13	15.87	15.67	15.66	15.65	16.60	16.73	
9	17.85	17.03	17.18	17.03	16.95	16.13	15.87	15.67	15.65	15.65	15.70	16.65	
10	18.95	17.03	17.13	17.05	16.98	16.12	15.86	15.69	15.65	15.65	15.73	16.95	
11	17.35	17.13	17.15	17.08	16.90	16.11	15.86	15.68	15.65	15.65	15.75	16.70	
12	17.48	17.18	17.15	17.03	16.85	16.11	15.87	15.68	15.65	15.65	15.75	16.77	
13	18.63	17.10	17.23	17.00	16.88	16.09	15.86	15.67	15.65	15.65	15.74	16.70	
14	17.75	17.18	17.15	17.03	16.88	16.04	15.84	15.66	15.65	15.65	15.71	16.70	
15	17.35	17.58	17.13	16.98	16.83	16.03	15.82	15.66	15.65	15.65	16.60	16.65	
16	17.23	17.23	17.08	16.95	16.78	15.96	15.79	15.66	15.65	15.65	15.69	16.25	
17	17.13	17.08	17.20	16.95	16.48	15.98	15.79	15.66	15.64	15.65	15.68	16.23	
18	17.10	17.08	17.28	17.00	16.32	15.95	15.77	15.68	15.64	15.64	15.71	16.63	
19	17.03	17.13	17.13	17.13	16.33	15.95	15.76	15.68	15.64	15.64	15.75	16.35	
20	17.15	17.08	17.08	17.08	16.28	15.98	15.73	15.68	15.64	15.64	15.82	16.18	
21	17.10	17.05	17.03	17.03	16.28	15.98	15.73	15.68	15.64	15.64	15.85	16.13	
22	17.03	17.00	17.00	17.08	16.28	15.96	15.71	15.68	15.65	15.65	15.83	16.08	
23	16.95	17.08	16.98	17.00	16.28	15.94	15.60	15.68	15.65	15.65	15.81	16.00	
24	16.95	17.10	16.95	17.00	16.23	15.92	15.69	15.69	15.65	15.65	15.79	16.45	
25	17.08	17.03	16.90	16.93	16.18	15.92	15.69	15.68	15.65	15.65	15.78	16.70	
26	17.10	17.00	16.93	16.93	16.17	15.92	15.69	15.68	15.65	15.65	15.81	16.68	
27	17.08	17.05	16.50	17.00	16.17	15.92	15.68	15.68	15.65	15.65	15.86	16.70	
28	17.05	17.13	16.98	16.98	16.15	15.92	15.68	15.68	15.65	15.65	16.04	17.28	
29	17.05	17.08	16.95	17.03	16.16	15.93	15.68	15.67	15.65	15.65	16.18	17.18	
30	17.03	-	16.93	16.95	17.00	15.93	15.68	15.67	15.65	15.65	16.20	17.13	
31	17.08	-	16.90	-	17.00	-	15.68	15.67	-	15.65	-	17.05	
TOTAL													
ERA													

Table 3.4 Stream stage records at Kampili weir (3)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Kampili weir					1973.	
D	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		1.700	17.00	16.68	16.95	16.98	16.90	16.50	16.18	15.95	17.18	16.05	17.08
2		16.93	17.03	17.08	17.00	16.95	16.88	16.58	16.13	15.93	17.10	16.23	17.05
3		16.93	16.85	17.03	17.08	17.00	16.85	16.58	16.08	15.88	17.03	16.28	17.03
4		16.95	16.70	16.80	17.10	16.95	16.80	16.58	16.05	15.85	16.98	17.15	17.03
5		17.13	16.65	16.75	17.08	17.00	16.85	16.55	16.05	15.90	16.90	17.08	16.95
6		17.08	16.60	16.90	17.05	16.95	16.93	16.60	16.05	15.90	16.83	16.98	17.00
7		17.10	16.65	17.03	17.23	17.08	16.95	16.78	16.30	15.90	16.70	16.95	17.03
8		17.13	16.70	17.05	17.13	17.00	16.88	17.15	16.15	15.90	16.23	16.88	16.98
9		17.53	16.70	17.05	17.05	17.08	16.83	16.98	16.15	15.90	16.18	16.83	16.98
10		17.05	16.75	17.03	17.03	17.03	16.85	17.50	16.43	16.10	16.13	16.78	17.08
11		16.88	16.85	17.00	17.00	17.08	16.88	17.08	16.18	16.20	16.07	16.80	16.95
12		16.80	17.10	16.98	17.00	17.00	16.88	16.93	16.13	16.18	16.03	16.83	16.93
13		16.70	17.10	17.13	17.00	17.08	16.68	16.80	16.10	16.33	16.03	16.85	17.03
14		16.70	17.08	17.23	16.95	16.98	16.58	16.68	16.03	16.30	15.98	16.88	17.00
15		16.73	16.98	17.60	16.95	16.97	16.43	16.63	16.00	16.35	15.95	16.85	16.98
16		16.85	16.90	17.13	17.00	17.03	16.35	16.58	16.00	16.33	15.93	16.83	16.98
17		16.93	16.83	17.05	17.00	16.98	16.35	16.60	16.00	16.68	15.90	16.78	16.98
18		16.90	16.93	17.05	16.98	16.95	16.35	16.65	16.00	16.73	16.03	16.73	16.93
19		16.93	16.88	17.00	16.98	16.98	16.48	16.63	15.98	17.35	16.00	16.78	16.95
20		16.93	16.85	16.95	17.18	16.98	16.30	16.60	16.03	17.10	15.98	17.08	17.00
21		16.95	16.88	16.93	17.10	17.00	16.30	16.58	16.03	16.93	15.93	17.05	17.03
22		16.95	16.95	16.90	17.10	16.98	16.30	16.53	16.00	16.90	15.90	17.23	17.23
23		17.08	16.88	16.88	17.10	17.00	16.65	16.43	16.00	16.98	15.95	17.68	17.28
24		17.18	16.83	16.85	17.03	17.08	16.65	16.38	15.98	17.05	15.98	17.18	17.25
25		17.33	16.78	16.80	16.98	17.00	16.68	16.35	16.20	17.00	15.90	17.35	17.45
26		17.30	16.70	16.80	17.00	17.00	16.58	16.30	16.50	17.10	16.03	17.08	17.38
27		17.28	16.70	16.75	17.03	17.00	15.55	16.20	16.50	17.05	16.03	17.10	17.25
28		17.33	16.65	16.73	17.03	17.00	16.48	16.20	16.18	17.03	15.98	17.05	17.33
29		17.55		16.80	16.98	17.00	16.40	16.18	16.10	17.00	16.45	17.10	17.28
30		17.23		16.88	17.00	16.95	16.48	16.15	16.05	17.05	15.98	17.08	17.30
31		17.08		16.85		16.90		16.15	16.00		16.00		17.60
TOTAL													
AVERAGE													

gauge zero = 15.7m

Table 3.4 Stream stage records at Kampili weir (4)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Kampili weir					1974	
M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1	17.50	16.75	17.63	17.65	16.15	16.63	16.13	16.88	15.95	15.98	17.13	17.08	
2	17.43	16.73	18.45	16.98	16.23	16.55	16.10	16.90	15.95	15.88	17.05	17.05	
3	17.33	16.70	18.10	16.98	16.38	16.50	16.13	16.68	15.95	15.90	17.05	17.03	
4	17.33	16.90	17.50	16.95	16.48	16.45	16.10	16.58	15.95	15.95	17.28	17.00	
5	17.38	16.90	17.08	17.00	16.53	16.40	16.13	16.48	15.90	16.00	17.18	16.95	
6	18.60	16.95	17.00	17.05	16.70	16.35	16.13	16.43	15.98	16.03	17.15	17.00	
7	17.80	16.93	17.83	17.10	16.83	16.35	16.13	16.35	16.48	17.10	17.20	17.00	
8	17.33	16.95	17.25	17.10	16.93	16.30	16.18	16.23	16.30	16.88	17.18	17.15	
9	17.20	17.00	17.10	17.13	16.83	16.30	16.33	16.18	16.53	16.78	17.15	17.18	
10	17.15	17.08	17.05	17.05	16.73	16.28	16.23	16.15	16.60	16.75	17.95	17.13	
11	17.08	17.03	17.03	17.00	16.70	16.20	16.18	16.13	16.70	16.73	17.58	17.15	
12	17.05	18.30	16.93	16.93	16.75	16.15	16.15	16.08	16.68	16.70	17.50	17.15	
13	17.03	19.50	16.95	17.03	16.68	16.13	16.13	16.08	16.73	16.75	17.28	17.23	
14	16.88	17.98	17.58	17.15	16.70	16.10	16.13	16.08	16.78	16.75	17.23	18.23	
15	16.88	17.60	18.50	17.15	16.75	16.15	16.13	16.03	16.73	16.80	17.20	17.80	
16	16.85	17.15	18.13	17.10	16.73	16.20	16.20	16.03	16.68	16.80	17.48	17.38	
17	16.83	17.65	18.83	17.18	16.63	16.25	16.18	16.03	16.58	16.85	17.38	17.20	
18	16.83	17.50	18.50	17.08	16.58	16.30	16.68	16.00	16.43	16.83	18.18	17.75	
19	16.90	17.33	17.68	17.00	16.58	16.30	16.63	15.98	16.25	16.93	18.10	17.75	
20	16.90	17.58	17.88	16.93	16.48	16.45	16.48	15.98	16.18	17.23	17.73	17.13	
21	16.93	17.40	17.25	16.83	16.38	16.43	16.43	15.98	16.08	18.05	17.55	17.35	
22	16.88	17.10	17.10	16.75	16.28	16.33	16.45	16.45	16.00	17.98	17.43	17.10	
23	16.90	17.00	17.10	16.68	16.23	16.25	16.33	15.95	16.00	17.83	17.38	17.05	
24	16.85	16.98	17.08	16.58	16.33	16.25	16.30	15.95	15.95	17.58	17.43	17.00	
25	16.90	16.93	17.00	16.48	16.43	16.43	16.33	15.90	16.03	17.35	17.28	17.15	
26	16.88	17.05	16.88	16.35	16.55	16.53	16.43	15.90	16.05	17.33	17.20	17.18	
27	16.80	17.33	16.80	16.18	16.63	16.65	16.38	16.05	16.05	17.23	17.18	17.13	
28	16.75	17.38	16.83	16.13	16.58	16.45	16.35	16.03	16.00	17.18	17.13	17.20	
29	16.70		16.80	16.15	16.53	16.33	16.38	15.95	16.00	17.13	17.13	17.23	
30	16.68		16.75	16.10	16.43	16.13	16.30	15.95	16.00		17.10	17.28	
31	16.73		16.73		16.35		16.45	15.95				17.18	
TOTAL													
AVERAGE													

Table 3.4 Stream stage records at Kampili weir (5)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Kampili weir					1975	
D	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		17.13	17.00	17.23	17.03	17.18	17.10	16.48	16.33	16.03	16.00	17.10	17.03
2		17.03	17.08	17.23	16.98	17.33	17.08	16.65	16.23	15.93	15.93	17.13	17.03
3		17.63	17.18	17.28	15.98	17.23	17.00	16.55	16.15	15.85	16.85	17.15	17.08
4		17.48	17.23	17.23	17.08	17.10	16.98	16.58	16.08	15.83	17.28	17.10	17.25
5		17.35	17.10	17.15	17.15	17.08	16.95	16.58	16.05	16.10	16.80	17.13	17.90
6		17.23	17.10	17.33	17.15	17.10	16.98	16.60	16.10	15.98	16.88	17.15	17.48
7		17.05	17.15	17.28	17.03	17.05	16.93	16.53	16.08	16.00	16.83	17.05	17.28
8		16.95	17.20	17.23	17.03	17.13	16.90	16.33	16.05	16.05	16.90	16.93	17.13
9		17.13	17.18	17.15	17.13	17.23	17.03	16.35	16.08	16.15	16.75	16.88	17.03
10		17.08	17.15	17.18	17.08	17.15	16.95	16.38	16.08	16.33	16.80	16.95	17.03
11		17.08	18.43	17.08	17.03	17.18	16.90	16.45	16.10	16.45	16.78	17.00	17.23
12		17.15	18.18	16.98	17.00	17.10	16.90	16.45	16.65	16.15	16.80	17.00	17.35
13		17.13	18.03	17.08	17.03	17.13	16.95	16.43	16.43	16.30	16.80	17.00	17.53
14		17.08	17.40	17.15	17.03	17.23	16.93	16.40	16.40	17.15	16.75	17.10	17.43
15		17.73	17.13	17.28	17.13	17.15	16.95	16.33	16.33	17.10	16.75	17.08	17.38
16		17.43	17.73	17.18	17.23	17.13	17.00	16.23	16.23	17.15	16.70	17.03	17.25
17		17.23	17.60	17.18	17.73	17.18	16.98	16.38	16.23	16.08	16.70	16.90	17.13
18		17.13	17.18	17.13	17.90	17.08	17.98	16.38	16.30	16.43	16.90	16.93	17.00
19		17.03	17.08	17.18	17.63	17.03	17.03	16.30	16.03	15.93	16.90	16.95	17.03
20		17.13	17.03	17.28	17.60	17.18	17.03	16.30	16.03	15.88	16.90	16.90	17.10
21		17.08	17.03	17.23	17.93	17.13	17.08	16.35	16.05	15.93	17.10	16.98	17.10
22		17.18	17.03	17.23	17.53	17.13	16.98	16.63	16.05	15.90	17.23	16.98	17.08
23		17.13	17.00	17.28	17.25	17.13	16.88	16.68	16.05	15.78	17.30	17.08	16.98
24		17.15	17.10	17.25	17.03	17.13	16.78	16.63	16.05	15.90	17.43	17.15	16.95
25		17.20	17.40	17.20	17.08	17.08	16.68	16.68	15.95	15.93	17.53	18.35	17.05
26		17.23	17.90	17.13	17.08	17.08	16.58	16.68	15.95	15.93	17.13	17.13	17.08
27		17.23	17.20	17.05	17.08	17.03	16.58	16.58	15.95	16.05	17.15	17.08	17.05
28		17.23	17.33	17.00	17.10	17.03	16.58	16.50	16.13	16.03	17.15	17.03	16.05
29		17.15		16.95	17.30	17.03	16.68	16.40	16.00	15.93	17.23	16.98	16.98
30		17.08		17.05	17.33	17.03	16.58	16.35	16.43	15.95	17.13	17.03	17.03
31		17.03		17.03		17.03		16.35	15.93		17.13		17.03
TOTAL													
AVERAGE													

Table 3.4. Stream stage records at Kampili weir (6)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Kampili weir					1976	
NO	DI	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1			1.50	2.37	0.98	1.97	0.73	0.73	0.04		0.17	0.52	2.49
2			1.66	2.76	0.99	4.80	0.58	0.65	0.13		0.16	0.60	1.73
3			1.80	2.55	1.20	4.62	0.52	0.61	0.11		0.41	0.84	1.08
4			1.68	2.03	2.18	4.17	0.45	0.53	0.05		0.65	0.47	4.11
5			3.84	1.58	2.40	4.35	0.45	0.35	0.05		0.62	1.68	6.105
6			2.94	3.60	1.65	4.32	0.43	0.33	0.02		0.57	1.38	2.41
7			3.39	3.96	1.29	4.10	0.40	0.28	0.05		0.62	1.29	2.01
8			5.31	3.90	2.37	4.38	0.78	0.25	0.05		0.99	0.98	2.04
9			3.90	2.94	1.85	4.26	0.68	0.25	0.05		0.58	0.63	1.65
10			4.35	2.13	2.39	4.14	0.58	0.38	0.14		0.48	0.81	2.415
11													
12			4.55	1.74	1.83	4.77	0.48	0.28	0.14		0.40	1.25	3.78
13			3.36	1.49	1.82	4.38	0.43	0.20	0.14		0.49	1.29	4.47
14			3.57	2.10	1.74	4.17	0.28	0.25	0.13		0.65	2.33	3.39
15			2.64	2.40	3.03	4.14	0.33	0.23	0.13		0.45	2.19	3.09
16			2.31	3.21	1.92	3.69	0.33	0.15	0.11		0.48	1.64	3.17
17			3.93	2.71	1.53	3.90	0.28	0.14	0.11		0.65	1.28	2.70
18			4.21	2.20	3.78	4.53	0.25	0.13	0.11		0.52	1.38	2.07
19			2.31	2.49	4.71	4.29	0.25	0.11	0.10		0.45	1.43	1.94
20			1.92	2.37	2.85	4.80	0.33	0.10	0.11		0.48	1.53	1.77
21			1.72	2.34	2.70	3.30	0.40	0.05	0.10		0.50	1.32	1.635
22													
23			1.46	1.97	4.08	4.20	0.33	0.10	0.10		1.88	1.48	1.50
24			1.29	1.74	2.87	4.64	0.28	0.10	0.10		1.44	2.55	1.37
25			1.14	1.71	2.49	3.39	0.25	0.09	0.11		1.19	1.95	1.35
26			3.15	1.76	2.37	4.23	0.18	0.09	0.10		1.58	1.92	2.61
27			4.23	1.77	2.25	3.41	0.15	0.09	0.09		1.50	2.94	3.27
28			4.65	1.35	2.08	4.02	0.15	0.09	0.14		1.43	2.73	1.92
29			2.85	1.85	1.83	3.93	0.20	0.09	0.13		0.81	2.04	1.59
30			2.67	1.41	1.53	3.84	0.30	0.09	0.13		1.91	2.28	0.35
31			-	1.10	3.89	3.96	0.35	0.08	0.13		0.83	3.20	1.32
32			-	1.32	2.49	3.75	0.73	0.07	0.12		0.44	4.88	1.35
33			-	1.41	-	3.72	-	0.06	0.11		0.54	-	1.67
34													
TOTAL													
AVERAGE													

Table 3.4 Stream stage records at Kampili weir (7)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Kampili weir					1977	
N	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1			1.49	1.04	0.50		0.23	0.28	0.18		0.07	1.00	
2			1.20	0.98	0.50		0.24	0.25	0.18		0.07	1.05	
3			1.03	0.95	0.37		0.24	0.26	0.18		0.10	0.94	
4			1.01	0.90	0.40		0.25	0.25	0.18		0.10	1.00	
5		1.14	1.51	0.90	0.40		0.25	0.24	0.17		0.10	0.90	
6		1.60	1.11	0.80	0.40		0.26	0.24	0.17		0.12	0.70	
7		1.33	2.40	0.70	0.37		0.25	0.23	0.17	0.10	0.12	0.30	
8		1.20	1.43	0.80	0.40		0.31	0.23	0.18	0.10	0.13	0.20	
9		1.21	1.19	1.15	0.50		0.29	0.23	0.18	0.10	0.12	0.20	
10		1.71	1.11	1.08	0.33		0.27	0.22	0.17	0.10	0.12	1.00	
11		1.50	1.05	2.90	0.33		0.25	0.25	0.17	0.10	0.13	1.05	
12		1.74	1.00	1.34	0.27		0.23	0.33	0.17	0.10	0.13	1.05	
13		2.46	0.99	1.18	0.31		0.24	0.37	0.17	0.10	0.13	1.00	
14		3.58	1.03	1.04	0.27		0.23	0.35	0.17	0.10	0.12	1.05	
15		2.45	1.03	1.01	0.33		0.22	0.32	0.17	0.10	0.10	1.05	
16		2.17	0.99	0.99	0.33		0.22	0.29	0.15	0.10	0.10	1.10	
17		3.20	1.02	0.97	0.29		0.22	0.25	0.15		0.10	1.55	
18		2.24	1.33	0.85	0.50		0.22	0.21	0.15		0.15	1.55	
19		1.79	1.06	0.99	0.40		0.20	0.20	0.14		0.13	1.90	
20		1.79	1.05	0.90	0.37		0.20	0.19	0.14		0.16	1.65	
21		1.20	1.00	0.90	0.37		0.20	0.19	0.13		0.16	1.30	
22		1.22	1.03	0.69	0.37		0.20	0.19	0.12		0.19	1.33	
23		3.00	1.07	0.70	0.29		0.20	0.19	0.14		0.70	1.50	
24		2.22	0.95	0.50	0.34		0.20	0.19	0.13		0.70	1.38	
25		1.94	1.05	0.33	0.31		0.20	0.19	0.13		0.60	1.10	
26		2.24	0.95	0.40	0.25		0.20	0.19	0.13		0.40	1.35	
27		1.86	0.90	0.30	0.17		0.20	0.19	0.13		0.20	1.30	
28		2.06	0.90	0.40	0.16		0.20	0.19	0.13		0.20	1.30	
29			0.97	0.45	0.15		0.20	0.19	0.12		0.75	1.40	
30			0.96	0.44	0.16		0.20	0.19	0.12		0.75	1.35	
31			0.93		0.16		0.20	0.19				1.35	
TOTAL													
AVERAGE													

Table 3.4 Stream stage records at Kampili weir (8)

River System		River		Observatory							Year		
Jeneberang		Jeneberang		Kampili Weir							1978		
D	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
		1	1.30	1.00	1.30	1.28	1.09	1.06	1.10	1.18	0.70	0.40	2.50
2	1.45	1.45	1.15	1.20	1.05	1.07	1.67	1.18	1.08	0.40	2.50	1.23	
3	1.60	1.50	1.10	1.17	1.45	1.09	1.43	1.09	1.11	0.40	2.75	1.33	
4	1.55	1.35	1.10	1.14	1.33	1.08	1.35	1.04	1.05	0.40	2.75	1.38	
5	1.40	1.45	1.15	1.63	1.29	1.10	1.55	1.01	1.02	0.30	2.50	1.38	
6	1.35	1.70	1.45	1.55	1.23	1.05	1.70	8.75	0.90	0.30	2.75	1.34	
7	1.40	1.70	1.45	2.20	1.18	1.30	1.43	7.75	1.11	0.40	0.30	1.25	
8	1.30	1.35	1.43	1.55	1.12	1.35	1.28	6.75	1.18	0.40	0.30	1.13	
9	2.65	1.25	1.53	1.98	1.07	1.28	1.45	0.60	1.25	0.40	9.30	1.11	
10	2.60	1.45	1.50	1.65	1.04	2.45	1.07	5.70	1.27	0.40	9.30	1.27	
11	3.20	1.30	1.58	1.45	1.23	1.50	1.07	5.75	1.17	0.40	1.13	1.13	
12	2.05	1.35	1.45	1.28	1.19	1.40	1.08	0.50	1.15	0.40	1.26	1.09	
13	1.85	1.35	1.30	1.25	1.24	1.33	1.23	0.50	1.10	0.30	1.08	2.40	
14	1.50	1.25	1.23	1.18	1.24	1.45	1.45	0.50	0.70	0.30	1.04	2.15	
15	1.45	1.18	1.18	1.33	1.33	1.35	1.28	8.50	6.50	0.30	5.02	1.58	
16	1.45	1.20	1.20	1.23	1.85	1.24	1.21	0.60	0.60	0.30	1.05	1.35	
17	1.45	1.25	1.15	1.19	1.63	1.19	1.08	0.60	0.60	0.40	0.90	1.38	
18	1.28	1.60	1.15	1.10	1.43	1.23	1.08	1.09	0.50	0.30	4.55	1.35	
19	1.58	1.60	1.10	1.05	1.33	1.22	1.04	1.09	2.25	0.30	5.06	1.28	
20	1.43	1.40	1.05	1.00	1.23	1.33	1.08	1.08	0.20	0.30	9.55	1.13	
21	1.43	1.55	1.05	9.85	1.20	1.19	1.07	0.80	0.15	0.30	5.25	1.40	
22	1.35	1.43	1.07	1.00	1.11	1.09	1.05	0.60	0.60	0.30	5.53	1.32	
23	1.40	1.30	1.18	1.14	1.08	1.07	1.04	0.60	0.50	1.00	1.08	1.60	
24	1.40	1.20	1.70	1.15	1.23	1.06	1.05	0.60	0.50	0.20	1.15	2.50	
25	1.40	1.16	4.80	1.15	1.15	1.08	1.02	0.50	0.40	1.50	1.50	2.23	
26	1.30	1.15	1.45	1.13	1.15	1.38	9.00	0.50	0.40	0.40	1.40	1.95	
27	1.20	1.35	1.38	1.05	1.11	1.43	8.50	0.50	0.40	0.40	1.35	1.75	
28	1.15	1.45	1.32	1.05	1.09	1.33	8.45	0.50	0.40	0.40	1.23	2.20	
29	1.07	-	1.33	1.25	1.09	1.22	9.10	0.50	0.40	0.30	1.13	1.90	
30	1.05	-	1.24	1.13	1.19	1.18	1.13	0.50	0.40	2.50	1.15	1.80	
31	1.03	-	1.20	-	1.06		1.08	0.50		2.50		1.85	
TOTAL													
AVERAGE													

Table 3.4 Stream stage records at Kampili weir (9)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Kampili weir					1979	
D	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		1.55	1.02	1.60	1.28	1.34	0.92	0.45	0.22	0.10	0.12	0.14	
2		1.35	3.30	1.35	1.21	1.33	0.93	0.45	0.22	0.10	0.15	0.14	
3		1.45	2.25	1.17	1.27	1.65	1.35	0.40	0.21	0.10	0.12	0.17	
4		0.88	1.70	1.35	1.17	1.49	0.92	0.40	0.20	0.10	0.11	0.16	
5		1.45	1.37	1.25	1.25	1.37	0.98	0.40	0.20	0.11	0.11	0.17	
6		1.95	1.24	1.22	1.32	1.37	1.43	0.60	0.24	0.12	0.11	0.16	
7		2.78	1.16	2.20	1.38	1.45	1.35	0.50	0.23	0.12	0.12	0.17	
8		3.10	1.24	2.20	1.68	1.55	1.17	0.50	0.23	0.12	0.12	0.16	
9		2.65	1.21	2.30	1.38	1.37	1.22	0.50	0.24	0.12	0.11	0.16	
10		2.65	1.19	2.02	1.35	1.25	1.27	0.50	0.21	0.12	0.10	0.15	
11		3.35	1.16	2.25	1.33	1.30	1.23	0.36	0.18	0.12	0.10	0.14	
12		2.48	1.14	2.05	1.18	2.15	1.12	0.46	0.18	0.12	0.90	0.14	
13		2.15	1.25	1.85	1.15	1.55	1.05	0.40	0.17	0.13	0.10	0.10	
14		1.65	1.27	1.62	1.11	1.45	0.99	0.39	0.17	0.14	0.10	1.05	NO RECORD
15		1.45	1.40	1.47	1.07	1.35	1.04	0.38	0.16	0.14	0.09	1.03	
16		1.68	1.25	1.37	1.05	1.28	1.09	0.37	0.15	0.13	0.09	1.00	NO RECORD
17		1.58	1.40	1.45	1.17	1.22	1.03	0.35	0.14	0.12	0.09	1.00	
18		1.70	1.43	1.27	1.22	1.19	0.90	0.32	0.13	0.12	0.10	1.01	NO RECORD
19		1.47	1.27	1.23	1.13	1.16	0.89	0.40	0.13	0.11	0.09	0.60	
20		1.35	1.35	1.35	1.07	1.09	0.95	0.37	0.12	0.09	0.11	0.40	NO RECORD
21		1.32	1.43	1.52	1.08	1.11	1.02	0.37	0.12	0.09	0.14	0.20	
22		1.28	1.32	1.42	1.45	0.99	0.90	0.32	0.12	0.08	0.16	0.20	
23		1.41	1.23	1.33	1.35	1.02	0.93	0.32	0.12	0.08	0.28	0.20	
24		1.27	1.20	1.22	1.35	0.98	0.93	0.30	0.11	0.08	0.20	0.20	
25		1.16	1.23	1.19	1.35	0.96	0.90	0.28	0.11	0.09	0.20	1.06	
26		1.35	1.22	1.65	1.45	0	0.92	0.26	0.11	0.09	0.19	1.10	
27		1.32	2.45	1.35	1.55	0	0.90	0.25	0.10	0.08	0.17	1.06	
28		1.20	2.25	1.33	1.27	0.94	0.49	0.25	0.10	0.09	0.16	1.04	
29		1.09	-	1.80	1.24	0.92	0.48	0.23	0.10	0.09	0.16	1.05	
30		1.06	-	1.70	1.43	0.93	0.46	0.23	0.10	0.10	0.16	1.07	
31		1.01	-	1.55	-	0.91	-	0.23	0.10	-	0.15	-	
TOTAL													
AVERAGE													

Table 3.4 Stream stage records at Kampili weir (10)

River System		River					Observatory					Year	
Jemberang		Jemberang					Kampili weir					1980	
N	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1	1.48	1.05	1.63	1.29									
2	1.48	1.04	1.53	1.23									
3	1.55	1.06	1.43	1.24									
4	1.48	1.38	1.45	1.22									
5	1.58	1.23	1.55	1.48									
6	1.63	2.00	1.33	1.35									
7	2.05	2.38	1.24	1.40									
8	2.35	2.00	1.20	1.53									
9	2.35	1.65	1.29	1.45									
10	2.10	1.53	1.65	1.50									
11	2.10	1.50	1.45	1.55									
12	1.85	2.30	1.33	1.38									
13	1.65	3.25	1.24	1.42									
14	1.53	2.30	2.10	2.03									
15	1.39	2.50	1.90	1.80									
16	1.55	2.40	1.55	1.65									
17	1.53	2.15	1.35	1.73									
18	1.38	1.80	1.98	1.65									
19	3.30	1.55	1.65	1.45									
20	2.65	1.48	1.80	1.43									
21	2.20	1.43	1.68	1.34									
22	2.25	1.65	1.45	1.31									
23	1.65	1.70	1.39	1.58									
24	1.45	1.80	1.36	1.38									
25	1.32	1.65	1.43	1.30									
26	1.23	1.53	1.38	1.38									
27	1.23	1.80	1.34	1.36									
28	1.15	1.58	1.33	1.38									
29	1.24	1.58	1.30	1.73									
30	1.15	-	1.34	1.45									
31	1.08	-	1.38	-									
TOTAL													
AVERAGE													

Table 3.5 Overflow depth records at Kampili (BL 1) weir (1)

River System		River					Observatory					Year	
Jeneberang		Kampili canal					Kampili (BL 1)					1977	
Sl	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1	0.00	0.00	0	0.40	0.70	0.00	0.38	0.30	0.22	0.00	0	0	
2	0.00		0	0.40	0.70		0.39	0.27	0.20	0.00	0	0	
3			0	0.40	0.70		0.39	0.28	0.20	0.00	0	0	
4		0.04	0	0.40	0.70		0.39	0.27	0.19	0.00	0	0	
5		0.11	0	0.30	0.70		0.41	0.26	0.19	0.00	0	0	
6		0.11	0	0.30	0.70		0.42	0.26	0.18	0.00	0	0	
7		0.20	0	0.30	0.54		0.47	0.25	0.18	0.00	0	0	
8		0.30	0	0.40	0.70		0.50	0.25	0.21	0	0	0	
9		0.40	0	0.40	0.50		0.47	0.25	0.20	0	0	0	
10		0.40	0	0.40	0.50		0.46	0.24	0.19	0	0	0	
11		0.40	0.50	0.40	0.49		0.43	0.23	0.19	0	0	0	
12		0	0.50	0.20	0.40		0.40	0.30	0.18	0	0	0	
13		0	0.50	0.20	0.38		0.40	0.40	0.18	0	0	0.40	
14		0	0.50	0.20	0.51		0.39	0.38	0.18	0	0	0.40	
15		0	0.50	0.20	0.49		0.39	0.36	0.18	0	0	0.28	
16		0	0.50	0.20	0.45		0.38	0.33	0.16	0	0	0.40	
17		0	0.50	0.20	0.49		0.38	0.29	0.13	0	0	0.40	
18		0	0.50	0.20	0.65		0.38	0.23	0.13	0	0	0.65	
19		0	0.50	0.40	0.65		0.35	0.21	0.12	0	0	0.43	
20		0	0.50	0.40	0.65		0.34	0.20	0.12	0	0.20	0.50	
21		0	0.50	0.40	0.65		0.34	0.20	0.11	0	0.20	0.60	
22		0	0.50	0.40	0.65		0.34	0.20	0.10	0	0.20	0.60	
23		0	0.50	0.50	0.53		0.34	0.20	0.12	0	0.33	0.60	
24		0	0.50	0.50	0.58		0.34	0.19	0.11	0	0.40	0.20	
25		0	0.50	0.50	0.37		0.34	0.25	0.11	0	0.40	0.80	
26		0	0.30	0.60	0.29		0.34	0.25	0.11	0	0.40	0.85	
27		0	0.30	0.60	0.25		0.34	0.25	0.11	0	0.25	0.90	
28		0	0.30	0.60	0.23		0.34	0.24	0.11	0	0.25	0.90	
29			0.30	0.70	0.21		0.34	0.24	0.10	0	0.25	0.95	
30			0.30	0.70	0.21		0.34	0.23	0.10	0	0.25	0.95	
31	0.00		0.35	-	0.21		0.34	0.23	-	0	-	0.95	
TOTAL													
AVERAGE													

Table 3.5 Overflow depth records at Kampili (BL.1) weir (2)

River System		River					Observatory					Year	
Jeneberang		Kampili canal					Kampili (BL.1)					1978	
D	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		0.90	0.85	0.90	0.60	0.50	0.50	0.50	0.50	0.70	0.50	0.30	0.50
2		0.90	0.65	0.80	0.60	0.50	0.50	0.50	0.50	0.70	0.50	0.30	0.50
3		0.50	0.70	0.80	0.60	0.50	0.50	0.50	0.50	0.70	0.50	0.35	0.50
4		0.10	0.90	0.80	0.60	0.50	0.50	0.50	0.50	0.70	0.50	0.35	0.50
5		0.30	0.90	0.80	0.60	0.50	0.50	0.50	0.50	0.70	0.40	0.30	0.50
6		0.60	0.90	0.80	0.60	0.50	0.50	0.50	0.50	0.70	0.45	0.35	0.40
7		0.80	0.90	0.80	0.50	0.30	0.50	0.50	0.50	0.30	0.50	0.40	0.40
8		0.80	0.90	0.80	0.50	0.40	0.50	0.50	0.50	0.30	0.50	0.40	0.40
9		0.80	0.90	0.80	0.50	0.50	0.50	0.50	0.50	0.30	0.50	0.40	0.40
10		0.55	0.90	0.80	0.50	0.50	0.50	0.50	0.50	0.30	0.50	0.40	0.40
11		0.30	0.90	0.80	0.40	0.50	0.50	0.50	0.50	0.30	0.50	0.40	0.50
12		0.50	0.75	0.80	0.40	0.50	0.50	0.50	0.50	0.30	0.50	0.40	0.50
13		0.50	0.85	0.80	0.40	0.50	0.50	0.50	0.50	0.30	0.40	0.40	0.50
14		0.85	0.90	0.80	0.40	0.50	0.50	0.50	0.50	0.30	0.40	0.40	0.50
15		0.85	0.90	0.80	0.15	0.40	0.50	0.50	0.60	0.30	0.40	0.38	0.60
16		0.85	0.90	0.80	0.30	0.35	0.50	0.50	0.60	0.30	0.40	0.30	0.70
17		0.85	0.85	0.80	0.30	0.35	0.50	0.50	0.60	0.30	0.50	0.30	0.70
18		0.85	0.90	0.80	0.50	0.35	0.50	0.50	0.60	0.30	0.40	0.20	0.70
19		0.85	0.75	0.80	0.50	0.35	0.50	0.50	0.60	0.30	0.40	0.20	0.70
20		0.85	0.85	0.80	0.50	0.35	0.50	0.50	0.60	0.20	0.40	0.20	0.70
21		0.85	0.80	0.80	0.50	0.35	0.50	0.50	0.60	0.15	0	0.30	0.65
22		0.55	0.70	0.80	0.50	0.50	0.50	0.50	0.60	0.40	0	0.30	0.70
23		0.75	0.80	0.80	0.50	0.50	0.50	0.50	0.60	0.50	0	0.30	0.70
24		0.68	0.80	0.80	0.50	0.50	0.50	0.50	0.55	0.50	0.20	0.30	0.55
25		0.60	0.80	0.80	0.50	0.50	0.50	0.50	0.50	0.50	0.20	0.30	0.70
26		0.80	0.80	0.80	0.50	0.50	0.50	0.50	0.50	0.50	0.10	0.30	0.70
27		0.80	0.80	0.80	0.50	0.50	0.50	0.50	0.50	0.50	0	0.30	0.70
28		0.80	0.80	0.75	0.50	0.50	0.50	0.50	0.47	0.50	0.10	0.30	0.70
29		0.80	-	0.70	0.50	0.50	0.50	0.50	0.45	0.50	0.40	0.50	0.70
30		0.80	-	0.70	0.50	0.50	0.50	0.50	0.58	0.50	0.35	0.50	0.70
31		0.80	-	0.60	-	0.50	-	0.50	0.69	-	0.35	-	0.70
TOTAL													
AVERAGE													

Table 3.5 Overflow depth records at Kampili (BL-1) weir (3)

River System			River			Observatory					Year	
Jemberang			Kampili canal			Kampili (BL-1)					1979	
NO.	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1	0.70	0.40	0.40	0.40	0.40	0.60	0.25	0.25	0.13	0.15	0.14	
2	0.70	0.40	0.40	0.40	0.40	0.60	0	0.25	0.13	0.18	0.16	
3	0.30	0.40	0.40	0.40	0.40	0.60	0	0.24	0.13	0.15	0.18	
4	0.30	0.40	0.40	0.40	0.40	0.60	0	0.23	0.12	0.14	0.16	
5	0.30	0.40	0.40	0.40	0.40	0.60	0	0.23	0.14	0.14	0.20	
6	0.30	0.40	0.40	0.40	0.40	0.60	0	0.27	0.15	0.14	0.19	
7	0.30	0.40	0.40	0.40	0.40	0.60	0.25	0.26	0.15	0.15	0.20	
8	0.30	0.40	0.40	0.40	0.40	0.55	0.35	0.26	0.15	0.15	0.19	
9	0.30	0.40	0.40	0.40	0.40	0.50	0.40	0.27	0.15	0.14	0.19	
10	0.30	0.40	0.40	0.40	0.40	0.50	0.45	0.24	0.15	0.13	0.18	
11	0.30	0.40	0.40	0.40	0.40	0.50	0.43	0.23	0.15	0.13	0.17	
12	0.20	0.40	0.40	0.40	0.40	0.50	0.60	0.23	0.15	0.12	0.17	
13	0.20	0.40	0.40	0.40	0.40	0.50	0.50	0.21	0.16	0.13	0.17	
14	0.20	0.40	0.40	0.40	0.40	0.50	0.49	0.21	0.17	0.13	0.17	
15	0.20	0.40	0.40	0.40	0.40	0.10	0.44	0.20	0.17	0.12	0.10	
16	0.20	0.50	0.40	0.40	0.40	0	0.40	0.18	0.16	0.12	0	
17	0.30	0.60	0.40	0.40	0.40	0	0.38	0.17	0.15	0.11	0	
18	0.40	0.60	0.40	0.40	0.40	0.60	0.35	0.16	0.15	0.12	0	
19	0.40	0.60	0.40	0.40	0.40	0.60	0.43	0.16	0.14	0.11	0	
20	0.40	0.60	0.40	0.50	0.40	0.70	0.40	0.15	0.13	0.13	0	
21	0.40	0.60	0.40	0.60	0.40	0.70	0.40	0.15	0.12	0.16	0	
22	0.40	0.40	0.40	0.60	0.60	0.70	0.35	0.15	0.11	0.17	0	
23	0.40	0.40	0.40	0.60	0.60	0.70	0.35	0.15	0.11	0.19	0	
24	0.40	0.40	0.40	0.60	0.60	0.70	0.33	0.14	0.11	0.18	0	
25	0.40	0.40	0.40	0.60	0.60	0.70	0.31	0.14	0.12	0.18	0	
26	0.40	0.40	0.40	0.60	0.60	0.70	0.29	0.14	0.12	0.17	0	
27	0.40	0.40	0.40	0.60	0.60	0.75	0.28	0.13	0.11	0.17	0	
28	0.40	0.40	0.40	0.60	0.60	0.75	0.28	0.13	0.11	0.16	0	
29	0.40		0.40	0.60	0.60	0.70	0.26	0.13	0.12	0.16	0	
30	0.40		0.40	0.40	0.60	0.55	0.26	0.13	0.13	0.15	0	
31	0.40		0.40		0.60	-	0.26	0.13	-	0.14	0	
TOTAL												
AVERAGE												

NO RECORD

Table 3.5 Overflow depth records at Kampili (BL-1) weir (7)

River System		River					Observatory					Year	
Jeneberang		Kampili canal					Kampili (BL-1)					1980	
D	H	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		0.65	0.60	0	0.50								
2		0.65	0.60	0	0.53								
3		0.65	0.80	0	0.55								
4		0.65	0.80	0	0.55								
5		0.65	0.40	0	0.55								
6		0.65	0.40	0	0.55								
7		0.65	0.60	0	0.55								
8		0.65	0.80	0	0.55								
9		0.30	0.80	0	0.55								
10		0.50	0.80	0.70	0.55								
11		0.40	0.70	0.70	0.55								
12		0.40	0.40	0.80	0.55								
13		0.40	0.40	0.93	0.55								
14		0.40	0.40	0.04	0.55								
15		0.40	0.40	0	0.55								
16		0.40	0.60	0	0.55								
17		0.40	0.80	0	0.55								
18		0.60	0.80	0	0.55								
19		0.40	0.80	0	0.55								
20		0.60	0.80	0	0								
21		0.30	0.80	0	0								
22		0	0.80	0	0								
23		0	0.40	0	0								
24		0	0	0	0								
25		0	0	0	0								
26		0	0	0	0								
27		0	0	0	0								
28		0	0	0	0								
29		0		0	0								
30		0		0	0								
31		0		0.50	-								
TOTAL													
AVERAGE													

Table. 3.6 Stream stage records at Bili-Bili Intake (1)

River System		River				Observatory					Year		
Jeneberang		Jeneberang				Bili-Bili (Intake)					1979		
D	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1								0.76	0.36	0.35	0.36	0.33	
2								0.74	0.40	0.34	0.40	0.31	
3								0.94	0.39	0.33	0.37	0.30	
4								0.89	0.49	0.32	0.35	0.31	
5								1.07	0.55	0.36	0.37	0.40	
6								1.35	0.55	0.35	0.37	0.35	
7								1.18	0.55	0.35	0.35	0.37	
8								1.10	0.55	0.34	0.35	0.34	
9								1.10	0.55	0.36	0.33	0.33	
10								1.09	0.57	0.37	0.33	0.32	
11								0.98	0.52	0.37	0.32	0.30	
12								0.95	0.51	0.34	0.30	0.38	
13								0.87	0.53	0.36	0.30	0.52	
14								0.84	0.50	0.35	0.29	0.53	
15								0.79	0.50	0.34	0.27	0.55	
16								0.77	0.47	0.33	0.29	0.55	
17								0.72	0.45	0.34	0.30	0.57	
18								0.70	0.48	0.33	0.29	0.57	
19								0.68	0.46	0.32	0.29	0.56	
20								0.74	0.45	0.30	0.31	0.55	
21								0.76	0.45	0.30	0.37	0.52	
22								0.76	0.45	0.29	0.40	0.49	
23								0.76	0.44	0.28	0.41	0.48	
24								0.77	0.43	0.29	0.41	0.68	
25								0.79	0.43	0.28	0.39	0.79	
26								0.76	0.42	0.28	0.37	0.83	
27								0.72	0.38	0.28	0.35	0.82	
28								0.68	0.40	0.27	0.32	0.92	
29								0.65	0.43	0.28	0.37	1.00	
30								0.61	0.45	0.29	0.38	1.06	
31									0.46		0.35		
TOTAL													
AVERAGE													

Table. 3.6 Stream stage records at Bili-Bili Intake (2)

River System		River					Observatory					Year	
Jeneberang		Jeneborang					Bili-Bili (Intake)					1920	
D	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		1.34	0.85	1.28									
2		1.27	0.95	1.18									
3		1.30	1.15	1.22									
4		1.36	1.28	1.33									
5		1.36	1.33	1.23									
6		1.53	1.98	1.10									
7		1.81	1.90	1.05									
8		1.86	1.58	1.15									
9		2.65	1.40	1.40									
10		2.05	1.28	1.40									
11		1.80	1.23	1.08									
12		1.45	1.87	0.96									
13		1.34	2.03	1.09									
14		1.25	2.07	1.92									
15		1.18	1.97	1.39									
16		1.37	1.73	1.30									
17		1.26	1.77	1.90									
18		1.20	1.45	1.55									
19		2.75	1.30	1.53									
20		2.13	1.31	1.63									
21		1.82	1.32	1.50									
22		1.69	1.54	1.33									
23		1.44	1.81	1.18									
24		1.25	1.65	1.20									
25		1.23	1.35	1.18									
26		1.08	1.65	1.11									
27		1.00	1.43	1.06									
28		0.99	1.30	1.20									
29		0.95	1.38	1.23									
30		0.97		1.25									
31		0.90		1.13									
TOTAL													
AVER-													
GE													

Table 3.7 Stream stage records in Bili-Bili canal (1)

River System			River			Observatory					Year	
Janeberang			Janeberang			Bili-Bili (Canal)					1979	
#	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1							0.76	0.36	0.35	0.36	0.33	
2							0.75	0.40	0.34	0.40	0.31	
3							0.95	0.39	0.33	0.37	0.30	
4							0.89	0.49	0.32	0.35	0.31	
5							1.07	0.55	0.36	0.37	0.40	
6							1.24	0.55	0.35	0.37	0.35	
7							0.51	0.55	0.35	0.35	0.37	
8							0.90	0.55	0.34	0.35	0.34	
9							0.98	0.55	0.36	0.33	0.33	
10							0.84	0.57	0.37	0.33	0.32	
11							0.78	0.52	0.37	0.32	0.30	
12							0.84	0.51	0.34	0.30	0.36	
13							0.79	0.53	0.36	0.30	0.52	
14							0.80	0.50	0.35	0.29	0.53	
15							0.78	0.50	0.34	0.27	0.55	
16							0.74	0.47	0.33	0.29	0.55	
17							0.70	0.45	0.34	0.30	0.57	No Data
18							0.69	0.48	0.33	0.29	0.57	No Data
19							0.68	0.46	0.32	0.29	0.56	No Data
20							0.71	0.45	0.30	0.31	0.55	No Data
21							0.77	0.45	0.30	0.37	0.52	
22							0.73	0.45	0.29	0.40	0.52	
23							0.78	0.44	0.28	0.41	0.48	
24							0.77	0.43	0.29	0.41	0.68	
25							0.79	0.43	0.28	0.39	0.79	
26							0.76	0.42	0.28	0.37	0.83	
27							0.72	0.38	0.28	0.35	0.82	
28							0.68	0.40	0.27	0.32	0.92	
29							0.62	0.43	0.28	0.37	1.00	
30							0.61	0.45	0.29	0.38	1.06	
31								0.43		0.35		
TOTAL												
AVERAGE												

Table 3.7 Stream stage records in Bili-Bili canal (2)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Bili - Bili (Canal)					1980	
No	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
		1	1.19	0.85	0.98								
2	1.12	0.95	0.90										
3	1.13	1.03	0.97										
4	1.20	1.03	1.05										
5	1.20	1.05	0.95										
6	1.32	1.68	0.85										
7	1.58	1.60	0.93										
8	1.58	1.33	1.03										
9	2.23	1.15	1.25										
10	1.80	1.00	1.10										
11	1.50	0.95	0.80										
12	1.33	1.60	0.84										
13	1.11	2.12	0.96										
14	1.00	1.73	1.59										
15	0.90	1.67	1.09										
16	1.10	1.50	1.00										
17	1.01	1.47	1.65										
18	0.95	1.45	1.23										
19	2.40	1.05	1.23										
20	1.28	1.06	1.30										
21	1.52	1.07	1.20										
22	1.40	1.23	1.03										
23	1.19	1.50	1.93										
24	1.00	1.35	0.95										
25	0.98	1.10	1.05										
26	0.89	1.38	1.11										
27	0.75	1.13	1.08										
28	0.74	1.02	1.05										
29	0.70	1.10	1.00										
30	0.70		1.00										
31	0.70		1.23										
TOTAL													
AVERA- GE													

Table. 3.8 Stream stage records at Bili-Bili gauging station (i)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Bili-Bili					1974	
N	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1					0.64	0.57	0.45	0.93	0.37	0.34	0.56	0.93	
2					0.77	0.53	0.45	0.85	0.37	0.36	0.45	0.86	
3					0.69	0.52	0.44	0.78	0.37	0.38	0.68	0.79	
4					0.74	0.52	0.44	0.76	0.37	0.45	0.70	0.74	
5					0.77	0.52	0.44	0.74	0.37	0.56	0.68	0.71	
6					0.77	0.52	0.43	0.71	0.42	0.57	0.76	0.71	
7					0.72	0.52	0.43	0.66	0.41	0.78	0.88	0.73	
8					0.67	0.50	0.45	0.63	0.41	0.84	0.75	0.97	
9					0.69	0.48	0.50	0.59	0.40	0.76	0.77	0.84	
10					0.74	0.47	0.48	0.56	0.41	0.68	0.93	0.81	
11					0.73	0.46	0.47	0.55	0.41	0.57	0.97	0.83	
12					0.72	0.46	0.45	0.53	0.42	0.50	0.97	1.03	
13					0.72	0.45	0.44	0.51	0.42	0.47	0.90	1.31	
14					0.77	0.45	0.44	0.50	0.42	0.47	0.87	1.21	
15					0.79	0.46	0.41	0.46	0.44	0.50	0.97	1.09	
16					0.74	0.49	0.41	0.47	0.51	0.48	1.00	1.10	
17					0.66	0.49	0.48	0.46	0.46	0.48	0.93	1.16	
18					0.63	0.48	0.51	0.46	0.45	0.49	1.20	1.20	
19					0.62	0.49	0.50	0.44	0.44	0.49	1.14	1.22	
20					0.58	0.51	0.49	0.42	0.43	0.56	1.05	1.22	
21					0.57	0.52	0.45	0.42	0.41	0.98	0.88	1.05	
22					0.56	0.53	0.42	0.41	0.38	0.91	0.92	0.95	
23				0.73	0.55	0.54	0.42	0.40	0.35	0.89	1.01	0.93	
24				0.70	0.54	0.51	0.43	0.40	0.33	0.85	1.01	0.90	
25				0.67	0.52	0.53	0.45	0.39	0.33	0.82	0.97	0.88	
26				0.64	0.55	0.50	0.45	0.39	0.33	0.79	0.94	0.87	
27				0.62	0.54	0.55	0.44	0.38	0.33	0.77	0.92	0.90	
28				0.60	0.64	0.51	0.43	0.38	0.33	0.74	0.89	0.85	
29				0.59	0.59	0.49	0.44	0.38	0.33	0.71	0.88	0.77	
30				0.63	0.63	0.47	0.49	0.38	0.33	0.69	0.85	0.67	
31				-	0.67	-	0.62	0.38	-	0.68	-	0.55	
TOTAL													
AVERAGE													
GE													

Table. 3.8 Stream stage records at Bili-Bili gauging station (2)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Bili-Bili					1975	
D	N	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		1.20	0.62	1.18	0.89	1.63	0.97	0.63	0.61	0.51	0.46	0.88	1.00
2		1.16	0.64	1.18	0.89	1.67	0.97	0.62	0.58	0.50	0.46	0.84	0.95
3		1.24	0.66	1.20	0.91	1.80	0.97	0.62	0.57	0.53	0.47	0.81	0.88
4		1.52	0.67	1.17	0.97	1.67	0.98	0.62	0.55	0.56	0.62	0.78	0.85
5		1.34	0.72	1.15	1.00	1.50	1.00	0.61	0.56	0.62	0.70	0.77	0.82
6		1.12	0.84	1.19	1.00	0.99	1.00	0.60	0.56	0.60	0.71	0.77	0.95
7		0.58	0.70	1.49	0.99	0.87	0.99	0.61	0.55	0	0.78	0.77	0.96
8		0.48	0.76	1.52	0.98	0.90	0.94	0.59	0.55	0	0.80	1.14	0.95
9		0.60	0.77	1.43	1.02	0.98	0.86	0.57	0.55	0	0.73	1.17	0.96
10		0.71	0.81	1.28	1.05	0.94	0.83	0.58	0.55	0.54	0.70	1.14	1.08
11		0.71	0.87	1.14	1.10	0.96	0.87	0.57	0.80	0.55	0.68	1.11	1.43
12		0.64	0.85	1.15	1.10	0.94	0.92	0.56	0.80	0.53	0.66	0.89	1.70
13		0.50	0.77	1.28	1.10	0.92	0.92	0.56	0.77	0.60	0.64	0.94	1.56
14		0.47	0.74	1.14	1.11	0.93	0.81	0.56	0.71	0.62	0.63	1.31	1.30
15		0.85	0.74	1.27	1.11	0.89	0.75	0.59	0.65	0.59	0.60	1.48	1.24
16		1.23	0.74	1.28	1.21	0.88	0.80	0.57	0.58	0.60	0.56	1.40	1.28
17		1.13	0.74	1.20	1.31	0.87	0.80	0.58	0.59	0.59	0.56	1.28	1.21
18		1.00	0.73	1.21	1.25	0.91	0.79	0.60	0.57	0.57	0.55	1.15	1.20
19		0.92	0.73	1.20	1.19	0.94	0.75	0.60	0.57	0.61	0.57	1.06	1.26
20		0.88	0.76	1.23	1.28	0.96	0.75	0.60	0.56	0.53	0.70	1.07	1.29
21		0.85	0.79	1.19	1.26	0.89	0.75	0.60	0.55	0.47	0.83	1.05	1.30
22		0.71	0.79	1.20	1.23	0.89	0.70	0.59	0.56	0.47	0.81	1.00	1.30
23		0.54	0.75	1.13	1.72	0.82	0.69	0.57	0.56	0.48	0.93	1.00	1.23
24		1.15	0.68	1.16	2.28	0.89	0.69	0.62	0.56	0.48	0.76	1.05	-
25		1.37	0.68	1.09	1.94	0.84	0.68	0.92	0.55	0.47	0.76	1.07	-
26		1.48	-	1.04	1.70	0.91	0.67	0.86	0.54	0.47	0.78	1.10	-
27		1.38	-	1.07	1.40	0.96	0.66	0.81	0.53	0.60	0.79	1.05	-
28		1.43	-	1.01	1.30	0.96	0.66	0.74	0.52	0.65	0.78	1.18	-
29		1.24	-	0.97	1.35	0.95	0.65	0.67	0.52	0.65	0.84	1.19	-
30		0.87	-	1.04	1.50	0.93	0.64	0.65	0.51	0.53	0.92	1.12	-
31		0.63	-	0.95	-	0.95	-	0.64	0.50	-	0.90	-	-
TOTAL													
AVERAGE													

Table. 3.8 Stream stage records at Bili-Bili gauging station (3)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Bili-Bili					1976	
D	H	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1				1.18	1.06	0.97	0.50	0.58	0.39	0.35	0.35	0.56	0.87
2				-	0.71	0.74	0.50	0.56	0.40	0.35	0.35	0.52	0.81
3				-	0.75	0.68	0.50	0.57	0.39	0.35	0.35	0.50	0.79
4				-	0.94	0.74	0.60	0.57	0.39	0.35	0.35	0.49	0.79
5				0.99	0.89	0.89	0.61	0.57	0.38	0.35	0.35	0.48	0.84
6				0.99	0.90	0.81	0.59	0.52	0.38	0.35	0.35	0.46	0.88
7				0.93	0.87	0.77	0.56	0.50	0.37	0.35	0.35	0.46	0.88
8				0.83	0.89	0.83	0.55	0.49	0.37	0.35	0.35	0.44	0.79
9				0.87	0.99	0.88	0.53	0.48	0.37	0.35	0.35	0.56	0.76
10				0.87	0.91	0.84	0.53	0.47	0.37	0.35	0.35	0.58	0.77
11				0.85	0.84	0.81	0.53	0.49	0.37	0.35	0.35	0.72	0.87
12				1.06	0.76		0.54	0.48	0.36	0.35		0.63	0.94
13				1.10	0.70		0.55	0.46	0.35	0.35		0.56	0.91
14				1.15	0.70		0.53	0.45	0.35			0.53	1.20
15				1.24	0.77		0.51	0.43	0.35			0.53	1.16
16				1.26	0.83		0.49	0.41	0.35			0.53	1.06
17				1.27	0.79	0.65		0.41	0.35			0.57	0.95
18				1.13	0.75	0.64		0.40	0.35			0.63	0.86
19				1.61	0.75	0.62	0.54	0.39	0.35		0.35	0.68	0.98
20				1.74	0.76	0.57	0.54	0.39	0.35	0.35	0.35	0.67	0.98
21				1.45	0.81	0.58	0.53	0.39	0.35	0.35	0.37	0.69	1.07
22				1.19	0.89	0.61	0.53	0.39	0.35	0.35	0.40	0.76	1.07
23				1.15	0.86	0.57	0.51	0.39	0.36	0.35	0.62	0.74	0.89
24		1.24		1.12	0.86	0.56	0.49	0.39	0.36	0.35	0.71	0.74	0.86
25		0.77		1.06	0.81	0.55	0.47	0.39	0.36	0.35	0.65	0.74	0.78
26		1.20		1.06	0.75	0.54	0.46	0.39	0.36	0.35	0.69	0.75	0.77
27		1.46		0.99	0.69	0.50	0.45	0.39	0.36	0.35	0.61	0.76	1.05
28		1.44		0.93	0.71	0.51	0.48	0.39	0.36	0.35	0.56	0.72	1.10
29		1.33		0.90	0.69	0.50	0.59	0.39	0.35	0.35	0.54	0.77	1.01
30		-		1.12	0.94	0.50	0.60	0.38	0.35	0.35	0.54	0.92	0.97
31		-		1.26	-	0.50	-	0.40	0.35	-	0.55	-	0.92
TOTAL													
AVERAGE													

Table. 3.8 Stream stage records at Bili-Bili gauging station (4)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Bili-Bili					1977	
D	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		0.91	0.77	1.17	0.76	0.64	0.32	0.32		-0.05	-0.08	-0.09	0.40
2		0.92	0.73	1.06	0.76	0.58	0.33	0.32		-0.05	-0.08	-0.09	0.47
3		0.97	0.69	0.95	0.71	0.55	0.32	0.32		-0.05	-0.08	-0.09	0.35
4		1.25	0.76	0.96	0.66	0.59	0.31	0.31		-0.05	-0.08	-0.09	0.38
5		1.18	1.14	1.17	0.62	0.56	0.31	0.29		-0.05	-0.08	-0.07	0.29
6		1.29	1.43	1.06	0.61	0.54	0.30	0.24		-0.06	-0.08	-0.06	0.20
7		2.03	1.12	1.54	0.59	0.50	0.30	0.28		-0.06	-0.08	-0.06	0.14
8		1.87	1.07	1.22	0.83	0.56	0.31	0.27		-0.06	-0.08	-0.06	0.15
9		1.79	1.16	-	1.35	0.58	0.35	0.27		-0.06	-0.08	-0.07	0.29
10		1.74	1.40	0.90	1.20	0.50	0.32	0.27		-0.06	-0.08	-0.07	0.45
11		1.62	1.26	0.89	1.80	0.47	0.88	0.27		-0.06	-0.08	-0.07	0.36
12		1.56	1.34	0.86	1.18	0.46	1.30	0.27		-0.06	-0.08	-0.07	0.21
13		1.50	1.54	0.85	1.01	0.48	1.11	0.26		-0.06	-0.09	-0.06	0.22
14		1.47	1.92	0.85	0.89	0.46	0.93	0.26		-0.06	-0.09	-0.06	0.28
15		1.40	2.25	0.85	0.83	0.48	0.75	0.22		-0.06	-0.09	-0.05	0.31
16		1.34	2.15	0.83	0.78	0.48	0.60	0.19		-0.06	-0.09	-0.05	0.65
17		1.24	2.43	0.85	0.71	0.56	0.52	0.15		-0.06	-0.09	-0.05	0.51
18		1.16	2.32	1.05	0.71	0.63	0.96	0.11		-0.06	-0.09	-0.05	0.59
19		1.28	1.29	0.90	0.75	0.55	0.75	0.08		-0.06	-0.09	-0.05	0.90
20		1.13	1.21	0.84	0.67	0.46	0.62	0.04	-0.05	-0.06	-0.09	-0.05	0.51
21		1.06	1.06	0.82	0.64	0.38	0.55		-0.05	-0.06	-0.09	-	0.34
22		1.55	1.15	0.93	0.58	0.38	0.49		-0.05	-0.06	-0.09	0.04	0.54
23		1.61	1.76	0.88	0.59	0.38	0.44		-0.05	-0.06	-0.09	0.02	0.81
24		1.36	1.67	0.84	0.52	0.38	0.41		-0.05	-0.06	-0.09	0.02	0.54
25		1.99	1.46	0.85	0.50	0.38	0.39		-0.03	-0.07	-0.09	0.02	0.45
26		1.18	1.45	0.75	0.50	0.37	0.37		-0.03	-0.07	-0.09	0.02	0.48
27		1.01	1.37	0.71	0.49	0.36	0.36		-0.04	-0.08	-0.09	0.02	0.50
28		0.87	1.33	0.80	0.46	0.36	0.34		-0.04	-0.08	-0.09	0.13	0.48
29		0.80	-	0.87	0.59	0.35	0.33		-0.05	-0.08	-0.09	0.26	0.56
30		0.82	-	0.80	0.67	0.34	0.32		-0.05	-0.08	-0.09	0.34	0.57
31		0.85	-	0.75	-	0.32	-		-0.05	-	-0.09	-	0.56
TOTAL													
AVERAGE													

Table. 3.8 Stream stage records at Bili-Bili gauging station (5)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Bili-Bili					1978	
D	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
	1	0.66	0.24	0.43	0.30	0.15	0.08	0.08	0.19	-0.01	-0.02	0	0.24
	2	0.64	0.26	0.34	0.25	0.14	0.08	0.22	0.13	-0.01	-0.02	0	0.31
	3	0.77	0.29	0.29	0.19	0.27	0.09	0.26	0.08	-0.01	-0.01	0	0.36
	4	0.74	0.32	0.31	0.18	0.24	0.12	0.27	0.06	-0.01	-	0	0.43
	5	0.69	0.44	0.33	0.49	0.19	0.14	0.45	0.06	-0.02	-	0	0.39
	6	0.53	0.59	0.44	0.52	0.15	0.12	0.57	0.06	-0.02	-	0	0.38
	7	0.64	0.68	0.50	0.75	0.12	0.29	0.30	0.06	-0.01	-	0	0.32
	8	0.50	0.55	0.49	0.76	0.10	0.29	0.20	0.04	-0.01	-	0	0.23
	9	0.40	0.59	0.56	0.69	0.08	0.28	0.14	-0.00	0.00	-	0	0.22
	10	0.80	0.69	0.56	0.62	0.08	0.60	0.12	-0.00	0.06	-	0	0.26
	11	1.79	0.50	0.58	0.43	0.09	0.31	0.13	-0.00	0.06	0	0.14	0.20
	12	1.19	0.48	0.43	0.34	0.13	0.37	0.19	-0.01	0.06	0	0.15	0.34
	13	0.82	0.47	0.31	0.27	0.21	0.26	0.21	-0.01	0.06	-0.01	0.09	0.64
	14	0.65	0.42	0.26	0.22	0.29	0.21	0.21	-0.01	0.06	-0.01	0.09	0.84
	15	0.57	0.37	0.24	0.19	0.34	0.21	0.16	0.06	0.06	-0.02	0.09	0.65
	16	0.48	0.32	0.24	0.16	0.64	0.15	0.12	0.06	0.06	-0.02	0.09	0.53
	17	0.62	0.41	0.20	0.17	0.45	0.12	0.08	0.06	0.02	-0.03	0.09	0.43
	18	0.55	0.41	0.17	0.16	0.31	0.12	0.06	0.07	0.00	-0.03	0.07	0.41
	19	0.70	0.52	0.15	0.12	0.23	0.15	0.05	0.06	0.24	-0.03	0.01	0.41
	20	0.60	0.66	0.24	0.10	0.18	0.23	0.05	0.06	0.22	-0.03	0.09	0.30
	21	0.67	0.49	0.18	0.10	0.15	0.14	0.05	0.06	0.15	-0.03	0.13	0.43
	22	1.11	0.48	0.21	0.19	0.14	0.11	0.05	0.05	0.10	-0.03	0.17	0.60
	23	0.76	0.41	0.31	0.25	0.13	0.08	0.05	0.02	0.10	-0.03	0.27	0.94
	24	0.69	0.38	0.72	0.25	0.13	0.08	0.03	0.00	0.10	-0.02	0.40	1.29
	25	0.80	0.33	0.71	0.27	0.10	0.10	0.05	-0.01	0.10	-0.02	0.44	1.13
	26	0.73	0.31	0.47	0.19	0.11	0.23	0.06	-0.02	0.10	-0.02	0.43	0.79
	27	0.51	0.93	0.38	0.14	0.09	0.33	0.06	-0.02	0.07	-0.02	0.39	0.80
	28	0.39	0.63	0.38	0.18	0.07	0.25	0.06	-0.01	0.03	-0.01	0.23	1.27
	29	0.32	-	0.33	0.28	0.07	0.15	0.06	-0.01	0.00	-0.01	0.17	0.91
	30	0.26	-	0.28	0.17	0.10	0.11	0.13	-0.00	-0.01	0	0.19	0.80
	31	0.22	-	0.28	-	0.08	-	0.17	-0.00	-	0	-	0.71
	TOTAL												
	AVERAGE												

Table. 3.8 Stream stage records at Bili-Bili gauging station (6)

River System			River			Observatory						Year	
Jeneberang			Jeneberang			Bili-Bili						1979	
D	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		0.59	0.14	0.53	0.30	0.35	0.01	-0.03	-0.23	-0.30	0.24	0.27	0.50
2		0.67	0.88	0.36	0.24	0.32	0.01	-0.04	-0.23	-0.30	0.32	0.26	0.62
3		0.58	0.85	0.30	0.25	0.43	0.01	-0.06	-0.23	-0.30	0.32	0.26	0.93
4		0.44	0.40	0.60	0.29	0.51	0.01	-0.07	-0.23	-0.30	0.30	0.28	0.81
5		0.41	0.39	0.34	0.28	0.38	0.02	-0.09	-0.22	-0.30	0.26	0.29	0.60
6		0.76	0.37	0.30	0.34	0.36	0.23	-0.14	-0.17	-0.30	0.22	0.28	0.61
7		1.35	0.29	0.96	0.33	0.47	0.10	-0.14	-0.17	-0.30	0.22	0.29	0.83
8		1.63	0.22	1.19	0.33	0.51	0.04	-0.13	-0.17	-0.30	0.22	0.28	1.34
9		1.44	0.19	1.00	0.41	0.32	0.11	-0.13	-0.18	-0.30	0.24	0.28	1.03
10		1.37	0.18	0.64	0.37	0.28	0.18	-0.12	-0.18	-0.30	0.25	0.27	1.00
11		1.63	0.16	0.95	0.26	0.27	0.08	-0.12	-0.19	-0.30	0.23	0.27	0.95
12		1.34	0.38	0.90	0.19	0.35	0.02	-0.12	-0.19	-0.30	0.24	0.37	0.96
13		0.86	0.74	0.68	0.14	0.48	0	-0.12	-0.20	-0.30	0.23	0.43	0.83
14		0.55	0.56	0.53	0.11	0.38	0	-0.12	-0.23	-0.30	0.23	0.40	0.73
15		0.47	0.38	0.41	0.08	0.31	0	-0.13	-0.24	-0.30	0.22	0.38	0.60
16		0.55	0.69	0.33	0.07	0.22	0	-0.13	-0.24	-0.30	0.22	0.37	0.60
17		0.50	0.63	0.34	0.16	0.16	0	-0.13	-0.24	-0.30	0.22	0.35	0.88
18		0.37	0.43	0.29	0.18	0.12	0	-0.13	-0.24	-0.30	0.23	0.34	1.10
19		0.29	0.27	0.37	0.09	0.09	0	-0.13	-0.24	-0.30	0.24	0.36	1.05
20		0.23	0.34	0.39	0.10	0.08	0	-0.13	-0.24	-0.30	0.25	0.35	1.08
21		0.24	0.39	0.36	0.17	0.08	0	-0.15	-0.24	-0.30	0.29	0.31	0.93
22		0.44	0.27	0.43	0.36	0.07	0	-0.17	-0.24	-0.30	0.31	0.31	0.79
23		0.42	0.22	0.39	0.34	0.04	0	-0.18	-0.24	-0.30	0.31	0.31	0.81
24		0.28	0.21	0.26	0.28	0.02	0	-0.20	-0.24	-0.30	0.30	0.32	1.04
25		0.23	0.31	0.27	0.36	0.01	0	-0.21	-0.25	-0.30	0.29	0.32	0.94
26		0.31	0.37	0.30	0.48	0.01	0	-0.22	-0.28	-0.30	0.27	0.31	0.86
27		0.34	1.16	0.30	0.43	0.01	0	-0.22	-0.29	-0.30	0.26	0.33	1.02
28		0.25	1.01	0.30	0.25	0.02	0	-0.23	-0.30	0.21	0.27	0.35	0.99
29		0.21	-	0.42	0.31	0.02	0	-0.23	-0.30	0.22	0.27	0.39	0.98
30		0.16	-	0.54	0.38	0.01	0	-0.23	-0.30	0.22	0.27	0.53	1.05
31		0.12	-	0.46	-	0.01	-	-0.23	-0.30	-	0.27	-	1.25
TOTAL													
AVERAGE													

Table. 3.8 Stream stage records at Bili-Bili gauging station (7)

River System		River					Observatory					Year	
Jeneberang		Jeneberang					Bili-Bili					1980	
D	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		1.00	0.58	0.94	0.66	0.74	0.47	0.30	0.15	-	0.07	0.20	0.75
2		0.93	0.61	0.81	0.65	0.67	0.45	0.28	0.16	-	0.07	0.18	0.69
3		0.85	0.67	0.86	0.67	0.69	0.43	0.27	0.16	-	0.07	0.16	0.70
4		1.01	0.75	1.02	0.70	0.91	0.42	0.27	0.17	-	0.07	0.15	0.76
5		1.20	0.78	0.99	0.85	0.87	0.40	0.25	0.17	0.12	0.07	0.12	0.85
6		1.32	0.85	0.82	0.83	0.78	0.38	0.25	0.17	0.12	0.07	0.11	0.79
7		1.52	0.99	0.77	0.77	0.76	0.37	0.24	0.23	0.11	0.07	0.13	0.76
8		1.58	1.06	0.74	0.84	0.69	0.37	0.24	0.20	0.10	0.08	0.15	0.81
9		2.10	1.07	1.18	0.78	0.65	0.37	0.25	0.20	0.10	0.09	0.23	0.91
10		1.63	0.96	1.09	0.91	0.62	0.40	0.25	0.19	0.10	0.09	0.39	0.81
11		1.46	0.93	0.88	0.86	0.59	0.38	0.25	0.19	0.10	0.10	0.38	0.85
12		1.17	1.32	0.84	0.78	0.57	0.36	0.24	0.18	0.10	0.11	0.34	0.87
13		1.00	1.97	0.89	0.73	0.55	0.35	0.23	0.17	0.09	0.11	0.30	1.09
14		0.87	1.69	1.52	0.83	0.52	0.34	0.22	0.16	0.09	0.11	0.26	1.35
15		0.81	1.73	1.24	0.94	0.50	0.34	0.23	0.16	0.09	0.13	0.23	1.01
16		1.04	1.51	1.01	1.04	0.49	0.33	0.23	0.15	0.08	0.14	0.22	0.81
17		0.91	1.59	1.21	1.06	0.47	0.34	0.24	0.13	0.08	0.14	0.27	0.70
18		0.83	1.33	1.36	1.08	0.46	0.35	0.24	0.13	0.07	0.15	0.36	0.76
19		0.94	1.14	1.12	0.91	0.44	0.34	0.23	0.12	0.07	0.15	0.50	0.89
20		1.83	1.05	1.28	0.83	0.44	0.43	0.21	0.12	0.07	0.14	0.38	1.14
21		1.65	1.13	1.34	0.76	0.43	0.38	0.19	0.11	0.07	0.14	0.36	1.23
22		1.35	1.24	1.09	0.75	0.42	0.34	0.19	0.11	0.07	0.16	0.38	0.99
23		1.25	1.38	0.94	0.91	0.52	0.33	0.18	0.11	0.07	0.21	0.34	1.10
24		0.04	1.45	0.88	0.78	0.73	0.32	0.18	0.11	0.07	0.21	0.34	1.65
25		0.92	1.15	0.88	0.79	0.69	0.31	0.18	0.10	0.07	0.20	0.46	1.36
26		0.82	1.20	0.81	0.97	0.55	0.31	0.18	0.10	0.07	0.19	0.61	1.01
27		0.74	1.34	0.74	0.84	0.50	0.31	0.18	0.11	0.07	0.18	0.64	0.90
28		0.70	1.06	0.78	0.83	0.47	0.31	0.18	0.11	0.07	0.27	0.64	1.01
29		0.67	1.01	0.89	0.88	0.51	0.31	0.16	0.12	0.07	0.32	0.62	1.23
30		0.65	-	0.84	0.86	0.56	0.31	0.15	-	0.07	0.27	0.74	
31		0.60	-	0.72	-		-	0.15	-	-	0.23	-	
TOTAL													
AVERAGE													

Table. 3.9 Stream stage records at Jenelata gauging station (1)

River System		River					Observatory					Year	
Jenaberang		Jenelata					Jenelata					1977	
DATE	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1							0.50	0.36	0.26	0.17	0.13	0.92	
2							0.50	0.36	0.26	0.18	0.14	0.89	
3							0.50	0.35	0.26	0.18	0.15	0.94	
4							0.49	0.36	0.25	0.19	0.16	0.96	
5							0.49	0.36	0.33	0.20	0.17	0.83	
6							0.49	0.35	0.43	0.18	0.18	0.84	
7							0.49	0.34	0.38	0.19	0.18	0.77	
8							0.48	0.33	0.28	0.19	0.19	0.90	
9							0.40	0.33	0.26	0.19	0.20	1.23	
10							0.40	0.33	0.29	0.19	0.23	1.05	
11							0.40	0.33	0.26	0.17	0.21	0.85	
12							0.40	0.34	0.25	0.14	0.18	0.76	
13							0.40	0.43	0.24	0.13	0.17	1.10	
14							0.40	0.38	0.20	0.13	0.16	1.23	
15							0.40	0.33	0.23	0.13	0.14	1.02	
16							0.40	0.32	0.23	0.13	0.11	1.40	
17							0.40	0.32	0.22	0.13	0.17	1.30	
18							0.40	0.30	0.22	0.13	0.21	1.60	
19							0.39	0.28	0.22	0.18	0.47	1.78	
20							0.39	0.29	0.21	0.19	0.46	1.65	
21							0.38	0.29	0.18	0.16	0.49	1.07	
22						0.70	0.38	0.29	0.22	0.15	0.49	1.07	
23						0.69	0.38	0.28	0.21	0.15	0.52	1.04	
24						0.65	0.38	0.29	0.20	0.15	0.54	1.01	
25						0.61	0.38	0.31	0.24	0.15	0.44	1.02	
26						0.59	0.37	0.29	0.27	0.15	0.39	1.02	
27						0.57	0.36	0.28	0.19	0.14	0.35	0.96	
28						0.50	0.36	0.27	0.17	0.14	0.33	0.94	
29						0.50	0.35	0.27	0.17	0.13	0.59	1.45	
30						0.50	0.35	0.27	0.17	0.13	0.76	1.21	
31						-	0.35	0.27	-	0.12	-	1.14	
TOTAL													
AVERAGE													

Table. 3.9 Stream stage records at Jenelata gauging station (2)

River System			River			Observatory					Year	
Jenabarang			Jenelata			Jenelata					1978	
D	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1	1.28	0.78	1.08	0.80	0.60	0.64	0.76	0.68	0.55	0.50	0.40	1.06
2	2.08	1.46	0.92	0.76	0.62	0.60	1.11	0.74	0.52	0.54	0.39	1.04
3	2.40	1.95	0.91	0.72	1.34	0.59	1.03	0.81	0.55	0.51	0.39	0.99
4	2.30	1.53	0.92	0.68	0.99	0.92	1.16	0.69	0.64	0.51	0.38	1.03
5	1.36	1.72	0.92	1.23	0.86	1.08	1.18	0.66	0.59	0.50	0.37	0.93
6	1.20	1.70	1.31	1.29	0.88	0.93	1.30	0.63	0.61	0.55	0.37	0.87
7	1.19	1.55	1.50	1.28	0.79	1.18	1.02	0.60	0.66	0.66	0.42	0.86
8	1.06	1.19	1.33	1.27	0.73	1.27	0.94	0.59	0.71	0.82	0.43	0.82
9	1.11	1.06	1.11	1.03	0.67	1.06	0.79	0.57	1.87	0.66	0.49	0.71
10	1.28	0.97	1.02	1.12	0.78	1.79	0.76	0.56	0.91	0.56	0.49	1.04
11	3.16	0.92	2.38	0.98	0.77	1.07	0.73	0.66	0.84	0.53	0.62	0.86
12	2.97	1.39	1.42	0.87	1.04	0.95	0.69	0.57	0.75	0.50	0.53	1.24
13	2.88	1.25	1.07	0.81	0.96	0.89	0.66	0.56	0.68	0.53	0.45	1.78
14	1.46	1.11	0.89	0.77	1.01	0.86	1.21	0.56	0.64	0.51	0.42	1.51
15	1.07	1.00	0.87	0.72	1.16	0.85	1.05	0.56	0.60	0.50	0.53	1.05
16	1.00	0.89	0.84	0.67	1.67	0.81	0.89	0.60	0.58	0.47	0.59	1.28
17	0.96	0.78	0.81	0.71	1.34	0.78	0.81	0.78	0.55	0.46	0.48	0.86
18	0.85	0.76	0.79	0.66	1.10	0.85	0.78	0.75	0.96	0.45	0.43	0.83
19	0.85	1.30	0.77	0.63	0.93	1.00	0.75	0.65	1.05	0.45	0.42	0.81
20	0.97	1.66	0.75	0.61	0.82	0.94	0.73	0.60	0.93	0.45	0.51	0.90
21	1.00	1.74	0.72	0.60	0.79	0.79	0.69	0.56	0.85	0.45	0.46	1.02
22	1.97	1.67	0.81	0.59	0.75	0.76	0.65	0.53	0.74	0.45	0.61	0.98
23	1.81	1.40	0.87	0.66	0.71	0.72	0.62	0.52	0.67	0.45	0.73	1.63
24	1.50	1.12	1.74	0.67	0.67	0.68	0.57	0.52	0.63	0.45	0.67	2.38
25	1.37	1.03	1.52	0.67	0.71	0.80	0.58	0.51	0.60	0.44	0.87	1.68
26	1.22	0.96	1.04	0.64	0.82	1.18	0.58	0.51	0.58	0.43	1.07	1.75
27	1.02	1.24	0.95	0.61	0.77	1.05	0.58	0.50	0.56	0.42	1.07	1.91
28	0.89	1.31	1.00	0.79	0.69	0.88	0.56	0.49	0.55	0.40	0.82	1.88
29	0.83	-	0.99	0.87	0.68	0.78	0.53	0.49	0.53	0.40	0.68	1.69
30	0.78	-	0.94	0.72	0.67	0.73	0.56	0.49	0.52	0.40	0.87	1.55
31	0.72	-	0.86	-	0.66	-	0.62	0.49	-	0.42	-	1.35
TOTAL												
AVERAGE												

Table 3.8 Stream stage records at Jenelata gauging station (3)

River System		River					Observatory					Year	
Jenebbrang		Jenelata					Jenelata					1979	
D	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		1.21	0.68	0.95	0.94	0.93	0.54	0.46	0.34	0.27	0.28	0.20	0.74
2		1.22	2.80	0.90	0.89	0.95	0.57	0.45	0.34	0.27	0.25	0.18	0.59
3		1.08	1.18	0.86	0.92	1.12	0.66	0.46	0.32	0.25	0.24	0.18	1.51
4		0.93	0.90	0.95	0.94	1.07	0.54	0.46	0.34	0.27	0.24	0.23	1.22
5		0.85	0.86	0.78	1.04	1.06	1.10	0.44	0.38	0.24	0.21	0.24	0.74
6		1.18	0.85	0.76	1.04	0.99	1.25	0.44	0.31	0.26	0.22	0.30	0.13
7		2.14	0.79	1.54	0.94	1.41	0.86	0.44	0.31	0.26	0.22	0.28	0.98
8		2.75	0.74	1.62	1.45	1.13	0.79	0.43	0.35	0.27	0.22	0.25	1.36
9		2.68	0.70	1.62	1.05	0.90	0.73	0.43	0.36	0.27	0.19	0.23	1.31
10		2.71	0.69	1.22	0.88	0.73	0.71	0.42	0.35	0.26	0.18	0.22	1.06
11		2.52	0.67	1.66	0.80	0.87	0.65	0.41	0.33	0.24	0.14	0.19	1.02
12		1.96	0.63	1.62	0.76	1.27	0.61	0.41	0.33	0.23	0.16	0.25	1.23
13		1.55	0.91	1.38	0.71	1.17	0.59	0.43	0.32	0.27	0.13	0.48	1.02
14		1.23	0.84	1.08	0.65	1.04	0.57	0.41	0.33	0.23	0.19	0.56	0.82
15		1.04	1.15	0.97	0.61	0.90	0.56	0.41	0.32	0.23	0.16	0.42	0.71
16		1.29	1.47	0.88	0.60	0.82	0.54	0.40	0.30	0.22	0.16	0.32	0.64
17		1.26	1.50	0.85	0.81	0.74	0.53	0.39	0.29	0.20	0.15	0.28	0.71
18		0.99	0.95	0.80	0.69	0.69	0.51	0.39	0.28	0.35	0.20	0.25	1.20
19		0.86	0.87	0.77	0.66	0.66	0.50	0.39	0.27	0.24	0.17	0.33	1.21
20		0.79	1.13	0.74	0.67	0.62	0.50	0.39	0.29	0.25	0.14	0.30	1.10
21		0.83	1.07	0.68	0.71	0.62	0.51	0.38	0.27	0.21	0.15	0.26	0.93
22		1.03	1.21	0.65	1.41	0.59	0.50	0.39	0.26	0.23	0.21	0.24	0.93
23		1.01	0.79	0.62	1.36	0.70	0.56	0.37	0.28	0.26	0.28	0.22	0.81
24		0.81	0.76	0.61	0.96	0.61	0.61	0.36	0.26	0.24	0.25	0.30	1.20
25		0.74	0.73	0.70	0.99	0.58	0.53	0.35	0.27	0.22	0.23	0.50	1.07
26		0.72	0.70	1.31	1.06	0.56	0.60	0.36	0.25	0.22	0.21	0.51	0.95
27		0.86	1.79	0.97	1.04	0.56	0.52	0.35	0.25	0.21	0.21	0.60	1.25
28		0.76	1.43	1.00	0.85	0.62	0.49	0.34	0.27	0.20	0.18	0.48	0.97
29		0.70	-	1.39	0.87	0.58	0.48	0.35	0.24	0.24	0.30	0.46	1.05
30		0.65	-	1.34	1.42	0.56	0.47	0.35	0.23	0.27	0.23	0.67	0.93
31		0.61	-	1.17	-	0.54	-	0.35	0.23	-	0.21	-	1.19
TOTAL													
AVERAGE													

Table. 3.9 Stream stage records at Jenelata gauging station (4)

River System		River					Observatory					Year	
Jeneberang		Jenelata					Jenelata					1980.	
D	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		1.03	0.62	1.25	0.71	1.27	0.50	0.39	0.30	0.20	0.14	0.27	0.88
2		0.97	0.63	0.99	0.72	1.28	0.48	0.39	0.32	0.19	0.11	0.24	0.86
3		0.86	0.66	0.86	0.69	1.57	0.48	0.39	0.33	0.24	0.07	0.20	0.81
4		1.15	0.94	0.86	0.65	1.10	0.46	0.39	0.31	0.20	0.09	0.17	1.14
5		1.11	0.80	0.78	1.10	1.29	0.46	0.39	0.30	0.19	0.09	0.17	1.13
6		1.21	1.82	0.74	1.01	1.21	0.45	0.38	0.30	0.18	0.04	0.18	0.92
7		1.62	1.91	0.71	1.08	1.08	0.44	0.38	0.46	0.17	0.02	0.29	0.86
8		1.93	1.55	0.68	1.27	0.99	0.46	0.38	0.36	0.13	0.13	0.33	0.99
9		2.47	1.15	0.75	1.73	0.93	0.55	0.38	0.33	0.17	0.14	0.35	1.09
10		2.47	1.04	1.19	1.16	0.86	0.57	0.38	0.31	0.13	0.10	0.35	1.17
11		1.73	1.02	0.88	1.40	0.78	0.54	0.38	0.27	0.17	0.12	0.36	1.25
12		1.41	2.01	0.79	1.26	0.73	0.46	0.38	0.26	0.16	0.09	0.55	1.35
13		1.17	2.46	1.25	1.02	0.69	0.47	0.38	0.25	0.15	0.10	0.45	1.60
14		1.03	1.77	1.51	1.70	0.65	0.44	0.37	0.23	0.15	0.22	0.45	1.67
15		0.92	1.76	1.39	1.65	0.63	0.43	0.39	0.25	0.19	0.23	0.35	1.27
16		1.26	1.51	1.06	1.34	0.67	0.44	0.47	0.23	0.14	0.21	0.36	1.02
17		1.04	1.91	0.91	1.32	0.64	0.45	0.39	0.22	0.15	0.18	0.40	1.00
18		0.94	1.35	1.51	1.36	0.61	0.44	0.37	0.22	0.15	0.16	0.55	1.04
19		3.10	1.12	1.21	1.07	0.58	0.67	0.37	0.22	0.13	0.15	0.63	1.03
20		2.62	1.10	1.29	0.96	0.53	0.70	0.36	0.23	0.10	0.13	0.60	1.12
21		1.86	1.02	1.24	0.85	0.46	0.53	0.36	0.23	0.11	0.49	0.66	1.70
22		1.42	1.34	1.04	0.79	0.40	0.48	0.36	0.23	0.15	0.34	0.53	1.34
23		1.39	1.38	0.91	1.10	0.34	0.46	0.36	0.22	0.15	0.35	0.53	1.30
24		1.10	1.36	0.96	0.85	0.52	0.44	0.34	0.22	0.16	0.26	0.63	1.91
25		0.95	1.23	0.88	0.93	0.67	0.44	0.31	0.21	0.19	0.23	0.65	1.66
26		0.85	1.12	0.80	1.05	0.72	0.43	0.31	0.21	0.14	0.18	0.82	1.25
27		0.78	1.28	0.76	0.93	0.59	0.42	0.31	0.22	0.12	0.20	0.96	1.03
28		0.75	1.38	0.73	1.15	0.67	0.42	0.32	0.26	0.09	0.19	0.86	1.05
29		0.75	1.51	0.81	1.37	0.71	0.44	0.35	0.20	0.10	0.47	0.89	1.30
30		0.69	-	0.81	1.15	0.75	0.42	0.31	0.21	0.11	0.37	1.16	1.15
31		0.63	-	0.80	-	0.67	-	0.30	0.15	-	0.30	-	1.39
TOTAL													
AVERAGE													

Table 310: stream stage records at Bantimurung gauging station (2)

River System			River			Observatory					Year	
Marob			Bantimurung			Bantimurung					1978	
D. M.	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1	2.29	1.85	1.94	1.83	0.96	1.85	1.94	1.90	1.83	1.80	1.75	1.94
2	2.38	1.92	1.85	1.62	0.94	1.84	1.97	1.89	1.82	1.82	1.75	2.01
3	2.39	1.93	1.93	1.43	0.92	1.83	2.02	1.89	1.81	1.88	1.75	2.06
4	2.29	2.06	2.03	1.33	0.91	1.86	2.06	1.88	1.82	1.93	1.74	2.11
5	2.24	1.99	2.14	1.73	0.92	1.89	x	1.87	1.83	1.88	1.74	2.11
6	2.40	2.06	2.27	1.89	0.92	1.88	x	1.87	1.83	1.83	1.77	2.12
7	2.23	2.02	2.26	2.05	0.90	1.92	x	1.87	1.84	1.44	1.83	2.10
8	2.09	1.99	2.29	2.27	0.89	1.93	1.98	1.87	1.87	0.93	1.85	2.07
9	1.98	1.95	2.24	2.14	0.88	1.92	1.96	1.87	1.88	1.91	1.85	2.03
10	2.04	2.06	2.41	2.16	0.87	1.96	1.94	1.86	1.87	1.29	1.88	2.05
11	x	2.08	2.23	2.00	0.87	1.97	1.91	1.86	1.86	1.74	2.04	2.06
12	x	2.06	2.19	1.96	0.92	1.94	1.91	1.86	x	1.74	2.10	2.02
13	2.80	2.06	2.08	1.95	0.93	1.92	1.91	1.86	x	1.74	1.98	2.02
14	2.58	2.09	1.98	1.78	0.93	1.96	1.95	1.86	x	1.74	1.93	2.11
15	2.44	2.05	1.78	1.55	1.18	2.16	1.96	1.86	x	1.74	1.90	2.21
16	2.25	2.09	1.77	1.38	2.63	2.05	1.93	1.86	x	1.73	1.90	2.43
17	2.09	2.28	1.81	1.28	2.32	1.99	1.91	1.89	1.89	1.72	1.94	2.59
18	1.98	2.31	1.53	1.30	1.94	2.03	1.86	1.92	1.89	1.72	1.93	2.31
19	1.88	2.95	1.35	1.40	1.59	2.06	1.82	1.88	1.93	1.72	1.89	2.18
20	1.76	2.75	1.29	1.12	1.35	2.02	1.83	1.86	1.84	1.75	1.88	2.22
21	1.79	2.55	1.24	1.14	1.35	2.03	1.82	1.86	1.54	1.77	1.88	2.58
22	2.85	2.49	1.30	1.39	1.94	1.99	1.81	1.86	1.07	1.77	2.00	2.59
23	2.61	2.39	1.95	1.27	1.95	1.97	1.80	1.86	1.19	1.78	1.99	2.35
24	2.77	2.25	2.12	1.15	1.92	1.96	1.80	1.85	1.77	1.78	2.09	2.76
25	2.92	2.13	2.34	1.21	1.85	1.80	1.79	1.85	1.73	1.78	2.04	3.26
26	2.71	2.05	2.09	1.08	1.80	1.55	1.79	1.85	1.38	1.78	2.09	2.92
27	2.43	2.08	1.99	1.24	1.84	1.62	1.79	1.84	1.26	1.78	1.78	2.72
28	2.29	2.00	1.95	1.34	1.86	1.80	1.78	1.84	1.81	1.78	1.19	3.48
29	2.13	-	1.82	1.04	1.86	1.93	1.78	1.84	1.80	1.78	1.85	3.16
30	2.00	-	1.80	0.99	1.85	1.90	1.79	1.84	1.80	1.77	1.92	2.75
31	1.88	-	1.90	-	1.85	-	1.79	1.84	-	1.76	-	2.69
TOTAL												
AVERAGE												

Table 310 Stream stage records at Bantimurung gauging station (3)

River System		River					Observatory					Year	
Maros		Bantimurung					Bantimurung					1979	
NO	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1	2.44	2.12	1.63	2.69	1.99	1.92	1.76	1.68	1.62	1.51	1.59	2.11	
2	2.57	2.43	1.89	2.55	2.11	1.92	1.75	1.68	1.62	1.51	1.59	1.34	
3	2.95	2.45	1.85	2.43	2.14	1.91	1.75	1.68	1.62	1.51	1.57	1.41	
4	2.69	2.29	1.92	2.30	2.13	1.90	1.75	1.67	1.62	1.51	1.53	2.19	
5	2.58	2.21	2.04	2.19	1.16	1.90	1.75	1.67	1.62	1.51	1.59	1.87	
6	2.43	2.14	2.07	2.16	2.27	1.90	1.74	1.67	1.62	1.52	1.21	1.41	
7	1.99	2.12	1.43	2.22	2.53	1.91	1.74	1.67	1.62	1.52	1.25	1.62	
8	1.89	2.08	1.17	2.39	2.58	1.91	1.74	1.66	1.63	1.52	1.49	2.29	
9	1.99	2.04	1.12	2.46	2.48	1.90	1.73	1.66	1.63	1.52	1.65	2.57	
10	2.00	2.02	1.48	2.38	2.38	1.89	1.72	1.66	1.63	1.52	1.76	2.39	
11	2.08	2.03	1.55	2.29	2.29	1.89	1.72	1.66	1.63	1.52	1.83	2.21	
12	2.46	2.00	1.55	2.20	2.25	1.89	1.72	1.66	1.63	1.52	1.82	2.10	
13	2.51	2.03	1.75	2.13	2.27	1.88	1.72	1.66	1.63	1.52	1.40	2.00	
14	2.15	2.06	1.99	2.07	2.31	1.87	1.71	1.66	1.62	1.53	1.16	1.57	
15	2.00	2.05	2.39	2.03	2.30	1.86	1.71	1.66	1.61	1.53	1.07	1.53	
16	1.92	2.05	2.45	2.00	2.24	1.85	1.71	1.66	1.59	1.54	1.30	1.84	
17	1.83	2.05	2.40	1.98	2.19	1.84	1.71	1.66	1.58	1.54	1.69	1.99	
18	1.75	2.08	2.24	1.95	2.14	1.83	1.71	1.66	1.57	1.54	1.72	2.11	
19	1.73	2.05	2.34	1.93	2.09	1.82	1.71	1.64	1.56	1.54	1.74	2.07	
20	1.66	2.11	2.28	1.91	2.05	1.82	1.71	1.63	1.55	1.54	1.74	2.03	
21	1.62	2.25	2.23	1.90	2.02	1.81	1.71	1.63	1.54	1.55	1.72	2.04	
22	2.02	2.30	2.22	1.93	1.99	1.81	1.71	1.63	1.54	1.55	1.69	2.06	
23	2.21	2.20	2.21	2.01	1.97	1.81	1.71	1.63	1.54	1.56	1.70	2.04	
24	2.10	2.26	2.17	1.97	1.96	1.81	1.71	1.64	1.54	1.56	1.71	2.01	
25	2.13	2.29	2.15	1.95	1.94	1.80	1.71	1.64	1.53	1.56	1.79	1.99	
26	2.12	2.27	2.27	1.95	1.93	1.80	1.70	1.64	1.53	1.56	1.82	1.94	
27	2.24	1.52	2.42	1.95	1.95	1.79	1.69	1.64	1.52	1.56	1.82	2.08	
28	2.29	0.73	2.40	1.96	2.05	1.78	1.69	1.64	1.52	1.57	1.77	2.07	
29	2.25	-	2.40	1.96	2.01	1.78	1.69	1.64	1.51	1.57	1.66	2.04	
30	2.20	-	2.82	2.00	1.97	1.77	1.68	1.64	1.51	1.58	1.90	2.56	
31	2.14	-	3.05	-	1.95	-	1.68	1.64	-	1.58	-	3.56	
TOTAL													
AVERAGE													

Table 310 Stage records at Bantimurung gauging station (4)

River System		River				Observatory					Year	
Maros		Bantimurung				Bantimurung					1980	
DATE	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		1.79	2.29	1.83	1.94	1.84	1.69	1.68		1.48	.	1.86
2		1.72	2.28	.	1.92	1.84	1.69	1.68	.	1.48	.	1.81
3	2.40	1.68	2.26	.	1.90	1.82	1.69	1.68	1.47	1.48	.	1.87
4	2.46	1.73	2.27	.	1.88	1.82	1.70	1.68	1.47	1.48	.	1.79
5	2.44	1.77	2.24	.	1.87	1.81	1.70	1.68	1.47	1.48	.	1.71
6	2.62	2.05	2.22	.	1.86	1.80	1.70	1.67	1.47	1.48	.	1.80
7	3.11	2.64	2.18	.	1.86	1.80	1.70	1.67	1.47	1.48	.	1.86
8	3.35	3.04	2.15	.	1.84	1.79	1.70	1.67	1.46	1.48	0.54	1.79
9	3.50	2.31	2.12	.	1.83	1.78	1.70	1.66	1.46	1.48	0.54	2.02
10	3.52	2.20	2.10	.	1.82	1.78	1.70	1.65	1.45	1.48	0.54	1.07
11	3.38	2.15	.	.	1.81	1.77	1.70	1.64	1.45	1.48	0.54	2.31
12	2.91	2.32	.	.	1.80	1.76	1.71	1.62	1.45	1.48	0.55	2.61
13	2.69	3.96	.	.	1.78	1.76	1.71	1.61	1.45	1.48	0.55	2.69
14	2.63	3.76	.	2.09	1.77	1.75	1.71	1.60	1.45	1.48	0.53	3.49
15	2.57	3.71	.	2.02	1.75	1.75	1.71	1.59	1.45	1.48	0.50	2.80
16	2.49	3.13	.	2.08	1.75	1.75	1.71	1.59	1.45	1.48	0.50	2.58
17	2.47	2.77	.	2.15	1.74	1.74	1.71	1.58	1.45	1.48	0.51	2.48
18	2.42	2.51	.	2.15	1.73	1.74	1.71	1.58	1.45	1.48	0.53	2.35
19		2.27	.	2.18	1.71	1.74	1.71	1.56	1.45	1.48	0.54	2.25
20		2.42		2.22	1.71	1.73	1.71	1.56	1.45	1.48	0.54	2.41
21		2.42	2.92	2.25	1.71	1.73	1.71	1.55	1.44	1.48	0.53	3.04
22		2.36	2.75	2.21	1.71	1.71	1.70	1.54	1.44	1.48	0.57	2.72
23	2.66	2.30	2.65	2.16	1.72	1.71	1.70	1.54	1.44	1.41	0.62	3.15
24	2.33	2.28	2.62	2.12	1.76	1.70	1.70	1.53	1.44	1.16	1.39	4.11
25	2.23	2.26	2.56	2.08	1.84	1.70	1.70	1.53	1.46	1.03	0.89	3.38
26	2.37	2.23	2.51	2.05	1.85	1.70	1.70	1.52	1.48	0.98	0.90	2.83
27	2.23	2.21	.	2.03	1.85	1.70	1.70	1.52	1.48	0.98	1.66	2.63
28	2.17	2.20	.	2.00	1.85	1.69	1.70	1.52	1.48	0.97	1.74	2.68
29	2.08	2.22	.	1.98	1.84	1.69	1.70	1.52	1.48	0.97	1.64	2.56
30	1.99		.	1.96	1.85	1.69	1.69	1.51	1.48		2.21	2.55
31	1.90		.	.	1.85	.	1.68	1.50	1.48			2.63
TOTAL												
AVERAGE												

Table 3.11 Stream stage records at Tampobuku gauging station (1)

River System		River			Observatory					Year		
Maros		Maros			Tampobulu gauging station					1977		
	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1			1.52	0.99	0.90	0.70	0.70	0.54	0.48	0.43	0.36	1.10
2			1.38	1.03	0.86	0.70	0.70	0.54	0.48	0.43	0.36	0.96
3			1.28	1.00	0.87	0.68	0.69	0.54	0.47	0.43	0.36	0.86
4			1.30	0.90	0.90	0.68	0.68	0.55	0.47	0.42	0.36	0.98
5			1.45	0.93	0.89	0.68	0.67	0.54	0.47	0.42	0.36	0.93
6			1.27	0.97	0.87	0.67	0.66	0.54	0.47	0.42	0.40	0.82
7			2.10	0.93	0.81	0.67	0.66	0.53	0.47	0.43	0.42	0.71
8			1.52	1.01	0.79	0.68	0.65	0.53	0.47	0.42	0.41	0.73
9			1.29	1.35	0.76	0.67	0.64	0.53	0.46	0.42	0.41	0.87
10			1.14	1.56	0.75	0.65	0.63	0.53	0.45	0.42	0.41	0.89
11			1.07	2.11	0.79	0.65	0.63	0.51	0.45	0.41	0.41	0.80
12			0.99	1.50	0.91	0.66	0.63	0.60	0.44	0.41	0.41	0.71
13			1.24	0.82	0.89	1.47	0.62	0.58	0.44	0.41	0.41	0.75
14			1.29	1.21	0.81	1.32	0.61	0.54	0.44	0.40	0.40	0.84
15			1.14	1.13	0.77	1.09	0.61	0.52	0.44	0.40	0.40	0.87
16			1.05	1.06	0.77	0.93	0.60	0.52	0.44	0.40	0.40	1.27
17			1.03	1.00	1.07	0.88	0.59	0.51	0.44	0.39	0.40	1.12
18			1.09	1.00	1.11	1.53	0.59	0.51	0.43	0.39	0.40	1.56
19			1.02	0.99	0.93	1.18	0.58	0.50	0.43	0.38	0.45	1.56
20			0.99	0.94	0.87	1.03	0.58	0.50	0.43	0.39	0.50	1.51
21			0.92	0.90	0.95	0.94	0.57	0.50	0.43	0.39	0.49	0.95
22			0.95	0.87	0.89	0.89	0.57	0.50	0.44	0.39	0.50	1.03
23			0.92	0.90	0.87	0.85	0.57	0.50	0.43	0.39	0.61	1.15
24			1.09	0.87	0.90	0.82	0.57	0.51	0.42	0.38	0.69	0.95
25			1.06	0.83	0.80	0.79	0.56	0.50	0.42	0.38	0.61	0.94
26			0.93	0.79	0.77	0.77	0.56	0.50	0.42	0.38	0.54	1.04
27			0.90	0.79	0.75	0.75	0.56	0.49	0.42	0.38	0.67	1.04
28			1.15	0.79	0.74	0.74	0.55	0.48	0.42	0.37	0.90	1.10
29			1.07	0.89	0.73	0.72	0.55	0.48	0.42	0.37	0.93	1.14
30			0.96	0.97	0.71	0.71	0.55	0.48	0.42	0.37	0.93	1.07
31			0.92	-	0.70	-	0.54	0.48	-	0.36	-	1.17
MEAN												
AVERS.												

Table 3.11 Stream stage records at Tampobulu gauging station (2)

River System	River					Observatory					Year	
Maros	Maros					Tampobulu gauging station					1978	
	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1	1.15	0.88	0.97	1.06	0.74	0.68	0.71	0.72	0.62	0.60	0.50	0.80
2	1.27	1.05	0.94	0.95	0.72	0.67	0.84	0.69	0.63	0.60	0.50	0.89
3	1.29	1.29	1.10	0.89	0.85	0.67	1.00	0.65	0.63	0.72	0.49	0.94
4	1.36	1.21	1.04	0.87	0.76	0.72	0.93	0.63	0.64	0.84	0.49	0.96
5	1.31	1.11	1.09	1.21	0.73	0.71	1.02	0.62	0.62	0.79	0.50	0.91
6	1.17	1.19	1.07	1.12	0.71	0.71	1.07	0.61	0.59	0.73	0.50	0.91
7	1.21	1.24	1.06	1.47	0.70	0.77	0.91	0.60	0.60	0.68	0.61	0.88
8	1.07	1.13	1.04	1.35	0.68	0.79	0.82	0.59	0.61	0.59	0.62	0.81
9	0.99	1.17	1.14	1.29	0.67	0.92	0.77	0.59	0.60	0.57	0.59	0.82
10	1.31	1.22	1.25	1.18	0.67	0.98	0.76	0.59	0.60	0.56	0.58	0.87
11												
12	2.08	1.12	1.22	1.09	0.67	0.82	0.75	0.58	0.59	0.55	0.70	0.82
13	1.78	1.11	1.06	1.02	0.69	0.85	0.76	0.60	0.57	0.54	0.70	1.02
14	1.43	1.10	0.98	0.95	0.69	0.78	0.88	0.62	0.56	0.54	0.61	1.38
15	1.28	1.04	0.92	0.87	0.77	0.88	0.90	0.63	0.56	0.54	0.59	1.30
16	1.18	1.00	0.99	0.85	1.14	0.94	0.81	0.65	0.54	0.53	0.63	1.17
17	1.09	1.02	0.90	0.82	1.48	0.81	0.76	0.60	0.54	0.56	0.63	1.17
18	1.10	1.06	0.91	0.84	1.02	0.84	0.73	0.67	0.54	0.56	0.60	1.08
19	1.17	1.02	0.94	0.80	0.98	0.81	0.70	0.70	0.66	0.54	0.60	0.96
20	1.21	1.37	0.91	0.77	0.89	0.82	0.69	0.67	0.72	0.54	0.64	0.96
21	1.18	1.32	0.92	0.76	0.84	0.80	0.67	0.65	0.65	0.53	0.69	0.94
22												
23	1.32	1.14	0.89	0.76	0.80	0.75	0.67	0.61	0.60	0.52	0.73	1.18
24	1.85	1.13	0.90	0.83	0.77	0.72	0.66	0.60	0.58	0.52	0.73	1.33
25	1.47	1.05	1.10	0.82	0.76	0.70	0.65	0.60	0.56	0.53	0.70	1.37
26	1.51	1.06	1.54	0.90	0.77	0.69	0.65	0.59	0.55	0.54	0.87	1.70
27	1.56	1.00	1.44	0.91	0.75	0.72	0.64	0.57	0.56	0.52	0.93	1.70
28	1.40	0.96	1.18	0.81	0.74	0.78	0.63	0.57	0.57	0.52	0.92	1.36
29	1.19	1.15	1.09	0.75	0.71	0.82	0.63	0.56	0.58	0.51	0.86	1.40
30	1.08	1.07	1.04	0.81	0.69	0.84	0.62	0.56	0.62	0.50	0.75	1.96
31	1.02	-	0.98	0.84	0.69	0.76	0.62	0.64	0.60	0.50	0.72	1.59
32	0.95	-	0.93	0.76	0.69	0.73	0.74	0.65	0.60	0.52	0.75	1.46
33	0.90	-	1.13	-	0.68	-	0.71	0.61	-	0.50	-	1.55
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AVERAGE												
ST. DEVI.												

Table 3.11 Stream stage records at Tampobulu gauging station (3)

River System		River					Observatory					Year	
Maros		Maros					Tampobulu gauging station					1979	
NO.	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1	1.38	0.96	1.31	0.95	0.89	0.68	0.58	0.50	0.45	0.44	0.42	0.76	
2	1.39	1.36	1.13	0.89	0.86	0.69	0.58	0.50	0.45	0.44	0.43	0.68	
3	1.35	1.12	1.05	0.95	0.97	0.69	0.57	0.50	0.45	0.44	0.46	0.93	
4	1.20	1.18	1.30	0.88	1.09	0.72	0.57	0.50	0.46	0.43	0.46	0.84	
5	1.15	1.16	1.08	0.84	1.00	0.76	0.56	0.50	0.47	0.42	0.46	0.69	
6	1.64	1.01	1.00	0.89	1.00	0.83	0.56	0.50	0.46	0.42	0.51	0.70	
7	1.97	0.93	1.53	1.10	1.17	0.74	0.56	0.50	0.46	0.42	0.46	0.89	
8	2.03	0.90	1.70	1.24	1.16	0.72	0.57	0.50	0.44	0.42	0.46	1.34	
9	1.96	0.88	1.64	1.12	1.01	0.79	0.57	0.50	0.44	0.42	0.44	1.16	
10	1.92	0.86	1.33	1.04	1.04	1.00	0.56	0.48	0.44	0.42	0.53	1.13	
11	2.16	0.86	1.51	0.94	0.98	0.80	0.56	0.47	0.44	0.41	0.53	1.17	
12	1.89	0.99	1.44	0.86	1.05	0.73	0.55	0.47	0.44	0.41	0.48	1.10	
13	1.58	1.20	1.26	0.82	1.05	0.71	0.55	0.48	0.44	0.41	0.52	0.97	
14	1.35	1.13	1.20	0.78	0.92	0.69	0.54	0.48	0.43	0.40	0.48	0.86	
15	1.23	1.02	1.11	0.75	0.86	0.71	0.54	0.48	0.43	0.40	0.50	0.80	
16	1.28	1.17	1.11	0.74	0.82	0.68	0.54	0.47	0.43	0.40	0.49	0.94	
17	1.17	1.13	1.06	0.78	0.79	0.66	0.53	0.47	0.44	0.40	0.46	1.15	
18	1.07	1.00	1.00	0.75	0.76	0.66	0.55	0.46	0.44	0.40	0.46	1.26	
19	0.99	0.93	0.98	0.72	0.74	0.65	0.55	0.46	0.44	0.39	0.45	1.08	
20	0.94	1.09	0.94	0.72	0.73	0.72	0.54	0.47	0.44	0.39	0.44	1.11	
21	0.96	1.07	0.90	0.81	0.72	0.69	0.52	0.47	0.44	0.45	0.44	1.14	
22	1.17	1.01	1.00	0.85	0.75	0.65	0.52	0.46	0.44	0.45	0.44	1.03	
23	1.10	0.91	0.93	0.79	0.77	0.64	0.52	0.46	0.43	0.44	0.48	1.08	
24	0.99	0.95	0.88	0.83	0.71	0.64	0.51	0.45	0.43	0.44	0.48	1.24	
25	0.93	0.96	1.04	0.87	0.72	0.62	0.50	0.46	0.42	0.44	0.54	1.09	
26	1.02	1.02	1.06	0.98	0.70	0.62	0.50	0.46	0.42	0.43	0.58	1.11	
27	1.02	1.99	0.97	0.92	0.72	0.60	0.50	0.46	0.44	0.43	0.62	1.38	
28	0.95	1.77	0.94	0.81	0.71	0.60	0.50	0.46	0.44	0.43	0.56	1.24	
29	0.90	.	0.98	0.84	0.68	0.60	0.50	0.46	0.44	0.43	0.57	1.26	
30	0.86	.	1.13	0.93	0.69	0.59	0.50	0.47	0.44	0.43	0.76	1.77	
31	0.83	.	1.08	.	0.76	-	0.50	0.47	-	0.42	-	1.76	
TOTAL													
W.P.A.													
01													

Table 3.11 Stream stage records at Tampobulu gauging station (4)

River System			River			Observatory						Year	
Maros			Maros			Tampobulu gauging station						1980	
NO.	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.	
1	1.33	0.82	1.09	0.96	0.92	0.67	0.56	0.48	0.42	0.40	0.46	0.98	
2	1.18	0.82	1.02	0.93	0.87	0.67	0.56	0.47	0.45	0.41	0.45	0.96	
3	1.17	0.87	1.04	1.03	0.88	0.66	0.56	0.46	0.45	0.40	0.44	0.96	
4	1.25	0.98	1.04	1.07	.	0.65	0.56	0.46	0.44	0.40	0.44	0.97	
5	1.30	0.87	0.99	0.90	.	0.65	0.56	0.46	0.43	0.39	0.43	1.06	
6	1.58	1.38	0.92	0.87	.	0.65	0.56	0.46	0.43	0.39	0.44	1.00	
7	1.81	1.47	0.90	0.82	.	0.65	0.56	0.47	0.43	0.39	0.46	0.98	
8	1.85	1.36	1.00	0.80	.	0.64	0.56	0.47	0.43	0.38	0.48	1.20	
9	2.00	1.18	1.19	0.77	.	0.63	0.58	0.46	0.42	0.38	0.52	1.15	
10	1.92	1.11	1.23	.	.	0.64	0.56	0.45	0.42	0.37	0.60	1.25	
11	1.73	1.26	1.03	.	.	0.63	0.56	0.45	0.42	0.37	0.56	1.34	
12	1.41	1.66	1.01	.	0.75	0.62	0.56	0.44	0.42	0.39	0.57	1.17	
13	1.24	2.15	1.06	.	0.73	0.62	0.55	0.44	0.42	0.44	0.57	1.29	
14	1.12	1.93	1.71	1.12	0.71	0.62	0.58	0.44	0.42	0.42	0.51	1.66	
15	1.06	2.00	1.46	1.26	0.70	0.62	0.59	0.44	0.42	0.40	0.48	1.30	
16	1.23	1.80	.	1.23	0.69	0.62	0.58	0.44	0.42	0.39	0.53	1.05	
17	1.09	1.68	.	1.30	0.68	0.66	0.56	0.44	0.42	0.39	0.55	1.02	
18	1.18	1.48	.	1.18	0.64	0.62	0.55	0.44	0.42	0.38	0.60	1.00	
19	1.86	1.31	.	1.07	0.66	0.62	0.55	0.44	0.42	0.38	0.65	1.10	
20	1.75	1.23	.	1.00	0.66	0.64	0.52	0.44	0.42	0.38	0.59	1.25	
21	1.73	1.15	.	0.95	0.65	0.62	0.50	0.44	0.41	0.47	0.68	1.32	
22	1.47	1.24	.	1.12	0.65	0.61	0.50	0.44	0.40	0.50	0.70	1.14	
23	1.36	1.57	.	1.09	0.70	0.59	0.50	0.44	0.41	0.54	0.64	1.33	
24	1.34	1.68	1.21	1.00	0.94	0.58	0.50	0.44	0.41	0.48	0.75	1.99	
25	1.22	1.35	1.27	1.06	0.85	0.58	0.49	0.43	0.41	0.45	0.74	1.61	
26	1.09	1.49	1.18	1.09	0.73	0.59	0.49	0.43	0.41	0.45	0.73	1.26	
27	1.03	1.50	1.06	1.13	0.70	0.59	0.48	0.44	0.40	0.52	0.37	1.29	
28	0.98	1.23	1.05	1.14	0.68	0.58	0.48	0.44	0.40	0.62	0.17	1.31	
29	0.93	1.17	1.10	1.09	0.73	0.58	0.48	0.43	0.39	0.55	1.14	1.17	
30	0.89	.	1.02	1.00	0.73	0.56	0.48	0.43	0.38	0.51	1.18	1.27	
31	0.85	.	0.95	.	0.68	.	0.48	0.42	-	0.43	-	1.35	

Table 3.12 Stream stage records at Maradekaya gauging station (1)

River System			River			Observatory					Year		
Pappa			Pappa			Maradekaya					1977		
U	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
	1							0.58	0.52	0.45	0.36	0.14	1.21
	2							0.57	0.52	0.43	0.36	0.13	1.35
	3							0.57	0.52	0.42	0.35	0.12	1.42
	4							0.57	0.52	0.42	0.35	0.11	1.44
	5							0.58	0.51	0.42	0.34	0.10	1.53
	6							0.56	0.51	0.41	0.34	0.9	1.47
	7							0.57	0.51	0.41	0.33	0.9	1.38
	8							0.57	0.51	0.41	0.33	0.8	1.35
	9							0.57	0.51	0.40	0.32	0.7	1.36
	10							0.56	0.50	0.40	0.31	0.7	1.62
	11							0.56	0.50	0.40	0.30	0.6	1.47
	12							0.56	0.53	0.40	0.30	0.6	1.47
	13							0.56	0.53	0.40	0.29	0.5	1.51
	14							0.56	0.52	0.39	0.28	0.5	1.70
	15							0.55	0.51	0.39	0.28	0.4	1.45
	16							0.55	0.50	0.39	0.27	0.4	1.52
	17							0.55	0.49	0.39	0.26	0.3	1.43
	18							0.54	0.48	0.39	0.25	0.3	1.69
	19							0.54	0.48	0.38	0.24	0.20	1.49
	20							0.54	0.50	0.38	0.23	0.34	1.63
	21							0.55	0.48	0.38	0.22	0.39	1.42
	22							0.55	0.48	0.38	0.20	0.46	1.37
	23							0.56	0.46	0.38	0.20	0.54	1.35
	24							0.55	0.46	0.37	0.18	0.62	1.35
	25							0.54	0.46	0.37	0.18	0.74	1.28
	26							0.54	0.45	0.37	0.17	0.85	1.22
	27							0.53	0.45	0.37	0.16	0.93	1.17
	28							0.53	0.45	0.37	0.15	1.05	1.08
	29							0.53	0.45	0.36	0.15	0.94	0.99
	30							0.52	0.45		0.14	0.76	1.08
	31							0.52	0.45	-	0.14	-	1.20
	TOTAL												
	AVERAGE												

Table 3.12 Stream stage records at Maradekaya gauging station (2)

River System		River					Observatory					Year	
Pappa		Pappa					Maradekaya					1978	
D	N	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		1.26	1.82	1.88	0.76	0.72	0.86	0.78	0.92	0.83	0.73	0.58	0.74
2		1.33	2.15	1.93	0.71	0.70	0.85	0.76	0.92	0.82	0.73	0.57	0.85
3		2.55	1.77	1.90	0.76	0.69	0.91	0.76	0.92	0.82	0.72	0.57	0.80
4		1.77	1.62	1.81	2.25	0.69	0.89	0.78	0.91	0.81	0.72	0.57	0.90
5		1.32	1.52	1.81	1.76	0.68	0.86	0.77	0.91	0.81	0.71	0.56	1.04
6		1.32	1.44	2.01	1.70	0.68	0.89	0.77	0.90	0.80	0.71	0.55	1.06
7		1.58	1.34	2.03	1.59	0.68	1.33	0.81	0.90	0.80	0.71	0.69	0.90
8		1.65	1.26	1.78	1.73	1.36	1.56	0.78	0.90	0.79	0.70	0.70	0.81
9		1.66	1.23	1.69	1.68	1.27	1.73	0.77	0.89	0.79	0.70	0.94	0.82
10		1.77	1.23	1.54	1.55	0.99	1.62	2.82	0.87	0.78	0.70	0.77	0.81
11		3.89	1.18	1.49	1.48	1.00	1.56	2.42	0.86	0.78	0.69	0.83	0.78
12		3.92	1.14	1.44	1.57	1.38	1.52	2.21	0.85	0.78	0.69	0.83	0.79
13		3.05	1.17	1.40	1.60	1.67	1.45	1.81	0.85	0.78	0.68	0.80	0.79
14		2.82	1.09	1.67	1.29	1.67	1.25	1.41	0.84	0.78	0.68	0.74	0.78
15		2.50	1.09	1.44	1.04	1.25	0.89	1.13	0.93	0.76	0.68	0.75	0.77
16		2.45	1.11	1.36	0.93	0.98	0.79	0.98	0.86	0.76	0.68	1.00	0.76
17		2.51	1.06	1.27	0.78	0.98	0.79	0.98	0.84	1.21	0.68	0.89	0.73
18		2.29	1.28	1.13	0.73	1.07	0.78	0.97	0.84	1.07	0.67	0.86	0.75
19		2.15	1.59	0.97	0.72	0.96	0.78	0.97	0.84	0.96	0.66	0.93	0.74
20		1.97	1.63	0.77	0.71	0.89	1.04	0.98	0.83	1.34	0.66	0.97	0.74
21		1.78	1.60	0.72	0.71	0.84	0.86	0.98	0.83	0.79	0.65	0.95	0.76
22		1.70	2.33	0.69	0.71	0.84	0.77	0.97	0.83	0.77	0.64	0.99	1.16
23		1.59	2.56	0.65	0.70	0.83	0.73	0.97	0.83	0.77	0.64	1.04	1.31
24		1.83	2.19	2.49	0.69	0.82	0.72	0.96	0.83	0.77	0.63	0.94	1.45
25		1.64	1.97	2.68	0.69	0.79	0.69	0.96	0.83	0.76	0.63	0.92	1.49
26		1.45	1.97	2.53	0.68	0.79	0.68	0.95	0.82	0.76	0.62	0.87	2.87
27		1.33	1.85	2.34	0.67	0.78	0.68	0.94	0.82	0.76	0.61	0.87	2.36
28		1.20	1.72	2.00	0.70	0.80	1.00	0.94	0.82	0.75	0.60	0.80	1.78
29		1.07	-	1.53	0.87	0.86	0.85	0.94	0.82	0.74	0.59	0.75	1.54
30		0.91	-	1.10	0.72	0.88	0.79	0.93	0.82	0.73	0.58	0.75	1.69
31		0.78	-	0.95	-	0.86	-	0.93	0.82	-	0.58	-	-
TOTAL													
AVERAGE													

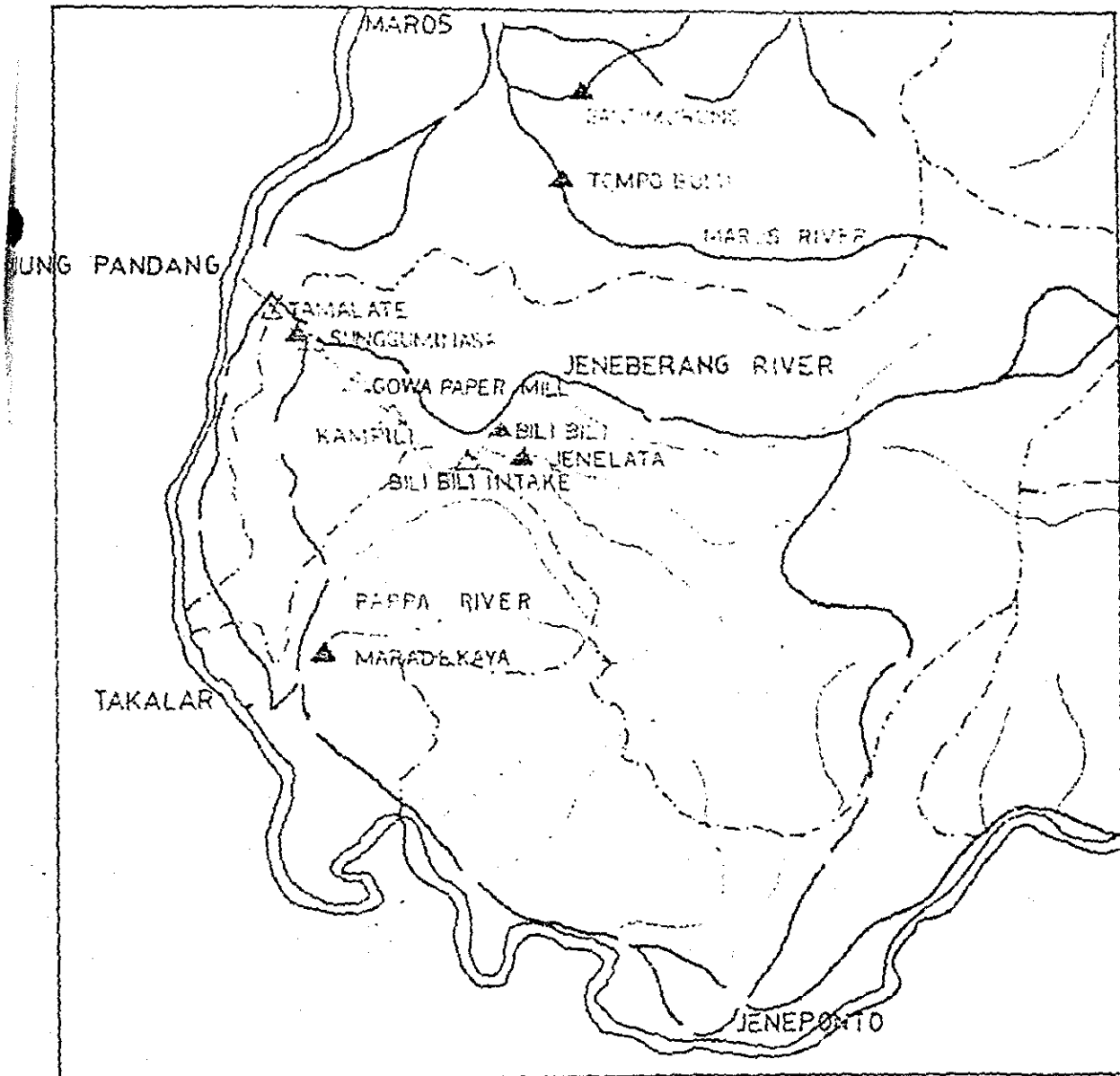
Table 3.12 Stream stage records at Maradekaya gauging station (3)

River System		River				Observatory					Year	
Pappa		Pappa				Maradekaya					1979	
	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1	2.30	0.77	2.24	1.34	0.84	0.89	0.58	0.48	0.44	0.39	0.39	
2	2.27	4.40	1.99	1.19	0.87	0.88	0.57	0.47	0.44	0.39	0.39	
3	2.21	3.70	1.75	1.03	0.81	0.88	0.57	0.47	0.43	0.39	0.39	
4	2.22	3.43	1.40	0.90	0.81	0.87	0.56	0.47	0.43	0.39	0.38	
5	2.20	2.81	1.31	0.92	0.99	0.87	0.56	0.47	0.43	0.39	0.38	
6	2.12	2.50	1.21	1.02	2.02	0.85	0.55	0.47	0.43	0.39	0.38	
7	2.77	2.12	1.27	1.17	1.58	0.83	0.55	0.46	0.43	0.38	0.38	
8	3.35	1.74	1.25	1.20	1.28	0.81	0.53	0.46	0.43	0.38	0.37	
9	6.48	1.38	1.26	1.10	1.10	0.81	0.53	0.46	0.43	0.38	0.37	
10	5.59	1.18	1.15	1.16	1.00	0.80	0.52	0.46	0.43	0.38	0.37	
11	6.40	0.84	1.01	0.99	0.98	0.78	0.52	0.46	0.43	0.38	0.37	
12	5.57	0.79	0.96	0.82	0.94	0.76	0.51	0.46	0.42	0.38	0.37	
13	3.30	0.79	0.97	0.79	0.91	0.74	0.51	0.46	0.42	0.38	0.37	
14	1.91	0.78	0.95	0.76	1.50	0.72	0.51	0.46	0.42	0.37	0.42	
15	1.63	0.77	0.93	0.68	0.99	0.70	0.50	0.45	0.42	0.37	0.44	
16	1.52	0.77	0.91	0.65	0.83	0.69	0.50	0.45	0.42	0.37	0.49	
17	1.32	0.77	0.90	0.65	0.77	0.67	0.50	0.45	0.42	0.37	0.41	
18	1.20	1.74	0.90	0.82	0.76	0.66	0.50	0.45	0.41	0.37	0.38	
19	1.19	1.37	1.04	0.75	0.75	0.64	0.49	0.45	0.41	0.37	0.38	
20	1.13	1.19	0.95	0.71	0.79	0.64	0.49	0.45	0.41	0.37	0.37	
21	1.08	1.00	0.94	0.77	0.76	0.64	0.49	0.45	0.41	0.37	0.37	
22	1.10	0.96	0.88	0.83	0.76	0.64	0.49	0.45	0.41	0.37	0.59	
23	1.06	0.91	0.74	0.85	0.74	0.63	0.49	0.45	0.41	0.37	0.46	
24	1.14	0.88	0.72	0.89	0.74	0.62	0.49	0.45	0.41	0.45	0.78	
25	1.06	1.44	0.70	0.89	0.72	0.61	0.48	0.45	0.40	0.41	0.63	
26	1.04	2.52	1.27	1.31	0.70	0.60	0.48	0.45	0.40	0.39	0.82	
27	1.32	2.47	2.25	1.51	0.67	0.59	0.48	0.45	0.40	0.39	0.98	
28	1.95	2.76	1.81	1.14	0.65	0.59	0.48	0.45	0.40	0.39	1.19	
29	0.89	-	1.50	1.08	0.64	0.58	0.48	0.44	0.40	0.39	1.40	
30	0.82	-	1.36	0.93	0.63	0.58	0.48	0.44	0.39	0.39	2.46	
31	0.78	-	1.38	-	0.63	-	0.48	0.44	-	0.39	-	
TOTAL												
AVERAGE												

Table 3.12 Stream stage records at Maradekaya gauging station (4)

River System		River					Observatory					Year	
Pappa		Pappa					Maradekaya					1980	
D	M	JAN.	FEB.	MAR.	APR.	MAY.	JUNE.	JULY.	AUG.	SEP.	OCT.	NOV.	DEC.
1		1.16	0.93	2.83	0.72	0.75	0.75	0.52	0.42	0.38	0.25		0.70
2		1.14	0.92	3.31	0.72	0.74	0.74	0.52	0.42	0.38	0.24		0.70
3		1.10	0.92	2.75	0.76	0.74	0.74	0.51	0.42	0.37	0.24		0.87
4		1.06	0.96	2.54	0.72	0.74	0.74	0.51	0.42	0.37	0.24		0.84
5		1.06	0.95	2.22	0.71	0.73	0.73	0.51	0.42	0.37	0.22		0.84
6		1.09	0.93	2.19	0.76	0.73	0.73	0.51	0.41	0.36	0.21		0.81
7		1.07	0.92	1.82	0.73	0.73	0.73	0.50	0.41	0.36	0.20		0.77
8		1.04	1.20	1.78	1.48	0.72	0.72	0.50	0.41	0.36	0.19		0.77
9		1.03	1.52	1.73	1.36	0.71	0.71	0.49	0.41	0.36	0.18		0.78
10		1.02	2.25	1.71	1.27	0.71	0.71	0.49	0.41	0.35	0.18		0.72
11		1.00	3.77	1.80	1.28	0.70	0.70	0.49	0.41	0.35	0.16		0.69
12		2.54	3.34	1.64	1.26	0.70	0.70	0.48	0.41	0.35	0.15		0.67
13		3.44	1.70	1.87	1.24	0.69	0.69	0.48	0.40	0.35	0.14		0.65
14		2.59	1.41	3.38	1.24	0.68	0.68	0.48	0.40	0.35	0.13		0.70
15		1.94	1.40	2.39	1.24	0.68	0.68	0.48	0.40	0.34	0.13	0.30	1.73
16		1.33	1.39	1.50	1.20	0.67	0.67	0.47	0.40	0.34	0.11	0.27	1.60
17		3.73	1.37	1.19	1.18	0.67	0.67	0.47	0.40	0.34	0.11	0.44	1.44
18		3.47	1.35	1.06	1.18	0.67	0.67	0.47	0.40	0.34	0.10	0.38	1.47
19		3.47	1.34	1.02	1.16	0.67	0.67	0.47	0.40	0.33	0.09	0.49	1.52
20		2.64	1.33	0.97	1.16	0.66	0.66	0.46	0.40	0.33	0.07	0.53	1.47
21		1.81	1.33	0.97	1.15	0.65	0.65	0.46	0.40	0.32	0.06	0.43	1.42
22		1.81	1.32	0.96	1.12	0.65	0.65	0.46	0.40	0.32	0.04	0.37	1.46
23		1.50	1.30	0.96	1.08	0.65	0.65	0.46	0.39	0.31	0.03	0.49	1.39
24		0.97	1.42	0.94	1.04	0.65	0.65	0.45	0.39	0.30	0.02	0.68	1.95
25		0.96	1.33	0.94	0.99	0.64	0.64	0.45	0.39	0.29	-	1.15	2.02
26		0.95	1.29	0.92	0.93	0.64	0.64	0.45	0.39	0.27	-	1.26	1.79
27		0.95	1.23	0.92	0.88	0.63	0.63	0.45	0.39	0.27	-	0.98	1.67
28		0.93	1.22	0.83	0.83	0.63	0.63	0.43	0.39	0.25	-	1.20	1.79
29		0.91	1.22	0.75	0.76	0.63	0.63	0.43	0.39	0.25	-	1.15	1.64
30		0.87	-	0.72	0.75	0.62	0.62	0.42	0.39	0.25	-	1.01	1.65
31		0.87	-	0.72		0.62	0.62	0.42	0.39		-		1.59
TOTAL													
AVERAGE													

FIG 13.1 LOCATION MAP OF STREAM GAUGING STATION



△ STAFF GAUGE

▲ RECORDER

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Table. 4.1 Discharge measurement results at
SUNGGUMINASA gauging station.

No.	Date	$\frac{H}{(m)}$	$\frac{B}{(m)}$	$\frac{V}{(m/s)}$	$\frac{A}{(m^2)}$	$\frac{Q}{(m^3/s)}$	$\frac{\sqrt{Q}}{-}$
1	Jun. -- 1979	1.03	103.0	0.34	64.50	22.09	4.70
2	Oct. -- 1979	0.33	56.0	0.22	7.70	1.67	1.29
3	May. -- 1980	0.60	110.0	0.32	43.20	13.88	3.73
4	Mar. 2 1981	2.35	103.0	1.75	292.00	509.80	22.58
5	Mar. 3 1981	1.33	103.0	0.99	186.90	184.80	13.59
6	Mar. 4 1981	1.00	103.0	0.59	148.20	88.10	9.39
7	Mar. 5 1981	0.83	103.0	0.62	142.40	87.70	9.36
8	Mar. 6 1981	0.74	103.0	0.60	111.90	66.70	8.17
9	Mar. 7 1981	0.64	103.0	0.55	93.30	51.60	7.18

Note : No.4 to No.7 measurements are conducted by
the Survey team. No.4 measurement is by
surface float method.

Table. Discharge measurement results at
BILI-BILI gauging station.

No.	Date	H (m)	B (m)	V (m/s)	A (m ²)	Q (m ³ /s)	\sqrt{Q} -
1	Feb. 14 1976	1.02	74.0	0.80	61.63	49.14	7.01
2	Mar. 6 1976	1.06	74.0	0.79	65.79	51.97	7.21
3	Sep. 30 1977	0.08	59.5	0.05	19.65	0.93	0.96
4	Mar. 9 1978	0.44	34.5	0.73	66.17	48.6	6.97
5	Mar. 29 1978	0.23	28.5	0.94	28.65	26.97	5.19
6	Apr. 18 1978	0.15	33.0	0.20	71.07	14.10	3.75
7	Jun. 27 1978	0.39	33.0	0.62	82.42	51.41	7.17
8	Jul. 19 1978	0.05	29.5	0.17	62.75	10.96	3.31
9	Sep. 14 1978	0.0	50.0	0.13	46.69	5.96	2.44
10	Oct. 7 1978	0.14	32.0	0.17	66.69	11.43	3.38
11	Nov. 4 1978	0.05	28.0	0.05	65.36	2.87	1.69
12	Dec. 4 1978	0.42	54.0	0.58	66.57	38.65	6.21
13	Feb. 3 1979	0.48	75.0	0.66	86.78	56.82	7.54
14	Feb. 20 1979	0.35	71.0	0.60	66.60	39.47	6.28
15	Mar. 18 1979	0.34	72.0	0.48	80.85	38.36	6.19
16	Mar. 26 1979	0.28	72.0	0.42	79.89	33.29	5.77
17	Apr. 24 1979	0.21	73.0	0.38	66.41	24.88	4.99
18	May 5 1979	0.01	56.0	0.20	62.73	12.54	3.54
19	Jun. 16 1979	0.03	66.0	0.21	62.31	13.21	3.63
20	Jul. 27 1979	0.23	27.5	0.05	49.83	2.61	1.62
21	Aug. 8 1979	0.15	31.0	0.06	54.45	3.38	1.84
22	Sep. 22 1979	0.30	47.0	0.03	25.47	0.71	0.84
23	Oct. 9 1979	0.26	41.0	0.03	41.14	1.13	1.06
24	Nov. 27 1979	0.32	30.0	0.06	52.37	3.32	1.82
25	Dec. 16 1979	0.51	60.0	0.31	34.54	10.57	3.25
26	Feb. 4 1980	0.77	75.0	0.443	67.62	29.95	5.47
27	Feb. 11 1980	0.89	74.0	0.54	80.81	43.79	6.62
28	Mar. 3 1980	0.77	74.0	0.40	71.62	28.49	5.34
29	Mar. 9 1980	0.81	87.0	0.29	54.52	15.71	3.96
30	Apr. 25 1980	0.73	76.0	0.40	65.9	26.30	5.13
31	May 29 1980	0.48	66	0.40	30.0	12.00	3.46
32	Jul. 12 1980	0.24	51	0.21	16.0	3.37	1.84
33	Jul. 29 1980	0.16	41.50	0.10	15.70	1.50	1.22

- Continued -

No.	Date	$\frac{H}{(m)}$	$\frac{B}{(m)}$	$\frac{V}{(m/s)}$	$\frac{A}{(m^2)}$	$\frac{Q}{(m^3/s)}$	$\frac{\sqrt{Q}}{-}$
34	Sep. 1 1980	0.14	46	0.12	15.20	1.75	1.32
35	Sep. 25 1980	0.08	33	0.07	10.46	0.71	0.84
36	Oct. 31 1980	0.23	44	0.17	15.42	2.67	1.63
37	Nov. 11 1980	0.37	56	0.31	24.20	7.58	2.75
38	Dec. 26 1980	0.98	83.50	0.87	78.70	68.50	8.28
39	Jan. 31 1981	0.96	84	0.85	74.70	63.80	7.99

Note : The gauge zero is dropped by 60 Cm on
Sep.28 1979 from the old gauge zero
height deu to bank errosion of the site.

Table. Discharge measurement results at JENELATA gauging station.

No.	Date	$\frac{H}{(m)}$	$\frac{B}{(m)}$	$\frac{V}{(m/s)}$	$\frac{A}{(m^2)}$	$\frac{Q}{(m^3/s)}$	$\frac{\sqrt{Q}}{-}$
1	May 1979	0.61	-	0.12	52.60	6.36	2.52
2	Jun. 1979	0.55	-	0.09	49.90	4.41	2.10
3	Jul. 1979	0.35	-	0.05	43.50	2.22	1.48
4	Aug. 1979	0.35	-	0.05	41.60	1.85	1.36
5	Sep. 1979	0.18	-	0.03	45.70	1.26	1.12
6	Oct. 1979	0.15	-	0.03	44.60	1.21	1.10
7	Nov. 1979	0.62	-	0.13	51.50	6.55	2.56
8	Dec. 1979	0.63	-	0.11	53.50	5.66	2.37
9	Feb. 1980	0.86	-	0.20	59.30	12.0	3.46
10	Feb. 1980	1.02	-	0.39	68.00	26.7	5.16
11	Mar. 1980	0.85	-	0.34	45.10	15.3	3.91
12	Mar. 1980	0.65	-	0.09	62.30	5.9	2.42
13	Apr. 1980	0.76	-	0.21	52.90	11.3	3.36
14	May 1980	0.50	-	0.16	29.30	4.73	2.17
15	Jul. 1980	0.39	-	0.10	23.10	1.28	1.13
16	Jul. 1980	0.34	-	0.04	23.30	0.92	0.96
17	Sep. 1980	0.21	-	0.03	18.30	0.58	0.76
18	Sep. 1980	0.18	-	0.04	17.70	0.71	0.84
19	Oct. 1980	0.31	-	0.05	19.30	1.00	1.00
20	Nov. 1980	0.35	-	0.09	22.60	1.94	1.39
21	Jun. 1979	0.91	35.5	0.10	47.10	4.59	2.14
22	Oct. 1979	0.58	17.0	0.08	4.40	0.34	0.58
23	May 1980	0.89	32.0	0.17	28.60	4.87	2.21

Note : No.21 to No.23 data are extracted from P3SA which gauge zero is 0.34 meter higher than that of PMA staff gauge.

Table.

Discharge measurement results at
BANTIMURUNG gauging station.

No.	Date	$\frac{H}{(m)}$	$\frac{B}{(m)}$	$\frac{V}{(m/s)}$	$\frac{A}{(m^2)}$	$\frac{Q}{(m^3/s)}$	$\frac{\sqrt{Q}}{-}$
1	Mar. 12 1978	2.16	16.0	0.38	27.90	10.70	3.27
2	Mar. 17 1978	1.08	16.0	0.36	15.60	5.64	2.37
3	Apr. 12 1978	1.86	15.2	0.39	28.65	11.10	3.33
4	Apr. 19 1978	1.20	15.5	0.20	15.01	2.95	1.71
5	Jun. 19 1978	-	16.5	0.21	12.31	2.60	1.61
6	Jul. 20 1978	1.85	18.0	0.16	27.59	4.53	2.12
7	Aug. 25 1978	1.84	18.0	0.11	26.37	3.00	1.73
8	Sep. 16 1978	1.89	17.0	0.10	26.55	2.70	1.64
9	Oct. 5 1978	1.80	16.0	0.12	23.21	2.78	1.66
10	Nov. 13 1978	1.96	17.0	0.11	28.22	3.02	1.73
11	Dec. 3 1978	2.03	15.0	0.27	26.18	7.14	2.67
12	Jan. 27 1979	2.27	17.0	0.29	33.77	9.88	3.14
13	Feb. 20 1979	2.20	16.0	0.34	30.48	10.32	3.21
14	Mar. 24 1979	2.16	16.0	0.33	29.99	9.95	3.15
15	Apr. 27 1979	1.97	16.5	0.22	29.81	6.42	2.53
16	May 7 1979	2.51	16.0	0.46	39.02	18.10	4.25
17	Jun. 5 1979	1.92	16.5	0.17	26.68	4.50	2.12
18	Jul. 17 1979	1.71	18.0	0.12	21.33	2.46	1.56
19	Aug. 20 1979	1.63	28.0	0.11	20.34	4.85	2.20
20	Sep. 8 1979	1.63	17.0	0.07	22.35	1.60	1.26
21	Nov. 2 1979	1.50	16.5	0.05	19.41	0.88	0.93
22	Nov. 29 1979	1.60	16.5	0.05	21.19	1.10	1.04
23	Dec. 7 1979	1.50	18.0	0.05	19.41	0.88	0.93
24	Jan. 9 1980	3.70	19.0	0.81	61.58	50.03	7.07
25	Feb. 22 1980	2.19	17.0	0.24	32.35	7.71	2.77
26	Mar. 20 1980	3.17	19.5	0.59	50.23	27.86	5.27
27	Apr. 26 1980	2.06	17.0	0.29	31.27	9.15	3.02
28	May 31 1980	1.85	17.0	0.18	25.40	4.49	2.11
29	Jul. 13 1980	1.71	18.0	0.11	23.50	2.57	1.60
30	Jul. 30 1980	1.68	17.0	0.09	22.50	1.95	1.39
31	Sep. 2 1980	1.47	17.0	0.08	19.10	1.60	1.26
32	Sep. 25 1980	1.48	18.0	0.06	19.07	1.20	1.09
33	Oct. 30 1980	0.67	17.0	0.29	5.41	1.59	1.26

- Continued -

No.	Date	$\frac{H}{(m)}$	$\frac{B}{(m)}$	$\frac{V}{(m/s)}$	$\frac{A}{(m^2)}$	$\frac{Q}{(m^3/s)}$	$\frac{\sqrt{Q}}{-}$
34	Nov. 7 1980	0.54	17.0	0.20	6.75	1.38	1.17
35	Dec. 27 1980	2.58	16.7	0.59	37.66	20.89	4.57
36	Feb. 2 1981	2.35	9.5	0.42	34.98	14.56	3.81

Table. Discharge measurement results at
TOMPO BULU gauging station.

No.	Date	H (m)	B (m)	V (m/s)	A (m ²)	Q (m ³ /s)	\sqrt{Q} -
1	Sep. 13 1973	0.30	47.0	0.10	32.90	3.13	1.76
2	Jul. 26 1973	0.45	50.8	0.16	41.27	6.42	2.53
3	Jun. 19 1975	0.54	51.5	0.32	45.10	14.46	3.80
4	Nov. 26 1975	1.09	69.0	0.59	66.30	39.41	6.27
5	Sep. 13 1976	0.10	25.0	0.30	5.25	1.56	1.24
6	Oct. 10 1976	0.00	25.0	0.31	5.59	1.75	1.32
7	Jan. 4 1977	1.48	-	-	-	-	-
8	Mar. 8 1977	1.60	73.0	0.51	110.65	56.63	7.52
9	Apr. 27 1977	0.76	48.0	0.64	25.45	16.33	4.04
10	Jun. 18 1977	1.50	55.5	0.83	72.25	62.73	7.92
11	Jul. 14 1977	0.61	49.0	0.60	23.56	14.33	3.78
12	Aug. 13 1977	0.58	46.0	0.12	37.37	4.81	2.19
13	Sep. 30 1977	0.43	21.0	0.47	3.34	1.57	1.25
14	Dec. 29 1977	1.07	59.5	0.25	75.90	18.98	4.35
15	Jan. 18 1978	1.08	62.0	0.53	67.77	36.20	6.01
16	Mar. 10 1978	1.08	58.0	0.51	77.64	39.20	6.26
17	Mar. 28 1978	2.00	61.5	0.43	71.66	31.17	5.58
18	Apr. 19 1978	0.78	61.0	0.20	56.94	11.60	3.40
19	Jun. 26 1978	0.72	60.1	0.24	53.42	12.83	3.58
20	Jul. 20 1978	0.68	63.0	0.19	50.20	9.75	3.12
21	Aug. 25 1978	0.57	63.0	0.12	43.65	5.30	2.30
22	Jul. 15 1978	0.55	60.0	0.10	40.71	4.23	2.06
23	Oct. 7 1978	0.61	61.0	0.15	44.55	6.65	2.58
24	Nov. 6 1978	0.49	54.0	0.04	37.54	1.72	1.31
25	Nov. 18 1978	0.57	64.0	0.12	44.66	5.44	2.33
26	Dec. 3 1978	0.88	63.0	0.34	61.75	21.11	4.59
27	Jan. 28 1979	0.95	63.0	0.69	68.71	47.96	6.92
28	Mar. 3 1979	1.04	60.0	0.43	69.12	27.98	5.29
29	Mar. 24 1979	0.86	60.0	0.31	58.98	18.75	4.33
30	Apr. 18 1979	0.73	60.0	0.24	52.09	12.88	3.58
31	May 7 1979	0.94	63.0	0.34	68.03	25.41	5.04
32	Jun. 5 1979	0.69	63.0	0.21	53.47	11.21	3.34
33	Jul. 15 1979	0.54	62.0	0.08	41.18	3.38	1.83

- Continued -

No.	Date	$\frac{H}{(m)}$	$\frac{B}{(m)}$	$\frac{V}{(m/s)}$	$\frac{A}{(m^2)}$	$\frac{Q}{(m^3/s)}$	$\frac{\sqrt{Q}}{-}$
34	Aug. 21 1979	0.47	64.5	0.04	41.15	1.69	1.3
35	Sep. 8 1979	0.44	62.5	0.04	38.40	1.56	1.24
36	Nov. 2 1979	0.42	63.0	0.02	39.08	1.14	1.06
37	Nov. 29 1979	0.56	63.5	0.07	42.24	3.43	1.85
38	Dec. 7 1979	0.75	57.0	0.25	52.08	13.03	3.60
39	Jan. 16 1980	1.25	-	0.58	90.61	48.32	6.95
40	Feb. 23 1980	1.20	-	0.60	87.99	48.04	6.93
41	Mar. 28 1980	0.94	66.0	0.38	74.21	28.22	5.31
42	Apr. 26 1980	0.93	61.0	0.29	66.74	14.82	3.84
43	May 30 1980	0.71	63.0	0.21	54.20	11.30	3.37
44	Jul. 21 1980	0.51	64.5	0.07	42.20	3.12	1.76
45	Jul. 31 1980	0.48	62.5	0.06	39.30	2.23	1.49
46	Sep. 3 1980	0.45	83.0	0.05	37.30	1.92	1.38
47	Sep. 26 1980	0.41	60.0	0.03	41.01	1.25	1.11
48	Oct. 29 1980	0.55	59.0	0.09	47.39	4.35	2.08
49	Nov. 8 1980	0.46	56.5	0.04	43.69	1.92	1.38
50	Dec. 27 1980	1.12	65.5	0.42	79.10	32.90	5.73
51	Feb. 1 1981	1.11	65.0	0.52	78.44	37.47	6.12

Table. Discharge measurement results at
 MARADEKAYA gauging station.

No.	Date	$\frac{H}{(m)}$	$\frac{B}{(m)}$	$\frac{V}{(m/s)}$	$\frac{A}{(m^2)}$	$\frac{Q}{(m^3/s)}$	$\frac{\sqrt{q}}{-}$
1	Mar. 26 1980	1.18	-	0.35	42.72	14.96	3.87
2	May 30 1980	0.68	-	0.02	28.30	0.56	0.75
3	Jul. 1 1980	0.50	-	0.03	23.10	0.66	0.81
4	Aug. 8 1980	0.45	-	0.01	19.79	0.22	0.47
5	Sep. 7 1980	0.38	-	0.03	19.36	0.56	0.75
6	Sep. 26 1980	0.12	-	0.03	16.16	0.44	0.66
7	Nov. 1 1980	0.00	-	0.03	9.47	0.24	0.49
8	Dec. 2 1980	0.50	-	0.09	30.21	2.62	1.62
9	Jan. 4 1981	1.47	-	0.69	48.98	30.62	5.53
10	Jan. 17 1981	1.33	-	0.42	43.40	18.34	4.28
11	Mar. 3 1981	1.35	-	0.33	43.18	14.37	3.79