Annex 2.1-1 Site Selection for Installing of Water level Gauge Stations

The water level gauge stations had been installed in Karnafuli, Halda, Sangu and Matamuhuri River at two to four locations each, and recordings of water level data have been conducted at twelve locations in total. For verifying the observation quality of the existing water level gauge station, one new water level gauge station at each river in Karnafuli, Halda, Sangu and Matamuhuri River had been installed. On selecting locations of the new water level gauge stations, some evaluation items such as tidal influence and observation period were considered since the installation aims to understand the real discharge for water resource survey. In addition, the accessibility to each station was also considered from a standpoint of operation and maintenance of station, then the best places by relatively evaluating with all items were selected as shown in the table below.

Accordingly, Chitmorom, Panchpukuria, Bandarban and Lama stations were selected in Karnafuli, Halda, Sangu and Matamuhuri river respectively. One location map of water level gauge stations that shows whole area on this project and detailed maps at each final selected station are shown on the following pages.

Table Annex 2.1-1-1 Evaluation Sheet of Site selection of New installed WLG stations

River Name	WLG Station	Period of Record					Tidal Influnce		Accessibility		Final Evaluation
		From	To	Water Level (Years)	Discharge (Years)	Eval.	Max Tidal Range (m)	Eval.	Distance (km)	Eval.	
Karnaphuli	Kaptai (BPDB)	1990/1/1	2019/12/31	30	0	20	0.00	100	– (1)	20(1)	#VALUE!
	Chitmorom (CPA)	2011/1/1	2019/12/31	9	24	80	2.25	60	0	100	**240**
	Rangunia (BWDB)	1965/1/1	2019/12/31	55	0	20	2.75	40	1.2	60	120
	Kalurghat (CPA)	2012/1/1	2019/12/31	8	0	20	4.75	20	0	100	140
Halda	Narayanhat (BWDB)	1965/1/1	2019/12/31	55	0	20	0.00	100	0	100	220
	Panchpukuria (BWDB)	1965/1/1	2019/12/31	55	38	100	1.15	80	0.7	80	**260**
	Telpari (BWDB)	1965/1/1	2019/12/31	55	0	20	2.15	60	0	100	180
	Enayethat (BWDB)	1965/1/1	2019/12/31	55	0	20	4.50	20	0	100	140
Sangu	Bandarban (BWDB)	1965/1/1	2019/12/31	55	27	100	0.00	100	0	100	**300**
	Dohazari (BWDB)	1969/1/1	2019/12/31	51	0	20	1.60	60	0	100	180
	Banigram	1968/1/1	2019/12/31	52	0	20	4.40	20	3.5	40	80
Matamuhuri	Lama (BWDB)	1965/1/1	2019/12/31	55	38	100	0.00	100	0	100	**300**
	Shaplapur (BWDB)	1968/4/1	2019/12/31	52	0	20	3.60	20	0.6	80	120
	Chiringa (BWDB)	1968/1/1	2019/12/31	52	0	20	1.75	60	0	100	180

Note (1): Located in restricted Kaptai army area and high security area for Kaptai power plant

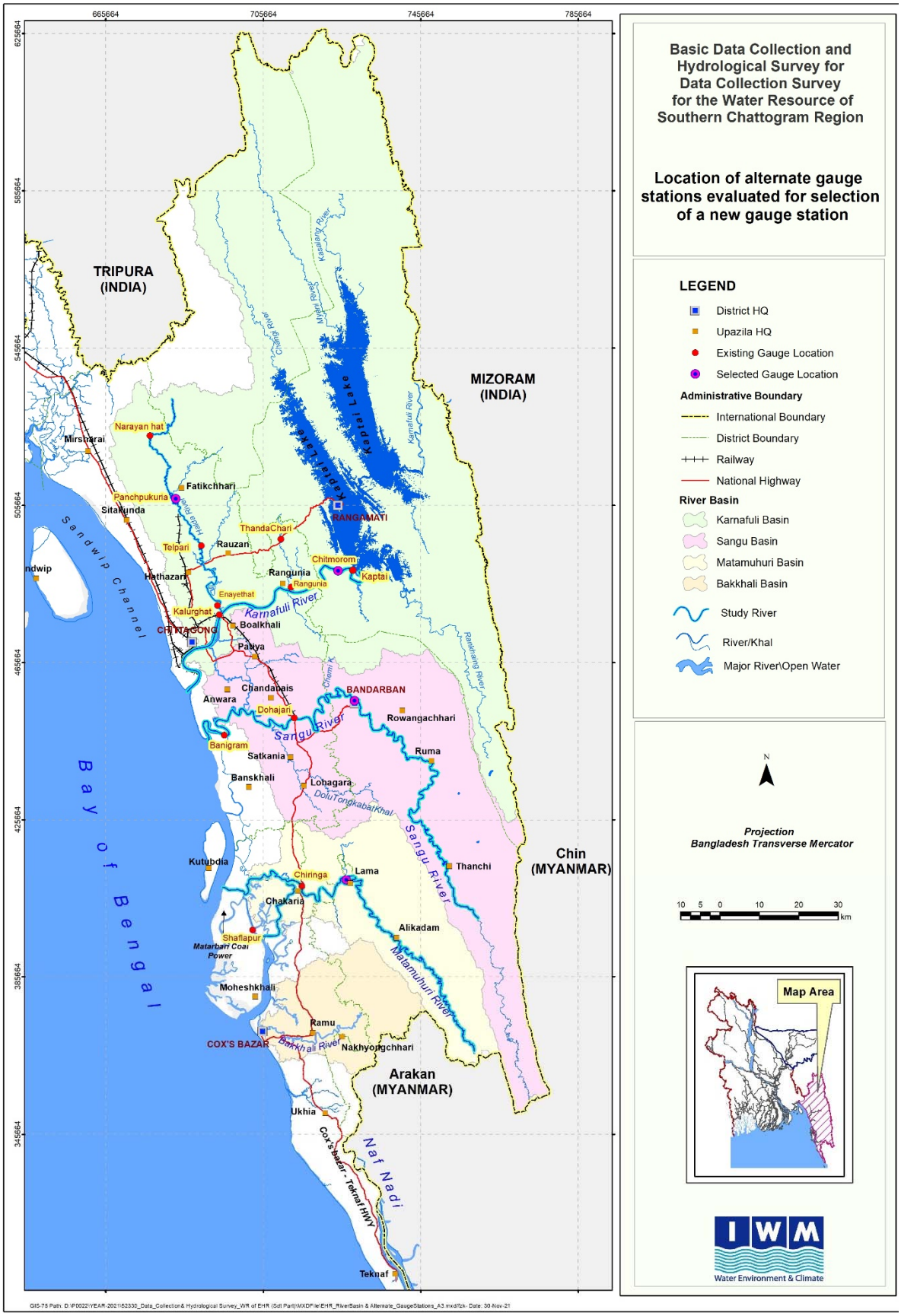
Source: JICA Survey Team

Table Annex 2.1-1-2 Criteria for Evaluation Items

Period of Records	Tidal Influence	Accessibility	Points
Historical WL & Q Data Availability (> 30 years)	No Tidal Influence	Vehicle Access or Distance from Main Road < 100m	100
Historical WL & Q Data Availability (20 > Years < 30)	Tidal Influence < 1.5m	Distance from Main Road > 500m	80
Historical WL & Q Data Availability (10 > Years < 20)	Tidal Influence < 2.5m	Distance from Main Road > 1Km	60
Historical WL & Q Data Availability only (5 > Years < 10)	Tidal Influence < 3.5m	Distance from Main Road > 2Km	40
Historical WL Data Availability Only (Any No of years)	Tidal Influence > 4m	Restricted Access	20

Source: JICA Survey Team

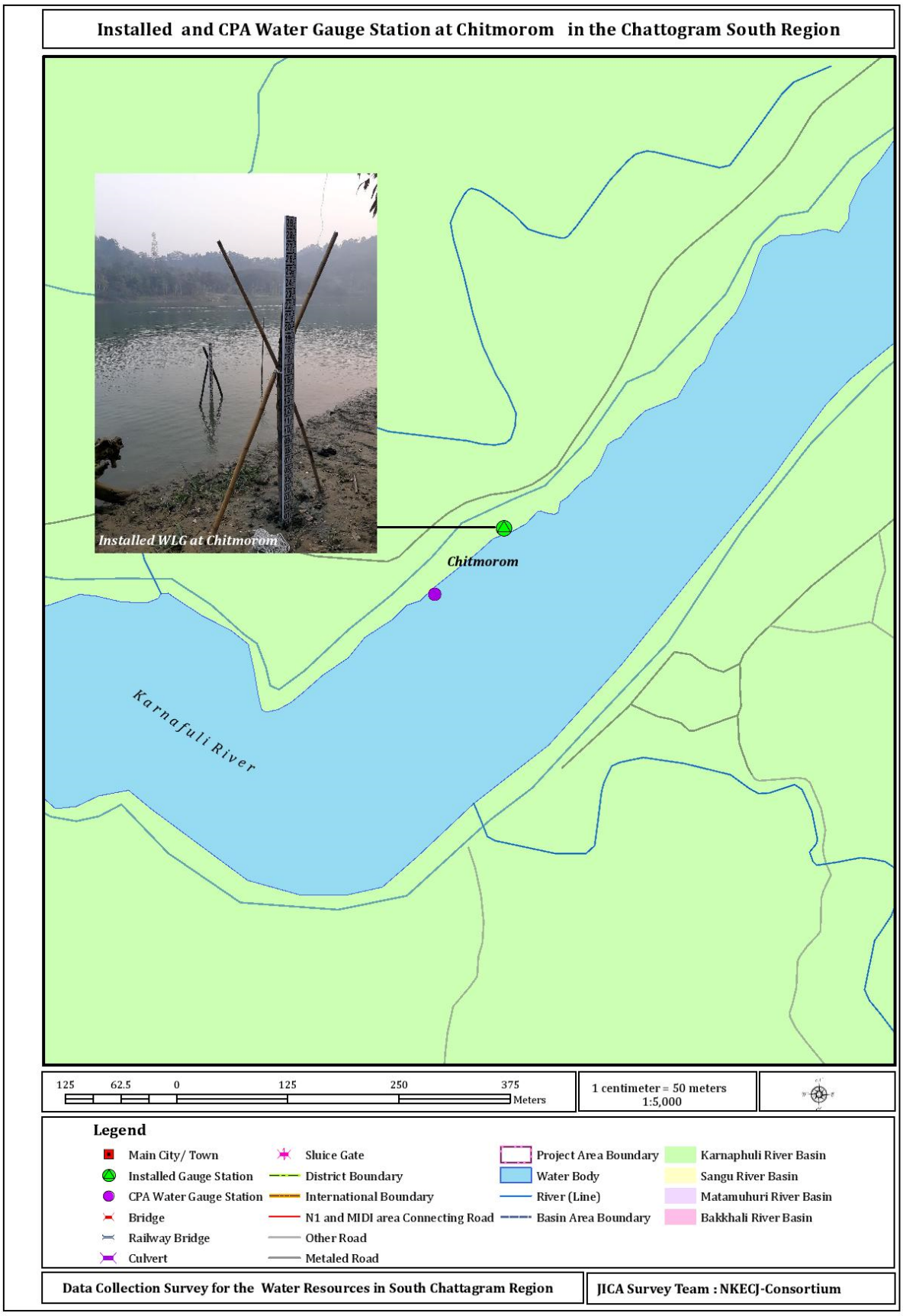
Annex 2.1-1 Site Selection for Installing of Water level Gauge Stations



Source: JICA Survey Team

Figure Annex 2.1-1-1 Location Map of Water Level Gauge Stations

Annex 2.1-1 Site Selection for Installing of Water level Gauge Stations



Source: JICA Survey Team

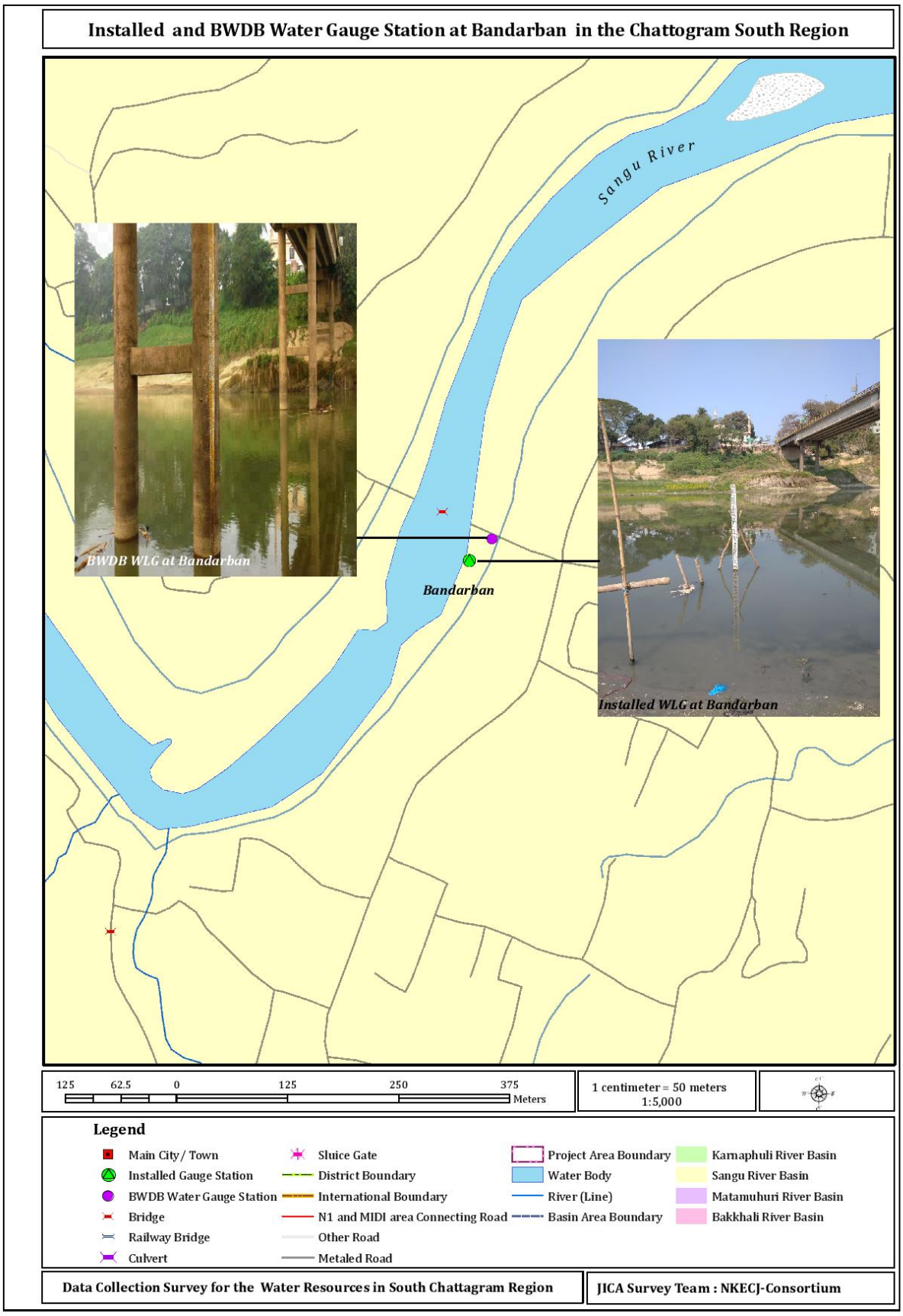
Figure Annex 2.1-1-2 Location Map of Water Level Gauge Station of Chitmorom in Karnafuli River

Annex 2.1-1 Site Selection for Installing of Water level Gauge Stations

Source: JICA Survey Team

Figure Annex 2.1-1-3 Location Map of Water Level Gauge Station of Panchpukuria in Halda River

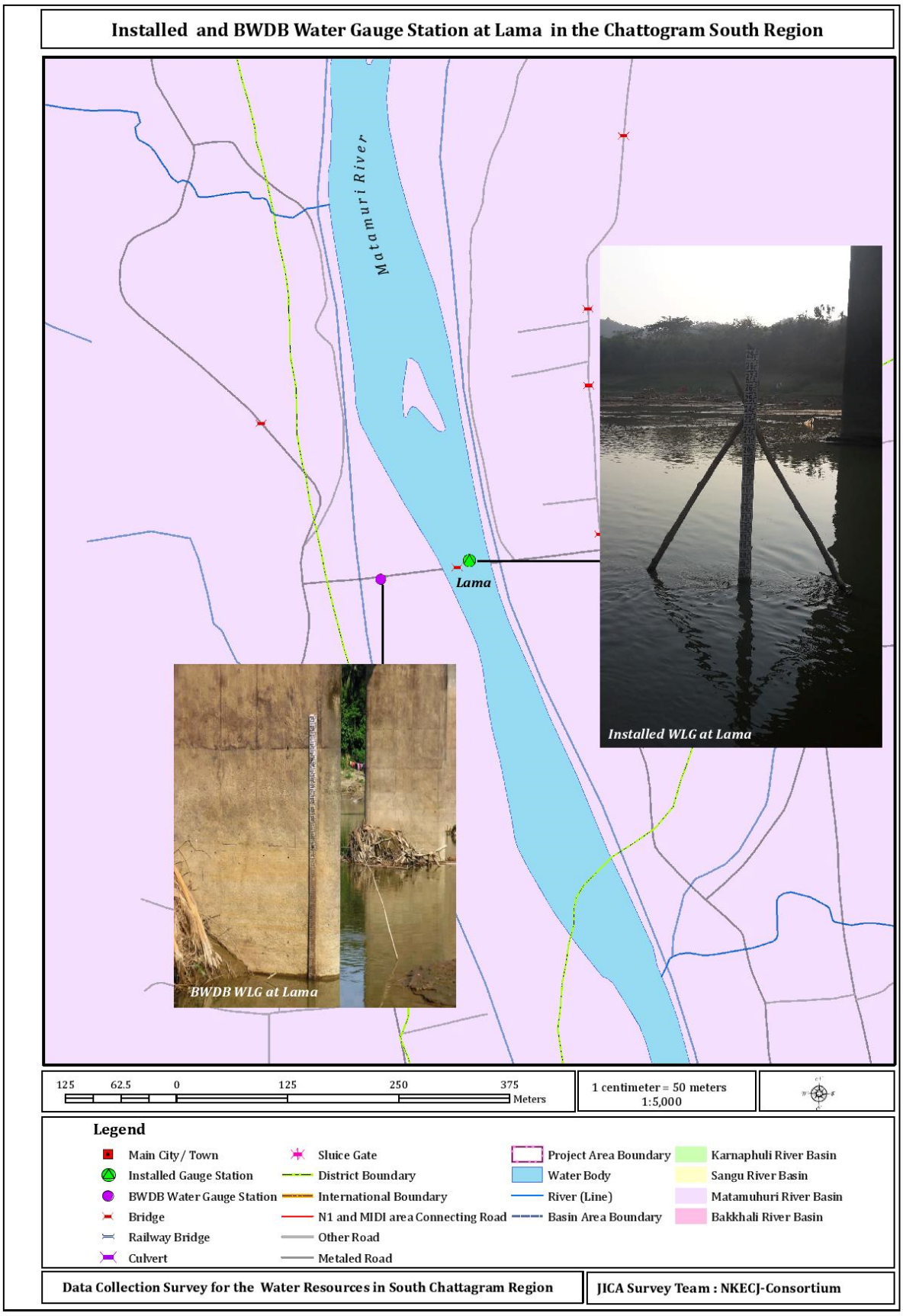
Annex 2.1-1 Site Selection for Installing of Water level Gauge Stations



Source: JICA Survey Team

Figure Annex 2.1-1-4 Location Map of Water Level Gauge Station of Bandarban in Sangu River

Annex 2.1-1 Site Selection for Installing of Water level Gauge Stations



Source: JICA Survey Team

Figure Annex 2.1-1-5 Location Map of Water Level Gauge Station of Lama in Matamuhuri River

Annex 2.1-2 Water Quality Analysis : Surface Water

Annex2.1-2（1）

Sampling Situations

Annex2.1-2（2-1）Analysis Results February 2020 to May 2021: Depth, pH, Temperature, DO

	Sampling Station		Kaptai Intake			Kaptai Lake			Panchpukuria			Bandarban			Lama			Reason for Missing Data
Month	Parameter	Depth	0.2d	0.5d	0.8d	0.2d	0.5d	0.8d	0.2d	0.5d	0.8d	0.2d	0.5d	0.8d	0.2d	0.5d	0.8d	
February	Depth	(m)	2.40	6.00	9.60	3.20	8.00	12.80	0.25	0.63	1.00	0.46	1.15	1.84	0.12	0.30	0.48	Depth < 1.5m
March	Depth	(m)	2.25	5.38	8.60	2.90	7.25	11.60	0.34	0.84	1.34	0.19	0.48	0.77	0.16	0.41	0.65	Depth < 1.5m
June	Depth	(m)	2.76	6.90	11.04	3.68	9.20	14.72	0.33	0.82	1.30	0.64	1.59	2.54	0.29	0.73	1.17	
July	Depth	(m)	2.50	6.25	10.00	2.40	6.00	9.60	1.06	2.65	4.24	0.94	2.35	3.76	0.60	1.50	2.40	
August	Depth	(m)	1.80	4.50	7.20	3.00	7.50	12.00	0.52	1.30	2.08	0.48	1.20	1.92	0.18	0.45	0.72	Depth < 1.5m
September	Depth	(m)	2.34	5.85	9.36	3.20	8.00	12.80	0.29	0.73	1.16	0.42	1.05	1.68	0.17	0.43	0.68	Depth < 1.5m
October	Depth	(m)	3.40	8.50	13.60	5.00	12.50	20.00	0.60	1.50	2.40	0.34	0.86	1.37	0.25	0.62	0.98	Depth < 1.5m
November	Depth	(m)	3.40	8.50	13.60	5.80	14.50	23.20	0.33	0.83	1.33	0.33	0.86	1.32	0.12	0.30	0.48	Depth < 1.5m
December	Depth	(m)	4.00	10.00	16.00	5.40	13.50	21.60	0.18	0.46	0.74	0.22	0.55	0.88	0.14	0.35	0.56	Depth < 1.5m
January	Depth	(m)	2.80	7.00	11.20	5.00	10.00	13.00	0.40	1.00	1.60	0.16	0.39	0.62	0.15	0.39	0.62	Depth < 1.5m
April	Depth	(m)																ICDDRB Testing labs could not be contacted due to lockdown
May	Depth	(m)	2.90	7.25	11.60	3.80	9.50	15.20	0.50	1.25	2.00	0.30	0.75	1.20	0.20	0.50	0.80	Depth < 1.5m
February	pH		7.27	7.32	7.42	7.63	7.42	7.40	7.66	7.67	7.67	8.16	8.12	8.10	8.04	8.04	8.04	Depth < 1.5m
March	pH		8.22	7.97	7.15	8.61	7.81	6.96	7.81	7.42	7.79	8.17	8.37	8.34	8.04	8.05	8.05	Depth < 1.5m
June	pH		7.20	7.41	7.48	7.51	7.35	7.44	7.46	7.38	7.27	7.24	7.41	7.28	7.26	6.96	7.07	
July	pH		7.05	6.53	6.54	6.95	6.83	6.79	7.52	7.50	7.27	6.79	6.84	6.88	6.89	6.87	6.87	
August	pH		7.10	7.09	7.08	7.15	7.24	7.33	6.90	6.74	7.19	7.51	7.55	7.58	7.70	7.67	7.63	Depth < 1.5m
September	pH		7.72	7.11	7.02	7.72	7.11	7.02	6.99	7.15	7.30	7.75	7.76	7.77	7.58	7.56	7.53	Depth < 1.5m
October	pH		7.08	6.13	6.29	6.49	6.40	6.53	6.73	6.69	6.77	7.32	7.51	7.75	6.92	6.86	6.80	Depth < 1.5m
November	pH		7.05	6.94	7.03	6.91	6.76	6.33	7.12	7.24	7.11	7.74	7.66	7.29	7.40	7.42	7.44	Depth < 1.5m
December	pH		7.27	7.20	7.07	7.17	7.06	6.86	6.96	6.87	6.78	7.69	7.66	7.62	7.37	7.30	7.22	Depth < 1.5m
January	pH		6.78	6.72	6.72	6.47	6.37	6.05	6.66	6.60	6.68	7.45	7.24	7.03	8.12	8.16	8.20	Depth < 1.5m
April	pH		7.32	6.52	6.46	8.14	7.37	6.97	6.90	6.96	7.01	7.44	7.48	7.51	7.58	7.60	7.61	Depth < 1.5m
May	pH		7.97	6.93	6.96	7.81	6.72	6.72	7.63	7.63	7.78	7.57	7.48	7.66	7.08	7.35	7.62	Depth < 1.5m
February	Temp	(°C)	23	22	22	23	22	22		24	24	24	23	23	24	23	23	Depth < 1.5m
March	Temp	(°C)	26	26	27	25	24	24	27	25	28	27	26	26	24	25	25	Depth < 1.5m
June	Temp	(°C)	28	28	28	28	27	28	29	28	28	23	22	22	22	22	21	
July	Temp	(°C)																BUET Testing labs could not be contacted due to lockdown
August	Temp	(°C)	30	30	30	30	30	30	31	31	30	29	29	29	30	30	30	Depth < 1.5m
September	Temp	(°C)	32	31	31	32	31	31	30	30	30	30	30	30	30	30	30	Depth < 1.5m
October	Temp	(°C)							31	31	32	33	33	33	37	37	37	Depth < 1.5m Insitu tests done at Lab
November	Temp	(°C)	28	28	30	29	29	29	26	26	26	27	27	27	27	27	27	Depth < 1.5m
December	Temp	(°C)	26	25	25	26	25	25	21	21	21	21	21	21	24	24	25	Depth < 1.5m
January	Temp	(°C)	24	24	24	24	24	24	22	22	22	22	22	22	24	24	24	Depth < 1.5m
April	Temp	(°C)	28	27	28	27	28	27	27	27	27	26	26	26	27	26	26	Depth < 1.5m
May	Temp	(°C)	33	31	29	33	30	28	35	35	35	33	33	33	30	30	30	Depth < 1.5m
February	DO	(mg/l)	8.33	7.00	7.11	8.17	6.81	6.57	8.60	8.66	8.71	8.94	9.42	8.88	9.19	9.17	9.15	Depth < 1.5m
March	DO	(mg/l)	8.20	7.98	5.75	9.11	7.84	3.89	8.86	7.21	8.82	8.87	8.93	8.94	8.27	8.21	8.15	Depth < 1.5m
June	DO	(mg/l)	7.05	6.92	5.63	5.06	2.25	2.48	7.02	7.03	7.06	5.63	5.53	4.05	1.93	1.33	4.80	
July	DO	(mg/l)	6.69	6.55	6.56	6.30	6.52	6.18	5.33	5.66	5.65	6.52	6.71	5.75	7.13	6.70	7.01	
August	DO	(mg/l)	3.30	3.02	3.09	2.84	3.13	3.02	7.25	6.98	7.14	6.95	6.97	7.00	7.07	7.08	7.08	Depth < 1.5m
September	DO	(mg/l)	7.62	3.09	1.97	7.62	3.09	1.97	8.11	8.29	8.46	7.14	7.07	7.07	7.22	7.24	7.26	Depth < 1.5m
October	DO	(mg/l)	7.66	7.55	7.57	7.55	7.27	7.22	6.89	6.84	6.78	6.79	6.76	6.58	6.81	6.87	6.93	Depth < 1.5m
November	DO	(mg/l)	6.13	5.93	6.02	5.45	5.45	3.93	7.92	7.97	7.77	7.64	7.60	7.16	7.81	7.88	7.94	Depth < 1.5m
December	DO	(mg/l)	6.91	6.59	6.45	6.68	6.53	6.54	9.24	9.23	9.21	8.69	8.67	8.64	8.45	8.52	8.58	Depth < 1.5m
January	DO	(mg/l)	6.80	6.59	6.39	6.49	6.29	6.25	9.51	9.43	9.34	9.07	9.04	9.00	9.94	9.81	9.68	Depth < 1.5m
April	DO	(mg/l)	7.32	4.41	4.02	7.40	6.73	4.27	6.83	6.80	6.76	6.85	6.86	6.87	7.25	7.31	7.36	Depth < 1.5m
May	DO	(mg/l)	7.23	1.92	1.01	7.36	0.67	1.30	6.97	7.22	7.15	6.32	5.93	5.73	6.11	6.27	6.43	Depth < 1.5m

出典：JICA 調査団

Annex2.1-2（2-2）Analysis Results February 2020 to May 2021: EC, E-Coli, Odor, COD

	Sampling Station		Kaptai Intake			Kaptai Lake			Panchpukuria			Bandarban			Lama			Reason for Missing Data
February	EC	(us/cm)	105	107	111	109	112	118	185	185	184	185	267	268	195	223	251	Depth < 1.5m
March	EC	(us/cm)	107	100	108	108	114	116	194	285	193	278	278	276	255	254	253	Depth < 1.5m
June	EC	(us/cm)	105	61	63	60	63	66	41	43	50	123	111	108	106	105	105	
July	EC	(us/cm)	119	118	118	111	111	112	41	42	41	113	112	111	123	123	122	
August	EC	(us/cm)	95	89	89	101	85	87	120	120	120	146	147	146	171	169	168	Depth < 1.5m
September	EC	(us/cm)	132	114	112	132	114	112	102	107	112	180	180	180	181	180	179	Depth < 1.5m
October	EC	(us/cm)	223	124	126	128	118	127	99	99	101	189	189	212	163	162	162	Depth < 1.5m
November	EC	(us/cm)	116	117	118	117	118	121	137	138	138	197	198	199	158	158	157	Depth < 1.5m
December	EC	(us/cm)	116	116	115	114	116	115	145	146	146	207	206	206	215	215	215	Depth < 1.5m
January	EC	(us/cm)	104	104	104	105	106	105	138	138	138	222	222	221	223	223	223	Depth < 1.5m
April	EC	(us/cm)	126	120	120	135	126	120	219	219	219	297	297	296	258	256	254	Depth < 1.5m
May	EC	(us/cm)	142	135	143	143	135	145	232	233	237	276	277	279	187	188	189	Depth < 1.5m
February	E-Coli	CFU/100ml	0	0	0	0	0	0	145	157	168	700	900	800	200	250	300	
March	E-Coli	CFU/100ml	44	30	52	33	22	4	22000	17000	16000	21000	20000	18000	245	253	260	
June	E-Coli	CFU/100ml																ICDDRB Testing labs could not be contacted due to lockdown
July	E-Coli	CFU/100ml	7	6	10	8	8	13	576	472	448	484	508	500	428	392	476	
August	E-Coli	CFU/100ml	14	19	15	6	13	17	188	200	132	220	300	200	164	172	180	Depth < 1.5m
September	E-Coli	CFU/100ml	0	0	0	15	0	2	143	146	148	800	840	760	600	625	650	Depth < 1.5m
October	E-Coli	CFU/100ml	85	3	6	0	0	4	440	160	380	420	360	340	288	289	290	Depth < 1.5m
November	E-Coli	CFU/100ml	0	0	0	0	15	25	750	560	700	270	90	270	390	233	75	Depth < 1.5m
December	E-Coli	CFU/100ml	4	0	0	0	0	0	121	123	124	70	110	150	30	61	92	Depth < 1.5m
January	E-Coli	CFU/100ml	0	0	0	0	0	0	6	8	9	34	21	7	6	3	0	
April	E-Coli	CFU/100ml																ICDDRB Testing labs could not be contacted due to lockdown
May	E-Coli	CFU/100ml	0	0	0	0	24	2	6	6	5	77	56	91	121	80	38	
February	Odor	(mg/l as H_2S)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Depth < 1.5m
March	Odor	(mg/l as H_2S)	0.002	0.002	0.001	0.002	0.002	0.001	0.002	0.003	0.002	0.005	0.002	0.002	0.002	0.002	0.002	Depth < 1.5m
June	Odor	(mg/l as H_2S)																BUET Testing labs could not be contacted due to lockdown
July	Odor	(mg/l as H_2S)	0.000	0.000	0.000	0.000	0.000	0.000	0.031	0.039	0.035	0.023	0.020	0.019	0.020	0.020	0.024	
August	Odor	(mg/l as H_2S)	0.022	0.047	0.047	0.022	0.054	0.065	0.009	0.010	0.007	0.010	0.007	0.009	0.003	0.004	0.004	Depth < 1.5m
September	Odor	(mg/l as H_2S)	0.001	0.001	0.001	0.001	0.000	0.002	0.005	0.005	0.005	0.007	0.011	0.006	0.006	0.007	0.007	Depth < 1.5m
October	Odor	(mg/l as H_2S)	0.002	0.008	0.013	0.002	0.002	0.014	0.021	0.018	0.020	0.005	0.006	0.005	0.017	0.018	0.018	Depth < 1.5m
November	Odor	(mg/l as H_2S)	0.002	0.001	0.002	0.001	0.002	0.000	0.003	0.002	0.003	0.002	0.002	0.002	0.002	0.003	0.003	Depth < 1.5m
December	Odor	(mg/l as H_2S)	0.001	0.001	0.002	0.001	0.002	0.001	0.003	0.003	0.003	0.001	0.001	0.001	0.000	0.001	0.001	Depth < 1.5m
January	Odor	(mg/l as H_2S)	0.001	0.001	0.001	0.001	0.005	0.001	0.003	0.008	0.006	0.002	0.003	0.003	0.003	0.003	0.002	Depth < 1.5m
April	Odor	(mg/l as H_2S)																ICDDRB Testing labs could not be contacted due to lockdown
May	Odor	(mg/l as H_2S)	0.001	0.001	0.001	0.001	0.002	0.000	0.002	0.003	0.001	0.005	0.012	0.014	0.011	0.016	0.020	Depth < 1.5m
February	COD	(mg/l)	24	17	16	16	13	12										
March	COD	(mg/l)	25	18	17	17	14	13										
June	COD	(mg/l)	29	8	1	26	7	1										
July	COD	(mg/l)	26	31	22	22	23	26										
August	COD	(mg/l)	12	17	17	10	12	12										
September	COD	(mg/l)	2	6	1	24	2	1										
October	COD	(mg/l)	9	18	14	14	10	11										
November	COD	(mg/l)	12	9	14	5	15	3										
December	COD	(mg/l)	3	3	3	3	5	3										
January	COD	(mg/l)	10	6	5	16	12	6										
April	COD	(mg/l)	10	8	16	11	13	11										
May	COD	(mg/l)	27	25	25	18	23	15										

出典：JICA 調査団

Annex2.1-2（2-3）Analysis Results February 2020 to May 2021: BOD, Color, Turbidity, Alkalinity

	Sampling Station		Kaptai Intake			Kaptai Lake			Panchpukuria			Bandarban			Lama			Reason for Missing Data
February	BOD	(mg/l)							2.10	2.35	2.60	2.20	2.90	2.00	2.20	2.60	3.00	Depth < 1.5m
March	BOD	(mg/l)							0.5	1.1	3.1	2.6	0.4	0.8	0.1	0.10	0.1	Depth < 1.5m
June	BOD	(mg/l)							0	-0.8	3.7	16	6.6	12	12	9.7	9.8	
July	BOD	(mg/l)							2	2.8	2.1	12	5.2	11.1	10	9.2	8.8	
August	BOD	(mg/l)								3.8	4		3	3	3.2	2.8	2.4	Depth < 1.5m
September	BOD	(mg/l)							7.7	5.3	2.8	12	12	7.9	9.7	9.7	9.7	Depth < 1.5m
October	BOD	(mg/l)							3	2.8	3.4	2.3	1.9	1.7	3.4	3.1	2.7	Depth < 1.5m
November	BOD	(mg/l)							1.9	1.3	2.4	3.3	3.3	4.9	3.7	3.9	4.1	Depth < 1.5m
December	BOD	(mg/l)							1.3	1.3	1.3	1.4	1.3	1.2	1.1	1.1	1	Depth < 1.5m
January	BOD	(mg/l)							1	1.5	1	0.8	0.8	0.8	0.5	1.1	1.7	Depth < 1.5m
April	BOD	(mg/l)							5.1	4.8	4.4	4.4	3.8	3.2	2.7	2.8	2.9	Depth < 1.5m
May	BOD	(mg/l)							2	3.2	3.8	6.8	6.4	7.2	2.5	3.0	3.5	Depth < 1.5m
February	Colour	(PtCo)	0	0	2	0	0	1	17	24.5	32	17	18	19	28	28.0	28	Depth < 1.5m
March	Colour	(PtCo)	5	3	4	8	5	6	18	15	15	5	8	5	6	5.5	5	Depth < 1.5m
June	Colour	(PtCo)	13	24	21	21	36	28	198	164	170	693	796	135	485	2389	2529	
July	Colour	(PtCo)	6	7	9	6	7	8	70	37	300	20	125	59	44	29	67	
August	Colour	(PtCo)	119	135	109	65	247	227	84	91	76	44	43	50	46	29.5	13	Depth < 1.5m
September	Colour	(PtCo)	15	12	11	14	12	16	105	126.0	147	108	109	134	79	100.0	121	Depth < 1.5m
October	Colour	(PtCo)	14	90	197	6	29	170	217	188	208	73	68	71	362	360.0	358	Depth < 1.5m
November	Colour	(PtCo)	25	28	33	37	19	24	63	56	70	39	59	39	54	53.5	53	Depth < 1.5m
December	Colour	(PtCo)	4	2	7	16	4	5	25	23.0	21	4	3.5	3	20	19.5	19	Depth < 1.5m
January	Colour	(PtCo)	5	3	2	4	4	3	31	43	36	10	7.0	4	6	6.0	6	Depth < 1.5m
April	Colour	(PtCo)	8	8	8	5	5	4	31	45.0	59	11	11.0	11	12	11.5	11	Depth < 1.5m
May	Colour	(PtCo)	10	9	15	11	7	19	24	26	27	121	79	97	111	157.5	204	Depth < 1.5m
February	Turbidity	(NTU)	0.56	0.60	0.54	0.64	0.66	0.68	5.23	5.4	5.66	1.72	1.59	1.68	3.99	4.1	4.21	Depth < 1.5m
March	Turbidity	(NTU)	2	1.98	1.82	1.39	3.21	1.77	11.9	10.6	10.5	3.25	4.26	4.17	10.1	10.0	9.97	Depth < 1.5m
June	Turbidity	(NTU)	3.07	3.86	4.33	2.97	13.1	4.31	77	40.2	39.5	1287	1304	1331	3983	3440	3368	
July	Turbidity	(NTU)	2.91	2.53	7.63	2.39	2.63	3.41	162	254	257	214	270	294	364	389	405	
August	Turbidity	(NTU)	44.6	63.1	87.3	28.3	97.6	95.6	112	51	31.1	156	132	125	50	41.7	33.4	Depth < 1.5m
September	Turbidity	(NTU)	1.03	1.24	1.29	1.61	1.25	1.62	18.9	21.7	24.5	130	164	176	196	204.5	213	Depth < 1.5m
October	Turbidity	(NTU)	1.51	15.5	35.8	1.19	4.47	26.2	140	157	156	122	117	146	277	280.5	284	Depth < 1.5m
November	Turbidity	(NTU)	1.69	1.72	1.7	1.64	1.52	2.22	22.4	25.7	25.8	24	28.5	31.4	39.2	41.5	43.8	Depth < 1.5m
December	Turbidity	(NTU)	0.734	0.737	0.985	0.711	0.877	0.917	16.1	16.3	16.4	6.15	5.8	5.43	10.3	9.3	8.31	Depth < 1.5m
January	Turbidity	(NTU)	0.894	0.845	0.572	1.04	0.952	1.06	29.9	27.8	26.8	8.16	8.2	8.32	9.12	9.1	9.02	Depth < 1.5m
April	Turbidity	(NTU)	3.41	5.43	5.63	2.7	2.06	6.49	53.7	74.1	94.4	7.37	8.3	9.14	15.2	15.1	15	Depth < 1.5m
May	Turbidity	(NTU)	4.08	3.18	6.69	3.01	3.03	5.49	31.3	31.3	34.5	399	394	405	197	216.0	235	Depth < 1.5m
February	Alkalinity	(mg/l)	28	40	43	41	60	66	87	90.2	93	92	116	113	103	87.5	72	Depth < 1.5m
March	Alkalinity	(mg/l)	44.4	52	56	51.2	60.8	74.8	102.8	106.4	104.4	124	117	119	117	115.5	114	Depth < 1.5m
June	Alkalinity	(mg/l)	60	63	60	60	60	61	38	36	33	47	49	44	50	55	44	
July	Alkalinity	(mg/l)	44	42	44	44	43	47	31.2	28	12.3	66	58	48	47	50	51	
August	Alkalinity	(mg/l)	62	56.8	54.8	56.4	54.4	56.8	65.6	62.8	66	89.6	88	74.8	86.4	87.6	88.8	Depth < 1.5m
September	Alkalinity	(mg/l)	170	151	171	152	149	153	160	157.5	155	236	250	227	237	241.0	245	Depth < 1.5m
October	Alkalinity	(mg/l)	48	51	41	51	46	53.5	32	34	35.4	70	78.2	77.5	74	73.8	73.6	Depth < 1.5m
November	Alkalinity	(mg/l)	42	44	42	50	44	47	44	54	46	72	71	78	49	52.0	55	Depth < 1.5m
December	Alkalinity	(mg/l)	79.6	70	65.6	70	68.4	65.6	64.1	71.7	79.2	116.4	117.8	119.2	120.4	119.6	118.8	Depth < 1.5m
January	Alkalinity	(mg/l)	41	45	52	47	51	52	63	55	59	109	113.0	117	114	112.5	111	Depth < 1.5m
April	Alkalinity	(mg/l)	54	51	49	48	52	46	76	77.0	78	122	120.0	118	140	136.5	133	Depth < 1.5m
May	Alkalinity	(mg/l)	65.7	64.5	73.3	66.5	64.8	71.5	94.5	132.5	93	114.8	111.8	92.5	74	75.6	77.2	Depth < 1.5m

出典：JICA 調査団

Annex2.1-2（2-4）Analysis Results February 2020 to May 2021: Hardness, Chloride Ion, Fluoride, Ammonium Nitrogen

	Sampling Station		Kaptai Intake			Kaptai Lake			Panchpukuria			Bandarban			Lama			Reason for Missing Data
February	Hardness	(mg/l)	56.4	56	44	46	46	47	62	59	55	107	107	104	101	101	100	Depth < 1.5m
March	Hardness	(mg/l)	55.2	53.6	56.8	58.4	43.4	61.6	70.8	68.8	71.2	109	106	111	107	107	106	Depth < 1.5m
June	Hardness	(mg/l)	46.2	46.4	49	44.3	46.8	53	25.7	26.3	25	39.7	40.9	41	41.5	41	46	
July	Hardness	(mg/l)	52	64	57	59	52	55	14.6	15	15.6	44.8	52	60	55	60	71	
August	Hardness	(mg/l)	66.4	46	60	42.8	36.8	34.4	42.4	42	48	66	64.4	63.2	71.2	71	70.8	Depth < 1.5m
September	Hardness	(mg/l)	52.4	54	46	50.4	44.8	44	39.6	38	36.8	68	74	73.6	65.2	68	70.4	Depth < 1.5m
October	Hardness	(mg/l)	53	65	56	53.5	59	55.5	14.6	17	15.6	45	51.5	64	57	63	69	Depth < 1.5m
November	Hardness	(mg/l)	55	56.8	57.6	49.6	49	44	52	36	40	76	84	96	84	92	100	Depth < 1.5m
December	Hardness	(mg/l)	68	61	66	66	63	68	69	67	65	99	99	98	89	92	95	Depth < 1.5m
January	Hardness	(mg/l)	48	49	46	45	55	49	45	43	46	98	101	103	103	106	109	Depth < 1.5m
April	Hardness	(mg/l)	58	54	60	48	52	46	61	63	65	114	117	119	101	103	104	Depth < 1.5m
May	Hardness	(mg/l)	66	61	66	63	60	69	72	71	73	100	101	100	75	71	66	Depth < 1.5m
February	Chloride, Cl-	(mg/l)	6.8	5.4	6.4	6.8	6.2	5.8	12.2	12.1	12	9.6	9.7	9.7	9	9.00	9	Depth < 1.5m
March	Chloride, Cl-	(mg/l)	7	6.4	5.8	7.4	6.2	6.8	13.6	15.4	14	9.3	10.8	10.7	20	20.75	21.5	Depth < 1.5m
June	Chloride, Cl-	(mg/l)	7.9	6.5	6.9	7.6	17	20	27	12	24	22	19	28	26	34	17	
July	Chloride, Cl-	(mg/l)	17	20	21	18	19	25	14	15	16	18	22	25	17	27	19	
August	Chloride, Cl-	(mg/l)	7.5	9.5	5.5	7	6	6	10.5	11	14.5	12.5	11.5	9	8.5	9.3	10	Depth < 1.5m
September	Chloride, Cl-	(mg/l)	8	10	6.5	9	7.5	7	10	13.0	16	14.5	13	10.5	8	9.3	10.5	Depth < 1.5m
October	Chloride, Cl-	(mg/l)	33	26	19	20	18	21	23	26	31	22	30	27	31	27.5	24	Depth < 1.5m
November	Chloride, Cl-	(mg/l)	10	14	13	12	15	16	22	18	13	14	12	16	13	14.0	15	Depth < 1.5m
December	Chloride, Cl-	(mg/l)	10.5	10.5	10	14	12	11.5	21.5	19.5	17.5	20	19.8	19.5	19	17.3	15.5	Depth < 1.5m
January	Chloride, Cl-	(mg/l)	10.5	11	8.5	8	6.5	9	18	16.5	15	11	12.8	14.5	12.5	12.3	12	Depth < 1.5m
April	Chloride, Cl-	(mg/l)	11	11.5	14	10.5	13	16.5	28	27.0	26	14.5	16.3	18	16	15.0	14	Depth < 1.5m
May	Chloride, Cl-	(mg/l)	7	6	6	5.5	5.5	5	13	11	13.5	14	11.5	10	8.5	9.8	11	Depth < 1.5m
February	Fluoride, F-	(mg/l)	0.14	0.17	0.19	0.14	0.21	0.23	0.24	0.24	0.24	0.10	0.19	0.28	0.23	0.22	0.20	Depth < 1.5m
March	Fluoride, F-	(mg/l)	<MDL	<MDL	0.07	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	1.38	0.08	0.07	<MDL	0.05	0.05	Depth < 1.5m
June	Fluoride, F-	(mg/l)	0.11	0.28	0.04	0.44	0.04	0.1	0.36	0.27	0.17	0.07	0.18	0.01	1.59	1.67	1.9	
July	Fluoride, F-	(mg/l)	0.08	0.12	0.1	0.13	0.23	0.18	<MDL	<MDL	<MDL	<MDL	<MDL	0.05	0.07	0.07	<MDL	
August	Fluoride, F-	(mg/l)	0.16	0.04	0.06	0.08	0.21	0.05	0.17	0.09	0.32	0.22	1.98	0.18	0.35	0.30	0.24	Depth < 1.5m
September	Fluoride, F-	(mg/l)	0.18	0.13	0.09	0.1	0.2	0.1	0.17	0.26	0.35	0.29	1.7	0.15	0.29	0.27	0.24	Depth < 1.5m
October	Fluoride, F-	(mg/l)	0.15	0.09	0.04	0	0	0	0	0	0.03	0	0	0.03	0.07	0.04	0.01	Depth < 1.5m
November	Fluoride, F-	(mg/l)	0.13	0.09	0.07	0.09	0.22	0.06	0.13	0.11	0.25	0.21	1.01	0.18	0.22	0.26	0.29	Depth < 1.5m
December	Fluoride, F-	(mg/l)	0.15	0.1	0.11	0.16	0.19	0.14	0.12	0.19	0.25	0.11	0.19	0.26	0.11	0.11	0.11	Depth < 1.5m
January	Fluoride, F-	(mg/l)	0.28	0.29	0.09	0.12	0.11	0.12	0.09	0.13	0.04	0.13	0.17	0.21	0.16	0.11	0.06	Depth < 1.5m
April	Fluoride, F-	(mg/l)	0.18	0.11	0.04	0.12	0.12	0.09	0.23	0.20	0.16	0.18	0.18	0.17	0.29	0.21	0.12	Depth < 1.5m
May	Fluoride, F-	(mg/l)	0.22	0.55	0.19	0.2	0.1	0.16	0.3	0.17	0.27	0.15	0.21	0.26	0.31	0.26	0.2	Depth < 1.5m
February	Ammonium Nitrogen	(mg/l)	0.21	0.2	0.20	0.30	0.17	0.18	0.28	0.26	0.24	0.32	0.28	0.34	0.27	0.24	0.21	Depth < 1.5m
March	Ammonium Nitrogen	(mg/l)	0.08	0.07	0.04	0.05	0.05	0.05	0.29	0.23	0.27	0.1	0.09	0.08	0.23	0.18	0.13	Depth < 1.5m
June	Ammonium Nitrogen	(mg/l)	0.17	0.24	0.11	0.02	0	0.95	0.72	0.42	0.51	1.42	1.27	1.5	0.98	3.03	1.64	
July	Ammonium Nitrogen	(mg/l)	0.01	0.04	0.05	0.03	0.02	0.04	0.42	0.48	0.57	0.2	0.35	0.32	0.35	0.32	0.68	
August	Ammonium Nitrogen	(mg/l)	0.18	0.37	0.33	0.17	0.56	0.6	0.24	0.26	0.32	0.22	0.27	0.23	0.05	0.07	0.08	Depth < 1.5m
September	Ammonium Nitrogen	(mg/l)	0.08	0.22	0.07	0.08	0.14	0.09	0.28	0.29	0.29	0.21	0.15	0.21	0.19	0.20	0.2	Depth < 1.5m
October	Ammonium Nitrogen	(mg/l)	0.05	0.18	0.39	0.13	0.11	0.27	0.36	0.35	0.32	0.14	0.14	0.15	0.53	0.52	0.5	Depth < 1.5m
November	Ammonium Nitrogen	(mg/l)	0.04	0.05	0.38	0.03	0.04	0.53	0.16	0.17	0.12	0.08	0.1	0.13	0.12	0.51	0.9	Depth < 1.5m
December	Ammonium Nitrogen	(mg/l)	0.03	0.02	0.01	0.04	0.02	0.04	0.1	0.09	0.07	0.07	0.07	0.06	0.12	0.12	0.11	Depth < 1.5m
January	Ammonium Nitrogen	(mg/l)	0.01	0	0	0.01	0	0	0.15	0.18	0.24	0.11	0.10	0.09	0.13	0.13	0.13	Depth < 1.5m
April	Ammonium Nitrogen	(mg/l)	0.32	0.39	0.37	0.37	0.37	0.31	0.48	0.47	0.46	0.31	0.31	0.31	0.27	0.28	0.28	Depth < 1.5m
May	Ammonium Nitrogen	(mg/l)	0.61	0.5	0.58	0.51	0.46	0.76	0.39	0.38	0.38	0.43	0.46	0.54	0.59	0.63	0.67	Depth < 1.5m

出典：JICA 調査団

Annex2.1-2（2-5）Analysis Results February 2020 to May 2021: Nitrite Nitrogen, Nitrate Nitrogen, Sulfate, Zinc

	Sampling Station		Kaptai Intake			Kaptai Lake			Panchpukuria			Bandarban			Lama			Reason for Missing Data
February	Nitrate Nitrogen	*(mg/l)*	0.09	0.07	0.12	0.08	0.08	0.10	0.07	0.10	0.13	0.01	0.17	0.10	0.09	0.11	0.13	Depth < 1.5m
March	Nitrate Nitrogen	*(mg/l)*	0.05	0.05	0.08	0.07	0.02	0.09	0.15	0.14	0.17	0.08	0.07	0.11	0.07	0.09	0.11	Depth < 1.5m
June	Nitrate Nitrogen	*(mg/l)*	0.13	0.06	0.08	0.03	0.05	0.03	0.07	0.01	0.01	0.64	0.65	1.12	1.64	0.52	0.7	
July	Nitrate Nitrogen	*(mg/l)*	0.02	0.03	0.03	0.05	0.03	0.03	0.09	0.08	0.1	0.03	0.09	0.03	0.04	0.01	0.05	
August	Nitrate Nitrogen	*(mg/l)*	0.04	0.06	0.05	0.04	0.05	0.02	0.06	0.17	0.17	0.07	0.09	0.02	0.02	0.02	0.02	Depth < 1.5m
September	Nitrate Nitrogen	*(mg/l)*	0.01	0.02	0.02	0.01	0	0.04	0.07	0.06	0.04	0.02	0.03	0.03	0.03	0.05	0.06	Depth < 1.5m
October	Nitrate Nitrogen	*(mg/l)*	0.03	0.04	0.04	0.02	0.03	0.06	0.2	0.36	0.16	0.2	0.05	0.05	0.06	0.05	0.04	Depth < 1.5m
November	Nitrate Nitrogen	*(mg/l)*	0.01	0.02	0.02	0.02	0.06	0.02	0.09	0.03	0.04	0.02	0.02	0.03	0.03	0.03	0.03	Depth < 1.5m
December	Nitrate Nitrogen	*(mg/l)*	0.03	0.05	0.04	0.03	0.04	0.03	0.02	0.02	0.02	0.04	0.04	0.03	0.06	0.07	0.07	Depth < 1.5m
January	Nitrate Nitrogen	*(mg/l)*	0.04	0.04	0.04	0.04	0.03	0.05	0.09	0.07	0.08	0.06	0.12	0.17	0.04	0.04	0.04	Depth < 1.5m
April	Nitrate Nitrogen	*(mg/l)*	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.02	0.02	0.01	0.02	0.02	0.02	Depth < 1.5m
May	Nitrate Nitrogen	*(mg/l)*	0.02	0.02	0.03	0.02	0.02	0.04	0.02	0.04	0.02	0.26	0.24	0.18	0.02	0.12	0.21	Depth < 1.5m
February	Nitrite Nitrogen	*(mg/l)*																Depth < 1.5m; Decision taken later to note NO_2^- - N values from March
March	Nitrite Nitrogen	*(mg/l)*	0.003	0.004	0.005	0.007	0.006	0.004	0.036	0.035	0.034	0.007	0.008	0.011	0.012	0.01	0.013	Depth < 1.5m
June	Nitrite Nitrogen	*(mg/l)*	0.08	0.006	0.004	0.007	0.004	0.002	0	0.019	0.002	0.374	0.074	0.076	0.045	0.023	0.114	
July	Nitrite Nitrogen	*(mg/l)*	0.1	0.014	0.013	0.003	0.003	0.005	0.016	0.011	0.008	0.012	0.012	0.032	0.011	0.013	0.008	
August	Nitrite Nitrogen	*(mg/l)*	0.007	0.009	0.009	0.006	0.004	0.005	0.009	0.006	0.011	0.009	0.017	0.011	0.011	0.01	0.013	Depth < 1.5m
September	Nitrite Nitrogen	*(mg/l)*	0.05	0.007	0.009	0.008	0.017	0.006	0.034	0.03	0.032	0.006	0.015	0.016	0.024	0.02	0.021	Depth < 1.5m
October	Nitrite Nitrogen	*(mg/l)*	0.033	0.032	0.031	0.064	0.043	0.024	0.172	0.13	0.091	0.092	0.07	0.054	0.151	0.19	0.221	Depth < 1.5m
November	Nitrite Nitrogen	*(mg/l)*	0.004	0.004	0.003	0.005	0.005	0.004	0.017	0.006	0.027	0.005	0.011	0.01	0.008	0.01	0.007	Depth < 1.5m
December	Nitrite Nitrogen	*(mg/l)*	0.008	0.008	0.009	0.007	0.01	0.004	0.006	0.01	0.014	0.007	0.01	0.008	0.011	0.01	0.006	Depth < 1.5m
January	Nitrite Nitrogen	*(mg/l)*	0.007	0.008	0.004	0.004	0.007	0.007	0.085	0.094	0.051	0.055	0.06	0.055	0.053	0.05	0.053	Depth < 1.5m
April	Nitrite Nitrogen	*(mg/l)*	0.013	0.012	0.013	0.017	0.014	0.009	0.042	0.05	0.063	0.022	0.02	0.023	0.013	0.01	0.011	Depth < 1.5m
May	Nitrite Nitrogen	*(mg/l)*	0.009	0.008	0.012	0.01	0.01	0.013	0.01	0.016	0.012	0.112	0.117	0.085	0.011	0.04	0.077	Depth < 1.5m
February	Sulfate, SO_4^{2-}	*(mg/l)*	1	1	1	1	1	1	3	3.00	3	4	3	3	4	4.00	4	Depth < 1.5m
March	Sulfate, SO_4^{2-}	*(mg/l)*	3	2	3	2	2	3	3	3	4	5	5	5	5	5.00	5	Depth < 1.5m
June	Sulfate, SO_4^{2-}	*(mg/l)*	6	6	3	5	6	4	8	0	1	18	13	0	28	12	35	
July	Sulfate, SO_4^{2-}	*(mg/l)*	4	14	12	3	4	2	9	9	2	5	3	2	5	3	5	
August	Sulfate, SO_4^{2-}	*(mg/l)*	0	3	5	8	9	8	7	9	5	10	3	2	3	4.00	5	Depth < 1.5m
September	Sulfate, SO_4^{2-}	*(mg/l)*	2	2	1	6	0	2	2	2.00	2	4	3	3	4	5.00	6	Depth < 1.5m
October	Sulfate, SO_4^{2-}	*(mg/l)*	1	2	2	0	1	2	2	2	2	3	3	3	3	3.00	3	Depth < 1.5m
November	Sulfate, SO_4^{2-}	*(mg/l)*	0	1	1	1	1	1	5	6	4	3	7	7	9	5.50	2	Depth < 1.5m
December	Sulfate, SO_4^{2-}	*(mg/l)*	1	1	1	0	1	1	4	4.00	4	4	4.00	4	2	2.00	2	Depth < 1.5m
January	Sulfate, SO_4^{2-}	*(mg/l)*	1	1	1	1	1	1	2	2	3	3	3.50	4	4	4.00	4	Depth < 1.5m
April	Sulfate, SO_4^{2-}	*(mg/l)*	0	0	0	1	1	0	0	0.00	0	4	3.00	2	6	6.00	6	Depth < 1.5m
May	Sulfate, SO_4^{2-}	*(mg/l)*	0	0	0	0	0	0	2	0	1	5	6	6	8	7.50	7	Depth < 1.5m
February	Zinc, Zn	*(mg/l)*	0.06	0.09	0.09	0.06	0.25	0.28	0.22	0.17	0.12	0.26	0.04	0.17	0.14	0.11	0.07	Depth < 1.5m
March	Zinc, Zn	*(mg/l)*	0.02	0.1	0.11	0	0.01	0.01	0.03	0	0.05	0	0.09	0.47	0.04	0.05	0.06	Depth < 1.5m
June	Zinc, Zn	*(mg/l)*	0.21	0.26	0.25	0.37	0.12	0.2	0.22	0.24	0.14	0.25	0.36	0.3	0.33	0.21	0.05	
July	Zinc, Zn	*(mg/l)*	0.19	0.2	0.27	0.35	0.22	0.25	0.19	0.22	0.33	0.27	0.31	0.12	0.08	0.1	0.02	
August	Zinc, Zn	*(mg/l)*	0.25	0.4	0.37	0.31	0.15	0.27	0.18	0.15	0.23	0.27	0.28	0.17	0.28	0.29	0.29	Depth < 1.5m
September	Zinc, Zn	*(mg/l)*	0.03	0.14	0.47	0.27	0.11	0.24	0.29	0.31	0.32	0.25	0.23	0.25	0.2	0.19	0.18	Depth < 1.5m
October	Zinc, Zn	*(mg/l)*	0.08	0.03	0.04	0.03	0.04	0.02	0.02	0.03	0.05	0.03	0.03	0.05	0.02	0.02	0.02	Depth < 1.5m
November	Zinc, Zn	*(mg/l)*	0.1	0.08	0.07	0.08	0.09	0.09	0.09	0.09	0.08	0.09	0.1	0.08	0.08	0.08	0.08	Depth < 1.5m
December	Zinc, Zn	*(mg/l)*	0.09	0.07	0.04	0.08	0.06	0.06	0.07	0.07	0.06	0.05	0.05	0.05	0.07	0.07	0.06	Depth < 1.5m
January	Zinc, Zn	*(mg/l)*	0.07	0.02	0.03	0.02	0.02	0.04	0.02	0.02	0.02	0.02	0.04	0.05	0.02	0.03	0.03	Depth < 1.5m
April	Zinc, Zn	*(mg/l)*	0.14	0.15	0.12	0.13	0.13	0.12	0.13	0.14	0.15	0.13	0.13	0.13	0.12	0.15	0.17	Depth < 1.5m
May	Zinc, Zn	*(mg/l)*	0.08	0.07	0.04	0.03	0.02	0.02	0.14	0.04	0.03	0.04	0.03	0.02	0.02	0.03	0.04	Depth < 1.5m

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Annex2.1-2（2-6）Analysis Results February 2020 to May 2021: Manganese, Iron, Heavy Metals

	Sampling Station		Kaptai Intake			Kaptai Lake			Panchpukuria			Bandarban			Lama			Reason for Missing Data
February	Manganese, Mn	(mg/l)	0.001	0.005	0.032	0.004	0.002	0.003	0.080	0.04	0.006	0.006	0.018	0.011	0.061	0.05	0.034	Depth < 1.5m
March	Manganese, Mn	(mg/l)	0.012	0.013	0.015	0.008	0.01	0.009	0.03	0.025	0.026	0.018	0.01	0.019	0.017	0.02	0.014	Depth < 1.5m
June	Manganese, Mn	(mg/l)	0.006	0.011	0.007	0.067	0.804	1.484	0.052	0.031	0	0.036	0.047	0.08	0.014	0.348	0.419	
July	Manganese, Mn	(mg/l)	0.03	0.033	0.031	0.025	0.029	0.059	0.051	0.05	0.057	0.021	0.032	0.034	0.042	0.045	0.044	
August	Manganese, Mn	(mg/l)	0.008	0.038	0.024	0.019	0.08	0.069	0.029	0.019	0.014	0.009	0.013	0.009	0.003	0.00	0.004	Depth < 1.5m
September	Manganese, Mn	(mg/l)	0.005	0.008	0.009	0.009	0.01	0.012	0.015	0.01	0.014	0.015	0.009	0.011	0.007	0.01	0.006	Depth < 1.5m
October	Manganese, Mn	(mg/l)	0.008	0.074	0.04	0.019	0.035	0.028	0.026	0.023	0.026	0.019	0.011	0.011	0.026	0.03	0.028	Depth < 1.5m
November	Manganese, Mn	(mg/l)	0.013	0.029	0.015	0.008	0.01	0.037	0.113	0.098	0.015	0.017	0.05	0.04	0.033	0.05	0.058	Depth < 1.5m
December	Manganese, Mn	(mg/l)	0.021	0.014	0.005	0.008	0.008	0.011	0.011	0.01	0.011	0.016	0.01	0.012	0.01	0.01	0.011	Depth < 1.5m
January	Manganese, Mn	(mg/l)	0.038	0.017	0.025	0.027	0.028	0.03	0.034	0.032	0.027	0.036	0.03	0.025	0.026	0.03	0.028	Depth < 1.5m
April	Manganese, Mn	(mg/l)	0.011	0.021	0.006	0.012	0.016	0.019	0.028	0.04	0.051	0.018	0.02	0.018	0.024	0.02	0.015	Depth < 1.5m
May	Manganese, Mn	(mg/l)	0.005	0.006	0.508	0.014	0.01	0.995	0.019	0.013	0.008	0.017	0.02	0.019	0.025	0.02	0.019	Depth < 1.5m
February	Iron, Fe	(mg/l)	0.08	0.06	0.13	0.03	0.02	0.04	0.61	0.62	0.63	0.08	0.06	0.05	0.18	0.17	0.16	Depth < 1.5m
March	Iron, Fe	(mg/l)	0.05	0.04	0.02	0.04	0.04	0.03	0.43	0.35	0.39	0.04	0.04	0.04	0.08	0.07	0.06	Depth < 1.5m
June	Iron, Fe	(mg/l)	0.04	0.04	0.06	0.05	0.14	0.52	1.26	0.66	1.1	2.78	2.19	0	0.67	3.37	6.82	
July	Iron, Fe	(mg/l)	0.05	0.06	0.05	0.02	0.01	0.08	0.66	0.51	1.01	0.25	0.5	0.59	0.55	0.65	0.62	
August	Iron, Fe	(mg/l)	0.33	0.58	0.48	0.29	0.8	0.82	1.01	0.78	1.02	0.16	0.19	0.09	0.04	0.07	0.09	Depth < 1.5m
September	Iron, Fe	(mg/l)	0.07	0.04	0.05	0.04	0.08	0.07	0.41	0.67	0.93	0.1	0.13	0.21	0.25	0.26	0.27	Depth < 1.5m
October	Iron, Fe	(mg/l)	0.26	0.18	0.37	0.03	0.08	0.3	0.63	0.61	0.66	0.1	0.09	0.12	0.51	0.56	0.6	Depth < 1.5m
November	Iron, Fe	(mg/l)	0.05	0.05	0.05	0.04	0.04	0.08	0.77	0.95	0.92	0.28	0.24	0.22	0.53	0.61	0.68	Depth < 1.5m
December	Iron, Fe	(mg/l)	0.05	0.04	0.05	0.07	0.07	0.06	0.37	0.33	0.29	0.03	0.03	0.03	0.38	0.34	0.3	Depth < 1.5m
January	Iron, Fe	(mg/l)	0.07	0.09	0.07	0.11	0.04	0.04	0.77	0.78	0.71	0.06	0.06	0.05	0.09	0.07	0.05	Depth < 1.5m
April	Iron, Fe	(mg/l)	0.03	0.17	0.15	0.02	0.02	0.03	0.21	0.27	0.32	0.03	0.05	0.07	0.05	0.05	0.04	Depth < 1.5m
May	Iron, Fe	(mg/l)	0.02	0.02	0.07	0.03	0.02	0.14	0.11	0.12	0.1	0.33	0.34	0.28	0.14	0.25	0.35	Depth < 1.5m
	Heavy Metals																	
August	Copper,Cu	(mg/l)	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL		<MDL	Minimum Detection Limit, MDL= 0.014
January	Copper,Cu	(mg/l)	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL		<MDL	<MDL		<MDL	Minimum Detection Limit, MDL= 0.014
August	Chromium, Cr	(mg/l)	0.007	0.005	0.002	<MDL	<MDL	0.005	0.006	0.002	0.006	0.008	<MDL	0.01	0.003	0.004	0.005	Minimum Detection Limit, MDL= 0.001
January	Chromium, Cr	(mg/l)	0.005	0.006	0.003	0.011	0.144	0.009	0.003	0.004	0.031	<MDL		0.001	0.015		<MDL	Minimum Detection Limit, MDL= 0.001
August	Lead,Pb	(mg/l)	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	0.017	<MDL	<MDL	<MDL	<MDL		<MDL	Minimum Detection Limit, MDL= 0.01
January	Lead,Pb	(mg/l)	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL		<MDL	<MDL		<MDL	Minimum Detection Limit, MDL= 0.01
August	Mercury,Hg	(mg/l)	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL		<MDL	Minimum Detection Limit, MDL= 0.0001
January	Mercury,Hg	(mg/l)	<MDL	<MDL	<MDL	0.001	<MDL	<MDL	<MDL	<MDL	0.0003	<MDL		<MDL	<MDL		<MDL	Minimum Detection Limit, MDL= 0.0001
August	Aluminium,Al	(mg/l)	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL		<MDL	Minimum Detection Limit, MDL= 0.1
January	Aluminium,Al	(mg/l)	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL		<MDL	<MDL		<MDL	Minimum Detection Limit, MDL= 0.1
August	Cadmium,Cd	(mg/l)	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL		<MDL	Minimum Detection Limit, MDL= 0.001
January	Cadmium,Cd	(mg/l)	0.002	0.005	<MDL	<MDL	<MDL	<MDL	<MDL	0.004	0.001	<MDL		<MDL	0.002		0.004	Minimum Detection Limit, MDL= 0.001
August	Cyanide,Cn	(mg/l)	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL		<MDL	Minimum Detection Limit, MDL= 0.003
January	Cyanide,Cn	(mg/l)	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL		<MDL	<MDL		<MDL	Minimum Detection Limit, MDL= 0.003

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Annex2.1-2（3-1）Result of the Correlation Analysis: Kapti 1

		Temp	DO	EC	E-Coli	Odor	COD	Colour	Turbidity	Alkalinity	Hardness	Chloride, Cl	Fluoride, F-	Ammonium Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Sulfate, SO42	Zinc, Zn	Manganese	Iron, Fe
pH	r	-0.15277338	0.129834	-0.51516	0.636627	-0.00808	BOD	-0.26176	-0.07542	0.152332	-0.45731	**-0.7893**	0.1613	-0.09691	0.494787	**-0.7516**	-0.1400632	0.187255	**-0.6597**	-0.17213
	P	0.673499557	0.68756	0.086522	0.06524	0.982334	#VALUE!	0.41116	0.815797	0.63648	0.134981	0.002266	0.635639	0.764482	0.101971	0.007647	0.66417138	0.560054	0.019591	0.592698
Temp	r		**-0.7668**	0.118207	-0.08124	0.31073	0.17853	0.397243	0.3130822	0.544641	-0.01208	0.148541	0.144293	0.561785	-0.53991	0.018362	0.15117432	0.410674	0.226038	0.212816
	P		0.003615	0.714451	0.8354	0.382192	0.578793	0.201013	0.3217442	0.067101	0.970277	0.644992	0.67209	0.057314	0.069989	0.957267	0.63907516	0.184804	0.479929	0.506639
DO	r			-0.26771	0.218439	-0.38104	-0.06185	-0.21092	-0.36338	-0.47772	0.14234	0.27833	-0.3196	**-0.7477**	0.457434	0.227252	0.23217245	-0.33325	0.222691	-0.32946
	r			0.400214	0.572317	0.277317	0.848558	0.510524	0.2456227	0.116248	0.659002	0.381043	0.33803	0.005178	0.13486	0.501576	0.46776147	0.289818	0.486629	0.295684
EC	P				-0.66606	-0.59396	0.278025	-0.1973	-0.272882	0.034596	**0.78927**	0.385593	0.102466	0.074318	**-0.6437**	0.345513	-0.2272479	**-0.6037**	0.182276	-0.23114
	r				0.050152	0.07021	0.381586	0.5388	0.3908175	0.914998	0.00227	0.215754	0.764337	0.818449	0.023903	0.298002	0.47751785	0.037672	0.570716	0.469808
E-Coli	P					0.439128	0.300225	0.268714	0.4168628	-0.2285	-0.39967	-0.28405	-0.40869	0.037538	**0.62787**	-0.18139	0.1073269	0.467329	0.020071	0.39213
	r					0.204194	0.343059	0.398381	0.1776185	0.475022	0.198023	0.370909	0.212037	0.907794	0.028813	0.593499	0.73989001	0.125556	0.950633	0.207405
Odor	r						0.083609	**0.88696**	**0.995999**	-0.06102	-0.5405	-0.02069	-0.35195	0.44212	0.394784	0.071028	-0.0026409	**0.83848**	0.365537	**0.98797**
	P						0.796149	0.00012	8.017E-12	0.850588	0.069625	0.949111	0.288488	0.15012	0.204071	0.835601	0.99350103	0.000656	0.242622	1.95E-09
COD	P							0.145098	0.1600208	-0.35327	0.447819	0.245003	0.22475	0.211964	0.00459	0.303448	0.53418075	0.148766	0.250055	0.08734
	r							0.652759	0.619338	0.259988	0.144319	0.442786	0.506424	0.508382	0.988705	0.364335	0.07360717	0.644486	0.433132	0.787232
Colour	P								**0.912616**	-0.072	-0.19167	0.348658	-0.39387	0.305753	0.247399	0.438534	0.00403093	0.54872	**0.70429**	**0.87757**
	r								3.46E-05	0.824021	0.550667	0.26669	0.230704	0.333805	0.438193	0.177262	0.99008035	0.064675	0.010559	0.000176
Turbidity	r									-0.07568	-0.37623	0.067616	-0.34594	0.388737	0.308179	0.159532	0.01615426	**0.72801**	0.43808	**0.97563**
	P									0.815183	0.228064	0.834612	0.297367	0.211713	0.329785	0.639395	0.9602592	0.007266	0.154323	6.49E-08
Alkalinity	r										-0.09399	-0.16303	-0.00893	0.164211	-0.27202	-0.17947	-0.1282719	0.069762	-0.27939	-0.13008
	P										0.771393	0.612672	0.979214	0.610069	0.392372	0.597475	0.69115444	0.82943	0.37915	0.686994
Hardness	r											**0.58967**	-0.00047	-0.15899	-0.34432	0.543398	0.17105999	-0.54173	0.348493	-0.39351
	r											0.043596	0.99891	0.621635	0.273095	0.08405	0.59502972	0.068871	0.266932	0.205665
Chloride, Cl^-	P												-0.4555	-0.30037	-0.29176	**0.85059**	0.36946751	-0.18275	**0.88135**	0.114006
	r												0.159154	0.342811	0.357503	0.000905	0.23720745	0.569699	0.000151	0.724244
Fluoride, F^-	P													0.387873	-0.13163	-0.24788	-0.1655722	-0.28163	-0.483	-0.42868
	r													0.212819	0.683442	0.462387	0.60706804	0.375192	0.111699	0.164393
Ammonium Nitrogen	r														-0.18754	0.057512	-0.2791102	0.372626	-0.09098	0.364707
	P														0.559453	0.866614	0.37965322	0.232909	0.778552	0.243774
Nitrate Nitrogen	P															-0.03851	0.08184136	0.288763	-0.04746	0.249869
	r															0.910489	0.80038142	0.362681	0.88355	0.433485
Nitrite Nitrogen	r																0.12392427	-0.20109	**0.86234**	0.204927
	P																0.70118908	0.530855	0.000308	0.52288
Sulfate, SO_4^{2-}	r																	0.416825	0.189067	-0.0282
	r																	0.177662	0.556193	0.930672
Zinc, Zn	P																		-0.01275	**0.67051**
	r																		0.970331	0.023945
Manganese, Mn	P																			0.43692
	r																			0.179047

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Annex2.1-2（3-2）Result of the Correlation Analysis: Kapti 2

		Temp	DO	EC	E-Coli	Odor	COD	Colour	Turbidity	Alkalinity	Hardness	Chloride, Cl	Fluoride, F-	Ammonium Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Sulfate, SO42-	Zinc, Zn	Manganese	Iron, Fe
pH	r	-0.23011	0.067706	-0.25475	0.29459	0.167179	-0.18413	0.115552733	0.168257266	0.183811	**-0.6024**	-0.26832	0.323384	0.130541	0.11037	-0.4013	0.27507456	0.292609	0.212519	0.154963
	P	0.522457	0.834395	0.424258	0.408657	0.644346	0.566726	0.720634167	0.601166545	0.567421	0.038175	0.399108	0.332015	0.685934	0.732749	0.221227	0.386868211	0.356032	0.507245	0.630596
Temp	r		-0.72326	0.047341	0.351615	0.345345	0.024854	0.383357778	0.347380033	0.368935	-0.10766	0.126653	-0.00686	0.518636	-0.46057	0.328078	0.176114407	-0.15473	0.043355	0.356476
	P			0.883845	0.319089	0.32839	0.938885	0.218655286	0.268567125	0.237937	0.73911	0.694885	0.984026	0.084055	0.131863	0.324635	0.584024015	0.631123	0.893573	0.255377
DO	r			0.267298	-0.38057	-0.331	-0.02389	-0.328521108	-0.330059611	-0.36395	0.129166	0.224892	0.10615	-0.46677	0.121881	0.247666	-0.26283345	0.060217	-0.41757	-0.3322
	r			0.400968	0.277962	0.350188	0.941254	0.297138181	0.294745877	0.244828	0.689097	0.482219	0.756081	0.126069	0.705919	0.462789	0.409176753	0.852524	0.176809	0.291436
EC	P				0.245252	**-0.7857**	0.364359	-0.489846617	-0.494297082	0.054282	0.516493	-0.17505	0.135243	0.158274	-0.35627	0.323213	**-0.7978368**	-0.25604	**-0.8217**	-0.51667
	r				0.494632	0.007063	0.244258	0.105976092	0.102363012	0.866938	0.085571	0.58633	0.691753	0.623218	0.255666	0.332286	0.001872988	0.421834	0.001044	0.085444
E-Coli	P					0.178123	**0.63067**	0.165589594	0.190749003	-0.24171	-0.20452	-0.24051	0.085556	0.428238	-0.12217	-0.44213	0.186250832	-0.29456	0.030609	0.124062
	r					0.622486	0.027897	0.607029833	0.552619015	0.449142	0.523723	0.451451	0.8025	0.164872	0.705245	0.173322	0.562197241	0.35269	0.924767	0.70087
Odor	r						-0.04819	**0.989812414**	**0.995118475**	-0.14306	-0.55913	-0.29167	0.18181	**0.71008**	0.207918	-0.23304	**0.89635532**	0.152485	**0.8911**	**0.99149**
	P						0.88177	8.49608E-10	2.16517E-11	0.657371	0.05876	0.357642	0.592633	0.00967	0.516696	0.490431	7.89677E-05	0.636137	0.0001	3.46E-10
COD	P							-0.06658225	-0.037868205	-0.57423	0.13111	0.030721	0.124816	0.25933	0.067916	-0.27467	0.014573457	0.111744	-0.26726	-0.14182
	r							0.837109921	0.906986666	0.050867	0.684629	0.924493	0.714622	0.415677	0.833887	0.413703	0.964145787	0.729532	0.401042	0.660191
Colour	P								**0.995346679**	-0.10216	-0.56816	-0.19838	0.162336	**0.60503**	0.218089	-0.15364	**0.81835102**	0.171563	0.104895	**0.9943**
	r								1.70488E-11	0.752045	0.053943	0.536525	0.63344	0.037124	0.495908	0.651981	0.001138141	0.59393	0.74561	4.68E-11
Turbidity	r									-0.10883	**-0.5813**	-0.2446	0.184577	**0.62458**	0.217401	-0.21234	**0.83299593**	0.190103	0.106773	**0.99354**
	P									0.736356	0.047459	0.44356	0.586915	0.02992	0.497302	0.530771	0.000767384	0.55399	0.741192	8.8E-11
Alkalinity	r										-0.19343	-0.35303	0.191556	0.014222	-0.49917	0.101718	-0.27038336	-0.03278	-0.05455	-0.0421
	P										0.546935	0.260321	0.572591	0.965009	0.098504	0.766015	0.395342657	0.919434	0.866293	0.89665
Hardness	r											0.29353	-0.39768	-0.23172	-0.20421	0.392442	**-0.5914246**	-0.41606	-0.19256	-0.5716
	r											0.35445	0.225818	0.468663	0.524375	0.232548	0.042818617	0.178544	0.54879	0.052185
Chloride, Cl^-	P												-0.26651	-0.44671	0.079261	0.26421	0.115920781	0.192247	0.359661	-0.2442
	r												0.428261	0.145436	0.806569	0.432404	0.719775987	0.549445	0.25085	0.444333
Fluoride, F^-	P													0.056012	0.227975	-0.58907	0.086474826	0.552199	-0.45661	0.174078
	r													0.862734	0.476072	0.056535	0.789298448	0.062654	0.135653	0.588448
Ammonium Nitrogen	r														-0.07006	0.004217	0.268203044	0.096497	-0.21881	**0.58395**
	P														0.828701	0.990182	0.399313116	0.765451	0.494449	0.046199
Nitrate Nitrogen	P															-0.31655	0.312915512	0.497326	0.212778	0.20355
	r															0.342916	0.322015818	0.099952	0.506717	0.525738
Nitrite Nitrogen	r																-0.39326723	-0.29947	-0.20792	-0.17223
	P																0.205972384	0.344333	0.516682	0.592466
Sulfate, SO_4^{2-}	r																	0.347264	0.50341	**0.8139**
	r																	0.268737	0.095223	0.001275
Zinc, Zn	P																		0.051428	0.121598
	r																		0.880633	0.721725
Manganese, Mn	P																			0.106766
	r																			0.754704

出典：JICA 調査団

Annex2.1-2（3-2）Result of the Correlation Analysis: Halda River

		Temp	DO	EC	E-Coli	Odor	BOD	Colour	Turbidity	Alkalinity	Hardness	Chloride, Cl-	Fluoride, F	Ammonium Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Sulfate, S	Zinc, Zn	Manganes	Iron, Fe
pH	r	0.1618	-0.2659	0.2016	0.2437	-0.0368	-0.1593	-0.3322	-0.0278	0.3110	0.1913	-0.5152	0.1768	0.3199	-0.3621	-0.5810	-0.0696	0.2710	0.2093	-0.3062
	P	0.6346	0.4035	0.5299	0.4975	0.9195	0.6209	0.2914	0.9316	0.3252	0.5515	0.0865	0.5824	0.3108	0.2474	0.0609	0.8298	0.3942	0.5139	0.3330
Temp	r		**-0.7206**	-0.0931	-0.1614	0.3801	0.4338	0.4769	0.4409	0.2635	-0.2484	-0.1834	-0.0926	**0.6171**	0.3184	-0.0300	-0.0916	0.1913	-0.2432	-0.1478
	P		0.0082	0.7734	0.6560	0.2786	0.1589	0.1170	0.1514	0.4080	0.4363	0.5682	0.7748	0.0325	0.3131	0.9302	0.7772	0.5515	0.4462	0.6466
DO	r			0.1798	-0.1753	**-0.7041**	-0.1804	-0.2412	**-0.7094**	0.2821	0.3934	-0.0876	0.4617	**-0.8116**	-0.2699	0.1158	-0.2349	-0.2130	-0.0880	0.2215
	r			0.5760	0.6281	0.0230	0.5748	0.4501	0.0098	0.3743	0.2058	0.7867	0.1308	0.0014	0.3962	0.7345	0.4624	0.5062	0.7856	0.4889
EC	P				**0.6710**	**-0.6888**	0.1429	**-0.6119**	-0.5190	0.5651	**0.8761**	0.0910	-0.0505	-0.2137	-0.0675	-0.0006	-0.3450	-0.5754	-0.1302	-0.5506
	r				0.0337	0.0276	0.6578	0.0345	0.0838	0.0555	0.0002	0.7784	0.8761	0.5048	0.8350	0.9986	0.2721	0.0503	0.6866	0.0636
E-Coli	P					-0.1690	-0.3877	-0.3014	-0.2002	0.2109	0.3821	-0.0222	-0.4414	-0.1120	0.1133	-0.0379	-0.0912	-0.3746	-0.0773	-0.2981
	r					0.6407	0.2130	0.3411	0.5327	0.5106	0.2203	0.9455	0.1509	0.7290	0.7259	0.9119	0.7780	0.2303	0.8112	0.3466
Odor	r						0.1726	0.2176	**0.9756**	**-0.5856**	**-0.7524**	0.2064	**-0.6104**	**0.7087**	0.2911	0.1164	0.5336	0.2742	0.0853	0.0193
	P						0.5916	0.4969	0.0000	0.0455	0.0048	0.5198	0.0350	0.0099	0.3587	0.7333	0.0740	0.3884	0.7922	0.9525
BOD	P							-0.0059	0.1820	0.4818	0.0851	0.1666	0.0366	0.2817	0.1501	0.0892	0.0678	0.2781	-0.2258	-0.1850
	r							0.9855	0.5713	0.1128	0.7927	0.6049	0.9102	0.3751	0.6416	0.7942	0.8341	0.3814	0.4804	0.5648
Colour	P								0.2173	-0.2533	**-0.6850**	0.1453	0.0776	0.2803	0.4681	0.4159	-0.1860	0.3376	-0.1557	0.3957
	r								0.4976	0.4270	0.0140	0.6523	0.8107	0.3775	0.1249	0.2033	0.5627	0.2832	0.6290	0.2030
Turbidity	r									-0.5495	**-0.6713**	0.2989	**-0.5786**	**0.6133**	0.3756	0.2006	0.4058	0.1691	0.1288	-0.0398
	P									0.0642	0.0168	0.3454	0.0487	0.0339	0.2289	0.5543	0.1905	0.5993	0.6900	0.9023
Alkalinity	r										**0.6108**	-0.3331	0.3950	-0.1445	-0.2486	-0.2060	-0.3613	0.1028	-0.3966	-0.3758
	P										0.0349	0.2901	0.2037	0.6542	0.4359	0.5435	0.2486	0.7506	0.2018	0.2286
Hardness	r											-0.0690	0.2781	-0.3356	-0.3661	-0.2545	-0.3496	-0.4055	-0.2958	**-0.6153**
	r											0.8312	0.3815	0.2862	0.2418	0.4502	0.2654	0.1909	0.3505	0.0332
Chloride, Cl^-	P												-0.2735	0.0926	0.3098	0.5993	-0.2180	-0.3411	0.1435	-0.1582
	r												0.3897	0.7746	0.3270	0.0513	0.4960	0.2778	0.6564	0.6234
Fluoride, F^-	P													-0.0256	**-0.6259**	-0.2741	-0.5143	0.5116	-0.1455	-0.0122
	r													0.9370	0.0295	0.4147	0.0872	0.0891	0.6518	0.9701
Ammonium Nitrogen	r														0.0431	0.0610	-0.1796	0.4118	-0.0236	-0.3164
	P														0.8941	0.8586	0.5764	0.1835	0.9420	0.3164
Nitrate Nitrogen	P															**0.6537**	0.1563	-0.3249	-0.2048	0.1501
	r															0.0291	0.6276	0.3029	0.5232	0.6415
Nitrite Nitrogen	r																-0.4026	-0.3879	-0.1767	0.0846
	P																0.1945	0.2128	0.5827	0.7938
Sulfate, SO_4^{2-}	r																	0.1319	0.3199	0.4117
	r																	0.6828	0.3107	0.1836
Zinc, Zn	P																		0.0414	0.2515
	r																		0.8985	0.4305
Manganese, Mn	P																			0.5106
	r																			0.0898

出典：JICA 調査団

Annex2.1-2（3-4）Result of the Correlation Analysis: Sangu River

		Temp	DO	EC	E-Coli	Odor	BOD	Colour	Turbidity	Alkalinity	Hardness	Chloride, Cl	Fluoride, F	Ammonium Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Sulfate, SO_4^{2-}	Zinc, Zn	Manganese, Mn	Iron, Fe
pH	r	-0.4168	0.5264	0.5511	**0.6364**	**-0.6652**	-0.2999	-0.2296	-0.2923	0.3667	0.4745	-0.4775	0.1106	-0.2652	-0.1395	-0.2459	-0.0303	-0.3815	-0.4173	-0.2848
	P	0.3043	0.0787	0.0633	0.0479	0.0358	0.3999	0.4728	0.3565	0.2410	0.1191	0.1164	0.7323	0.4047	0.6654	0.4661	0.9255	0.2210	0.1771	0.3696
Temp	r		-0.3867	0.1200	-0.3952	**0.8353**	0.1655	-0.4771	-0.3420	0.2543	-0.0548	0.3059	0.2144	-0.4517	-0.5034	0.3291	-0.4850	-0.3551	-0.4477	-0.4889
	P		0.2144	0.7103	0.2584	0.0026	0.6477	0.1168	0.2766	0.4251	0.8656	0.3335	0.5034	0.1405	0.0952	0.3231	0.1100	0.2573	0.1445	0.1067
DO	r			0.4373	0.3606	**-0.7651**	-0.4712	**-0.5829**	**-0.6778**	0.2176	**0.6085**	-0.3703	-0.1319	**-0.6383**	-0.4543	-0.5270	-0.4449	-0.5602	-0.2576	**-0.5926**
	r			0.1551	0.3060	0.0099	0.1692	0.0467	0.0154	0.4970	0.0358	0.2360	0.6828	0.0255	0.1379	0.0958	0.1473	0.0582	0.4189	0.0423
EC	P				0.4426	-0.5558	-0.3091	-0.5660	-0.5286	0.3107	**0.9141**	-0.4280	-0.2951	-0.4068	-0.3498	0.1208	-0.3098	**-0.7667**	-0.4032	-0.5684
	r				0.2002	0.0953	0.3848	0.0551	0.0772	0.3256	0.0000	0.1652	0.3517	0.1894	0.2651	0.7236	0.3271	0.0036	0.1937	0.0538
E-Coli	P					-0.2325	-0.4347	-0.3377	-0.2864	0.0564	0.3444	-0.2447	-0.2146	-0.2856	-0.1083	-0.2764	0.1993	-0.0763	-0.3078	-0.2940
	r					0.5181	0.2093	0.2831	0.3669	0.8618	0.2729	0.4433	0.5030	0.3682	0.7375	0.4106	0.5347	0.8136	0.3303	0.3536
Odor	r						0.5365	**0.8875**	**0.8534**	-0.0013	**-0.6148**	0.2875	0.0660	**0.6434**	0.1682	0.1696	-0.1969	**0.6596**	0.0383	**0.8511**
	P						0.1099	0.0001	0.0004	0.9968	0.0334	0.3649	0.8386	0.0240	0.6013	0.6182	0.5397	0.0196	0.9058	0.0004
BOD	P							0.3291	0.3661	**0.6066**	-0.2391	-0.0743	0.3842	0.2774	0.2102	0.1409	0.1357	0.4212	0.0559	0.2769
	r							0.2962	0.2419	0.0365	0.4542	0.8185	0.2176	0.3827	0.5119	0.6795	0.6741	0.1727	0.8630	0.3836
Colour	P								**0.9735**	-0.3323	**-0.6235**	0.2225	-0.0919	**0.9379**	**0.9150**	0.3541	**0.8703**	**0.6458**	0.5562	**0.9894**
	r								0.0000	0.2913	0.0303	0.4870	0.7763	0.0000	0.0000	0.2853	0.0002	0.0233	0.0604	0.0000
Turbidity	r									-0.3415	**-0.6073**	0.2023	-0.1093	**0.9631**	0.9402	0.4987	**0.8548**	**0.6210**	0.5057	**0.9782**
	P									0.2773	0.0362	0.5283	0.7352	0.0000	0.0000	0.1184	0.0004	0.0312	0.0935	0.0000
Alkalinity	r										0.3530	-0.3451	0.4239	-0.3896	-0.3782	-0.2036	-0.4110	-0.1442	-0.5720	-0.4256
	P										0.2604	0.2720	0.1696	0.2106	0.2254	0.5483	0.1844	0.6549	0.0520	0.1677
Hardness	r											**-0.5829**	-0.1910	-0.4815	-0.4143	-0.1203	-0.3529	**-0.6880**	-0.3064	**-0.6067**
	r											0.0467	0.5520	0.1130	0.1806	0.7245	0.2605	0.0134	0.3327	0.0365
Chloride, Cl^-	P												-0.3988	0.1202	0.0303	0.1379	-0.0070	0.0981	-0.0117	0.1924
	r												0.1992	0.7099	0.9254	0.6860	0.9827	0.7616	0.9713	0.5491
Fluoride, F^-	P													-0.1597	-0.2171	-0.3396	-0.1418	0.3762	-0.1334	-0.1263
	r													0.6200	0.4979	0.3069	0.6601	0.2281	0.6795	0.6957
Ammonium Nitrogen	r														**0.9486**	0.4799	**0.8100**	**0.6046**	0.4990	**0.9548**
	P														0.0000	0.1352	0.0014	0.0373	0.0986	0.0000
Nitrate Nitrogen	P															0.5682	**0.8486**	0.4428	0.4927	**0.9284**
	r															0.0682	0.0005	0.1494	0.1036	0.0000
Nitrite Nitrogen	r																0.3832	-0.2215	0.1273	0.3643
	P																0.2189	0.4890	0.6935	0.2444
Sulfate, SO_4^{2-}	r																	0.3709	**0.6869**	**0.8863**
	r																	0.2353	0.0136	0.0001
Zinc, Zn	P																		0.3150	**0.6556**
	r																		0.3186	0.0206
Manganese, Mn	P																			**0.6178**
	r																			0.0323

出典：JICA 調査団

Annex2.1-2（3-5）Result of the Correlation Analysis: Matamuhuri River

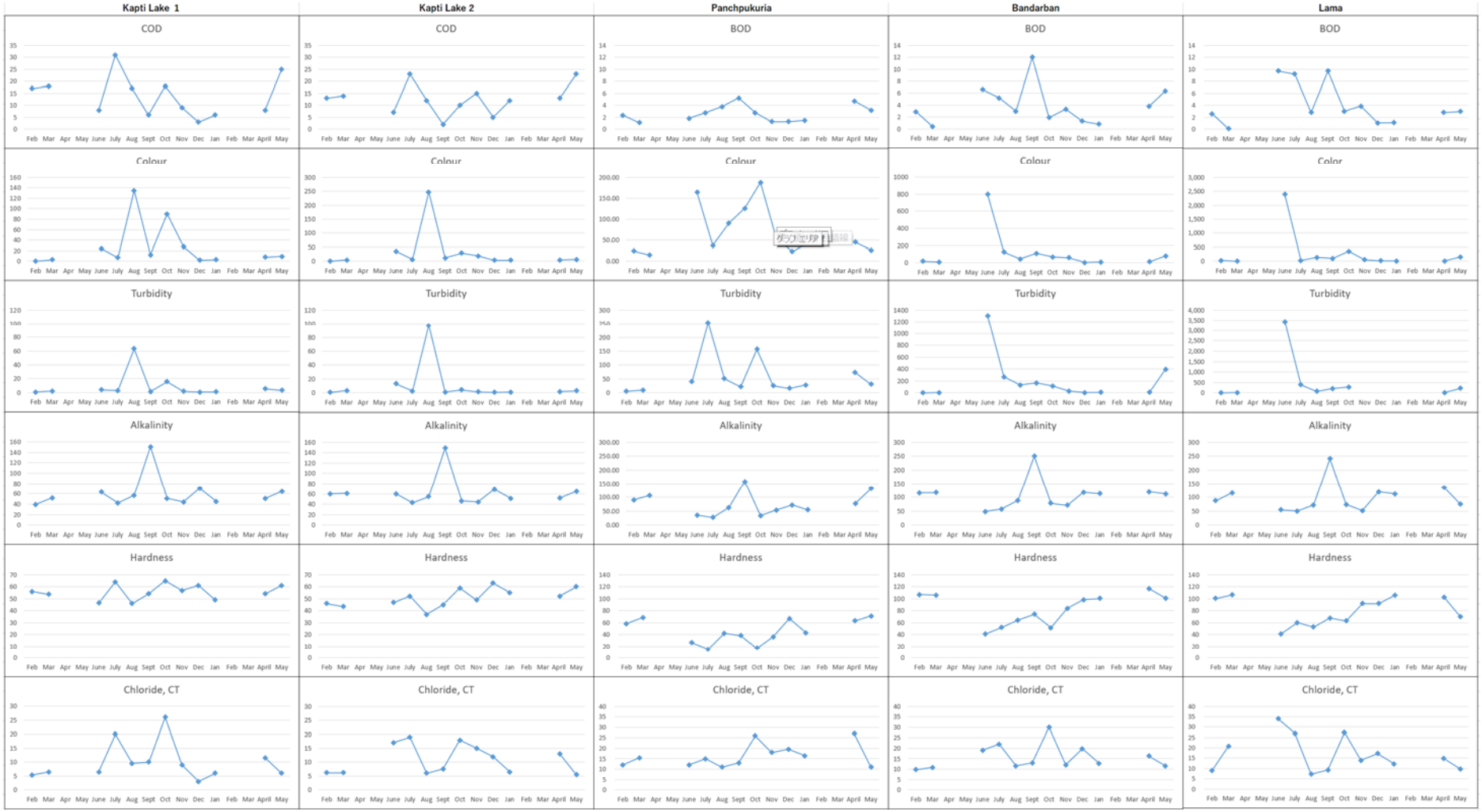
		Temp	DO	EC	E-Coli	Odor	BOD	Colour	Turbidity	Alkalinity	Hardness	Chloride, Cl^-	Fluoride, F^-	Ammonium Nitrogen	Nitrate Nitrogen	Nitrite Nitrogen	Sulfate, SO_4^{2-}	Zinc, Zn	Manganese, Mn	Iron, Fe
pH	r	-0.4568	**0.6504**	**0.7579**	-0.2650	**-0.7765**	-0.5712	-0.4443	-0.4611	0.3659	**0.8001**	**-0.6742**	-0.3246	-0.4655	-0.2795	-0.3382	-0.1758	-0.0523	-0.3809	-0.5352
	P	0.1578	0.0220	0.0043	0.4593	0.0083	0.0524	0.1479	0.1313	0.2421	0.0018	0.0162	0.3032	0.1273	0.3789	0.3090	0.5847	0.8718	0.2219	0.0730
Temp	r		0.0030	-0.2369	0.3642	**0.8510**	0.0597	-0.2538	-0.2979	0.0870	-0.3796	-0.0342	-0.3654	-0.2731	-0.4161	**0.7216**	-0.3090	-0.0611	-0.4063	-0.2860
	P		0.9926	0.4585	0.3009	0.0018	0.8537	0.4261	0.3471	0.7879	0.2235	0.9158	0.2429	0.3904	0.1784	0.0122	0.3285	0.8505	0.1899	0.3674
DO	r			**0.6955**	-0.3872	**-0.7627**	**-0.6546**	**-0.8961**	**-0.9085**	0.2838	**0.8249**	**-0.6440**	**-0.8713**	**-0.9062**	**-0.8192**	-0.0039	**-0.8074**	-0.4436	**-0.8450**	**-0.8879**
	r			0.0120	0.2690	0.0103	0.0209	0.0001	0.0000	0.3714	0.0010	0.0238	0.0002	0.0000	0.0011	0.9909	0.0015	0.1486	0.0005	0.0001
EC	P				-0.3911	**-0.6798**	**-0.7578**	**-0.5865**	**-0.6235**	0.4397	**0.8899**	-0.5287	-0.5532	**-0.6001**	-0.4415	-0.1250	-0.3438	-0.3261	-0.5755	**-0.6857**
	r				0.2637	0.0306	0.0043	0.0450	0.0303	0.1526	0.0001	0.0772	0.0621	0.0391	0.1508	0.7143	0.2739	0.3010	0.0502	0.0138
E-Coli	P					0.2678	**0.8153**	0.1785	0.5074	0.4969	-0.4776	0.1489	0.0929	0.0172	-0.2543	0.0003	-0.0022	0.3884	0.0012	0.3150
	r					0.4544	0.0012	0.5789	0.0922	0.1003	0.1164	0.6443	0.7739	0.9578	0.4251	0.9993	0.9947	0.2121	0.9970	0.3186
Odor	r						0.5039	**0.6246**	**0.9548**	-0.2980	**-0.8053**	0.5658	-0.2458	**0.6143**	-0.1777	0.5029	0.0646	-0.2189	0.1975	**0.5827**
	P						0.0949	0.0299	0.0000	0.3469	0.0016	0.0552	0.4412	0.0336	0.5806	0.1149	0.8419	0.4944	0.5384	0.0468
BOD	P							0.5213	**0.5909**	0.0876	**-0.7719**	0.3851	0.5426	0.5261	0.4082	-0.1271	0.4189	0.4773	0.5256	**0.5980**
	r							0.0822	0.0430	0.7867	0.0033	0.2164	0.0684	0.0789	0.1877	0.7097	0.1753	0.1166	0.0793	0.0400
Colour	P								**0.9912**	-0.2869	**-0.6503**	**0.6659**	**0.9610**	**0.9857**	**0.9621**	0.0537	**0.8155**	0.3346	**0.9764**	**0.9760**
	r								0.0000	0.3660	0.0221	0.0181	0.0000	0.0000	0.0000	0.8753	0.0012	0.2878	0.0000	0.0000
Turbidity	r									-0.2891	**-0.6745**	**0.6796**	**0.9625**	**0.9814**	**0.9528**	-0.0280	**0.8125**	0.3645	**0.9826**	**0.9836**
	P									0.3621	0.0161	0.0151	0.0000	0.0000	0.0000	0.9350	0.0013	0.2440	0.0000	0.0000
Alkalinity	r										0.2227	-0.4472	-0.2247	-0.3597	-0.2669	-0.1467	-0.1693	0.1934	-0.3638	-0.3638
	P										0.4865	0.1449	0.4826	0.2508	0.4017	0.6669	0.5989	0.5471	0.2450	0.2451
Hardness	r											-0.5369	**-0.5926**	**-0.6353**	-0.5182	-0.2373	-0.4302	-0.4024	-0.5669	**-0.6765**
	r											0.0719	0.0423	0.0264	0.0843	0.4823	0.1627	0.1947	0.0546	0.0157
Chloride, Cl^-	P												0.4783	**0.6513**	0.5565	0.2996	0.3104	-0.0661	**0.6526**	**0.7207**
	r												0.1157	0.0218	0.0602	0.3707	0.3262	0.8384	0.0214	0.0082
Fluoride, F^-	P													0.9565	0.9448	-0.1626	**0.8703**	0.4963	**0.9599**	**0.9379**
	r													0.0000	0.0000	0.6329	0.0002	0.1008	0.0000	0.0000
Ammonium Nitrogen	r														**0.9573**	0.0139	**0.8654**	0.2739	**0.9792**	**0.9768**
	P														0.0000	0.9676	0.0003	0.3891	0.0000	0.0000
Nitrate Nitrogen	P															-0.0533	**0.8402**	0.2683	**0.9575**	**0.9245**
	r															0.8764	0.0006	0.3992	0.0000	0.0000
Nitrite Nitrogen	r																-0.1919	-0.4238	-0.0652	-0.0113
	P																0.5501	0.1698	0.8405	0.9722
Sulfate, SO_4^{2-}	r																	0.3188	**0.8126**	**0.7615**
	r																	0.3126	**0.0013**	**0.0040**
Zinc, Zn	P																		0.3161	0.3064
	r																		0.3168	0.3328
Manganese, Mn	P																			**0.9791**
	r																			0.0000

出典：JICA 調査団

Annex2.1-2（4-1）Water Quality Analysis : Graphs of pH, Temperature, DO, EC, E-Coil, Odor, February 2020 to May 2021

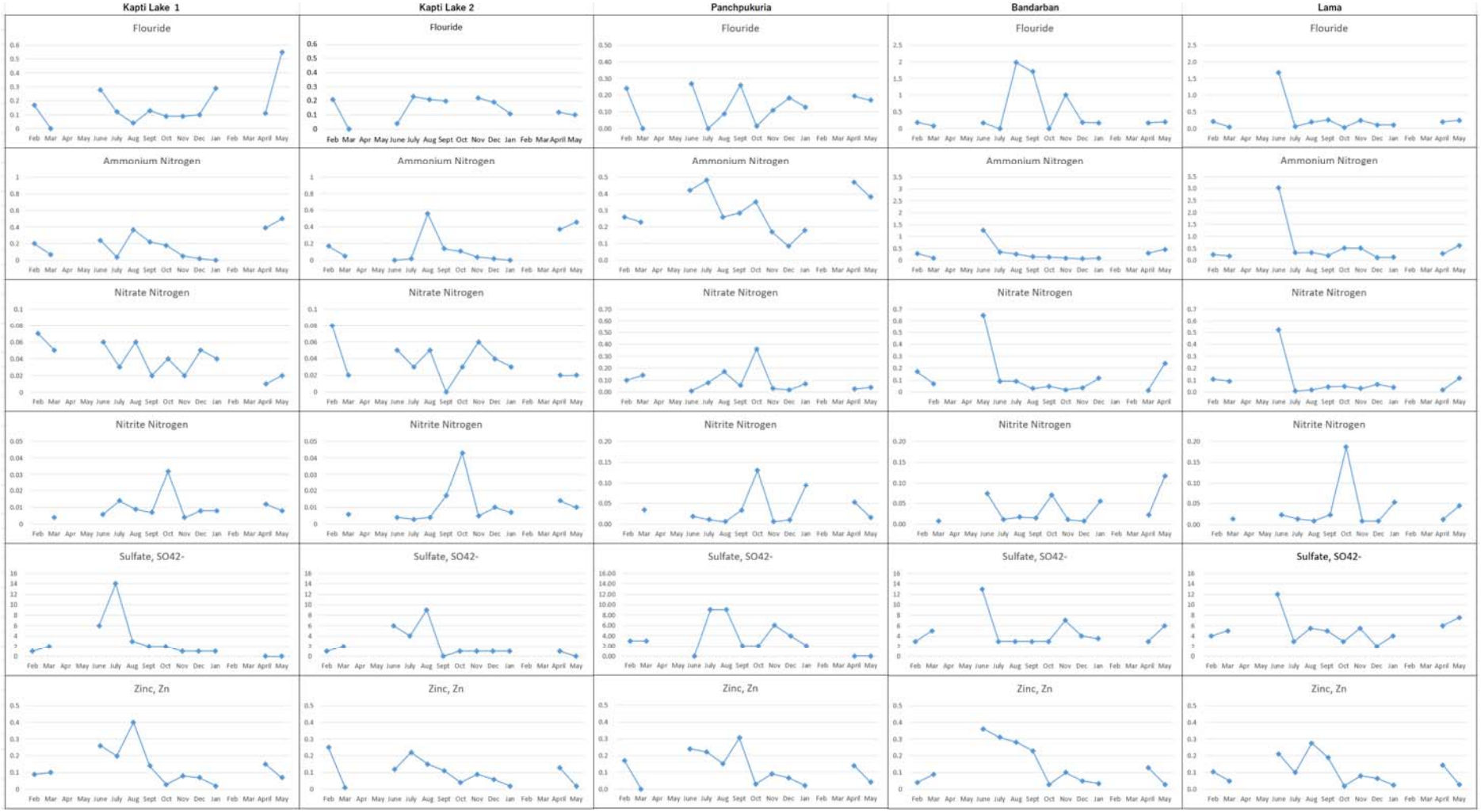
出典：JICA 調査団

Annex2.1-2（4-2）Water Quality Analysis : Graphs of COD, Color, Turbidity, Alkalinity, Hardness, Chloride Ion, February 2020 to May 2021



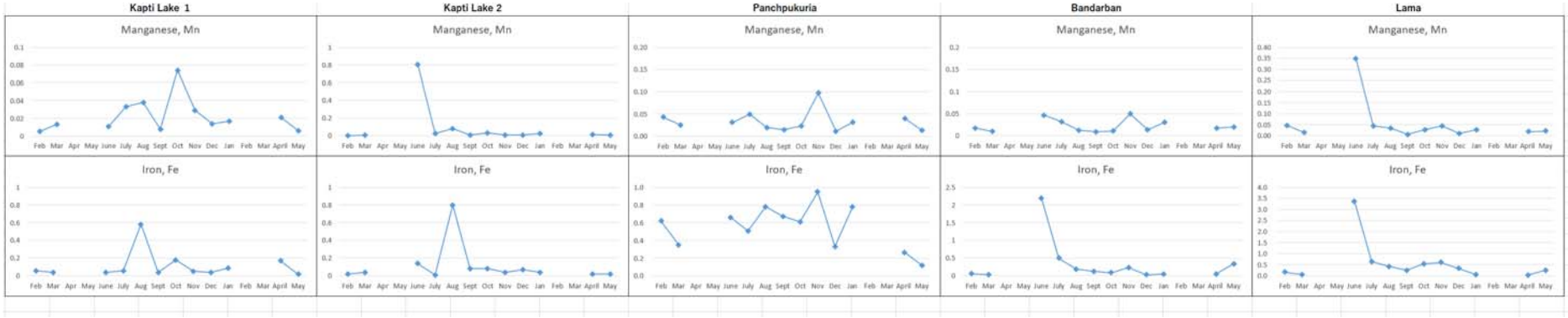
出典：JICA 調査団

Annex2.1-2（4-3）Water Quality Analysis : Graphs of Fluoride, Ammonium Nitrogen, Nitrate Nitrogen, Nitrite Nitrogen, Sulfate, Zinc, February 2020 to May 2021



出典：JICA 調査団

Annex2.1-2（4-4）Water Quality Analysis : Graphs of Manganese, Iron, February 2020 to May 2021



出典：JICA 調査団

Annex 2.2-1 Inventory of Existing Wells

	Interpretation of Questionnaire number (x-xx-x-xx=Upazila code-Union code-Data collector Code-Ques#)	A. Location					B. GPS Coordinate		3.1 Type of Survey [Shallow Tube Well	3.2 Type of Survey [Deep Tube Well (DTW)]			3.4 Founder name of the well (such as DPHE,BADC, Water aid, BRAC,Private, Others)	3.5 Date of Installation						3.10 Structure of the well								3.13 Usage of groundwater				Water Quality		
SL#		Date	Upazila	Union	Village/ Land marks	Elevation in m (GPS)	2.1 Longitude	2.2 Latitude	1= Domestic 2= Irrigation	3= Domestic 4= Irrigation	3.3 Type of well	3.3.1 Source of piped scheme		Month	Year	3.6 Owner Name	3.7 Telephone number:	3.8 Handler of the well	3.9 Number of user (well)	Depth of the well (ft)	Location of screen (ft)	Length of Screen(ft)	Diameter of casing pipe (inch)	Pumping rate ($M^{3/minute}$)	Pumping rate L/minute)	3.12 Pumping hours (per day)	3.13 Yearly Pumping days(only for	1=Drinking/ cooking	2=Washing	3=Irrigation	4=Others (nursing etc.)	1=Salinity 2=Sweet	3=Presence of Iron	4=Others (sand etc.)
1	104513	06-03-20	Chokaria	Badarkhali	Chona para	18	91.96860	21.71327		4	3	source of channal	private	3	2005	Eshahaq	01846435510	Eshahaq	20	850	790	60	4	0.220	220	20	115			3		2		
2	104206	06-03-20	Chokaria	Badarkhali	West Notun Guna w-2	8	91.94936	21.73608		4	3	No	Private	6	2017	Jamal Saodagars	01832721473	Jamal Saodagars	10	680	580	100	4	0.250	250	16	120			3		2		
3	104718	06-03-20	Chokaria	Badarkhali	Carpara w-3	4	91.94944	21.73000		3	1	No	Sothu compannay	5	2018	Joynal Abedin	01815333116	Joynal Abedin	70	700	650	50	1.5	0.018	18	14		1	2			2		
4	104719	06-03-20	Chokaria	Badarkhali	Matar para w-8	3	91.96430	21.71907		3	3	Tank	Private		1997	Samsher Alam	01815480966	Samsher Alam	50	820	750	70	1.5	0.016	16	13		1	2			2		
5	104716	06-03-20	Chokaria	Badarkhali	Parigat w-4	3	91.94917	21.71639		3	1	No	Private	1	2019	Mohammad Ali	01832118247	Mohammad Ali	100	900	800	100	1.5	0.010	10	12		1	2			2		
6	104303	06-03-20	Chokaria	Badarkhali	Kutubdia para w-1	8	91.95452	21.74462		3	1	No	DPHE	1	1993	Jajim uddin	01817053260	Jajim uddin	50	780	750	30	1.5	0.030	30	10		1	2			2		
7	104610	06-03-20	Chokaria	Badarkhali	Bodor Khali Baruya Khali w-7	25	91.97002	21.71300		4	3	Source of chonle	Private		2005	Jalal Uddin	01828706264	Jalal uddin	8	510	450	60	3	0.100	100	10	66			3		2		
8	104305	06-03-20	Chokaria	Badarkhali	Uttar notun guna w-1	6	91.94683	21.74854		3	1	No	Private	5	2014	Abul Hosen	01819011781	Abul Hosen	100	520	490	30	1.5	0.025	25	9		1	2			2		
9	104204	06-03-20	Chokaria	Badarkhali	Majar para w-1	10	91.95100	21.74732		3	1	no	Private	7	2016	Abdus Jabbar	01872375544	Abdus Jabbar	40	470	430	40	1.5	0.020	20	8		1	2			2		
10	104307	06-03-20	Chokaria	Badarkhali	Bazar para w-3	7	91.95151	21.71840		3	1	No	Private	1	2012	Abdul Mannan	01891700828	Abdul Mannan	15	700	650	50	1.5	0.025	25	7		1	2			2		
11	104612	06-03-20	Chokaria	Badarkhali	Goaha Khali w-9	11	91.97229	21.71152		3	1	source of pot	Govt.	3	2008	Naseruddin	01821575518	Naseruddin	150	1400	1340	60	1.5	0.008	8	7		1	2			2		
12	104715	06-03-20	Chokaria	Badarkhali	Bazar para wq-4	11	91.95103	21.71641		3	1	No	Private	11	2012	Sattar	01814327797	Sattar	20	900	820	80	1.5	0.013	13	6		1	2			2		
13	104717	06-03-20	Chokaria	Badarkhali	Poschim Notun Gonopara w-3	5	91.95009	21.72384		3	1	No	Private		2000	Abul Hashim	01814115475	Abul Hashim	40	850	820	30	1.5	0.008	8	6		1	2			2		
14	104301	06-03-20	Chokaria	Badarkhali	Naya para w-2	7	91.95512	21.73534		3	1	No	Private	4	2005	Ruhul Kader	01834095213	Ruhul Kader	15	900	860	40	1.5	0.020	20	5		1	2			2		
15	104202	06-03-20	Chokaria	Badarkhali	Tessa para w-2	4	91.95873	21.74048		3	1	No	Private	1	2020	Mohammad Alam	01828423240	Mohammad Alam	20	685	645	40	2	0.025	25	5		1	2			2		
16	104608	06-03-20	Chokaria	Badarkhali	Matar bari para w-8	14	91.95520	21.71870		3	3	source of pipe to tar	private	2	2017	Mohammad ali	01818926717	Mohammad ali	40	700	640	60	1.5	0.022	22	5		1	1			2		
17	104511	06-03-20	Chokaria	Badarkhali	Baruah para	15	91.97368	21.71341		4	3	source of channal	private	4	2010	Mahmud islam	01813945751	Mahmud islam	2	400	340	60	1.5	0.045	45	4	105			3		2		
18	104509	06-03-20	Chokaria	Badarkhali		26	91.96027	21.71610		3	3	source of pipe to tar	private		2014	Jalal Ahmed	01817743639	Jalal Ahmed	10	850	790	60	1.5	0.016	16	3		1	1			2		
19	104614	06-03-20	Chokaria	Badarkhali	Poschim Pukuria w-3	21	91.95577	21.72258		3	3	source of Tank	Private			Oliullah	01834316900	Imam	150	750	690	60	1.5	0.018	18	3		2				2		
20	105301	08-03-20	Chokaria	Barawtali	Opar para w-4	14	92.07112	21.82282		3	4	No	PDHE	12	2012	Mohammad Hossen	01811529400	Mohammad Hossen	100	780	700	80	1.5	0.030	30	20		1	2				3	
21	105304	08-03-20	Chokaria	Barawtali	Chader baper para w-5	11	92.06029	21.81270		3	1	No	Private	10	2010	Saleh Ahmed	01851018856	Saleh Ahmed	120	720	680	40	1.5	0.020	20	15		1	2			2		
22	105719	08-03-20	Chokaria	Barawtali	Goru bazar Akkat Bazar w-3	9	92.06944	21.83004		3	1	No	Up		1990	Abdur Rahim	01812610754	Abdur Rahim	100	620	570	50	1.5	0.018	18	12		1				2		
23	105306	08-03-20	Chokaria	Barawtali	Shikder para w-6	10	92.05692	21.80451		3	1	No	Soudi NGO	11	2014	Rashid Ahmed	01921520859	Rashid Ahmed	15	350	340	10	1.5	0.020	20	8		1	2				3	
24	105303	08-03-20	Chokaria	Barawtali	Shikder para w-5	7	92.06525	21.81655		3	1	No	Private	2	2018	Hasif	01849512773	Hasif	50	240	210	30	1.5	0.025	25	8		1	2				3	
25	105413	08-03-20	Chokaria	Barawtali	Haya Nagar w-8	8	92.02570	21.80797		3	1	No	Private	3	2016	Hajanagar Mosjid	01813147175	Imam Hosen	200	450	430	20	2	0.050	50	8		1	2			2		
26	105717	08-03-20	Chokaria	Barawtali	Rushlabad w-2	1	92.05705	21.82015		3	1	No	Private	6	2010	Jubir	01831624382	Jubir	35	400	350	50	1.5	0.028	28	8		1	2			2		
27	105305	08-03-20	Chokaria	Barawtali	Patali Shikder w-6	2	92.05946	21.80868		3	1	No	Private	6	2012	Mohammad Yousuf	01820133609	Mohammad Yousuf	13	265	235	30	1.5	0.015	15	7		1	2				3	
28	105412	08-03-20	Chokaria	Barawtali	Baratali w-8	16	92.03095	21.80692		3	1	No	Private	3	2019	Nurul Amin	01879347060	Nurul Amin	12	250	230	20	2	0.050	50	6		1	2			1		
29	105411	08-03-20	Chokaria	Barawtali	Sikdar para w-9	13	92.03143	21.80087	1		1	No	Private	6	2018	Abdus Sukkur	01826575699	Abdus Sukkur	10	180	160	20	2	0.040	40	6		1	2			2		
30	105716	8-3-20	Chokaria	Barawtali	Russulabad w-2	0	92.05917	21.82242		3	1	No	Private	2	2020	Nabiul Hosen	01854232107	Nabiul Hosen	20	220	190	30	2	0.025	25	6		1	2			2		
31	105720	08-03-20	Chokaria	Barawtali	Purbo Hindu para w-3	8	92.07236	21.83219		3	1	No	Private	5	1990	Dipol Ray	01813166667	Dipol Ray	30	250	230	20	1.5	0.018	18	6		1	2			2		
32	105302	08-03-20	Chokaria	Barawtali	Boiddora para w-4	6	92.06735	21.82067		3	1	No	Private	2	2019	Osman Sarwar	01832409504	Osman Sarwar	40	540	510	30	1.5	0.030	30	6		1	2			2		
33	105410	08-03-20	Chokaria	Barawtali	Gobindropur w-9	9	92.03172	21.79654		3	1	No	Private	4	2013	Sayed Alam	01867418242	Sayed Alam	9	280	260	20	2	0.050	50	6		1	2			2		
34	105307	08-03-20	Chokaria	Barawtali	Moddam Baniachora w-5	12	92.06756	21.80600		3	3	To tank	Private	12	2011	Mohammad Ladu	01830939022	Mohammad Ladu	25	600	560	40	2	0.035	35	5		1	2			2		
35	105718	08-03-20	Chokaria	Barawtali	Boriyatali Govt. Primary School	1	92.05874	21.82726		3	1	No	Priate	6	1995	Dulal Kanti Dey	01811822570	Dulal Kanti Dey	375	220	200	20	1.5	0.015	15	4		1	2			2		
36	105408	08-03-20	Chokaria	Barawtali	Bibirchil w-7	5.2	92.03947	21.80452		3	1	No	Private	4	2012	Tahir Ahmed	01824692370	Tahir Ahmed	8	300	270	30	2	0.040	40	4		1	2			2		
37	105715	08-03-20	Chokaria	Barawtali	Tailakata w-4	3	92.06231	21.82152		3	1	No	Private	5	2019	Nurul Alam	0185020234	Nurul Alam	7	600	570	30	2	0.030	30	3		1	2			2		
38	105409	08-03-20	Chokaria	Barawtali	Talepara w-7	4	92.03488	21.80458		4	3	No	Private	4	2003	Abdul Aziz	01868513454	Abdul Aziz	10	350	320	30	4	0.070	70	2	90	1	2	3		2		
39	105721	08-03-20	Chokaria	Barawtali	Mash para w-3	7	92.07159	21.82859		3	1	No	Private			Abdullah	01867160181	Abdullah	10	230	200	30	1.5	0.012	12			1	2			2		
40	106508	08-03-20	Chokaria	Bheola Manik Char	North Bahatdar Ghata	4.5	92.01601	21.78797		4	4	source of channel t	private		2005	Nurul Alam gong	01834599824	Nurul Alam gong	10	1000	920	80	2	0.010	10	24	105			3		2		
41	106607	08-03-20	Chokaria	Bheola Manik Char	North Bahathdar Ghat	28	92.01693	21.78920		4	4	Soruce of channel	private		2008	Nurul Alam	01834599824	Nurul Alam	12	1000	920	80	1.5	0.014	14	24	105	3		3		2		
42	106609	08-03-20	Chokaria	Bheola Manik Char	Bothbar Ghat w-4 south para M	4.1	92.01656	21.78390		4	4		Mosjid Comittee P	5	2014	Ibrahim Master	01859407384	Monir	2	900	820	80	1.5	0.015	15	24	110			3		2		
43	106210	08-03-20	Chokaria	Bheola Manik Char	Dokkhin Bohoddar Kata w-4	2	92.01924	21.78270		3	4	No	others Union poris	2	2012	Union porishad	01875564340	Erfanul haq	250-300	1250	1140	110	3	0.021	21	16		1	2			2		
44	106214	08-03-20	Chokaria	Bheola Manik Char	Hash Mahal w-7	13	92.03483	21.78208		3	1	No	Private	5	2004	Hashmahal Nurani Jam	01825253412	Osman Goni	100-150	370	340	30	1.5	0.015	15	12		1	2				3	
45	106211	08-03-20	Chokaria	Bheola Manik Char	Chandpara w-6	1	92.02724	21.78457		3	4	No	Private	4	2006	Joynal Abedin	01871782427	Joynal Abedin	60-70	940	860	80	2	0.025	25	12		1	2			2		
46	106510	08-03-20	Chokaria	Bheola Manik Char	Homazzum w-1	16	92.01747	21.77496		4	4	Source of channel	n/A	2	2001	Zafor Alam	01874202342	Zafor Alam	20	230	170	60	4	0.200	200	12	100			3		2		
47	106611	08-03-20	Chokaria	Bheola Manik Char	BM Char	22	92.01694	21.77136		4	4	source of channel t	private	2	2015	Rofique	01820978216	Rofique	30	280	240	40	3	0.200	200	12	110			3		2		
48	106212	08-03-20	Chokaria	Bheola Manik Char	Pucchalia para w-6	8	92.02373	21.78736		3	1	No	Private	4	2006	Iddris Ahmed	01814477181	Iddris Ahmed	7	220	210	10	1.5	0.018	18	6		1	2				3	
49	106216	08-03-20	Chokaria	Bheola Manik Char	Paharia para w-8	16	92.04050	21.78384		3	1	No	Private	1	2004	Abul Kalam	01859542899	Altaf Hosan	14	740	690	50	3	0.025	25	5		1	2			2		
50	106603	08-03-20	Chokaria	Bheola Manik Char	Fokir Guna Jame Mosjid	12	92.00775	21.77946		3	3	source of pipe to tar	Govt.	5	2018	Shohidul Islam	01889848667	Abdur Sukkur	150	250	210	40	3	0.033	33	3.5		1	2			2		
51	106218	08-03-20	Chokaria	Bheola Manik Char	Noyapara w-9	25	92.04073	21.78323		3	1	yes Tank	private	11	2010	Kabir Ahmed	01875515084	Kabir Ahmed	14	650	630	20	1.5	0.070	70	3		1	2			3		
52	106601	08-03-20	Chokaria	Bheola Manik Char	Bahador Ghata	15	92.10895	21.78416	1		3	source of pipe of tar	private	2	2012	Nur Mohammad	01820191823	Nur Mohammad	15	80	60	20	1.5	0.012	12	2.5		1	2			2		
53	106502	08-03-20	Chokaria	Bheola Manik Char	Hamidur Ghana	24	92.01337	21.78031		3	1	Source of pot	private		2010	Mofizur Rahman	01872851149	Mofizur Rahman	10	300	240	60	1.5	0.012	12	2		1	2			2		
54	106605	08-03-20	Chokaria	Bheola Manik Char	Krishnopur	10	92.01053	21.78789		3	3	source of pipe to tar	private		2008	Helal uddin	01866359194	Helal uddin	13	250	210	40	1.5	0.009	9	2		1	2			2		
55	106217	08-03-20	Chokaria	Bheola Manik Char	Naya para w-9	11	92.04300	21.78025		3	1	No	Private	3	2008	Golam Kuddus	01937296827	Golam Kuddus	17	700	670	30	1.5	0.060	60	2		1	2			2		
56	106506	08-03-20	Chokaria	Bheola Manik Char	South Bodar Kata	31	92.09293	21.78803		3	1	source of the pot	private		2013	Munjur Alam		Munjur Alam	5	220	210	10	1.5	0.012	12	2		1	2			2		
57	106504	08-03-20	Chokaria	Bheola Manik Char	Krishnopur w-3	25	92.00755	21.78408		3	3	source of pipe to tar	private		2010	Nurul Afsar	01887657105	Nurul Afsar	7	400	340	60	1.5	0.025	25	2		1	2			2		
58	106213	08-03-20	Chokaria	Bheola Manik Char	Khachi Shikder para w-7	12	92.03190	21.78340		3	3	Yes Tank	Private	8	2005	Monsurul Haq	01940886228	Monsurul Haq	7	350	320	30	1.5	0.080	80	3		1	2				3	
59	106215	08-03-20	Chokaria	Bheola Manik Char	Paharia para w-8	9	92.03739	21.78381		3	1	No	other care BD	7	1992	Moftul Hossain	01713614885	Moftul Hossain	70-80	720	680	40	1.5	0.040	40	3		1	2			2		
60	108706	07-03-20	Chokaria	Chiringa	Salakata w-1	8	92.07305	21.73136		3	4	No	UP	10	2019	Jafor Alam	01756208039	Jafor Alam	50	720	700	20	1.5	0.015	15	24		1	2			2		
61	108510	07-03-20	Chokaria	Chiringa	BURE dukur ghonapara	10	92.05608	21.72465		4	4	channel to filed	private	3	2015	Abbas uddin	01828416990	Abbas uddin	30	380	320	60	3	0.205	205	18	105			3		2		
62	108217	07-03-20	Chokaria	Chiringa	Poschim Soudagor Ghona w-7	3	92.03945	21.73171		3	1	No	Private	5	2015	Abul Kalam Member	01812426120	Akther Ahmed	150	790	760	30	1.5	0.025	25	14		1	2				3	
63	108213	07-03-20	Chokaria	Chiringa	Soudagor ghona w-5	6	92.05333	21.73379		3	1	No	Private	1	2018	Sayed Alam	01821559103	Sayed Alam	36	420	400	20	1.5	0.018	18	12		1	2				3	
64	108216	07-03-20	Chokaria	Chiringa	Moidhom Soudagor para Muns	7	92.04458	21.73323		3	1	No	Private	11	1990	Munshipara Jame Mosj	01811339541	Sayed Hosen	100	770	740	30	2	0.020	20	12		1	2			3		
65	108609	07-03-20	Chokaria	Chiringa	Bure Pukur Vitorar Ghona	1	92.05456	21.72374		4	4	Channal to field	private	2	2013	Jamal uddin	01842919764	Jamal uddin	22	480	420	60	4	0.225	225	12	88			3		2		
66	108214	7-3-20	Chokaria	Chiringa	Bottali Sourdagor ghona w-5	11	92.04898	21.73236		3	1	no	private	2	2012	Abdul Hamid	01859602981	Abdul Hamid	20	380	350	30	1.5	0.022	22	10		1	2				3	
67	108611	07-03-20	Chokaria	Chiringa	Hataliah para w9	1	92.06058	21.72130		4	4	channel to field	private		2018	Haji Shona miah	01869561414	Haji Shona miah	30	400	340	60	4	0.220	220	10	77			3		2		
68	108704	07-03-20	Chokaria	Chiringa	Chiringa Alogona w-2	10	92.06843	21.72971		4	3	No	Private		1998	Jakaria	01720583396	Jakaria	15	220	170	50	3	0.080	80	10	90			3		2		
69	108512	07-03-20	Chokaria	Chiringa	Charon DIP	7	92.06129	21.71636		4	4	source of cannal to	private	2	2015	Abdul Hakim	01828366478	Abdul Hakim	2	380	320	60	3	0.205	205	10	100			3		2		
70	108703	07-03-20	Chokaria	Chiringa	Aktar para w-2	2	92.06541	21.73175		3	1	No	Private		1990	Jannat Ara	01875565664	Jannat Ara	30	250	210	40	1.5	0.018	18	8		1	2			2		
71	108215	07-03-20	Chokaria	Chiringa	Moidhom Soudagor Ghona w-6	5	92.04641	21.72727		4	3	No	Private	8	2017	Abdul Malek	01889533468	Abdul Malek	12	450	420	30	4	0.110	110	8	90			3			3	
72	108621	07-03-20	Chokaria	Chiringa	Charan DIP Talamul	34	92.05721	21.71819		3	1	source of Pot	SAUDI Smahstha	2	2018	Barak Ahmed	01834637298	Barak Ahmed	490	180	160	20	1.5	0.004	4	7		1	1			2		
73	108702	07-03-20	Chokaria	Chiringa	Uttar Goripokur w-3	7	92.06020	21.73173		3	1	no	private		1990	Helal Uddin	01843229722	Helal Uddin	15	250	220	30	1.5	0.028	28	6		1	2			2		
74	108218	07-03-20	Chokaria	Chiringa	Poschim Soudagor Ghona w-7	3	92.03368	21.73011		3	1	No	others cae BD	5	1992	Abdus Sukkur	01792379651	Abdus Sukkur	15	620	580	40	1.5	0.025	25	5		1	2			2		
75	108705	07-03-20	Chokaria	Chiringa	Dokkin pala kata	5	92.07076	21.73177		3	1	No	UP	10	2019	Nurul Hosen	01858016110	Nurul Hosen	30	820	770	50	1.5	0.016	16	5		1	2			2		
76	108520	07-03-20	Chokaria	Chiringa	Charan DIP w-8	4	92.05687	21.71236		3	1	source of pot	Govt.	3	2019	Sayed hossain	01818928895	Sayed hossain	15	680	620	60	1.5	0.008	8	3		1	2			2		
77	108607	07-03-20	Chokaria	Chiringa	Moddhom Bure pukur w-4	6.2	92.05974	21.72658	1		1	source of pot	private	2	2014	Jafor Alam	01850506947	Parveen akter	35	180	140	40	1.5	0.012	12	3		1	1			2		
78	108508	07-03-20	Chokaria	Chiringa	Buri Pukur w-4	17	92.05818	21.72643		3	3	source of pot	private	3	2010	Moulana Shmsul Huda	01817224192	Moulana Shmsul Huc	15	700	640	60	1.5	0.010	10	2.5		1	2			2		
79	108619	07-03-20	Chokaria	Chiringa	Purom Kata Charon DIP w-9	16	92.06098	21.71324		3	3	source of pipe to tar	Saudi Shantma	3	2020	Mosjid Comittee Kamal	01874270630	Nurul alam	170	380	220	160	1.5	0.015	15	2		1	2			2		
80	108701	07-03-20	Chokaria	Chiringa	Sawdagor para Govt. school w-	20	92.07026	21.56523		3	3	Tank	Private	6	2010	Ziaul Karim	01919768246	Ziaul Karim	280	320	260	60	2	0.035	35	3		1	2			2		
81	116814	11-03-20	Chokaria	Dhemoshia	Purbo Gondi para w-6	2	91.96658	21.75782		3	1	No	Private		2017	Amir Hossen	01829245772	Amir Hossen	80	800	770	30	1.5	0.042	42	24		1	2			2		
82	116107	11-03-20	Chokaria	Dhemoshia	Jomider para w-2	8	91.97088	21.76854		3	1	No	Private	1	2015	Mujibur Rahman	01819465580	Mujibur Rahman	50	850	820	30	1.5	0.030	30	18		1	2			1		
83	116106	11-03-20	Chokaria	Dhemoshia	Jamider para w-2	1	91.97334	21.76354		3	1	No	Private	1	2013	Kamal hosen	01812369847	Kamal hosen	120	1100	1000	100	2	0.030	30	18		1	2			2		
84	116125	11-03-20	Chokaria	Dhemoshia	Musa para W-1	14	91.97670	21.77058		3	1	No	Private	1	2012	Musa	01301003709	Musa	15	850	800	50	2	0.040	40	18		1	2			2		
85	116126	11-03-20	Chokaria	Dhemoshia	Noya para w-1	10	91.98189	21.77073		3	1	no	Private	1	1999	Shafiq	01831511664	Monirul alam	40	800	750	50	1.5	0.040	40	18		1	2			2		
86	116816	11-03-20	Chokaria	Dhemoshia	Tekka para Eksho Bish w-4	5	91.95372	21.76003		3	1	No	others	2	2019	Fazal karim	01826518696	Fazal karim	40	840	810	30	1.5	0.030	30	13		1	2			2		
87	116417	11-03-20	Chokaria	Dhemoshia	Hashpara w-7	2	91.97694	21.75178		3	1	No	DPHE	4	2007	Joynal Uddin	01836431075	Joynal Uddin	100	900	860	40	2	0.040	40	12		1	2			2		
88	116421	11-03-20	Chokaria	Dhemoshia	Bazar para w-9	5	91.98192	21.76612		3	1	no	Private	7	1985	Jahirul Islam	01714373941	Jahirul Islam	15	740	710	30	2	0.045	45	12		1	2			2		
89	116810	11-03-20	Chokaria	Dhemoshia	Tesra para w-5	5	91.96302	21.76216		3	1	no	privte	6	2012	Ahmed Sofi	01873194387	Ahmed Sofi	150	780	760	20	1.5	0.038	38	12		1	2			2		
90	116422	11-03-20	Chokaria	Dhemoshia	Bazar para w-9	11	91.98088	21.76144		3	1	no	private	4	2000	Katabari Mosjid	01878121095	Amir uddin	80-100	775	755	20	2	0.025	25	12		1	2			2		
91	116811	11-03-20	Chokaria	Dhemoshia	Gomdipara w-6	2	91.96026	21.76027		3	1	No	Private	9	2000	Ali Moddin	01876980248	Ali Moddin	50	850	830	20	1.5	0.038	38	11		1	2			2		
92	116812	11-03-20	Chokaria	Dhemoshia	Poschim Gomdi para w-6	2	91.96091	21.75764		3	1	No	Private	9	2019	Faridul Alam	01846821559	Faridul Alam	150	840	810	30	1.5	0.032	32	10		1	2			2		
93	116418	11-03-20	Chokaria	Dhemoshia	Hashpara w-7	7	91.97430	21.74955		3	1	No	Private	6	2017	Badsha Rashid	01813274595	Badsha Rashid	50	780	750	30	2	0.050	50	10		1	2			2		
94	116423	11-03-20	Chokaria	Dhemoshia	Amberdarapara w-8	18	91.98034	21.75808		3	1	no	Private	6	1987	Mahsin Islamia Madras	01815707808	Abu Tayeb	60-100	680	660	20	2	0.060	60	10		1	2			2		

Annex 2.2-1 Inventory of Existing Wells

SL#	Interpretation of Questionnaire number (x-xx-x-xx=Upazila code-Union code-Data collector Code-Ques#)	A. Location: Date	Upazila	Union	Village/ Land marks	Elevation in m (GPS)	B. GPS Coordinate: 2.1 Longitude	2.2 Latitude	3.1 Type of Survey [Shallow Tube Well] 1= Domestic 2= Irrigation	3.2 Type of Survey [Deep Tube Well (DTW)] 3= Domestic 4= Irrigation	3.3 Type of well	3.3.1 Source of piped scheme	3.4 Founder name of the well (such as DPHE,BADC, Water aid, BRAC,Private, Others)	3.5 Date of Installation: Month	Year	3.6 Owner Name	3.7 Telephone number:	3.8 Handler of the well	3.9 Number of user (well)	3.10 Structure of the well: Depth of the well (ft)	Location of screen (ft)	Length of Screen(ft)	Diameter of casing pipe (inch)	Pumping rate ($M^{3/minute}$)	Pumping rate L/minute)	3.12 Pumping hours (per day)	3.13 Yearly Pumping days(only for	3.13 Usage of groundwater: 1=Drinking/ cooking	2=Washing	3=Irrigation	4=Others (nursing etc.)	Water Quality: 1=Salinity 2=Sweet	3=Presence of Iron	4=Others (sand etc.)
95	116809	11-03-20	Chokaria	Dhemoshia	Tesra para w-5	3	91.96523	21.76395		3	1	no	private	4	2017	Maksud Ahmed	01883810440	Maksud Ahmed	20	850	820	30	2	0.034	34	8			1	2			3	
96	116815	11-03-20	Chokaria	Dhemoshia	Poschim Gondia w-6	10	91.95763	21.75778		3	1	No	Private	7	2019	Samsul Alam	01835698207	Samsul Alam	35	1300	1260	40	1.5	0.025	25	8		1	2			2		
97	116827	11-03-20	Chokaria	Dhemoshia	Sakoritakka para w-4	7	91.95295	21.76664		3	1	no	others		1991	Nurul islam	01851275270	Nurul islam	400	844	825	19	1.5	0.040	40	8		1	2			2		
98	116419	11-03-20	Chokaria	Dhemoshia	Dashkhali para w-7	11	91.96994	21.74611		3	1	no	Private	7	2015	Abdur Sukkur	01838931493	Abdur Sukkur	9	875	845	30	2	0.050	50	7		1	2			2		
99	116424	11-03-20	Chokaria	Dhemoshia	Amberdara para w-8	7	91.97873	21.75372		3	1	no	Private	7	1991	Zakir Hosen	01822907456	Zakir Hosen	10	720	700	20	2	0.050	50	6		1	2			2		
100	116101	11-03-20	Chokaria	Dhemoshia	Hetaria Para w-3	2	92.96816	21.76578		3	1	No	Private	1	2014	Abu Kashem	01846506429	Abu Kashem	20	800	770	30	1.5	0.040	40	6		1	2			2		
101	116420	11-03-20	Chokaria	Dhemoshia	Bazar para w-9	12	91.98125	21.76519		3	1	no	private	4	2015	Habibul haque	01821393005	Habibul haque	25	730	710	20	2	0.035	35	6		1	2			2		
102	116103	11-03-20	Chokaria	Dhemoshia	Hetaria para w-3	1	91.96583	21.77097		3	1	no	private	1	2006	Akter Ahmed	01878120196	Akter Ahmed	40	850	820	30	2	0.040	40	6		1	2			2		
103	116104	11-03-20	Chokaria	Dhemoshia	Islam Nagor para w-3	8	91.96044	21.76968		3	3	yes Mosjid	Private	1	2016	Saifun nahar	01814937505	Saifun nahar	100	750	720	30	1.5	0.080	80	4		1	2			2		
104	116813	11-03-20	Chokaria	Dhemoshia	Purbo Gondi para w-6	1	91.96389	21.75835		3	1	No	Private		2017	Nur Mohammad	01835669400	Nur Mohammad	200	900	870	30	1.5	0.040	40	3		1				2		
105	116108	11-03-20	Chokaria	Dhemoshia	Jamidar para w-2	5	91.97305	21.77217		3	3	yes house	private	1	2013	Siddique Ahmed	01487250042	Rahela begum	50	750	720	30	1.5	0.040	40	2		1	2			1		
106	116102	11-03-20	Chokaria	Dhemoshia	Hetaria para w-3	10	91.96609	21.76787		3	3	yes house	private	1	2015	Nobir Hosen	01831831629	Nobir Hosen	15	720	700	20	1.5	0.040	40	2		1	2			2		
107	116105	11-03-20	Chokaria	Dhemoshia	Jomidar para w-2	6	91.97030	21.76265		3	3	Yes Tank	private	1	2015	Wasim Shawon	01812585389	Wasim Shawon	3	700	660	40	1.5	0.080	80	3		1	2			2		
108	103117	05-03-20	Chokaria	Dulhazara	Boyragi para, Dulhazara w-6	7	92.07091	21.65782		3	4	No	Private	10	2007	Monjur Alam	01823650943	Monjur Alam	200	600	570	30	2.5	0.070	70	24		1	2			2		
109	103116	05-03-20	Chokaria	Dulhazara	Maizpara Dulhazara w-5	15	92.07457	21.66163		3	4	No	Private	4	2014	Abdul Jabbar	01819833965	Abdul Jabbar	500	700	680	20	1.5	0.050	50	24		1	2			2		
110	103118	05-03-20	Chokaria	Dulhazara	Notun para Dulhazara w-8	11	92.07534	21.65565		3	4	No	Private	12	2008	Salim Mollah	01819853145	Salim Mollah	500	700	660	40	2	0.080	80	24		1	2			2		
111	103815	05-03-20	Chokaria	Dulhazara	Rong Mohol para w-9	9	92.07665	21.65273		4	3	No	Private		2012	Irfan	01825075837	Irfan	20	400	300	100	4	0.045	45	12	130			3		2		
112	103406	05-03-20	Chokaria	Dulhazara	Dolhayara w-5	4	92.06889	21.66696		4	3	No	Private	7	2012	Karumullah	01840923461	Karumullah	2	400	320	80	4	0.100	100	10	120			3		2		
113	103705	05-03-20	Chokaria	Dulhazara	Uttar para w-5	13	92.07162	21.66916		4	3	No	Private		2000	Mainuddin	01877112264	Mainuddin	5	250	200	50	4	0.100	100	10	120			3		2		
114	103813	05-03-20	Chokaria	Dulhazara	Bagan para w-9	8	92.07645	21.66614		3	3	No	Private		2014	Fariduddin Chowdhury	01819173530	Fariduddin Chowdhu	780	640	600	40	2	0.042	42	9		1				2		
115	103814	05-03-20	Chokaria	Dulhazara	Rong Mohol para w-9	18	92.07729	21.65619		3	1	No	Private	1	2000	Kaisar	01828145780	Kaisar	20	260	200	60	2	0.013	13	7		1	2			2		
116	103213	05-03-20	Chokaria	Dulhazara	Rangmaohol w-9	17	92.8828	21.65863		3	1	no	Private	4	2014	Abdus Salam	01301013187	Monsur	14	220	200	20	1.5	0.014	14	6		1	2				3	
117	103707	05-03-20	Chokaria	Dulhazara	Oloboniya w-4	10	92.06741	21.66265		3	1	No	Private	10	2010	Emon	01878354710	Emon	10	280	250	30	2	0.020	20	6		1	2			2		
118	103408	05-03-20	Chokaria	Dulhazara	Balorcar w-4	10	92.06835	21.65972		3	3	Tank	Private	6	2010	Nurul amin Chairman	01835448542	Nurul amin Chairman	10	300	260	40	2	0.050	50	6		1	2			2		
119	103404	05-03-20	Chokaria	Dulhazara	Dak Bangla w-5	13	92.07468	10308		3	1	No	Private	7	2015	Nijam Uddin	01835838386	Nijam Uddin	7	300	250	50	1.5	0.020	20	6		1	2			2		
120	103709	05-03-20	Chokaria	Dulhazara	Shab Miya para w-5	13	92.06477	21.65911		3	1	No	Private	10	2010	Abul Hossain	01861516092	Abul Hossain	8	280	250	30	1.5	0.020	20	6		1	2			2		
121	103310	05-03-20	Chokaria	Dulhazara	Bagan para w-7	8	92.77859	21.66914		3	1	No	Private	11	2009	Abdul Salam	01861079185	Abdul Salam	14	230	200	30	1.5	0.020	20	5		1	2				3	
122	103503	5-3-20	Chokaria	Dulhazara	Mitha core	4	92.07212	21.68087		3	3	source of pot	Govt.	3	2019	Nurul Afsar	01811110843	Nurul Afsar	50	700	640	60	1.5	0.008	8	5		1	1			2		
123	103211	05-03-20	Chokaria	Dulhazara	bagan para w-7	12	92.07825	21.66449	2		3	No	Private	12	2016	Abdul Gafur	01812365725	Abdul Gafur	3	180	150	30	1.5	0.050	50	5	120			3			3	
124	103312	05-03-20	Chokaria	Dulhazara	Maise para w-7	10	92.07822	12.66147		4	3	No	Private	11	2010	Mobarak Ali	01690123690	Musa	Farmars 8 hea	250	200	50	2	0.100	100	5	120			3		2		
125	103602	05-03-20	Chokaria	Dulhazara	Purbo Dom Chnton ment w-2	5	92.07289	21.67700		3	1	source of pot	n/A		1997	Mosjid Committee Johir	01837277332	Jamal Uddin	30	700	640	60	1.5	0.010	10	3		1	1			2		
126	103604	05-03-20	Chokaria	Dulhazara	Malum ghat w-3	29	92.07995	21.68181		3	3	source of pipe to tar	US Armi memorial coustian s		2007	US Armi	01838157105	Tareq	700	500	440	60	4	0.016	16	3		1	2			2		
127	103501	05-03-20	Chokaria	Dulhazara	Dong khali purbo w-2	11	92.07470	21.67527	1		1	source of pot	n/A	2	2017	Abdul Jabbar	01862306718	Abdul Jabbar	8	80	60	20	1.5	0.008	8	3		1	2			2		
128	110814	08-03-20	Chokaria	Fasiakhali	Sikdar para w-7	11	92.08247	21.73588		3	4	No	Private	11	2019	Anowar Hossain	01843172878	Anowar Hossain	1000	800	760	40	1.5	0.100	100	24		1	2			2		
129	110107	08-03-20	Chokaria	Fasiakhali	Razarbil para w-6	11	92.10313	21.74182		3	4	No	Private	2	2016	Maulana Abul Kasem	01823917838	Maulana Abul Kasem	300	800	750	50	2	0.035	35	24		1	2			2		
130	110802	08-03-20	Chokaria	Fasiakhali	Rudro para w-8	8	92.08990	21.73069		3	4	No	others		2012	Sunil Susil	01850911031	Sunil Susil	50	700	660	40	1.5	0.050	50	24		1	2			2		
131	110105	08-03-20	Chokaria	Fasiakhali	Noay para w-6	5	92.10101	21.73500		3	4	No	Others	10	2016	Zakariah	01830191096	Zakariah	500	780	730	50	1.5	0.025	25	24		1	2			2		
132	110812	08-03-20	Chokaria	Fasiakhali	Daiel para w-6	9	92.09709	21.74118		4	4	No	private	4	2015	Barek Hsossain	01727597459	Barek Hsossain	10	700	620	80	4	0.120	120	24	130			3		2		
133	110115	08-03-20	Chokaria	Fasiakhali	Dokkin Chorarkul w-9	14	92.08439	21.72938		4	4	No	Private	3	1991	Hossain	01820996557	Hossain	5	700	670	30	4	0.080	80	24	150			3		2		
134	110808	08-03-20	Chokaria	Fasiakhali	Goniah para w-5	13	92.11013	21.74360		3	1	No	others	7	2017	Eliah	01822662034	Eliah	500	770	720	50	2	0.030	30	18		1	2			2		
135	110103	08-03-20	Chokaria	Fasiakhali	Airmar para w-8	5	92.09120	21.72818		4	4	No	Private	3	2000	Sirajul Islam	01821424876	Sirajul Islam	10	700	650	50	4	0.095	95	15	140	3		3		2		
136	110101	08-03-20	Chokaria	Fasiakhali	Sikdar para w-7	7	92.08849	21.73562		4	3	No	Private		2000	Dr Nur Alam	01823965390	Dr Nur Alam	10	600	570	30	4	0.120	120	12	130			3		2		
137	110111	08-03-20	Chokaria	Fasiakhali	Biddaloy para w-2	11	92.10109	21.74624	1		1	No	Private	7	2004	Nizamuddin	01815575337	Nizamuddin	14	120	10	110	2	0.034	34	9		1	2			2		
138	110806	08-03-20	Chokaria	Fasiakhali	Dokkin Goniah Para w-5	7	92.10338	21.73782	1		1	No	Private	4	2007	Hafiez Abu taher	01830924975	Hafiez Abu taher	10	100	90	10	2.5	0.030	30	6		1	2			2		
139	110109	08-03-20	Chokaria	Fasiakhali	Uttoar Goniah para w-4	4	92.10989	21.74821	1		1	No	Private	1	2015	Badol	01833480786	Badol	4	120	100	20	2	0.038	38	6		1	2			2		
140	110113	08-03-20	Chokaria	Fasiakhali	Fakwali para w-3	27	92.08159	21.73919		3	1	No	Others	10	2019	Joynal Abedin	01826305555	Joynal Abedin	22	860	800	60	2	0.039	39	5		1	2			2		
141	110810	08-03-20	Chokaria	Fasiakhali	Gorjoniah para w-4	11	92.10529	21.74858	1		1	No	Private	4	2019	Amir Hossain	01824751919	Amir Hossain	7	40	30	10	2	0.037	37	4		1	2			2		
142	110804	08-03-20	Chokaria	Fasiakhali	Ocitar Bil para	1	92.09380	21.73524	1		3	yes House	private		2017	Hafiez Jallal	01817224965	Hafiez Jallal	3	130	100	30	1.5	0.050	50	3		1	2			2		
143	119407	12-03-20	Chokaria	Harbang	Vayaghata w-6	14	92.05291	21.84960		3	4	No	Private	9	2019	Bainnatali Mosjid	01872015772	Nasir	150	950	800	150	1.5	0.050	50	24		1	2			2		
144	119721	12-03-20	Chokaria	Harbang	Modukhali w-1	5	92.05267	21.83340		3	4	No	Upazilla porishad		2004	AR Harun Rashid	01948659820	AR Harun Rashid	50	850	820	30	2	0.011	11	24		1	2			2		
145	119722	12-03-20	Chokaria	Harbang	Katakhah w-1	3	92.05560	21.83137		4	4	No	Private		2008	Rezaul karim	01867540802	Rezaul karim	7	400	300	100	4	0.007	7	24	90			3		1		
146	119118	12-03-20	Chokaria	Harbang	Master para w-4	4	92.05157	21.84300		4	3	No	Private	1	2014	Ziabul	01849265482	Ziabul	10	260	220	40	4	0.100	100	24	180			3		2		
147	119117	12-03-20	Chokaria	Harbang	Kala sikder para w-3	5	92.04991	21.84338	2		3	No	Private	4	2016	Azam	01837577051	Asraful	2	140	110	30	3	0.150	150	24	180			3		2		
148	119119	12-03-20	Chokaria	Harbang	Sikdar para w-4	4	92.05392	21.84318		3	3	Yes Village	Private	1	2012	Bellal	01815468574	Bellal	300	700	660	40	1.5	0.050	50	18		1	2			2		
149	119812	12-03-20	Chokaria	Harbang	Nayapara w-3	6	92.05549	21.83774		3	1	No	Private	7	2003	Mostak Ahmed	01828933826	Mostak Ahmed	300	850	830	20	1.5	0.034	34	14		1	2			2		
150	119814	12-03-20	Chokaria	Harbang	Mahjom para w-3	5	92.05322	21.84077		4	3	No	Private	1	2009	Sojuru Nahar	01832465935	Sojuru Nahar	11	300	270	30	4	0.110	110	14	90			3		2		
151	119810	12-03-20	Chokaria	Harbang	Mahajon para	23	92.05464	21.84190	1		1	No	Private	7	1971	Faridul Alam	01872115653	Faridul Alam	12	70	60	10	1.5	0.040	40	12		1	2			2		
152	119406	12-03-20	Chokaria	Harbang	Sikder para w-6	1	92.05038	21.85162		3	1	no	Private	4	2012	Rajon	01857994965	Rajon	25	248	228	20	2	0.052	52	12		1	2			2		
153	119813	12-03-20	Chokaria	Harbang	Kala Sikder para w-3	1	92.05180	21.83935	2		3	No	Private		2000	Hares	01823810119	Hares	10	80	70	10	4	0.120	120	12	40			3		2		
154	119405	12-03-20	Chokaria	Harbang	Uttor phorsada w-6	4	92.05223	21.85268		3	1	No	Private	4	2019	Vayakhata Jame Mosjid	01812368450	Najim uddin	200	850	750	100	2	0.060	60	10		1	2			2		
155	119811	12-03-20	Chokaria	Harbang	Rakhain para w-1	13	92.05585	21.83858		3	1	no	Private	7	1990	Master maung yen	01817016922	Master maung yen	10	282	262	20	1.5	0.044	44	8		1	2			2		
156	119720	12-03-20	Chokaria	Harbang	Mok Bazar w-1	11	92.05553	21.83372		3	3	No	Private		2000	Apru	01869288688	Apru	12	200	180	20	1	0.035	35	6		1	2			2		
157	119724	12-03-20	Chokaria	Harbang	Katakhali pahartali w-1	12	92.05952	21.83274		3	1	No	Private	11	2010	Monsur Alam	01816373727	Monsur Alam	15	300	260	40	2	0.020	20	6		1	2			2		
158	119401	12-03-20	Chokaria	Harbang	Moddom para w-5	12	92.04855	21.84787		3	1	No	Private	7	2010	Younus	01833893651	Younus	15	240	220	20	2	0.040	40	6		1	2			2		
159	119403	12-03-20	Chokaria	Harbang	Dokkin phorsada w-5	2	92.04512	21.85261		3	1	no	Private	7	2002	Anower Kabir	01891528844	Anower Kabir	18	290	260	30	2	0.035	35	6		1	2			2		
160	119115	12-03-20	Chokaria	Harbang	Gudar para w-4	17	92.05435	21.84536	1		3	Yes House	Private	1	2015	Monjur Alam	01838103050	Monjur Alam	6	70	50	20	1.5	0.030	30	6		1	2			2		
161	119723	12-03-20	Chokaria	Harbang	Sudansho paher w-1	14	92.05797	21.83150		3	1	No	Private	1	2020	Swarup Datta	01825422351	Swarup Datta	7	480	440	40	1.5	0.013	13	6		1	2			2		
162	119116	12-03-20	Chokaria	Harbang	Gudar para w-4	4	92.05149	21.84553		3	3	Yes house	private	1	2010	Mozaffor	01836780988	Mozaffor	4	400	360	40	3	0.100	100	4		1	2			2		
163	119404	12-03-20	Chokaria	Harbang	Pohorsada w-5	20	92.05142	21.84700		4	3	No	Private	7	1990	Akter Mikar	01857729365	Akter Mikar	2	230	210	20	4	0.080	80	4	120			3		2		
164	119409	12-03-20	Chokaria	Harbang	Vayakata w-6	4	92.04819	21.85256		4	3	No	Private	4	2010	Belal	01826121206	Belal	16	275	245	30	4	0.100	100	4	180			3		2		
165	119402	12-03-20	Chokaria	Harbang	Patakhola w-5	5	92.04596	21.84989		4	1	No	Private	7	2014	Nur Mohammad	01851238338	Nur Mohammad	3	260	230	30	4	0.080	80	4	180			3		2		
166	119408	12-03-20	Chokaria	Harbang	Uttar Fayagate w-6	9	92.05199	21.85445		4	3	No	private	7	2002	Najim uddin	01859614747	Najim uddin	8	385	355	30	3	0.090	90	4	180			3		2		
167	112514	11-03-20	Chokaria	Kaiarbil	Hamidullah Shikder para	8	92.04877	21.79294		3	1	source of pot	private	3	2012	Abdullah	01815811656	Abdullah	30	550	490	60	1.5	0.013	13	13		1	2			2		
168	112510	11-03-20	Chokaria	Kaiarbil	Hacimarkakta w-6	10	92.05259	21.79379	2		3	source of pipe to file	private	2	2018	Rokon uddin	01850542601	Rokon uddin	16	60	40	20	4	0.160	160	12	100			3		2		
169	112508	11-03-20	Chokaria	Kaiarbil	Bonar Char w-4	7	92.05001	21.78571	2		4	source of pipe to file	private	3	2010	Jamal uddin	01878976781	Jamal uddin	12	60	40	20	4	0.140	140	12	120			3		2		
170	112719	11-03-20	Chokaria	Kaiarbil	Khilshdak w-1	10	92.04063	21.79798		3	3	No	Private	11	2010	Uttar Khil Sadak Jame I	01881277283	Nurul Abser	100	700	650	50	1.5	0.035	35	10		1	2			2		
171	112722	11-03-20	Chokaria	Kaiarbil	Cotho Veala w-3	10	92.04029	21.78545		3	1	No	Up	5	2015	Talimul Quran Madrash	01811546662	Sahidul	200	800	700	100	1.5	0.020	20	10		1	2			2		
172	112215	11-03-20	Chokaria	Kaiarbil	Hachemar kata	7	92.05626	21.79367	2		4	source of pipe to fie	private	1	2016	Edrish Ali	0181226180	Edrish Ali	8	50	30	20	4	0.140	140	8	99			3		2		
173	112506	11-03-20	Chokaria	Kaiarbil	Choyaliaya para	8	92.04982	21.78913	2		4	source of pipe to fie	private	5	2015	Jamal	01853743705	Jamal	12	60	40	20	4	0.150	150	7	100			3		2		
174	112718	11-03-20	Chokaria	Kaiarbil	Cadahata w-1	10	90.04105	21.75590		3	1	No	Private	6	2010	Najem Uddin	01868671675	Najem Uddin	20	400	360	40	1.5	0.018	18	6		1	2			2		
175	112724	11-03-20	Chokaria	Kaiarbil	Madrasha para w-3	12	92.04203	21.78304		3	1	No	Private		2005	abul Kalam	01873188987	Hamid	5	220	190	30	1.5	0.012	12	6		1	2			2		
176	112601	10-03-20	Chokaria	Kaiarbil	Jaliah Bazar	4.3	92.06669	21.87384		3	1	source of pot	Govt.		2015	Bazar Comittee	01705220727	Bazar committee	50	850	790	60	1.5	0.009	9	6		1	2			2		
177	112723	11-03-20	Chokaria	Kaiarbil	Shidarkhail w-3	5	92.04250	21.78179		3	1	no	private	1	2019	Sirajul Islam	0140226210	Yesmin Akhter	50	800	770	30	1.5	0.020	20	6		1	2			2		
178	112721	11-03-20	Chokaria	Kaiarbil	Dokkin Khilshdak govt. school w	13	92.03989	21.78948		3	1	no	DPHE		2000	Sawkat osman	01815373197	Sawkat osman	200	720	600	120	1.5	0.035	35	5		1	2			2		
179	112516	11-03-20	Chokaria	Kaiarbil	Moddom Koyerbil	7	92.05755	21.79281	2		4		n/A	3	2015	Azizul Haque	01832483157	Abdur Rahman	2	150	120	30	1.5	0.040	40	5	150			3		2		
180	112502	10-03-20	Chokaria	Kaiarbil	Shikder para	28	92.06260	21.78663		3	3	source of pipe to tar	private			Yeatim kana comittee	01647147095	Habibullah	200	850	830	20	1.5	0.016	16	4		1	2			2		
181	112217	11-03-20	Chokaria	Kaiarbil	Moddom Koyar Bil	13	92.06237	21.78783		3	1	source of pot	private	2	2015	Nazrul Islam	01818465236	Rifat	35	700	640	60	1.5	0.012	12	4		1	2			2		
182	112203	10-03-20	Chokaria	Kaiarbil	Muhuripara w-7	18	92.06789	21.78350	1		1	no	Private	10	2017	Iliash	01888317999	Iliash	7	80	70	10	1.5	0.016	16	4		1	2			3		
183	112207	11-03-20	Chokaria	Kaiarbil	Borenar para w-4	4	92.04865	21.78755	2		4	source of pipe to file	private	2	2014	Abdul Munnaf	01816384485	Abdul Munnaf	3	50	30	20	1	0.160	160	4	105			3		2		
184	112512	11-03-20	Chokaria	Kaiarbil	Khojakhali w-5	12	92.04814	21.79627		3	1	source of pot	Govt.		2001	Mosjid committee	01814435605	Shoyed	125	800	740	60	1.5	0.012	12	3		1	2			2		
185	112213	11-03-20	Chokaria	Kaiarbil	Baroitoli Madrasha	10	92.05019	21.79746		3	1	source of pot	govt.	3	2019	Abdullah	01868242227	Murus Safa	15	800	740	60	1.5	0.015	15	3		1	2			2		
186	112504	11-03-20	Chokaria	Kaiarbil	Union Porishad	14	92.05226	21.78991		3	1	source of pot	Govt.	2	2015	Montu kumar boruya	01814380108	Montu kumar boruya	20	750	690	60	1.5	0.010	10	3		1	2			2		
187	112209	11-03-20	Chokaria	Kaiarbil	Dipkol	12	92.05318	21.78559		3	3	source of pot	Saudi Arab, Snnstna		1996	Mafaz Delower	01819197148	Mafaz Delower	200	390	300	90	1.5	0.015	15	3		2				2		
188	112720	11-03-20	Chokaria	Kaiarbil	Khilshdak w-2	7	92.03936	21.79446		4	3	No	Private		1999	Najim uddin	01876969013	Najim uddin	4	500	400	100	4	0.100	100	3	120			3		1		
189	112211	11-03-20	Chokaria	Kaiarbil	Khojakhali Bangla para w-6	6	92.05048	21.78560		3	1	source of pot	private	2	2018	Nasir uddin	01827328649	Nasir uddin	10	800	740	60	1.5	0.007	7	2		1	2			2		
190	112205	11-03-20	Chokaria	Kaiarbil	Prochm Koyaar bil w-9	11	92.05080	21.78976		3	1	source of pot	private	11	2019	Nurul Kabir	01840187721	Nurul Kabir	8	850	790	60	1.5	0.012	12	2		1	2			2		

Annex 2.2-1 Inventory of Existing Wells

SL#	Interpretation of Questionnaire number (x-xx-x-xx=Upazila code-Union code-Data collector Code-Ques#)	A. Location: Date	Upazila	Union	Village/ Land marks	Elevation in m (GPS)	B. GPS Coordinate: 2.1 Longitude	2.2 Latitude	3.1 Type of Survey [Shallow Tube Well 1= Domestic 2= Irrigation	3.2 Type of Survey [Deep Tube Well (DTW)] 3= Domestic 4= Irrigation	3.3 Type of well	3.3.1 Source of piped scheme	3.4 Founder name of the well (such as DPHE,BADC, Water aid, BRAC,Private, Others)	3.5 Date of Installation: Month	Year	3.6 Owner Name	3.7 Telephone number:	3.8 Handler of the well	3.9 Number of user (well)	3.10 Structure of the well: Depth of the well (ft)	Location of screen (ft)	Length of Screen(ft)	Diameter of casing pipe (inch)	Pumping rate ($M^{3/minute}$)	Pumping rate L/minute)	3.12 Pumping hours (per day)	3.13 Yearly Pumping days(only for	3.13 Usage of groundwater: 1=Drinking/ cooking	2=Washing	3=Irrigation	4=Others (nursing etc.)	Water Quality: 1=Salinity 2=Sweet	3=Presence of Iron	4=Others (sand etc.)
191	111114	10-03-20	Chokaria	Kakara	Rudro para w-5	10	92.10458	21.75486	2		3	No	Private	12	2013	Prokit	01869560552	Prokit	15	60	40	20	3	0.150	150	24	88			3		1		
192	111217	10-03-20	Chokaria	Kakara	Dakkhin kakara	7	92.11871	21.74140		4	3	No	Private	7	1998	Sefayet ullah	01643200041	Sefayet ullah	8	230	210	20	3	0.140	140	21	90	1		3		2		
193	111225	10-03-20	Chokaria	Kakara	Dakkhin Kakara	5	92.11855	21.73869		4	3	No	Private	6	2013	Atik	01872296188	Atik	4	250	230	20	3	0.120	120	20	90	1	2	3		2		
194	111218	10-03-20	Chokaria	Kakara	Dakkhin kakara	11	92.11705	21.74241		4	3	No	Private	2	2005	Sofur Alam	01814275450	Sofur Alam	4	260	220	40	3	0.160	160	20	90	1		3		2		
195	111826	10-03-20	Chokaria	Kakara	Proper kakara para w-6	4	92.10723	21.75376		3	1	no	Others	4	2018	Master Lokman Ali khar	01814833531	Master Lokman Ali kh	1000	550	530	20	2	0.042	42	10		1	2			2		
196	111301	10-03-20	Chokaria	Kakara	SM Char Piler chara w-2	2	92.09324	21.76872	1		1	No	Private	11	2015	Jashim uddin	01706100604	Jashim uddin	50	128	100	28	1.5	0.020	20	10		1	2			2		
197	111704	10-03-20	Chokaria	Kakara	School pahar w-1	3	92.09142	21.77352		4	3	No	Private	11	2017	Jasim uddin	01860846784	yeasin	1	300	250	50	4	0.110	110	10	80			3		2		
198	111408	10-03-20	Chokaria	Kakara	Kadumpara w-4	4	92.10443	21.76185	1		1	No	Private	4	2000	Sayed Noor	01873193394	Sayed Noor	10	85	65	20	2	0.040	40	7		1	2			2		
199	111410	10-03-20	Chokaria	Kakara	Dokkin Lutuni w-3	6	92.09427	21.75608		3	3	yes tank	private	4	2015	Dakkin lutuni puran Mos	1834722267	Abdul Aziz	100	270	250	20	4	0.100	100	7		1	2			2		
200	111303	10-03-20	Chokaria	Kakara	Shaher Mohammad char w-1	10	92.08832	21.77066		3	1	No	DPHE	12	2018	Shaker Mohammad cha	01830309438	Shahidul islam	150	650	620	30	1.5	0.030	30	7		1	2			2		
201	111411	10-03-20	Chokaria	Kakara	Moddo Lutuni w-3	8	92.09660	21.75515		3	1	No	Private	4	2012	Anowar hossen	01877948922	Anowar hossen	17	280	250	30	2	0.050	50	7		1	2			2		
202	111228	10-03-20	Chokaria	Kakara	Dakkhin kakara	9	92.11604	21.74799		3	1	no	Private	5	2000	Nurul Amin	01851827494	Nurul Amin	12	230	210	20	1.5	0.018	18	6		1	2				3	
203	111520	10-03-20	Chokaria	Kakara	Suraj pur	24	92.12434	21.75347		3	3	source of pipe	Govt. Surajpur pri	2	2020	Govt. World Bank		Parvez Babu	211	750	690	60	3	0.028	28	6		1	2			2		
204	111706	10-03-20	Chokaria	Kakara	Safurabad w-1	14	92.08440	21.77018		3	3	Tank	Private	5	2015	Fakar Mohammad	01824573868	Fakar Mohammad	10	220	190	30	1.5	0.017	17	6		1	2			2		
205	111816	10-03-20	Chokaria	Kakara	Proper kakara w-6	17	92.11053	21.75612	1		1	no	Private		2001	khaza ali	01831006404	khaza ali	12	140	130	10	1.5	0.033	33	6		1	2			2		
206	111305	10-03-20	Chokaria	Kakara	Purbo para w-1	9	92.08525	21.77287		3	3	Tank	Private	1	2020	Saidul Islam	01820993079	Saidul Islam	18	250	200	50	2	0.050	50	6		1	2			2		
207	111524	10-03-20	Chokaria	Kakara	South Kakara	10	92.11614	21.74590		4	4	source of channal to	private	2	2010	Abu Taher	01827841993	Abu Taher	12	200	140	60	5	0.225	225	6	88			3		2		
208	111407	10-03-20	Chokaria	Kakara	Darga para w-4	15	92.10224	21.76204	1		1	No	Private	4	2013	Khorshida	01881767587	Khorshida	6	170	150	20	2	0.020	20	5		1	2			1		
209	111702	10-03-20	Chokaria	Kakara	Ali Pahar w-2	9	92.09686	21.77163		3	1	No	Private	5	2015	Sajjad Hossen	01890506614	Sajjad Hossen	8	230	200	30	1.5	0.015	15	5		1	2			2		
210	111115	10-03-20	Chokaria	Kakara	Dey para w-5	15	92.10300	21.75831	1		3	yes house	private	1	1987	Bholanath	01822301449	Bholanath	10	120	100	20	2	0.090	90	4		1	2			2		
211	111619	10-03-20	Chokaria	Kakara	Pahar Toli Majar para w-9	31	92.12100	21.75501		3	1	source of pot	govt.		2012	Ando Hafaz	01831439492	Moin uddin	60	350	310	40	1.5	0.025	25	4		1	2			2		
212	111623	10-03-20	Chokaria	Kakara	South kakara w-7	23	92.11797	21.74771	2		3	source of pipe to fie	Private	2	2010	Nasir uddin	01812754180	Nasir uddin	10	120	70	50	4	0.500	500	4	77			3		2		
213	111409	10-03-20	Chokaria	Kakara	Malipara w-4	6	92.09740	21.75884	2		3	No	Private	4	2007	Sefayetullah Islam	01714678911	Sefayetullah Islam	2	50	30	20	4	0.070	70	4	120			3		2		
214	111522	10-03-20	Chokaria	Kakara	Purbo kakara w-8	33	92.12061	21.75053		3	3	Soruce of pipe to ta	n/A	5	2019	Mojibul Haque	01821691291	Mojibul Haque	10	600	540	60	3	0.018	18	2		1	2			2		
215	111812	10-03-20	Chokaria	Kakara	Proper Kakara w-6	7	92.0056	21.76267	1		3	Tank	Private		2017	Jomir uddin	01818908696	Jomir uddin	12	80	70	10	2	0.090	90	2		1	2			2		
216	111227	10-03-20	Chokaria	Kakara	Dakkhin kakara w-7	8	92.11334	21.75289		3	3	no	Private	4	2007	Geah uddin Mahmud	01822167244	Geah uddin Mahmud	9	270	250	20	1.5	0.060	60	2		1	2			2		
217	111621	10-03-20	Chokaria	Kakara	Purbo kakara w-8	27	92.11969	21.75244		3	3	source of pipe to tar	private	2	2017	Jaynal Abedin	01814816477	Parvin Akter	7	450	390	60	1.5	0.016	16	3.5		1	2			2		
218	111113	10-03-20	Chokaria	Kakara	Rudro para W-5	12	92.10651	21.75644		3	3	yes House	Private	10	2019	Basanti Rudro	01826982617	Basanti Rudro	4	450	430	20	2	0.080	80	3		1	2			2		
219	102108	05-03-20	Chokaria	Khutakhali	Maiz para w-5	8	92.06524	21.61702		4	4	Yes house	Private	9	1984	Azizul Mannan	01881598887	Azizul Mannan	3	400	350	50	1.5	0.050	50	24	180	1	2	3		2		
220	102107	05-03-20	Chokaria	Khutakhali	Dokkhin para w-5	1	92.06599	21.61506	1		1	No	Private	1	2007	Nurul Islam	01818978127	Nurul Islam	16	110	90	20	1.5	0.025	25	18		1	2			2		
221	102403	05-03-20	Chokaria	Khutakhali	Uttar Kossopia	14	92.07036	21.46284		3	1	No	Private	6	2000	Madakossopia School	01851509378	Shajahan	100	300	270	30	2	0.030	30	12		1	2				3	
222	102109	5-3-20	Chokaria	Khutakhali	Dokkhin para Khuta Khali w-5	6	92.06142	21.61336		3	1	No	Private	8	2000	Samsul Alam	01826505828	Samsul Alam	50	220	200	20	1.5	0.020	20	12		1	2			2		
223	102815	05-03-20	Chokaria	Khutakhali	Dokkhin Fulsori Siah para w-8	3	92.05819	21.60354		4	3	No	Private		2012	Akter	01818891647	Akter	17	450	420	30	4	0.060	60	12	120			3		2		
224	102402	05-03-20	Chokaria	Khutakhali	Moddokosspia w-1	9	92.07332	21.64557		4	3	No	Private	4	2017	Hamid Hossain	01846955825	Hamid Hossain	2	450	400	50	4	0.080	80	12	180			3		2		
225	102404	05-03-20	Chokaria	Khutakhali	2 no w, kutakhali	4	92.06618	21.64020		3	1	No	Private	4	2006	Rahima Khatun	01819363204	Rahima Khatun	17	350	320	30	2	0.030	30	10		1	2				3	
226	102401	5-3-20	Chokaria	Khutakhali	Poglibil w-1	4	92.07314	21.64929		3	1	no	private	4	2017	Baitul Mamun Jame Mo	01709111708	Sakib	100-200	370	340	30	2	0.001	1	10		1	2			2		
227	102816	05-03-20	Chokaria	Khutakhali	Dokkhin Foisori w-8	1	92.05437	21.60332		3	4	No	Private		1980	Abser	01818871418	Abser	30	650	600	50	4	0.040	40	10		1	2	3		2		
228	102818	05-03-20	Chokaria	Khutakhali	Porbo Nayah para w-9	3	92.06661	21.60806		3	4	No	Private		2010	Abdul Kalek	01824086324	Abdul Kalek	120	250	200	50	2	0.048	48	9		1	2			2		
229	102406	05-03-20	Chokaria	Khutakhali	Kutakhali w-3	24	92.06797	21.62425		3	1	No	Private	7	2006	Shabul Huda	01713678911	Shabul Huda	9	290	260	30	2	0.025	25	7		1	2				3	
230	102405	05-03-20	Chokaria	Khutakhali	Kutakhali w-2	16	92.06676	21.63412		3	1	No	Private	7	1999	Mohtaz Mia	01711807825	Mohtaz Mia	16	330	270	60	2	0.040	40	6		1	2				3	
231	102817	05-03-20	Chokaria	Khutakhali	Suboy Pahar para w-9	25	92.06432	21.60418		3	1	No	Private		2000	Abdul Salam	01872022438	Abdul Salam	20	260	200	60	2	0.013	13	5		1	2			2		
232	102814	05-03-20	Chokaria	Khutakhali	Kataiah para w-7	12	92.05415	21.60880		3	1	No	Private	1	2020	Abbus Uddin	01816240729	Abbus Uddin	5	200	170	30	1.5	0.014	14	3		1	2			2		
233	102813	05-03-20	Chokaria	Khutakhali	Gorututa para w-7	8	92.05249	21.61547		3	4	No	Others	4	2013	Ariful Islam	01819724378	Ariful Islam	40	550	500	50	2	0.010	10	2		1	2			1		
234	117101	12-03-20	Chokaria	Konakhali	Kutubdia para w-2	5	91.96722	21.77772		3	1	No	Private	1	1990	A Razzak	01869140479	A Razzak	200	750	730	20	1.5	0.040	40	18		1	2			2		
235	117804	12-03-20	Chokaria	Konakhali	Cheptakhali para w-3	6	91.96794	21.77674		3	1	No	Private	7	2015	Nurul alam	01647147169	Nurul alam	100	850	840	10	1.5	0.042	42	16		1	2			2		
236	117805	12-03-20	Chokaria	Konakhali	Chowdhury bari para w-3	11	91.96720	21.77127		3	1	No	others	3	1995	Kismot	01875554163	Kismot	150	800	750	50	1.5	0.037	37	9		1	2			2		
237	117714	12-03-20	Chokaria	Konakhali	Sbodia baper para w-3	5	91.96799	21.78812		3	1	no	Private	12	2018	Rafiq Uddin	01818441170	Rafiq Uddin	40	750	700	50	1.5	0.013	13	8		1	2			2		
238	117111	12-03-20	Chokaria	Konakhali	Carpara w-3	9	91.97327	21.78845		3	1	No	Private	12	2012	Rahena begum	01840716210	Rahena begum	50	800	760	40	1.5	0.015	15	8		1	2			2		
239	117713	12-03-20	Chokaria	Konakhali	Katon baper para w-4	7	91.97504	21.78280		3	1	No	Private	12	2011	Kaniye	01814041772	Kaniye	6	650	620	30	1.5	0.020	20	8		1	2			2		
240	117712	12-03-20	Chokaria	Konakhali	Katun Baper para w-4	7	91.97555	21.78626		3	1	No	Private	10	2018	Abdul Hossain	01922694024	Abdul Hossain	10	640	600	40	1.5	0.018	18	7		1	2			2		
241	117407	12-03-20	Chokaria	Konakhali	Kunakhali w-5	6	91.96559	21.78804		3	1	No	Private	4	2014	Samsul alam	01824677265	Samsul alam	16	740	720	20	2	0.020	20	7		1	2			2		
242	117408	12-03-20	Chokaria	Konakhali	Kunakhali w-2	7	91.96415	21.78794		3	1	No	Private	7	2012	Hanif	01880329022	Hanif	12	600	570	30	2	0.040	40	6		1	2			2		
243	117409	12-03-20	Chokaria	Konakhali	Kuhakhali w-3	5	91.96589	21.78508		3	1	no	Private	4	2007	Mozammel haque	01863284521	Mozammel haque	12	750	720	30	2	0.040	40	6		1	2			2		
244	117406	12-03-20	Chokaria	Konakhali	Station para w-5	9	91.96579	21.78719		3	1	No	Private	4	2003	Nurussafa	01814281136	Nurussafa	4	770	740	30	2	0.030	30	6		1	2			2		
245	117710	12-03-20	Chokaria	Konakhali	Konakhali san para w-3	7	91.97005	21.78852		3	1	No	Private	11	2015	Setra Begum	01860934806	Setra Begum	20	720	680	40	1.5	0.013	13	5		1	2			2		
246	117103	12-03-20	Chokaria	Konakhali	JamJam para w-1	7	91.96750	21.77803		3	1	No	Private		2016	Jakirul Islam	01832902193	Jakirul Islam	5	720	650	70	1.5	0.035	35	4		1	2			2		
247	117102	12-03-20	Chokaria	Konakhali	Kutubdia para w-2	11	91.96458	21.77450		3	1	No	Private	1	2018	Rashed	01884152126	Rashed	4	850	810	40	1.5	0.040	40	2		1	2			2		
248	113113	10-03-20	Chokaria	Lakhyarchar	Uttar para w-6	5	92.08321	21.77848	2		3	no	Private	1	2010	Sadek		Sadek	5	75	35	40	4	0.100	100	24	240			3		2		
249	113704	10-03-20	Chokaria	Lakhyarchar	Carpara w-8	5	92.08288	21.77263		3	1	no	DPHE	1	2010	Jahir Alam	01814232324	Nurul Alam	100	800	750	50	1.5	0.020	20	12		1	2			2		
250	113815	10-03-20	Chokaria	Lakhyarchar	Sikolgat para w-4	6	92.07933	21.77627	1		1	No	others	5	2009	Eshak	01815173718	Eshak	900	160	130	30	1.5	0.034	34	12		1	2			2		
251	113719	16-Mar-20	Chokaria	Lakhyarchar	Noluila w-2	10	92.0791	21.78523		3	1	No	Private	11	2019	Badsha		Badsha	40	250	200	50	1.5	0.025	25	10		1	2			2		
252	113411	10-03-20	Chokaria	Lakhyarchar	Sikdar para w-7	12	92.08128	21.77526	1		1	no	Private	4	2004	Lakaar primary school	01826500611	Jafor Alam	500	40	30	10	2	0.040	40	8		1	2			2		
253	113301	10-03-20	Chokaria	Lakhyarchar	Kandukar para w-8	10	92.08246	21.77466	1		1	No	Private	1	2019	Ataul Haque	01875514400	Ataul Haque	10	40	30	10	1.5	0.020	20	6		1	2			2		
254	113412	10-03-20	Chokaria	Lakhyarchar	Laikasara w-7	10	92.08007	21.77378	1		1	no	Private	4	2012	Mukbul Haque	01872659061	Mukbul Haque	12	70	50	20	2	0.060	60	6		1	2			2		
255	113416	10-03-20	Chokaria	Lakhyarchar	Mayer para w-7	9	92.08352	21.77702	1		1	no	Private	4	2017	Abdul Karim	01818799986	Abdul Karim	18	30	20	10	1.5	0.050	50	6		1	2			2		
256	113303	10-03-20	Chokaria	Lakhyarchar	Carpara w-9	8	92.08745	21.77488		3	1	No	Private	6	2015	Razia Sultana	01821575507	Razia Sultana	20	210	190	20	1.5	0.015	15	6		1	2			2		
257	113702	10-03-20	Chokaria	Lakhyarchar	Purbo para w-9	12	92.08528	21.77613		3	1	No	Private	12	2000	Giasuddin	01880642099	Giasuddin	8	250	230	20	1.5	0.012	12	6		1	2			2		
258	113508	10-03-20	Chokaria	Lakhyarchar	Mondol para w-45	4.5	92.07185	21.78101		3	1	source of pot	Govt BADC	2	2019	Mosjid Comittee Ahmad	01884150491	Altaf Ahmed	100	500	440	60	1.5	0.008	8	3		1	2			2		
259	113205	10-03-20	Chokaria	Lakhyarchar	Rustam Ali Chowdhury para w-	20	92.07673	21.77743		3	1	Yes Tank	Private	9	2004	Chowdhury para Jame	01827571227	Ataur Rahman	150	230	210	20	1.5	0.065	65	3		1	2			3		
260	113510	10-03-20	Chokaria	Lakhyarchar	Hajipara w-2	4.1	92.07367	21.77978	1		3	Source of pipe to ta	private		1995	Jonayed Ullah	01888645893	Jonayed Ullah	17	70	60	10	1.5	0.012	12	2.5		1	2			2		
261	113107	10-03-20	Chokaria	Lakhyarchar	Sikdar para w-7	7	92.08064	21.77452		3	3	yes tank	private	1	2019	Faridur Alam	01732350872	Faridur Alam	12	200	190	10	2	0.080	80	2		1	2			2		
262	113609	10-03-20	Chokaria	Lakhyarchar	Mondol para w-1	4.1	92.07188	21.78043		3	3	Source of pot	Saudi Shantha	3	2015	Habju Khana committee	01634973564	Hossen	50	500	440	60	2	0.016	16	2		1	2			2		
263	113114	10-03-20	Chokaria	Lakhyarchar	Paschim para w-6	12	92.08038	21.77533		3	3	Yes tank	Private	1	2005	Nurul Alam	01867325618	Nurul Alam	33	200	190	10	1.5	0.080	80	3		1	2			2		
264	113806	10-03-20	Chokaria	Lakhyarchar	Uttar Lokkharchar w-5	9	92.08025	21.780073	1		1	No	Private		2000	Akter Hossain	01857960205	Akter Hossain	2000	160	130	30	1.5	0.035	35			1	2			2		
265	115101	06-03-20	Chokaria	Paschim Bara Bheol	Elishia pubkhali w-8	2	91.99935	21.75304		3	1	No	Private	1	2011	Erfan	01839397128	Erfan	100	700	660	40	1.5	0.030	30	18		1	2			2		
266	115315	06-03-20	Chokaria	Paschim Bara Bheol	Purbo para w-5	13	91.97412	21.74294		3	1	no	DPHE	11	2013	Dalilur Rahman	01883330388	Nuzrul Islam	Farmar 200	700	640	60	1.5	0.020	20	15		1	2			2		
267	115214	06-03-20	Chokaria	Paschim Bara Bheol	Paskhali Para w-7	5	91.96851	21.74873		3	1	No	Private	6	2017	Joynal AbedinBelal Udd	01883330388	Nurul Islam	18	700	640	60	1.5	0.020	20	12		1	2			2		
268	115804	06-03-20	Chokaria	Paschim Bara Bheol	Elishiah Bazar w-8	7	91.98040	21.75312		3	1	No	Private	2	1995	Azgar Ali	01861383610	Azgar Ali	1200	850	830	20	2	0.016	16	12		1	2			2		
269	115408	06-03-20	Chokaria	Paschim Bara Bheol	Pachim Bara Bhelola	8	92.00420	21.7540		4	3	No	Private	4	2018	Belal Uddin	01830533648	Belal Uddin	2	600	500	100	4	0.070	70	10	90			3		2		
270	115407	06-03-20	Chokaria	Paschim Bara Bheol	Lalbridge w-9	5	92.00690	21.75229		3	1	No	Private	8	2013	Humayon Kabir	01821600155	Humayon Kabir	40	450	420	30	1.5	0.050	50	9		1	2			1		
271	115313	06-03-20	Chokaria	Paschim Bara Bheol	Darshikata w-6	9	91.97074	21.74471		3	1	No	DPHE	8	2013	Monir Uddin	01850218757	Monir Uddin	10	600	560	40	1.5	0.030	30	9		1	2			2		
272	115716	06-03-20	Chokaria	Paschim Bara Bheol	Elisiya Bazar para w-7	3	91.97628	21.74849		3	1	No	Private	6	2010	Shahidul Islam	01856766395	Shahidul Islam	50	650	610	40	1.5	0.018	18	8		1	2			2		
273	115717	06-03-20	Chokaria	Paschim Bara Bheol	Elisa Bazar para w-7	9	91.97768	21.74996		3	1	No	Private	6	2018	Joynal Abedin	01872514114	Joynal Abedin	20	650	590	60	1.5	0.030	30	7		1	2			2		
274	115610	06-03-20	Chokaria	Paschim Bara Bheol	Dorbash kata Adorsho Bazar w	10	91.97012	21.74497		3	1	source of pot	Govt.	3	2015	Shabuddin	01831576724	Bazar Comitte	50	680	620	60	1.5	0.004	4	7		1	1			2		
275	115612	06-03-20	Chokaria	Paschim Bara Bheol	Porchem Para w-1	20	91.96380	21.74562		3	3	source of pipe to tar	Govt.	6	2012	Mezba Alam	01849106273	Mezba Alam	500	700	640	60	1.5	0.016	16	7		1	2			2		
276	115718	06-03-20	Chokaria	Paschim Bara Bheol	Elishiya bazar w-7	3	91.97939	21.75149		3	1	No	USAID		2010	Ariful Haque	01814464957	Ariful Haque	20	700	690	10	1.5	0.020	20	5		1	2			2		
277	115619	06-03-20	Chokaria	Paschim Bara Bheol	Dorbash kata	28	91.96191	21.74861		3	1	Source of Pot	Private	1	2020	Hossain	01824771885	Hossain	10	660	600	60	1.5	0.012	12	4		1	2			2		
278	115806	06-03-20	Chokaria	Paschim Bara Bheol	Elishiah Jomider para w-8	5	91.98281	21.75825		3	1	No	Others	3	2019	Kamaluddin	01877222990	Kamaluddin	20	785	735	50	2	0.017	17	4		1	2			2		
279	115805	06-03-20	Chokaria	Paschim Bara Bheol	Elishiah Mazar para w-8	6	91.98460	21.75492		3	3	No	Private		2000	Masudul Islam	01819362994	Masudul Islam	12	750	700	50	2	0.034	34	3		1	2			2		
280	115511	06-03-20	Chokaria	Paschim Bara Bheol	Moddom Porchem para Mosjid	5	91.96778	21.74235		3	3	source of pipe to tar	govt.		2017	Ashraf uddin	01872033827	Ashraf uddin	150	660	600	60	1.5	0.015	15	3		1	2			2		
281	115102	06-03-20	Chokaria	Paschim Bara Bheol	Elishia W-7	6	91.98959	21.75194		3	3	Yes House	Private	1	2016	Redoanul Haq	01760483546	Redoanul Haq	6	700	650	50	1.5	0.080	80	3		1	2			1		
282	115103	06-03-20	Chokaria	Paschim Bara Bheol	Elishia W-7	11	91.98067	21.75154		3	3	Yes House	Private	2	2001	Mobinul Islam	01711932070	Mobinul Islam	40	700	670	30	1.5	0.080	80	3		1	2			2		
283	102110	05-03-20	Chokaria	Pourasava	Joynagor para w-6	5	92.07374	21.61778		3	4	No	Private	7	2000	Sayed Alam	01838133677	Sayed Alam	150	750	690	60	2	0.070	70	24		1	2			2		
284	102112	05-03-20	Chokaria	Pourasava	Gozzamtoli khulakhali w-4	9	92.07205	21.62188		3	4	No	Private	1	2015	Humayon kabir	01814447502	Humayon kabir	500	800	740	60	1.5	0.100	100	24		1	2			2		
285	102111	05-03-20	Chokaria	Pourasava	Choter Bill Khutakhazi w-6	14	92.07628	21.62057		3	4	No	Private			Obaidul Akbar	01869775283	Obaidul Akbar	500	900	850	50	2	0.080	80	24		1	2			2		
286	101603	05-03-20	Chokaria	Pourasava	Ukil para w-6	22	92.07276	21.75109	2		3	No	Private		2015	Anowar hosen	01834381540	Anowar hosen	22	85	50	35	5	0.200	200	16	105			3		2		

Annex 2.2-1 Inventory of Existing Wells

SL#	Interpretation of Questionnaire number (x-xx-x-xx=Upazila code-Union code-Data collector Code-Ques#)	A. Location: Date	Upazila	Union	Village/ Land marks	Elevation in m (GPS)	B. GPS Coordinate: 2.1 Longitude	2.2 Latitude	3.1 Type of Survey [Shallow Tube Well: 1= Domestic 2= Irrigation	3.2 Type of Survey [Deep Tube Well (DTW)]: 3= Domestic 4= Irrigation	3.3 Type of well	3.3.1 Source of piped scheme	3.4 Founder name of the well (such as DPHE,BADC, Water aid, BRAC,Private, Others)	3.5 Date of Installation: Month	Year	3.6 Owner Name	3.7 Telephone number:	3.8 Handler of the well	3.9 Number of user (well)	3.10 Structure of the well: Depth of the well (ft)	Location of screen (ft)	Length of Screen(ft)	Diameter of casing pipe (inch)	Pumping rate (M3/minute)	Pumping rate L/minute)	3.12 Pumping hours (per day)	3.13 Yearly Pumping days(only for	3.13 Usage of groundwater: 1=Drinking/ cooking	2=Washing	3=Irrigation	4=Others (nursing etc.)	Water Quality: 1=Salinity 2=Sweet	3=Presence of Iron	4=Others (sand etc.)
287	101715	05-03-20	Chokaria	Pourasava	Hospital rapa w-4	4	92.07530	21.76036		3	3	Tank	Private		2017	Jahirul Islam	01866718035	Jahirul Islam	5	300	250	50	1.5	0.015	15	14		1	2			1		
288	101716	05-03-20	Chokaria	Pourasava	Hindu para harimodir road w-2	19	92.07458	21.76383		3	1	No	Private		2001	Sottujid Das	01820121317	Sottujid Das	20	250	210	40	1.5	0.012	12	12		1	2			2		
289	101607	05-03-20	Chokaria	Pourasava	Porchim Kahariya Gong w-6	20	92.06390	21.74943		4	3	no	Private		2000	Abdur Rahman	01624610250	Abdur Rahman	10	200	170	30	4	0.140	140	10	88			3		2		
290	101605	05-03-20	Chokaria	Pourasava	Moddom para kariya gona w-5	31	92.05898	21.75025		3	4	source of pot	Govt.		2013	Jamal Uddin Joynal	01811179203	Jamal Uddin Joynal	250	1000	920	80	1.5	0.017	17	8		1	2			2		
291	101211	05-03-20	Chokaria	Pourasava	Bazar para w-1	11	92.06750	21.76963		3	1	No	Private			Anowar Hossain	01812945165	Anowar Hossain	20	220	180	40	2	0.015	15	6		1	2			2		
292	101717	05-03-20	Chokaria	Pourasava	Kot para w-8	20	92.07609	21.75863		3	3	no	private		2000	Sabekur Naher	01840875233	Sabekur Naher	20	300	250	50	2	0.020	20	6		1	2			2		
293	101506	05-03-20	Chokaria	Pourasava	Kariyagona Primary School	5.1	92.05668	21.75059		3	1	source of pot	Govt.	3	2015	Salima Madam	01876951981	Nacima Akter	33	500	440	60	1.5	0.007	7	5		1	2			2		
294	101308	05-03-20	Chokaria	Pourasava	Boramohuri para	11	92.07230	21.75369	1		1	no	Private	1	2017	Purnendho Shikder	01857701635	Purnendho Shikder	15	70	40	30	1.5	0.015	15	5		1	2			2		
295	101310	05-03-20	Chokaria	Pourasava	Fultala w-3	16	92.06733	21.76432		3	3	yes to tank	Private	11	1996	Ibne Amin	01813215131	Noyan	50	750	690	60	2	0.100	100	5		1	2			2		
296	101209	5-3-20	Chokaria	Pourasava	Hospital para w-4	12	92.07478	21.76003		3	3	yes to tank	private	1	2014	Shafiqul islam	01816029073	Shafiqul islam	20	270	240	30	2	0.020	20	4		1	2			2		
297	101312	05-03-20	Chokaria	Pourasava	Halki Kara Mornirechar w-2	10	92.07379	21.77040		3	3	yes tank	private		2014	Shahida akter	01888251359	Sajjat hossen	30	650	580	70	2	0.125	125	4		1	2			2		
298	101501	05-03-20	Chokaria	Pourasava	Cood Road Chokorian w-6	6.2	92.06931	21.75267		3	3	source of pot	Govt.	2	2008	DPHE	01813178576	Shahadat Hussain	50	860	830	30	1.5	0.008	8	4		1	2			2		
299	101508	05-03-20	Chokaria	Pourasava	Moddom kariya gona	29	92.05813	21.75154		3	3	source of pipe to tar	Saudi Arob Shonth	3	2015	Mosjid Comitee Nurul is	01855752024	Hafaz Abdullah	30	500	440	60	1	0.020	20	3		1	2			2		
300	101504	05-03-20	Chokaria	Pourasava	Boromohure w-4	21	92.07470	21.75475		3	3	source of pipe to tar	n/A	2	2020	Haji Shirajul Islam	01857701910	Haji Shirajul Islam	8	800	774	26	1.5	0.012	12	3		1	2			2		
301	101718	05-03-20	Chokaria	Pourasava	Majan para w-4	15	92.07366	21.75685		3	3	Tank	Private		2016	Sanjid Soil	01858282327	Sanjid Soil	20	250	200	50	2	0.030	30	2		1	2			2		
302	101602	05-03-20	Chokaria	Pourasava	Karamohor Okil para w-4	4.8	92.07059	21.75176	1		3	source of pot	private		1984	Rajib Mahmud	01782454877	Rajib Mahmud	5	70	50	20	1.5	0.010	10	3.5		2				2		
303	109111	06-03-20	Chokaria	Purba Barabheola	Bania Char w-4	8	92.03065	21.77367		3	4	No	Private	1	2012	Nur Ahmed	01857401153	Nur Ahmed	1200	1200	1100	100	3	0.100	100	24		1	2			2		
304	109108	06-03-20	Chokaria	Purba Barabheola	Braman Para w-6	6	92.03910	21.77094		3	4	Yes, House	Private	1	1991	Altaf Hosain	01866175657	Altaf Hosain	200	850	790	60	1.5	0.080	80	24		1	2			2		
305	109109	06-03-20	Chokaria	Purba Barabheola	Purbo Maizpara w-5	15	92.04090	21.77692		3	3	yes house	Private	11	2010	Amir Hossain	01880050485	Amir Hossain	500	800	760	40	4	0.090	90	24		1	2			2		
306	109107	06-03-20	Chokaria	Purba Barabheola	Sikderpara w-3	8	92.03851	21.76364		4	3	No	Private	1	2010	Omor Faruk	01818150489	Omor Faruk	10	500	470	30	3	0.090	90	24	180	1		3		2		
307	109802	06-03-20	Chokaria	Purba Barabheola	Sikdar para w-2	4	92.03506	21.76728		3	4	No	Private	1	2019	Zakaremot	01814788431	Zakaremot	200	800	764	36	1.5	0.042	42	15		1	2			2		
308	109414	06-03-20	Chokaria	Purba Barabheola	Sikander Para w-8	14	92.05060	21.77152		3	1	No	Private	7	2001	Mansur Ahmed	01850698041	Mansur Ahmed	15	400	370	30	2	0.040	40	14		1	2			2		
309	109413	06-03-20	Chokaria	Purba Barabheola	Monallarkap w-8	11	92.04369	21.77194		4	3	No	Private	4	2015	Behedur Alam	01827835903	Behedur Alam	3	350	320	30	4	0.080	80	14	180			3		2		
310	109416	06-03-20	Chokaria	Purba Barabheola	Burirpara w-9	3	92.05310	21.76712		3	1	No	Private	7	2013	Zabbar	01876980391	Zabbar	25	300	270	30	2	0.040	40	13		1	2			2		
311	109801	06-03-20	Chokaria	Purba Barabheola	Hazi Rosun Ali para w-3	6	92.04019	21.76003		3	1	no	Others	5	2017	Shuaibul Islam	01860649022	Shuaibul Islam	120	700	600	100	2	0.017	17	12		1	2			2		
312	109415	06-03-20	Chokaria	Purba Barabheola	Chorojgata w-7	4	92.06141	21.76826		3	1	No	Private	7	2006	Kaled Ahmed	01713678910	Kaled Ahmed	17	500	470	30	2	0.035	35	12		1	2			2		
313	109803	06-03-20	Chokaria	Purba Barabheola	Dokkin Sikder para w-2	5	92.03107	21.76278		3	4	No	Private		2017	Morsed	01836607624	Morsed	200	700	670	30	2	0.030	30	12		1	2			2		
314	109804	06-03-20	Chokaria	Purba Barabheola	Salenogor para w-1	4	92.02250	21.76537		4	3	No	Private		2019	Jafor Alam	01833858446	Jafor Alam	15	300	250	50	4	0.035	35	11	90	3		3		2		
315	109805	06-03-20	Chokaria	Purba Barabheola	Eid Monipara w-1	5	92.01897	21.76277		3	1	No	Private		2019	Khalilur Rahman	0188826589	Khalilur Rahman	10	210	190	20	2	0.015	15	6		1	2			2		
316	109417	06-03-20	Chokaria	Purba Barabheola	Purbo Borobheala w-9	2	92.05454	21.76395		3	1	No	Private	4	2002	Sakia uddin	01716432423	Sakia uddin	30	600	550	50	2	0.040	40	6		1	2			2		
317	109806	06-03-20	Chokaria	Purba Barabheola	Moddom para w-1	5	92.01176	21.76281		3	1	No	Private	7	2014	Ibrahim	01812788570	Ibrahim	3	210	190	20	2	0.014	14	3		1	2			2		
318	109110	06-03-20	Chokaria	Purba Barabheola	Char para w-4	3	92.03585	21.77420		3	3	yes Tank	Private	11	2015	Osman Goni	01816036878	Tania	4	250	230	20	1.5	0.080	80	3		1	2			2		
319	109112	06-03-20	Chokaria	Purba Barabheola	Sikdar para	5	92.02899	21.76954		3	1	yes to tank	Private	12	2005	Jamal uddin	01814318720	Jamal uddin	8	300	290	10	1.5	0.080	80	3		1	2			2		
320	114104	07-03-20	Chokaria	Saharbil	Montaz para w-2	5	92.05181	21.76497		3	3	Yes Tank	Private	3	2019	Abdul Khalek	01814108041	Abdul Khalek	12	700	670	30	2	0.075	75	20		1	2			2		
321	114412	07-03-20	Chokaria	Saharbil	Purbo Para w-4	20	92.06011	21.75808		3	1	No	Others UNICEF	8	2019	Showkat Osman	01875707267	Showkat Osman	200	800	750	50	2	0.035	35	14		1	2			2		
322	114101	07-03-20	Chokaria	Saharbil	Dokkhin Moyapara w-3	4	92.04769	21.75876		3	1	No	Private	7	2012	Shek Muktar	01777154418	Shek Muktar	300	650	620	30	2	0.040	40	12		1	2			2		
323	114411	07-03-20	Chokaria	Saharbil	Purbo para w-4	8	92.05840	21.75773		3	1	No	Private	4	2015	Nurul Kabir	01815822337	Nurul Kabir	15	700	670	30	2	0.050	50	10		1	2			2		
324	114407	07-03-20	Chokaria	Saharbil	Pachim Maizgana w-6	4.7	92.04755	21.75306		3	1	No	Private	4	2010	Morshedul Karim	01819974539	Morshedul Karim	200	800	750	50	2	0.040	40	10		1	2			2		
325	114409	07-03-20	Chokaria	Saharbil	uttar maijgona w-5	2	92.05368	21.75613		3	1	No	Private	5	2010	Minhaz Uddin	01816033596	Minhaz Uddin	7	780	730	50	2	0.050	50	10		1	2			2		
326	114817	07-03-20	Chokaria	Saharbil	Karalkhali w-9	4	92.03262	21.74969		3	3	yes to tank	n/A		2000	Md Nobi	01743920156	Md Nobi	9	700	670	30	4	0.060	60	7		1	2			2		
327	114408	07-03-20	Chokaria	Saharbil	Uttar para Maiz Gona w-5	12	92.05264	21.75701	1		1	No	Private	1	2005	Mumtaz Begum	01829098762	Mumtaz Begum	4	30	20	10	1.5	0.020	20	6		1	2				3	
328	114816	07-03-20	Chokaria	Saharbil	Rampura para w-8	1	92.03608	21.75033		3	1	No	Private	4	2017	Saifuddin	01890604752	Saifuddin	15	370	350	20	2	0.040	40	6		1	2			2		
329	114106	07-03-20	Chokaria	Saharbil	Purbo para w-1	4	92.05887	21.76205		3	1	No	Private	7	2019	Mosida Begum	01823600350	Mosida Begum	20	770	670	100	2	0.040	40	6		1	2			2		
330	114105	07-03-20	Chokaria	Saharbil	Alibolir para w-1	4	92.05489	21.76241		3	3	yes tank	Private	6	2018	Abdur Sukkur	01831837876	Abdur Sukkur	40	750	730	20	2	0.075	75	6		1	2			2		
331	114103	07-03-20	Chokaria	Saharbil	Boillapara w-2	10	92.04983	21.76622		3	1	No	Private	8	2019	Mojaffar Ahmed	01815922050	Mojaffar Ahmed	5	900	850	50	2	0.030	30	6		1	2			2		
332	114410	07-03-20	Chokaria	Saharbil	Moddo para w-5	14	92.05613	21.75822		3	3	No	Private	6	2012	Jalilur Rahman	01860020318	Jalilur Rahman	9	250	220	30	4	0.060	60	6		1	2			2		
333	114818	07-03-20	Chokaria	Saharbil	Karakhali w-9	5	92.03032	21.74644		3	1	No	Private	4	2012	Jasim uddin	01811179039	Jasim uddin	10	900	870	30	2	0.050	50	4		1	2			1		
334	114813	07-03-20	Chokaria	Saharbil	Rampur Shafura w-7	13	92.04541	21.75186		3	1	No	Private	4	2017	Abdus Samad	01813344977	Abdus Samad	10	400	370	30	2	0.060	60	4		1	2			2		
335	114814	07-03-20	Chokaria	Saharbil	Shapara w-7	2	92.04352	21.75035		3	1	No	Private	7	2000	Shajahan	01812684405	Shajahan	6	700	670	30	2	0.040	40	4		1	2			2		
336	114102	07-03-20	Chokaria	Saharbil	Chorghor para w-3	3	92.04942	21.76356		3	3	Yes Tank	Private	3	2000	Jahir Ahmed	01875628666	Jahir Ahmed	8	700	650	50	2	0.080	80	3		1	2				3	
337	114815	07-03-20	Chokaria	Saharbil	Rampura para w-8	2	92.04028	21.74971		3	3	Yes tank	Private	7	2003	Kazi Anam	01819848789	Kazi Anam	12	360	320	40	2	0.090	90	3		1	2			2		
338	118103	10-03-20	Chokaria	Surajpur-Manikpur	Suruzpur W-9	9	92.12434	21.75349		3	3	No	n/A		2020	LGED	01813997065	Nasir uddin	200	800	700	100	2	0.100	100	24		1	2			2		
339	118802	10-03-20	Chokaria	Surajpur-Manikpur	Moddom Surajpur w-9	13	92.12732	21.75480	2		3	No	Private	1	2008	Kabir Ahmed	01822907344	Kabir Ahmed	10	80	60	20	2	0.095	95	12	130			3		2		
340	118306	11-03-20	Chokaria	Surajpur-Manikpur	Midle Manikapur w-3	5	92.14512	21.75721	1		1	No	Private	11	2010	Manikpur Govt. Primary	01865056852	Mujibun nahar	200	60	50	10	1.5	0.020	20	7		1	2				3	
341	118307	11-03-20	Chokaria	Surajpur-Manikpur	Natun Bazar w-2	11	92.14130	21.76261	2		3	No	n/A	12	2016	Md. Musa	01719147392	Abu Yousuf	21	130	110	20	1.5	0.030	30	7	120			3			3	
342	118309	11-03-20	Chokaria	Surajpur-Manikpur	Pahar tali naya mora w-8	9	92.13490	21.75773	2		3	No	Private	1	2019	Nurul Kabir	01839893324	Nurul Kabir	armers 6 Heet	80	60	20	2	0.050	50	7	120			3			3	
343	118308	11-03-20	Chokaria	Surajpur-Manikpur	Uttar para w-1	5	92.13867	21.76475	1		1	No	NGO Asanullah	6	2014	Ayesa Hoque Govt. P.S	01813259772	Noman	200	60	50	10	1.5	0.020	20	6		1	2				3	
344	118310	11-03-20	Chokaria	Surajpur-Manikpur	Kayar bil w-8	17	92.12548	21.75867	2		3	No	Private	10	2015	Faysal	01627367708	Faysal	armer 4 Hach	80	60	20	2	0.040	40	6	38			3			3	
345	118305	11-03-20	Chokaria	Surajpur-Manikpur	Madbar para w-5	15	92.15065	21.75114	2		3	No	Private	12	2019	Md. Ismail	01852786122	Md. Ismail	ersonal Irrigati	150	130	20	1.5	0.020	20	6	90			3			3	
346	118304	11-03-20	Chokaria	Surajpur-Manikpur	Surajpur Manikpur Bazar para	19	92.14762	21.75342	1		1	No	Private	12	2017	Mohammad Safuddin	01822336267	Mohammad Safuddin	7	40	30	10	1.5	0.015	15	5		1	2				3	
347	118401	10-03-20	Chokaria	Surajpur-Manikpur	Surypur w-9	13	92.12539	21.75521		3	1	No	Private	4	2013	Jalal Uddin	01716400665	Jalal Uddin	10	240	220	20	2	0.050	50	5		1	2			2		
348	307208	4-3-20	Cox's bazar	Chaufaldandi	Notun Mahal w-8	8	92.03835	21.53169		4	3	yes to house	private	4	2019	Enamul haque	01640742552	Enamul haque	10	780	750	30	2	0.080	80	24	90			3		2		
349	307308	4-3-20	Cox's bazar	Chaufaldandi	Notun Mahal w-8	8	92.03835	21.53169		4	3	yes house	private	4	2019	Enamul Hauq	01640742552	Enamul Hauq	10	780	750	30	2	0.080	80	24	90			3		2		
350	307206	04-03-20	Cox's bazar	Chaufaldandi	Uttar para w-7	1	92.02900	21.52395		4	3	no	private	1	2012	Habibullah	01812428306	Habibullah	5	900	800	100	3	0.100	100	24	180	1	2	3		2		
351	307517	21-02-20	Cox's bazar	Chaufaldandi	Porchim para guna w-4	2	92.01112	21.53384		4	3		private			Saiful	01818299710	Saiful	30	750	690	60	5	0.015	15	21	105			3		2		
352	307103	20-02-20	Cox's bazar	Chaufaldandi	Uttar para bill	2	92.01015	21.5304		4	3	no	private	6	2000	Ali akbar danu	01621964970	Ali akbar danu	15	700	640	60	6	0.100	100	15	180	1	2	3		2		
353	307102	20-02-20	Cox's bazar	Chaufaldandi	Del para Uttar para Bill	2	92.00914	21.5312		4	3	No	Private	6	2000	Nurul Islam	01817409178	Nurul Islam	15	700	640	60	6	0.100	100	15	180	1	2	3		2		
354	307204	04-03-20	Cox's bazar	Chaufaldandi	Khamar para w-6	2	92.03835	21.53169		3	1	No	Private	5	2015	Salim	01733141002	Salim	50	850	810	40	1.5	0.030	30	10		1	2			2		
355	307107	04-03-20	Cox's bazar	Chaufaldandi	Shiva khala uttar paschim para	6	92.03583	21.52571		4	3	no	private	7	2000	Monir Member	01821080047	Nurul uddin	25	800	770	30	6	0.100	100	10	90			3		2		
356	307104	20-02-20	Cox's bazar	Chaufaldandi	Delprata uttar para	3	92.00828	21.52859		4	3	no	private	4	2015	Fazlul haque	01407162909	Fazlul haque	16	650	620	30	4	0.100	100	10	180	1	2	3		2		
357	307106	20-02-20	Cox's bazar	Chaufaldandi	Shiva khala uttar paschim para	5	92.00846	21.52626		3	1	No	Private	8	2010	Firoza begum	01872854932	Firoza begum	100	800	740	60	2	0.030	30	8		1	2			2		
358	307211	20-02-20	Cox's bazar	Chaufaldandi	Chaufaldandi kokkhin para	6	92.01171	21.51417		3	1	No	Private	1	2019	Kamal uddin	01881239675	Kamal uddin	100	700	660	40	3	0.030	30	8		1	2			2		
359	307310	4-3-20	Cox's bazar	Chaufaldandi	Notun Mahal w-8	10	92.04335	21.53201		3	1	No	Private	10	2015	Nurul Huda	01818129152	Nurul Huda	15	700	680	20	3	0.025	25	8		1	2			2		
360	307212	20-02-20	Cox's bazar	Chaufaldandi	Chaufaldandi Dokkhin para	7	92.01137	21.51439		3	1	yes construction us	private	1	2017	Forkan	01866758032	Forkan	20	750	720	30	3	0.030	30	8		1	2			2		
361	307213	20-02-20	Cox's bazar	Chaufaldandi	Dokkhin para chaufaldandi	9	92.01140	21.5133		3	1	no	private	5	2005	Yousuf ali	01819691167	Yousuf ali	50	300	250	50	2	0.030	30	8		1	2			2		
362	307108	20-02-20	Cox's bazar	Chaufaldandi	Chaufal dandi paschim para	6	92.00868	21.5249		3	1	no	private	4	2005	Sanoara begum	01827292745	Naser mia	80	800	720	80	2	0.030	30	8		1	2			2		
363	307218	20-02-20	Cox's bazar	Chaufaldandi	Dokkhin para	9	92.01248	21.51457		3	1	No	private	8	2015	Shah Alam	01864692067	Shah Alam	10	800	760	40	3	0.030	30	6		1	2			2		
364	307210	04-03-20	Cox's bazar	Chaufaldandi	Chowfaldandi dakshin para	6	92.04335	21.53201		3	1	no	private	1	2005	Mohammad Yeasin	01812560965	Mohammad Yeasin	350	800	770	30	2	0.025	25	6		1	2			2		
365	307309	4-3-20	Cox's bazar	Chaufaldandi	Khunkar Khil w-9	6	92.04492	21.53749		3	3	Yes House	Private	10	2013	Abu Taher	01875806141	Mustak	4	800	760	40	3	0.080	80	6		1	2			2		
366	307216	20-02-20	Cox's bazar	Chaufaldandi	Dokkhin para	6	92.01287	21.51435		3	1	No	private	1	2016	Daliur Rahman	01885002748	Daliur Rahman	9	800	780	20	2	0.030	30	5		1	2			2		
367	307101	20-02-20	Cox's bazar	Chaufaldandi	South chaufaldandi	8	92.01048	21.50013	1		1	no	private	1	2013	Shin te latee	01405563228	Shin te latee	25	100	95	5	7	0.025	25	4			2				3	
368	307214	20-02-20	Cox's bazar	Chaufaldandi	Chaufaldandi Dakhain para	12	92.01163	21.51355		3	1	no	private	6	2007	Salma begum	01868164469	Salma begum	10	650	620	30	2	0.030	30	4		1	2			1	3	
369	307215	20-02-20	Cox's bazar	Chaufaldandi	Dokkhin para	7	92.01192	21.51368		3	1	yes toilet use	private	4	2012	Alam	01857274494	Alam	13	600	580	20	3	0.028	28	4		1	2			2		
370	307217	20-02-20	Cox's bazar	Chaufaldandi	Dokkhin para	8	92.01272	21.51466		3	1	no	private	5	2012	Shajahan	01885308806	Helal uddin	5	800	760	40	2	0.030	30	4		1	2			2		
371	307105	20-02-20	Cox's bazar	Chaufaldandi	Wapda Uttar Paschim para	4	92.00692	21.53249		3	1	no	private	7	2015	Moulobi Rasel	01872459016	Moulobi Rasel	200	750	700	50	2	0.025	25	3		1	2			1		
372	307109	20-02-20	Cox's bazar	Chaufaldandi	uttar parchim para	3	92.00952	21.52656	2		3	No	Private	4	2005	Abu Siddique	01817626607	Abu Siddique	100	150	140	10		0.100	100	2	180		2	3		1		
373	307307	4-3-20	Cox's bazar	Chaufaldandi	Uttar para w-7	9	92.03585	21.52571		3	3	yes house	Private	8	2016	Abul Bashar	0181191299	Abul Bashar	33	900	870	30	2	0.080	80	3		1	2			2		
374	307305	4-3-20	Cox's bazar	Chaufaldandi	Khamar para w-6	5	92.03271	21.51928		3	3	yes house	private	9	2013	Shafiul Alam	01836243221	Shafiul Alam	15	800	770	30	4	0.070	70	3		1	2			2		
375	307202	04-03-20	Cox's bazar	Chaufaldandi	Uttar maiz para w-5	2	92.01618	21.52327		3	3	yes house and villag	private	1	2015	Farida begum	0179679712	Farida begum	500	770	740	30	3	0.050	50	3		1	2			2		
376	307301	4-3-20	Cox's bazar	Chaufaldandi	Maizpara w-5	5	92.01601	21.51847		3	3	Yes house + Mosjid	private	1	2017	Nur Mohammad	01879679712	Farida begum	600	770	740	30	3	0.050	50	3		1	2			2		
377	307303	4-3-20	Cox's bazar	Chaufaldandi	Matbar para w-5	6	92.02183	21.52138		3	3	yes house	private	1	2011	Abul Kashem	01890434230	Abul Kashem	8	700	680	20	3	0.060	60	3		1	2			2		
378	307616	21-02-20	Cox's bazar	Chaufaldandi	Uttar Hara bil	5	92.00925	21.53119		4	3	source of channel	private	1	1995	Md. Askor	01585863586	Monsur alam	40	700	640	60	5	0.165	165		95			3		2		
379	305612	22-02-20	Cox's bazar	Eidgah	Bomriah w-9	31	92.08010	21.56505		3	4	source of pot	Private			Babul company	01719006687	Somiron	500	900	820	80	2	0.030	30	24		1	2			2		
380	305614	22-02-20	Cox's bazar	Eidgah	Uttar siah para	4.2	92.08297	21.56126		4	4	source of channal to	NGO	5	2019	Nurul Hakim	01813972481	Nurul Hakim	200	900	840	60	2	0.035	35	24	105	1	2	3		2		
381	305108	22-02-20	Cox's bazar	Eidgah	Dokkhin Mass para w-3	13	92.05180	21.53693	2		3	no	private	7	2015	Anowar hosen	01848583327	Anowar hosen	20	150	130	20	3	0.120	120	24	120	1	2	3		2		
382	305209	22-02-20	Cox's bazar	Eidgah	Dokkhin Masipara	30	92.05190	21.53482	2		3	No	private	7	2006	Nurul Shafa	01811684846	Nurul Shafa	25	145	135	10	3	0.120	120	24	120	1	2	3		2		

Annex 2.2-1 Inventory of Existing Wells

SL#	Interpretation of Questionnaire number (x-xx-x-xx=Upazila code-Union code-Data collector Code-Ques#)	A. Location: Date	A. Location: Upazila	A. Location: Union	A. Location: Village/ Land marks	Elevation in m (GPS)	B. GPS Coordinate: 2.1 Longitude	B. GPS Coordinate: 2.2 Latitude	3.1 Type of Survey [Shallow Tube Well] 1= Domestic 2= Irrigation	3.2 Type of Survey [Deep Tube Well (DTW)] 3= Domestic 4= Irrigation	3.3 Type of well	3.3.1 Source of piped scheme	3.4 Founder name of the well (such as DPHE,BADC, Water aid, BRAC,Private, Others)	3.5 Date of Installation: Month	3.5 Date of Installation: Year	3.6 Owner Name	3.7 Telephone number:	3.8 Handler of the well	3.9 Number of user (well)	3.10 Structure of the well: Depth of the well (ft)	3.10: Location of screen (ft)	3.10: Length of Screen(ft)	3.10: Diameter of casing pipe (inch)	Pumping rate ($M^{3/minute}$)	Pumping rate L/minute)	3.12 Pumping hours (per day)	3.13 Yearly Pumping days(only for	3.13 Usage of groundwater: 1=Drinking/ cooking	3.13: 2=Washing	3.13: 3=Irrigation	3.13: 4=Others (nursing etc.)	Water Quality: 1=Salinity 2=Sweet	Water Quality: 3=Presence of Iron	Water Quality: 4=Others (sand etc.)
383	305212	22-02-20	Cox's bazar	Eidgah	Chander gona w-4	14	92.07095	21.53712		4	3	no	private	4	2010	Nurul Haq	01817103815	Nurul Haq	30	300	270	30	4	0.160	160	24	120	1		3		2		
384	305111	22-02-20	Cox's bazar	Eidgah	Chander Gona w-4	12	92.06903	21.53748		4	3	no	private	1	1995	Nur	01814359934	Nur	50	600	580	20	3.2	0.150	150	24	120			3		2		
385	305107	22-02-20	Cox's bazar	Eidgah	Dokkin maij para w-3	9	92.05437	21.54073	2		3	no	private	6	2012	Jahidul	01836243700	Jahidul	12	110	80	30	4	0.120	120	24	180			3		2		
386	305516	22-02-20	Cox's bazar	Eidgah	Pal para	10	92.07042	21.55764	1		3	source of tank	private	5	2001	Uttam Paul	01717661297	Uttam Paul		180	160	20	2	0.040	40	13		1	2			2		
387	305513	22-02-20	Cox's bazar	Eidgah	Boboriya gunaw-9	4.1	92.08228	21.56888		3	4	source of pot	NGO	5	2019	Haji Sabar Ahmed	01836613800	Haji Sabar Ahmed	200	900	840	60	2	0.030	30	13		1	2			2		
388	305101	22-02-20	Cox's bazar	Eidgah	Jagir para w-1	24	92.06581	21.55572		3	1	no	Govt.	1	2000	Union porishad	01818019952	Sayed alam	600	500	460	40	3	0.040	40	12		1	2				3	
389	305106	22-02-20	Cox's bazar	Eidgah	Moddam Maispara w-2	10	92.05782	21.54646	2		3	No	private	7	2015	Shafiul alam	01816173750	Shafiul alam	4	180	160	20	1.5	0.042	42	12	24	1	1	3	3	2		
390	305104	22-02-20	Cox's bazar	Eidgah	Maijpara w-2	10	92.05963	21.54786		3	1	no	private	4	2000	Abul hosen	01837587757	Abul hosen	200	570	560	10	3	0.040	40	10		1	2			2		
391	305619	22-02-20	Cox's bazar	Eidgah	Chadar gona	39	92.06435	21.53290	1		1	source of pot	private			surut	01864148951	Surot	10	90	70	20	2	0.014	14	8		1	2			2		
392	305213	22-02-20	Cox's bazar	Eidgah	Kalichora, w-5	9	92.06560	21.52408	1		1	No	Private	1	2018	Romel	01818155100	Romel	200	100	80	20	2	0.016	16	8		1	2			2		
393	305616	22-02-20	Cox's bazar	Eidgah	Baro Awlia Dorga	38	92.07449	21.55321	2		3	source of pipe to fie	Mosjid comittee	4	2010	Nurul islam	01837577327	Nurul islam	25	80	40	40	4	0.150	150	8	60			3		2		
394	305515	22-02-20	Cox's bazar	Eidgah	Purbkaniah char w-7	31	92.07863	21.55688		4	3	source of pipe to ho	private	5	1996	Jaynal abedin	01879041579	Shajada akter	5	450	410	40	2	0.120	120	4	100	1	2	3		2		
395	305205	22-02-20	Cox's bazar	Eidgah	Maij para w-3	15	92.05836	21.54363		3	1	no	private	4	2013	Rahima Begum	01835140040	Rahima Begum	11	220	210	10	2	0.030	30	3		1	2				3	
396	305202	22-02-20	Cox's bazar	Eidgah	Jagir para	23	92.06343	21.55281	1		1	yes cooking	Private	1	2019	Amanul haq	01885312753	Amanul haq	3	130	120	10	2	0.040	40	3		1	2				3	
397	305411	23-2-20	Cox's bazar	Eidgah	Jumbari Maisepara w-1	7	92.05632	21.54949		3	3	yes to tank	Masjid Fund	1	2019	Jumbari Mosjid	01889219511	Giash	200	320	270	50	3	0.070	70	3		1	2			2		
398	305617	22-02-20	Cox's bazar	Eidgah	South mis para	26	92.05682	21.53768		3	3	source of pipe to tar	school managing comity			sholimuddin	01819686207	Yousuf	220	500	440	60	2	0.010	10	2			2			1		
399	305618	22-02-20	Cox's bazar	Eidgah	Mais para	5.0	92.05585	21.53865		3	1	source of pot	private	8	2008	Mohammed Khaled	01864920004	Kulsum akter	5	300	260	40	2	0.015	15	3.5		1	2			2		
400	305610	22-02-20	Cox's bazar	Eidgah	Palpara w-8	4.5	92.06951	21.55542	1		1	source of pot	private			babul pal	01866007982	babul pal	8	80	60	20	2	0.010	10	3.3		1	2			2		
401	305203	22-02-20	Cox's bazar	Eidgah	Sawdagor para	24	92.06008	21.55216	1		3	yes to tank	private	6	2016	Nurul alam	01819838713	Nurul alam	8	150	130	20	2	0.090	90	3		1	2			1		
402	305110	22-02-20	Cox's bazar	Eidgah	Chander gona w-4	20	92.06815	21.53423		3	4	yes to toilet	DPHE	4	2013	Jahangir alam	01811364361	Jahangir alam	1000	950	920	30	1.5	0.060	60			1					3	
403	304109	23-02-20	Cox's bazar	Islamabad	Horipur w-7	16	92.06377	21.56708		4	4	no	private	7	2000	Sayed akbar	01823823248	Sayed akbar	20	900	840	60	2	0.080	80	24	180	1	2	3		2		
404	304212	04-03-20	Cox's bazar	Islamabad	Paishak Ali Sikder para w-2	16	92.04806	21.55503		3	1	no	CARE	1	1992	Care bd	01825156207	Shafiqul islam	500	730	700	30	1.5	0.030	30	18		1	2			2		
405	304105	23-02-20	Cox's bazar	Islamabad	Dokkhin horipur	8	92.06268	21.56030		3	1	yes	private		1995	Abbas mistry	01818933295	Abbas mistry	14	250	220	30	3	0.030	30	10		1	2			2		
406	304204	23-02-20	Cox's bazar	Islamabad	Dokkhin Tsipur w-6	15	92.06313	21.56334		3	1	no	private	1	2000	Alkas ahmed	01864692817	Alkas ahmed	50	550	520	30	3	0.030	30	10		1	2			3		
407	304606	23-02-20	Cox's bazar	Islamabad	Boddo para w-5	7	92.05183	21.56997		4	3	source of channal	private	1	2018	Osman	01859456085	Osman		300	240	60	3	0.120	120	10	35			3		2		
408	304110	23-02-20	Cox's bazar	Islamabad	Chorpara	20	92.05802	21.55531		3	1	No	private	8	2019	Saiful islam	01881277099	Golam Kabir	30	290	260	30	3	0.025	25	6		1	2			2		
409	304505	23-02-20	Cox's bazar	Islamabad	Usubar w-5 Boyalkhali	24	92.05743	21.56800		4	3	source of channal to	private	5	2019	Shamsul alam	01837275666	Shamsul alam	8	800	730	70	2	0.020	20	6	100			3		2		
410	304602	23-02-20	Cox's bazar	Islamabad	Uttar Larabag w-3	5.5	92.05220	21.55397		3	3	source of pot	world vision	2	2005	Jasmeen Akter	01814481033	Jasmeen Akter	40	700	640	60	6	0.015	15	5		1	2			2		
411	304206	23-2-20	Cox's bazar	Islamabad	Horipur w-7	15	92.06313	21.56334		3	1	No	Private	7	2015	Sri Ajit	01879490050	Sri Ajit	5	295	245	50	3	0.030	30	5		1	2			2		
412	304208	23-02-20	Cox's bazar	Islamabad	Horipur w-7	13	92.06528	21.56771		3	3	yes drinking /cookin	private	2	2016	Shahina	01835142379	Shahina	10	240	220	20	3	0.050	50	4		1	2			2		
413	304507	23-02-20	Cox's bazar	Islamabad	Satoula ghata	4.0	92.04657	21.56780		3	1	source of pot	private	4	2007	Hafiz abdur Rahman	01876983715	Hafiz abdur Rahman	15	680	600	80	2	0.005	5	4		1	2			2		
414	304604	23-02-20	Cox's bazar	Islamabad	Minidu para	39	92.05807	21.55528		3	1	source of pot	LGED	11	2018	Md. Saiful	01812425669	Saiful Islam	30	450	390	60	2	0.007	7	4		1	2			2		
415	304107	23-2-20	Cox's bazar	Islamabad	Horipur w-7	17	92.06402	21.56527	1		1	no	Private	2	2010	Kolpona Dey	01811821359	Kolpona Dey	6	110	90	20	3	0.075	75	4		1	2			2		
416	304111	04-03-20	Cox's bazar	Islamabad	Purbo Sikdar para w-2	12	92.05287	21.55509		3	3	yes house	private	12	2019	Abul Kashem	01855887957	Abul Kashem	10	870	830	40	2	0.080	80	3		1	2			2		
417	304503	23-02-20	Cox's bazar	Islamabad	Uttar Larabag	15	92.05369	21.55248		3	1	source of pot	LGED	6	2010	Shanewaj chow	01835470465	Mostak Ahmed	5	750	690	60	2	0.003	3	2		1	2			2		
418	304608	23-02-20	Cox's bazar	Islamabad	Satvla Ghata	8	92.04686	21.56966		3	3	source of pot	n/A	2	2020	Saiful islam	01840634640	Saiful islam	6	220	180	40	2	0.030	30	2		1	2			2		
419	304501	23-02-20	Cox's bazar	Islamabad	Uttar Laraga w-3	5.8	92.05236	21.55333	1		3	source of pipe to tar	private	3	2013	Mizanur rahman	01815515392	Mizanur rahman	33	60	40	20	2	0.017	17	3		1	2			2		
420	302815	23-02-20	Cox's bazar	Islampur	Dormer care Govt.primary scho	0	92.05139	21.58279		3	4	no	Private			Rabiul Hossain	01830773552	Rabiul Hossain	140	450	410	40	2	0.001	1	24		1	2			2		
421	302719	23-02-20	Cox's bazar	Islampur	Koylas gona norani madrash	1	92.05323	21.59648		3	4	No	Private	2	2020	Shafiul alam	01815115217	Shafiul alam	150	800	760	40	2	0.010	10	24		1	2			2		
422	302816	23-02-20	Cox's bazar	Islampur	Public Model School	3	92.05460	21.58367		3	4	No	Private	6	2007	Saiful Islam	01819889995	Saiful Islam	200	1000	950	50	2	0.003	3	24		1	2			2		
423	302717	23-02-20	Cox's bazar	Islampur	Botola Moddom Napitkhali w-4	4	92.05739	21.58650		4	4	No	Private		2000	Abdul Jabbar		Abdul Jabbar	3	650	610	40	2	0.003	3	24	120			3		2		
424	302308	23-02-20	Cox's bazar	Islampur	Koylashi Gona w-2	6	92.05540	21.59561		3	3	Yes, tank	Private	7	2008	Monjur Alam	01817773379	Monjur Alam	40	240	210	30	3	0.030	30	14		1	2			2		
425	302407	23-02-20	Cox's bazar	Islampur	Koilmgana w-4	4	92.05439	21.59410		4	2	No	Private	1	2019	Safi Master	01814269295	Safi Master	4 Hactor	450	420	30	4	0.120	120	8	180			3		2		
426	302713	23-02-20	Cox's bazar	Islampur	Dokkin Khan Gona w-9	4	92.04338	21.57860	1		1	No	Private		2014	Jobirul Islam	01826575851	Jobirul Islam	20	170	150	20	2	0.015	15	6		1	2			2		
427	302304	23-02-20	Cox's bazar	Islampur	Bottoli para w-5	17	92.06563	21.58696		3	3	yes tank	Private	8	2013	Rubel Ahmed	01630151259	Rubel Ahmed	10	350	320	30	3	0.050	50	4		1	2			2		
428	302401	23-02-20	Cox's bazar	Islampur	Moddom Napitkal w-5	14	92.06184	21.58886	1		1	No	DPHE	5	2013	Islampu union	01812586238	Kamal hosen	15	80	60	20	2	0.025	25	4		1	2			2		
429	302302	23-02-20	Cox's bazar	Islampur	Napit khali	20	92.06783	21.58884		3	3	No	Private	2	2019	Abul Hasem	01839427142	riduwan	15	260	230	30	2	0.035	35	4		1	2			2		
430	302403	23-02-20	Cox's bazar	Islampur	Purbo Napitakhali w-5	19	92.06783	21.588863		3	3	yes tank	Private	7	2018	Abdul hakim	01837584829	Abdul hakim	20	280	250	30	2	0.050	50	4		1	2			2		
431	302306	23-02-20	Cox's bazar	Islampur	Kilizarpur	15	92.07397	21.58085		3	1	No	Private	3	2019	Abul Kasem	01826305377	Abul Kasem	30	280	250	30	2	0.035	35	4		1	2			2		
432	302409	23-02-20	Cox's bazar	Islampur	Islampur w-8	10	92.06126	21.59479		3	1	No	Private	2	2015	Obadul	01823003059	Obadul	80	280	250	30	2	0.040	40	4		1	2			2		
433	302812	23-02-20	Cox's bazar	Islampur	Dokkhin khan gona w-9	4	92.04635	21.58093		4	3	No	Private		2000	Helal uddin	01845385145	Helal uddin	1	850	790	60	2	0.040	40	4	60			3		2		
434	302310	23-02-20	Cox's bazar	Islampur	AcF para, w-3	10	92.05881	21.59704		4	3	No	Private	1	2020	Ruja khatun	01875777530	Hakim	5 Hector	760	700	60	4	0.100	100	4	120			3		2		
435	302405	23-02-20	Cox's bazar	Islampur	Napit khali	2	92.06369	21.58583	2		3	No	Private	7	2015	Abdul Karim	01824466105	Abdul Karim	2 hactor	120	90	30	3	0.100	100	3	120			3		2		
436	302818	23-02-20	Cox's bazar	Islampur	Ideal public school	9	92.06193	21.59366		3	3	Tank	Private	5	2018	Anower	01711717524	Anower	280	500	460	40	2	0.035	35	3						1		
437	302711	23-02-20	Cox's bazar	Islampur	Dokkin khan gona w-9	10	92.04645	21.58144		3	3	Tank	Private	5	2015	Helal uddin	01845385145	Helal uddin	6	800	760	40	2	0.035	35	3		1	2			2		
438	306202	23-02-20	Cox's bazar	Jalalabad	Lorabad purbo	5	92.04822	21.54891	2		3	no	private	6	2016	Shafiqul islam	01876983442	Shafiqul islam	30	70	60	10	3	0.060	60	24	120	1		3		2		
439	306615	21-02-20	Cox's bazar	Jalalabad	Dokkhin lorabag w-3	13	92.04182	21.55026		3	3	source of pipe to tar	private		2016	Towhidul islam	01829427632	Towhidul islam	8	850	790	60	2	0.022	22	14		1	2			2		
440	306102	21-02-20	Cox's bazar	Jalalabad	Farazi para w-5	15	92.03235	21.55177		3	1	no	private	1	2018	Nasir uddin	01830737344	Nasir uddin	35	1009	969	40	3	0.015	15	10		1	2			2		
441	306105	21-02-20	Cox's bazar	Jalalabad	Lorabad w-3	12	92.04769	21.55337		3	1	yes house / cooking	private	1	2000	Haji Farid alam	01852646165	Haji Farid alam	30	1200	1160	40	3	0.020	20	8		1	2			2		
442	306101	21-02-20	Cox's bazar	Jalalabad	Lorabad Dokkhin	15	92.02879	21.55126		3	1	no	private	7	2016	Nurul Afsar	01815675270	Nurul afsar	50	800	780	20	2	0.040	40	8		1	2			2		
443	306211	23-02-20	Cox's bazar	Jalalabad	Satipara	14	92.05779	21.55178		3	3	yes to tank	private	9	2010	Abdul Hai	01814359937	Abdul Hai		220	210	10	1.5	0.055	55	7		1	2			2		
444	306613	21-02-20	Cox's bazar	Jalalabad	Middel bahon chora	14	92.03133	21.54308		3	1	source of pot	Unicef	4	2019	Gora mia	01886127285	Gora mia	15	910	850	60	2	0.003	3	6		1	2			2		
445	306612	21-02-20	Cox's bazar	Jalalabad	Bahor chore jalalabad	10	92.02882	21.54514		3	3	tank	private	2	2013	Belal uddin	01849385600	Belal uddin	20	750	690	60	2	0.004	4	6		1	2			2		
446	306104	21-02-20	Cox's bazar	Jalalabad	Miaji para w-4	16	92.04311	21.55734		3	1	yes drinking / cookir	private	5	2019	Nuru shofa	01882207674	Nahar begum	20	900	870	30	2	0.020	20	6		1	2			2		
447	306511	21-02-20	Cox's bazar	Jalalabad	Bahar chara w-6	9	92.02752	21.54824		3	3	source of pipe tank	private		1997	Saber ahmed	01817225055	Saber ahmed	5	700	630	70	2	0.004	4	5		1	2			2		
448	306103	21-02-20	Cox's bazar	Jalalabad	Lorabad purbo	15	92.03762	21.55579	1		1	no	private	1	2015	Ayub ali	01644258164	Ayub ali	8	80	70	10	2	0.040	40	4		1	2				3	
449	306106	21-02-20	Cox's bazar	Jalalabad	Lora bad w-3	8	92.05206	21.55182		3	1	no	private	6	2005	Jubayer haq	01817248121	Jubayer haq	10	700	680	20	2	0.040	40	4		1	2			2		
450	306212	23-02-20	Cox's bazar	Jalalabad	Lorabad purbo	7	92.04429	21.55339		3	1	yes, to tank	private	7	2000	Badrul islam	01865056858	Badrul islam	3	850	830	20	3	0.080	80	4		1	2			2		
451	306514	21-2-20	Cox's bazar	Jalalabad	Moddom Bahar char	1	92.03232	21.54263		3	3	source of pipe to tar	Roshidah Madrasha Management			Madrasha Comittee	01830175361	Nurul Hosen	400	1000	900	100	2	0.013	13	4		1	1			2		
452	306610	23-02-20	Cox's bazar	Jalalabad	Purbo lara bag w-2	30	92.05173	21.55208		4	3	source of channal to	private		1952	Abu Taher	01834339044	Abu Taher	1	220	190	30	2	0.020	20	4	55			3		2		
453	306516	21-02-20	Cox's bazar	Jalalabad	Dokkhin lorabag w-3	9	92.04647	21.55237		3	3	source of pipe to tar	private	1	2001	Shaalam	01868522237	Asma	25	750	690	60	2	0.012	12	3.5		1	2			2		
454	311705	04-03-20	Cox's bazar	Jhilangza	Bangla bazar w-6	10	92.03564	21.42937		3	3	tank	private	5	2015	Shahidul Haq	01818000666	Shahidul Haq	300	280	250	30	2	0.030	30	10		1	2			2		
455	311318	18-02-20	Cox's bazar	Jhilangza	Korulia bazar w-9	10	92.06033	21.42752		3	1	no	DPHE	12	2001	Bazar Commity	01813258202	Jashim uddin	1000	450	420	30	2	0.030	30	8		1	2			2		
456	311806	04-03-20	Cox's bazar	Jhilangza	Moktarkul w-6	9	92.04187	21.42706		3	1	no	private	10	2012	Abdul Sabur	01842370019	Abdul Sabur	16	220	200	20	2	0.020	20	8		1	2			2		
457	311808	04-03-20	Cox's bazar	Jhilangza	Mohoripara w-4	23	92.02354	21.4245		3	3	Tank	private	6	2007	Monowar bari	01680598777	Sakib	6	230	200	30	2	0.035	35	8		1	2			2		
458	311707	04-03-20	Cox's bazar	Jhilangza	Konor para	8	92.02992	21.42170		3	3	Tank	Private	11	2019	Mainuddin	01717025920	Mainuddin	60	500	450	50	2	0.040	40	6		1	2			2		
459	311212	18-02-20	Cox's bazar	Jhilangza	Janargona Sorkari college	5.24	92.0105	21.442663		4	3	No	private	6	2010	Nuru	01628228993	Nuru	3	330	310	20	6	0.080	80	6	80			3		2		
460	311102	18-02-20	Cox's bazar	Jhilangza	West Jilonga	15	92.002401	21.49176	2		3	No	BADC	1	2002	BADC	01840506951	Abdur Rashid	100	160	140	20	4	0.035	35	6	120			3			3	
461	311408	18-02-20	Cox's bazar	Jhilangza	Makbul showdor para w-7	14	92.05205	21.42943		3	1	No	private	4	2013	Abdul Munnaf	01883827616	Abdul Munnaf	10	370	340	30	2	0.011	11	5		1	2			2		
462	311403	18-2-20	Cox's bazar	Jhilangza	Hajir para w-2	10	92.01209	21.42562		3	1	no	DPHE	5	2012	Kashem Ali	01732026299	Kashem Ali	l student scho	320	300	20	2	0.020	20	5		1	2			2		
463	311214	18-02-20	Cox's bazar	Jhilangza	Sorkari college gate	12	92.01763	21.42464		4	3	no	private	4	2010	Abdul Gafur	01830977631	Abdul Gafur	3	320	310	10	6	0.090	90	5	80			3		2		
464	311113	18-02-20	Cox's bazar	Jhilangza	Janargona	7	92.0145	21.42684		4	3	No	private	1	2010	Nurul islam	01867168847	Nurul islam	5	330	300	30	6	0.065	65	5	80			3		2		
465	311309	18-02-20	Cox's bazar	Jhilangza	Ghalfarpara w-8	10	92.05933	21.42722		3	1	no	private	3	2017	Salim ullah	01813707062	Salim ullah	12	450	420	30	2	0.015	15	4		1	2				3	
466	311407	18-02-20	Cox's bazar	Jhilangza	7 no word, khorulia para	4	92.05069	21.42743		3	1	no	private	2	2000	Badsha mia	01839423284	Sayed karim	20	370	340	30	2	0.012	12	4		1	2			2		
467	311310	18-02-20	Cox's bazar	Jhilangza	East Mukterkul w-7	14	92.04461	21.4291		3	1	no	private	9	2018	Junayet uddin	01813215233	Mofiz alam	50	840	820	20	3	0.015	15	4		1	2			2		
468	311311	18-02-20	Cox's bazar	Jhilangza	Mokterkul Jame mosjid w-7	15	92.04443	21.42955		3	1	no	DPHE	6	2013	Mokterkul jame mosjid	01812340140	Azizul haq	40	350	340	10	2	0.020	20	3		1	2			2		
469	311406	18-02-20	Cox's bazar	Jhilangza	8 no word chairman para	10	92.05469	21.42544		4	3	no	private	10	2016	Abdul Haque	0186092434	Mamun	50	500	450	50	4	0.025	25	3	120			3		2		
470	311115	18-02-20	Cox's bazar	Jhilangza	Mohuri para link road	5.06	91.97066	21.55054		3	3	yes to tank	private	7	2019	Julkar	01819063108	Julkar	500	450	430	20	3	0.070	70	2		1	2				3	
471	311117	18-02-20	Cox's bazar	Jhilangza	Muhuripara Link road	6	92.02600	21.52971		3	3	yes to tank Drinking	Private	2	2019	Anam Md. Tutul	01852753638	Anam Md. Tutul	60	390	345	45	3	0.120	120	3		1	2				3	
472	311305	18-02-20	Cox's bazar	Jhilangza	Upazila Jilongza	13	92.006635	21.427319		3	3	yes to tank	private	6	2018	Wazed ali	01819082642	Wazed ali	20	380	360	20	4	0.040	40	3		1	2			2		
473	311004	18-2-20	Cox's bazar	Jhilangza	Hajir para w-2	8	91.011660	21.427036		3	3	yes to tank	private	1	2020	Anu Badsha	01878334764	Anu Badsha	4	450	380	70	4	0.035	35	3		1	2			2		
474	311201	18-02-20	Cox's bazar	Jhilangza	West jilongza	14	92.00645	21.428283	1		3	no	private	3	2005	Mahbubul Alam	01812368884	Mahbubul Alam	6	120	110	10	4	0.020	20	3		1				2		
475	311216	18-02-20	Cox's bazar	Jhilangza	Mohuri para merin city market	5	91.97039	21.442922		3	3	Yes to tank	private	2	2014	SM Rafiq	01827041033	SM Rafiq	6	450	410	40	2	0.070	70	3		1	2			2		
476	310707	20-02-20	Cox's bazar	Khurushkul	Pacher gona	4	91.99767	21.49151		3	3	Tank	private	12	2018	Sohidul islam	01837767136	Sohidul islam	5	230	200	30	2	0.025	25	20		1	2			2		
477	310712	20-02-20	Cox's bazar	Khurushkul	Gona para	2	91.98564	21.47204		4	3	No	Private		2010	Monsur Alam	0184473586	Monsur Alam	20	260	220	40	4	0.025	25	16	120			3		2		
478	310606	20-02-20	Cox's bazar	Khurushkul	Middel Deu para	8	91.99722	21.48594		3	3	Tank	Private	6	2016	Foridul Alam	01858722758	Foridul Alam	13	350	280	70	4	0.100	100	15		1	2			2		

Annex 2.2-1 Inventory of Existing Wells

SL#	Interpretation of Questionnaire number (x-xx-x-xx=Upazila code-Union code-Data collector Code-Ques#)	A. Location				Elevation in m (GPS)	B. GPS Coordinate		3.1 Type of Survey [Shallow Tube Well	3.2 Type of Survey [Deep Tube Well (DTW)]			3.4 Founder name of the well (such as DPHE,BADC, Water aid, BRAC,Private, Others)	3.5 Date of Installation						3.10 Structure of the well								3.13 Usage of groundwater				Water Quality		
		Date	Upazila	Union	Village/ Land marks		2.1 Longitude	2.2 Latitude	1= Domestic 2= Irrigation	3= Domestic 4= Irrigation	3.3 Type of well	3.3.1 Source of piped scheme		Month	Year	3.6 Owner Name	3.7 Telephone number:	3.8 Handler of the well	3.9 Number of user (well)	Depth of the well (ft)	Location of screen (ft)	Length of Screen(ft)	Diameter of casing pipe (inch)	Pumping rate ($M^{3/minute}$)	Pumping rate L/minute)	3.12 Pumping hours (per day)	3.13 Yearly Pumping days(only for	1=Drinking/ cooking	2=Washing	3=Irrigation	4=Others (nursing etc.)	1=Salinity 2=Sweet	3=Presence of Iron	4=Others (sand etc.)
479	310613	20-02-20	Cox's bazar	Khurushkul	Gogir did	3	91.98634	21.47057		4	3	no	private	3	2000	Shofiul alam	01814473586	Monsur alam	3	230	200	30	5	0.025	25	15	120			3		2		
480	310702	20-02-20	Cox's bazar	Khurushkul	Janapara	6	91.98567	21.47449	2		3	no	private	3	2000	Sayed Ahmed	01842523966	Sayed Ahmed	40	100	60	40	4	0.200	200	15	120			3		2		
481	310901	20-2-20	Cox's bazar	Khurushkul	Janapara	2	91.98602	21.47431	1		3	Source of the tank	private	6	2012	Abdul Sukkur	01811362383	Abdul Sukkur	6	95	85	10	1.5	0.030	30	13		1	2			1		
482	310903	20-2-20	Cox's bazar	Khurushkul	Khurushkul high school	7	91.99419	21.47752		3	3	Tank	BRAC	12	2019	Nazimuddin	01819019024	Nazimuddin	954	280	250	30	4	0.067	67	13		1	2			2		
483	310322	15-Mar-20	Cox's bazar	Khurushkul	Mono para w-8	5	91.98095	21.46806		4	3	No	Private	12	2018	Imtias	01812009639	Imtias	5	280	200	80	2	0.070	70	13	120			3		2		
484	310723	15-Mar-20	Cox's bazar	Khurushkul	Pal para w-4	8	91.99557	21.47676		4	3	No	Private	5	2015	Habibullah	01818176851	Habibullah	8	220	180	40	3	0.090	90	12	66			3		2		
485	310719	15-Mar-20	Cox's bazar	Khurushkul	Bashir para w-5	4	91.98588	21.47931	2		3	No	Private	11	2010	Abdul Karim	01639732284	Abdul Karim	2	130	90	40	3	0.100	100	12	100			3		2		
486	310721	15-Mar-20	Cox's bazar	Khurushkul	Hatkula para w-5	8	91.98494	21.47691		4	3	No	Private	11	2000	Rafiq	01843655802	Rafiq	10	250	200	50	4	0.090	90	12	120			3		2		
487	310703	20-02-20	Cox's bazar	Khurushkul	Notun gono para w-2	9	91.99419	21.47752		4	3	No	private	1	2012	Jahid uddin member	01859621295	Jahid uddin member	13	280	220	60	3	0.070	70	12	120			3		2		
488	310324	15-Mar-20	Cox's bazar	Khurushkul	Tatoya w-1	14	92.00352	21.48349		4	3	No	Private	5	2011	Ridwan	01861071957	Ridwan	5	400	320	80	4	0.120	120	12	120			3		2		
489	310802	04-03-20	Cox's bazar	Khurushkul	Purbo Totiya w-1	8	91.99982	21.48329		4	3	No	private		2000	Jamal hossain	01851053517	Jamal hossain	20	300	210	90	4	0.060	60	10	90			3		1		
490	310320	15-Mar-20	Cox's bazar	Khurushkul	Bassher para w-5	3	91.98601	21.47799	2		3	No	Private	6	2015	Kabir	01815153880	Kabir	33	180	150	30	4	0.150	150	10	90			3		2		
491	310609	20-02-20	Cox's bazar	Khurushkul	Meddel dail para	3	91.99664	21.49073		4	3	no	Private	10	2015	N/A	01632522208	N/A	25	300	270	30	4	0.120	120	10	120			3		2		
492	310725	15-Mar-20	Cox's bazar	Khurushkul	Sikder para w-2	14	92.00706	21.48727	2		3	No	Private	11	2010	Abdul Malek	01883167316	Abdul Malek	5	130	70	60	4	0.090	90	9	120			3		2		
493	310715	20-02-20	Cox's bazar	Khurushkul	Mamun para	10	91.98727	21.47484		3	1	No	Union porishad	4	2019	Jasim uddin		jasim	Public	160	130	30	2	0.010	10	8		1	2			2		
494	310326	15-Mar-20	Cox's bazar	Khurushkul	Patna bazer para w-1	13	92.00982	21.4856	2		3	No	Private	6	2011	Bada mia	01811362385	Bada mia	4	150	100	50	3	0.090	90	8	120			3		2		
495	310610	20-02-20	Cox's bazar	Khurushkul	Rastar para	6	91.99621	21.49476		4	3	no	private		1990	Hamidul haq		Hamidul haq	10	250	200	50	4	0.060	60	7	120			3		2		
496	310701	20-02-20	Cox's bazar	Khurushkul	Dokkin Kaliya para w-9	10	91.98602	21.47431		3	3	No	private	2	2020	Jafor alam	01870023168	Jafor alam	12	270	190	80	1.5	0.035	35	5		1	2			2		
497	310804	04-03-20	Cox's bazar	Khurushkul	Pathna baperpar w-1	4	92.01292	21.49051		3	1	No	private	10	2015	Kamal uddin	01883581758	N/A	20	210	180	30	1.5	0.013	13	5		1	2			2		
498	310611	20-02-20	Cox's bazar	Khurushkul	Gano para	7	91.98489	21.47203		3	3	No	Private	6	2019	Sanaullah	01817249732	Sanaullah	10	280	240	40	4	0.032	32	4		1	2			2		
499	310717	20-02-20	Cox's bazar	Khurushkul	Konar para Mosjid	11	91.99134	21.47199		3	3	Tank	Private	5	2018	Aziz	01887993330	Aziz	200	260	240	20	3	0.025	25	4		1	2			2		
500	310716	20-02-20	Cox's bazar	Khurushkul	Palpara bazar	9	91.99208	21.47238		3	3	Tank	Private	5	2019	Jisan	0187077690	Jisan	200	220	200	20	1	0.038	38	4		1	2			2		
501	310605	20-02-20	Cox's bazar	Khurushkul	Jol Shiri Asrom Prokolro	23	91.99932	21.47198		3	3	No	Private	1	2020	Bokther	01853974517	Bokther	10	250	230	20	4	0.040	40	2		1	2			2		
502	310604	20-02-20	Cox's bazar	Khurushkul	Jolshiri Asrom prokolpo	20	91.99897	21.47198		3	3	source of pipe to tar	others	9	2019	Nurul Alam	01814185018	Nurul Alam	10	250	220	30	4	0.040	40	2		1	2			2		
503	310708	20-02-20	Cox's bazar	Khurushkul	North Mamun para	11	91.98872	21.47369		3	3	No	private	3	2015	Towhidul islam	01846528584	Towhidul islam	5	280	250	30	1.5	0.025	25	3		1	2			2		
504	310614	20-02-20	Cox's bazar	Khurushkul	Hatkula para	4	91.98249	21.4839		3	3	Tank	private	2	2016	Nurul huda	01715879087	Nurul huda	6	270	240	30	2	0.030	30	3		1	2			2		
505	309721	16-Mar-20	Cox's bazar	Patali Machuakhali	Katalia para w-9	9	92.04213	21.4631		4	3	No	Private	11	2007	Md. Kalu	01873219460	Md. Kalu	10	250	200	50	4	0.100	100	19	120			3		2		
506	309501	4-3-2020	Cox's bazar	Patali Machuakhali	ward no-3	77	92.18874	21.47458		4	3	No	Private	6	2008	Amir Hamza	01838051219	Amir Hamza	2	250	220	30	4	0.080	80	16	180			3		2		
507	309735	16-Mar-20	Cox's bazar	Patali Machuakhali	Totukhali w-3	12	92.02722	21.48515		4	3	No	Private	6	1990	Amanul	01844875831	Amanul	10	320	260	60	2	0.088	88	15	90			3		2		
508	309322	16-Mar-20	Cox's bazar	Patali Machuakhali	Katali Mor w-9	16	92.04321	21.46441		4	3	No	Private		2000	Salim ullah	01813241052	Salim ullah	10	280	210	70	4	0.130	130	15	120			3		2		
509	309320	16-Mar-20	Cox's bazar	Patali Machuakhali	Katalia para w-9	6	92.04361	21.46246		4	3	No	Private	12	2009	Kalu Mia	01873219460	Kalu Mia	8	350	250	100	1	0.150	150	15	120			3		2		
510	309304	04-03-20	Cox's bazar	Patali Machuakhali	Tahergona w-3	4	92.02576	21.48439		4	3	No	Private	7	2005	Altaf mia	01831905702	Altaf mia	2	300	270	30	4	0.070	70	14	180			3		2		
511	309407	04-03-20	Cox's bazar	Patali Machuakhali	Chonglaula bazarw-1	7	92.00844	21.45121		3	1	No	Private	7	2010	Khorshed	01829004193	Khorshed	30	280	250	30	2	0.040	40	12		1	2			2		
512	309222	12-3-20	Cox's bazar	Patali Machuakhali	Porania para w-4	14	92.03135	21.45183		4	3	no	Private	6	2014	Kalu mia	01875809844	Kamal	10 F 20 H	250	200	50	2	0.200	200	12	120			3			3	
513	309723	16-Mar-20	Cox's bazar	Patali Machuakhali	Nur Mohammad Bazar w-9	7	92.04916	21.4603		4	3	No	Private	5	2015	Farhad Chy	01818165928	Farhad Chy	5	420	350	70	2	0.110	110	12	120			3		2		
514	309306	04-03-20	Cox's bazar	Patali Machuakhali	Mali para w-2	15	92.01849	21.45247		3	1	No	Private	6	2007	Arif Ahmed	01831702520	Arif Ahmed	15	240	210	30	2	0.035	35	10		1	2			2		
515	309308	4-3-20	Cox's bazar	Patali Machuakhali	ward -1	9	92.00104	21.45349		3	1	no	Private	5	2003	Ruhul Amin	01914704619	Ruhul Amin	18	350	320	30	2	0.040	40	10		1	2			2		
516	309302	04-03-20	Cox's bazar	Patali Machuakhali	PM Khali w-9	2	92.04990	21.45867		3	1	no	DPHE	4	2000	Abdul Karim	01837014245	Abdul Karim	25	700	640	60	2	0.050	50	10		1	2			2		
517	309731	16-Mar-20	Cox's bazar	Patali Machuakhali	Purbo paraniyer para w-3	2	92.03363	21.45464		4	3	No	Private	11	2010	Kalia miya		Kalia miya	5	350	280	70	3	0.120	120	10	60			3		2		
518	309620	12-3-20	Cox's bazar	Patali Machuakhali	Poraniya	15	92.03480	21.45614	2		3	source of channel	private	4	2015	Haji md. Shahidullah	01817757526	Haji md. Shahidullah	8	130	100	30	4	0.070	70	10	105			3		2		
519	309519	12-3-20	Cox's bazar	Patali Machuakhali	Poraniya	15	92.03414	21.45343	2		3	source of channel	private	2	2019	Hamidur Rahman	0182600902	Hamidur Rahman	10	100	80	20	2	0.045	45	10	110			3		2		
520	309719	16-Mar-20	Cox's bazar	Patali Machuakhali	Kataliamora w-9	6	92.04255	21.45979		4	3	No	Private	11	2008	Sayted Alam	01840501536	Sayted Alam	10	250	200	50	4	0.120	120	10	120			3		2		
521	309729	16-Mar-20	Cox's bazar	Patali Machuakhali	Chowdhury para	6	92.04705	21.45863		4	3	No	Private	6	2015	Abdul Karim	01309736482	Abdul Karim	5	350	280	70	3	0.088	88	10	120			3		2		
522	309324	16-Mar-20	Cox's bazar	Patali Machuakhali	Gonar para w-8	12	92.04919	21.4646		4	3	No	Private	6	2012	Aisqullah	01816329518	Aisqullah	5	280	200	80	3	0.120	120	10	120			3		2		
523	309326	16-Mar-20	Cox's bazar	Patali Machuakhali	Donkhali w-8	8	92.053	21.46773		4	3	No	Private	6	2015	Aziz Khan	01831702520	Aziz Khan	5	450	300	150	4	0.140	140	10	120			3		2		
524	309332	16-Mar-20	Cox's bazar	Patali Machuakhali	Majar para w-3	4	92.03218	21.47725		4	3	No	Private		2020	Taher Mahmud	01825064567	Taher Mahmud	8	293	200	93	3	0.130	130	10	120			3		2		
525	309334	16-Mar-20	Cox's bazar	Patali Machuakhali	Caya para w-1	6	92.03246	21.48156		4	3	No	Private	6	2012	Shahalam	01812341805	Shahalam	8	800	670	130	4	0.150	150	9	90			3		2		
526	309733	16-Mar-20	Cox's bazar	Patali Machuakhali	Taher Mahmud Gona w-3	7	92.03437	21.47817		4	2	No	Private	6	2012	Ali Akbar	01811362383	Ali Akbar	5	320	250	70	4	0.100	100	9	120			3		2		
527	309725	16-Mar-20	Cox's bazar	Patali Machuakhali	Gonar para w-2	8	92.04959	21.4669		4	3	No	Private			Joined uddin	01835244242	Joined uddin	8	400	300	100	3	0.130	130	8	66			3		2		
528	309321	12-3-20	Cox's bazar	Patali Machuakhali	Porania para w-4	8	92.03036	21.45277	2		3	no	private	12	2017	Ayub khan	01819906078	Ayub khan	farmar 9 hach	120	90	30	2	0.070	70	8	90			3		2		
529	309328	16-Mar-20	Cox's bazar	Patali Machuakhali	Mosiniy para w-7	8	92.05355	21.45952		4	3	No	Private	2	2017	Lablu Joynal	01812611508	Lablu Joynal	5	720	600	120	4	0.100	100	8	120			3		2		
530	309727	16-Mar-20	Cox's bazar	Patali Machuakhali	Macayakhali	10	92.05399	21.4635		4	3	No	Private	2	2012	Nur Siker	01312329259	Nur Siker	5	500	400	100	2	0.090	90	8	120			3		2		
531	309330	16-Mar-20	Cox's bazar	Patali Machuakhali	Parania para w-4	5	92.03105	21.45553		4	3	No	Private	12	2008	Tasin Ahmed	01876326524	Tasin Ahmed	5	400	300	100	4	0.100	100	8	120			3		2		
532	309323	12-3-20	Cox's bazar	Patali Machuakhali	Poschim porania w-4	10	92.03030	21.45359		4	3	No	Private	7	2015	Abdul Malek	01825157997	Aziz	2 F 5 Ha	210	160	50	2	0.090	90	7	77			3			3	
533	309401	20-02-20	Cox's bazar	Patali Machuakhali	Chango bazar	7	92.03410	21.44969	2		3	no	private	10	1990	Nur islam	01812808566	Nur islam	4	100	80	20	4	0.060	60	6	120			3		1		
534	309309	20-02-20	Cox's bazar	Patali Machuakhali	2 no word	12	92.03521	21.44489		3	1	No	private	8	2016	Abdul Mazed	01638752210	Abdul Mazed	30	220	190	30	2	0.018	18	5		1	2			2		
535	309408	20-02-20	Cox's bazar	Patali Machuakhali	4 no ward bazar	8	92.03510	21.44666		3	1	no	private	4	2019	Prodip	01882424172	Prodip	300	200	170	30	2	0.015	15	5		1	2			2		
536	309316	20-02-20	Cox's bazar	Patali Machuakhali	Patali muchkali w-5	13	92.03362	21.43613		4	3	No	Private	7	2011	Hakim ali	01843874373	Mansur	30	400	340	60	4	0.040	40	5	130			3			3	
537	309305	20-02-20	Cox's bazar	Patali Machuakhali	Saibai para Kutublkhali w-3	8	92.03536	21.44331		4	3	no	private	8	1995	Abdul Halim	01879489494	Abdul Halim	7	350	330	20	4	0.040	40	5	150			3		1		
538	309314	20-02-20	Cox's bazar	Patali Machuakhali	Uttor para w-5	8	92.04361	21.3461		3	3	No	Private	7	1995	Hosen	01839649696	Shahbuddin	30	300	270	30	4	0.035	35	4		1	2				3	
539	309307	20-02-20	Cox's bazar	Patali Machuakhali	Jumehori w-4	10	92.03176	21.44793		3	1	no	Isrx foundation	6	2014	PM Khali madrasha	01813590592	Amanul haq	450	330	300	30	1.5	0.012	12	4		1	2				3	
540	309312	20-02-20	Cox's bazar	Patali Machuakhali	4 no word	14	92.03483	21.44061		3	1	no	Private	3	2018	Rahmat ali	01831584224	Rahmat ali	13	380	350	30	3	0.020	20	4		1	2			2		
541	309413	20-02-20	Cox's bazar	Patali Machuakhali	Patalia mochuakhali w-5	12	92.34436	21.44015		3	1	No	Private	4	2010	Nur	01814519295	Nur	15	390	360	30	3	0.025	25	4		1	2			2		
542	309303	20-02-20	Cox's bazar	Patali Machuakhali	Patali machuakhlia w-3	11	92.03146	21.48574		4	3	no	private	6	2009	Amir hamza	01850142444	Amir hamza	8	320	290	30	4	0.070	70	4	120			3		2		
543	309406	20-02-20	Cox's bazar	Patali Machuakhali	Noya para	9	92.03147	21.48673		4	3	no	private	7	1990	Late Malukuzzaman	01817770198	Rezaul karim	4	380	350	30	4	0.070	70	4	150			3		1		
544	309402	20-02-20	Cox's bazar	Patali Machuakhali	Tutukhali w-3	12	92.03092	21.48395	1		3	yes to tank	Sahah Foundation	2	2016	Soibai para jeme mosjid	01819672255	Josim uddin	600	100	70	30	4	0.030	30	3		2					3	
545	309403	04-03-20	Cox's bazar	Patali Machuakhali	Maizpara w-9	7	92.04368	21.45213		3	3	No	Private	7	2009	Raza mia	01818849751	Raza mia	15	240	210	30	4	0.050	50	3		1	2			2		
546	309405	04-03-20	Cox's bazar	Patali Machuakhali	Koronia para w-4	14	92.02949	21.46397		3	3	no	private	5	2013	Kasem	01727448831	Kasem	22	280	250	30	4	0.060	60	3		1	2			2		
547	309404	20-02-20	Cox's bazar	Patali Machuakhali	Tututkhali w-3	15	92.03118	21.48475		3	3	no	private	7	2014	Azizur Rahman	01819565044	Azizur Rahman	100	350	320	30	4	0.030	30	2		1	2			2		
548	309415	20-02-20	Cox's bazar	Patali Machuakhali	Kelar para Jame Mosjid	11	92.03381	21.4383		3	3	Yes to tank	Fayezullah fund	1	2017	Mosjid	01811821529	Ayub Ali	80	280	250	30	4	0.025	25	2		1	2			2		
549	303101	21-02-20	Cox's bazar	Pokkhali	Paschaim pokhkahalima mura	7	92.00717	21.53901		4	3	no	private	1	1990	Abdullah	01814330957	Abdullah	5	730	690	40	3	0.100	100	24	90	1	2	3		2		
550	303102	21-02-20	Cox's bazar	Pokkhali	Uttar Nalkondia	3	92.01776	21.54552		4	3	No	Private	4	1995	Alam	01815111338	Alam	7	800	780	20	3	0.090	90	24	120	1	2	3		2		
551	307501	21-2-20	Cox's bazar	Pokkhali	uttor porchim bil	10	92.00771	21.55541		4	3	Source of channel t	private	1	2002	Jakaria	01812996101	Kashem	32	600	540	60	4	0.160	160	20	105			3		2		
552	303507	20-02-20	Cox's bazar	Pokkhali	Solebon para	36	92.01239	21.5498		3	1	source of pipe to tar	Mosjid Comittee		2015	Mosjid Comittee	01846432419	Mosjid Comittee	25	900	820	80	2	0.030	30	11			2			2		
553	303810	20-02-20	Cox's bazar	Pokkhali	Moddom Pokkhali uttor para	4	92.02111	21.55358		4	3	source of channal to	private	2	2019	Shofiqul alam	01644205612	Shofiqul alam	12	680	600	80	6	0.130	130	8	110			3		2		
554	303509	20-02-20	Cox's bazar	Pokkhali	Uttor para	6	92.01890	21.55428		4	3	source of channal to	private	2	2010	Nobi alam	01817675676	Nobi alam	3	900	820	80	1.6	0.002	2	7	115			3		2		
555	303503	20-02-20	Cox's bazar	Pokkhali	Mamura para	3	92.01184	21.54712		3	1	source of pot	n/A	6	2018	Azizur Rahman	01814321348	Azizur Rahman	8	800	740	60	2	0.014	14	3		1	2			2		
556	303804	20-02-20	Cox's bazar	Pokkhali	Purbo mazar para	3	92.01467	21.54814		3	1	source of pot	private		2012	Abdul Mojid	01640748470	Shamsul	20	750	690	60	2	0.013	13	2		1	2			2		
557	303806	20-02-20	Cox's bazar	Pokkhali	West Pokkhali	6	92.01283	21.54814		3	1	source of pipe	private		2010	Ismail	01851824589	Ismail	30	800	720	80	2	0.014	14	2		1	2			2		
558	303812	20-02-20	Cox's bazar	Pokkhali	Moddom pokkhal Jamian Azizu	9	91.02573	21.55130		3	1	source of pipe to tar	Madrasha managing commite		2015	Madrasha managing co	01815153265	Madrasha managing	300	840	810	30	2	0.033	33	2		1	2			2		
559	303505	20-02-20	Cox's bazar	Pokkhali	Majarpara	6	92.01524	21.54919		3	3	source of pipe to tar	private	7	2014	Monjur Alam	01887021069	Monjur Alam	20	725	665	60	2	0.033	33	3.3		1	2			2		
560	303511	20-02-20	Cox's bazar	Pokkhali	Komolapara	3	92.02321	21.55018		3	1	source of pipe to tar	private		2007	Hafiz abu bakkar	01876885912	Hafiz abu bakkar	750	850	810	40	1.5	0.035	35	3.3		1	2			2		
561	303501	21-02-20	Cox's bazar	Pokkhali	Mamra para	3	92.00771	21.55541		3	3	source of pipe	n/A	4	2012	Nace haque	01866357656	Akter	22	900	840	60	2.5	0.034	34	3		1	2			2		
562	303808	20-02-20	Cox's bazar	Pokkhali	Porchim Pokkhali	2	92.01475	21.55226		3	1	source of pipe to tar	private		2013	Bojlur Rahman	01813386555	Bojlur Rahman	14	700	640	60	2	0.035	35	3		1	2			2		
563	303802	20-02-20	Cox's bazar	Pokkhali	Mamur para	5	92.01061	21.54664		3	3	source of pot	private	4	2013	Johirul Haque	01814330956	Johirul Haque	4	900	840	60	2	0.033	33	3		1	2			2		
564	301503	19-02-20	Cox's bazar	Pourasava	Notun Kobita House	14	91.37623	21.44156	1		3	Source of pipe to ta	Private		2014	Shahanewaj Ahmed	01712174692	Rahmat ullah	30	220	190	30	4	0.033	33	14		1	2			2		
565	301802	19-02-20	Cox's bazar	Pourasava	Kazi office road Tek para	12	91.98305	21.44298	1		3	source of pipe to tar	private	10	2019	Iftakher alam	01846769344	Iftakher alam	20	80	60	20	4	0.050	50	13		1	2			2		
566	301511	19-02-20	Cox's bazar	Pourasava	Koroskol Road, uttar Tarabonia	5	91.98881	21.44363		3	3	Source of pipe to ta	Private	4	2017	Abdul Wahab	01712866811	Abdul Wahab	25	280	250	30	6	0.033	33	9		1	2			2		
567	301607	19-02-20	Cox's bazar	Pourasava	C-food Corner Resturant	5	91.97963	21.42634		3	3	source of pipe to tar	private	1	2019	akhter hossain	01712700700	akhter hossain	500	370	340	30	3	0.010	10	9		1	2			2		
568	301604	19-02-20	Cox's bazar	Pourasava	Baitus saraf Jabbar academi	15	91.97694	21.43957		3	3	source of pipe to tar	private	6	2015	Soyed karim	01819321833	Soyed karim	500	385	370	15	4	0.111	111	9		1	2			2		
569	301813	19-02-20	Cox's bazar	Pourasava	Khurskol Rasta matha	8	91.97827	21.44304		3	3	Source of pipe to ta	Private		2018	Dr. Harun ur Rashid	01866133324	Ramiz uddin	15	370	340	30	2	0.037	37	8		1	2		4	2		
570	301609	19-02-20	Cox's bazar	Pourasava	Niribili Resturant Bahar Cora	12	91.97363	21.44341		3	3	Source of pipe to ta	Private		2017	Sujon Borua	01878085015	Sujon Borua	500	380	350	30	4	0.033	33	8		1	2			2		
571	301721	14-Mar-20	Cox's bazar	Pourasava	Poti School	15	91.99055	21.43851		3	3	Tank	Private	11	2020	Salman	01632196098	Salman	10	400	330	70	2	0.035	35	6		1	2			2		
572	301512	19-02-20	Cox's bazar	Pourasava	Modda Baharchar	9	91.97208	21.4407		3	3	Source of pipe to ta	Private	5	2013	Abid Ahsan	01711081610	Mojibur Rahman	80	700	680	20	6	0.027	27	6		1	2			2		
573	301605	19-02-20	Cox's bazar	Pourasava	Thanar pgcha road	11	91.97447	21.44545	1		3	source of pipe to tar	Haji Sala monjil		1990	Abdul Karim	01819611618	Abdul Karim	50	70	60	10	4	0.004	4	5		1	2			2		
574	301708	19-02-20	Cox's bazar	Pourasava	Hotel Nishita Resturant	9	91.97595	21.44526		3	3	source of the pipe to	private	12	2019	hazi shirajul hauqe	01819102433	Razaul kabir	100	400	360	40	4	0.060	60	4		1	2			2		

Annex 2.2-1 Inventory of Existing Wells

SL#	Interpretation of Questionnaire number (x-xx-x-xx=Upazila code-Union code-Data collector Code-Ques#)	A. Location: Date	Upazila	Union	Village/ Land marks	Elevation in m (GPS)	B. GPS Coordinate: 2.1 Longitude	2.2 Latitude	3.1 Type of Survey [Shallow Tube Well]: 1= Domestic 2= Irrigation	3.2 Type of Survey [Deep Tube Well (DTW)]: 3= Domestic 4= Irrigation	3.3 Type of well	3.3.1 Source of piped scheme	3.4 Founder name of the well (such as DPHE,BADC, Water aid, BRAC,Private, Others)	3.5 Date of Installation: Month	Year	3.6 Owner Name	3.7 Telephone number:	3.8 Handler of the well	3.9 Number of user (well)	3.10 Structure of the well: Depth of the well (ft)	Location of screen (ft)	Length of Screen(ft)	Diameter of casing pipe (inch)	Pumping rate ($M^{3/minute}$)	Pumping rate L/minute)	3.12 Pumping hours (per day)	3.13 Yearly Pumping days(only for	3.13 Usage of groundwater: 1=Drinking/ cooking	2=Washing	3=Irrigation	4=Others (nursing etc.)	Water Quality: 1=Salinity 2=Sweet	3=Presence of Iron	4=Others (sand etc.)
575	301501	19-02-20	Cox's bazar	Pourasava	Ghona para Tower	10	91.98025	21.43858		3	3	source of pipe to tar	private		2017	Nedip	01819084419	Nedip	50	280	250	30	6	0.017	17	4		1	2			2		
576	301719	14-Mar-20	Cox's bazar	Pourasava	Cox's Bazar city college	32	91.99531	21.4371		3	3	To Tank	Private	12	2012	Shanu akter	01911184944	Manik	500	270	230	40	2	0.090	90	4		1	2			2		
577	301610	19-02-20	Cox's bazar	Pourasava	Hoticultur Center	11	92.00419	21.42855	2		3		G- Agriculture	6	2019	Shamsul Alam	01855295601	Zakir	8	140	100	40	3	0.080	80	4	240			3		2		
578	301320	14-Mar-20	Cox's bazar	Pourasava	Boro Bill para w-6	7	91.99372	21.43346		3	3	To Tank	Private		2004	Samsul Alam	01882793397	Samsul Alam	20	380	290	90	2	0.100	100	3		1	2			2		
579	301514	19-02-20	Cox's bazar	Pourasava	Boyshakhi Restora	4	91.98924	31.40925		3	3	Source of pipe to ta	Private	9	2017	Boyshakhi Restora	01711117843	Kamrul	1500	400	370	30	2	0.083	83	2		1	2			2		
580	301815	19-02-20	Cox's bazar	Pourasava	Tak para, pahar tali road	12	91.98611	21.44031		3	3	source of pipe to tar	Private		2016	Fafiq	01816906898	Nazrul	10	330	300	30	4	0.020	20	3		1	2			2		
581	301706	19-02-20	Cox's bazar	Pourasava	Mohajar Para 0124	15	91.97696	21.43958	1		3	source of pipe to tar	private	11	2019	Nasir mohammad babo	00713645929	Joynal Abedin	12	700	670	30	4	0.025	25	3		1	2			2		
582	308706	22-02-20	Cox's bazar	Varuakhali	Sowdager para w-2	5	92.02552	21.49815	2		3	no	private	2	2006	Mahmudur Rahman	0181386948	Mahmudur Rahman	10	75	55	20	3	0.040	40	12	105			3		2		
583	308801	22-02-20	Cox's bazar	Varuakhali	Chomdupara w-5	11	92.04363	21.49942		3	1	no	DPHE		2016	Ali hosen sikder school	01824857435	Altaf hosen	320	900	860	40	3	0.015	15	10		1				2		
584	308807	22-02-20	Cox's bazar	Varuakhali	West para w-3	10	92.01937	21.50131		3	1	Tank	others	4	2019	Nargis akter	01839647390	Nargis akter	25	1000	970	30	1.5	0.020	20	7		1	2			2		
585	308710	22-2-20	Cox's bazar	Varuakhali	Cocola mora	4	92.03723	21.49959		3	3	no	private	6	2018	Khaled Hosen	01835614314	Khaled Hosen	40	880	840	40	3	0.040	40	6		1	2			2		
586	308708	22-02-20	Cox's bazar	Varuakhali	Possim para	9	92.01975	21.50199		4	3	No	Private		2000	Mir Kasem	01819785430	Mir Kasem	2	800	760	40	4	0.060	60	6	100			3		2		
587	308413	22-02-20	Cox's bazar	Varuakhali	Gonapara w-7	4	92.04907	21.49258		4	3	no	private	4	1992	Sayed ahmed	01817719756	Sayed ahmed	18	700	670	30	4	0.030	30	6	120			3		2		
588	308320	22-02-20	Cox's bazar	Varuakhali	Pokira kabar bazar	6	90.06408	21.48280		3	1	no	private	6	2011	Jamal uddin	01865119016	Jamal uddin	30	300	270	30	2	0.020	20	5		1	2			2		
589	308314	22-02-20	Cox's bazar	Varuakhali	Choto Chowdhury para w-8	9	92.05061	21.48742		3	3	yes tank	private	4	2015	Abdus Salam	01817244077	Abdus Salam	12	400	370	30	4	0.018	18	4		1	2			1		
590	308312	22-02-20	Cox's bazar	Varuakhali	Gunapara w-7	7	92.04867	21.49242		3	1	no	Private	4	2014	Monjur Alam	01823018902	Monjur Alam	22	320	80	240	2	0.025	25	4		1	2			1	3	
591	308316	22-02-20	Cox's bazar	Varuakhali	Boro Chowdhury para w-9	8	92.04816	21.48241		3	3	yes tank	private	8	2017	Sirajul haq	01840566163	Sirajul haq	25	450	420	30	3	0.050	50	4		1	2			2		
592	308704	22-02-20	Cox's bazar	Varuakhali	Sabak para w-1	0	92.02902	21.50209		3	1	No	others (MUP)	10	2019	Abdul Jalal	01825161721	Abdul Jalal	50	860	830	30	2	0.035	35	4		1	2			2		
593	308318	22-02-20	Cox's bazar	Varuakhali	Pokira bazar w-9	8	92.05260	21.47979		3	3	yes to tank	private	9	2014	Madrasha	01818042909	Raisul islam	500	400	350	50	2	0.025	25	3		1	2			2		
594	308417	22-02-20	Cox's bazar	Varuakhali	Brochu para	12	92.05006	21.47950		4	3	no	Private	7	2016	Ahmed Hosen	01815674962	Ahmed Hosen	12	750	710	40	4	0.080	80	3	120			3		2		
595	308415	22-02-20	Cox's bazar	Varuakhali	Boro Chowdury para w-9	6	92.04784	21.48535		4	3	no	private	5	1986	Nobob mia	01818893826	Nobob mia	6	850	820	30	4	0.200	200	3	120			3		2		
596	308809	22-02-20	Cox's bazar	Varuakhali	Dhokkin para	7	92.03040	21.49643		3	3	Tank	private	6	2016	Jane alam	01817617166	Jane alam	15	300	270	30	2	0.035	35	2		1	2			1		
597	308805	22-02-20	Cox's bazar	Varuakhali	Varuakhali Govt. primary schoo	16	92.03151	21.049987		3	3	tank	DPHE	3	2014	Mina Rani das	01717868745	Mina Rani das	250	800	760	40	2	0.030	30	2		1				2		
598	308419	22-02-20	Cox's bazar	Varuakhali	Purbo para, w-9	6	92.06186	21.48540		3	3	No	Private	10	2019	Firoz Mia	01874670425	Firoz Mia	30	350	320	30	3	0.020	20	2		1	2			2		
599	308803	22-02-20	Cox's bazar	Varuakhali	Baniya para w-4	7	92.03183	21.49657		4	3	No	Private	6	2018	Ali Ahmed	01789833358	Ali Ahmed	1	850	820	30	3	0.040	40	2	120			3		2		
600	308411	22-02-20	Cox's bazar	Varuakhali	Karim shikder para	6	92.04671	21.49080		4	3	no	private	6	2010	Litu mia	01815583151	Litu mia	10	600	520	80	4	0.060	60	2	120			3		2		
601	308310	22-02-20	Cox's bazar	Varuakhali	Hajir para w-6	7	92.04462	21.49717		3	3	yes to tank	private	6	2012	Najir ahmed	01829779684	Najir ahmed	50	930	890	40	4	0.100	100	3		1	2				3	
602	308702	22-02-20	Cox's bazar	Varuakhali	Baniya para w-4	12	92.03168	21.49672	1		3	Tank	Private	2	2010	Zakaria	01819336195	Zakaria	20	100	10	90	2	0.030	30	3		1	2			2		
603	202102	26-02-20	Moheshkhali	Bara Maheskhali	Fakirghata w-1	3	91.92062	21.55636		3	3	No	Private	7	2016	Afsar	01887025622	Afsar	15	220	180	40	4	0.120	120	24		1		3		2		
604	202103	26-02-20	Moheshkhali	Bara Maheskhali	Majordel w-2	16	91.93959	21.55012		4	3	Yes pipe house	Private	4	2004	Amanullah	01845197684	Amanullah	20	200	160	40	4	0.080	80	24	140	1		3		2		
605	202812	26-02-20	Moheshkhali	Bara Maheskhali	Debongapara w-4	36	91.95325	21.54308		4	3	No	Private		1988	Mostak Ahmed	01840508040	Mostak Ahmed	15	230	200	30	4	0.038	38	15	150			3		2		
606	202811	26-02-20	Moheshkhali	Bara Maheskhali	Dedanga pra w-5	34	91.94656	21.54125		4	3	No	Private		2017	Fazlul haq	01830110007	Fazlul haq	20	400	320	80	4	0.042	42	12	76			3		2		
607	202715	26-02-20	Moheshkhali	Bara Maheskhali	Porbo Fakira Gona w-8	10	91.94154	21.53212	2		3	No	Private		2000	Kabir Maya	01845196869	Kabir Maya	8	100	60	40	4	0.035	35	10	100			3		2		
608	202716	26-02-20	Moheshkhali	Bara Maheskhali	Dokkin Pokira gong w-8	9	91.93826	21.52970		4	3	No	Private		2004	Najir Hossen	01839691400	Najir Hossen	20	270	180	90	4	0.040	40	10	120			3		2		
609	202810	26-02-20	Moheshkhali	Bara Maheskhali	Nistalok para w-6	23	91.94532	21.53852	2		3	No	Private		2009	Abdus Sobbahan	01715486856	Abdus Sobbahan	5	150	120	30	4	0.031	31	10	130			3		2		
610	202101	26-02-20	Moheshkhali	Bara Maheskhali	Boro Dail Para w-1	10	91.93001	21.55378	1		1	No	Private	4	2000	Abdul Mahbub	01845198076	Abdul Mahbub	11	100	80	20	2	0.035	35	8		1	2			2		
611	202714	26-02-20	Moheshkhali	Bara Maheskhali	Jagir Gona w-7	0	91.95060	21.52608		3	3	Tank	Private	6	2010	Nasir	01813185703	Nasir	4	260	230	30	2	0.025	25	8		1	2			2		
612	202419	26-02-20	Moheshkhali	Bara Maheskhali	Boro Moheshkhali w-4	1	91.94287	21.53813		3	1	No	private	4	2015	Jaynal Abedin	01810201698	Pasa Ahmed	12	370	340	30	2	0.042	42	7		1	2			2		
613	202408	26-02-20	Moheshkhali	Bara Maheskhali	Debogro w-4	8	91.95090	21.54464		4	3	Yes water tank	DPHE	9	2004	Riazuddin	01836759102	Riazuddin	3	300	270	30	4	0.080	80	7	180			3		1		
614	202406	26-02-20	Moheshkhali	Bara Maheskhali	Uttor maizi w-3	16	91.93472	21.54312		3	1	No	private	7	2003	Faruk Ahmed	01828105571	Faruk Ahmed	17	340	310	30	2	0.042	42	6		1	2			2		
615	202405	26-02-20	Moheshkhali	Bara Maheskhali	Miazipara w-3	13	91.93620	21.53783		3	1	No	Private	8	2010	Siddique	01830999417	Siddique	18	500	470	30	2	0.040	40	6		1	2			2		
616	202407	26-02-20	Moheshkhali	Bara Maheskhali	Boro moheshkhali w-4	10	91.94814	21.54012		3	1	No	Private	3	2014	Jalal uddin	01853233817	Jalal uddin	14	410	380	30	2	0.053	53	5		1	2			2		
617	202713	26-02-20	Moheshkhali	Bara Maheskhali	Gagira gona govt. primary scho	8	91.94624	21.52908		3	3	Tank	DPHE	5	2015	Abdul Gafur	01718276907	Abdul Gafur	400	240	210	30	2	0.005	5	4		1	2			2		
618	202809	26-02-20	Moheshkhali	Bara Maheskhali	Moheshkhali Iceland school w-(	35	91.9436	21.53408		3	3	Tank	others		2019	Azizul Karim	01716397245	Azizul Karim	800	300	250	50	2	0.038	38	2		1				2		
619	209105	25-02-20	Moheshkhali	Chhoto Moheshkhali	Moddom siphahi w-2	7	91.95519	21.53960		4	3	No	Private	1	2008	Sahidullah Master	01816142876	Sahidullah Master	20	350	280	70	4	0.100	100	24	120			3		2		
620	209716	25-02-20	Moheshkhali	Chhoto Moheshkhali	Bonsi Mahacar para w-8	18	91.96574	21.52531		3	3	Tank	Private	6	2013	Manik dey	01819066868	Manik dey	6	250	220	30	2	0.035	35	13		1	2			2		
621	209712	25-02-20	Moheshkhali	Chhoto Moheshkhali	Asroon prokolpo w-6	11	91.96795	21.54333		3	3	No	Private	5	2017	Rasel	01817023728	Rasel	150	500	460	40	2	0.040	40	10		1	2			2		
622	209714	25-02-20	Moheshkhali	Chhoto Moheshkhali	Asraf Aligona w-5	16	91.96361	21.54080		4	3	No	Private		2010	Sirajul Mostafa	01863469744	Sirajul Mostafa	20	250	210	40	4	0.050	50	10	100			3		1		
623	209107	25-02-20	Moheshkhali	Chhoto Moheshkhali	Sipahipari w- 1	20	91.95325	21.54306		3	3	No	Private	7	2000	Rafiqul Islam	01849511924	Rafiqul Islam	18	350	320	30	4	0.060	60	8		1	2			2		
624	209408	25-02-20	Moheshkhali	Chhoto Moheshkhali	Chotomoheskali w- 1	10	91.95766	21.54524		4	3	No	Private	4	2008	Mahmuda khatun	01840504611	Mahmuda khatun	20	460	430	30	4	0.100	100	8	120			3		2		
625	209101	25-02-20	Moheshkhali	Chhoto Moheshkhali	Uttorkul w-4	13	92.96351	21.55379		3	1	No	Private	4	2019	Alam	01834639677	Alam	15	400	370	30	2	0.035	35	6		1	2			2		
626	209402	25-02-20	Moheshkhali	Chhoto Moheshkhali	Uttor kul w-4	12	91.96681	21.56166		3	3	No	Private	7	2015	Abdur Sukkur	01830724044	Abdur Sukkur	10	260	230	30	2	0.035	35	5		1	2			1		
627	209404	25-02-20	Moheshkhali	Chhoto Moheshkhali	Norbila w-3	9	91.95826	21.53161		3	1	No	Private	7	2015	Kairul Boshor	01866908485	Kairul Boshor	12	280	250	30	2	0.035	35	5		1	2			1		
628	209718	25-02-20	Moheshkhali	Chhoto Moheshkhali	Oddaharapara	11	91.97906	21.53480		3	1	No	Private	11	2012	Abu Musa	01852382009	Abu Musa	33	270	240	30	2	0.012	12	5		1	2			2		
629	209817	25-02-20	Moheshkhali	Chhoto Moheshkhali	Purbo Takor Tala w-9	2	91.97484	21.52550		3	1	No	Private	8	2015	Kajol dey	01826358530	Kajol dey	10	270	240	30	2	0.015	15	5		1	2			2		
630	209406	25-02-20	Moheshkhali	Chhoto Moheshkhali	Sipahipara w-2	7	91.95699	21.53696		3	3	yes pipe cooking	private	4	2015	Sanuza khatun	01866286828	Sanuza khatun	12	280	250	30	4	0.040	40	5		1	2			2		
631	209103	25-02-20	Moheshkhali	Chhoto Moheshkhali	Nolabil w-3	9	91.95828	21.53667	2		3	No	Private	3	2016	Sakina khatun	01646179637	Sakina khatun	2	140	130	10	4	0.060	60	5	180	1	2	3		2		
632	209811	25-02-20	Moheshkhali	Chhoto Moheshkhali	Lomber gona w-5	8	91.96447	21.54562	1		1	No	Private	5	2019	Sona miya	01885088937	Sona miya	12	60	45	15	2	0.001	1	4		1	2			2		
633	209813	25-02-20	Moheshkhali	Chhoto Moheshkhali	Modir para w-6	10	91.97439	21.54366		4	3	No	Private	3	2019	Farid Alam	01811793578	Farid Alam	15	250	180	70	4	0.050	50	4	110			3		2		
634	209815	25-02-20	Moheshkhali	Chhoto Moheshkhali	Dail para w-7	14	91.96600	21.52970		3	3	Tank	Private	5	2008	Nurul Abser	01884762364	Nurul Abser	10	250	200	50	4	0.038	38	3		1	2			2		
635	203807	01-03-20	Moheshkhali	Dhalghat	Shtoria w-5	5	91.86245	21.67847		3	1	No	Private	4	1991	Sanaullah	01829606889	Sanaullah	50	800	750	50	1.5	0.020	20	24		1	2			2		
636	203811	01-03-20	Moheshkhali	Dhalghat	Kator para w-7	5	21.86461	21.66680		3	1	No	Private	6	2018	Hossain	01887754077	Hossain	50	400	300	100	1.5	0.025	25	12		1	2			2		
637	203413	01-03-20	Moheshkhali	Dhalghat	Dhalghat w-9	7	91.87455	21.6652		3	1	No	Private	7	1998	Kamrun Nahar	01857824253	Kamrun Nahar	25	450	420	30	2	0.040	40	10		1	2			2		
638	203714	01-03-20	Moheshkhali	Dhalghat	Samrat Dali w-9	7	91.87173	21.66755		3	1	No	Private	6	2012	Nur Mohammad	01814569247	Nur Mohammad	15	475	450	25	1.5	0.025	25	8		1	2			2		
639	203815	01-03-20	Moheshkhali	Dhalghat	Shapmar dil w-9	6	91.87771	21.66475		3	1	No	Private	7	2006	Sekender Ali	01814820945	Sekender Ali	90	360	300	60	2	0.018	18	8		1	2			2		
640	203702	01-03-20	Moheshkhali	Dhalghat	Uttarmohirigona w-1	5	91.87225	21.69235		3	1	No	Private	1	2000	Iqbal hosen	01815113813	Iqbal hosen	50	485	455	30	1.5	0.025	25	7		1	2			2		
641	203105	1-3-20	Moheshkhali	Dhalghat	Panicara w-2	4	91.87006	21.68394		3	1	No	Private	9	1991	Mostak	01879279323	Mostak	50	450	400	50	1.5	0.015	15	7		1	2			2		
642	203109	01-03-20	Moheshkhali	Dhalghat	Moddom Sotoriya w-6	4	91.86203	21.67194		3	1	No	Private	9	1994	Mahcina Begum	01833812737	Mahcina Begum	15	450	350	100	1.5	0.025	25	6		1	2			2		
643	203710	01-03-20	Moheshkhali	Dhalghat	Moddom Cotoriya w-6	6	91.86195	21.66867		3	1	No	Private	5	2018	Mostak Ahmed	0187219543	Mostak Ahmed	40	500	450	50	1.5	0.025	25	6		1	2			2		
644	203803	01-03-20	Moheshkhali	Dhalghat	Uttar Mohiragona w-1	3	91.87218	21.69046		3	1	no	Private	7	2005	Rahima begum	01836551880	Rahima begum	50	770	700	70	1.5	0.025	25	6		1	2			2		
645	203706	01-03-20	Moheshkhali	Dhalghat	Uttar Sotoriya w-5	8	91.86425	21.68239		3	1	no	Private	9	2003	Saiful Alam	01815334974	Saiful Alam	50	450	400	50	1.5	0.030	30	6		1	2			2		
646	203408	01-03-20	Moheshkhali	Dhalghat	Saturia w-5	2	91.86246	21.67608		3	1	no	Private	4	1995	Maksudul Karim	01813964419	Maksudul Karim	25	800	740	60	2	0.030	30	5		1	2			2		
647	203112	01-03-20	Moheshkhali	Dhalghat	Dhalghata w-9	4	91.87486	21.66556		3	1	No	Private	3	2019	Arman	01871780993	Arman	50	490	470	20	2	0.020	20	5		1	2			2		
648	203404	01-03-20	Moheshkhali	Dhalghat	Dokkin Mohiri Gona w-2	3	91.87073	21.68779		3	1	No	Private	5	2019	Kalimuddin	01825040137	Kalimuddin	6	770	700	70	1.5	0.030	30	4		1	2			2		
649	203101	01-03-20	Moheshkhali	Dhalghat	Nasir Del w-1	5	91.87196	21.69757		3	3	No	Private	1	2004	Md. Rashid	01853861551	Md. Rashid	40	260	230	30	1.5	0.040	40	3		1	2			2		
650	204105	27-02-20	Moheshkhali	Hoanak	Della gona w-1	11	91.92262	21.64512		3	4	no	private	6	1992	Fayjuddin	01845198091	Fayjuddin	100	650	550	100	3	0.020	20	24		1	2			2		
651	204701	27-02-20	Moheshkhali	Hoanak	Kalagazir para w-2	13	91.9216	21.63027		3	4	No	others up	8	2019	Mostafa kamal		Mostafa kamal	100	800	700	100	1.5	0.025	25	24		1				2		
652	204101	27-02-20	Moheshkhali	Hoanak	Baniakata w-4	4	91.92108	21.61830		3	4	Yes house cooking	Private	1	1991	Mostofa kamal	0181411327	Mostofa kamal	600	1200	1120	80	3	0.050	50	24		1	2	3		2		
653	204103	27-02-20	Moheshkhali	Hoanak	Kursha para w-3	4	91.91595	21.62753		4	4	no	private	1	1995	Shahad Hosen	01831016291	Shahad Hosen	6	920	800	120	2	0.020	20	24	270	1		3		2		
654	204422	01-03-20	Moheshkhali	Hoanak	Hoanak w-7	20	91.92413	21.60798		3	3	No	Private	7	2001	Snaullah	01815176032	Snaullah	100	750	710	40	4	0.070	70	15		1	2			2		
655	204810	27-02-20	Moheshkhali	Hoanak	Rajuahgona para w-6	15	91.92449	21.60503		3	4	No	Private		2012	Nizamuddin	01835140043	Nizamuddin	60	700	580	120	2	0.019	19	14		1	2			2		
656	204820	01-03-20	Moheshkhali	Hoanak	Hoanak w-1	14	91.92296	21.64119		4	3	No	private	7	2002	Nuru Zahan	01853139182	Nuru Zahan	3	700	640	60	4	0.060	60	14	180			3		2		
657	204121	01-03-20	Moheshkhali	Hoanak	Hoanak	16	91.92378	21.61128		3	3	No	Private	7	2008	Alam mia	01814110537	Alam mia	300	880	760	120	4	0.050	50	12		1				2		
658	204812	27-02-20	Moheshkhali	Hoanak	Kalaliah Gata w-7	8	91.92256	21.59007		4	4	no	private		1991	Abul Fazal	01825026238	Abul Fazal	10	750	690	60	4	0.040	40	12	140			3		2		
659	204416	27-02-20	Moheshkhali	Hoanak	Kaliaghata w-8	4	92.92368	21.59328		4	3	No	Private	6	2015	Arifullah	01862570480	Arifullah	3	330	300	30	4	0.075	75	10	120			3		2		
660	204811	27-02-20	Moheshkhali	Hoanak	Noyah para w-7	11	91.92474	21.59590		3	4	No	Private		1985	Samsul Alam	01865114887	Samsul Alam	60	900	840	60	2	0.045	45	9		1	2			2		
661	204414	27-02-20	Moheshkhali	Hoanak	Borogorpara w-9	9	91.92601	21.56628		4	3	No	Private	4	2012	Jashim uddin	01792557618	Jashim uddin	2	280	250	30	4	0.095	95	8	180			3		2		
662	204413	27-02-20	Moheshkhali	Hoanak	Moharaghata w-8	6	91.92410	21.58490		3	1	No	Private	3	2012	Ali Azgar	01825985572	Ali Azgar	14	235	205	30	2	0.032	32	7		1	2			2		
663	204415	27-02-20	Moheshkhali	Hoanak	Parirgara w-9	21	91.92561	21.57747		3	1	No	Private	7	2014	Kalimullah	01830247840	Rashid	19	335	305	30	2	0.058	58	5		1	2			2		
664	204704	27-02-20	Moheshkhali	Hoanak	Cankula para w-1	24	91.92437	21.64108		3	3	Tank	Private	6	2010	Balel Hosen	01812447121	Balel Hosen	5	850	700	150	1.5	0.025	25	5		1	2			2		
665	204809	27-02-20	Moheshkhali	Hoanak	Purbo Mazar para w-5	18	91.92753	21.61422		3	3	Tank	Private			Mojib Member	01834733998	Mojib Member	50	800	760	40	2	0.070	70	5		1	2			2		
666	204702	27-02-20	Moheshkhali	Hoanak	Kalagazirpara w-1	11	91.91461	21.63252		3	1	No	Private	1	2020	Nagomia	01848420704	Nagomia	10	450	370	80	1.5	0.024	24	4		1	2			2		
667	204703	27-02-20	Moheshkhali	Hoanak	Purbo hariyercara w-2	24	91.92638	21.63545		3	1	no	private	4	2019	Sabekur Naher	01883360900	Sabekur Naher	10	250	190	60	1.5	0.012	12	4		1	2			2		
668	204104	27-02-20	Moheshkhali	Hoanak	Fakirkali para w-3	14	91.92402	21.62793		3	1	no	private	2	2008	Amanullah	01859904390	Amanullah	4	800	780	20	3	0.025	25	2		1	2			2		
669	204102	27-02-20	Moheshkhali	Hoanak	Jamalpara w-4	35	91.93038	21.62046	1		3	No	Private	7	2018	Mozammal	01882427905	Mozammal	10	150	120	30	3	0.050	50	3		1	2				3	
670	205106	28-02-20	Moheshkhali	Kalarmarchhara	Ananda Market w-9	19	91.92614	21.65275		3	4	No	Private	1	2000	Jalamat	01647128718	Mostafa	15	600	550	50	2	0.015	15	24		1	2				3	

Annex 2.2-1 Inventory of Existing Wells

SL#	Interpretation of Questionnaire number (x-xx-x-xx=Upazila code-Union code-Data collector Code-Ques#)	A. Location: Date	Upazila	Union	Village/ Land marks	Elevation in m (GPS)	B. GPS Coordinate: 2.1 Longitude	2.2 Latitude	3.1 Type of Survey [Shallow Tube Well] 1= Domestic 2= Irrigation	3.2 Type of Survey [Deep Tube Well (DTW)] 3= Domestic 4= Irrigation	3.3 Type of well	3.3.1 Source of piped scheme	3.4 Founder name of the well (such as DPHE,BADC, Water aid, BRAC,Private, Others)	3.5 Date of Installation: Month	Year	3.6 Owner Name	3.7 Telephone number:	3.8 Handler of the well	3.9 Number of user (well)	3.10 Structure of the well: Depth of the well (ft)	Location of screen (ft)	Length of Screen(ft)	Diameter of casing pipe (inch)	Pumping rate ($M^{3/minute}$)	Pumping rate L/minute)	3.12 Pumping hours (per day)	3.13 Yearly Pumping days(only for	3.13 Usage of groundwater: 1=Drinking/ cooking	2=Washing	3=Irrigation	4=Others (nursing etc.)	Water Quality: 1=Salinity 2=Sweet	3=Presence of Iron	4=Others (sand etc.)
671	205105	28-02-20	Moheshkhali	Kalarmarchhara	Anderghuna w-9	8	91.92027	21.65591		3	4	yes house	Private	7	2005	Ferdoush	01868235804	Ferdoush	100	750	700	50	3	0.012	12	24		1	2			2		
672	205107	28-02-20	Moheshkhali	Kalarmarchhara	Mirji para w-9	8	91.92303	21.64917		3	4	No	Private	1	2012	Mahi uddin	01643822804	Mahi uddin	40	700	620	80	1.5	0.015	15	24		1	2			2		
673	205103	28-02-20	Moheshkhali	Kalarmarchhara	Shamirghuna w-7	12	91.98844	21.66168		3	4	No	Private	1	2005	Mawlana Mahabubul Al	01861074555	Mawlana Mahabubul	500	900	800	100	3	0.020	20	24		1	2			2		
674	205816	01-03-20	Moheshkhali	Kalarmarchhara	Madrasha guna	6	91.91338	21.66578		4	4	No	Private	7	2002	Nurul Amin	01827271931	Nurul Amin	3	700	500	200	4	0.080	80	24	120			3		2		
675	205108	01-03-20	Moheshkhali	Kalarmarchhara	Chaliartoli w-1	9	91.93684	21.70797		4	3	No	Private	7	2005	Abdul Gafur	0834529663	Abdul Gafur	10	500	420	80	3	0.050	50	24	180			3		2		
676	205719	01-03-20	Moheshkhali	Kalarmarchhara	Mizirpara w-9	20	91.92413	21.64987		4	4	no	others	4	2020	Jakir	01641662870	Jakir	10	700	600	100	2	0.030	30	24	180	1	2	3		2		
677	205418	01-03-20	Moheshkhali	Kalarmarchhara	M. Shaguna w-3	16	91.91653	21.66573		4	4	No	Private	8	2004	Mostak Ahmed	01835058018	Mostak Ahmed	3	800	700	100	3	0.050	50	24	180	1	2	3		2		
678	205104	28-02-20	Moheshkhali	Kalarmarchhara	Fakira Ghuna w-8	10	91.92462	21.65909		3	1	No	Private	1	1990	Farid ul alam	01837126567	Farid ul alam	300	350	310	40	5	0.035	35	20		1	2			2		
679	205411	28-02-20	Moheshkhali	Kalarmarchhara	Soleijjompara w-6	22	91.92456	21.66622		3	1	No	Private	3	2002	Rubel	01960296206	Rubel	13	470	440	30	2	0.028	28	14		1	2			2		
680	205410	28-02-20	Moheshkhali	Kalarmarchhara	Kalamorchara w-5	12	91.92261	21.67138		4	3	No	Private	7	2011	N/A		N/A	3	360	330	30	4	0.090	90	14	180			3		2		
681	205409	28-02-20	Moheshkhali	Kalarmarchhara	Tofuasikini para w-5	12	91.92253	21.68027		3	1	no	Private	7	2012	Shabuddin	01828336251	Shabuddin	15	260	230	30	2	0.039	39	13		1	2			2		
682	205101	28-02-20	Moheshkhali	Kalarmarchhara	Fakirumjum para w-7	9	91.92290	21.66670		3	1	Yes cooking	private	1	2018	Obaidul haq	01818766713	Obaidul haq	150	570	500	70	1.5	0.021	21	12		1	2			2		
683	205718	28-02-20	Moheshkhali	Kalarmarchhara	Caliyatali w-1	17	91.93365	21.71195		4	3	No	Private	5	2010	Liyakat ali	01813184344	Liyakat ali	1	700	670	30	4	0.050	50	12	120			3		2		
684	205102	28-02-20	Moheshkhali	Kalarmarchhara	Noyapara w-6	7	91.92036	21.67068		3	3	Yes Tank	Private	1	2018	Abdus Sukkur	01820185531	Abdus Sukkur	120	600	520	80	2	0.020	20	10		1	2			2		
685	205408	28-02-20	Moheshkhali	Kalarmarchhara	Jafua bazar	6	91.92203	21.68843		3	3	yes tank	private	6	2013	Abu Hanif	01829193219	Abu Hanif	13	450	420	30	2	0.060	60	10		1	2			2		
686	205407	28-02-20	Moheshkhali	Kalarmarchhara	Markaguna w-4	14	91.92342	21.69578	1		1	No	Private	7	2013	Belal Hossain	01813002709	Belal Hossain	23	100	70	30	2	0.038	38	10		1	2			2		
687	205717	28-02-20	Moheshkhali	Kalarmarchhara	Uttar noor villa w-1	30	91.92863	21.71609	2		3	No	Private		2000	Redwoan	01824571657	Redwoan	30	70	60	10	1.5	0.012	12	9	180			3		2		
688	205715	28-02-20	Moheshkhali	Kalarmarchhara	Afzalia para w-2	14	91.92613	21.70640		4	3	No	Private	8	2019	Upazila Parishod		Upazila Parishod	5	800	740	60	1.5	0.020	20	8	120			3		2		
689	205713	28-02-20	Moheshkhali	Kalarmarchhara	Mashpara w-3	18	91.92239	21.69909		3	1	no	private		1990	Saker uddin	01848132182	Saker uddin	20	300	250	50	1.5	0.025	25	7		1	2				3	
690	405716	28-02-20	Moheshkhali	Kalarmarchhara	Mazar para w-2	4.2	91.92771	21.71144		4	3	No	Private	11	2014	Mostofa	01857396101	Mostofa	15	700	640	60	1.5	0.025	25	7	180			3		2		
691	205716	28-2-20	Moheshkhali	Kalarmarchhara	Mazar para w-2	4.2	91.92771	21.71144		4	3	No	Private	11	2014	Mostofa	01857396101	Mostofa	15	700	640	60	1.5	0.025	25	7	180			3		2		
692	205117	01-03-20	Moheshkhali	Kalarmarchhara	Kalamar marcara	8	91.92303	21.64917		4	3	No	Private	6	2011	Akbar Ali	01813683231	Akbar Ali	5	600	500	100	4	0.055	55	6	120			3		2		
693	205714	28-02-20	Moheshkhali	Kalarmarchhara	Pahartali w-3	5.3	91.92893	21.70180		3	3	Tank	Private	11	2019	Saidul Amin	01814482151	Saidul Amin	5	300	230	70	2	0.028	28	4		1	2			2		
694	206102	26-02-20	Moheshkhali	Kutubjom	Meheri para w-8	4	91.94487	21.51908	2		3	No	Private	1	2016	Saidul Karim	01811363766	Saidul Karim	5	50	40	10	3	0.120	120	24	140			3			3	
695	206407	26-02-20	Moheshkhali	Kutubjom	Konolorkar para	4	91.95545	21.51592	2		3	no	Private	7	2012	Jalal Uddin	01714704619	Jalal Uddin	2	40	30	10	4	0.100	100	8	120			3		2		
696	206406	26-02-20	Moheshkhali	Kutubjom	Kondokar para w-9	9	91.94872	21.51330	1		3	no	private	7	2012	Zakir hossain	01850991257	Zakir hossain	15	40	30	10	4	0.060	60	7		1	2			2		
697	206405	26-02-20	Moheshkhali	Kutubjom	Purbo para w-7	13	91.94066	21.51518	1		2	No	Private	4	2018	Kulsuma begum	01892619741	Kulsuma begum	12	40	30	10	2	0.020	20	6		1	2			2		
698	206812	26-02-20	Moheshkhali	Kutubjom	Poschim para w-5	14	91.93450	21.59972	1		1	No	Private		1997	Arman	01834681159	Arman	4	15	5	10	2	0.014	14	6		1	2			2		
699	206717	26-02-20	Moheshkhali	Kutubjom	Purbo tajiakata	27	91.92394	21.51805	1		3	No	Private	7	2017	Jahid	01858645853	Jahid	3	40	30	10	4	0.035	35	6				3		2		
700	206715	26-2-20	Moheshkhali	Kutubjom	Garibaga w-1	17	91.89968	21.52399	1		1	no	private	11	2010	Alauddin	01830978614	Alauddin	10	45	35	10	2	0.020	20	5		1	2			2		
701	206101	26-02-20	Moheshkhali	Kutubjom	Kamitar para w-8	23	91.94596	21.51349	1		1	no	private			Hasem	01874271701	Hasem	16	17	12	5	2	0.035	35	4		1	2			2		
702	206716	26-02-20	Moheshkhali	Kutubjom	Poschim Tajiyakata w-3	11	91.91547	21.51832	1		1	no	private	5	2019	Hossain	01873157855	Hossain	4	35	25	10	2	0.016	16	4		1	2			2		
703	206103	26-02-20	Moheshkhali	Kutubjom	Doilar para w-6	8	91.93864	21.52147	1		1	No	Private	6	2018	Safiul Alam	01826309790	Safiul Alam	8	70	60	10	3	0.035	35	4		1	2			2		
704	206811	26-02-20	Moheshkhali	Kutubjom	Niapara w-4	25	91.93236	21.51599	1		1	No	Private	11	2019	Jahidul islam	01829292960	Jahidul islam sumon	3	25	15	10	2	0.012	12	3		1	2			2		
705	207104	29-02-20	Moheshkhali	Matarbari	Sikdar para w-1	11	91.89824	21.73351		3	3	Yes	Private	1	1980	Saleh Ahmed(Madrash	01876845699	Saleh Ahmed	2000	900	800	100	1.5	0.025	25	24		1	2			2		
706	207107	29-02-20	Moheshkhali	Matarbari	Bandi Sikderpara w - 2	2	91.90450	21.74201		3	3	Yes	private	5	2018	Mukaddes nur	01731658582	Mukaddes nur (Mosji	500	860	810	50	1.5	0.030	30	24		1	2			2		
707	207105	29-02-20	Moheshkhali	Matarbari	Sikdarpara w-1	6	91.89767	21.73714		3	1	No	Private	1	1990	Manik Sikder	01642779324	Manik Sikder	160	720	620	100	1.5	0.020	20	15		1	2			2		
708	207812	29-02-20	Moheshkhali	Matarbari	Monhazir para w-4	6	91.89363	21.73810		4	3	no	private		1965	abu Sattar	01815646129	abu Sattar	20	550	510	40	4	0.043	43	14	150			3		2		
709	207417	29-02-20	Moheshkhali	Matarbari	Matarbari w- 6	4	91.88833	21.73105		3	1	No	Private	3	1998	Al - Rashid	01814308892	Al - Rashid	14	540	510	30	2	0.038	38	12		1	2			2		
710	207414	29-02-20	Moheshkhali	Matarbari	Dolapara Mosjid w-6	12	91.88812	21.72761		3	1	no	private	4	2009	Nasir	01870582692	Nasir	14	480	450	30	2	0.052	52	12		1	2			2		
711	207413	29-02-20	Moheshkhali	Matarbari	Titamazir para w-6	9	91.89210	21.73032		3	1	No	Private	3	2011	Hazi Riduwan	01740802638	Hazi Riduwan	25	500	470	30	2	0.045	45	12		1	2			2		
712	207102	29-02-20	Moheshkhali	Matarbari	Dokkin Razghat w-3	3	91.89904	21.72720		4	3	no	private	1	2014	Erfanul karim	01834733964	Erfanul karim	5	750	710	40	2.5	0.025	25	12	120	1	2	3		2		
713	207816	29-02-20	Moheshkhali	Matarbari	Laillagona para w-4	6	91.89625	21.72878		4	4	no	private		2010	Ahjiboda miah	01715022613	Ahjiboda miah	120	900	800	100	2	0.052	52	11	160			3		2		
714	207813	29-02-20	Moheshkhali	Matarbari	Dokkin Niaze para w-3	3	91.89098	21.73629		4	4	no	private		2000	Ruhul Kader	01819622364	Ruhul Kader	5	1070	970	100	2	0.037	37	10	145			3		2		
715	207416	29-02-20	Moheshkhali	Matarbari	Matarbari w-7	11	91.88797	21.72182		4	3	yes tank	private	7	2003	Anisul karim	01756973699	Anisul karim	3	700	670	30	4	0.090	90	10	180			3		2		
716	207815	29-02-20	Moheshkhali	Matarbari	Laillagona para w- 4	0	91.89627	21.72984		3	4	no	others		2019	Md. Alam	01788655126	Md. Alam	100	845	765	80	2	0.027	27	8		1	2			2		
717	207721	29-02-20	Moheshkhali	Matarbari	Uttor Carirardal w-9	6	91.87613	21.71785		3	1	No	others		2015	Md. Carman		Md. Carman	40	850	810	40	1.5	0.017	17	8		1	2			2		
718	207723	29-02-20	Moheshkhali	Matarbari	Mokdali w-8	1	91.88574	21.71897		3	1	No	others	3	2019	Anamul haque	01830882115	Anamul haque	50	750	700	50	1.5	0.026	26	8		1	2			2		
719	207724	29-02-20	Moheshkhali	Matarbari	Gaifagona w-8	1	91.88818	21.71552		4	2	no	private		1980	Bokso mia	01883284428	Bokso mia	8	900	770	130	1.5	0.032	32	8	180			3		2		
720	207720	29-02-20	Moheshkhali	Matarbari	Baher para w-5	5	91.87508	21.71343		3	1	No	Private	5	2016	Badsha Mia	01868240793	Badsha Mia	10	740	710	30	1.5	0.022	22	7		1	2			2		
721	207719	29-02-20	Moheshkhali	Matarbari	Cairardaily w-9	7	91.87619	21.70832		3	1	no	private		2008	Rajiullah	01825368337	Rajiullah	20	850	810	40	1.5	0.025	25	7		1	2			2		
722	207810	29-02-20	Moheshkhali	Matarbari	Sikder para w-1	4	91.89662	21.73260		3	3	tank	private		2000	Tawhidul Alam	01713620119	Tawhidul Alam	30	870	750	120	1.5	0.034	34	7		1	2			2		
723	207811	29-02-20	Moheshkhali	Matarbari	Monhazi para w-4	4	91.89452	21.73409		4	3	No	Private		2018	Nur Mohammad	01740802688	Nur Mohammad	35	600	300	300	1.5	0.029	29	7	78			3		2		
724	207415	29-02-20	Moheshkhali	Matarbari	Maiypara w- 7	8	91.88529	21.72451		3	1	No	Private	12	2000	Amir Hosen	01745724179	Amir Hosen	17	250	220	30	2	0.035	35	6		1	2			2		
725	207106	29-02-20	Moheshkhali	Matarbari	Uttar Sikder para w-1	14	91.90034	21.74069		3	3	yes tank	Private	1	2000	Delower hossen	01846616662	Delower hossen	100	600	550	50	2	0.030	30	2		1	2			2		
726	207814	29-02-20	Moheshkhali	Matarbari	Dokkin Niaza para w-5	5	91.89220	21.73339		3	3	Tank	Private		1996	Ruhul kader	01819622364	Ruhul kader	15	520	480	40	1.5	0.030	30	2		1	2			2		
727	207101	29-02-20	Moheshkhali	Matarbari	Razghat w-3	5	91.90028	21.72999		3	3	yes 3 house cookin	private	1	2015	Ali Asgor	01865533778	Ali Asgor	30	700	650	50	2	0.020	20	3		1	2			2		
728	207103	29-02-20	Moheshkhali	Matarbari	Dokkin Razghat w-3	7	91.90410	21.72922		3	3	yes house	Private	1	2018	Rokeya begum	01884038904	Rokeya begum	30	550	510	40	2	0.030	30	3		1	2			2		
729	207722	29-02-20	Moheshkhali	Matarbari	Honsomiyaji para w-8	9	92.88529	21.72317	2		3	No	Private		1990	Rahmat ullah	01849190147	Rahmat ullah	5	65	35	30	2	0.120	120	3	80			3		2		
730	201816	24-02-20	Moheshkhali	Pourasava	Potiblla Govt. primary school w-	7	91.9593	21.52290		3	1	No	others	5	2010	Adv. Hamidul Haque	01815333989	Adv. Hamidul Haque	1000	650	620	30	2	0.014	14	15		1	2			2		
731	201711	24-02-20	Moheshkhali	Pourasava	Thana para w-4	14	91.96156	21.52186		3	3	Tank	Private	9	2019	Abu Taleb	01843916824	Abu Taleb	10	540	510	30	2	0.033	33	13		1	2			2		
732	201713	24-02-20	Moheshkhali	Pourasava	Lombhiderpara w-1	6	91.95332	21.52625	2		3	No	Private	6	2018	Ibrahim	01858693733	Ibrahim	10	130	50	80	4	0.040	40	12	55			3		2		
733	201107	24-02-20	Moheshkhali	Pourasava	Pourashava bazar w-7	8	91.96964	21.51935		3	1	No	Private	4	2014	Gurokata Bazar	01811257804	Dilip	100	250	220	30	5	0.045	45	10		1	2			1		
734	201101	24-02-20	Moheshkhali	Pourasava	Hindupara w-6	13	91.96580	21.51749	1		1	no	Private	1	2000	Sri Rupon Kanti	01876916806	Sri Rupon Kanti	40	20	10	10	2	0.025	25	10		1	2			2		
735	201714	24-02-20	Moheshkhali	Pourasava	Kossamar para w-1	5	91.95612	21.52974		4	3	No	others	8	2016	Malek	01820538949	Malek	5	250	210	40	4	0.040	40	9	140			3		2		
736	201408	24-02-20	Moheshkhali	Pourasava	Cjpr[ara w-9	4	91.96818	21.51113		3	1	No	Private	7	2018	Ansarul Karim	01644211559	Ansarul Karim	15	280	250	30	2	0.045	45	6		1	2			1		
737	201109	24-02-20	Moheshkhali	Pourasava	Rakain para w- 6	8	91.97136	21.51633		3	1	No	Private	1	2000	Lorori	01815334146	Lorori	30	280	250	30	4	0.030	30	6		1	2			1		
738	201410	24-02-20	Moheshkhali	Pourasava	Sikder para w- 8	5	91.97445	21.51783		3	1	No	Private	4	2015	Abdur Gafur	01840507611	Abdur Gafur	10	290	260	30	2	0.030	30	6		1	2			2		
739	201402	24-02-20	Moheshkhali	Pourasava	Hindu para w-6	13	91.96095	21.51752	1		1	No	Private	1	2010	Pompi Dey	01811684027	Pompi Dey	10	22	12	10	2	0.030	30	6		1	2			2		
740	201105	24-02-20	Moheshkhali	Pourasava	Gunapara w- 9	5	91.96664	21.51217		3	3	yes tank	private	3	2015	Helal uddin	01731099827	Helal uddin	15	900	840	60	4	0.080	80	6		1	2			2		
741	201404	24-02-20	Moheshkhali	Pourasava	Gonapara w-5	10	91.95763	21.51770	1		1	No	Private	6	2017	Syed Ahmed	01850535352	Syed Ahmed	15	35	15	20	3	0.020	20	6		1	2			2		
742	201812	24-02-20	Moheshkhali	Pourasava	Borunagat Kali Mondir W-2	8	91.95845	21.52670		3	1	No	others	2	2012	Mridul Kanti Bhattachar	01814435666	Mridul Kanti Bhattach	40	270	240	30	2	0.025	25	6		1	2			2		
743	201717	24-02-20	Moheshkhali	Pourasava	Boro Rakhain para w-4	9	91.96955	21.52062	1		3	Tank	Private		2005	Congpai	01558413159	Congpai	16	40	30	10	2	0.020	20	4		1	2			2		
744	201406	24-02-20	Moheshkhali	Pourasava	Sikdar para w-9	3	91.97050	21.51247		3	1	No	Private	1	2017	Hosain	01881234211	Hosain	5	240	210	30	2	0.020	20	4		1	2			2		
745	201103	24-02-20	Moheshkhali	Pourasava	Gunapara W-5	11	91.96116	21.51498		3	1	No	Private		2015	Aminul Islam	01876765576	Aminul Islam	No User	520	480	40	3	0.025	25	2						1		
746	201815	24-02-20	Moheshkhali	Pourasava	Mosharaf Ali para w-3	8	91.95866	21.52266	1		3	Tank	Private		1991	Hazi Khobir Hosen	01843985677	Hazi Khobir Hosen	30	70	40	30	2	0.035	35	3		1	2			2		
747	208109	29-02-20	Moheshkhali	Shaplapur	Chinpara w-1	6	91.94704	21.68962		4	3	No	Private	9	2010	Ebadullah	01827930264	Ebadullah	7	750	710	40	2	0.050	50	24	180			3		2		
748	208216	28-02-20	Moheshkhali	Shaplapur	Sadikerkata w-8	10	91.98360	21.62025		4	3	no	private	2	2001	Firoj Ahmed	01873211582	Firoj Ahmed	10	280	240	40	3	0.090	90	21	120	1	2	3		2		
749	208213	28-02-20	Moheshkhali	Shaplapur	Mukhbeki w-7	4	91.98166	21.63693	2		3	No	Private	6	1995	Abul kasem	01811759591	Abul kasem	20	150	120	30	4	0.140	140	20	120	1	2	3		2		
750	208210	28-02-20	Moheshkhali	Shaplapur	Shatghor para-w-6	5	91.97753	21.63999		4	3	No	Private	4	2013	Nurul Hosen	01868520634	Nurul Hosen	15	750	650	100	2	0.120	120	20	180			3		2		
751	208303	28-02-20	Moheshkhali	Shaplapur	Mowlabi kata w-4	9	91.57404	21.39867		3	1	No	Priavate	8	1990	Ziabul Hosen	01791680252	Bulbul akter	32	950	890	60	2	0.025	25	7		1	2			2		
752	208215	28-02-20	Moheshkhali	Shaplapur	Sadiker kata w-8	13	91.98234	21.62423		3	4	No	Private	1	2019	Thandamia	01824807075	Thandamia	30	840	800	40	3	0.036	36	7		1	2			2		
753	208211	28-02-20	Moheshkhali	Shaplapur	Jaydargona w-6	8	91.97593	21.63810		3	1	No	Private	2	2003	Abdul Kader	01868423411	Abdul Kader	25	950	900	50	2	0.020	20	6		1	2			2		
754	208301	28-02-20	Moheshkhali	Shaplapur	Sima para w-5	11	91.58458	21.38613	1		1	no	Private	2	2011	Ziaur Rahman	01828448013	Babul	10	110	90	20	2	0.009	9	5		1	2				3	
755	208305	28-02-20	Moheshkhali	Shaplapur	Moheshkhali	8	92.57648	21.39405		3	4	no	Private	5	2010	Badar Alam	01863267393	Badar Alam	15	230	200	30	2	0.020	20	5		1	2			2		
756	208307	28-02-20	Moheshkhali	Shaplapur	Noyer par w-2	13	91.57166	21.40353		3	1	No	Private	12	2019	Taiub ali	01882902273	Taiub ali	20	220	190	30	1.5	0.015	15	5		1	2			2		
757	208309	28-02-20	Moheshkhali	Shaplapur	Uttarsitemara w-1	13	91.56463	21.42120		3	1	yes to tank	Private	8	2015	Sirajul Haque	01814943933	Sirajul Haque	25	700	610	90	2	0.030	30	5		2	2			2		
758	208217	28-02-20	Moheshkhali	Shaplapur	Kaidabad w-9	15	91.98118	21.60951		3	4	No	Private	12	2008	Ehtesham Billah	01910840430	Ehtesham Billah	250	650	570	80	3	0.025	25	5		1	2			2		
759	208306	28-02-20	Moheshkhali	Shaplapur	Jamirchari w-3	15	92.57897	21.39096		3	1	no	Private	7	2008	Sayed Hossain	01884762064	Anower hosen	15	300	270	30	1.5	0.020	20	5		1	2			2	3	
760	208304	28-02-20	Moheshkhali	Shaplapur	Mitachari w-3	11	91.57905	21.39412		3	1	No	Private	4	2019	Mohammad Motaleb	01855320600	Mohammad Motaleb	6	315	285	30	1.5	0.020	20	4		1	2			2		
761	208308	28-02-20	Moheshkhali	Shaplapur	Shanti para w-2	8	91.56995	21.40971		4	3	no	private	8	2014	Karim Bakta	01821021594	Karim Bakta	3	280	200	80	3	0.030	30	4	120	1	2	3		2		
762	208302	28-02-20	Moheshkhali	Shaplapur	gunapara w-4	12	92.58260	21.38913		4	3	No	Govt.	7	2007	Abul Kashem	01822892447	Abul Kashem	1 Hector	850	790	60	2	0.030	30	4	120	1	2	3		2	3	
763	208212	28-02-20	Moheshkhali	Shaplapur	Mukhbekigram w-7	10	91.97359	21.63357		3	3	no	Private	5	2014	Joshim uddin	01877113175	Joshim uddin	100	900	820	80	2	0.090	90	3		1	2			2		
764	208214	28-02-20	Moheshkhali	Shaplapur	Mukhberi w-7	15	91.97787	21.63007		3	3	No	Private	9	2012	Sirajul Haque	01812083854	Joshim uddin	70	750	690	60	2	0.070	70	3		1	2			2		
765	208218	28-02-20	Moheshkhali	Shaplapur	Dineshpur w-9	8	91.98064	21.60600		3	3	No	Private	10	2018	Sayed Ahmed	01300015090	Sayed Ahmed	20	800	760	40	2	0.110	110	2		1	2			2		
766	401326	12-3-20	Ramu	Chakmarkul	Jarailtoli w-5	3	92.07381	21.43891		4	3	no	Private	4	2014	Afsar kamal	01821818595	Afsar kamal	18	450	430	20	3	0.120	120	20	90	1	2	3		2		

Annex 2.2-1 Inventory of Existing Wells

	Interpretation of Questionnaire number (x-xx-x-xx=Upazila code-Union code-Data collector Code-Ques#)	A. Location					B. GPS Coordinate		3.1 Type of Survey [Shallow Tube Well	3.2 Type of Survey [Deep Tube Well (DTW)]			3.4 Founder name of the well (such as DPHE,BADC, Water aid, BRAC,Private, Others)	3.5 Date of Installation						3.10 Structure of the well								3.13 Usage of groundwater				Water Quality		
SL#		Date	Upazila	Union	Village/ Land marks	Elevation in m (GPS)	2.1 Longitude	2.2 Latitude	1= Domestic 2= Irrigation	3= Domestic 4= Irrigation	3.3 Type of well	3.3.1 Source of piped scheme		Month	Year	3.6 Owner Name	3.7 Telephone number:	3.8 Handler of the well	3.9 Number of user (well)	Depth of the well (ft)	Location of screen (ft)	Length of Screen(ft)	Diameter of casing pipe (inch)	Pumping rate ($M^{3/minute}$)	Pumping rate L/minute)	3.12 Pumping hours (per day)	3.13 Yearly Pumping days(only for	1=Drinking/ cooking	2=Washing	3=Irrigation	4=Others (nursing etc.)	1=Salinity 2=Sweet	3=Presence of Iron	4=Others (sand etc.)
767	401616	27-02-20	Ramu	Chakmarkul	Jarain toli w-5	34	92.07410	21.43953		4	3	source of channal t	private	1	2014	Abu Tahar	01821337594	Abu Tahar	30	420	360	60	4	0.180	180	18	100			3		2		
768	401515	27-02-20	Ramu	Chakmarkul	Nayapar w-6	3	92.07463	21.44324		4	3	source of cannal to	private	2	1998	Shaalam	01821543040	Shaalam	20	550	370	180	4	0.190	190	16	105			3		2		
769	401330	12-3-20	Ramu	Chakmarkul	Purbo para w-6	4	92.08359	21.44402		4	4	No	Private	12	2006	Kamal uddin	01717918909	Kamal uddin	7 F 20 H	780	690	90	3	0.250	250	10	120			3		2		
770	401332	12-3-20	Ramu	Chakmarkul	Samadar para w-6	9	92.08441	21.43971		4	3	no	Private	6	2010	Jamal uddn kamal	01890442287	Jamal uddn kamal	6 F 12 H	480	420	60	2	0.120	120	9	90			3		2		
771	401519	12-3-20	Ramu	Chakmarkul	uttar chokmerkul	3	92.07442	21.44726		4	3	source of channel	private	3	2008	Moh Ali	01837474912	Moh Ali	28	400	340	60	4	0.180	180	8	110			3		2		
772	401309	27-02-20	Ramu	Chakmarkul	Naya para, w-6	11	92.07632	21.44123		4	4	no	private	7	1984	Amir hosen gong	01815438407	Amir	12	900	860	40	4	0.250	250	8	120	1	2	3		2		
773	401229	12-3-20	Ramu	Chakmarkul	Rurbo Mohammad para w-6	6	92.08005	21.44573		4	3	no	Private	11	2006	Anu Mia	01624788819	Mujibur Rahman	armar 7 Hach	730	630	100	4	0.100	100	8	120			3		2		
774	401225	12-3-20	Ramu	Chakmarkul	Dakkhin Shamodar para	10	92.06993	21.43641		3	1	no	Private	12	2014	Redwan	01814111263	Redwan	20	360	340	20	1.5	0.020	20	7		1	2			2		
775	401621	12-3-20	Ramu	Chakmarkul	Ceremura	6	92.07101	21.45489		4	3	source of channel	private		2001	Jafor Alam	01879680651	Jafor Alam	5	700	640	60	3	0.035	35	7	88	1	2	3		2		
776	401233	12-3-20	Ramu	Chakmarkul	Purbo Moh para w-6	15	92.08150	21.44038		4	3	no	Private	12	2002	Nurul Alam	01850533697	Nurul Alam	3 F 3 H	350	310	40	1.5	0.060	60	7	90			3			3	
777	401307	27-02-20	Ramu	Chakmarkul	Lamboripara w-4	12	92.09200	21.41597	1		1	no	private	8	2013	Abdul Gafur	01815098632	Abdul Gafur	40	60	40	20	1.5	0.016	16	6		1	2				3	
778	401227	12-3-20	Ramu	Chakmarkul	Jalal toli w-5	6	92.07310	21.43773		3	1	no	DPHE	12	2013	Abdus Sattar	01824897591	Abdus Sattar	20	730	700	30	1.5	0.030	30	6		1	2			2		
779	401612	27-02-20	Ramu	Chakmarkul	South samuer para	4.1	92.07121	21.43348		3	1	source of pot	private	8	2004	Oli ullah	01822549235	oli ullah	25	600	570	30	1.5	0.012	12	6		1	2			2		
780	401206	27-02-20	Ramu	Chakmarkul	Purbo kalu shikader para w-3	14	92.08896	21.41712		3	1	No	Care BD	2	1990	Matul hossain sikder	01827716036	Matul hossain sikder	50	360	320	40	2	0.020	20	6		1	2			2		
781	401231	12-3-20	Ramu	Chakmarkul	Purbo para w-6	5	92.08487	21.44286		4	3	no	Private	12	2019	Moh Company	01815674009	Asiullah	3 F 4 H	450	390	60	1.5	0.090	90	6	90			3		2		4
782	401522	12-3-20	Ramu	Chakmarkul	Ceremura	10	92.06789	21.45259		4	3	source of channel	private	2	2011	Abu Bakkar Siddique	01817098040	Abu Bakkar Siddique	12	850	790	60	4	0.190	190	6	110			3		2		
783	401301	27-02-20	Ramu	Chakmarkul	Chakmarkul w-1	12	92.07773	21.42533		3	1	No	Govt.			Union parishad 4 no	01820402509	Sharupa pal	13	430	380	50	2	0.025	25	5		1	2				3	
784	401204	27-02-20	Ramu	Chakmarkul	Matbarpara w-3	17	92.08276	21.41900		3	1	No	private	5	2015	Sirajul haq	01817082384	Sirajul haq	10	370	340	30	2	0.015	15	5		1	2			2		
785	401303	27-02-20	Ramu	Chakmarkul	Char para w-2	17	92.07256	21.41446		3	1	no	private	7	2010	Abdul Malek	01864232126	Abdul Malek	12	250	210	40	2	0.015	15	5		1	2			2		
786	401208	27-02-20	Ramu	Chakmarkul	Tesrikul W-4	14	92.08372	21.42669		3	1	No	Private	9	2019	Rayhan uddin	01819519580	Rayhan uddin	12	230	210	20	2	0.020	20	5		1	2			2		
787	401219	27-2-20	Ramu	Chakmarkul	Tesrikul kunar para -4	14	92.08119	21.42853		3	1	no	Private	3	1995	Ismail	01817783445	Joynal Abedin	25	330	300	30	2	0.025	25	5		1	2			2		
788	401623	12-3-20	Ramu	Chakmarkul	Ceremura	11	92.06998	21.44801		4	3	source of pipe to fie	private	2	2015	Rejaul karim	01814258900	Rejaul karim	1	360	320	40	4	0.140	140	5	66			3		2		
789	401324	12-3-20	Ramu	Chakmarkul	Shahamodar para w-8	11	92.07234	21.43515		4	3	no	Private	12	2016	Nurul Alam	01853142354	Rasel	1	410	380	30	2	0.030	30	5	90			3		2		
790	401328	12-3-20	Ramu	Chakmarkul	Purbo Samadar pra w-8	8	92.07284	21.44020		3	3	yes to tank	private	6	2005	Rezaul karim	01878912911	Rezaul karim	20	450	420	30	1.5	0.040	40	4		1	2			2		
791	401513	27-02-20	Ramu	Chakmarkul	Uttar Samuber para w-8	14	92.07030	21.43761		3	3	source of tha tank	Mosjid comittee	6	2010	Abdul Mannan	01826660890	Abdul Mannan	200	800	760	40	1.5	0.045	45	4		1	2			2		
792	401202	27-02-20	Ramu	Chakmarkul	Miaji para w-2	14	92.07993	21.42155		3	3	yes to tank	private	10	1995	Nabi hosen	01840006525	Nabi hosen	60	700	650	50	2	0.070	70	4		1	2			2		
793	401617	27-02-20	Ramu	Chakmarkul	Raihiuddin jaraintoli	31	92.07504	21.43543		4	3	source of pipe to Nu	private	4	2017	Jafor Alam	01881785540	fahim uddin	2	420	360	60	5	0.027	27	4	44			3		2		
794	401305	27-02-20	Ramu	Chakmarkul	Mistry para w-9	20	92.08677	21.41936		3	1	yes to tank	private	4	2009	Abul Hasem	01812809487	Abul Hasem	14	350	320	30	1.5	0.025	25	3		1				2		
795	401614	27-02-20	Ramu	Chakmarkul	Shamupar para	2	92.07188	21.43907		3	3	source of pipe to tar	private	3	2015	Salam	01887215131	Razzak	7	465	405	60	4	0.025	25	3		1	2			2		
796	401620	12-3-20	Ramu	Chakmarkul	Sere Mura w7	1	92.07177	21.45198		3	1	source of pot	private		2019	Sukkur Ali	01874172611	Sukkur Ali	8	450	410	40	1.5	0.004	4	3		1	1			2		
797	401511	27-02-20	Ramu	Chakmarkul	Voth para w-9	30	92.06946	21.43083		3	3	source of pipe to tar	private	5	1986	Islam Master	01838119616	Arafa	22	250	210	40	1.5	0.025	25	2		1	2			2		
798	401610	27-02-20	Ramu	Chakmarkul	Madrasha gate w-9	5.6	92.07148	21.42638	1		3	source of pipe to tar	private	5	2006	Saif uddin	01820554231	Saif uddin	6	60	40	20	1.5	0.025	25	3.5		1	1			2		
799	411518	03-03-20	Ramu	Dakshin Mithachhari	Murakacha	5.5	92.03279	21.40840		3	3	source of chanal to	private		2011	sayed alom	01815914659	sayed alam	20	200	170	30	3	0.150	150	18				3		2		
800	411619	03-03-20	Ramu	Dakshin Mithachhari	Gat para	3	92.03435	21.41576		4	3	source of chanal to	private		2005	Razaul Haq	01842447553	Razaul Haq	5	250	210	40	5	0.140	140	12	105			3		2		
801	411707	03-03-20	Ramu	Dakshin Mithachhari	Goni Sawdogor para w-3	15	92.07859	21.41275	2		1	no	private	1	2019	Sulaiman	01832942124	Sulaiman	1	80	40	40	2	0.038	38	8	90			3		2		
802	411709	03-03-20	Ramu	Dakshin Mithachhari	Barua para w-4	17	92.07661	21.40354		4	3		private	11	2019	Arifullah	0182432326	Arifullah	3	400	360	40	2	0.080	80	8	90			3		2		
803	411310	03-03-20	Ramu	Dakshin Mithachhari	Danomadbar para w-5	11	92.07176	21.39852		4	3	no	privat	1	2002	Abdul Karim	0183558303	Oman	10	720	670	50	4	0.200	200	7	120			3		2		
804	411306	03-03-20	Ramu	Dakshin Mithachhari	Dharpara w-3	11	92.07517	21.41571		3	1	no	private	4	2019	Sikumar	01827280325	Ramanto	30	860	810	50	2	0.030	30	6		1	2			1		
805	411514	03-03-20	Ramu	Dakshin Mithachhari	Foriramura w-7	22	92.05142	21.40729		4	3	source of chanal to	private		1995	Jabol Hussain	01859257521	Hasan	3	400	340	60	2	0.025	25	6	105			3		2		
806	411711	03-03-20	Ramu	Dakshin Mithachhari	Caliyatali w-6	9	92.06178	21.40452		3	1	no	private		1995	Abdur Rahim	01843009884	Abdur Rahim	10	250	200	50	2.5	0.030	30	5		1	2			2		
807	411304	03-03-20	Ramu	Dakshin Mithachhari	Purbo para	7	92.06212	21.41924		3	3	yes to tank	Private	10	2014	Abu Sukkur	01840227946	Sukkur	12	250	210	40	2	0.030	30	5		1	2			2		
808	411308	03-03-20	Ramu	Dakshin Mithachhari	Mukta baerpara w-4	17	92.07888	21.40802		3	1	no	private	1	2010	Noor hossain	01821015166	hossain	15	250	220	30	1.5	0.020	20	5		1	2			2		
809	411705	03-03-20	Ramu	Dakshin Mithachhari	Azzim uddin para w-3	12	92.07082	21.41853		3	1	no	private	11	2019	Abdul Khalek	01862305444	N/A	16	440	400	40	1.5	0.020	20	5		1	2			2		
810	411701	03-03-20	Ramu	Dakshin Mithachhari	Dhkhin Mithachhari	10	92.05788	21.41977		3	3	Tank	Care BD	1	2020	Dhkhin Mithachhari Gov	01713328829	Dilruba Akhter	180	260	230	30	1.5	0.025	25	5		1	2			2		
811	411302	03-03-20	Ramu	Dakshin Mithachhari	Gatpara w-1	7	92.05399	21.41691	1		1	no	NGO	7	2015	Osiur rahman	01843724547	Fahim	9	50	30	20	1.5	0.010	10	4		1	2				3	
812	411613	03-03-20	Ramu	Dakshin Mithachhari	Ghat para w1	4.3	92.05502	21.41735		3	3	Source of pond	private		1998	Mukter Ahmer	01319210573	Mukter	15	380	320	60	1.5	0.015	15	4		1	2			2		
813	411521	03-03-20	Ramu	Dakshin Mithachhari	Kaza Khondokar para w-6	8	92.05685	21.40733		3	3	source of pot	private	6	2019	Khalil	01839038649	Khalil	50	800	740	60	3	0.013	13	4		1	2			2		
814	411703	03-03-20	Ramu	Dakshin Mithachhari	Dhakkhin Para	13	92.05882	21.41544		3	1	no	Private	9	2009	Musa Ali	01865182371	Ali	8	300	260	40	1.5	0.018	18	4		1	2			2		
815	411617	03-03-20	Ramu	Dakshin Mithachhari	Porchem Kondar para-w-8	4.6	92.03484	21.40913		3	3	source of pipe to fie	private		2010	Hanif	01849514381	Hanif	1	200	170	30	2.5	0.030	30	3						2		
816	411615	03-03-20	Ramu	Dakshin Mithachhari	Asmar Guna bontola	33	92.04548	21.40803		3	1	Source of pipe to po	private	4	2008	Ahmed yousuf	01815438810	yousuf	12	220	190	30	1.5	0.012	12	3		1	2			2		
817	411516	03-03-20	Ramu	Dakshin Mithachhari	Chaindar Rowson A2 Mare sch	24	92.04292	21.41329		3	3	source of pipe to tar	DPHE		2003	Jura jannath	01831509844	Hura Jannath	205	750	690	60	1.5	0.016	16	3		1	2			2		
818	411620	03-03-20	Ramu	Dakshin Mithachhari	Muslim Abad w-9	10	92.03226	21.41981		3	3	Source of pipe to ta	private	5	2019	abdullah al mamun	01817243739	abdullah al mamun	5	300	280	20	4	0.025	25	2		2				2		
819	402210	26-02-20	Ramu	Fatekharkul	Officer Chor w-2	20	92.11173	21.41222	2		3	source of water is c	private	2	2006	Helal uddin	01818384430	Helal uddin	8	120	110	10	2	0.070	70	18	80			3			3	
820	402217	26-02-20	Ramu	Fatekharkul	Purbo ra jarkul w-9	16	92.10450	21.42726		3	4	No	Private	6	2019	Orindo barua	01840478478	Orindo barua	80	550	520	30	3	0.025	25	12		1	2			2		
821	402211	26-02-20	Ramu	Fatekharkul	Lamarpara w-2	20	92.11173	21.41147		3	4	sourced to pot	private	5	2014	Nurul haq	01819519975	Nurul haq	80	800	760	40	3	0.020	20	8		1	2			2		
822	402216	26-02-20	Ramu	Fatekharkul	Mandalpara w-4	18	92.10120	21.42572		3	4	source of pot	private	5	2019	Mijanur rahman	01816800069	Mijanur rahman	70	750	700	50	2	0.030	30	6		1	2			2		
823	402605	26-02-20	Ramu	Fatekharkul	Naikhong Chari leaf area w-6	8	92.11091	21.44403		4	3	source of pipe to fie	Private			Joynal Mohammad	01819904229	Joynal Mohammad	15	280	220	60	2.5	0.120	120	6	58			3		2		
824	402215	26-02-20	Ramu	Fatekharkul	Sikderpara w-3	17	92.08830	21.42468		3	3	source of pipe tank	private	11	2019	Nurul Huda	01835174352	Nurul Huda	8	950	900	50	3	0.110	110	5		1	2			2		
825	402607	26-5-20	Ramu	Fatekharkul	Marong lowa w-8	8	92.10049	21.43553		3	3	Source of pot	Govt.		2019	Romiz uddin	01824971714	Romiz uddin	11	800	740	60	1.5	0.022	22	3		1	2			2		
826	402506	26-02-20	Ramu	Fatekharkul	Moddom merolong w-8	5	92.10137	21.43921		3	3	source of pipe to tar	private	3	2017	Alomgir	01866153849	Alomgir	15	280	220	60	3	0.040	40	3		1	2			2		
827	402504	26-02-20	Ramu	Fatekharkul	South para Maitupe w-6	9	92.11032	21.43717		3	3	source of pipe to tar	Mosjid comitee	1	2019	Mamun sair	01634980210	Saidul	175	300	260	40	4	0.010	10	3			2			2		
828	402615	26-02-20	Ramu	Fatekharkul	Hajipara Primary school w-9	8	92.11262	21.42176		3	4	source of pot	Govt.	9	2019	Nasir uddin	01816130476	Ismail	400	820	750	70	1.5	0.019	19	3		1	2			2		
829	402613	26-02-20	Ramu	Fatekharkul	Uttar sreepur primary school	12	92.10829	21.42949		3	1	source of pot	govt.			school comittee	01827562058	Kanul boruna	550	700	640	60	1.5	0.018	18	3		1	2			2		
830	402212	26-02-20	Ramu	Fatekharkul	Rampara w-2	18	92.10204	21.41141	1		1	source of pipe to tar	Private	2	2012	Osman Goni	01878418421	Osman Goni	6	85	75	10	2	0.018	18	3		1	2			2		
831	402601	26-02-20	Ramu	Fatekharkul	Afishar Char w-1	6	92.10971	21.41684		3	3	source of pipe to tar	govt.	4	2005	Abdul Hakim	01836710494	Abdul Hakim	20	740	720	20	1.5	0.015	15	2		1	2			2		
832	402213	26-02-20	Ramu	Fatekharkul	Lombori para w-3	17	92.10204	21.40804		3	3	source of cannal to	private	1	2017	Nurul Hossain	01820185202	Nurul Hossain	18	215	195	20	2	0.090	90	3		1	2			2		
833	402214	26-02-20	Ramu	Fatekharkul	Lombori para w-36	17	92.09427	21.41730		3	3	source of pipe to tar	private	4	2005	Murshid alam	01818142282	Murshid alam	50	265	245	20	2	0.070	70	3		1	2			2		
834	402516	26-02-20	Ramu	Fatekharkul	Rajargul	4	92.11501	21.42682		3	3	source of pipe to tar	Private	5	2008	Jikunikkag	01827657941	Jikunikkag	6	270	250	20	6.5	0.040	40	3		1	2			2		
835	402502	26-02-20	Ramu	Fatekharkul	Dokkhin Srekul w-5	10	92.10796	21.42347		3	3	source of pipe to tar	private	4	2019	Chala mong	01821816408	chala mong	8	315	275	40	4	0.033	33	3		1	2			2		
836	407217	24-02-20	Ramu	Ghuniapalong	Tuaingkata w-1	19	92.12177	21.35453		4	3	No	Private	6	2015	Shah Alam	01812506983	Rupon	5	270	250	20	4	0.070	70	12	120			3			3	
837	407211	24-02-20	Ramu	Ghuniapalong	Purbo desua palong	5	92.09527	21.32369	2		3	No	Private	4	2008	Hazi Rashid	01813171276	Hazi Rashid	10	130	100	30	3	0.110	110	12	120			3		2		
838	407312	24-02-20	Ramu	Ghuniapalong	East Desua palong w-4	13	92.10174	21.33169		4	3	No	Private	6	2012	Hazi Abdul Goni	01858951610	Hazi Abdul Goni	6	300	240	60	3	0.080	80	7	120			3		2		
839	407213	24-02-20	Ramu	Ghuniapalong	Hadmen para w-2	17	92.10098	21.33422	1		1	No	Private	11	2018	Sultan Ahmed	01825319818	Sultan Ahmed	16	50	30	20	2	0.020	20	6		1	2				2	
840	407219	24-02-20	Ramu	Ghuniapalong	Uttar palong school w-3	20	92.07651	21.34809		3	1	no	private	7	2000	Asu mia	01647131686	Asu mia	20	250	210	40	2	0.020	20	6		1	2			2		
841	407609	24-02-20	Ramu	Ghuniapalong	East Golie Pore West	22	92.08511	21.30402		3	1	Pot	Govt.	2	2016	Roshid Alam	01823967883	Roshid Alam	60	800	740	60	1.5	0.030	30	6		1	2			2		
842	407603	24-02-20	Ramu	Ghuniapalong	DUah Palong purbo para w-6	27	92.08616	21.31355		4	3	source of chennel t	private	2	2018	Abdur Gafur	01816113672	Abdur Gafur	3	90	60	30	2	0.120	120	6	105			3		2		
843	407320	24-2-20	Ramu	Ghuniapalong	Kania palong w-3	12	92.07732	21.33984		3	3	no	Private	2	2012	Abdul Sukkur	01829121314	Abdul Sukkur	100	385	320	65	4	0.150	150	5		1	2	3			2	
844	407322	24-02-20	Ramu	Ghuniapalong	Cicle Kunia palang w-3	12	92.07732	21.33984		3	3	No	Private	2	2012	Abdur Sukkur	01829121314	Abdur Sukkur	100	385	320	65	4	0.150	150	5		1	2	3			3	
845	407314	24-02-20	Ramu	Ghuniapalong	Brodepa w-1	14	92.10496	21.33170		3	1	No	Private	4	1999	Ziauddin	01811875330	Ziauddin	20	280	230	50	2	0.018	18	5		1	2			2		
846	407310	24-02-20	Ramu	Ghuniapalong	4 no word east Desua	6	92.09370	21.32096		4	3	No	Private	4	2017	Habibur Rahman	01833089660	Habibur Rahman	10	650	610	40	3	0.100	100	5	120			3		2		
847	407601	24-02-20	Ramu	Ghuniapalong	Union porishod w-5	12	92.09257	21.31761		3	1	source of pot	govt.		1996	Union porishad	01831913360	Nurul islam	17	700	640	60	2	0.004	4	4		1	2			2		
848	407215	24-02-20	Ramu	Ghuniapalong	North Bro depa w-1	12	92.10988	21.33974		3	3	No	Private	8	2016	Shamsul Alam	01631620643	Shamsul Alam	30	260	220	40	2	0.070	70	4		1	2	3		2		
849	407502	24-02-20	Ramu	Ghuniapalong	Beshoah Paloner w-5	32	92.08796	21.31722		4	3	Source of channel t	Govt.	2	2012	Abdul Mojid	01823692166	Abdul Mojid	12	700	640	60	1.5	0.115	115	4	95			3		2		
850	407607	24-02-20	Ramu	Ghuniapalong	Porchim goyaliah palong w-8	39	92.07270	21.30116		3	3		Private	12	2019	Forid alom miah	01838249513	Forid alom miah	10	800	740	60	4	0.055	55	3		1	2			2		
851	407506	24-02-20	Ramu	Ghuniapalong	West Gowelic palong w-8	31	92.07197	21.30666		3	3	Tank	private	2	2020	Abul Kalam azad	01859676584	Abul Kalam azad	22	880	840	40	3	0.025	25	3		1	2			2		
852	407510	24-02-20	Ramu	Ghuniapalong	Himsuri Mangla par w-9	4.4	92.05360	21.29577		3	3	source of pipe to tar	Govt.	10	2018	Mosjid Comittee	01823308074	Joynal	25	220	140	80	4	0.040	40	3		1	2			2		
853	407504	24-02-20	Ramu	Ghuniapalong	Doha Palong w-6	26	92.08501	21.31796		3	3	source of pot	private	2	2020	Shofiul Karim	01811681700	Shofiul Karim	15	250	120	130	3	0.060	60	2		1	2			2		
854	407316	24-02-20	Ramu	Ghuniapalong	Kalur Deekan w-1	14	92.11223	21.34790		3	3	No	n/A	2	2019	Sayed Alam	01830169463	Sayed Alam	30	270	230	40	3	0.025	25	2		1	2			2		
855	407318	24-02-20	Ramu	Ghuniapalong	Paim bagan w-2	36	92.11642	21.36342		3	3	yes tank	Mosjid Fund	10	2017	Mosid	01824402110	Hafez shamiullah	50	260	210	50	2	0.040	40	2		1	2			2		
856	407508	24-02-20	Ramu	Ghuniapalong	East Gowalia palong w-7	4.7	92.08131	21.30571		3	3	source of pipe	Private	2	2020	Haji Lakariam Member	01815665697	Zakarian member	6	200	140	60	4	0.110	110	2		1	2			2		
857	407605	24-02-20	Ramu	Ghuniapalong	Dowa palong	4.2	92.08294	21.31957		3	3	Tank	private	4	1996	Monira begum	01819358517	Monira begum	10	250	220	30	1.5	0.024	24	3		1	2			2		
858	407611	24-02-20	Ramu	Ghuniapalong	Pacher Dep Mangla para w-9	9	92.05022	21.30091		3	3	Source of pipe to ta	private	3	2015	Salim	01880889357	Asma	6	220	110	110	3	0.030	30	3		1	2			2		
859	404506	04-03-20	Ramu	Idgar	Paimisha gona w-7-8	13	92.13972	21.56531		3	3	source of pot to field	govt.	2	2018	Moktar ahmed	01829930466	Moktar ahmed	50	780	700	80	1.5	0.028	28	24		1	2			2		
860	404508	04-03-20	Ramu	Idgar	Shoglra kata	9	92.14733	21.55189		3	4		Govt.	3	2018	Madrasha comittee	01824887282	Abdul Aziz	290	750	690	60	1.5	0.003	3	18		1	2			2		
861	404605	04-03-20	Ramu	Idgar	Thotor bil	14	92.13461	21.56302		4	4	source of canal	n/A			Abu Ahmed	01879487105	Private	10	200	160	40	3	0.160	160	12	105			3		2		
862	404504	04-03-20	Ramu	Idgar	Thorar Bill w-7	5	92.12979	21.5683		4	3	source of channel t	private	3	2010	Nozir Ahmed	01830784634	Bosher ahmed	1	300	240	60	3	0.040	40	6	105			3		3		

Annex 2.2–1 Inventory of Existing Wells

	Interpretation of Questionnaire number (x-xx-x-xx=Upazila code-Union code-Data collector Code-Quesi)	A. Location					B. GPS Coordinate		3.1 Type of Survey [Shallow Tube Well	3.2 Type of Survey [Deep Tube Well (DTW)]			3.4 Founder name of the well (such as DPHE,BADC, Water aid, BRAC,Private, Others)	3.5 Date of Installation					3.10 Structure of the well						3.13 Usage of groundwater				Water Quality		
SL#		Date	Upazila	Union	Village/ Land marks	Elevation in m (GPS)	2.1 Longitude	2.2 Latitude	1= Domestic 2= Irrigation	3= Domestic 4= Irrigation	3.3 Type of well	3.3.1 Source of piped scheme		Month	Year	3.6 Owner Name	3.7 Telephone number:	3.8 Handler of the well	3.9 Number of user (well)	Depth of the well (ft)	Location of screen (ft)	Length of Screen(ft)	Diameter of casing pipe (inch)	Pumping rate ($M^{3/minute}$)	Pumping rate L/minute)	3.12 Pumping hours (per day)	3.13 Yearly Pumping days(only for	1=Drinking/ cooking	2=Washing	3=Irrigation	4=Others (nursing etc.)	1=Salinity 2=Sweet	3=Presence of Iron	4=Others (sand etc.)
863	404510	04-03-20	Ramu	Idgar	Boiduy para	9	92.16096	21.54049		3	3	Source of pipe to ta	Govt.	10	2019	Hlatun Rakhine	01816130873	Hlagya merme	110	700	640	60	2	0.023	23	4		1	2			2		
864	404607	04-03-20	Ramu	Idgar	Panisha par w-8	9	92.14366	21.55656		3	1	source of pot	private	3	2005	Oceur Rahman	01860252389	Oceur Rahman	8	220	190	30	1.5	0.012	12	4		1	2			2		
865	404502	04-03-20	Ramu	Idgar	Bodor Mukam w-3	7	92.13609	21.57450		3	4	source of pot	Govt.	4	2010	Eidgar H and FWC	01811600072	Abdus Salam	10	750	690	60	1.5	0.005	5	3			2			2		
866	404609	04-03-20	Ramu	Idgar	Korolia mora w-9	10	92.15414	21.54105		3	3	source of pipe to tar	n/A		2015	school comittee	01876000559	Shajahan	300	800	740	60	1.5	0.030	30	3		1	2			2		
867	404601	04-03-20	Ramu	Idgar	Raskat Khondokar para	8	92.14140	21.57391		3	3	source of pipe to tar	private	10	2019	shofiul alam	01830151147	shofiul alam	10	850	740	110	1.5	0.022	22	2.5						2		
868	404603	04-03-20	Ramu	Idgar	Dumcha Ghata	7	92.12962	21.57582		3	3	source of pipe to po	private		2014	Nurul islam	01824879541	Fatematuj Jannat	5	200	160	40	1.5	0.025	25	3.5		1	2			2		
869	405301	01-03-20	Ramu	Joarianala	Shawdagar para w-7	10	92.1004	21.47013		3	4	no	DPHE	7	1990	Joarianala Govt. primar	01845094534	Amjad hosen	300	650	600	50	1.5	0.015	15	24		1	2			2		
870	405511	01-03-20	Ramu	Joarianala	Charpara Mosjid w-9	19	92.09472	21.46751		3	3	source of tank	Mosjid commetee	private	1995	Golam Kobir	01819629701	Amir hosen	50	700	640	60	1.5	0.018	18	24		1	2			2		
871	405204	01-03-20	Ramu	Joarianala	Harillatun w-3	11	92.08214	21.47027		3	4	No	DAE	8	2017	Saifuddin	01818810374	Faruk	2	700	640	60	1.5	0.030	30	24		1	2			2	3	
872	405303	01-03-20	Ramu	Joarianala	Moiskhom para w-5	8	92.08948	21.47442		3	4	No	DPHE	12	2019	Shikder para Mosjid	01826980588	Abul Kalam	100	750	720	30	1.5	0.020	20	24		1	2			2	4	
873	405614	01-03-20	Ramu	Joarianala	Uttar Mitha cure w-2	4	92.09553	21.45057		4	3	source of channal to	private		1985	Ajahar miah	01865182471	Ajahar miah	22	750	710	40	2	0.055	55	15	140			3		2		
874	405612	01-03-20	Ramu	Joarianala	Ilishiya Para w-6	7	92.09029	21.46544		3	3	source of pot	Govt.		2015	Nurul Amin	01815681694	Nurul Amin	20	760	700	60	1.5	0.011	11	12		1	1			2		
875	405519	01-03-20	Ramu	Joarianala	Purbo nonac hore	10	92.08960	21.45810		4	3	source of channel to	private	1	2019	solim ullah	01864580701	solim ullah	15	400	330	70	4	0.140	140	10	105			3		2		
876	405522	12-3-20	Ramu	Joarianala	Uttar mith cure	5	92.007287	21.45279		4	3	source of channel	private		2012	Abdul Salam	01856904058	Sukkur Ali	1	800	740	60	4	0.060	60	8	105			3		2		
877	405520	12-3-20	Ramu	Joarianala	Uttar Mitha cure	4	92.07236	21.45005		4	3	source of channel	private	2	2012	Rahim	01826134348	Fazal ahmed	0 kane 8 pers	550	490	60	4	0.600	600	8	105			3		2		
878	405621	12-3-20	Ramu	Joarianala	Uttar mitha cure	6	92.07290	21.45146		4	3	source of channel	private	4	2010	Azim	01887215434	Fazal uddin	15 kan 8 p	600	580	20	4	0.150	150	7	110			3		2		
879	405206	01-03-20	Ramu	Joarianala	Nur para w-7	19	92.10367	21.46377		3	3	No	Private	7	2010	Zafor alam	01875704412	Zafor alam	18	270	240	30	1.5	0.025	25	6		1	2			2		
880	405515	01-03-20	Ramu	Joarianala	Uttor Mithachore w-1	21	92.09145	21.215131		4	3	source of channel to	private			Babul member	01819993093	Babul member	1	1000	920	80	3	0.160	160	6	105			3		2		
881	405616	01-03-20	Ramu	Joarianala	Askor khil w-1	22	92.08279	21.45204		4	3	source of channel to	private	2	2010	Ali Ahmed	01869005604	Ali Ahmed	10	450	390	60	3	0.050	50	6	105			3		2		
882	405210	01-03-20	Ramu	Joarianala	Purbo para w-8	11	92.10078	21.47208	2		3	No	Private	2	2019	Saiful Islam	01871676146	Saiful Islam	Personal firm	70	40	30	1.5	0.020	20	6	120	1	2	3		2		
883	405610	01-03-20	Ramu	Joarianala	Tahcinul Quran	8	92.08810	21.48590	1		3	source of pot	Private	2	2014	Rashid	01855549494	Rashid	40	80	60	20	3	0.009	9	5		1	2			2		
884	405307	01-03-20	Ramu	Joarianala	Cha Bagan Bazar w-2	13	92.09889	21.44957		3	3	yes to tank	private	8	2018	Nepal Sharma	01812340004	Nepal Sharma	5	250	210	40	1.5	0.020	20	5		1	2			2		
885	405619	12-3-20	Ramu	Joarianala	Uttar Mitha Cure	3	92.08062	21.44776		4	3	source of channel	private		1995	Saiful	01829670350	Saiful	25	450	390	60	4	0.018	18	5	105			3		2		
886	405202	01-03-20	Ramu	Joarianala	Purbo para w-8	11	92.10580	21.47630		3	4	No	Private	6	2013	Sirajul Haq	01814437405	Sirajul Haq	15	250	200	50	2	0.030	30	4		1	2				3	
887	405305	01-03-20	Ramu	Joarianala	Guna Para w-5	17	92.09402	21.47315		3	1	No	Private			Abul Kashem	01818687531	Abul Kashem	20	260	230	30	1.5	0.012	12	4		1	2			2		
888	405517	01-03-20	Ramu	Joarianala	Monacore w-4	34	92.08517	21.45711		3	1	source of pot	private	3	2017	Kolimollah	01865739131	Kolimollah	40	877	817	60	3.1	0.030	30	4		1	2			2		
889	405208	01-03-20	Ramu	Joarianala	Nonaishari w-4	13	92.08418	21.45963		3	3	No	Private	8	2016	Adbur Rahim	01843599809	Adbur Rahim	8	380	300	80	1.5	0.020	20	4		1	2			2		
890	405309	01-03-20	Ramu	Joarianala	Ilishapara w-4	18	92.08596	21.64315		3	3	yes tank	private	9	2014	Sayrul	01834680767	Sayrul	15	70	10	60	2	0.030	30	3		1	2			2		
891	405618	01-03-20	Ramu	Joarianala	Uttar para longlore	32	92.08111	21.46303		3	3	source of pipe to tar	private	3	2018	Alam	01824311092	alam	12	350	310	40	1.5	0.025	25	2		1	2			2		
892	405613	01-03-20	Ramu	Joarianala	West Ilishapar	5	92.0885	21.46252		3	3	source of pipe to tar	private	3	2008	Jasmin akter	01818002577	Jasmin akter	7	800	740	60	1.5	0.017	17	2		1	2			2		
893	408517	29-02-20	Ramu	Kowerkhope	West Gona w-7	8	92.11649	21.43969		4	3	source of channel	private	2	2010	Shomsher alam	01840006530	Nurul	4	300	240	60	6	0.200	200	16	105			3		2		
894	408326	12-3-20	Ramu	Kowerkhope	Tassapara w-7	16	92.12198	21.44321		4	3	No	Private	2	2018	Kashem Kaderi	01828449802	Amir	Farmar 8 Hed	400	310	90	2	0.250	250	10	90			3		2		
895	408623	12-3-20	Ramu	Kowerkhope	School para	11	92.12877	21.44444	2		3	source of channel	private	4	2013	Ashanullah	01816465855	Ashanullah	5	180	140	40	4	0.025	25	10	105			3		2		
896	408324	12-3-20	Ramu	Kowerkhope	Tassakhali w-8	13	92.1242	21.44619		4	3	no	private	1	2019	Habibullah Member	01820186361	Amir hosen	2	420	360	60	2	0.200	200	9	59			3			3	
897	408621	12-3-20	Ramu	Kowerkhope	Ukhear Guna	15	92.12737	21.44637		4	3	source of channel	private	3	2012	Sunil Barua	01812340078	Sunil Barua	5	250	200	50	4	0.180	180	8	105			3		2		
898	408519	12-3-20	Ramu	Kowerkhope	Khilapar	10	92.12295	21.44726		4	3	Source of pipe	private	2	2015	Sherajullah	01830591809	Mofijullah	7	360	300	60	4	0.120	120	8	105			3		2		
899	408620	12-3-20	Ramu	Kowerkhope	Ukhear Guna	15	92.12595	21.44763	2		2	source of pipe	private			Rajmohon boruya	01812580241	Rajmohon boruya	5	170	130	40	4	0.060	60	8	110			3		2		
900	408305	29-02-20	Ramu	Kowerkhope	Bazar para w-5	13	92.13435	21.42878		3	1	No	DPHE	8	2004	Union Porishad	01814032357	Razaul islam	150	800	770	30	2	0.022	22	7		1	2			2		
901	408618	29-02-20	Ramu	Kowerkhope	Fulane Char	33	92.12878	21.44443		4	3	source of channel	private	1	2016	Ahasan ullah	01816465858	Ahasan ullah	7	220	180	40	4	0.035	35	7	60			3		2		
902	408511	29-02-20	Ramu	Kowerkhope	Ukher Ghone lemon para	7	92.13620	21.44388		4	3	source of cannel	private	11	2019	Abdur Rahim	01824897527	Abdur Rahim	4	360	300	60	3	0.065	65	7	78			3		2		
903	408612	29-02-20	Ramu	Kowerkhope	Ukiahar Gona Laamar para w-9	35	92.13902	21.44522		3	1	source of pot	private	2	2018	Hanif	01874868007	Hanif	60	230	190	40	1.5	0.010	10	6		1	2			2		
904	402219	12-3-20	Ramu	Kowerkhope	Ukhiar Guna lot w-6	11	92.11637	21.43933	2		3	no	private	4	2008	Abdul Gafur	01815527371	Abdul Gafur	Poultry Firm	80	60	20	1.5	0.050	50	6	90		2	3			3	4
905	408225	12-3-20	Ramu	Kowerkhope	Tasskhali w-7	15	92.12169	21.44427		4	3	No	Private	12	2018	Rahamatullah	01869772315	Lutfor Rahman	3	440	390	50	1.5	0.080	80	6	90			3		2		
906	408616	29-02-20	Ramu	Kowerkhope	Lat Ukiargunal w-7	10	92.11907	21.44511	2		4	source of channel to	private	1	2012	Rashid ahmed	01840634378	Rashid ahmed	4	170	130	40	4	0.180	180	6	100			3		2		
907	408303	29-02-20	Ramu	Kowerkhope	Midle Kawerkhope w-5	7	92.12949	21.42692		3	3	No	Private	6	2015	Hamimgonj furkania Ma	01755568544	Sirajul haq	100	230	200	30	2	0.025	25	5		1	2			2		
908	408204	29-02-20	Ramu	Kowerkhope	West Kowerkhope w-6	7	92.13375	21.42813		3	1	No	Private	4	2012	Sarower kamal	01852886541	Sarower kamal	18	220	200	20	2	0.015	15	5		1	2			2		
909	408327	12-3-20	Ramu	Kowerkhope	Ukhiyar Gon Rastar Motha w-7	19	92.11624	21.44056	2		3	No	Private	8	2012	Shamsu Alam	01840006430	Shamsu Alam	sed in Nursa	80	65	15	1	0.035	35	5	90			3			3	
910	408202	29-02-20	Ramu	Kowerkhope	Biliza para w-4	11	92.14421	21.43208		3	1	No	Private	10	2016	Mohammad Islam	01873220202	Mohammad Islam	10	250	220	30	1.5	0.020	20	4		1	2			2		
911	408301	29-02-20	Ramu	Kowerkhope	Kowerkhope purbo para w-4	15	92.08215	21.25749	1		1	No	Private	7	2000	Noor Ahmad	01635623425	Noor Ahmad	10	80	60	20	1.5	0.018	18	4		1	2			2		
912	408515	29-02-20	Ramu	Kowerkhope	Tilapar	4.4	92.12606	21.45162		3	3	source of pot	private	1	2018	Soyed ahmed	01868740356	Jaheda begum	15	360	300	60	4	0.008	8	3		1	1			2		
913	408610	29-02-20	Ramu	Kowerkhope	Kowerkhope	33	92.13402	21.44099	1		1	source of pot	private	2	1919	Madrasha comitee	01840753530	Mofizullah	15	60	40	20	1	0.015	15	3		1	2			2		
914	408513	29-02-20	Ramu	Kowerkhope	School para w-8	4.0	92.12932	21.44541		3	3	source of pot	private		2014	Mofizur Rahman	01843727020	Ibrahim	8	300	260	40	3	0.018	18	2.5		1	1			1		
915	408614	29-02-20	Ramu	Kowerkhope	Donokkin Sowdagar para w-8	10	92.13121	21.45112		3	3	source of pipe to tar	private	4	2018	Haji Nur Ahmad	01840075590	Haji Nur Ahmad	30	280	220	60	4	0.025	25	2.5		1	2			2		
916	408522	12-3-20	Ramu	Kowerkhope	Ukear Guna	20	92.12710	21.44848		3	3	source of pipe	private	4	2014	Suruz Boruuyan	01813803298	Suruz Boruuyan	6	200	170	30	4	0.012	12	2.5		1	2			2		
917	409309	25-02-20	Ramu	Rajarkul	Rajarkul West hajirpara	6	92.11579	21.41558		3	4	No	DPHE	8	2013	Nasrat Asia Govt. Prim	01818158195	Kadam uddin	200	700	680	20	2	0.035	35	24		1	2			2		
918	409202	25-02-20	Ramu	Rajarkul	Shikder para w-4	10	92.10377	21.39718		4	3	No	Private	11	2018	Sohel Manik	01813781321	Sohel Manik	25	550	480	70	3	0.150	150	20	120			3		2		
919	409513	25-02-20	Ramu	Rajarkul	Gunar parara w-7	5.0	92.11961	21.39787		4	3	source of chanel of	private	1	1999	Shamiul alam	01830151411	Shamiul alam	25	500	420	80	4	0.200	200	15	110			3		2		
920	409616	25-02-20	Ramu	Rajarkul	Uttar para Purbo Razarku	33	92.11752	21.41758		4	3	source of channel to	n/A	8	2019	Azizur Rahman	01866354033	Azizur Rahman	4	850	790	60	4.1	0.140	140	14	105			3		2		
921	409515	25-02-20	Ramu	Rajarkul	Purbo Razarkul Dokhin para	4.2	92.11591	21.41552		4	3	source of UNDER g	BADC		2018	Kamal	01811624186	Kamal	3	200	140	60	4	0.120	120	13	66			3		2		
922	409208	25-02-20	Ramu	Rajarkul	Rajarkul Soceth shikderpara	16	92.09453	21.41228	1		1	No	Private	9	2017	Robiul Haq	01819825215	Robiul Haq	20	80	40	40	1.5	0.015	15	7		1	2			2		
923	409204	25-02-20	Ramu	Rajarkul	East Umkhali para	13	92.07893	21.41318		3	1	No	Private	7	2003	Abu Shama	01832475748	Abu Shama	35	320	290	30	2	0.025	25	7		1	2			2		
924	409206	25-02-20	Ramu	Rajarkul	Haldarkul w-2	12	92.08801	21.40933		3	1	No	Private	10	2015	Shamsul alam	01815148176	Shamsul alam	15	250	210	40	2	0.020	20	6		1	2			2		
925	409301	25-02-20	Ramu	Rajarkul	Nonyapara	16	92.09892	21.41305	1		1	No	DPHE	7	2018	Rajarkul Union porisha	01820185045	Shafi	50	65	50	15	2	0.025	25	6		1	2			2		
926	409303	25-02-20	Ramu	Rajarkul	West Shikder para w-3	13	92.08976	21.41454		3	3	yes to tank	Madrasha fund	5	2006	Joynul Abedin		N/A	100	860	800	60	3	0.150	150	5		1				2		
927	409305	25-02-20	Ramu	Rajarkul	Palpara w-1	13	92.08503	21.41340		3	1	No	DPHE	8	2015	Rajarkul Govt. primary	01862030586	Ram Prashad Dhor	100	790	740	50	2	0.030	30	5		1	2			2		
928	409614	25-02-20	Ramu	Rajarkul	Siko Lghat w-7	4.1	92.11069	21.40902		4	3	source of pipe	private	4	2005	Afazul haq	01816117885	Afazul haq	1	300	260	40	1.5	0.095	95	4	45			3		2		
929	409611	25-02-20	Ramu	Rajarkul	Dangpara Memberar Mosjid	5.9	92.10329	21.41081		3	3	Source of pipe to ta	Govt.	9	2019	Ali Ahmed	01815627381	Atauillah	17	700	640	60	1.5	0.012	12	3		1	2			2		
930	409612	25-02-20	Ramu	Rajarkul	Boddar Khil	4.3	92.10823	21.40659		3	3	source of pipe to tar	private	9	2014	Nurul Haq	01827288614	Sherazul Haq	35	220	180	40	1.5	0.011	11	3		1	2			2		
931	409610	25-02-20	Ramu	Rajarkul	Dangpara w-5	21	92.10204	21.41006	2		2	source channal of fi	private	7	2015	Ahmed hossain	01863374470	Ahmed hossain	9	75	60	15	1.5	0.027	27	2	88	1	2	3		2		
932	409307	25-02-20	Ramu	Rajarkul	Shikder para w-3	12	92.09214	21.40981		3	1	No	Private	7	2000	Abul Kasem	01813291677	Safique	10	230	190	40	1.5	0.017	17	11		1	2			2		
933	410209	02-03-20	Ramu	Rashidnagar	Hamirpara w-5	9	92.07504	21.51041		3	4	No	Private	9	2017	Gura mia	01819449965	Didarul	14	700	660	40	2	0.020	20	24		1	2			2		
934	410208	02-03-20	Ramu	Rashidnagar	Kadomor para w-5	9	92.06865	21.51056		4	4	Yes pipe to cannal	Private	5	2001	Nur Ahamed	01815438574	Nur Ahamed	2	800	740	60	2	0.030	30	24	90	1	2	3		2		
935	410207	02-03-20	Ramu	Rashidnagar	Thobiagona w-6	16	92.07843	21.50124		4	3	No	Private	10	2019	Haji Gulam Hossain	01638910700	Haji Gulam Hossain	1	280	240	40	2	0.080	80	21	90	1	2	3		2		
936	410206	02-03-20	Ramu	Rashidnagar	Adorshogram	6	92.07559	21.49952	2		3	Yes pipe to canal	private	4	2018	Jaku mia	01869224200	Jaku mia	4	70	60	10	1.5	0.120	120	21	90	1	2	3		2		
937	410514	02-03-20	Ramu	Rashidnagar	Uttar khali w-9	2	92.06169	21.47944		4	3	source of the canne	private			Iqbal	01817243714	Iqbal	25	250	210	40	4	0.080	80	20	88			3			3	
938	410511	02-03-20	Ramu	Rashidnagar	Pahirchar w-7	14	92.07853	21.43759	1		3	source of pot	private	3	2016	Boshir ahmed	01818808735	Shimul	5	60	40	20	1.5	0.012	12	15		1	2			2		
939	410513	02-03-20	Ramu	Rashidnagar	Utta Khali w-8	7	92.07195	21.48861		4	3	Source of channal	Private	2	2020	Sayed kazi	01484395262	Sayed kazi	15	200	170	30	4	0.120	120	10	105			3		2		
940	410223	02-03-20	Ramu	Rashidnagar	North katiar para notun bazar w	20	92.06725	21.51915		3	1	No	Private	11	2010	Mukter Ahmed	01883558519	Mukter Ahmed	25	270	250	20	2	0.015	15	8		1	2			2		
941	410618	02-03-20	Ramu	Rashidnagar	Borodoler Chora w-3	17	92.06467	21.49810		3	1	Source of pot	Govt	2	2019	Abul hossain	01843069129	Kamal hosen	30	800	740	60	1.5	0.007	7	8		1	2			2		
942	410617	02-03-20	Ramu	Rashidnagar	Uttar kholi roshid nagor w-9	31	92.06433	21.48168		4	3	source of channal to	private	2	2020	Mozibul alam	01823878367	Mozibul alam	3	250	210	40	4	0.110	110	8	44			3		2		
943	410302	02-03-20	Ramu	Rashidnagar	Sandeep para w-1	5	92.06464	21.51959		4	3	No	Private	7	2017	Nurul Islam	01864261604	Nurul Islam	10	450	380	70	2	0.200	200	8	120			3			3	
944	410305	02-03-20	Ramu	Rashidnagar	Khaderpara w-5	21	92.06811	21.51254		3	1	No	Private	2	2010	Md. Shafi	01877471917	Ayater islam	10	240	200	40	1.5	0.010	10	6		1	2			2		
945	410306	02-03-20	Ramu	Rashidnagar	Pahari para w-4	11	92.06808	21.51644		4	3	No	Private	9	2012	Nurul Haq	01840735067	Nurul Haq	8	460	390	70	2	0.150	150	6	92			3		2		
946	410301	02-03-20	Ramu	Rashidnagar	Shiker para w-7	13	92.05788	21.51792		3	4	yes to tank	NGO			Massokhali madrasha	01814292464	Shahajan sahed nur	150	240	200	40	2	0.130	130	5		1	2				3	
947	410303	02-03-20	Ramu	Rashidnagar	Kahatia para w-2	10	92.05798	21.51232		3	1	no	DPHE	11	1994	Uttar kahatia para, govt	01825820167	Tahamina	186	600	550	50	1.5	0.015	15	5		1	2			2		
948	410512	02-03-20	Ramu	Rashidnagar	Murapara w-8	5	92.07812	21.49375	2		4	source of channel	n/A	2	2010	Rashidul Alam	01860856526	Janaalam	10	80	60	20	4	0.080	80	5	80			3		2		
949	410210	02-03-20	Ramu	Rashidnagar	Kadomorpara w-5	8	92.06450	21.51191		3	3	No	Private	2	2015	Meher ali	01878973828	Meher ali	70	700	650	50	3	0.070	70	4		1	2			3		
950	410222	02-03-20	Ramu	Rashidnagar	Purbo kadomor para w-5	12	92.06767	21.51356		3	3	No	Private	10	2005	Abdus Sattar	01815119162	Abdus Sattar	15	220	210	10	2	0.090	90	3		1	2			2		
951	410304	02-03-20	Ramu	Rashidnagar	Kademor para w-5	6	92.06377	21.51095		3	3	No	Private			Rezaul Karim	01813221126	Rezaul Karim	sona Poultry	730	650	80	2	0.050	50	3		1	2		4	2		
952	410519	02-03-20	Ramu	Rashidnagar	Borodoler Sora	8	92.06091	21.49952		3	3	Source of pipe to ta	school comity		2019	Jaiyour rahman	01814363337	Monjur Alam	350	600	540	60	3	0.025	25	2			2			1		
953	410515	02-03-20	Ramu	Rashidnagar	Purbogona par	27	92.06227	21.49093		3	3	source of pot	private	11	2016	Nurul Alam	01817247409	Nurul Alam	20	240	180	60	1.5	0.025	25	2		1	1			2		

Annex 2.2-2 Simultaneous Ground Water Level Measurement

Ground Water Level Measurement in Rainy and Dry Seasons

					B. GPS Coordinate /Elevation (DEM: SRTM)			Rainy Season			Dry Season				[Shallow Well (STW)]	[Deep Well (DTW)]	3.3 Type of well
SL#	Interpretation of Questionnaire number (x-xx-x-xx=Upazila code-Union code-Data collector Code-Ques#)	Upazila	Union	Village/ Land marks	2.1 longitude	2.2 latitude	Elevation (SRTM)	Water Level from Pipe Top (m)	Water Level from GL (m)	**Water Level from MSL Sep 2020**	Parapet Height in (m)	Water Level from Pipe Top (m) (Sep 2020)	Water Level from GL (m)	**Water Level from MSL Mar 2021**	1= Domestic, 2= Irrigation	3= Domestic, 4= Irrigation	1= No. 6, 2= Tara, 3= Motor, 4= others
1	104305	Chokaria	Badarkhali	Uttar notun guna w-1	91.94683	21.74854	8.84	2.17	2.17	6.67	0.00	4.90	4.90	3.94		3	1
2	104920	Chokaria	Badarkhali	Hospital Road (Front of Market), w-4	91.95032	21.71952	5.79	3.40	3.40	2.39	0.00	7.25	7.25	-1.46		3	1
3	105302	Chokaria	Barawtali	Boiddora para w-4	92.06735	21.82067	8.54	0.65	0.37	8.17	0.28	1.30	1.02	7.52		3	1
4	105721	Chokaria	Barawtali	Mash para w-3	92.07159	21.82859	10.37	0.60	0.34	10.03	0.26	1.88	1.62	8.75		3	1
5	106213	Chokaria	Bheola Manik Char	Khachi Shikder para w-7	92.03192	21.78345	9.15	2.54	2.37	6.78	0.17	4.47	4.30	4.85		3	3
6	106609	Chokaria	Bheola Manik Char	Bothbar Ghat w-4 south para Mosjid	92.01656	21.78390	6.10	0.15	0.00	6.10	0.15	0.00	-0.15	6.25		4	4
7	108216	Chokaria	Chiringa	Moidhom Soudagor para Munshipara w-	92.04458	21.73323	6.71	0.53	0.26	6.45	0.27	0.86	0.59	6.12		3	1
8	108702	Chokaria	Chiringa	Uttar Goripokur w-3	92.06020	21.73173	6.71	1.75	1.50	5.21	0.25	3.67	3.42	3.29		3	1
9	116422	Chokaria	Dhemoshia	Bazar para w-9	91.98278	21.76751	4.58	3.90	3.41	1.17	0.49	5.46	4.97	-0.39		3	1
10	116815	Chokaria	Dhemoshia	Poschim Gondia w-6	91.95763	21.75778	4.58	3.88	3.66	0.92	0.22	6.95	6.73	-2.15		3	1
11	103408	Chokaria	Dulhazara	Balorcar w-4	92.06835	21.65972	4.87	0.32	0.00	4.87	0.32	0.00	-0.32	5.19		3	3
12	103813	Chokaria	Dulhazara	Bagan para w-9	92.07645	21.66614	9.78	3.40	3.17	6.61	0.23	3.95	3.72	6.06		3	3
13	110814	Chokaria	Fasiakhali	Abdur Rashid Chw.High School,Sikdar pa	92.08247	21.73588	7.62	0.60	0.00	7.62	0.60	0.00	-0.60	8.22		3	4
14	110808	Chokaria	Fasiakhali	Goniah para w-5	92.11013	21.74360	10.98	0.71	0.47	10.51	0.24	2.90	2.66	8.32		3	1
15	119721	Chokaria	Harbang	Modukhali w-1	92.05267	21.83340	6.41	0.50	0.00	6.41	0.50	0.00	-0.50	6.91		3	4
16	119403	Chokaria	Harbang	Baiakata Jame Mosjid, w-6	92.04513	21.85247	11.89	0.50	0.50	11.39	0.00	-0.50	-0.50	12.39		3	1
17	112722	Chokaria	Kaiarbil	Cotho Veala w-3	92.04029	21.78545	13.72	0.40	0.30	13.42	0.10	1.18	1.08	12.64		3	1
18	112211	Chokaria	Kaiarbil	Khojakhali Bangla para w-6	92.05018	21.79743	6.71	2.17	1.85	4.86	0.32	4.03	3.71	3.00		3	1
19	111113	Chokaria	Kakara	Rudro para W-5	92.10651	21.75644	12.20	3.35	2.33	9.87	1.02	4.65	3.63	8.57		3	3
20	111522	Chokaria	Kakara	Purbo kakara w-8	92.12061	21.75053	13.12	3.50	3.25	9.87	0.25	5.35	5.10	8.02		3	3
21	102818	Chokaria	Khutakhali	Porbo Nayah para w-9	92.06661	21.60806	13.11	0.77	0.00	13.11	0.77	0.00	-0.77	13.88		3	4
22	102107	Chokaria	Khutakhali	Dokkhin para w-5	92.06599	21.61506	7.10	1.92	1.72	5.38	0.20	1.95	1.75	5.35	1		1
23	102112	Chokaria	Khutakhali	Gozzamtoli khulakhali w-4	92.07205	21.62188	7.93	0.80	0.00	7.93	0.80	0.00	-0.80	8.73		3	4
24	117915	Chokaria	Konakhali	Dokkhin Konakhali, W-8	91.98608	21.7746	4.89	2.17	1.72	3.17	0.45	3.79	3.34	1.55		3	1
25	117409	Chokaria	Konakhali	Kuhakhali w-3	91.96589	21.78508	4.27	2.60	2.40	1.87	0.20	5.28	5.08	-0.81		3	1
26	113704	Chokaria	Lakhyarchar	Carpara w-8	92.08288	21.77263	8.23	1.15	1.00	7.23	0.15	2.25	2.10	6.13		3	1
27	113920	Chokaria	Lakyarchar	Purbo para w-9	92.08525	21.77287	10.37	0.92	0.62	9.75	0.30	2.36	2.06	8.31		3	1
28	113609	Chokaria	Lakhyarchar	Mondol para w-1	92.07188	21.78043	8.84	3.90	3.80	5.04	0.10	5.05	4.95	3.89	1		3
29	115407	Chokaria	Paschim Bara Bheola	Lalbridge w-9	92.00690	21.75229	5.49	2.17	1.71	3.78	0.46	4.25	3.79	1.70		3	1
30	115610	Chokaria	Paschim Bara Bheola	Dorbash kata Adorsho Bazar w-3	91.97012	21.74497	5.80	5.26	5.04	0.76	0.22	8.55	8.33	-2.53		3	1
31	101501	Chokaria	Pourasava	Cood Road Chokorian w-6	92.06931	21.75267	8.84	4.59	4.25	4.59	0.34	5.22	4.88	3.96		3	3
32	101605	Chokaria	Pourasava	Moddom para kariya gona w-5	92.05898	21.75025	9.76	0.80	0.00	9.76	0.80	0.00	-0.80	10.56		3	4
33	109111	Chokaria	Purba Barabheola	Bania Char Hamiusnah Eatimkhana,w-4	92.03056	21.77371	7.62	0.60	0.00	7.62	0.60	0.00	-0.60	8.22		3	4
34	109804	Chokaria	Purba Barabheola	Salenogor para w-1	92.02250	21.76537	4.58	1.83	1.83	2.75	0.00	4.10	4.10	0.48		4	3
35	114411	Chokaria	Saharbil	Purbo para w-4	92.05840	21.75773	10.05	4.00	3.75	6.30	0.25	5.10	4.85	5.20		3	1
36	114407	Chokaria	Saharbil	Pachim Maizgana w-6	92.04755	21.75306	7.93	2.07	1.77	6.16	0.30	3.05	2.75	5.18		3	1
37	118802	Chokaria	Surajpur-Manikpur	Moddom Surajpur w-9	92.12732	21.75480	10.10	1.55	1.55	8.55	0.00	4.92	4.92	5.18	2		3
38	118308	Chokaria	Surajpur-Manikpur	Uttar para w-8	92.13867	21.76475	11.59	3.90	3.65	7.94	0.25	6.30	6.05	5.54	1		1
39	307218	Cox's bazar	Chaufaldandi	Dokkhin para	92.01273	21.51465	5.49	0.00	-0.45	5.94	0.45	0.20	-0.25	5.74		3	1
40	307919	Cox's bazar	Chaufaldandi	Dokkhin Para Poschim (Moddom Para),	92.00728	21.51783	5.49	1.65	1.25	4.24	0.40	5.85	5.45	0.04		3	1
41	307309	Cox's bazar	Chaufaldandi	Khunkar Khil w-9	92.04492	21.53749	4.58	0.30	0.00	4.58	0.30	6.34	6.04	-1.46		3	3

Annex 2.2-2 Simultaneous Ground Water Level Measurement

					B. GPS Coordinate /Elevation (DEM: SRTM)			Rainy Season			Dry Season				[Shallow Well (STW)]	[Deep Well (DTW)]	3.3 Type of well
SL#	Interpretation of Questionnaire number (x-xx-x-xx=Upazila code-Union code-Data collector Code-Ques#)	Upazila	Union	Village/ Land marks	2.1 longitude	2.2 latitude	Elevation (SRTM)	Water Level from Pipe Top (m)	Water Level from GL (m)	**Water Level from MSL Sep 2020**	Parapet Height in (m)	Water Level from Pipe Top (m) (Sep 2020)	Water Level from GL (m)	**Water Level from MSL Mar 2021**	1= Domestic, 2= Irrigation	3= Domestic, 4= Irrigation	1= No. 6, 2= Tara, 3= Motor, 4= others
42	305205	Cox's bazar	Eidgah	Maij para w-3	92.05836	21.54363	3.97	1.20	0.85	3.12	0.35	3.00	2.65	1.32	1		1
43	305213	Cox's bazar	Eidgah	Kalichora, w-5	92.06560	21.52408	4.58	3.10	2.70	1.88	0.40	6.00	5.60	-1.02	1		1
44	305411	Cox's bazar	Eidgah	Jumbari Maisepara w-1	92.05632	21.54949	5.80	4.25	3.35	2.45	0.90	4.55	3.65	2.15		3	3
45	304503	Cox's bazar	Islamabad	Uttar Larabag	92.05369	21.55248	9.45	3.38	3.18	6.27	0.20	7.48	7.28	2.17		3	1
46	304606	Cox's bazar	Islamabad	Boddo para w-5	92.05183	21.56997	3.97	0.50	0.00	3.97	0.50	2.60	2.10	1.87		4	3
47	302310	Cox's bazar	Islampur	AcF para, w-3	92.05881	21.59704	12.20	0.00	-0.30	12.50	0.30	0.00	-0.30	12.50		4	3
48	302401	Cox's bazar	Islampur	Moddom Napitkal w-5	92.06184	21.58886	9.45	0.61	0.34	9.12	0.28	2.05	1.78	7.68	1		1
49	302713	Cox's bazar	Islampur	Dokkin Khan Gona w-9	92.04338	21.57860	1.83	0.57	0.17	1.66	0.40	3.05	2.65	-0.82	1		1
50	306101	Cox's bazar	Jalalabad	Lorabad Dokkhin	92.02942	21.5508	5.80	1.80	1.60	4.20	0.20	9.50	9.30	-3.50		3	1
51	306920	Cox's bazar	Jalalabad	Bahar Chora, W-6	92.02673	21.54847	6.41	2.89	2.39	4.02	0.50	8.00	7.50	-1.09		3	1
52	311403	Cox's bazar	Jhilangza	Hajir para w-2	92.01209	21.42562	9.45	0.00	-0.25	9.70	0.25	-0.35	-0.60	10.05		3	1
53	311201	Cox's bazar	Jhilangza	West jilongza	92.00252	21.42976	10.67	0.00	-0.75	11.42	0.75	2.90	2.15	8.52	2		3
54	310703	Cox's bazar	Khurushkul	Notun gono para w-2	92.00549	21.48421	13.42	0.00	-0.15	13.57	0.15	5.10	4.95	8.47		4	3
55	310719	Cox's bazar	Khurushkul	Bashir para w-5	91.98588	21.47931	3.36	0.98	0.53	2.83	0.45	6.00	5.55	-2.19	2		3
56	309401	Cox's bazar	Patali Machuakhali	Chango bazar	92.03410	21.44969	5.19	0.00	0.00	5.19	0.00	6.35	6.35	-1.16	2		3
57	309303	Cox's bazar	Patali Machuakhali	Katalia Mura, W-3	92.03833	21.45984	10.98	1.00	0.90	10.08	0.10	9.25	9.15	1.83		4	2
58	309936	Cox's Bazar	Patali Machuakhali	Chowdhury Para Mosque, W-9	92.04787	21.45614	4.58	1.56	1.36	3.22	0.20	10.76	10.56	-5.98		3	1
59	309937	Cox's Bazar	Patali Machuakhali	Mosoniya Para Govt. Primary School	92.05804	21.46131	8.54	1.10	0.92	7.62	0.18	5.51	5.33	3.21		3	1
60	303913	Cox's bazar	Pokkhali	Moddom Pokkhali Uttar Para, W-3	92.01844	21.554	5.19	1.48	1.13	4.06	0.35	7.84	7.49	-2.30		3	1
61	303914	Cox's bazar	Pokkhali	Poschim Pokkhali Dail Para (Side of Bac	92.00729	21.54347	6.10	1.10	0.73	5.38	0.38	4.70	4.33	1.78		3	1
62	301706	Cox's bazar	Pourasava	Mohajar Para 0124	91.97696	21.43958	14.33	18.67	18.38	-4.05	0.29	23.46	23.17	-8.84		3	3
63	301708	Cox's bazar	Pourasava	Hotel Nishita Resturant	91.97595	21.44526	8.84	21.00	20.07	-11.23	0.93	23.35	22.42	-13.58		3	3
64	308921	Cox's bazar	Varuakhali	Hajir Para, W-6	92.04411	21.49653	5.19	1.20	1.00	4.19	0.20	12.24	12.04	-6.85		3	1
65	308415	Cox's bazar	Varuakhali	Boro Chowdury para w-9	92.04828	21.48253	4.87	0.00	0.00	4.87	0.00	15.75	15.75	-10.88		4	3
66	202405	Moheshkhali	Bara Maheskhali	Miazipara w-3	91.93620	21.53783	12.81	0.98	0.68	12.13	0.30	3.77	3.47	9.34	1		1
67	202811	Moheshkhali	Bara Maheskhali	Dedanga pra w-5	91.94656	21.54125	12.50	3.65	3.22	9.28	0.43	13.24	12.81	-0.31		4	3
68	209404	Moheshkhali	Chhoto Moheshkhali	Norbila w-3	91.95826	21.53161	5.19	2.00	1.63	3.56	0.37	9.66	9.29	-4.10		3	1
69	209718	Moheshkhali	Chhoto Moheshkhali	Oddaharapara	91.97906	21.53480	13.72	0.50	0.35	13.37	0.15	2.01	1.86	11.86		3	1
70	203706	Moheshkhali	Dhalghat	Uttar Sotoriya w-5	91.86425	21.68239	4.27	1.54	1.19	3.08	0.35	2.38	2.03	2.24		3	1
71	203101	Moheshkhali	Dhalghat	Nasir Del w-1	91.87196	21.69757	4.27	1.40	1.02	3.25	0.38	1.65	1.27	3.00		3	3
72	204820	Moheshkhali	Hoanak	Hoanak w-1	91.92296	21.64119	11.28	0.48	0.00	11.28	0.48	0.00	-0.48	11.76		4	3
73	204414	Moheshkhali	Hoanak	Borogorpara w-9	91.92601	21.56628	14.94	2.36	2.12	12.82	0.24	4.30	4.06	10.88		3	1
74	205409	Moheshkhali	Kalarmarchhara	Chikni para w-5	91.91888	21.68017	6.71	0.00	0.00	6.71	0.00	0.00	0.00	6.71		4	1
75	205920	Moheshkhali	Kalarmarchhara	Uttar Nolbila, W-1 (School)	91.93409	21.71215	4.58	0.00	-0.30	4.88	0.30	3.95	3.65	0.93		3	3
76	205713	Moheshkhali	Kalarmarchhara	Mashpara w-3	91.92239	21.69909	10.67	1.10	0.66	10.01	0.44	2.26	1.82	8.85		3	1
77	206101	Moheshkhali	Kutubjom	Kamitar para w-8	91.94596	21.51349	9.76	1.06	0.76	9.00	0.30	3.70	3.40	6.36	1		1
78	206102	Moheshkhali	Kutubjom	Meheri para w-8	91.94487	21.51908	5.19	1.48	1.24	3.95	0.24	4.26	4.02	1.17	2		3
79	207925	Moheshkhali	Matarbari	Honsomiyaji para Jame Mosjid, w-8	91.88428	21.72345	6.10	1.10	0.82	5.28	0.28	2.66	2.38	3.72		3	3
80	207816	Moheshkhali	Matarbari	Laillagona para w-4	91.89625	21.72878	3.97	0.00	0.00	3.97	0.00	0.00	0.00	3.97		4	4
81	201815	Moheshkhali	Pourasava	Mosharaf Ali para w-3	91.95866	21.52266	7.02	3.90	3.70	3.32	0.20	5.95	5.75	1.27	1		3
82	201812	Moheshkhali	Pourasava	Borunagat Kali Mondir W-2	91.95845	21.52670	7.32	4.00	3.60	3.72	0.40	7.47	7.07	0.25		3	1
83	208919	Moheshkhali	Shaplapur	Chinpara w-1	91.94724	21.68986	7.32	0.00	-0.50	7.82	0.50	5.90	5.40	1.92		3	1
84	208301	Moheshkhali	Shaplapur	Sima para w-5	91.97434	21.64367	6.41	2.25	2.10	4.31	0.15	7.18	7.03	-0.62	1		1
85	401307	Ramu	Chakmarkul	Lamboripara w-4	92.09235	21.41608	7.32	1.73	1.53	5.79	0.20	4.60	4.40	2.92	1		1

Annex 2.2-2 Simultaneous Ground Water Level Measurement

					B. GPS Coordinate /Elevation (DEM: SRTM)			Rainy Season			Dry Season				[Shallow Well (STW)]	[Deep Well (DTW)]	3.3 Type of well
SL#	Interpretation of Questionnaire number (x-xx-x-xx=Upazila code-Union code-Data collector Code-Ques#)	Upazila	Union	Village/ Land marks	2.1 longitude	2.2 latitude	Elevation (SRTM)	Water Level from Pipe Top (m)	Water Level from GL (m)	**Water Level from MSL Sep 2020**	Parapet Height in (m)	Water Level from Pipe Top (m) (Sep 2020)	Water Level from GL (m)	**Water Level from MSL Mar 2021**	1= Domestic, 2= Irrigation	3= Domestic, 4= Irrigation	1= No. 6, 2= Tara, 3= Motor, 4= others
86	401610	Ramu	Chakmarkul	Madrasha gate w-9	92.07146	21.42564	8.54	2.48	2.28	6.26	0.20	4.37	4.17	4.37	1		1
87	411701	Ramu	Dakshin Mithachhari	Dhkhin Mithachhari	92.05788	21.41977	6.71	0.00	-0.20	6.91	0.20	3.37	3.17	3.54		3	3
88	411521	Ramu	Dakshin Mithachhari	Kaza Khondokar para w-6	92.05685	21.40733	7.32	0.00	-0.30	7.62	0.30	-0.40	-0.70	8.02		3	3
89	402613	Ramu	Fatekharkul	Uttar sreepur primary school	92.10829	21.42949	10.67	0.65	0.35	10.32	0.30	0.93	0.63	10.04		3	1
90	402921	Ramu	Fatekharkul	Lot Ukhiar Guna W-7	92.118141	21.438962	25.00	1.43	1.08	23.92	0.35	3.40	3.05	21.95	1		1
91	407312	Ramu	Ghuniapalong	East Desua palong w-4	92.10174	21.33169	9.45	4.47	4.47	4.98	0.00	20.50	20.50	-11.05		4	3
92	407921	Ramu	Ghuniapalong	Middle Ghuniapalong, W-3	92.07835	21.33903	10.67	5.76	4.87	5.80	0.89	11.85	10.96	-0.29		3	3
93	404911	Ramu	Idgar	Idgar Bazar, W-4	92.14336	21.57435	22.56	0.74	0.54	22.02	0.20	-0.74	-0.94	23.50		3	1
94	404510	Ramu	Idgar	Boiduy paraw-9	92.16096	21.54049	29.56	0.50	0.30	29.26	0.20	0.00	-0.20	29.76		3	3
95	405610	Ramu	Joarianala	Jaorinala Guccho Gucchu Gram, W-5	92.08810	21.48590	21.04	13.75	13.75	7.29	0.00	16.90	16.90	4.14	1		3
96	405517	Ramu	Joarianala	Mithachori, w-4	92.08517	21.45711	12.50	0.70	0.55	11.95	0.15	2.50	2.35	10.15		3	1
97	405929	Ramu	Kowerkhope	Kowerkhope Purbo Para, W-4	92.13583	21.429	7.93	0.19	0.00	7.93	0.19	0.19	0.00	7.93	1		1
98	405930	Ramu	Kowerkhope	Tila Para W-8	92.12183	21.44752	20.12	11.75	11.40	8.72	0.35	15.65	15.30	4.82		4	3
99	405928	Ramu	Kowerkhope	Villager Para W-4	92.14392	21.43344	17.07	8.96	8.66	8.41	0.30	10.00	9.70	7.37		3	3
100	409305	Ramu	Rajarkul	Palpara w-1	92.08503	21.41340	8.54	0.00	-0.20	8.74	0.20	1.63	1.43	7.11		3	1
101	409612	Ramu	Rajarkul	Boddar Khil	92.10823	21.40659	7.02	0.87	0.65	6.37	0.22	2.50	2.28	4.74		3	1
102	409917	Ramu	Rajarkul	Paschim Nonya Para, W-4	92.09541	21.40703	6.41	0.75	0.35	6.06	0.40	0.00	-0.40	6.81		3	1
103	410618	Ramu	Rashidnagar	Borodoler Chora w-3	92.06467	21.49810	3.36	0.50	0.25	3.11	0.25	5.25	5.00	-1.64		3	1
104	410301	Ramu	Rashidnagar	Shiker para w-7	92.05788	21.51792	10.67	1.00	0.60	10.07	0.40	6.15	5.75	4.92		3	3

Annex 2.2-3 Long Term Ground Water Level Monitoring Data

								Water Level (MSL)													
								2020				2021									
No.	Upazila	Union	Village	Well Type	Long.	Lat.	Elevation	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21
1	Chakaria	Fasiakhali	Goniah para w-5	DD (H)	92.11013	**21.74360**	10.98	10.51	10.29	9.66	9.08	8.64	8.52	8.32		8.32			11.14	10.34	9.98
2	Chakaria	Pourasava	Cood Road Chokorian w-6	DD (H)	92.06931	**21.75267**	8.84	4.59	4.59	4.76	4.96	4.03	4.33	3.96		3.03			4.51	4.67	
3	Chakaria	Konakhali	Kuhakhali w-3	DD (H)	91.96589	**21.78508**	4.27	1.90	1.90	2.10	1.95	1.00	0.27	-0.78		-0.10			1.16	1.50	1.66
4	Cox's bazar	Chaufaldandi	Khunkar Khil w-9 (Corner of Baitur Mamur Mosjid)	DD (H)	92.04492	21.53749	4.58	4.88	4.88	4.88	4.60	0.96	-1.46	-1.65		2.20			4.88	4.88	4.88
5	Cox's bazar	Pokkhali	Poschim Pokkhali Dail Para (Side of Badruzzaman's	DD (H)	92.00729	21.54347	6.10	6.03	6.03	6.03	5.68	2.96	1.78	1.54		3.98			5.97	6.13	6.15
6	Moheshkhali	Hoanak	Borogorpara w-9	DD (H)	91.92601	**21.56628**	14.94	12.82	12.80	12.35	11.78	11.53	11.08	10.88		10.18			12.96	12.80	12.48
7	Ramu	Fatekharkul	Uttar sreepur primary school	DD (H)	92.10829	21.42949	10.67	10.62	10.62	11.32	10.77	10.71	10.04	10.00		10.05			11.32	10.97	10.97
8	Ramu	Dakshin Mithachhari	Dakshin Mithachhari	DD (M)	92.05788	21.41977	6.71	6.91	6.91	6.91	6.91	5.95	3.54	3.29		4.14			6.91	6.91	6.91
9	Cox's bazar	Jhilangza	Hajir para, W-2	DD (H)	92.01209	21.42562	5.19	5.09	5.09	5.79	5.09	5.79	5.09	5.09		5.44			5.79	5.79	5.79

Annex 2.2-4 On-site Measurement Result of Ground Water Quality

SL	Interpretation of Questionnaire number (x-xx-x-xx=Upazila code-	Upazila	Union	Village/ Land marks	GPS Coordinate		Type of Survey [Shallow Tube Well (STW)]	Type of Survey [Deep Tube Well (DTW)]	Type of well	Water Quality Parameter													
					Longitude	Latitude	1= Domestic, 2= Irrigation	3= Domestic, 4= Irrigation	1= Hand pump, 2= Tara, 3= Motor, 4= others	pH	Electric Conductivity (mS/cm)	Turbidity (NTU)	Color (PCU/Hazen)	Ammonical Nitrogen (mg/l)	Nitrate Nitrogen (mg/l)	Nitrite Nitrogen (mg/l)	Iron (mg/l)	Manganese (mg/l)	Arsenic (mg/l)	Water Temperature (°C)	Total Colifrom (n/100 ml)	Fecal Colifrom (n/100 ml)
				Bangladesh Drinking Standard (ECR 1997)						6.5-8.5	….	10	15	0.50	10	<1	(0.3-1.0)	0.1	0.05	(20°-30°)	0	0
1	104305	Chakaria	Badarkhali	Uttar notun guna w-1	91.94683	21.74854		3	1	6.9	0.34	0	0.06	0.25<v<0.50	ND	ND	1.5<v<2	ND	ND	29.8	110	2
2	104920	Chakaria	Badarkhali	Hospital Road (Front of Market), w-4	91.95032	21.71952		3	1	6.8	0.21	0	0.07	0<v<0.25	ND	ND	3.5<v<4	ND	ND	29.2	480	315
3	105302	Chakaria	Barawtali	Boiddora para w-4	92.06735	21.82067		3	1	7	0.2	0	0.085	0.25<v<0.50	ND	ND	2<v<2.5	ND	ND	29.5	32	0
4	105721	Chakaria	Barawtali	Mash para w-3	92.07159	21.82859		3	1	6.6	0.14	0	0.075	0<v<0.25	ND	ND	>7	ND	ND	29.4	56	8
5	106213	Chakaria	Bheola Manik Char	Khachi Shikder para w-7	92.03192	21.78345		3	3	7	0.24	0	0.07	0.50<v<1	ND	ND	3<v<3.5	ND	ND	29.4	300	60
6	106609	Chakaria	Bheola Manik Char	Bothbar Ghat w-4 south para Mosjid	92.01656	21.78390		4	4	7.4	0.28	0	0.055	0.25<v<0.50	ND	ND	0.5<v<1	ND	ND	29.2	320	84
7	108216	Chakaria	Chiringa	Moidhom Soudagor para Munshipara w-6	92.04458	21.73323		3	1	6.6	0.21	0	0.08	0.25<v<0.50	ND	ND	0<v<0.5	ND	ND	28.9	182	52
8	108702	Chakaria	Chiringa	Uttar Goripokur w-3	92.06020	21.73173		3	1	6.6	0.47	0	0.075	0<v<0.25	ND	ND	0<v<0.5	ND	ND	27.7	28	0
9	116422	Chakaria	Dhemoshia	Bazar para w-9	91.98278	21.76751		3	1	7.6	0.35	0	0.07	0.25<v<0.50	ND	ND	0<v<0.5	ND	ND	29.5	0	0
10	116815	Chakaria	Dhemoshia	Poschim Gondia w-6	91.95763	21.75778		3	1	7.7	0.48	0	0.1	0.50<v<1	ND	ND	0<v<0.5	ND	ND	29.4	350	212
11	103408	Chakaria	Dulhazara	Balorcar w-4	92.06835	21.65972		3	3	6.5	0.15	0	0.12	0.25<v<0.50	ND	ND	>7	ND	ND	27.5	28	0
12	103813	Chakaria	Dulhazara	Bagan para w-9	92.07645	21.66614		3	3	6.4	0.16	0	0.115	0.25<v<0.50	ND	ND	>7	ND	ND	26.9	0	0
13	110814	Chakaria	Fasiakhali	Abdur Rashid Chw.High School,Sikdar para w-	92.08247	21.73588		3	4	6.9	0.15	0	0.1	0<v<0.25	ND	ND	>7	ND	ND	28.6	64	4
14	110808	Chakaria	Fasiakhali	Goniah para w-5	92.11013	21.74360		3	1	7.3	0.29	0	0.11	0.25<v<0.50	ND	ND	0<v<0.5	ND	ND	29.3	36	0
15	119721	Chakaria	Harbang	Modukhali w-1	92.05267	21.83340		3	4	6.7	0.19	0	0.09	0.25<v<0.50	ND	ND	3.5<v<4	ND	ND	27.8	86	0
16	119403	Chakaria	Harbang	Baiakata Jame Mosjid, w-6	92.04513	21.85247		3	1	6.7	0.17	0	0.085	0.50<v<1	ND	ND	0<v<0.5	ND	ND	28.1	70	0
17	112722	Chakaria	Kaiarbil	Cotho Veala w-3	92.04029	21.78545		3	1	7	0.28	0	0.095	0.25<v<0.50	ND	ND	0.5<v<1	ND	ND	29.1	68	0
18	112211	Chakaria	Kaiarbil	Khojakhali Bangla para w-6	92.05018	21.79743		3	1	6.7	0.37	0	0.09	0<v<0.25	ND	ND	2.5<v<3	ND	ND	29.1	66	22
19	111113	Chakaria	Kakara	Rudro para W-5	92.10651	21.75644		3	3	7	0.31	0	0.105	0<v<0.25	ND	ND	1<v<1.5	ND	ND	28.9	180	8
20	111522	Chakaria	Kakara	Purbo kakara w-8	92.12061	21.75053		3	3	7.3	0.26	0	0.105	0.25<v<0.50	ND	ND	0<v<0.5	ND	ND	29.8	28	65
21	102818	Chakaria	Khutakhali	Porbo Nayah para w-9	92.06661	21.60806		3	4	6.4	0.16	0	0.255	0<v<0.25	ND	ND	7	ND	ND	28.6	32	0
22	102107	Chakaria	Khutakhali	Dokkhin para w-5	92.06599	21.61506	1		1	6.3	0.47	0	0.16	0.50<v<1	ND	ND	>7	ND	ND	29.1	44	0
23	102112	Chakaria	Khutakhali	Gozzamtoli khulakhali w-4	92.07205	21.62188		3	4	6.7	0.16	0	0.11	0<v<0.25	ND	ND	6<v<6.5	ND	ND	28.7	72	0
24	117915	Chakaria	Konakhali	Dokkhin Konakhali, W-8	91.98608	21.7746		3	1	7.7	0.39	0	0.05	0.25<v<0.50	ND	ND	0<v<0.5	ND	ND	29.4	24	0
25	117409	Chakaria	Konakhali	Kuhakhali w-3	91.96589	21.78508		3	1	7.7	0.44	0	0.32	0.50<v<1	ND	ND	0<v<0.5	ND	ND	31.1	90	0
26	113704	Chakaria	Lakhyarchar	Carpara w-8	92.08288	21.77263		3	1	6.7	0.21	0	0.07	0<v<0.25	ND	ND	0.5<v<1	ND	ND	29	320	150
27	113920	Chakaria	Lakhyarchar	Purbo para w-9	92.08525	21.77287		3	1	6.7	0.21	0	0.105	0.25<v<0.50	ND	ND	6<v<6.5	ND	ND	29.5	42	0
28	113609	Chakaria	Lakhyarchar	Mondol para w-1	92.07188	21.78043	1		3	6.5	0.17	0	0.08	0.25<v<0.50	ND	ND	6<v<6.5	ND	ND	28.9	70	6
29	115407	Chakaria	Paschim Bara Bheola	Lalbridge w-9	92.00690	21.75229		3	1	7.5	0.3	0	0.065	0.25<v<0.50	ND	ND	0<v<0.5	ND	ND	29.5	225	160
30	115610	Chakaria	Paschim Bara Bheola	Dorbash kata Adorsho Bazar w-3	91.97012	21.74497		3	1	7.6	0.36	0	0.065	0.50<v<1	ND	ND	ND	ND	ND	29.7	520	320
31	101501	Chakaria	Pourasava	Cood Road Chokorian w-6	92.06931	21.75267		3	1	6.7	0.24	0	0.12	0<v<0.25	ND	ND	4.5<v<5	ND	ND	27.4	16	0
32	101605	Chakaria	Pourasava	Moddom para kariya gona w-5	92.05898	21.75025		3	4	6.7	0.18	0	0.085	0.25<v<0.50	ND	ND	6.5<v<7	ND	ND	28.2	38	0
33	109111	Chakaria	Purba Barabheola	Bania Char Hamiusnah Eatimkhana,w-4	92.03056	21.77371		3	4	7.6	0.28	0	0.05	0.25<v<0.50	ND	ND	0<v<0.5	ND	ND	29.6	76	12
34	109804	Chakaria	Purba Barabheola	Salenogor para w-1	92.02250	21.76537		4	3	7.1	0.35	0	0.07	0<v<0.25	ND	ND	2	ND	ND	29.8	68	2
35	114411	Chakaria	Saharbil	Purbo para w-4	92.05840	21.75773		3	1	6.6	0.44	0	0.075	1<v<2	ND	ND	0<v<0.5	ND	ND	28.4	0	0
36	114407	Chakaria	Saharbil	Pachim Maizgana w-6	92.04755	21.75306		3	1	6.7	0.18	0	0.055	0<v<0.25	ND	ND	0.5<v<1	ND	ND	28.8	40	0
37	118802	Chakaria	Surajpur-Manikpur	Moddom Surajpur w-9	92.12732	21.75480	2		4	6.8	0.19	0	0.1	0.25<v<0.50	ND	ND	2<v<2.5	ND	ND	29.4	60	4
38	118308	Chakaria	Surajpur-Manikpur	Uttar para w-8	92.13867	21.76475	1		1	6	0.49	0	0.08	0<v<0.25	ND	ND	0<v<0.5	ND	ND	29.2	500	265
39	307218	Cox's bazar	Chaufaldandi	Dokkhin para	92.01273	21.51465		3	1	7	0.24	0	0	0.25<v<0.50	ND	ND	1.5<v<2	ND	ND	27.4	34	4
40	307919	Cox's bazar	Chaufaldandi	Dokkhin Para Poschim (Moddom Para), W-3	92.00728	21.51783		3	1	7.1	0.27	0	0.005	0.25<v<0.50	ND	ND	1<v<1.5	ND	ND	28	0	0
41	307309	Cox's bazar	Chaufaldandi	Akar Khil w-9 (Corner of Baitur Mamur Mo	92.04492	21.53749		3	1	6.6	0.16	0	0.01	0.50<v<1	ND	ND	>7	ND	ND	26.7	0	0
42	305205	Cox's bazar	Eidgah	Maij para w-3	92.05836	21.54363	1		1	6.5	0.33	0	0.03	0.50<v<1	ND	ND	>7	ND	ND	26.8	340	0
43	305213	Cox's bazar	Eidgah	Kalichora, w-5	92.06560	21.52408	1		1	6	0.17	0	0	0.25<v<0.50	ND	ND	2.5	ND	ND	27.9	0	0
44	305411	Cox's bazar	Eidgah	Jumbari Maisepara w-1	92.05632	21.54949		3	3	6.8	0.51	0	0.005	0.25<v<0.50	ND	ND	0<v<0.5	ND	ND	26.5	420	0
45	304503	Cox's bazar	Islamabad	Uttar Larabag	92.05369	21.55248		3	1	6.2	0.13	0	0.035	0.25<v<0.50	ND	ND	>7	ND	ND	27.9	0	0
46	304606	Cox's bazar	Islamabad	Boddo para w-5	92.05183	21.56997		4	3	6.1	0.11	0	0.005	0.25<v<0.50	ND	ND	3<v<3.5	ND	ND	28.2	0	0
47	302310	Cox's bazar	Islampur	AcF para, w-3	92.05881	21.59704		4	3	6.5	0.16	0	0.01	0.25<v<0.50	ND	ND	6.5	ND	ND	27.6	0	0
48	302401	Cox's bazar	Islampur	Moddom Napitkal w-5	92.06184	21.58886	1		1	5.4	0.03	18.46	0.1	0.25<v<0.50	ND	ND	5.5	ND	ND	27	156	0
49	302713	Cox's bazar	Islampur	Dokkin Khan Gona w-9	92.04338	21.57860	1		1	6.7	0.19	0	0	0<v<0.25	ND	ND	>7	ND	ND	26.8	460	66
50	306101	Cox's bazar	Jalalabad	Farajipara W-5	92.02942	21.5508		3	1	6.5	0.38	0	0.015	0.25<v<0.50	ND	ND	4.5<v<5	ND	ND	28.6	72	0
51	306920	Cox's bazar	Jalalabad	Bahar Chora, W-6	92.02673	21.54847		3	1	6.5	0.23	0	0.005	0.25<v<0.50	ND	ND	2	ND	ND	27.9	504	0
52	311403	Cox's bazar	Jhilangza	Hajir para w-2	92.01209	21.42562		3	1	6.8	0.27	0	0.155	0.25<v<0.50	ND	ND	3.5	0.4	ND	26.1	0	0
53	311201	Cox's bazar	Jhilangza	West jilongza	92.00252	21.42976	2		3	7.4	0.54	0	0.045	0.25<v<0.50	ND	ND	1.5<v<2	1.4<v<1.6	ND	26.4	0	0
54	310703	Cox's bazar	Khurushkul	Notun gono para w-2	92.00549	21.48421		4	3	5.7	0.11	2.94	0.03	0<v<0.25	ND	ND	4	ND	ND	27.2	0	0
55	310719	Cox's bazar	Khurushkul	Bashir para w-5	91.98588	21.47931	2		3	7.1	3.08	0.12	0.045	0.50<v<1	ND	ND	6<v<6.5	0.4	ND	26.3	464	0
56	309401	Cox's bazar	Patali Machuakhali	Chango bazar	92.03410	21.44969	2		3	6.3	0.15	0	0.005	0.50<v<1	ND	ND	>7	ND	ND	26.4	240	2
57	309303	Cox's bazar	Patali Machuakhali	Katalia Mura, W-3	92.03833	21.45984		4	2	6.4	0.15	309	>500	0.50<v<1	10<v<20	0<v<0.2	>7	ND	ND	25.8	450	486
58	309936	Cox's Bazar	Patali Machuakhali	Chowdhury Para Mosque, W-9	92.04787	21.45614		3	1	6.7	0.2	0	0.01	0.25<v<0.50	ND	ND	>7	ND	ND	25.9	0	0
59	309937	Cox's Bazar	Patali Machuakhali	Mosoniya Para Govt. Primary School	92.05804	21.46131		3	1	7	0.25	0	0.01	0.25<v<0.50	ND	ND	1.5<v<2	ND	ND	25.9	0	0
60	303913	Cox's bazar	Pokkhali	Moddom Pokkhali Uttar Para, W-3	92.01844	21.554		3	1	6.9	0.24	0	0	0.50<v<1	ND	ND	2.5	ND	ND	26.2	800	0
61	303914	Cox's bazar	Pokkhali	Pokkhali Dail Para (Side of Badruzzaman's Ho	92.00729	21.54347		3	1	7.2	0.24	0	0	0.50<v<1	ND	ND	1.5<v<2	ND	ND	27	280	0
62	301706	Cox's bazar	Pourasava	Mohajar Para 0124	91.97696	21.43958		3	3	7.8	2.48	0	0.01	0.50<v<1	ND	ND	ND	0.6<v<0.8	ND	27.4	400	0
63	301708	Cox's bazar	Pourasava	Hotel Nishita Resturant	91.97595	21.44526		3	3	8	1.59	3.31	0.06	1<v<2	ND	ND	2<v<2.5	ND	ND	27.6	512	0
64	308921	Cox's bazar	Bharuakhali	Hajir Para, W-6	92.04411	21.49653		3	1	6.9	0.23	0	0.005	0.25<v<0.50	ND	ND	5.5<v<6	ND	ND	26.5	18	0
65	308415	Cox's bazar	Bharuakhali	Boro Chowdury para w-9	92.04828	21.48253		4	3	6.4	2.14	31.8	0.115	0.25<v<0.50	ND	ND	>7	0.6<v<0.8	ND	26.3	440	0
66	202405	Moheshkhali	Bara Maheskhali	Miazipara w-3	91.93620	21.53783	1		1	6.5	0.31	28.4	0.205	0<v<0.25	ND	ND	>7	ND	ND	27.7	52	0
67	202811	Moheshkhali	Bara Maheskhali	Dedanga pra w-5	91.94656	21.54125		4	3	7.8	0.62	0	0.215	1<v<2	ND	ND	0.5	ND	ND	27.4	116	46

Annex 2.2-4 On-site Measurement Result of Ground Water Quality

68	209404	Moheshkhali	Chhoto Moheshkhali	Norbila w-3	91.95826	21.53161		3	1	7.7	0.39	0	0.02	0.25<v<0.50	ND	ND	0.5<v<1	ND	ND	30	72	10
69	209718	Moheshkhali	Chhoto Moheshkhali	Oddaharapara	91.97906	21.53480		3	1	6.6	0.11	0	0.03	0.25<v<0.50	ND	ND	3.5<v<4	ND	ND	29.3	68	20
70	203706	Moheshkhali	Dhalghat	Uttar Sotoriya w-5	91.86425	21.68239		3	1	6.3	0.33	0	0.075	0<v<0.25	ND	ND	>7	0<v<0.2	ND	27.2	24	0
71	203101	Moheshkhali	Dhalghat	Nasir Del w-1	91.87196	21.69757		3	3	6.2	0.99	0	0.055	0<v<0.25	ND	ND	>7	0.2<v<0.4	ND	29.3	22	0
72	204820	Moheshkhali	Hoanak	Hoanak w-1	91.92296	21.64119		4	3	6.7	0.16	0	0.135	0.25<v<0.50	ND	ND	>7	ND	ND	29.5	182	60
73	204414	Moheshkhali	Hoanak	Borogorpara w-9	91.92601	21.56628		3	1	6.3	0.13	0	0.025	0.25<v<0.50	ND	ND	>7	ND	ND	29.1	82	0
74	205409	Moheshkhali	Kalarmarchhara	Chikni para w-5	91.91888	21.68017		4	3	7.4	0.19	0	0.05	0.25<v<0.50	ND	ND	ND	ND	ND	28.5	212	12
75	205920	Moheshkhali	Kalarmarchhara	Uttar Nolbila, W-1 (School)	91.93409	21.71215		3	3	6.3	0.13	0	0.07	0.25<v<0.50	ND	ND	>7	ND	ND	27.6	76	0
76	205713	Moheshkhali	Kalarmarchhara	Mashpara w-3	91.92239	21.69909		3	1	6.8	0.18	0	0.095	0<v<0.25	ND	ND	>7	ND	ND	27.6	14	0
77	206101	Moheshkhali	Kutubjom	Kamitar para w-8	91.94596	21.51349	1		1	6.6	1.18	0	0.035	2<v<4	ND	ND	0.5<v<1	1	ND	29.1	92	44
78	206102	Moheshkhali	Kutubjom	Meheri para w-8	91.94487	21.51908	2		3	6.6	2.37	0	0.07	0.50<v<1	ND	ND	>7	0.2<v<0.4	ND	29.4	350	212
79	207925	Moheshkhali	Matarbari	Honsomiyaji para Jame Mosjid, w-8	91.88428	21.72345		3	3	7.5	0.25	0	0.065	0.25<v<0.50	ND	ND	>7	ND	ND	27	96	36
80	207816	Moheshkhali	Matarbari	Laillagona para w-4	91.89625	21.72878		4	4	8	0.36	0	0.06	0.25<v<0.50	ND	ND	ND	ND	ND	29.8	0	0
81	201815	Moheshkhali	Pourasava	Mosharaf Ali para w-3	91.95866	21.52266	1		3	6.5	3.63	0	0.04	0.50<v<1	ND	ND	>7	ND	ND	30.2	240	110
82	201812	Moheshkhali	Pourasava	Borunagat Kali Mondir W-2	91.95845	21.52670		3	1	7	1.1	37.6	0.255	0.25<v<0.50	ND	ND	4	ND	ND	30.5	28	0
83	208919	Moheshkhali	Shaplapur	Chinpara w-1	91.94724	21.68986		3	1	6.5	0.2	0	0.06	0.25<v<0.50	ND	ND	>7	ND	ND	26.8	72	8
84	208301	Moheshkhali	Shaplapur	Sima para w-5	91.97434	21.64367	1		1	6.3	0.13	0	0.03	0<v<0.25	ND	ND	>7	0<v<0.2	ND	26.5	180	112
85	401307	Ramu	Chakmarkul	Lamboripara w-4	92.09235	21.41608	1		1	6.7	0.64	0	0.045	2<v<4	ND	ND	4.5<v<5	0.6<v<0.8	ND	26.8	38	0
86	401610	Ramu	Chakmarkul	Madrasha gate w-9	92.07146	21.42564	1		1	7.3	3.38	0	0.185	0.50<v<1	ND	ND	1<v<1.5	ND	ND	26.8	480	2
87	411701	Ramu	Dakshin Mithachhari	Dhkhin Mithachhari	92.05788	21.41977		3	3	6.6	0.18	0	0.065	0.25<v<0.50	ND	ND	5.5<v<6	ND	ND	26.6	36	0
88	411521	Ramu	Dakshin Mithachhari	Kaza Khondokar para w-6	92.05685	21.40733		3	3	6.5	0.15	0	0.025	0.25<v<0.50	ND	ND	>7	ND	ND	26.4	62	0
89	402613	Ramu	Fatekharkul	Uttar sreepur primary school	92.10829	21.42949		3	1	7.2	0.28	0	0.025	0.25<v<0.50	ND	ND	0.5	ND	ND	28.4	320	175
90	402921	Ramu	Fatekharkul	Lot Ukhiar Guna W-7	92.118141	21.438962	1		1	5.6	0.47	0	0.02	0.25<v<0.50	ND	ND	0.5<v<1	0.4	ND	26.1	510	0
91	407312	Ramu	Khuniapalong	East Desua palong w-4	92.10174	21.33169		4	3	7.6	0.29	0	0.02	0.50<v<1	ND	ND	0<v<0.5	ND	ND	28.1	76	46
92	407921	Ramu	Khuniapalong	Middle Ghuniapalong, W-3	92.07835	21.33903		3	3	8.1	0.31	0	0.01	0.25<v<0.50	ND	ND	ND	ND	ND	27.1	18	0
93	404911	Ramu	Idgar	Idgar Bazar, W-4	92.14336	21.57435		3	1	6.5	0.17	0	0.045	0<v<0.25	ND	ND	>7	ND	ND	26.3	78	0
94	404510	Ramu	Idgar	Boiduy paraw-9	92.16096	21.54049		3	3	6.6	0.15	0	0.015	0<v<0.25	ND	ND	>7	ND	ND	26.8	0	0
95	405610	Ramu	Joarianala	Jaorinala Guccho Gucchu Gram, W-5	92.08810	21.48590	1		3	5.6	0.02	0	0.005	0.50<v<1	ND	ND	0.5	ND	ND	26.5	420	0
96	405517	Ramu	Joarianala	Mithachori, w-4	92.08517	21.45711		3	1	6.5	0.19	0	0.09	0.25<v<0.50	ND	ND	3.5<v<4	ND	ND	26.6	364	0
97	405929	Ramu	Kauarkhop	Kauarkhop Purbo Para, W-4	92.13583	21.429	1		1	6.4	0.25	0	0.02	0.25<v<0.50	ND	ND	0.5<v<1	ND	ND	27.5	234	14
98	405930	Ramu	Kauarkhop	Tila Para W-8	92.12183	21.44752		4	3	7.9	0.38	0	0.015	0.50<v<1	ND	ND	ND	ND	ND	27.2	100	0
99	405928	Ramu	Kauarkhop	Villager Para W-4	92.14392	21.43344		3	3	8	2.39	0	0.06	1<v<2	ND	ND	0<v<0.5	ND	ND	27.6	720	40
100	409305	Ramu	Rajarkul	Palpara w-1	92.08503	21.41340		3	1	7	0.2	0	0.01	0.25<v<0.50	ND	ND	2<v<2.5	ND	ND	27.7	78	0
101	409612	Ramu	Rajarkul	Boddar Khil	92.10823	21.40659		3	1	6.5	0.15	0	0.035	0.25<v<0.50	ND	ND	5.5	0.2	ND	28.6	112	36
102	409917	Ramu	Rajarkul	Paschim Nonya Para, W-4	92.09541	21.40703		3	1	7.4	0.25	0	0.035	0.25<v<0.50	ND	ND	0.5	ND	ND	28	22	0
103	410618	Ramu	Rashidnagar	Borodoler Chora w-3	92.06467	21.49810		3	1	6.6	0.19	0	0.02	0.25<v<0.50	ND	ND	>7	ND	ND	26.3	310	0
104	410301	Ramu	Rashidnagar	Shiker para w-7	92.05788	21.51792		3	3	6.7	0.18	8.36	0.06	0.25<v<0.50	ND	ND	>7	ND	ND	26.3	546	4

Annex 2.2-5 List of Geophysical Survey Point

No.	VES Point	Exploration Depth (m)	Date	Coordinate (WGS 84 UTM Zone 46N)		Union / Village	Upazila
				X	Y		
1	VES 01	590	11/22	388,685	2,379,397	Kutubjom	Moheshkhali
2	VES 02	500	11/23	391,821	2,384,722	Chotto Moheshkhali	
3	VES 03	500	11/24	387,476	2,390,390	Hoanak	
4	VES 04	500	11/15	395,194	2,391,338	Shaplapur	
5	VES 05	600	12/01	387,247	2,397,264	Kalamarchara	
6	VES 06	700	12/07	385,504	2,401,527	Matarbari	
7	VES 23	700	11/17	393,412	2,395,176	Shaplapur	
8	VES 24	700	11/16	394,861	2,388,884	Shaplapur	
9	VES 123	600	12/06	391,014	2,400,984	Kalamarchara	
10	VES 12	785	11/10	392,384	2,398,902	Badarkhali	Chakaria
11	VES 13	600	12/05	399,370	2,402,985	Chiringa	
12	VES 14	800	11/03	404,035	2,402,423	Fasiakhali	
13	VES 16	600	11/02	398,091	2,405,189	Paschim Bara Bheola	
14	VES 17	540	11/08	391,700	2,404,558	Badarkhali	
15	VES 27	650	11/09	402,297	2,405,160	Shaharbil	
16	VES 255	800	11/29	399,932	2,390,775	Chiringa	
17	VES 33	800	11/30	403,450	2,393,930	Dulahazara	
18	VES 08	700	11/11	404,484	2,376,136	Rashid Nagar	Ramu
19	VES 09	800	11/18	402,255	2,381,417	Joarianala	
20	VES 101	500	11/25	402,209	2,386,070	Eidgaon	
21	VES 2A	800	12/09	404,937	2,367,263	Dakshin Mithachari	
22	VES 3A	690	12/08	400,574	2,368,607	Dakshin Mithachari	
23	VES 4A	700	12/08	405,821	2,370,973	Chakmarkul	
24	VES 07	600	12/02	398,175	2,376,766	Khurushkul	Cox's Bazar Sadar
25	VES 20	725	11/28	396,266	2,385,622	Pokkhali	
26	VES 77	700	11/04	395,685	2,377,500	Khurushkul – Chaowfaldandi border	

Total 26 Points , Average Exploration Depth = 660m

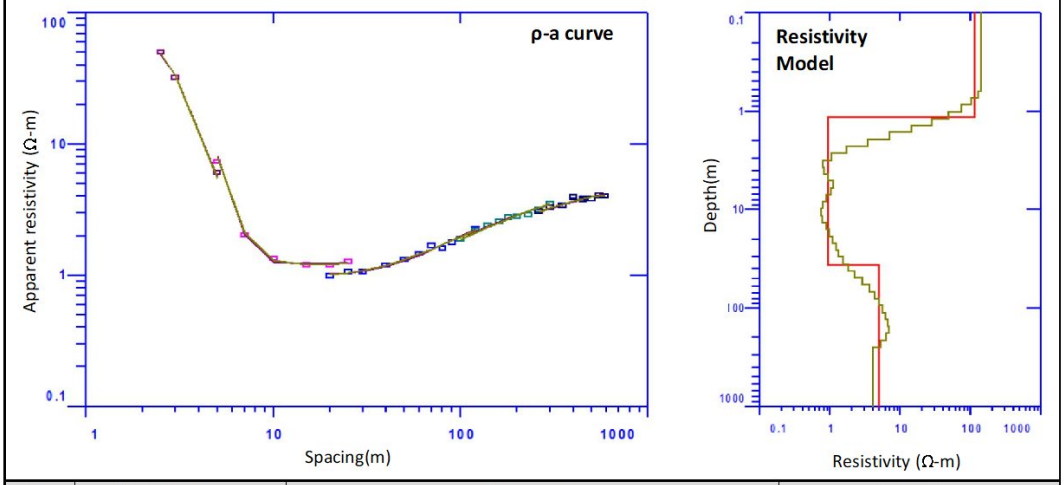
Annex 2.2-6 Result of Geophysical Survey and ρ -a Curves

	① VES 01		② VES 02		③ VES 03		④ VES 04		⑤ VES 05		⑥ VES 06		⑦ VES 23	
	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m
1st	1	113	10	7.9	2	10	2	1.0	1	2.0	7	0.7	4	6.0
2nd	37	0.9	15	5.6	5	3.7	7	0.8	3	0.5	118	11	7	3.5
3rd	∞	4.9	56	14	16	1.7	65	24	67	7.4	∞	40	18	1.3
4th			153	40	159	3.5	∞	53	∞	55			54	23
5th			∞	11	∞	40							253	54
6th													∞	40

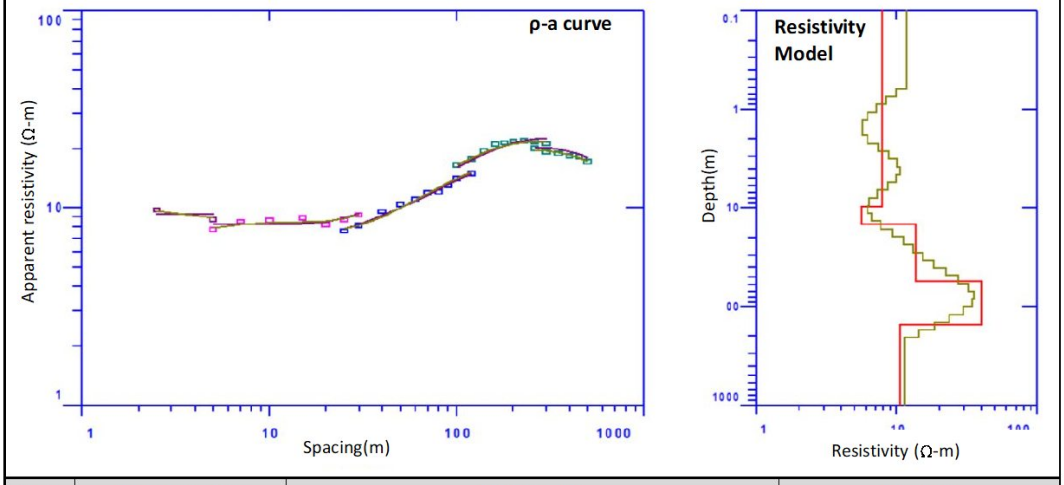
	⑧ VES 24		⑨ VES 123		⑩ VES 12		⑪ VES 13		⑫ VES 14		⑬ VES 16		⑭ VES 17	
	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m
1st	2	14	1	1.6	1	2.4	1	1.2	2	181	1	5.2	1	2.6
2nd	3	5.9	35	0.9	32	0.7	6	0.7	4	682	8	1.7	28	0.7
3rd	19	13	72	4.1	60	11	92	2.8	40	36	24	1.1	200	15
4th	95	29	136	26	∞	50	136	18	200	46	78	4.0	∞	41
5th	∞	61	∞	59			∞	67	∞	67	198	13		
6th											∞	56		

	⑮ VES 27		⑯ VES 255		⑰ VES 33		⑱ VES 08		⑲ VES 09		⑳ VES 101		㉑ VES 2A	
	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m
1st	1	66	1	1.0	2	4.3	1	12	2	214	2	49	2	111
2nd	23	9.2	38	0.8	13	25	6	64	12	8.8	6	127	11	7.0
3rd	70	3.4	142	19	36	5.9	53	49	33	2.3	18	8.2	66	37
4th	139	13	∞	70	348	50	120	59	299	42	127	98	170	50
5th	∞	44			∞	14	∞	49	∞	22	∞	69	267	74
6th													∞	28

	㉒ VES 3A		㉓ VES 4A		㉔ VES 07		㉕ VES 20		㉖ VES 77	
	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m	Depth GL-m	Resistivity Ω-m
1st	1	1.9	2	239	3	55	5	24	4	24
2nd	21	0.7	34	17	8	88	21	14	6	38
3rd	67	6.1	74	12	39	15	132	37	22	3.4
4th	201	21	300	2.5	168	34	265	67	173	41
5th	∞	43	∞	3.1	384	77	∞	19	240	28
6th					∞	29			∞	44



No	Point name	Union etc.	Upazila
1	**VES 01**	Kutubjom	Moheshkhali



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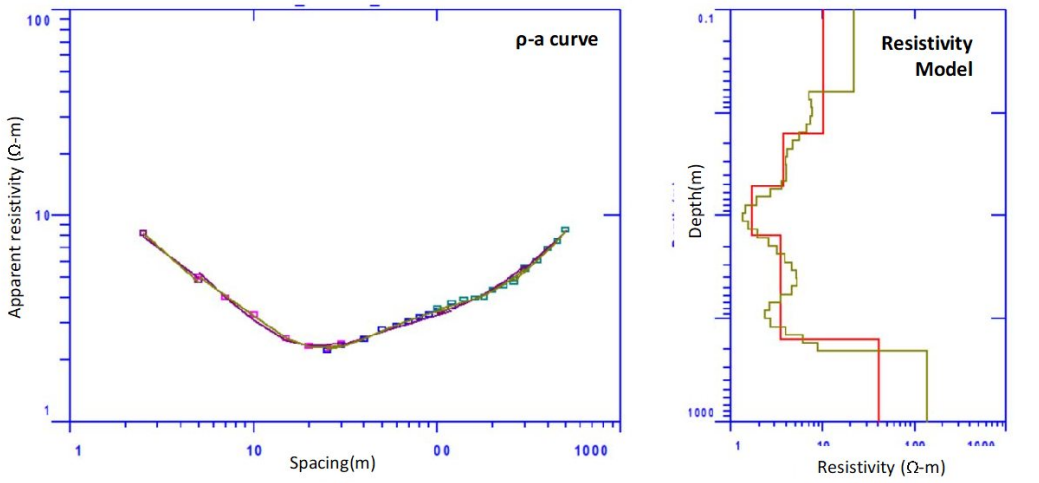
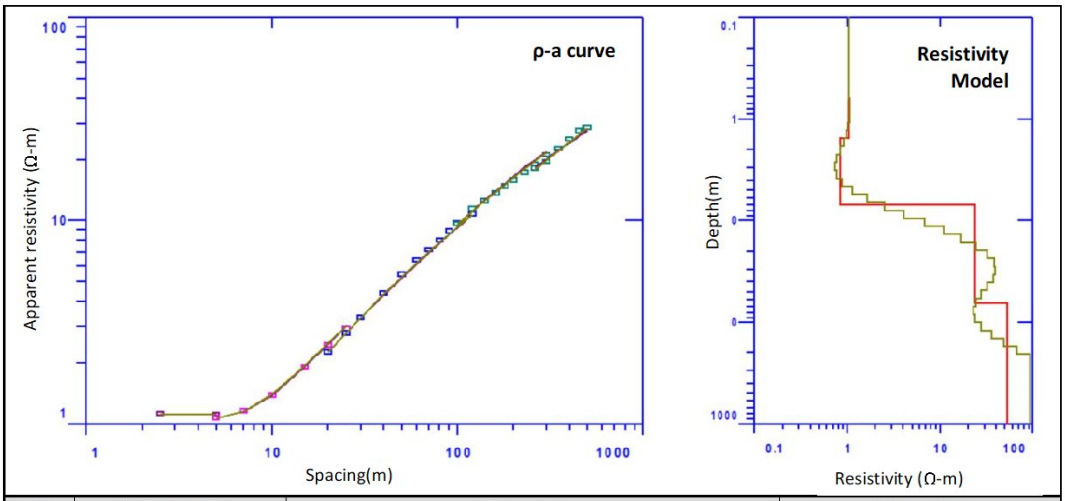
2	**VES 02**	Chotto Moheshkhali	Moheshkhali

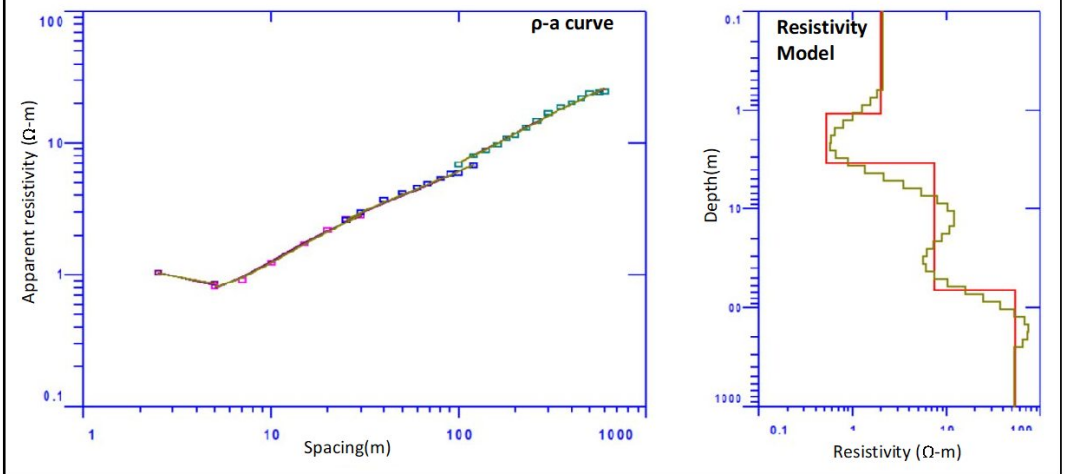


No	Point name	Union etc.	Upazila
3	**VES 03**	Hoanak	Moheshkhali

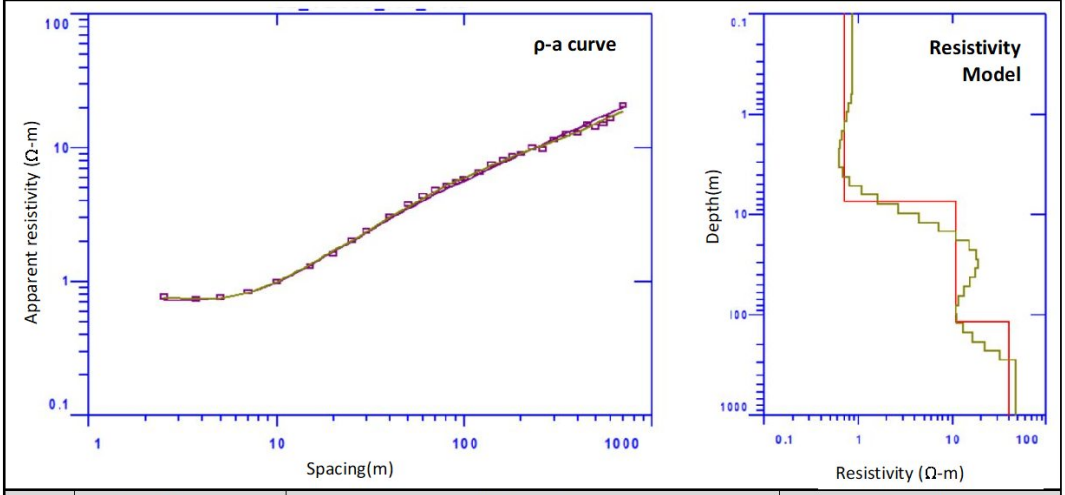
VES result (ρ -a Curve and Resistivity Model) 1/9



No	Point name	Union etc.	Upazila
4	**VES 04**	Shaplapur	Moheshkhali

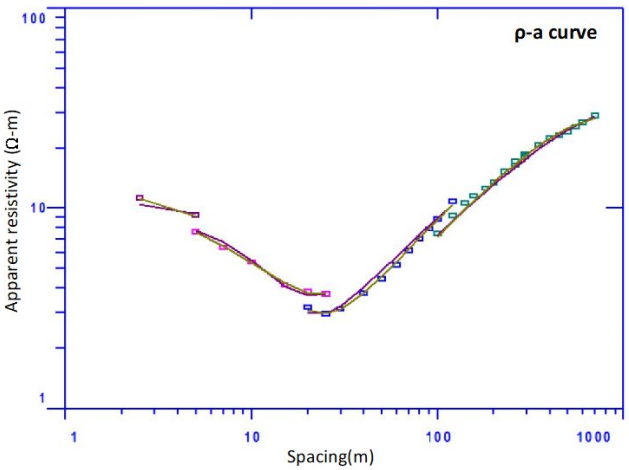


No	Point name	Union etc.	Upazila
5	**VES 05**	Kalamarchara	Moheshkhali

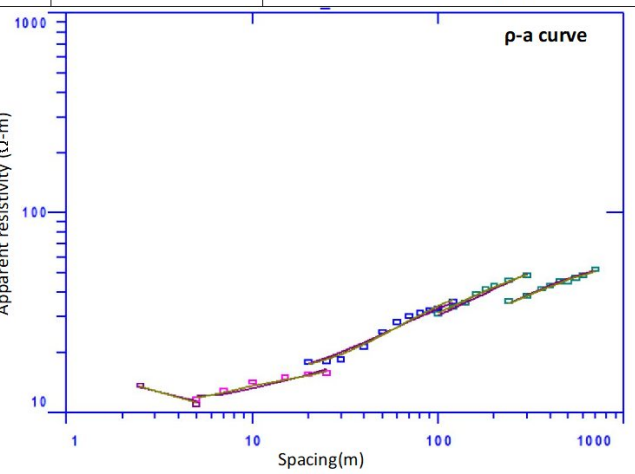


No	Point name	Union etc.	Upazila
6	**VES 06**	Matarbari	Moheshkhali

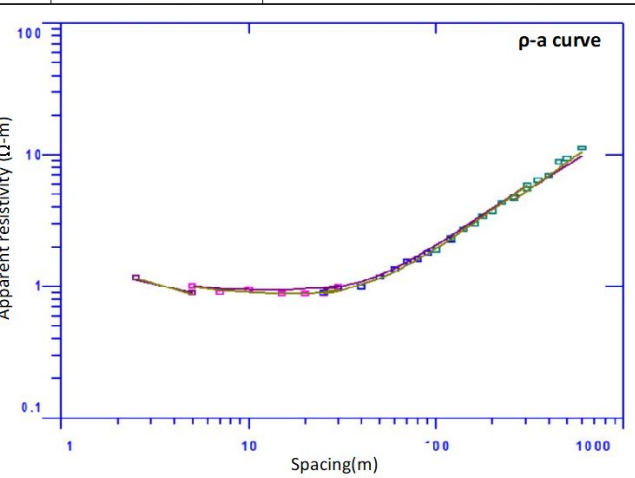
VES result (ρ -a Curve and Resistivity Model) 2/9



No	Point name	Union etc.	Upazila
7	**VES 23**	Shaplapur	Moheshkhali

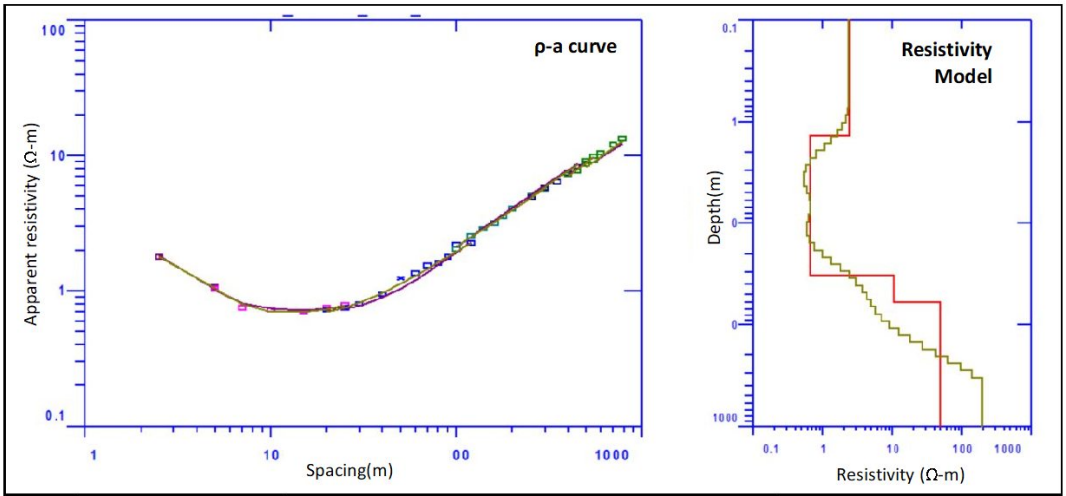


No	Point name	Union etc.	Upazila
8	**VES 24**	Shaplapur	Moheshkhali

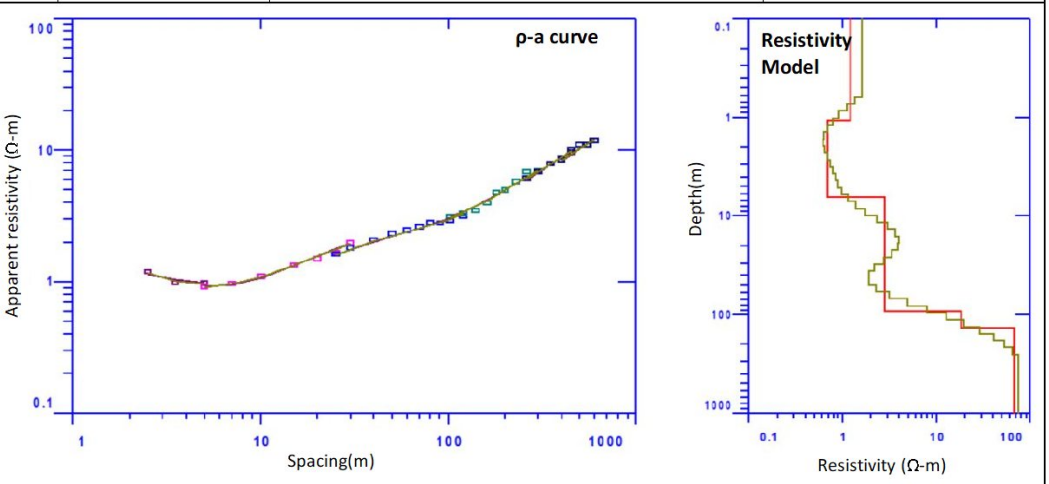


No	Point name	Union etc.	Upazila
9	**VES 123**	Kalamarchara	Moheshkhali

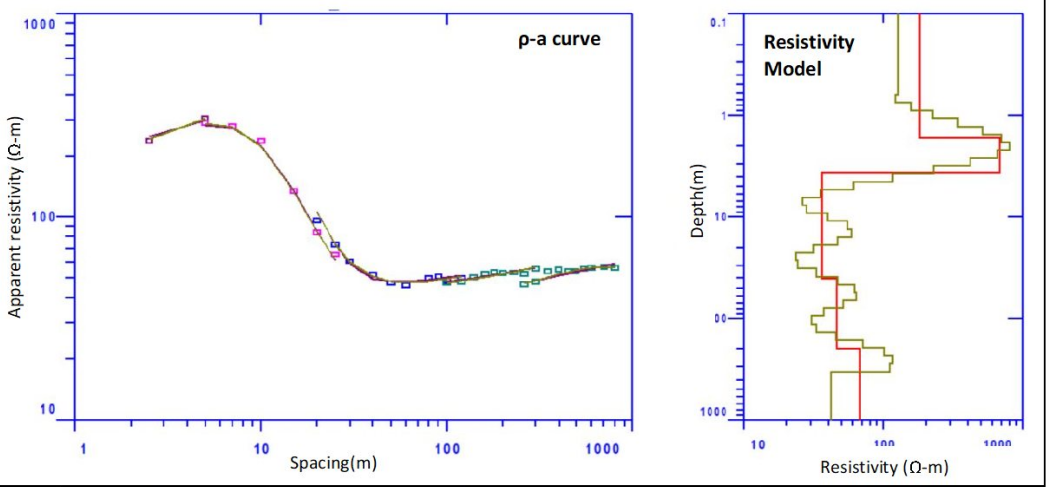
VES result (ρ -a Curve and Resistivity Model) 3/9



No	Point name	Union etc.	Upazila
10	**VES 12**	Badarkhali	Chakaria

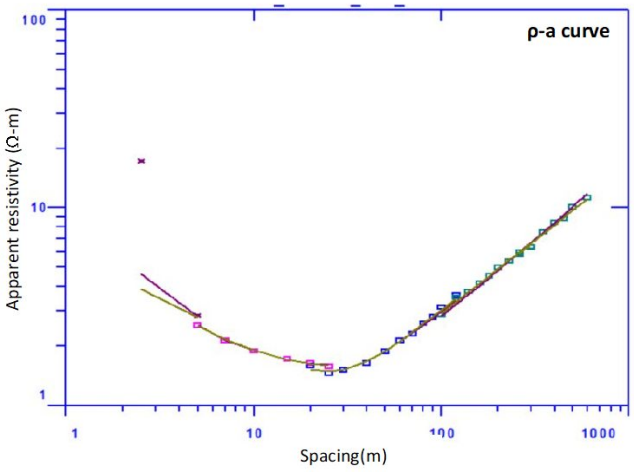


No	Point name	Union etc.	Upazila
11	**VES 13**	Chiringa	Chakaria

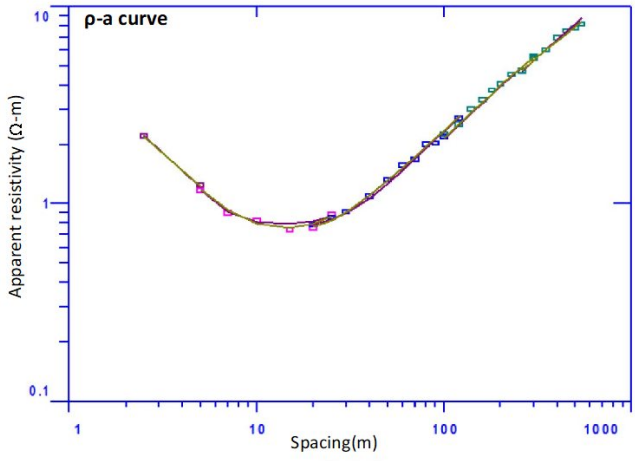


No	Point name	Union etc.	Upazila
12	**VES 14**	Fasiakhali	Chakaria

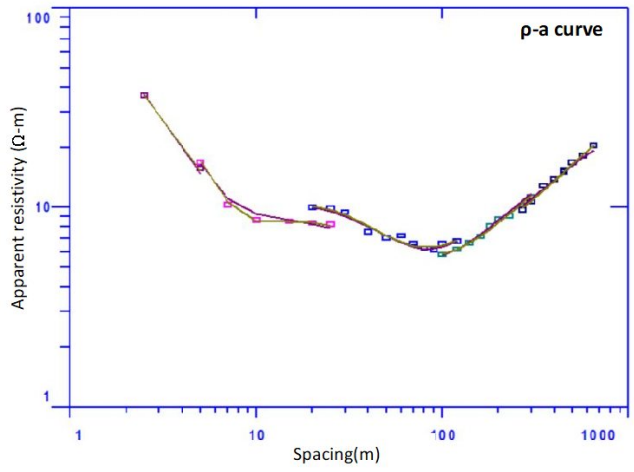
VES result (ρ -a Curve and Resistivity Model) 4/9



No	Point name	Union etc.	Upazila
13	**VES 16**	Paschim Bara Bheola	Chakaria

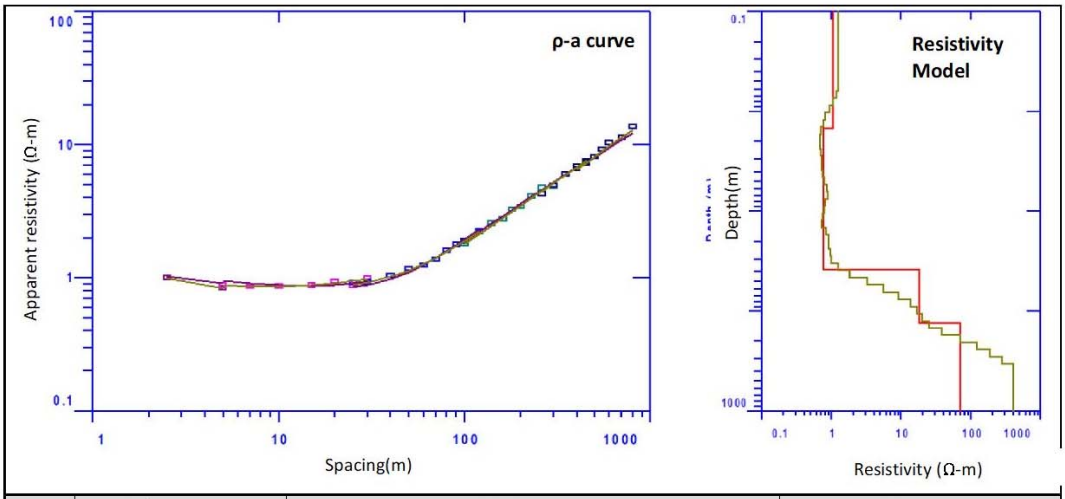


No	Point name	Union etc.	Upazila
14	**VES 17**	Badarkhali	Chakaria

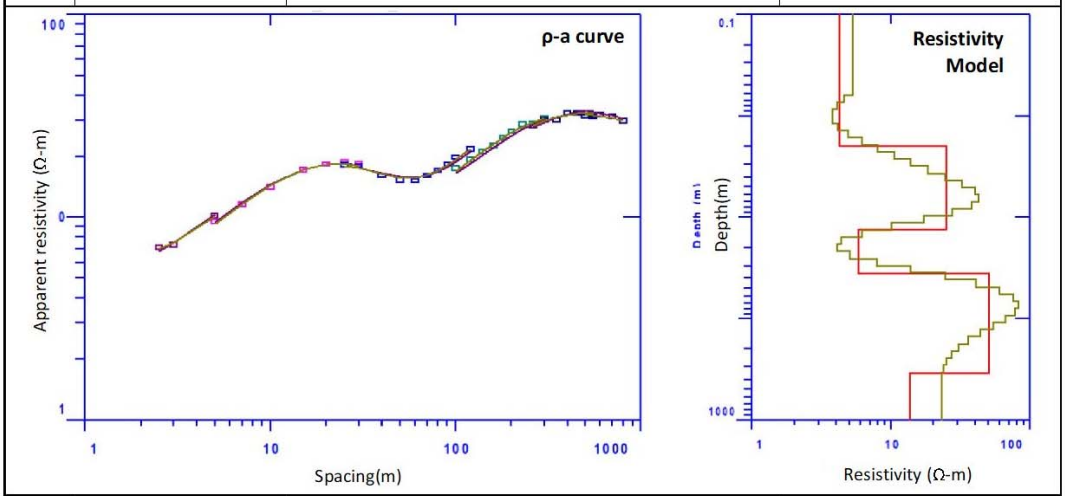


No	Point name	Union etc.	Upazila
15	**VES 27**	Shaharbil	Chakaria

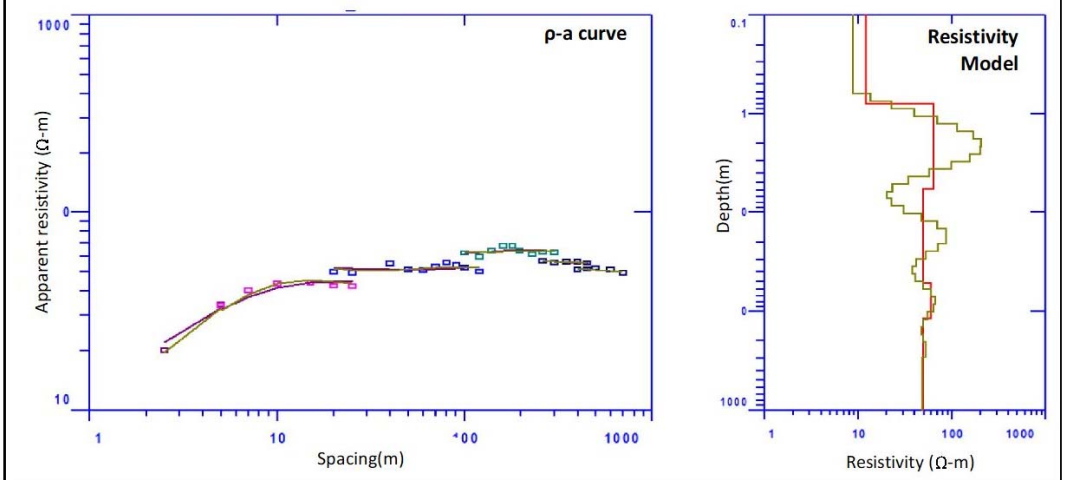
VES result (ρ -a Curve and Resistivity Model) 5/9



No	Point name	Union etc.	Upazila
16	**VES 255**	Chiringa	Chakaria

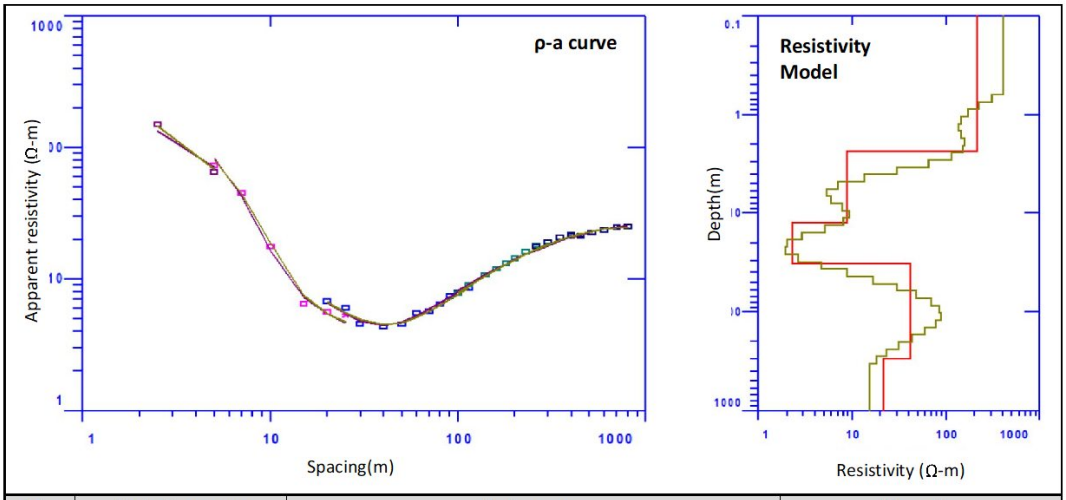


No	Point name	Union etc.	Upazila
17	**VES 33**	Dulahazara	Chakaria

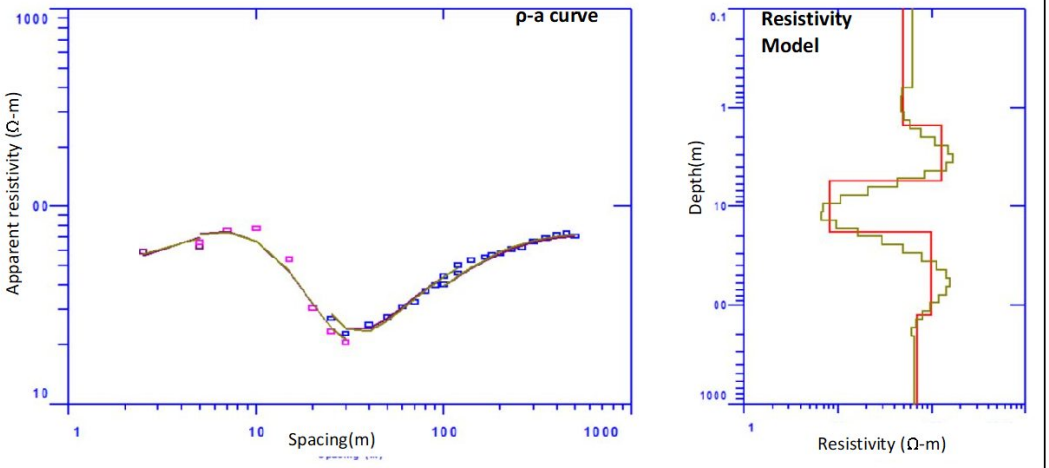


No	Point name	Union etc.	Upazila
18	**VES 08**	Rashid Nagar	Ramu

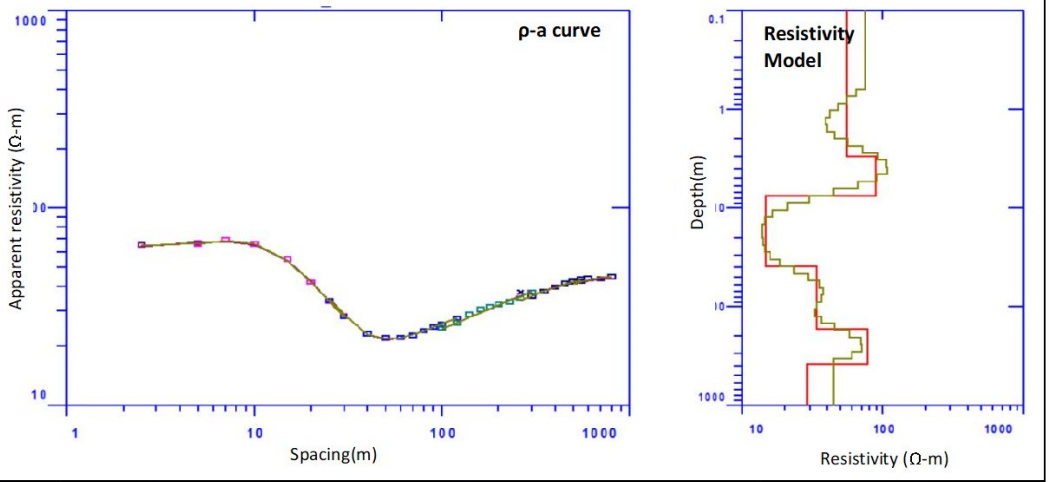
VES result (ρ -a Curve and Resistivity Model) 6/9



No	Point name	Union etc.	Upazila
19	**VES 09**	Joarianala	Ramu

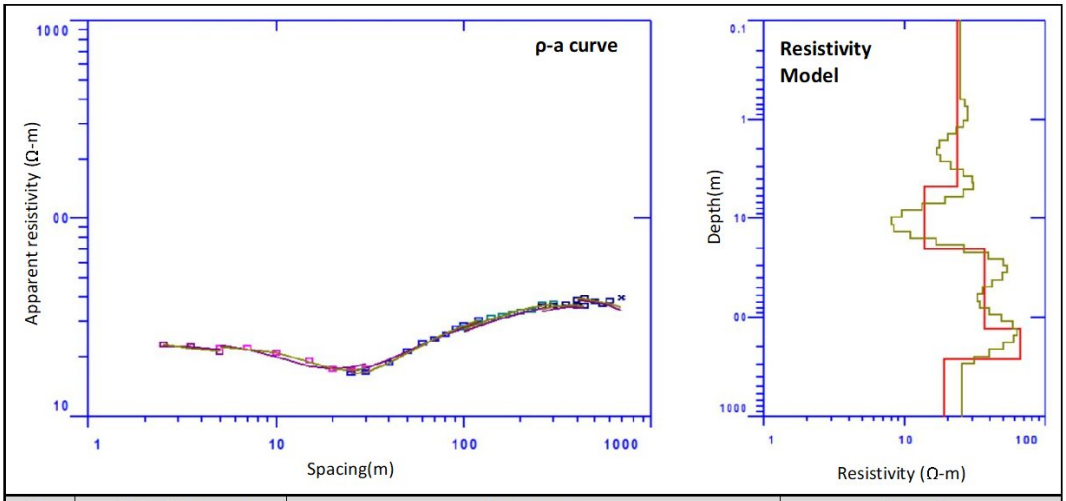


No	Point name	Union etc.	Upazila
20	**VES 101**	Eidgaon	Ramu

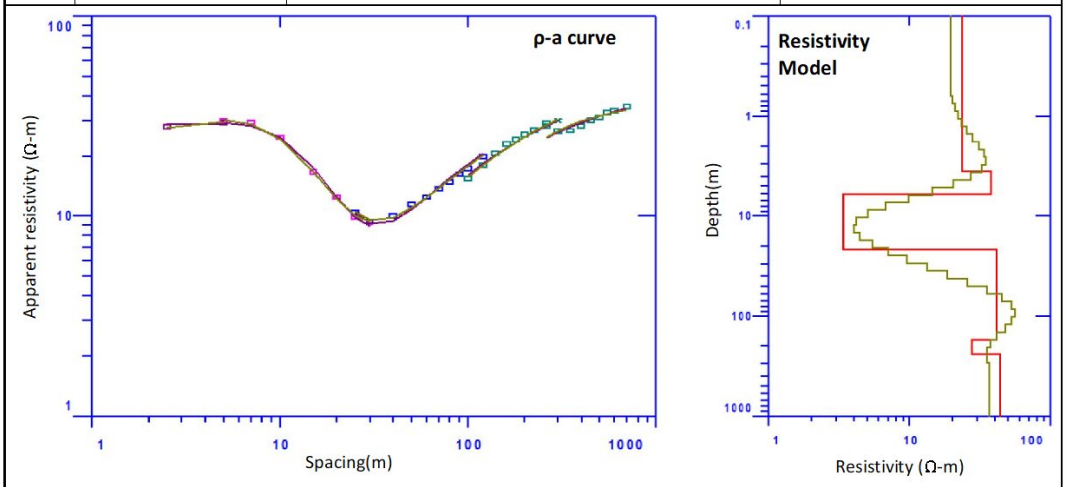


No	Point name	Union etc.	Upazila
21	**VES 2A**	Dakshin Mithachari	Ramu

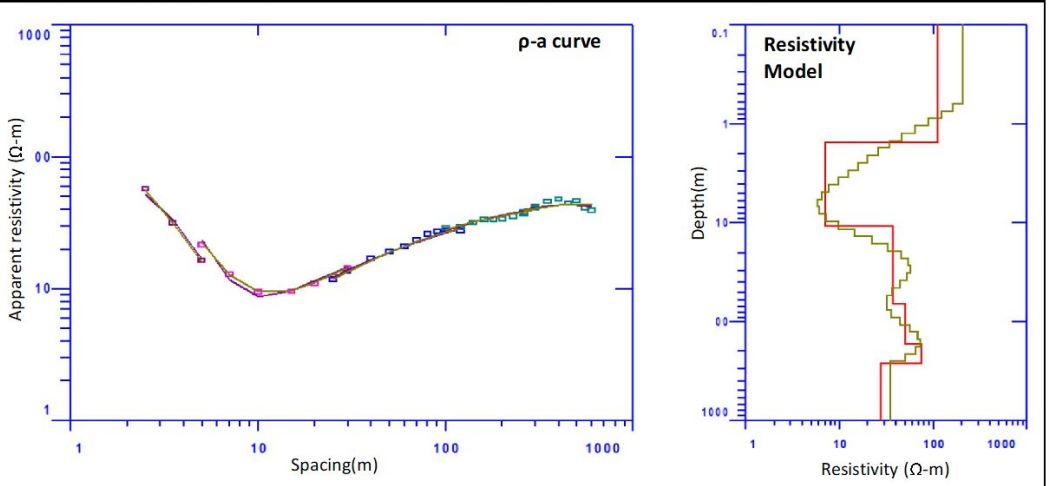
VES result (ρ -a Curve and Resistivity Model) 7/9



No	Point name	Union etc.	Upazila
22	**VES 3A**	Dakshin Mithachari	Ramu

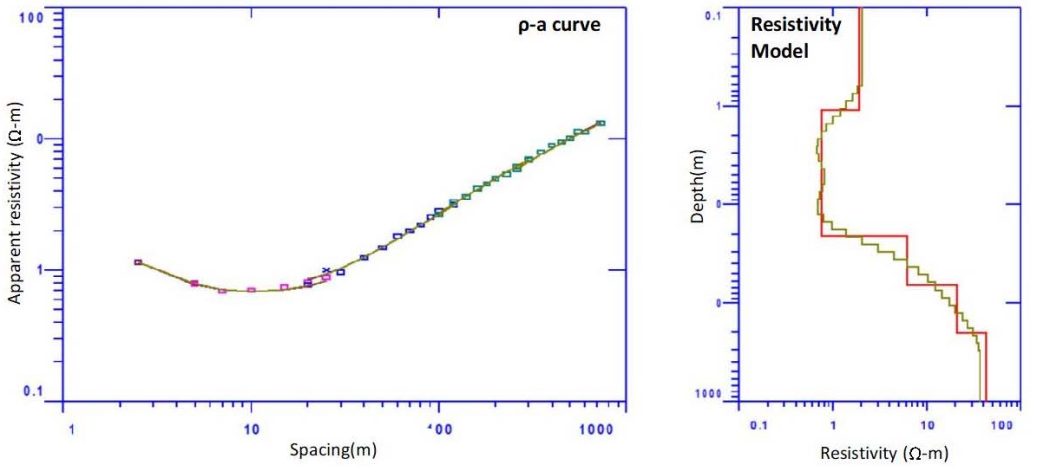


No	Point name	Union etc.	Upazila
23	**VES 4A**	Chakmarkul	Ramu

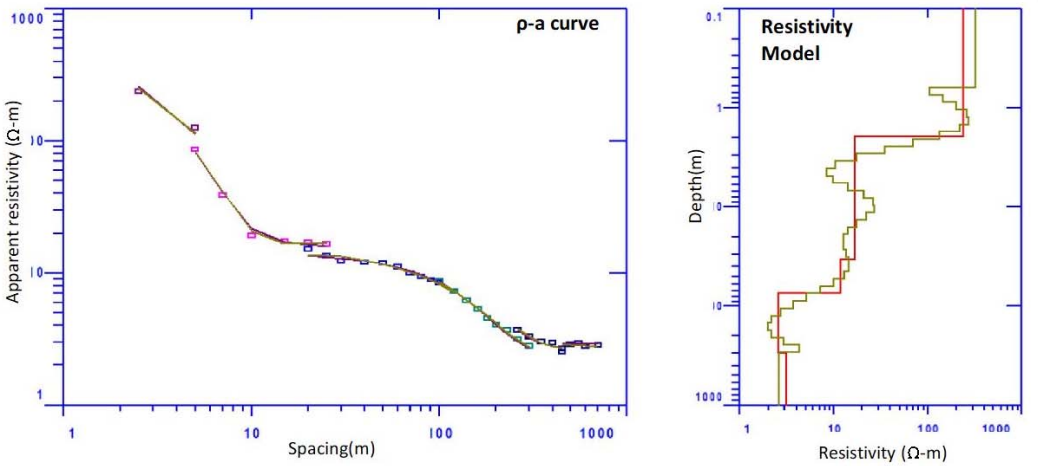


No	Point name	Union etc.	Upazila
24	**VES 07**	Khurushkul	Cox's Bazar Sadar.

VES result (ρ -a Curve and Resistivity Model) 8/9



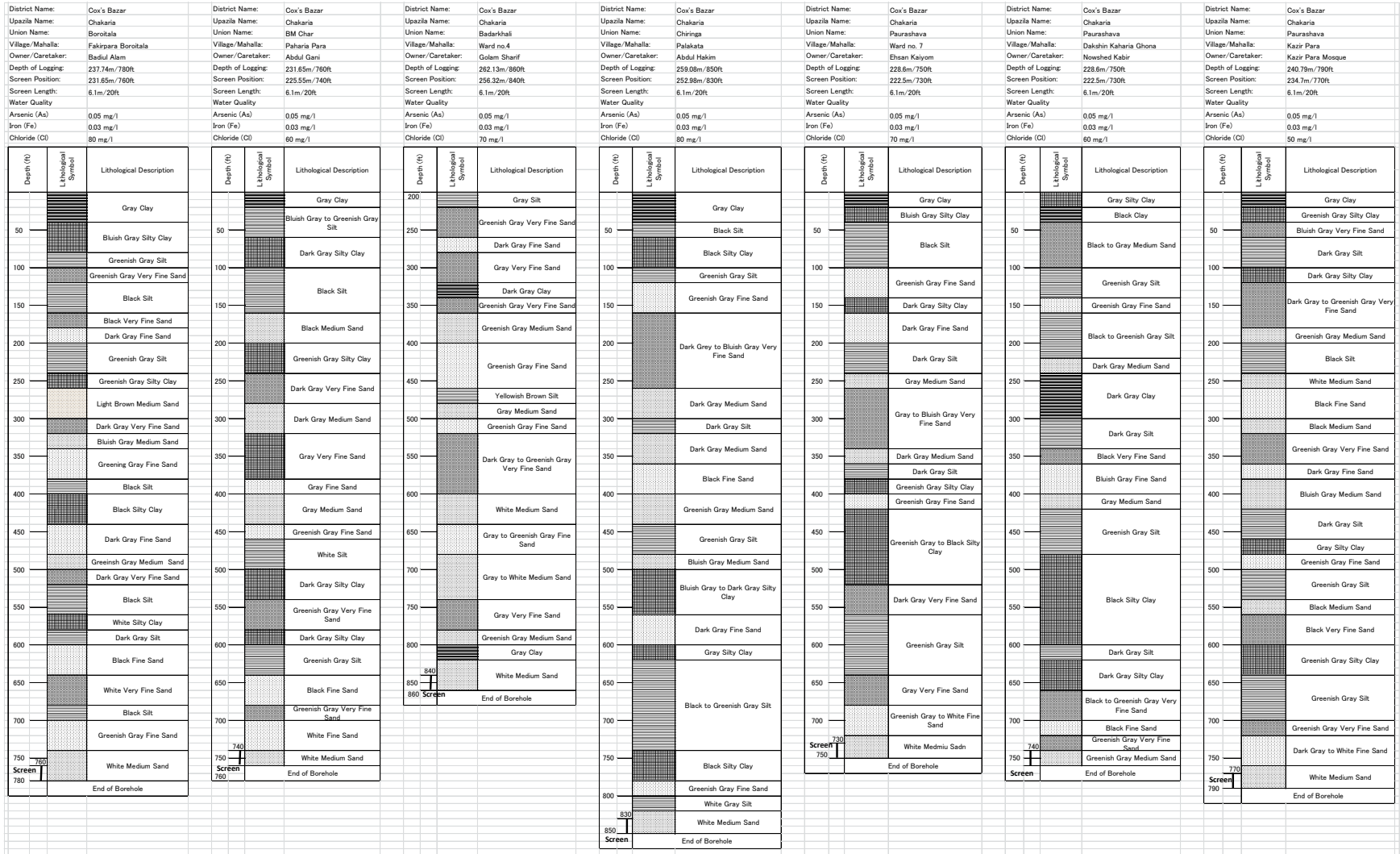
No	Point name	Union etc.	Upazila
25	**VES 20**	Pokkhali	Cox's Bazar Sadar



No	Point name	Union etc.	Upazila
26	**VES 77**	Khurushkul – Chaowfaldandi border	Cox's Bazar Sadar

VES result (ρ -a Curve and Resistivity Model) 9/9

ANNEX 2.2-7 Borehole Logs



Geological Column (Chakaria Upazila)

District Name:	Cox's Bazar
Upazila Name:	Moheshkhali
Union Name:	Dholghata
Mouza/Ward:	
Village/Mahalla:	Suturia
Latitude:	21.669682
Longitude:	91.861659
Owner/Caretaker:	Tofael Islam
Well Fixture	
Depth of Logging:	158.49m/520ft
Screen Position:	152.4m/500ft
Screen Length:	6m/20ft
Sand Trap:	
Water Quality	
Arsenic (As)	
Iron (Fe)	
Chloride (Cl)	

Depth (ft)	Lithological Symbol	Lithological Description
50		Gray Clay
100		
150		
200		Dark Gray Fine Sand
250		
300		Gray Clay
350		
400		
450		Bluish Gray Fine to Medium Sand
500		
Screen		
520		End of Borehole

District Name:	Cox's Bazar
Upazila Name:	Moheshkhali
Union Name:	Dholghata
Mouza/Ward:	3
Village/Mahalla:	Bongamia
Latitude:	21.690977
Longitude:	91.868536
Owner/Caretaker:	Md. Nurul Islam
Well Fixture	
Depth of Logging:	157.89m/518ft
Screen Position:	151.79m/498
Screen Length:	6m/20ft
Sand Trap:	
Water Quality	
Arsenic (As)	
Iron (Fe)	
Chloride (Cl)	

Depth (ft)	Lithological Symbol	Lithological Description
50		Gray Clay
100		
150		
200		Dark Gray Fine Sand
250		
300		Gray Clay
350		
400		
450		Bluish Gray Fine to Medium Sand
500		
518		
Screen		
		End of Borehole

District Name:	Cox's Bazar
Upazila Name:	Moheshkhali
Union Name:	Matarbari
Mouza/Ward:	2
Village/Mahalla:	Uttor Sikder Para
Latitude:	21.74111
Longitude:	91.899509
Owner/Caretaker:	Mokaddes
Well Fixture	
Depth of Logging:	225.55m/740ft
Screen Position:	213.36m/700ft
Screen Length:	12.19m/40ft
Sand Trap:	
Water Quality	
Arsenic (As)	
Iron (Fe)	
Chloride (Cl)	

Depth (ft)	Lithological Symbol	Lithological Description
50		Gray Clay
100		Dark Gray Very Fine Sand
150		
200		
250		Fine Sand
300		
345		Black Coarse Sand with
400		Gray Clay
450		
500		
550		Dark Gray Fine to Medium Sand
565		Dark Gray Coarse Sand with
600		Gray Clay
650		
700		Dark Gray Medium to Coarse Sand
Screen		
740		End of Borehole

District Name:	Cox's Bazar
Upazila Name:	Moheshkhali
Union Name:	Matarbari
Mouza/Ward:	
Village/Mahalla:	Cybar Dail
Latitude:	21.713051
Longitude:	91.881505
Owner/Caretaker:	Jamir Uddin
Well Fixture	
Depth of Logging:	201.17m/660ft
Screen Position:	188.98m/620ft
Screen Length:	12.19m/40ft
Sand Trap:	
Water Quality	
Arsenic (As)	
Iron (Fe)	
Chloride (Cl)	

Depth (ft)	Lithological Symbol	Lithological Description
		Gray Clay
50		Gray Silty Clay
100		Gray Clay
150		Gray Fine Sand
200		Gray Clay
250		Gray Coarse Sand with Gravel
265		
300		Gray Fine Sand
350		Gray Coarse Sand with Gravel
400		
450		Bluish Gray Fine to Medium Sand
500		
550		
600		
620		
Screen		
650		
660		End of Borehole

District Name:	Cox's Bazar
Upazila Name:	Moheshkhali
Union Name:	Kalamarchara
Mouza/Ward:	1
Village/Mahalla:	Uttor Nalbila
Latitude:	
Longitude:	
Owner/Caretaker:	Jashim Uddin
Well Fixture	
Depth of Logging:	204.21m/670ft
Screen Position:	188.98m/620ft
Screen Length:	15.24m/50ft
Sand Trap:	
Water Quality	
Arsenic (As)	
Iron (Fe)	
Chloride (Cl)	

Depth (ft)	Lithological Symbol	Lithological Description
50		Gray to Drak Gray Clay
100		
150		Fine Sand
200		Gray Clay
250		Black Gravel
265		Drak Gray Silty Clay
300		
350		Drak Very Coarse Sand
400		
450		Drak Gray to Gray Clay
500		
550		
565		Black Gravel
600		Gray Clay
620		
Screen		
650		Bluish Gray Fine to Medium Sand
670		End of Borehole

District Name:	Cox's Bazar
Upazila Name:	Moheshkhali
Union Name:	Hoanak
Mouza/Ward:	
Village/Mahalla:	Purbo Chonkhola para
Latitude:	21.636609
Longitude:	91.9258
Owner/Caretaker:	Mozzammel Haque
Well Fixture	
Depth of Logging:	228.6m/750ft
Screen Position:	213.36m/700ft
Screen Length:	15.24m/50ft
Sand Trap:	
Water Quality	
Arsenic (As)	
Iron (Fe)	
Chloride (Cl)	

Depth (ft)	Lithological Symbol	Lithological Description
		Gray Clay
50		
100		
150		
200		
250		Bluish Gray Medium Sand
300		
350		
400		
450		
500		
550		
600		
650		Light Brown Medium to Coarse Sand
700		
Screen		
750		End of Borehole

Geological Column (Moheshkhali Upazila) (1/3)

District Name:	Cox's Bazar
Upazila Name:	Moheshkhali
Union Name:	Hoanak
Mouza/Ward:	
Village/Mahalla:	
Latitude:	21.618058
Longitude:	91.920898
Owner/Caretaker:	
Well Fixture	
Depth of Logging:	242.32m/795ft
Screen Position:	224.03m/735ft
Screen Length:	18.29m/60ft
Sand Trap:	
Water Quality	
Arsenic (As)	
Iron (Fe)	
Chloride (Cl)	

Depth (ft)	Lithological Symbol	Lithological Description
		Gray Clay
50		
100		
150		
200		Gray Fine Sand
250		
300		
350		
400		
450		
500		
550		Gray Medium to Coarse Sand
600		
650		
700		
735		
750 (Screen)		
795		End of Borehole

District Name:	Cox's Bazar
Upazila Name:	Moheshkhali
Union Name:	Paurashava
Mouza/Ward:	
Village/Mahalla:	Pulpara
Latitude:	21.528823
Longitude:	91.963233
Owner/Caretaker:	Uttom Das
Well Fixture	
Depth of Logging:	48.77m/160ft
Screen Position:	42.67m/140ft
Screen Length:	6m/20ft
Sand Trap:	
Water Quality	
Arsenic (As)	
Iron (Fe)	
Chloride (Cl)	

Depth (ft)	Lithological Symbol	Lithological Description
50		Gray Silt
100		Gray Gravel
140		
150		Bluish Gray Fine Sand
160 (Screen)		
		End of Borehole

District Name:	Cox's Bazar
Upazila Name:	Moheshkhali
Union Name:	Paurashava
Mouza/Ward:	
Village/Mahalla:	Dashi Majhi Para
Latitude:	21.528823
Longitude:	91.963233
Owner/Caretaker:	Momtaz Chowkider
Well Fixture	
Depth of Logging:	45.72m/150ft
Screen Position:	39.62m/130ft
Screen Length:	6m/20ft
Sand Trap:	
Water Quality	
Arsenic (As)	
Iron (Fe)	
Chloride (Cl)	

Depth (ft)	Lithological Symbol	Lithological Description
		Gray Clay
50		Bluish Gray Very Fine Sand
		Gray Silt
100		Gray Gravel
130		
150 (Screen)		Bluish Gray Very Fine Sand
		End of Borehole

District Name:	Cox's Bazar
Upazila Name:	Moheshkhali
Union Name:	Boro Moheshkhali
Mouza/Ward:	
Village/Mahalla:	Jagira Ghona
Latitude:	21.531622
Longitude:	91.946729
Owner/Caretaker:	Rohima/Ansarul Haque
Well Fixture	
Depth of Logging:	45.72m/150ft
Screen Position:	33.53m/110ft
Screen Length:	12.19m/40ft
Sand Trap:	
Water Quality	
Arsenic (As)	
Iron (Fe)	
Chloride (Cl)	

Depth (ft)	Lithological Symbol	Lithological Description
		Gray Clay
50		Gray Coarse Sand with Gravel
		Gray Very Fine Sand
100		Gray Very Fine Sand
110		
150 (Screen)		
		End of Borehole

District Name:	Cox's Bazar
Upazila Name:	Moheshkhali
Union Name:	Boro Moheshkhali
Mouza/Ward:	
Village/Mahalla:	Modhuar Dail
Latitude:	21.533126
Longitude:	91.945507
Owner/Caretaker:	Saddam Hossain
Well Fixture	
Depth of Logging:	50.29m/165ft
Screen Position:	36.58m/120ft
Screen Length:	13.72m/45ft
Sand Trap:	
Water Quality	
Arsenic (As)	
Iron (Fe)	
Chloride (Cl)	

Depth (ft)	Lithological Symbol	Lithological Description
		Gray Clay
		Gray Silty Clay
50		Gray Coarse Sand with Gravel
100		Gray Gravel
120		
150 (Screen)		Gray Very Fine Sand
165		
		End of Borehole

District Name:	Cox's Bazar
Upazila Name:	Moheshkhali
Union Name:	Choto Moheshkhali
Mouza/Ward:	
Village/Mahalla:	Shipahir Para
Latitude:	21.524025
Longitude:	91.967513
Owner/Caretaker:	Nazrul
Well Fixture	
Depth of Logging:	62.48m/205ft
Screen Position:	53.34m/175ft
Screen Length:	9.14m/30ft
Sand Trap:	
Water Quality	
Arsenic (As)	
Iron (Fe)	
Chloride (Cl)	

Depth (ft)	Lithological Symbol	Lithological Description
		Gray Clay
50		Gray Silty Clay
		Gray Very Fine Sand
100		Gray Gravel
		Gray Clay
150		Brownish Gray Fine Sand
180 (Screen)		
200		
210		End of Borehole

Geological Column (Moheshkhali Upazila) (2/3)

13	
District Name:	Cox's Bazar
Upazila Name:	Moheshkhali
Union Name:	Choto Moheshkhali
Mouza/Ward:	
Village/Mahalla:	Thakurtala
Latitude:	21.524025
Longitude:	91.967513
Owner/Caretaker:	Khokhon Daa
Well Fixture	
Depth of Logging:	50.29m/165ft
Screen Position:	41.15m/135ft
Screen Length:	9.14m/30ft
Sand Trap:	
Water Quality	
Arsenic (As)	
Iron (Fe)	
Chloride (Cl)	

Depth (ft)	Lithological Symbol	Lithological Description
		Gray Clay
50		Gray Very Fine Sand
100		Bluish Gray Gravel
135		Gray Fine Sand
150 Screen		
165		End of Borehole

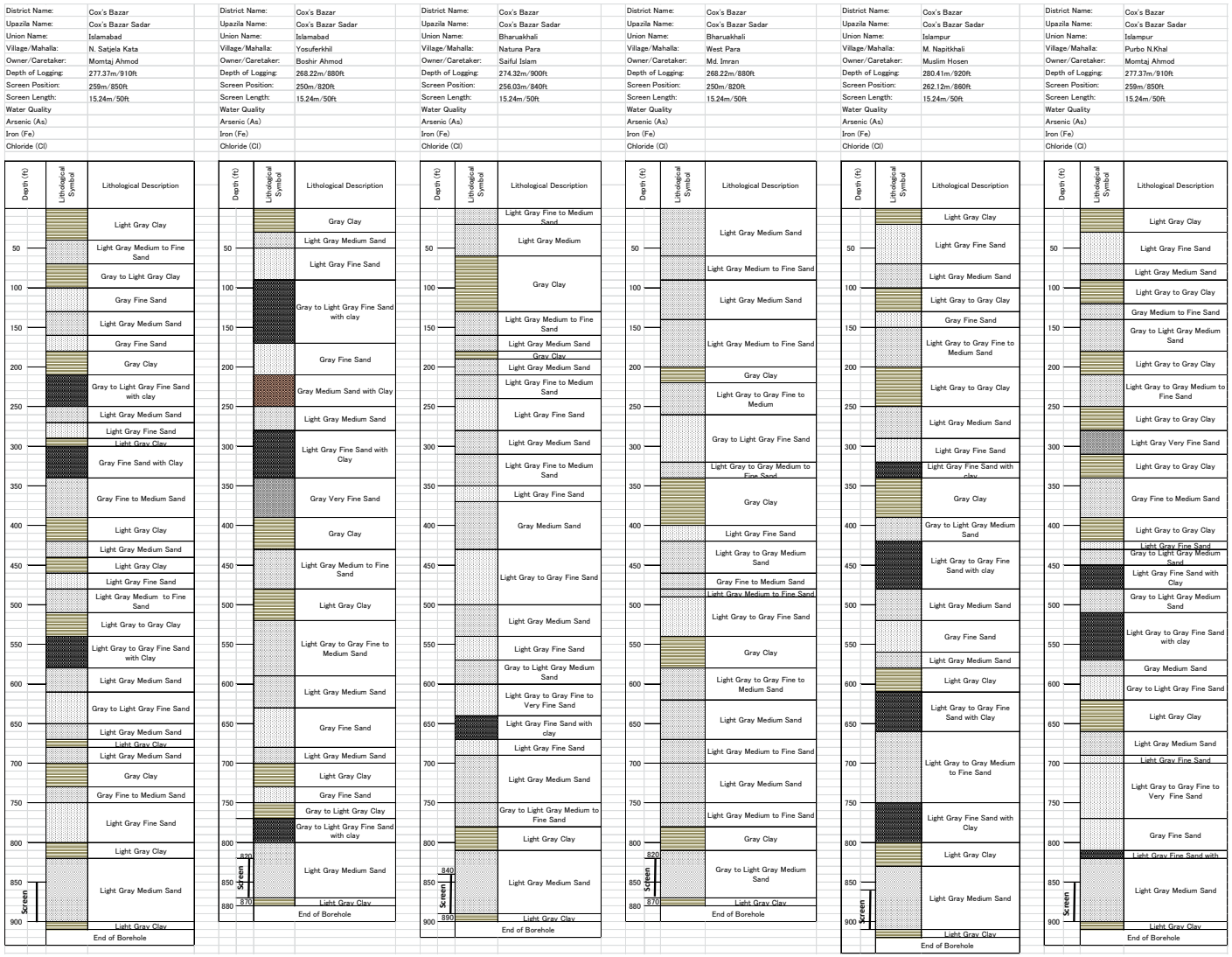
14	
District Name:	Cox's Bazar
Upazila Name:	Moheshkhali
Union Name:	Kutubjom
Mouza/Ward:	
Village/Mahalla:	Dowlar Para
Latitude:	21.527855
Longitude:	91.850396
Owner/Caretaker:	Md. Shafi
Well Fixture	
Depth of Logging:	50.29m/165ft
Screen Position:	44.2m/135ft
Screen Length:	6m/30ft
Sand Trap:	
Water Quality	
Arsenic (As)	
Iron (Fe)	
Chloride (Cl)	

Depth (ft)	Lithological Symbol	Lithological Description
		Gray Clay
50		Bluish Gray Fine Sand
100		Dark Gray Very Fine Sand
		Dark Gray Silt
135		Bluish Gray Fine Sand
150 Screen		
165		End of Borehole

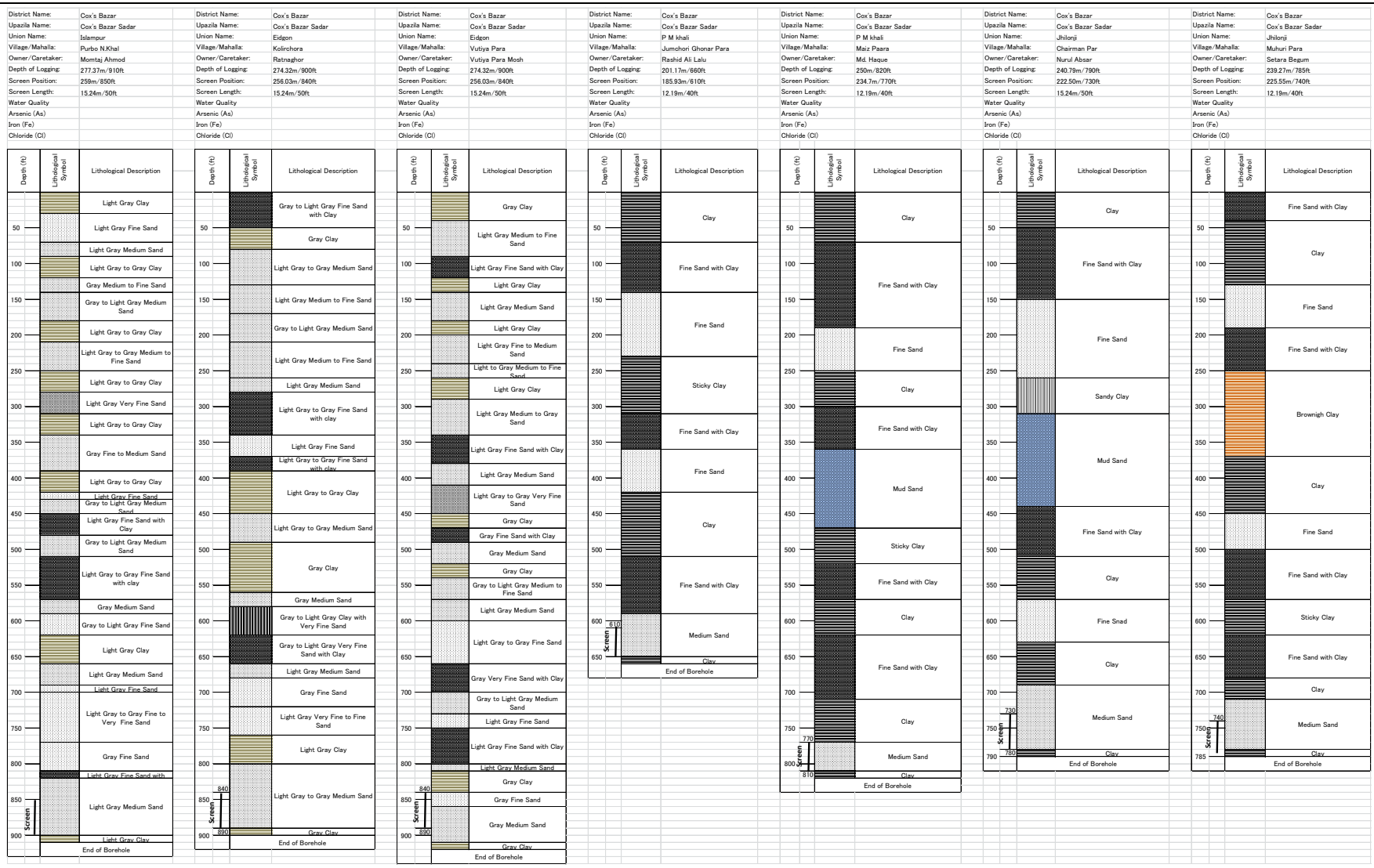
15	
District Name:	Cox's Bazar
Upazila Name:	Moheshkhali
Union Name:	Kutubjom
Mouza/Ward:	
Village/Mahalla:	Kutubjom
Latitude:	21.527855
Longitude:	91.850396
Owner/Caretaker:	Kutubjom High School
Well Fixture	
Depth of Logging:	50.29m/165ft
Screen Position:	44.2m/135ft
Screen Length:	6m/30ft
Sand Trap:	
Water Quality	
Arsenic (As)	
Iron (Fe)	
Chloride (Cl)	

Depth (ft)	Lithological Symbol	Lithological Description
		Gray Clay
50		Dark Gray Silt
		Bluish Gray Fine Sand
100		Dark Gray Silt
135		Bluish Gray Fine Sand
150 Screen		
165		End of Borehole

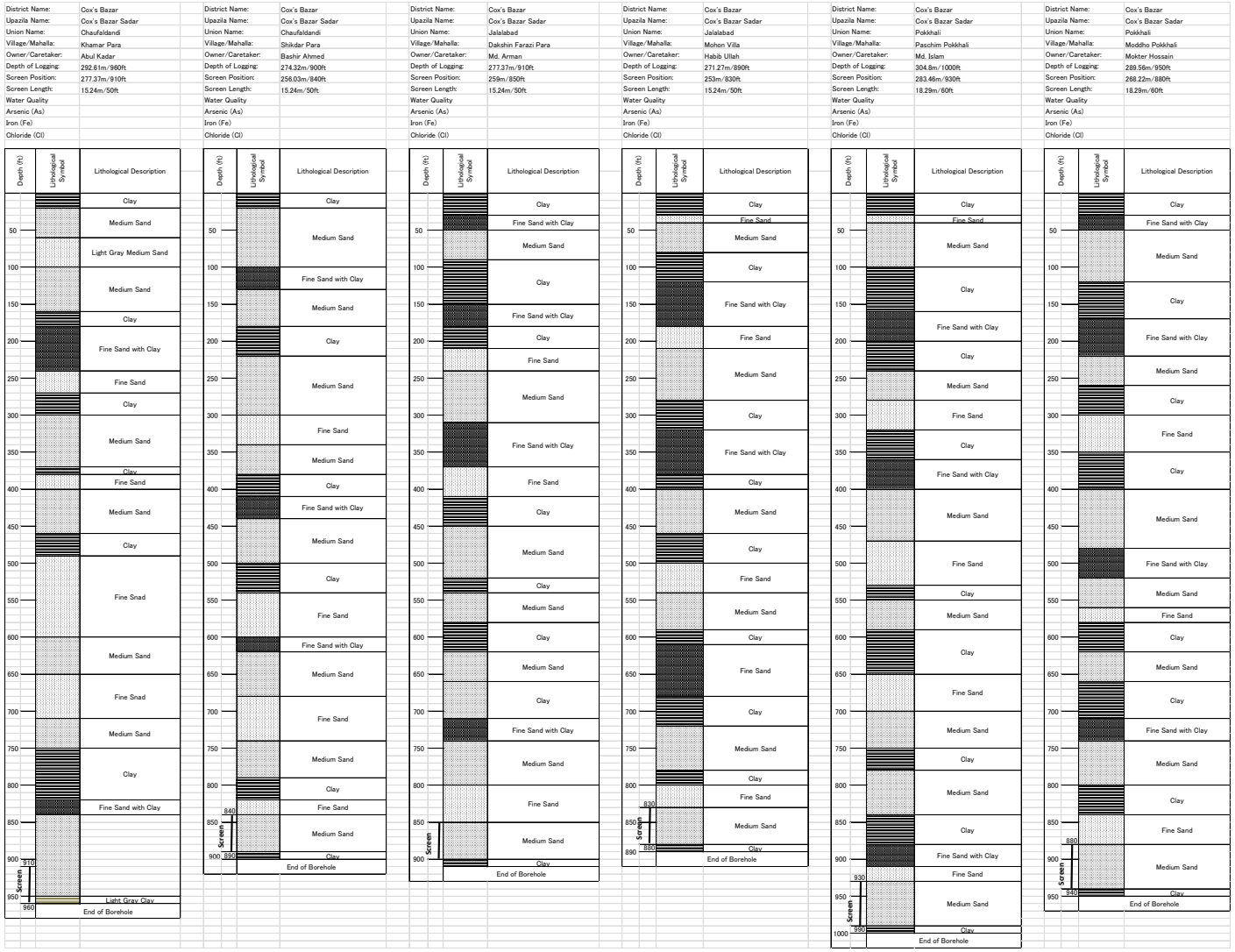
Geological Column (Moheshkhali Upazila) (3/3)



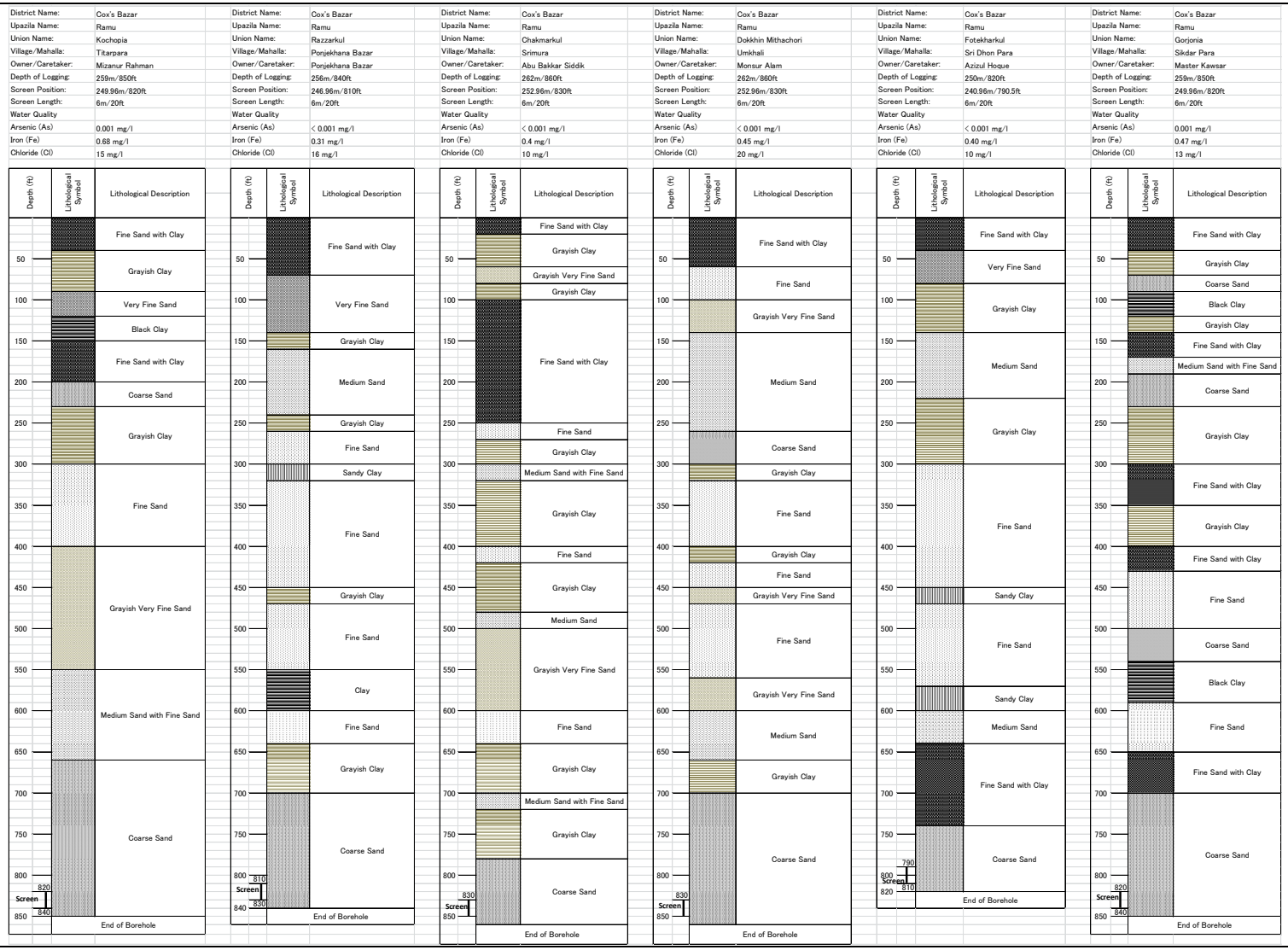
Geological Column (Cox's Bazar Sadr Upazila) (1/3)



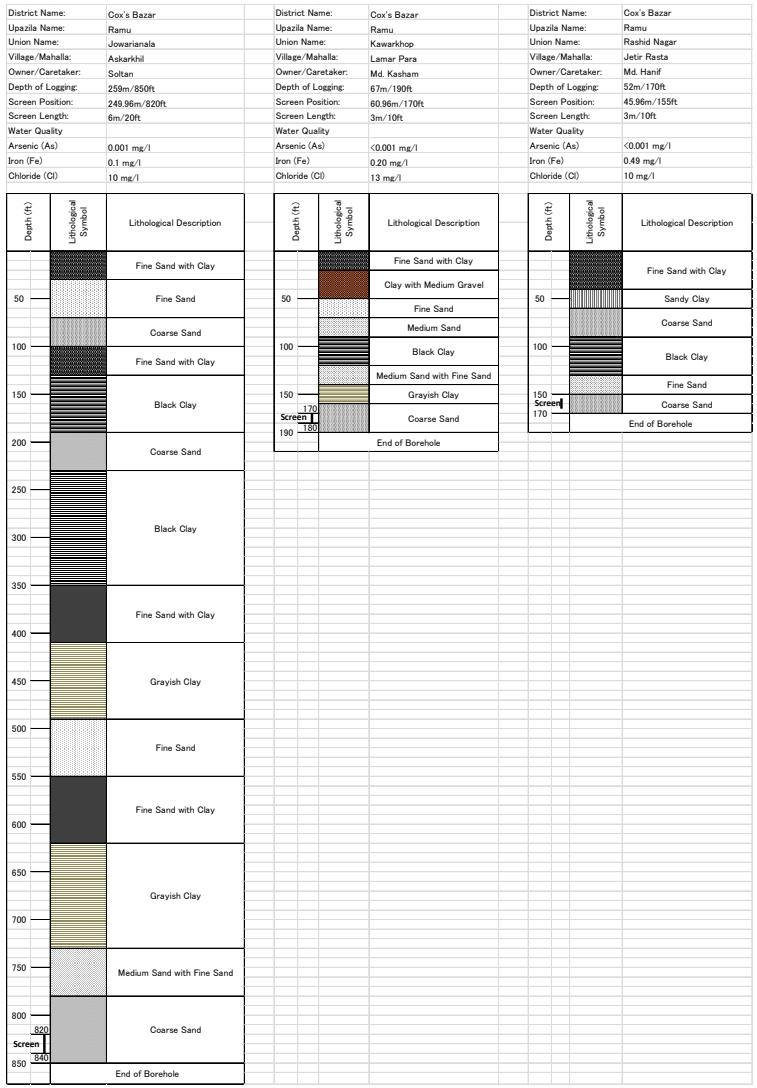
Geological Column (Cox's Bazar Sadr Upazila) (2/3)



Geological Column (Cox's Bazar Sadr Upazila) (3/3)

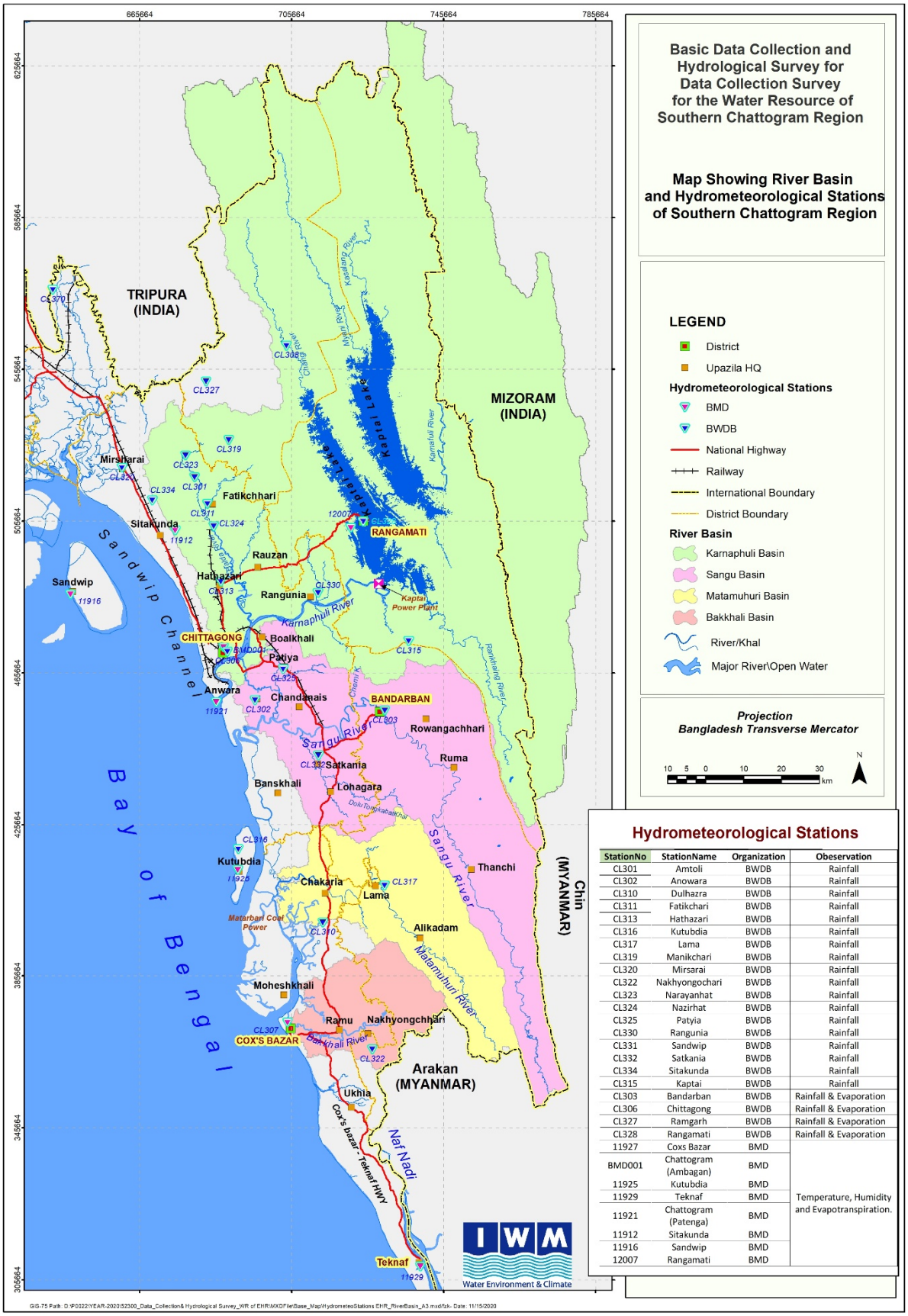


Geological Column (Ramu Upazila) (1/2)



Geological Column (Ramu Upazila) (2/2)

Annex 3.1-1 Location Map of Rainfall Gauging Station



Hydrometeorological Stations

StationNo	StationName	Organization	Obeservation
CL301	Amtoli	BWDB	Rainfall
CL302	Anowara	BWDB	Rainfall
CL310	Dulhazra	BWDB	Rainfall
CL311	Fatikchari	BWDB	Rainfall
CL313	Hathazari	BWDB	Rainfall
CL316	Kutubdia	BWDB	Rainfall
CL317	Lama	BWDB	Rainfall
CL319	Manikchari	BWDB	Rainfall
CL320	Mirsarai	BWDB	Rainfall
CL322	Nakhyongochari	BWDB	Rainfall
CL323	Narayanhat	BWDB	Rainfall
CL324	Nazirhat	BWDB	Rainfall
CL325	Patyia	BWDB	Rainfall
CL330	Rangunia	BWDB	Rainfall
CL331	Sandwip	BWDB	Rainfall
CL332	Satkania	BWDB	Rainfall
CL334	Sitakunda	BWDB	Rainfall
CL315	Kaptai	BWDB	Rainfall
CL303	Bandarban	BWDB	Rainfall & Evaporation
CL306	Chittagong	BWDB	Rainfall & Evaporation
CL327	Ramgarh	BWDB	Rainfall & Evaporation
CL328	Rangamati	BWDB	Rainfall & Evaporation
11927	Coxs Bazar	BMD	Temperature, Humidity and Evapotranspiration.
BMD001	Chattogram (Ambagan)	BMD	
11925	Kutubdia	BMD	
11929	Teknaf	BMD	
11921	Chattogram (Patenga)	BMD	
11912	Sitakunda	BMD	
11916	Sandwip	BMD	
12007	Rangamati	BMD	

Source: JICA Survey Team

Annex 3.1-2 Calculation Result of Average Rainfall over Watershed

Hydrological Year	Rainfall (mm/year)																	
	Matamuhuri Basin						Sangu Basin						Karnafuli Basin					
	Whole Year	Rank	Dry Season	Rank	Rainy Season	Rank	Whole Year	Rank	Dry Season	Rank	Rainy Season	Rank	Whole Year	Rank	Dry Season	Rank	Rainy Season	Rank
1966-67	3,002	22	227	47	2,775	16	2,368	11	215	47	2,153	6	1,174	1	176	37	999	1
1967-68	2,825	13	84	24	2,741	15	2,647	23	79	23	2,567	24	1,871	5	53	10	1,818	5
1968-69	2,658	9	30	8	2,629	9	2,596	20	59	13	2,537	20	2,664	33	78	18	2,587	35
1969-70	2,581	6	39	13	2,542	6	2,536	17	62	14	2,474	17	2,797	37	98	26	2,699	42
1970-71	3,057	25	113	31	2,944	24	2,909	36	161	35	2,748	33	2,648	31	196	43	2,452	29
1971-72	1,864	1	102	28	1,761	1	1,598	1	110	27	1,488	1	1,646	2	88	24	1,557	4
1972-73	2,189	2	16	5	2,173	2	1,989	2	40	10	1,949	2	2,287	20	83	20	2,204	21
1973-74	3,486	35	308	51	3,178	32	3,250	43	386	52	2,864	40	2,973	45	310	50	2,663	40
1974-75	2,928	19	148	33	2,780	17	2,362	10	118	29	2,243	8	2,689	34	66	15	2,623	38
1975-76	3,173	29	166	36	3,007	27	2,900	34	177	40	2,723	30	3,376	51	179	40	3,197	52
1976-77	3,341	32	209	45	3,131	31	2,841	32	203	44	2,638	26	2,945	43	169	35	2,776	45
1977-78	2,920	18	59	21	2,861	21	2,849	33	72	19	2,777	36	3,033	47	61	12	2,972	47
1978-79	2,568	5	1	1	2,567	7	2,282	5	8	2	2,274	11	2,638	30	21	3	2,617	37
1979-80	3,024	24	110	30	2,914	23	2,689	25	129	31	2,560	23	2,804	39	250	49	2,554	32
1980-81	2,769	11	101	27	2,668	11	2,680	24	172	37	2,508	19	2,137	14	178	39	1,959	10
1981-82	3,752	41	68	23	3,684	41	2,902	35	70	18	2,832	38	2,060	10	58	11	2,002	11
1982-83	3,184	30	176	40	3,008	28	3,141	41	166	36	2,975	42	3,022	46	186	41	2,836	46
1983-84	3,573	38	256	48	3,317	34	2,936	37	203	45	2,732	31	2,410	27	135	31	2,274	25
1984-85	2,884	16	49	19	2,834	20	2,491	15	54	11	2,437	15	2,103	13	82	19	2,021	13
1985-86	2,619	7	171	37	2,448	4	2,419	12	130	32	2,289	12	2,248	18	85	21	2,163	19
1986-87	4,172	44	172	38	4,001	44	3,230	42	203	43	3,028	43	2,951	44	245	48	2,706	43
1987-88	3,158	28	108	29	3,050	29	3,007	40	106	26	2,901	41	2,891	42	170	36	2,722	44
1988-89	2,647	8	30	9	2,617	8	2,448	13	78	22	2,370	14	2,295	21	77	17	2,219	23
1989-90	3,574	39	178	41	3,396	36	2,833	31	149	34	2,684	28	2,367	25	187	42	2,180	20
1990-91	4,485	47	198	44	4,287	46	3,665	46	211	46	3,454	47	3,182	49	176	38	3,005	49
1991-92	2,980	21	181	42	2,800	18	2,306	7	177	39	2,129	5	1,650	3	167	34	1,484	3
1992-93	4,470	46	325	52	4,145	45	3,549	45	323	51	3,226	45	3,488	52	333	52	3,154	50
1993-94	2,945	20	265	50	2,680	12	2,238	4	219	48	2,019	3	1,656	4	227	46	1,429	2
1994-95	2,784	12	59	20	2,726	14	2,328	8	74	20	2,254	9	2,086	11	67	16	2,019	12
1995-96	5,108	50	604	53	4,504	49	3,711	48	545	53	3,166	44	2,794	36	477	53	2,316	27
1996-97	5,082	49	213	46	4,869	50	3,756	49	235	50	3,522	48	2,837	41	312	51	2,525	31
1997-98	5,500	51	165	35	5,334	51	4,183	53	181	41	4,002	53	2,798	38	222	45	2,576	34
1998-99	5,556	52	46	16	5,510	53	4,009	51	37	7	3,972	52	2,730	35	50	8	2,681	41
1999-00	5,666	53	176	39	5,491	52	4,116	52	174	38	3,942	51	2,832	40	244	47	2,588	36
2000-01	3,475	34	47	17	3,427	37	2,590	19	39	9	2,550	21	2,096	12	63	13	2,033	14
2001-02	4,107	43	153	34	3,954	43	2,950	38	132	33	2,818	37	2,385	26	146	33	2,240	24
2002-03	2,883	15	181	43	2,703	13	2,455	14	124	30	2,331	13	2,328	22	116	29	2,212	22
2003-04	2,903	17	16	6	2,887	22	2,502	16	24	6	2,478	18	2,663	32	38	4	2,625	39
2004-05	2,687	10	28	7	2,660	10	2,340	9	70	17	2,271	10	2,164	15	87	23	2,077	15
2005-06	2,881	14	64	22	2,816	19	2,633	22	75	21	2,558	22	2,183	16	48	7	2,136	16
2006-07	3,520	37	42	14	3,478	39	3,341	44	65	15	3,276	46	3,094	48	115	28	2,979	48
2007-08	3,613	40	100	26	3,514	40	2,828	30	185	42	2,644	27	1,999	8	141	32	1,858	6
2008-09	3,002	23	4	3	2,998	26	2,632	21	22	4	2,610	25	2,351	23	13	1	2,338	28
2009-10	2,515	4	45	15	2,470	5	2,291	6	84	24	2,207	7	2,284	19	132	30	2,151	17
2010-11	3,415	33	85	25	3,329	35	2,966	39	110	28	2,856	39	2,364	24	86	22	2,277	26
2011-12	3,336	31	35	11	3,301	33	2,784	28	24	5	2,760	35	2,567	28	42	6	2,525	30
2012-13	3,821	42	4	2	3,817	42	2,744	26	4	1	2,741	32	1,929	6	20	2	1,909	8
2013-14	2,473	3	49	18	2,425	3	2,133	3	56	12	2,077	4	1,945	7	38	5	1,907	7
2014-15	4,398	45	6	4	4,392	48	3,695	47	15	3	3,680	49	3,263	50	93	25	3,170	51
2015-16	3,071	26	122	32	2,949	25	2,559	18	88	25	2,472	16	2,011	9	101	27	1,910	9
2016-17	4,564	48	264	49	4,300	47	3,928	50	220	49	3,708	50	3,737	53	196	44	3,541	53
2017-18	3,496	36	32	10	3,463	38	2,790	29	38	8	2,752	34	2,621	29	52	9	2,569	33
2018-19	3,090	27	38	12	3,053	30	2,780	27	67	16	2,713	29	2,227	17	65	14	2,162	18
Average	**3,392**		**122**		**3,270**		**2,843**		**128**		**2,716**		**2,496**		**134**		**2,362**	
Max	**5,666**		**176**		**5,491**		**4,183**		**181**		**4,002**		**3,737**		**196**		**3,541**	
Min	**1,864**		**102**		**1,761**		**1,598**		**110**		**1,488**		**1,174**		**176**		**999**	
1/5 Drought	**2,687**		**28**		**2,660**		**2,362**		**118**		**2,243**		**2,060**		**58**		**2,002**	
1/10 Drought	**2,568**		**1**		**2,567**		**2,282**		**8**		**2,274**		**1,871**		**53**		**1,818**	

: 1/5 Drought Year : 1/10 Drought Year

: Max Rainfall : Min Rainfall

Note: Max, Min, 1/5 drought, 1/10 drought is selected on the basis of whole year rainfall.

Source: JICA Survey Team

Annex 3.1-3 Calculation Result of Discharge Data

Statistic Table of Discharge in Matamuhuri River (Lama Station)

Catchment Area: 1201 Km² (Original)

Year	hydrological regime, unit: m^3/s								Total Runoff	Rank
	95-day	185-day	275-day	355-day	Rank	Maximum	Minimum	Average	(mil. m^3)	
1966-67	32.26	7.56	4.07	2.16	22	410.35	1.61	30.94	975.83	5
1967-68	65.85	10.65	4.79	2.44	27	431.33	2.11	50.50	1,596.78	27
1968-69	34.72	12.80	0.91	0.55	5	1,385.42	0.45	43.90	1,384.45	18
1969-70	54.83	10.83	6.48	1.88	17	601.50	1.73	41.18	1,298.56	15
1970-71	-	-	-	-	-	-	-	-	-	
1971-72	-	-	-	-	-	-	-	-	-	
1972-73	45.19	7.93	3.77	1.66	13	400.82	1.66	39.01	1,230.22	13
1973-74	94.75	24.54	6.33	3.10	39	835.71	2.73	72.33	2,281.01	42
1974-75	51.37	13.84	5.43	1.72	15	503.02	1.66	40.58	1,279.61	14
1975-76	49.72	13.84	4.52	2.56	30	1,022.02	1.47	63.51	2,008.19	38
1976-77	60.68	16.55	5.75	2.71	33	339.08	1.45	41.70	1,314.90	16
1977-78	68.67	8.78	3.10	0.94	9	1,165.74	0.70	54.40	1,715.62	28
1978-79	46.90	7.13	3.32	1.81	16	558.92	1.01	37.08	1,169.33	11
1979-80	50.73	9.42	3.51	1.66	14	729.25	1.31	44.17	1,396.70	19
1980-81	54.83	11.82	4.39	1.93	18	1,022.02	1.43	46.95	1,480.61	22
1981-82	38.49	5.48	3.34	1.98	19	702.64	1.89	47.10	1,485.49	24
1982-83	-	-	-	-	-	-	-	-	-	
1983-84	60.68	15.01	4.00	0.42	3	1,564.96	0.04	57.73	1,825.41	33
1984-85	42.53	8.51	4.21	2.55	28	1,304.14	2.26	50.10	1,579.83	25
1985-86	30.55	7.13	3.40	0.53	4	771.84	0.10	28.70	904.99	4
1986-87	76.65	9.05	4.49	2.37	24	1,554.32	1.84	64.24	2,025.98	39
1987-88	60.51	15.17	6.71	2.39	25	1,884.12	1.87	62.83	1,986.98	37
1988-89	45.19	12.59	6.81	2.17	23	979.43	2.03	37.48	1,181.91	12
1989-90	42.42	16.02	5.38	3.17	40	1,879.02	2.94	54.73	1,725.95	29
1990-91	91.56	23.90	4.92	2.10	21	942.17	1.95	74.11	2,337.26	43
1991-92	40.93	10.59	4.96	2.71	34	622.79	2.40	34.08	1,077.66	9
1992-93	53.12	20.65	5.25	2.65	31	1,144.45	2.46	56.03	1,766.94	31
1993-94	40.28	18.35	5.75	2.41	26	334.89	2.37	32.80	1,034.35	7
1994-95	39.33	11.68	2.24	1.31	10	2,105.47	1.19	50.18	1,582.55	26
1995-96	61.62	26.25	8.30	2.71	35	619.22	2.70	60.16	1,902.34	36
1996-97	63.82	14.85	6.73	3.09	38	2,080.27	2.48	77.81	2,453.89	45
1997-98	66.20	13.46	4.05	2.55	29	1,461.52	2.32	65.88	2,077.56	40
1998-99	63.53	6.71	2.90	0.85	7	1,562.28	0.76	77.30	2,437.65	44
1999-00	59.04	20.47	1.87	0.86	8	1,023.49	0.64	55.89	1,767.24	32
2000-01	43.73	11.49	8.07	4.88	44	635.21	4.30	32.96	1,039.46	8
2001-02	-	-	-	-	-	-	-	-	-	
2002-03	-	-	-	-	-	-	-	-	-	
2003-04	-	-	-	-	-	-	-	-	-	
2004-05	-	-	-	-	-	-	-	-	-	
2005-06	60.31	7.02	2.44	1.47	12	1,032.39	1.30	59.85	1,887.53	35
2006-07	-	-	-	-	-	-	-	-	-	
2007-08	34.41	10.15	4.73	2.67	32	511.98	2.44	35.37	1,118.53	10
2008-09	25.79	6.50	3.51	2.08	20	516.03	1.95	25.04	789.77	3
2009-10	25.18	4.59	1.40	0.37	2	253.17	0.31	18.39	580.10	1
2010-11	56.35	17.24	4.57	2.75	36	1,165.80	2.59	55.84	1,761.03	30
2011-12	49.43	12.47	6.63	4.77	43	906.70	4.67	46.75	1,478.42	21
2012-13	39.91	11.41	5.38	3.79	41	324.09	3.35	31.27	986.16	6
2013-14	22.83	8.87	4.95	2.94	37	277.61	2.78	23.24	732.85	2
2014-15	70.11	8.87	5.64	3.97	42	1,098.53	3.79	71.89	2,267.11	41
2015-16	38.07	29.16	21.56	5.82	45	1,004.26	2.31	46.85	1,481.38	23
2016-17	50.41	22.56	10.89	1.35	11	1,424.31	0.05	59.83	1,886.70	34
2017-18	28.41	12.46	7.56	0.07	1	1,176.49	0.00	42.46	1,339.11	17
2018-19	27.35	14.82	11.22	0.72	6	1,327.87	0.42	46.60	1,469.69	20
Average	**50.21**	**13.09**	**5.34**	**2.21**		**968.81**	**1.82**	**48.66**	**1,535.64**	
Max	**94.75**	**29.16**	**21.56**	**5.82**		**2,105.47**	**4.67**	**77.81**	**2,453.89**	
Min	**22.83**	**4.59**	**0.91**	**0.07**		**253.17**	**0.00**	**18.39**	**580.10**	

: 1/5 Drought Year : 1/10 Drought Year

Source: JICA Survey Team

Annex 3.1-3 Calculation Result of Discharge Data

Statistic Table of Discharge in Matamuhuri River (Lama Station)

Catchment Area: 100 Km² (Conversion)

Year	hydrological regime, unit: $m^3/s/100\ Km^2$								Total Runoff	Rank
	95-day	185-day	275-day	355-day	Rank	Maximum	Minimum	Average	(mil. m^3)	
1966-67	2.69	0.63	0.34	0.18	22	34.17	0.13	2.58	81.25	5
1967-68	5.48	0.89	0.40	0.20	27	35.91	0.18	4.20	132.95	27
1968-69	2.89	1.07	0.08	0.05	5	115.36	0.04	3.66	115.28	18
1969-70	4.57	0.90	0.54	0.16	17	50.08	0.14	3.43	108.12	15
1970-71	-	-	-	-	-					
1971-72	-	-	-	-	-					
1972-73	3.76	0.66	0.31	0.14	13	33.37	0.14	3.25	102.43	13
1973-74	7.89	2.04	0.53	0.26	39	69.58	0.23	6.02	189.93	42
1974-75	4.28	1.15	0.45	0.14	15	41.88	0.14	3.38	106.55	14
1975-76	4.14	1.15	0.38	0.21	30	85.10	0.12	5.29	167.21	38
1976-77	5.05	1.38	0.48	0.23	33	28.23	0.12	3.47	109.48	16
1977-78	5.72	0.73	0.26	0.08	9	97.06	0.06	4.53	142.85	28
1978-79	3.90	0.59	0.28	0.15	16	46.54	0.08	3.09	97.36	11
1979-80	4.22	0.78	0.29	0.14	14	60.72	0.11	3.68	116.30	19
1980-81	4.57	0.98	0.37	0.16	18	85.10	0.12	3.91	123.28	22
1981-82	3.20	0.46	0.28	0.16	19	58.50	0.16	3.92	123.69	24
1982-83	-	-	-	-	-					
1983-84	5.05	1.25	0.33	0.03	3	130.30	0.00	4.81	151.99	33
1984-85	3.54	0.71	0.35	0.21	28	108.59	0.19	4.17	131.54	25
1985-86	2.54	0.59	0.28	0.04	4	64.27	0.01	2.39	75.35	4
1986-87	6.38	0.75	0.37	0.20	24	129.42	0.15	5.35	168.69	39
1987-88	5.04	1.26	0.56	0.20	25	156.88	0.16	5.23	165.44	37
1988-89	3.76	1.05	0.57	0.18	23	81.55	0.17	3.12	98.41	12
1989-90	3.53	1.33	0.45	0.26	40	156.45	0.25	4.56	143.71	29
1990-91	7.62	1.99	0.41	0.18	21	78.45	0.16	6.17	194.61	43
1991-92	3.41	0.88	0.41	0.23	34	51.86	0.20	2.84	89.73	9
1992-93	4.42	1.72	0.44	0.22	31	95.29	0.21	4.67	147.12	31
1993-94	3.35	1.53	0.48	0.20	26	27.88	0.20	2.73	86.12	7
1994-95	3.27	0.97	0.19	0.11	10	175.31	0.10	4.18	131.77	26
1995-96	5.13	2.19	0.69	0.23	35	51.56	0.23	5.01	158.40	36
1996-97	5.31	1.24	0.56	0.26	38	173.21	0.21	6.48	204.32	45
1997-98	5.51	1.12	0.34	0.21	29	121.69	0.19	5.49	172.99	40
1998-99	5.29	0.56	0.24	0.07	7	130.08	0.06	6.44	202.97	44
1999-00	4.92	1.70	0.16	0.07	8	85.22	0.05	4.65	147.15	32
2000-01	3.64	0.96	0.67	0.41	44	52.89	0.36	2.74	86.55	8
2001-02	-	-	-	-	-					
2002-03	-	-	-	-	-					
2003-04	-	-	-	-	-					
2004-05	-	-	-	-	-					
2005-06	5.02	0.58	0.20	0.12	12	85.96	0.11	4.98	157.16	35
2006-07	-	-	-	-	-					
2007-08	2.86	0.85	0.39	0.22	32	42.63	0.20	2.95	93.13	10
2008-09	2.15	0.54	0.29	0.17	20	42.97	0.16	2.09	65.76	3
2009-10	2.10	0.38	0.12	0.03	2	21.08	0.03	1.53	48.30	1
2010-11	4.69	1.44	0.38	0.23	36	97.07	0.22	4.65	146.63	30
2011-12	4.12	1.04	0.55	0.40	43	75.50	0.39	3.89	123.10	21
2012-13	3.32	0.95	0.45	0.32	41	26.98	0.28	2.60	82.11	6
2013-14	1.90	0.74	0.41	0.24	37	23.11	0.23	1.93	61.02	2
2014-15	5.84	0.74	0.47	0.33	42	91.47	0.32	5.99	188.77	41
2015-16	3.17	2.43	1.80	0.48	45	83.62	0.19	3.90	123.35	23
2016-17	4.20	1.88	0.91	0.11	11	118.59	0.00	4.98	157.09	34
2017-18	2.37	1.04	0.63	0.01	1	97.96	0.00	3.54	111.50	17
2018-19	2.28	1.23	0.93	0.06	6	110.56	0.04	3.88	122.37	20
Average	**4.18**	**1.09**	**0.44**	**0.18**		**80.67**	**0.15**	**4.05**	**127.86**	
Max	**7.89**	**2.43**	**1.80**	**0.48**		**175.31**	**0.39**	**6.48**	**204.32**	
Min	**1.90**	**0.38**	**0.08**	**0.01**		**21.08**	**0.00**	**1.53**	**48.30**	

: 1/5 Drought Year : 1/10 Drought Year

Source: JICA Survey Team

Annex 3.1-3 Calculation Result of Discharge Data

Statistic Table of Discharge in Sangu River (Bandarban Station)

Catchment Area: 2199 Km² (Original)

Year	hydrological regime, unit: m^3/s								Total Runoff	Rank
	95-day	185-day	275-day	355-day	Rank	Maximum	Minimum	Average	(mil. m^3)	
1966-67	60.59	14.20	7.64	4.05	19	770.76	3.03	58.12	1,832.90	5
1967-68	123.68	20.00	9.00	4.58	24	810.17	3.96	94.84	2,999.23	26
1968-69	128.93	31.15	15.17	8.32	43	1,030.86	7.74	125.04	3,943.19	39
1969-70	102.98	27.42	17.38	3.54	13	1,129.79	3.25	80.40	2,535.54	18
1970-71	-	-	-	-	-	-	-	-	-	-
1971-72	-	-	-	-	-	-	-	-	-	-
1972-73	84.88	14.90	7.08	3.11	9	752.86	3.11	73.27	2,310.71	13
1973-74	177.97	46.09	11.90	5.83	37	1,569.71	5.12	135.86	4,284.41	41
1974-75	96.48	26.00	10.20	3.23	11	944.83	3.11	76.21	2,403.49	16
1975-76	93.38	26.00	8.49	4.81	27	1,919.65	2.77	119.28	3,771.99	36
1976-77	113.98	31.09	10.80	5.09	30	636.88	2.72	78.32	2,469.78	17
1977-78	128.98	16.50	5.82	1.76	6	2,189.60	1.32	102.18	3,222.45	27
1978-79	88.08	13.40	6.23	3.40	12	1,049.81	1.90	69.65	2,196.36	11
1979-80	95.28	17.70	6.60	3.12	10	1,369.75	2.47	82.96	2,623.43	19
1980-81	102.98	22.20	8.24	3.63	14	1,919.65	2.68	88.19	2,781.02	22
1981-82	72.29	10.30	6.27	3.72	15	1,319.76	3.56	88.48	2,790.19	23
1982-83	-	-	-	-	-	-	-	-	-	-
1983-84	113.98	28.19	7.51	0.78	2	2,939.47	0.07	108.43	3,428.67	33
1984-85	79.89	15.99	7.90	4.79	25	2,449.55	4.24	94.10	2,967.39	24
1985-86	57.39	13.40	6.38	0.99	3	1,449.74	0.19	53.90	1,699.84	4
1986-87	143.97	17.00	8.43	4.45	22	2,919.47	3.45	120.67	3,805.39	37
1987-88	177.27	30.79	11.10	6.05	39	1,356.63	5.39	138.29	4,373.20	42
1988-89	87.48	36.72	12.80	4.07	20	1,839.67	3.82	74.25	2,341.68	14
1989-90	79.69	30.09	10.10	5.95	38	3,529.36	5.53	102.80	3,241.85	28
1990-91	171.97	44.89	9.24	3.95	17	1,769.68	3.66	139.21	4,390.08	43
1991-92	76.89	19.90	9.31	5.10	31	1,169.79	4.50	64.01	2,024.17	9
1992-93	99.78	38.79	9.87	4.98	28	2,149.61	4.63	105.24	3,318.85	31
1993-94	75.66	34.46	10.80	4.53	23	629.02	4.45	61.61	1,942.82	8
1994-95	73.88	21.94	4.20	2.45	7	3,954.71	2.24	94.26	2,972.51	25
1995-96	115.74	49.31	15.59	5.10	32	1,163.09	5.08	112.99	3,573.17	35
1996-97	119.87	27.88	12.65	5.80	36	3,907.37	4.66	146.15	4,609.13	45
1997-98	124.35	25.29	7.60	4.79	26	2,745.17	4.35	123.74	3,902.27	38
1998-99	119.32	12.60	5.45	1.60	4	2,934.43	1.44	145.19	4,578.64	44
1999-00	110.89	38.45	3.52	1.61	5	1,922.42	1.21	104.97	3,319.41	32
2000-01	136.21	21.71	15.37	9.16	45	1,193.11	8.08	61.82	1,930.13	7
2001-02	-	-	-	-	-	-	-	-	-	-
2002-03	-	-	-	-	-	-	-	-	-	-
2003-04	-	-	-	-	-	-	-	-	-	-
2004-05	-	-	-	-	-	-	-	-	-	-
2005-06	113.27	13.19	4.58	2.75	8	1,939.13	2.43	112.42	3,545.34	34
2006-07	-	-	-	-	-	-	-	-	-	-
2007-08	64.63	19.07	8.89	5.01	29	961.65	4.58	66.44	2,100.93	10
2008-09	48.44	12.21	6.59	3.91	16	969.25	3.66	47.04	1,483.42	3
2009-10	47.29	8.62	2.63	0.69	1	475.52	0.59	34.55	1,089.60	1
2010-11	105.84	32.37	8.58	5.16	33	2,189.71	4.87	104.89	3,307.75	29
2011-12	92.85	23.43	12.45	8.97	44	1,703.05	8.78	87.82	2,776.92	21
2012-13	74.97	21.44	10.10	7.11	41	608.73	6.29	58.74	1,852.31	6
2013-14	42.88	16.66	9.30	5.51	34	521.43	5.22	43.65	1,376.52	2
2014-15	131.70	16.66	10.60	7.45	42	2,063.37	7.11	135.03	4,258.31	40
2015-16	79.78	40.41	7.45	4.26	21	1,340.19	3.93	69.89	2,209.93	12
2016-17	132.47	23.95	9.78	6.94	40	1,703.45	6.61	105.01	3,311.59	30
2017-18	62.82	19.12	7.45	5.51	35	1,386.02	4.71	76.19	2,402.72	15
2018-19	71.55	15.72	7.99	4.00	18	2,326.69	3.40	87.36	2,755.01	20
Average	**100.07**	**24.16**	**9.00**	**4.48**		**1,680.55**	**3.91**	**92.30**	**2,912.32**	
Max	**177.97**	**49.31**	**17.38**	**9.16**		**3,954.71**	**8.78**	**146.15**	**4,609.13**	
Min	**42.88**	**8.62**	**2.63**	**0.69**		**475.52**	**0.07**	**34.55**	**1,089.60**	

: 1/5 Drought Year : 1/10 Drought Year

Source: JICA Survey Team

Annex 3.1-3 Calculation Result of Discharge Data

Statistic Table of Discharge in Sangu River (Bandarban Station)

Catchment Area: 100 Km² (Conversion)

Year	hydrological regime, unit: $m^3/s/100\ Km^2$								Total Runoff	Rank
	95-day	185-day	275-day	355-day	Rank	Maximum	Minimum	Average	(mil. m^3)	
1966-67	2.76	0.65	0.35	0.18	19	35.05	0.14	2.64	83.35	5
1967-68	5.62	0.91	0.41	0.21	24	36.84	0.18	4.31	136.39	26
1968-69	5.86	1.42	0.69	0.38	43	46.88	0.35	5.69	179.32	39
1969-70	4.68	1.25	0.79	0.16	13	51.38	0.15	3.66	115.30	18
1970-71	-	-	-	-	-	-	-	-	-	-
1971-72	-	-	-	-	-	-	-	-	-	-
1972-73	3.86	0.68	0.32	0.14	9	34.24	0.14	3.33	105.08	13
1973-74	8.09	2.10	0.54	0.27	37	71.38	0.23	6.18	194.83	41
1974-75	4.39	1.18	0.46	0.15	11	42.97	0.14	3.47	109.30	16
1975-76	4.25	1.18	0.39	0.22	27	87.30	0.13	5.42	171.53	36
1976-77	5.18	1.41	0.49	0.23	30	28.96	0.12	3.56	112.31	17
1977-78	5.87	0.75	0.26	0.08	6	99.57	0.06	4.65	146.54	27
1978-79	4.01	0.61	0.28	0.15	12	47.74	0.09	3.17	99.88	11
1979-80	4.33	0.80	0.30	0.14	10	62.29	0.11	3.77	119.30	19
1980-81	4.68	1.01	0.37	0.17	14	87.30	0.12	4.01	126.47	22
1981-82	3.29	0.47	0.29	0.17	15	60.02	0.16	4.02	126.88	23
1982-83	-	-	-	-	-	-	-	-	-	-
1983-84	5.18	1.28	0.34	0.04	2	133.67	0.00	4.93	155.92	33
1984-85	3.63	0.73	0.36	0.22	25	111.39	0.19	4.28	134.94	24
1985-86	2.61	0.61	0.29	0.05	3	65.93	0.01	2.45	77.30	4
1986-87	6.55	0.77	0.38	0.20	22	132.76	0.16	5.49	173.05	37
1987-88	8.06	1.40	0.50	0.28	39	61.69	0.25	6.29	198.87	42
1988-89	3.98	1.67	0.58	0.19	20	83.66	0.17	3.38	106.49	14
1989-90	3.62	1.37	0.46	0.27	38	160.50	0.25	4.67	147.42	28
1990-91	7.82	2.04	0.42	0.18	17	80.48	0.17	6.33	199.64	43
1991-92	3.50	0.90	0.42	0.23	31	53.20	0.20	2.91	92.05	9
1992-93	4.54	1.76	0.45	0.23	28	97.75	0.21	4.79	150.93	31
1993-94	3.44	1.57	0.49	0.21	23	28.60	0.20	2.80	88.35	8
1994-95	3.36	1.00	0.19	0.11	7	179.84	0.10	4.29	135.18	25
1995-96	5.26	2.24	0.71	0.23	32	52.89	0.23	5.14	162.49	35
1996-97	5.45	1.27	0.58	0.26	36	177.69	0.21	6.65	209.60	45
1997-98	5.65	1.15	0.35	0.22	26	124.84	0.20	5.63	177.46	38
1998-99	5.43	0.57	0.25	0.07	4	133.44	0.07	6.60	208.21	44
1999-00	5.04	1.75	0.16	0.07	5	87.42	0.06	4.77	150.95	32
2000-01	6.19	0.99	0.70	0.42	45	54.26	0.37	2.81	87.77	7
2001-02	-	-	-	-	-	-	-	-	-	-
2002-03	-	-	-	-	-	-	-	-	-	-
2003-04	-	-	-	-	-	-	-	-	-	-
2004-05	-	-	-	-	-	-	-	-	-	-
2005-06	5.15	0.60	0.21	0.13	8	88.18	0.11	5.11	161.22	34
2006-07	-	-	-	-	-	-	-	-	-	-
2007-08	2.94	0.87	0.40	0.23	29	43.73	0.21	3.02	95.54	10
2008-09	2.20	0.56	0.30	0.18	16	44.08	0.17	2.14	67.46	3
2009-10	2.15	0.39	0.12	0.03	1	21.62	0.03	1.57	49.55	1
2010-11	4.81	1.47	0.39	0.23	33	99.58	0.22	4.77	150.42	29
2011-12	4.22	1.07	0.57	0.41	44	77.45	0.40	3.99	126.28	21
2012-13	3.41	0.97	0.46	0.32	41	27.68	0.29	2.67	84.23	6
2013-14	1.95	0.76	0.42	0.25	34	23.71	0.24	1.98	62.60	2
2014-15	5.99	0.76	0.48	0.34	42	93.83	0.32	6.14	193.65	40
2015-16	3.63	1.84	0.34	0.19	21	60.95	0.18	3.18	100.50	12
2016-17	6.02	1.09	0.44	0.32	40	77.46	0.30	4.78	150.60	30
2017-18	2.86	0.87	0.34	0.25	35	63.03	0.21	3.46	109.26	15
2018-19	3.25	0.71	0.36	0.18	18	105.81	0.15	3.97	125.28	20
Average	**4.55**	**1.10**	**0.41**	**0.20**		**76.42**	**0.18**	**4.20**	**132.44**	
Max	**8.09**	**2.24**	**0.79**	**0.42**		**179.84**	**0.40**	**6.65**	**209.60**	
Min	**1.95**	**0.39**	**0.12**	**0.03**		**21.62**	**0.00**	**1.57**	**49.55**	

: 1/5 Drought Year : 1/10 Drought Year

Source: JICA Survey Team

Annex 3.1-3 Calculation Result of Discharge Data

Statistic Table of Discharge in Halda River (Panchpukhuria Station) Catchment Area: 856 Km² (Original)										
Year	hydrological regime, unit: m^3/s								Total Runoff	Rank
	95-day	185-day	275-day	355-day	Rank	Maximum	Minimum	Average	(mil. m^3)	
1966-67	24.59	11.50	4.30	1.53	34	290.88	1.02	23.68	746.88	17
1967-68	44.68	9.57	1.84	0.65	7	305.88	0.42	34.48	1,090.47	38
1968-69	46.68	9.48	3.40	0.79	10	389.85	0.57	45.20	1,425.42	45
1969-70	36.49	9.48	5.37	2.09	42	330.87	1.33	33.50	1,056.32	34
1970-71	-	-	-	-	-					-
1971-72	-	-	-	-	-					-
1972-73	24.31	4.27	2.03	0.89	11	215.57	0.89	20.98	661.65	13
1973-74	50.96	13.20	3.41	1.67	38	449.47	1.47	38.90	1,226.79	41
1974-75	27.63	7.44	2.92	0.92	13	270.54	0.89	21.82	688.21	15
1975-76	26.74	7.44	2.43	1.38	27	549.67	0.79	34.16	1,080.06	36
1976-77	32.64	8.90	3.09	1.46	30	182.36	0.78	22.42	707.19	16
1977-78	36.93	4.72	1.67	0.50	6	626.97	0.38	29.26	922.71	25
1978-79	25.22	3.84	1.78	0.97	14	300.60	0.54	19.94	628.90	10
1979-80	27.28	5.07	1.89	0.89	12	392.21	0.71	23.75	751.19	18
1980-81	29.49	6.36	2.36	1.04	15	549.67	0.77	25.25	796.31	21
1981-82	20.70	2.95	1.80	1.06	16	377.90	1.02	25.33	798.94	22
1982-83	-	-	-	-	-					-
1983-84	32.64	8.07	2.15	0.22	2	841.68	0.02	31.05	981.76	31
1984-85	22.87	4.58	2.26	1.37	25	701.40	1.21	26.94	849.68	23
1985-86	16.43	3.84	1.83	0.28	3	415.12	0.05	15.43	486.73	4
1986-87	41.23	4.87	2.41	1.27	22	835.96	0.99	34.55	1,089.63	37
1987-88	32.55	8.16	3.61	1.29	23	1,013.33	1.01	33.79	1,068.65	35
1988-89	24.31	6.77	3.66	1.17	20	526.77	1.09	20.16	635.67	12
1989-90	22.82	8.62	2.89	1.70	39	1,010.59	1.58	29.44	928.26	26
1990-91	49.24	12.85	2.65	1.13	18	506.73	1.05	39.86	1,257.05	42
1991-92	22.02	5.70	2.67	1.46	31	334.95	1.29	18.33	579.60	8
1992-93	28.57	11.11	2.83	1.43	28	615.52	1.33	30.13	950.31	29
1993-94	21.66	9.87	3.09	1.30	24	180.11	1.27	17.64	556.31	6
1994-95	21.15	6.28	1.20	0.70	8	1,132.38	0.64	26.99	851.14	24
1995-96	33.14	14.12	4.46	1.46	32	333.04	1.45	32.35	1,023.14	33
1996-97	34.32	7.98	3.62	1.66	37	1,118.83	1.33	41.85	1,319.77	44
1997-98	35.61	7.24	2.18	1.37	26	786.05	1.25	35.43	1,117.37	39
1998-99	34.17	3.61	1.56	0.46	4	840.24	0.41	41.57	1,311.04	43
1999-00	31.75	11.01	1.01	0.46	5	550.46	0.35	30.06	950.47	30
2000-01	23.52	6.18	4.34	2.62	45	341.63	2.31	17.73	559.05	7
2001-02	-	-	-	-	-					-
2002-03	-	-	-	-	-					-
2003-04	-	-	-	-	-					-
2004-05	-	-	-	-	-					-
2005-06	32.43	3.78	1.31	0.79	9	555.25	0.70	32.19	1,015.17	32
2006-07	-	-	-	-	-					-
2007-08	18.51	5.46	2.55	1.43	29	275.36	1.31	19.02	601.58	9
2008-09	13.87	3.50	1.89	1.12	17	277.53	1.05	13.47	424.76	3
2009-10	13.54	2.47	0.75	0.20	1	136.16	0.17	9.89	311.99	1
2010-11	30.31	9.27	2.46	1.48	33	627.00	1.39	30.03	947.13	27
2011-12	26.59	6.71	3.56	2.57	44	487.65	2.51	25.14	795.14	20
2012-13	21.47	6.14	2.89	2.04	41	174.30	1.80	16.82	530.39	5
2013-14	12.28	4.77	2.66	1.58	35	149.31	1.50	12.50	394.15	2
2014-15	37.71	4.77	3.03	2.13	43	590.82	2.04	38.66	1,219.32	40
2015-16	22.84	11.57	2.13	1.22	21	383.75	1.12	20.01	632.79	11
2016-17	37.93	6.86	2.80	1.99	40	487.76	1.89	30.07	948.24	28
2017-18	17.99	5.48	2.13	1.58	36	396.87	1.35	21.82	687.99	14
2018-19	20.49	4.50	2.29	1.15	19	666.22	0.97	25.08	788.87	19
Average	**28.63**	**7.12**	**2.60**	**1.25**		**500.56**	**1.07**	**27.04**	**853.20**	
Max	**50.96**	**14.12**	**5.37**	**2.62**		**1,132.38**	**2.51**	**45.20**	**1,425.42**	
Min	**12.28**	**2.47**	**0.75**	**0.20**		**136.16**	**0.02**	**9.89**	**311.99**	

: 1/5 Drought : 1/10 Drought

Source: JICA Survey Team

Annex 3.1-3 Calculation Result of Discharge Data

Statistic Table of Discharge in Halda River (Panchpukhuria Station) Catchment Area: 100 Km² (Conversion)										
Year	hydrological regime, unit: $m^3/s/100$ Km²								Total Runoff	Rank
	95-day	185-day	275-day	355-day	Rank	Maximum	Minimum	Average	(mil. m^3)	
1966-67	2.87	1.34	0.50	0.18	34	33.98	0.12	2.77	87.25	17
1967-68	5.22	1.12	0.21	0.08	7	35.73	0.05	4.03	127.39	38
1968-69	5.45	1.11	0.40	0.09	10	45.54	0.07	5.28	166.52	45
1969-70	4.26	1.11	0.63	0.24	42	38.65	0.16	3.91	123.40	34
1970-71					-					-
1971-72					-					-
1972-73	2.84	0.50	0.24	0.10	11	25.18	0.10	2.45	77.30	13
1973-74	5.95	1.54	0.40	0.19	38	52.51	0.17	4.54	143.32	41
1974-75	3.23	0.87	0.34	0.11	13	31.61	0.10	2.55	80.40	15
1975-76	3.12	0.87	0.28	0.16	27	64.21	0.09	3.99	126.18	36
1976-77	3.81	1.04	0.36	0.17	30	21.30	0.09	2.62	82.62	16
1977-78	4.31	0.55	0.19	0.06	6	73.24	0.04	3.42	107.79	25
1978-79	2.95	0.45	0.21	0.11	14	35.12	0.06	2.33	73.47	10
1979-80	3.19	0.59	0.22	0.10	12	45.82	0.08	2.78	87.76	18
1980-81	3.44	0.74	0.28	0.12	15	64.21	0.09	2.95	93.03	21
1981-82	2.42	0.34	0.21	0.12	16	44.15	0.12	2.96	93.33	22
1982-83					-					-
1983-84	3.81	0.94	0.25	0.03	2	98.33	0.00	3.63	114.69	31
1984-85	2.67	0.53	0.26	0.16	25	81.94	0.14	3.15	99.26	23
1985-86	1.92	0.45	0.21	0.03	3	48.49	0.01	1.80	56.86	4
1986-87	4.82	0.57	0.28	0.15	22	97.66	0.12	4.04	127.29	37
1987-88	3.80	0.95	0.42	0.15	23	118.38	0.12	3.95	124.84	35
1988-89	2.84	0.79	0.43	0.14	20	61.54	0.13	2.35	74.26	12
1989-90	2.67	1.01	0.34	0.20	39	118.06	0.18	3.44	108.44	26
1990-91	5.75	1.50	0.31	0.13	18	59.20	0.12	4.66	146.85	42
1991-92	2.57	0.67	0.31	0.17	31	39.13	0.15	2.14	67.71	8
1992-93	3.34	1.30	0.33	0.17	28	71.91	0.15	3.52	111.02	29
1993-94	2.53	1.15	0.36	0.15	24	21.04	0.15	2.06	64.99	6
1994-95	2.47	0.73	0.14	0.08	8	132.29	0.08	3.15	99.43	24
1995-96	3.87	1.65	0.52	0.17	32	38.91	0.17	3.78	119.53	33
1996-97	4.01	0.93	0.42	0.19	37	130.70	0.16	4.89	154.18	44
1997-98	4.16	0.85	0.25	0.16	26	91.83	0.15	4.14	130.53	39
1998-99	3.99	0.42	0.18	0.05	4	98.16	0.05	4.86	153.16	43
1999-00	3.71	1.29	0.12	0.05	5	64.31	0.04	3.51	111.04	30
2000-01	2.75	0.72	0.51	0.31	45	39.91	0.27	2.07	65.31	7
2001-02					-					-
2002-03					-					-
2003-04					-					-
2004-05					-					-
2005-06	3.79	0.44	0.15	0.09	9	64.87	0.08	3.76	118.59	32
2006-07					-					-
2007-08	2.16	0.64	0.30	0.17	29	32.17	0.15	2.22	70.28	9
2008-09	1.62	0.41	0.22	0.13	17	32.42	0.12	1.57	49.62	3
2009-10	1.58	0.29	0.09	0.02	1	15.91	0.02	1.16	36.45	1
2010-11	3.54	1.08	0.29	0.17	33	73.25	0.16	3.51	110.65	27
2011-12	3.11	0.78	0.42	0.30	44	56.97	0.29	2.94	92.89	20
2012-13	2.51	0.72	0.34	0.24	41	20.36	0.21	1.96	61.96	5
2013-14	1.43	0.56	0.31	0.18	35	17.44	0.17	1.46	46.05	2
2014-15	4.41	0.56	0.35	0.25	43	69.02	0.24	4.52	142.44	40
2015-16	2.67	1.35	0.25	0.14	21	44.83	0.13	2.34	73.92	11
2016-17	4.43	0.80	0.33	0.23	40	56.98	0.22	3.51	110.78	28
2017-18	2.10	0.64	0.25	0.18	36	46.36	0.16	2.55	80.37	14
2018-19	2.39	0.53	0.27	0.13	19	77.83	0.11	2.93	92.16	19
Average	**3.34**	**0.83**	**0.30**	**0.15**		**58.48**	**0.12**	**3.16**	**99.67**	
Max	**5.95**	**1.65**	**0.63**	**0.31**		**132.29**	**0.29**	**5.28**	**166.52**	
Min	**1.43**	**0.29**	**0.09**	**0.02**		**15.91**	**0.00**	**1.16**	**36.45**	

: 1/5 Drought : 1/10 Drought

Source: JICA Survey Team

Annex 3.1-3 Calculation Result of Discharge Data

Discharge (mm/year)

Hydrological Year	Lama (1201Km2)						Bandarban (2199Km2)						Panchpukhuria (856Km2)					
	Whole Year	Rank	Dry Season	Rank	Rainy Season	Rank	Whole Year	Rank	Dry Season	Rank	Rainy Season	Rank	Whole Year	Rank	Dry Season	Rank	Rainy Season	Rank
1966-67	813	5	66	12	746	7	834	5	68	12	766	7	873	17	126	41	747	16
1967-68	1,330	27	73	14	1,257	27	1,364	26	75	14	1,290	26	1,274	38	65	19	1,209	37
1968-69	1,153	18	74	16	1,079	20	1,793	39	123	34	1,671	39	1,666	45	84	33	1,582	45
1969-70	1,081	15	94	25	987	16	1,153	18	140	38	1,013	17	1,235	34	101	38	1,134	33
1970-71	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1971-72	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1972-73	1,024	13	49	4	975	15	1,051	13	50	4	1,000	15	773	13	37	4	736	14
1973-74	1,899	42	230	43	1,669	41	1,949	41	236	44	1,713	40	1,434	41	174	44	1,260	40
1974-75	1,065	14	98	27	968	14	1,093	16	100	29	993	14	804	15	74	27	731	13
1975-76	1,672	38	145	38	1,527	37	1,716	36	149	39	1,567	36	1,262	36	110	39	1,153	35
1976-77	1,095	16	86	21	1,009	18	1,123	17	89	23	1,035	18	826	16	65	21	761	17
1977-78	1,428	28	57	7	1,371	33	1,466	27	58	7	1,407	32	1,078	25	43	7	1,035	30
1978-79	974	11	66	11	908	12	999	11	67	11	932	13	735	10	50	11	685	12
1979-80	1,163	19	61	10	1,102	21	1,193	19	63	10	1,131	19	878	18	46	10	832	18
1980-81	1,233	22	88	22	1,145	23	1,265	22	90	24	1,175	22	931	21	66	22	864	21
1981-82	1,237	24	49	3	1,188	24	1,269	23	50	3	1,219	23	934	22	37	3	897	22
1982-83	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1983-84	1,520	33	183	42	1,337	28	1,559	33	188	43	1,372	27	1,147	31	138	43	1,009	25
1984-85	1,315	25	59	8	1,256	26	1,350	24	61	8	1,289	25	993	23	45	8	948	24
1985-86	754	4	61	9	693	4	773	4	62	9	711	4	569	4	46	9	523	4
1986-87	1,687	39	75	18	1,612	39	1,731	37	77	17	1,653	37	1,273	37	57	15	1,217	38
1987-88	1,654	37	98	28	1,557	38	1,989	42	82	20	1,907	43	1,249	35	74	28	1,175	36
1988-89	984	12	112	33	873	11	1,065	14	170	41	895	12	743	12	84	34	659	11
1989-90	1,437	29	97	26	1,340	29	1,475	28	100	28	1,375	28	1,085	26	73	26	1,011	26
1990-91	1,946	43	99	30	1,847	43	1,997	43	101	31	1,895	42	1,469	42	75	30	1,395	42
1991-92	897	9	175	41	722	5	921	9	179	42	741	5	677	8	132	42	545	5
1992-93	1,471	31	106	32	1,365	32	1,510	31	108	33	1,401	31	1,111	29	80	32	1,031	29
1993-94	861	7	74	17	788	9	884	8	76	16	808	9	650	6	56	14	595	8
1994-95	1,318	26	70	13	1,248	25	1,352	25	72	13	1,280	24	995	24	53	12	942	23
1995-96	1,584	36	233	44	1,351	30	1,625	35	239	45	1,386	29	1,196	33	176	45	1,020	27
1996-97	2,043	45	132	37	1,911	44	2,096	45	136	37	1,961	44	1,542	44	100	37	1,443	43
1997-98	1,730	40	102	31	1,628	40	1,775	38	105	32	1,670	38	1,306	39	77	31	1,229	39
1998-99	2,030	44	48	2	1,982	45	2,083	44	49	2	2,033	45	1,532	43	36	2	1,496	44
1999-00	1,471	32	120	34	1,351	31	1,510	32	123	35	1,386	30	1,111	30	91	35	1,020	28
2000-01	865	8	98	29	767	8	878	7	100	30	777	8	653	7	74	29	579	7
2001-02	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
2002-03	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
2003-04	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
2004-05	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
2005-06	1,572	35	55	6	1,517	36	1,613	34	56	6	1,556	35	1,186	32	41	6	1,145	34
2006-07	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
2007-08	931	10	128	36	803	10	956	10	131	36	824	10	703	9	97	36	606	9
2008-09	658	3	51	5	607	3	675	3	52	5	622	3	496	3	38	5	458	3
2009-10	483	1	20	1	463	1	496	1	20	1	475	1	365	1	15	1	350	1
2010-11	1,466	30	94	24	1,373	34	1,504	29	96	27	1,408	33	1,107	27	71	25	1,036	31
2011-12	1,231	21	93	23	1,138	22	1,263	21	96	26	1,167	20	929	20	71	24	859	19
2012-13	821	6	77	19	744	6	842	6	79	18	764	6	620	5	58	16	562	6
2013-14	610	2	81	20	529	2	626	2	83	21	543	2	461	2	61	18	400	2
2014-15	1,888	41	73	15	1,814	42	1,937	40	75	15	1,862	41	1,425	40	55	13	1,370	41
2015-16	1,233	23	273	45	961	13	1,005	12	160	40	845	11	740	11	118	40	622	10
2016-17	1,571	34	156	39	1,415	35	1,506	30	92	25	1,415	34	1,108	28	67	23	1,041	32
2017-18	1,115	17	123	35	992	17	1,093	15	88	22	1,004	16	804	14	65	20	739	15
2018-19	1,224	20	174	40	1,050	19	1,253	20	81	19	1,172	21	922	19	60	17	862	20
Average	**1,279**		**102**		**1,177**		**1,325**		**100**		**1,225**		**997**		**75**		**922**	
Max	**2,043**		**273**		**1,982**		**2,096**		**239**		**2,033**		**1,666**		**176**		**1,582**	
Min	**483**		**20**		**463**		**496**		**20**		**475**		**365**		**15**		**350**	
1/5 Drought	**897**		**61**		**788**		**921**		**62**		**808**		**703**		**46**		**606**	
1/10 Drought	**754**		**49**		**693**		**773**		**50**		**711**		**569**		**37**		**523**	

: 1/5 Drought Year : 1/10 Drought Year

Source: JICA Survey Team

Annex 3.1-3 Calculation Result of Discharge Data

Discharge (Mm³/year)

Hydrological Year	Lama (1201Km2)						Bandarban (2199Km2)						Panchpukhuria (856Km2)					
	Whole Year	Rank	Dry Season	Rank	Rainy Season	Rank	Whole Year	Rank	Dry Season	Rank	Rainy Season	Rank	Whole Year	Rank	Dry Season	Rank	Rainy Season	Rank
1966-67	976	5	80	12	896	7	1,833	5	150	12	1,684	7	747	17	108	41	639	16
1967-68	1,597	27	87	14	1,510	27	3,000	26	164	14	2,836	26	1,091	38	56	19	1,035	37
1968-69	1,384	18	88	16	1,296	20	3,944	39	270	34	3,674	39	1,426	45	72	33	1,354	45
1969-70	1,299	15	113	25	1,186	16	2,536	18	308	38	2,228	17	1,057	34	86	38	970	33
1970-71	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1971-72	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1972-73	1,230	13	59	4	1,171	15	2,311	13	111	4	2,200	15	662	13	32	4	630	14
1973-74	2,281	42	276	43	2,005	41	4,285	41	519	44	3,766	40	1,227	41	149	44	1,079	40
1974-75	1,280	14	117	27	1,162	14	2,404	16	220	29	2,184	14	688	15	63	27	625	13
1975-76	2,008	38	174	38	1,834	37	3,773	36	328	39	3,445	36	1,080	36	94	39	987	35
1976-77	1,315	16	104	21	1,211	18	2,470	17	195	23	2,276	18	707	16	56	21	652	17
1977-78	1,716	28	68	7	1,647	33	3,223	27	129	7	3,094	32	923	25	37	7	886	30
1978-79	1,169	11	79	11	1,090	12	2,197	11	148	11	2,049	13	629	10	42	11	587	12
1979-80	1,397	19	73	10	1,323	21	2,624	19	138	10	2,486	19	751	18	39	10	712	18
1980-81	1,481	22	106	22	1,375	23	2,782	22	198	24	2,583	22	797	21	57	22	740	21
1981-82	1,485	24	59	3	1,427	24	2,791	23	111	3	2,680	23	799	22	32	3	768	22
1982-83	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1983-84	1,825	33	220	42	1,606	28	3,429	33	413	43	3,016	27	982	31	118	43	864	25
1984-85	1,580	25	71	8	1,508	26	2,968	24	134	8	2,834	25	850	23	38	8	812	24
1985-86	905	4	73	9	832	4	1,700	4	137	9	1,563	4	487	4	39	9	448	4
1986-87	2,026	39	91	18	1,935	39	3,806	37	170	17	3,636	37	1,090	37	49	15	1,041	38
1987-88	1,987	37	117	28	1,870	38	4,374	42	180	20	4,194	43	1,069	35	63	28	1,006	36
1988-89	1,182	12	134	33	1,048	11	2,342	14	373	41	1,969	12	636	12	72	34	564	11
1989-90	1,726	29	117	26	1,609	29	3,242	28	220	28	3,023	28	929	26	63	26	866	26
1990-91	2,337	43	119	30	2,219	43	4,391	43	223	31	4,168	42	1,258	42	64	30	1,194	42
1991-92	1,078	9	210	41	868	5	2,025	9	395	42	1,630	5	580	8	113	42	467	5
1992-93	1,767	31	127	32	1,640	32	3,319	31	239	33	3,081	31	951	29	68	32	882	29
1993-94	1,034	7	88	17	946	9	1,943	8	166	16	1,777	9	557	6	48	14	509	8
1994-95	1,583	26	84	13	1,499	25	2,973	25	157	13	2,816	24	851	24	45	12	806	23
1995-96	1,902	36	280	44	1,622	30	3,574	35	526	45	3,048	29	1,024	33	151	45	873	27
1996-97	2,454	45	159	37	2,295	44	4,610	45	299	37	4,311	44	1,320	44	85	37	1,235	43
1997-98	2,078	40	123	31	1,955	40	3,903	38	230	32	3,673	38	1,118	39	66	31	1,052	39
1998-99	2,438	44	58	2	2,380	45	4,579	44	108	2	4,471	45	1,312	43	31	2	1,281	44
1999-00	1,767	32	144	34	1,623	31	3,320	32	271	35	3,049	30	951	30	78	35	873	28
2000-01	1,039	8	118	29	921	8	1,930	7	221	30	1,710	8	559	7	63	29	496	7
2001-02	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
2002-03	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
2003-04	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
2004-05	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
2005-06	1,888	35	66	6	1,821	36	3,546	34	124	6	3,422	35	1,016	32	36	6	980	34
2006-07	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
2007-08	1,119	10	154	36	965	10	2,101	10	289	36	1,812	10	602	9	83	36	519	9
2008-09	790	3	61	5	729	3	1,484	3	115	5	1,369	3	425	3	33	5	392	3
2009-10	580	1	24	1	556	1	1,090	1	45	1	1,045	1	312	1	13	1	299	1
2010-11	1,761	30	112	24	1,649	34	3,308	29	211	27	3,097	33	948	27	60	25	887	31
2011-12	1,478	21	112	23	1,366	22	2,777	21	211	26	2,567	20	795	20	60	24	735	19
2012-13	986	6	92	19	894	6	1,853	6	173	18	1,680	6	531	5	50	16	481	6
2013-14	733	2	97	20	636	2	1,377	2	183	21	1,194	2	394	2	52	18	342	2
2014-15	2,267	41	88	15	2,179	42	4,259	40	165	15	4,094	41	1,220	40	47	13	1,172	41
2015-16	1,481	23	328	45	1,154	13	2,210	12	353	40	1,858	11	633	11	101	40	532	10
2016-17	1,887	34	187	39	1,700	35	3,312	30	201	25	3,111	34	949	28	58	23	891	32
2017-18	1,339	17	147	35	1,192	17	2,403	15	195	22	2,209	16	688	14	56	20	633	15
2018-19	1,470	20	209	40	1,261	19	2,756	20	179	19	2,577	21	789	19	51	17	738	20
Average	**1,536**		**122**		**1,417**		**2,913**		**220**		**2,693**		**854**		**64**		**790**	
Max	**2,454**		**328**		**2,380**		**4,610**		**526**		**4,471**		**1,426**		**151**		**1,354**	
Min	**580**		**24**		**556**		**1,090**		**45**		**1,045**		**312**		**13**		**299**	
1/5 Drought	**1,078**		**73**		**946**		**2,025**		**137**		**1,777**		**602**		**39**		**519**	
1/10 Drought	**905**		**59**		**832**		**1,700**		**111**		**1,563**		**487**		**32**		**448**	

: 1/5 Drought Year : 1/10 Drought Year

Source: JICA Survey Team

Annex 3.1-3 Calculation Result of Discharge Data

Hydrological Year	Discharge (MCM) Kaptai (11365.8Km2)					
	Whole Year	Rank	Dry Season	Rank	Rainy Season	Rank
1966-67	-	-	-	-	-	-
1967-68	-	-	-	-	-	-
1968-69	20,451	44	2,385	44	18,066	40
1969-70	18,586	37	1,994	39	16,593	35
1970-71	16,666	30	3,290	48	13,376	22
1971-72	10,483	5	2,250	41	8,232	4
1972-73	16,397	28	1,222	28	15,175	31
1973-74	24,332	49	4,826	51	19,507	46
1974-75	18,680	38	2,356	43	16,325	33
1975-76	28,394	51	2,821	47	25,573	50
1976-77	16,800	31	1,955	38	14,845	29
1977-78	19,334	39	1,093	17	18,241	41
1978-79	16,560	29	4,344	50	12,215	14
1979-80	14,821	21	1,208	25	13,613	24
1980-81	12,949	11	819	10	12,130	12
1981-82	10,115	4	617	5	9,498	6
1982-83	19,971	42	1,621	35	18,349	42
1983-84	13,910	18	1,422	31	12,488	17
1984-85	8,481	2	367	3	8,113	3
1985-86	15,550	25	676	6	14,874	30
1986-87	28,183	50	2,144	40	26,039	51
1987-88	17,120	32	1,055	16	16,065	32
1988-89	13,325	14	726	8	12,599	18
1989-90	13,305	13	1,148	20	12,157	13
1990-91	18,452	36	1,161	22	17,290	37
1991-92	8,599	3	1,328	30	7,271	2
1992-93	20,524	45	1,172	23	19,352	44
1993-94	7,911	1	917	12	6,994	1
1994-95	10,494	6	357	2	10,137	7
1995-96	13,212	12	2,309	42	10,903	10
1996-97	17,648	34	1,213	27	16,435	34
1997-98	21,326	46	1,761	37	19,565	47
1998-99	19,713	41	1,042	15	18,671	43
1999-00	21,610	47	1,501	33	20,109	48
2000-01	13,590	15	990	14	12,600	19
2001-02	17,463	33	711	7	16,751	36
2002-03	15,576	26	1,107	18	14,470	27
2003-04	20,256	43	2,487	46	17,769	39
2004-05	12,875	10	2,443	45	10,431	8
2005-06	13,697	17	1,304	29	12,393	15
2006-07	19,680	40	209	1	19,471	45
2007-08	12,676	9	3,296	49	9,380	5
2008-09	12,365	8	616	4	11,749	11
2009-10	14,934	22	1,672	36	13,262	20
2010-11	14,810	20	1,210	26	13,600	23
2011-12	15,299	23	1,161	21	14,138	25
2012-13	11,491	7	989	13	10,502	9
2013-14	14,208	19	857	11	13,351	21
2014-15	18,209	35	775	9	17,434	38
2015-16	15,488	24	1,116	19	14,372	26
2016-17	23,709	48	1,484	32	22,225	49
2017-18	16,153	27	1,597	34	14,556	28
2018-19	13,628	16	1,191	24	12,437	16
Average	**16,275**		**1,536**		**14,739**	
Max	**28,394**		**4,826**		**26,039**	
Min	**7,911**		**209**		**6,994**	
1/5 Drought	**12,875**		**819**		**10,903**	
1/10 Drought	**10,483**		**617**		**9,380**	

: 1/5 Drought Year

: 1/10 Drought Year

Hydrological Year	Discharge (mm) Kaptai (11365.8Km2)					
	Whole Year	Rank	Dry Season	Rank	Rainy Season	Rank
1966-67	-	-	-	-	-	-
1967-68	-	-	-	-	-	-
1968-69	1,799	44	210	44	1,590	40
1969-70	1,635	37	175	39	1,460	35
1970-71	1,466	30	289	48	1,177	22
1971-72	922	5	198	41	724	4
1972-73	1,443	28	108	28	1,335	31
1973-74	2,141	49	425	51	1,716	46
1974-75	1,644	38	207	43	1,436	33
1975-76	2,498	51	248	47	2,250	50
1976-77	1,478	31	172	38	1,306	29
1977-78	1,701	39	96	17	1,605	41
1978-79	1,457	29	382	50	1,075	14
1979-80	1,304	21	106	25	1,198	24
1980-81	1,139	11	72	10	1,067	12
1981-82	890	4	54	5	836	6
1982-83	1,757	42	143	35	1,614	42
1983-84	1,224	18	125	31	1,099	17
1984-85	746	2	32	3	714	3
1985-86	1,368	25	59	6	1,309	30
1986-87	2,480	50	189	40	2,291	51
1987-88	1,506	32	93	16	1,413	32
1988-89	1,172	14	64	8	1,108	18
1989-90	1,171	13	101	20	1,070	13
1990-91	1,623	36	102	22	1,521	37
1991-92	757	3	117	30	640	2
1992-93	1,806	45	103	23	1,703	44
1993-94	696	1	81	12	615	1
1994-95	923	6	31	2	892	7
1995-96	1,162	12	203	42	959	10
1996-97	1,553	34	107	27	1,446	34
1997-98	1,876	46	155	37	1,721	47
1998-99	1,734	41	92	15	1,643	43
1999-00	1,901	47	132	33	1,769	48
2000-01	1,196	15	87	14	1,109	19
2001-02	1,536	33	63	7	1,474	36
2002-03	1,370	26	97	18	1,273	27
2003-04	1,782	43	219	46	1,563	39
2004-05	1,133	10	215	45	918	8
2005-06	1,205	17	115	29	1,090	15
2006-07	1,732	40	18	1	1,713	45
2007-08	1,115	9	290	49	825	5
2008-09	1,088	8	54	4	1,034	11
2009-10	1,314	22	147	36	1,167	20
2010-11	1,303	20	106	26	1,197	23
2011-12	1,346	23	102	21	1,244	25
2012-13	1,011	7	87	13	924	9
2013-14	1,250	19	75	11	1,175	21
2014-15	1,602	35	68	9	1,534	38
2015-16	1,363	24	98	19	1,264	26
2016-17	2,086	48	131	32	1,955	49
2017-18	1,421	27	140	34	1,281	28
2018-19	1,199	16	105	24	1,094	16
Average	**1,432**		**135**		**1,297**	
Max	**2,498**		**425**		**2,291**	
Min	**696**		**18**		**615**	
1/5 Drought	**1,133**		**72**		**959**	
1/10 Drought	**922**		**54**		**825**	

: 1/5 Drought Year

: 1/10 Drought Year

Annex 3.1-4 Calculation Sheet of Surface Water Resources

Potential Water Resources for a whole year (Matamuhuri River)

Unit:mm/year

Year	(1) Rainfall	Rank	(2) Surface Water	Rank	(3) Evapotranspiration for initial calculation (mm)	(4) Subsurface Percolation for initial calculation (mm)	(5) Total of Evap. and Perco. = (3) + (4)	(6) Remain water resource excluding surface water = (1) - (2)	(7) Adjusted Evapotranspiration =(3)/(5)×(6)	Rank	(8) Adjusted subSurface Percolation =(4)/(5)×(6)	Rank
1966-67	3002.18	18	812.51	5	918.48	669.03	1587.51	2189.67	1266.87	28	922.80	26
1967-68	2825.21	11	1329.54	27	874.53	642.21	1516.74	1495.67	862.38	7	633.29	7
1968-69	2658.26	8	1152.75	18	888.22	567.78	1456.00	1505.51	918.42	11	587.09	4
1969-70	2581.09	5	1081.23	15	851.64	646.89	1498.52	1499.86	852.39	5	647.46	9
1970-71	-	-	-	-	-	-	-	-	-	-	-	-
1971-72	-	-	-	-	-	-	-	-	-	-	-	-
1972-73	2188.96	1	1024.33	13	874.32	624.89	1499.21	1164.63	679.20	1	485.43	1
1973-74	3485.59	29	1899.26	42	902.95	812.29	1715.24	1586.33	835.09	4	751.24	15
1974-75	2928.13	15	1065.45	14	889.18	722.26	1611.45	1862.67	1027.81	15	834.86	20
1975-76	3173.15	24	1672.10	38	901.59	565.05	1466.63	1501.05	922.74	12	578.30	3
1976-77	3340.60	26	1094.84	16	839.97	631.77	1471.75	2245.76	1281.73	30	964.03	30
1977-78	2920.04	14	1428.50	28	884.70	662.72	1547.42	1491.54	852.76	6	638.79	8
1978-79	2568.12	4	973.63	11	858.88	518.77	1377.64	1594.49	994.07	14	600.42	6
1979-80	3023.96	20	1162.95	19	875.38	669.94	1545.32	1861.01	1054.21	18	806.80	19
1980-81	2769.50	9	1232.81	22	851.18	659.61	1510.79	1536.68	865.77	8	670.91	10
1981-82	3752.38	34	1236.88	24	892.99	589.34	1482.34	2515.50	1515.40	37	1000.10	31
1982-83	-	-	-	-	-	-	-	-	-	-	-	-
1983-84	3572.89	31	1519.91	33	862.31	656.18	1518.49	2052.98	1165.83	23	887.15	22
1984-85	2883.72	13	1315.43	25	856.23	646.93	1503.17	1568.29	893.33	10	674.96	11
1985-86	2619.22	6	753.53	4	877.18	650.25	1527.43	1865.69	1071.44	19	794.26	17
1986-87	4172.28	36	1686.91	39	878.24	682.00	1560.24	2485.37	1398.98	33	1086.39	34
1987-88	3158.25	23	1654.44	37	858.44	752.93	1611.37	1503.82	801.15	3	702.67	12
1988-89	2646.52	7	984.11	12	880.27	688.75	1569.02	1662.41	932.67	13	729.75	14
1989-90	3573.59	32	1437.09	29	873.30	673.03	1546.33	2136.49	1206.60	27	929.89	27
1990-91	4484.80	39	1946.10	43	841.56	835.69	1677.26	2538.70	1273.80	29	1264.90	37
1991-92	2980.36	17	897.30	9	898.06	688.84	1586.90	2083.05	1178.84	26	904.21	24
1992-93	4470.31	38	1471.23	31	884.76	802.84	1687.60	2999.08	1572.33	38	1426.75	41
1993-94	2945.01	16	861.24	7	889.80	699.00	1588.80	2083.77	1167.01	24	916.76	25
1994-95	2784.44	10	1317.70	26	889.30	572.71	1462.01	1466.74	892.18	9	574.56	2
1995-96	5107.59	42	1583.97	36	909.11	756.23	1665.34	3523.62	1923.55	43	1600.07	42
1996-97	5081.86	41	2043.20	45	896.40	655.06	1551.46	3038.65	1755.66	41	1282.99	38
1997-98	5499.74	43	1729.86	40	944.46	717.41	1661.88	3769.88	2142.47	44	1627.41	43
1998-99	5555.90	44	2029.69	44	853.87	812.13	1666.01	3526.22	1807.28	42	1718.94	44
1999-00	5666.28	45	1471.48	32	891.43	759.44	1650.87	4194.80	2265.09	45	1929.71	45
2000-01	3474.50	28	865.49	8	888.53	725.97	1614.49	2609.01	1435.85	34	1173.16	35
2001-02	-	-	-	-	-	-	-	-	-	-	-	-
2002-03	-	-	-	-	-	-	-	-	-	-	-	-
2003-04	-	-	-	-	-	-	-	-	-	-	-	-
2004-05	-	-	-	-	-	-	-	-	-	-	-	-
2005-06	2880.55	12	1571.63	35	909.69	755.19	1664.87	1308.93	715.20	2	593.73	5
2006-07	-	-	-	-	-	-	-	-	-	-	-	-
2007-08	3613.16	33	931.33	10	899.42	708.13	1607.56	2681.83	1500.48	36	1181.36	36
2008-09	3002.22	19	657.59	3	902.20	623.83	1526.02	2344.63	1386.16	32	958.47	29
2009-10	2514.62	3	483.01	1	929.51	705.31	1634.82	2031.61	1155.11	22	876.49	21
2010-11	3414.51	27	1466.31	30	884.82	760.54	1645.37	1948.21	1047.68	17	900.53	23
2011-12	3336.31	25	1230.99	21	862.44	686.66	1549.10	2105.31	1172.10	25	933.21	28
2012-13	3820.68	35	821.12	6	805.64	695.29	1500.92	2999.56	1610.05	39	1389.51	40
2013-14	2473.42	2	610.20	2	914.23	630.49	1544.72	1863.22	1102.74	20	760.49	16
2014-15	4398.21	37	1887.69	41	833.94	619.02	1452.96	2510.52	1440.94	35	1069.58	33
2015-16	3070.79	21	1233.46	23	902.76	690.78	1593.54	1837.34	1040.87	16	796.46	18
2016-17	4564.06	40	1570.94	34	905.87	740.88	1646.75	2993.12	1646.51	40	1346.61	39
2017-18	3495.66	30	1115.00	17	889.36	674.47	1563.83	2380.66	1353.89	31	1026.76	32
2018-19	3090.26	22	1223.72	20	933.71	580.75	1514.46	1866.54	1150.78	21	715.76	13
Average	**3457.09**		**1278.63**		**883.35**	**680.65**	**1564.00**	**2178.45**	**1225.23**		**953.22**	

:1/10 years drought :1/5 year drought

Source: JICA Survey Team

Annex 3.1-4 Calculation Sheet of Surface Water Resources

Matamuhuri New Basin Area

Area 2511.10 Sq. Km 2.51E+09 sq.m

Lama WLG Basin Area

1201 Sq.km

Unit: Million m^3/year

Year	(1) Rainfall	Rank	(2) Surface Water	Rank	(3) Evapotranspiration for initial calculation	(4) Subsurface Percolation for initial calculation	(5) Total of Evap. and Perco. = (3) + (4)	(6) Remain water resource excluding surface water = (1) - (2)	(7) Adjusted Evapotranspiration =(3)/(5)×(6)	Rank	(8) Adjusted subSurface Percolation =(4)/(5)×(6)	Rank
1966-67	7538.78	18	2040.30	5	2306.40	1680.00	3986.41	5498.48	3181.24	28	2317.24	26
1967-68	7094.38	11	3338.61	27	2196.03	1612.66	3808.69	3755.77	2165.52	7	1590.25	7
1968-69	6675.17	8	2894.67	18	2230.40	1425.75	3656.16	3780.49	2306.25	11	1474.24	4
1969-70	6481.37	5	2715.08	15	2138.54	1624.40	3762.94	3766.29	2140.44	5	1625.85	9
1970-71	–	–	–	–	–	–	–	–	–	-	–	-
1971-72	–	–	–	–	–	–	–	–	–	-	–	-
1972-73	5496.70	1	2572.19	13	2195.52	1569.15	3764.67	2924.51	1705.54	1	1218.97	1
1973-74	8752.67	29	4769.23	42	2267.40	2039.73	4307.13	3983.44	2097.00	4	1886.44	15
1974-75	7352.82	15	2675.46	14	2232.83	1813.67	4046.50	4677.35	2580.93	15	2096.42	20
1975-76	7968.09	24	4198.81	38	2263.98	1418.89	3682.87	3769.27	2317.10	12	1452.18	3
1976-77	8388.58	26	2749.25	16	2109.26	1586.44	3695.70	5639.32	3218.55	30	2420.77	30
1977-78	7332.50	14	3587.10	28	2221.57	1664.15	3885.72	3745.41	2141.35	6	1604.05	8
1978-79	6448.81	4	2444.89	11	2156.73	1302.68	3459.40	4003.92	2496.20	14	1507.72	6
1979-80	7593.47	20	2920.29	19	2198.16	1682.28	3880.44	4673.18	2647.23	18	2025.95	19
1980-81	6954.48	9	3095.72	22	2137.41	1656.35	3793.75	3858.77	2174.03	8	1684.73	10
1981-82	9422.59	34	3105.92	24	2242.40	1479.90	3722.29	6316.67	3805.31	37	2511.36	31
1982-83	–	–	–	–	–	–	–	–	–	-	–	-
1983-84	8971.89	31	3816.64	33	2165.34	1647.74	3813.08	5155.25	2927.52	23	2227.73	22
1984-85	7241.30	13	3303.17	25	2150.09	1624.51	3774.60	3938.13	2243.24	10	1694.89	11
1985-86	6577.13	6	1892.19	4	2202.69	1632.85	3835.53	4684.95	2690.49	19	1994.46	17
1986-87	10477.02	36	4236.00	39	2205.35	1712.58	3917.92	6241.02	3512.99	33	2728.03	34
1987-88	7930.69	23	4154.46	37	2155.64	1890.67	4046.31	3776.23	2011.76	3	1764.47	12
1988-89	6645.68	7	2471.19	12	2210.45	1729.53	3939.98	4174.48	2342.02	13	1832.47	14
1989-90	8973.63	32	3608.68	29	2192.95	1690.04	3882.99	5364.95	3029.89	27	2335.05	27
1990-91	11261.78	39	4886.85	43	2113.25	2098.50	4211.76	6374.93	3198.63	29	3176.30	37
1991-92	7483.97	17	2253.22	9	2255.11	1729.75	3984.86	5230.75	2960.19	26	2270.57	24
1992-93	11225.40	38	3694.40	31	2221.72	2016.01	4237.73	7531.00	3948.28	38	3582.72	41
1993-94	7395.21	16	2162.67	7	2234.38	1755.25	3989.63	5232.55	2930.47	24	2302.08	25
1994-95	6992.00	10	3308.87	26	2233.12	1438.12	3671.24	3683.13	2240.35	9	1442.78	2
1995-96	12825.67	42	3977.50	36	2282.87	1898.96	4181.83	8848.17	4830.23	43	4017.94	42
1996-97	12761.05	41	5130.69	45	2250.94	1644.92	3895.87	7630.36	4408.65	41	3221.71	38
1997-98	13810.39	43	4343.84	40	2371.64	1801.50	4173.14	9466.55	5379.95	44	4086.60	43
1998-99	13951.43	44	5096.75	44	2144.16	2039.35	4183.52	8854.68	4538.26	42	4316.42	44
1999-00	14228.60	45	3695.02	32	2238.47	1907.03	4145.50	10533.57	5687.87	45	4845.71	45
2000-01	8724.83	28	2173.34	8	2231.18	1822.98	4054.16	6551.49	3605.57	34	2945.92	35
2001-02	–	–	–	–	–	–	–	–	–	-	–	-
2002-03	–	–	–	–	–	–	–	–	–	-	–	-
2003-04	–	–	–	–	–	–	–	–	–	-	–	-
2004-05	–	–	–	–	–	–	–	–	–	-	–	-
2005-06	7233.36	12	3946.52	35	2284.31	1896.35	4180.66	3286.84	1795.93	2	1490.91	5
2006-07	–	–	–	–	–	–	–	–	–	-	–	-
2007-08	9073.02	33	2338.66	10	2258.54	1778.20	4036.73	6734.36	3767.85	36	2966.51	36
2008-09	7538.87	19	1651.27	3	2265.51	1566.49	3832.00	5887.60	3480.79	32	2406.81	29
2009-10	6314.46	3	1212.89	1	2334.10	1771.10	4105.21	5101.56	2900.61	22	2200.96	21
2010-11	8574.18	27	3682.04	30	2221.88	1909.80	4131.68	4892.14	2630.83	17	2261.31	23
2011-12	8377.80	25	3091.15	21	2165.66	1724.27	3889.93	5286.65	2943.27	25	2343.39	28
2012-13	9594.11	35	2061.91	6	2023.04	1745.93	3768.97	7532.20	4042.99	39	3489.21	40
2013-14	6211.02	2	1532.28	2	2295.72	1583.21	3878.94	4678.73	2769.08	20	1909.65	16
2014-15	11044.34	37	4740.17	41	2094.11	1554.41	3648.52	6304.17	3618.35	35	2685.82	33
2015-16	7711.07	21	3097.34	23	2266.93	1734.62	4001.54	4613.73	2613.74	16	1999.99	18
2016-17	11460.80	40	3944.79	34	2274.74	1860.42	4135.15	7516.01	4134.54	40	3381.47	39
2017-18	8777.94	30	2799.87	17	2233.28	1693.67	3926.94	5978.07	3399.76	31	2578.30	32
2018-19	7759.95	22	3072.89	20	2344.64	1458.31	3802.96	4687.06	2889.73	21	1797.34	13
Average	**8681.09**		**3210.77**		**2218.19**	**1709.18**	3927.37	**5470.32**	**3076.68**		**2393.64**	

:1/10 years drought :1/5 year drought

Source: JICA Survey Team

Annex 3.1-4 Calculation Sheet of Surface Water Resources

Potential Water Resources for a whole year (Sangu Basin)
Unit:mm/year

Year	(1) Rainfall	Rank	(2) Surface Water	Rank	(3) Evapotranspiration for initial calculation (mm)	(4) Subsurface Percolation for initial calculation (mm)	(5) Total of Evap. and Perco. = (3) + (4)	(6) Remain water resource excluding surface water = (1) - (2)	(7) Adjusted Evapotranspiration =(3)/(5)×(6)	Rank	(8) Adjusted subSurface Percolation =(4)/(5)×(6)	Rank
1966-67	2368.06	9	833.67	5	923.98	666.28	1590.27	1534.39	891.52	25	642.87	25
1967-68	2646.56	19	1364.15	27	889.01	651.47	1540.48	1282.41	740.07	9	542.33	7
1968-69	2596.28	16	1182.76	19	902.70	599.38	1502.08	1413.51	849.48	21	564.04	9
1969-70	2536.13	13	1109.38	17	878.46	673.99	1552.45	1426.75	807.34	17	619.42	19
1970-71	-	-	-	-	-	-	-	-	-	-	-	-
1971-72	-	-	-	-	-	-	-	-	-	-	-	-
1972-73	1988.70	1	1050.99	14	896.22	660.26	1556.47	937.71	539.93	1	397.78	2
1973-74	3250.10	36	1948.70	42	917.41	773.57	1690.98	1301.40	706.05	5	595.35	15
1974-75	2361.66	8	1093.19	16	892.82	688.15	1580.98	1268.47	716.34	7	552.13	8
1975-76	2899.52	30	1715.63	38	922.88	620.37	1543.25	1183.88	707.97	6	475.91	5
1976-77	2841.40	28	1123.34	18	851.12	668.04	1519.16	1718.06	962.55	31	755.50	35
1977-78	2848.64	29	1465.68	28	894.20	703.26	1597.46	1382.96	774.13	11	608.83	18
1978-79	2282.11	4	998.98	11	896.65	519.71	1416.35	1283.13	812.31	18	470.82	4
1979-80	2689.48	21	1193.23	20	921.96	714.88	1636.84	1496.25	842.77	20	653.48	27
1980-81	2679.86	20	1264.91	23	909.82	712.23	1622.05	1414.95	793.66	14	621.29	20
1981-82	2901.74	31	1269.08	24	901.97	603.27	1505.24	1632.66	978.32	34	654.34	28
1982-83	-	-	-	-	-	-	-	-	-	-	-	-
1983-84	2935.66	32	1559.48	34	894.03	665.68	1559.70	1376.18	788.83	13	587.35	11
1984-85	2490.91	12	1349.67	25	885.60	640.66	1526.25	1141.23	662.19	4	479.04	6
1985-86	2418.83	10	773.15	4	906.67	668.35	1575.02	1645.69	947.35	29	698.34	30
1986-87	3230.27	35	1730.83	39	894.89	660.48	1555.37	1499.44	862.72	23	636.73	22
1987-88	3007.32	34	1697.51	37	878.23	727.29	1605.52	1309.81	716.48	8	593.33	14
1988-89	2447.78	11	1009.73	13	906.90	722.48	1629.38	1438.05	800.41	16	637.64	23
1989-90	2833.03	27	1474.50	29	894.39	690.41	1584.80	1358.52	766.69	10	591.83	13
1990-91	3664.95	38	1996.76	43	878.61	821.06	1699.68	1668.19	862.34	22	805.85	38
1991-92	2306.15	6	920.66	9	903.08	672.34	1575.41	1385.49	794.21	15	591.28	12
1992-93	3548.79	37	1509.53	32	891.95	782.97	1674.92	2039.26	1085.97	40	953.29	42
1993-94	2238.03	3	883.66	8	905.36	661.75	1567.11	1354.36	782.45	12	571.91	10
1994-95	2328.27	7	1352.00	26	911.05	587.38	1498.43	976.27	593.57	2	382.69	1
1995-96	3711.49	40	1625.20	36	924.05	761.50	1685.55	2086.29	1143.75	41	942.54	41
1996-97	3756.48	41	2096.39	45	904.23	655.56	1559.79	1660.09	962.37	30	697.72	29
1997-98	4182.73	45	1774.89	40	931.91	697.51	1629.42	2407.84	1377.11	44	1030.73	43
1998-99	4008.88	43	2082.53	44	850.87	749.04	1599.91	1926.35	1024.48	36	901.87	40
1999-00	4116.13	44	1509.78	33	879.59	730.82	1610.41	2606.35	1423.56	45	1182.79	45
2000-01	2589.54	15	878.29	7	888.75	673.04	1561.80	1711.25	973.80	33	737.45	32
2001-02	-	-	-	-	-	-	-	-	-	-	-	-
2002-03	-	-	-	-	-	-	-	-	-	-	-	-
2003-04	-	-	-	-	-	-	-	-	-	-	-	-
2004-05	-	-	-	-	-	-	-	-	-	-	-	-
2005-06	2632.67	18	1612.54	35	918.22	615.34	1533.56	1020.13	610.80	3	409.32	3
2006-07	-	-	-	-	-	-	-	-	-	-	-	-
2007-08	2828.49	26	955.58	10	920.93	674.62	1595.54	1872.91	1081.02	39	791.89	37
2008-09	2631.82	17	674.71	3	936.02	590.40	1526.42	1957.11	1200.13	42	756.98	36
2009-10	2290.87	5	495.59	1	954.08	666.27	1620.35	1795.28	1057.08	38	738.20	33
2010-11	2966.39	33	1504.48	30	903.05	692.50	1595.55	1461.91	827.41	19	634.50	21
2011-12	2783.91	24	1263.04	22	887.98	647.80	1535.77	1520.87	879.36	24	641.51	24
2012-13	2744.15	22	842.49	6	819.27	668.56	1487.83	1901.66	1047.14	37	854.52	39
2013-14	2133.32	2	626.09	2	909.44	609.23	1518.68	1507.23	902.59	26	604.64	17
2014-15	3695.01	39	1936.83	41	865.08	632.67	1497.75	1758.18	1015.50	35	742.68	34
2015-16	2559.48	14	1005.15	12	943.54	680.51	1624.05	1554.32	903.03	27	651.29	26
2016-17	3927.84	42	1506.23	31	922.79	724.37	1647.16	2421.62	1356.66	43	1064.95	44
2017-18	2789.99	25	1092.84	15	908.43	675.55	1583.98	1697.15	973.33	32	723.82	31
2018-19	2780.40	23	1253.08	21	929.37	608.54	1537.91	1527.32	922.97	28	604.35	16
Average	**2877.11**		**1302.38**		**901.06**	**673.55**	1574.60	**1574.73**	**901.13**		**675.45**	

:1/10 years drought :1/5 year drought

Source: JICA Survey Team

Annex 3.1-4 Calculation Sheet of Surface Water Resources

Sangu Basin Area — Bandarban WLG Basin Area

Area	3662.69	Sq. Km	3.66E+09	sq.m		2199	Sq.km			Unit: Million m^3/year		
Year	(1) Rainfall	Rank	(2) Surface Water	Rank	(3) Evapotranspiration for initial calculation	(4) Subsurface Percolation for initial calculation	(5) Total of Evap. and Perco. = (3) + (4)	(6) Remain water resource excluding surface water = (1) - (2)	(7) Adjusted Evapotranspiration =(3)/(5)×(6)	Rank	(8) Adjusted subSurface Percolation =(4)/(5)×(6)	Rank
1966-67	8673.47	9	3053.46	5	3384.27	2440.38	5824.65	5620.01	3265.37	25	2354.64	25
1967-68	9693.52	19	4996.47	26	3256.16	2386.13	5642.29	4697.05	2710.66	9	1986.39	7
1968-69	9509.35	16	4332.09	39	3306.32	2195.34	5501.67	5177.26	3111.37	21	2065.90	9
1969-70	9289.07	13	4063.31	18	3217.54	2468.60	5686.14	5225.76	2957.03	17	2268.73	19
1970-71	–		–		–	–	–	–	–	-	–	-
1971-72	–		–		–	–	–	–	–	-	–	-
1972-73	7284.01	1	3849.46	13	3282.57	2418.31	5700.88	3434.54	1977.61	1	1456.93	2
1973-74	11904.12	36	7137.49	41	3360.18	2833.35	6193.53	4766.64	2586.05	5	2180.59	15
1974-75	8650.04	8	4004.02	16	3270.13	2520.49	5790.62	4646.02	2623.74	7	2022.28	8
1975-76	10620.03	30	6283.83	36	3380.22	2272.24	5652.46	4336.20	2593.09	6	1743.12	5
1976-77	10407.16	28	4114.45	17	3117.38	2446.82	5564.20	6292.71	3525.53	31	2767.18	35
1977-78	10433.69	29	5368.34	27	3275.18	2575.84	5851.02	5065.34	2835.39	11	2229.96	18
1978-79	8358.66	4	3658.95	11	3284.13	1903.52	5187.66	4699.71	2975.23	18	1724.48	4
1979-80	9850.72	21	4370.42	19	3376.85	2618.39	5995.25	5480.30	3086.81	20	2393.49	27
1980-81	9815.49	20	4632.96	22	3332.39	2608.66	5941.05	5182.53	2906.93	14	2275.60	20
1981-82	10628.17	31	4648.23	23	3303.63	2209.59	5513.22	5979.93	3583.30	34	2396.64	28
1982-83	–		–		–	–	–	–	–	-	–	-
1983-84	10752.40	32	5711.88	33	3274.54	2438.17	5712.71	5040.52	2889.24	13	2151.28	11
1984-85	9123.41	12	4943.43	24	3243.66	2346.53	5590.19	4179.98	2425.40	4	1754.58	6
1985-86	8859.44	10	2831.79	4	3320.85	2447.96	5768.81	6027.64	3469.85	29	2557.80	30
1986-87	11831.48	35	6339.48	37	3277.71	2419.12	5696.82	5492.00	3159.86	23	2332.14	22
1987-88	11014.87	34	6217.44	42	3216.69	2663.82	5880.51	4797.43	2624.24	8	2173.19	14
1988-89	8965.44	11	3698.32	14	3321.69	2646.23	5967.92	5267.13	2931.64	16	2335.49	23
1989-90	10376.50	27	5400.65	28	3275.89	2528.75	5804.64	4975.84	2808.15	10	2167.69	13
1990-91	13423.58	38	7313.52	43	3218.08	3007.30	6225.39	6110.06	3158.47	22	2951.59	38
1991-92	8446.72	6	3372.10	9	3307.70	2462.55	5770.25	5074.61	2908.93	15	2165.68	12
1992-93	12998.10	37	5528.93	31	3266.92	2867.77	6134.70	7469.17	3977.57	40	3491.59	42
1993-94	8197.20	3	3236.59	8	3316.07	2423.78	5739.85	4960.61	2865.88	12	2094.73	10
1994-95	8527.72	7	4951.96	25	3336.89	2151.39	5488.28	3575.76	2174.07	2	1401.69	1
1995-96	13594.04	40	5952.61	35	3384.52	2789.13	6173.65	7641.43	4189.19	41	3452.24	41
1996-97	13758.82	41	7678.44	45	3311.91	2401.13	5713.04	6080.38	3524.86	30	2555.52	29
1997-98	15320.03	45	6500.87	38	3413.28	2554.76	5968.04	8819.16	5043.91	44	3775.24	43
1998-99	14683.28	43	7627.65	44	3116.48	2743.51	5859.99	7055.63	3752.35	36	3303.28	40
1999-00	15076.11	44	5529.87	32	3221.66	2676.78	5898.45	9546.24	5214.05	45	4332.20	45
2000-01	9484.68	15	3216.90	7	3255.23	2465.15	5720.38	6267.78	3566.73	33	2701.05	32
2001-02	–		–		–	–	–	–	–	-	–	-
2002-03	–		–		–	–	–	–	–	-	–	-
2003-04	–		–		–	–	–	–	–	-	–	-
2004-05	–		–		–	–	–	–	–	-	–	-
2005-06	9642.66	18	5906.24	34	3363.17	2253.79	5616.96	3736.41	2237.19	3	1499.23	3
2006-07	–		–		–	–	–	–	–	-	–	-
2007-08	10359.87	26	3499.98	10	3373.07	2470.91	5843.98	6859.89	3959.44	39	2900.46	37
2008-09	9639.55	17	2471.25	3	3428.36	2162.43	5590.79	7168.30	4395.71	42	2772.59	36
2009-10	8390.74	5	1815.18	1	3494.52	2440.33	5934.85	6575.55	3871.77	38	2703.78	33
2010-11	10864.96	33	5510.44	29	3307.59	2536.41	5844.01	5354.53	3030.56	19	2323.97	21
2011-12	10196.61	24	4626.13	21	3252.38	2372.68	5625.06	5570.48	3220.82	24	2349.66	24
2012-13	10050.98	22	3085.79	6	3000.72	2448.74	5449.46	6965.19	3835.35	37	3129.84	39
2013-14	7813.67	2	2293.17	2	3331.01	2231.43	5562.44	5520.50	3305.90	26	2214.61	17
2014-15	13533.66	39	7094.00	40	3168.52	2317.27	5485.79	6439.66	3719.46	35	2720.19	34
2015-16	9374.56	14	3681.57	12	3455.88	2492.50	5948.38	5693.00	3307.51	27	2385.49	26
2016-17	14386.47	42	5516.85	30	3379.89	2653.14	6033.03	8869.63	4969.04	43	3900.59	44
2017-18	10218.85	25	4002.73	15	3327.29	2474.35	5801.64	6216.12	3565.00	32	2651.12	31
2018-19	10183.73	23	4589.63	20	3403.99	2228.89	5632.89	5594.10	3380.56	28	2213.55	16
Average	**10537.95**		**4770.20**		**3300.29**	**2466.99**	5767.28	**5767.75**	**3293.80**		**2473.95**	

:1/10 years drought :1/5 year drought

Source: JICA Survey Team

Annex 3.1-4 Calculation Sheet of Surface Water Resources

Potential Water Resources for a whole year (Karnafuli Basin_Plain)

Unit:mm/year

Year	(1) Rainfall	Rank	Surface Water_ Kaptai	Surface Water_ Panchpukhuria	Ratio of area of kaptai		(2) Surface Water_ Karnafuli	Rank	(3) Evapotranspiration for initial calculation (mm)	(4) Subsurface Percolation for initial calculation (mm)	(5) Total of Evap. and Perco. = (3) + (4)	(6) Remain water resource excluding surface water = (1) - (2)	(7) Adjusted Evapotranspiration =(3)/(5)×(6)	Rank	(8) Adjusted subSurface Percolation =(4)/(5)×(6)	Rank
1966-67																
1967-68																
1968-69	2664.25	25	1768.09	1665.87	0.79	0.21	1746.75	39	878.88	565.31	1444.19	917.50	558.35	3	359.14	5
1969-70	2796.58	29	1596.14	1234.51	0.79	0.21	1520.65	30	872.16	534.49	1406.65	1275.93	791.11	27	484.82	27
1970-71	-	-	-	-	-	-	-	-	-	-	-	0.00	-	-	-	-
1971-72	-	-	-	-	-	-	-	-	-	-	-	0.00	-	-	-	-
1972-73	2286.69	16	1413.01	773.26	0.79	0.21	1279.46	25	867.73	567.52	1435.25	1007.23	608.96	8	398.27	10
1973-74	2973.35	36	2107.43	1433.74	0.79	0.21	1966.80	41	880.95	634.62	1515.57	1006.56	585.08	5	421.48	15
1974-75	2689.23	26	1609.14	804.30	0.79	0.21	1441.13	29	855.82	600.45	1456.27	1248.10	733.49	21	514.62	30
1975-76	3375.84	41	2458.18	1262.26	0.79	0.21	2208.53	43	870.44	602.30	1472.74	1167.32	689.92	18	477.40	22
1976-77	2945.09	34	1453.84	826.49	0.79	0.21	1322.87	27	842.39	618.78	1461.17	1622.22	935.23	37	686.98	39
1977-78	2981.23	37	1673.91	1078.36	0.79	0.21	1549.58	33	851.48	598.71	1450.19	1431.64	840.59	33	591.05	35
1978-79	2637.96	24	1432.17	734.99	0.79	0.21	1286.63	26	852.51	467.20	1319.71	1351.33	872.94	35	478.39	23
1979-80	2803.70	30	1281.43	877.90	0.79	0.21	1197.19	20	910.17	648.25	1558.42	1606.51	938.26	38	668.25	38
1980-81	2136.97	11	1113.35	930.64	0.79	0.21	1075.21	11	866.65	540.16	1406.81	1061.76	654.08	14	407.68	13
1981-82	2059.73	7	874.35	933.71	0.79	0.21	886.74	5	863.34	490.31	1353.65	1172.98	748.11	23	424.87	16
1982-83	-	-	-	-	-	-	-	-	-	-	-	0.00	-	-	-	-
1983-84	2409.56	21	1200.70	1147.37	0.79	0.21	1189.56	19	858.96	518.31	1377.27	1219.99	760.87	26	459.12	20
1984-85	2103.47	10	732.50	993.01	0.79	0.21	786.89	3	851.89	487.40	1339.29	1316.58	837.45	32	479.14	25
1985-86	2247.99	14	1338.44	568.83	0.79	0.21	1177.78	17	849.53	496.10	1345.63	1070.21	675.65	16	394.56	9
1986-87	2951.28	35	2432.41	1273.44	0.79	0.21	2190.47	42	846.21	510.00	1356.21	760.81	474.71	1	286.10	1
1987-88	2891.36	33	1469.34	1248.92	0.79	0.21	1423.33	28	822.75	603.85	1426.60	1468.03	846.65	34	621.38	36
1988-89	2295.41	17	1144.37	742.90	0.79	0.21	1060.56	9	824.39	521.86	1346.25	1234.85	756.17	25	478.68	24
1989-90	2367.13	20	1146.65	1084.85	0.79	0.21	1133.75	15	859.92	557.84	1417.77	1233.38	748.09	22	485.29	28
1990-91	3181.80	39	1594.32	1469.10	0.79	0.21	1568.18	34	799.76	666.03	1465.79	1613.63	880.42	36	733.21	40
1991-92	1650.34	1	744.14	677.37	0.79	0.21	730.20	2	882.49	498.81	1381.30	920.14	587.86	6	332.27	4
1992-93	3487.87	42	1773.11	1110.62	0.79	0.21	1634.81	35	834.37	655.40	1489.76	1853.06	1037.84	42	815.22	42
1993-94	1656.11	2	683.93	650.15	0.79	0.21	676.88	1	870.35	522.84	1393.19	979.23	611.74	9	367.49	7
1994-95	2085.83	8	903.54	994.72	0.79	0.21	922.58	8	889.05	483.26	1372.30	1163.25	753.61	24	409.64	14
1995-96	2793.53	28	1137.98	1195.73	0.79	0.21	1150.04	16	883.17	594.41	1477.59	1643.50	982.34	41	661.16	37
1996-97	2837.24	32	1518.37	1542.40	0.79	0.21	1523.39	31	865.03	569.09	1434.12	1313.85	792.48	28	521.37	32
1997-98	3088.29	38	1834.99	1305.86	0.79	0.21	1724.53	38	886.20	586.69	1472.89	1363.76	820.54	31	543.22	34
1998-99	2739.40	27	1701.77	1532.20	0.79	0.21	1666.37	36	812.05	552.22	1364.27	1073.03	638.70	12	434.33	17
1999-00	2832.37	31	1863.02	1110.81	0.79	0.21	1705.99	37	861.77	650.20	1511.96	1126.38	642.00	13	484.38	26
2000-01	2095.72	9	1174.07	653.35	0.79	0.21	1065.37	10	879.90	565.24	1445.14	1030.36	627.35	10	403.01	11
2001-02	-	-	-	-	-	-	-	-	-	-	-	0.00	-	-	-	-
2002-03	-	-	-	-	-	-	-	-	-	-	-	0.00	-	-	-	-
2003-04	-	-	-	-	-	-	-	-	-	-	-	0.00	-	-	-	-
2004-05	-	-	-	-	-	-	-	-	-	-	-	0.00	-	-	-	-
2005-06	2183.46	12	1185.08	1186.41	0.79	0.21	1185.36	18	883.93	499.46	1383.40	998.10	637.75	11	360.35	6
2006-07	-	-	-	-	-	-	-	-	-	-	-	0.00	-	-	-	-
2007-08	1999.25	5	915.58	703.06	0.79	0.21	871.21	4	905.96	584.55	1490.51	1128.03	685.64	17	442.39	18
2008-09	2350.97	18	1000.03	496.41	0.79	0.21	894.90	6	895.80	493.42	1389.22	1456.07	938.91	39	517.16	31
2009-10	2283.59	15	1289.63	364.62	0.79	0.21	1096.53	13	870.12	576.86	1446.98	1187.05	713.82	19	473.24	21
2010-11	2363.51	19	1275.52	1106.90	0.79	0.21	1240.32	23	871.85	585.95	1457.80	1123.19	671.74	15	451.46	19
2011-12	2566.90	22	1320.70	929.27	0.79	0.21	1238.99	22	868.67	538.86	1407.53	1327.91	819.54	30	508.38	29
2012-13	1928.83	3	992.95	619.86	0.79	0.21	915.06	7	833.53	560.35	1393.88	1013.77	606.22	7	407.54	12
2013-14	1945.19	4	1237.38	460.64	0.79	0.21	1075.23	12	902.48	473.54	1376.01	869.96	570.57	4	299.38	2
2014-15	3263.36	40	1569.90	1425.00	0.79	0.21	1539.66	32	841.28	664.36	1505.63	1723.71	963.13	40	760.58	41
2015-16	2010.59	6	1336.97	739.53	0.79	0.21	1212.25	21	861.43	531.07	1392.49	798.33	493.87	2	304.47	3
2016-17	3737.49	43	2053.38	1108.19	0.79	0.21	1856.07	40	816.37	626.65	1443.01	1881.43	1064.39	43	817.04	43
2017-18	2621.06	23	1398.73	804.05	0.79	0.21	1274.59	24	827.67	546.13	1373.81	1346.46	811.20	29	535.27	33
2018-19	2227.22	13	1173.29	921.94	0.79	0.21	1120.82	14	877.15	477.30	1354.44	1106.40	716.51	20	389.89	8
Average	**2547.60**			**993.57**	0.79	0.21	**1310.07**						**747.07**		**490.46**	

:1/10 years drought :1/5 year drought

Source: JICA Survey Team

Annex 3.1-4 Calculation Sheet of Surface Water Resources

Karnafuli Basin Area — Panchpukhuria WLG Basin Area

Area	14364.43	Sq. Km	1.44E+10	sq.m		856	Sq.km			Unit: Million m^3/year		
Year	(1) Rainfall	Rank	(2) Surface Water	Rank	(3) Evapotranspiration for initial calculation	(4) Subsurface Percolation for initial calculation	(5) Total of Evap. and Perco. = (3) + (4)	(6) Remain water resource excluding surface water = (1) - (2)	(7) Adjusted Evapotranspiration =(3)/(5)×(6)	Rank	(8) Adjusted subSurface Percolation =(4)/(5)×(6)	Rank
1968-69	38270.41	25	25091.11	39	12624.57	8120.34	20744.91	13179.31	8020.43	3	5158.88	5
1969-70	40171.23	29	21843.24	30	12528.15	7677.59	20205.74	18327.99	11363.89	27	6964.10	27
1970-71	-	-	-	-	-	-	-	-	-	-	-	-
1971-72	-	-	-	-	-	-	-	-	-	-	-	-
1972-73	32847.05	16	18378.75	25	12464.48	8152.05	20616.53	14468.30	8747.34	8	5720.96	10
1973-74	42710.54	36	28251.92	41	12654.37	9115.95	21770.32	14458.62	8404.32	5	6054.30	15
1974-75	38629.28	26	20700.96	29	12293.36	8625.09	20918.46	17928.31	10536.12	21	7392.20	30
1975-76	48492.07	41	31724.22	43	12503.33	8651.75	21155.08	16767.85	9910.33	18	6857.52	22
1976-77	42304.55	34	19002.33	27	12100.40	8888.44	20988.85	23302.22	13434.10	37	9868.12	39
1977-78	42823.61	37	22258.89	33	12231.04	8600.17	20831.21	20564.72	12074.57	33	8490.15	35
1978-79	37892.80	24	18481.72	26	12245.82	6711.02	18956.85	19411.08	12539.25	35	6871.83	23
1979-80	40273.61	30	17196.96	20	13074.08	9311.70	22385.78	23076.65	13477.57	38	9599.07	38
1980-81	30696.31	11	15444.80	11	12448.88	7759.14	20208.02	15251.52	9395.49	14	5856.02	13
1981-82	29586.78	7	12737.58	5	12401.37	7043.02	19444.39	16849.20	10746.19	23	6103.01	16
1982-83	-	-	-	-	-	-	-	-	-	-	-	-
1983-84	34611.94	21	17087.42	19	12338.49	7445.25	19783.74	17524.52	10929.49	26	6595.04	20
1984-85	30215.14	10	11303.17	3	12236.92	7001.22	19238.15	18911.97	12029.45	32	6882.52	25
1985-86	32291.14	14	16918.17	17	12202.94	7126.23	19329.18	15372.97	9705.30	16	5667.67	9
1986-87	42393.39	35	31464.84	42	12155.34	7325.82	19481.16	10928.55	6818.91	1	4109.64	1
1987-88	41532.80	33	20445.32	28	11818.38	8673.90	20492.28	21087.48	12161.65	34	8925.83	36
1988-89	32972.28	17	15234.33	9	11841.90	7496.22	19338.11	17737.96	10862.02	25	6875.93	24
1989-90	34002.42	20	16285.65	15	12352.30	8013.09	20365.39	17716.78	10745.82	22	6970.95	28
1990-91	45704.76	39	22525.95	34	11488.09	9567.19	21055.28	23178.80	12646.72	36	10532.09	40
1991-92	23706.13	1	10488.87	2	12676.52	7165.09	19841.61	13217.25	8444.31	6	4772.94	4
1992-93	50101.29	42	23483.14	35	11985.19	9414.42	21399.61	26618.15	14907.92	42	11710.24	42
1993-94	23789.00	2	9722.96	1	12502.12	7510.32	20012.44	14066.05	8787.30	9	5278.74	7
1994-95	29961.70	8	13252.30	8	12770.63	6941.71	19712.34	16709.40	10825.18	24	5884.22	14
1995-96	40127.53	28	16519.62	16	12686.24	8538.43	21224.67	23607.91	14110.74	41	9497.17	37
1996-97	40755.34	32	21882.63	31	12425.66	8174.71	20600.37	18872.71	11383.58	28	7489.13	32
1997-98	44361.53	38	24771.89	38	12729.75	8427.50	21157.24	19589.63	11786.56	31	7803.07	34
1998-99	39349.98	27	23936.47	36	11664.60	7932.29	19596.89	15413.51	9174.54	12	6238.97	17
1999-00	40685.36	31	24505.58	37	12378.77	9339.72	21718.49	16179.78	9221.90	13	6957.88	26
2000-01	30103.85	9	15303.37	10	12639.20	8119.42	20758.63	14800.48	9011.50	10	5788.98	11
2001-02	-	-	-	-	-	-	-	-	-	-	-	-
2002-03	-	-	-	-	-	-	-	-	-	-	-	-
2003-04	-	-	-	-	-	-	-	-	-	-	-	-
2004-05	-	-	-	-	-	-	-	-	-	-	-	-
2005-06	31364.20	12	17027.04	18	12697.21	7174.48	19871.68	14337.16	9160.87	11	5176.29	6
2006-07	-	-	-	-	-	-	-	-	-	-	-	-
2007-08	28718.04	5	12514.47	4	13013.57	8396.69	21410.25	16203.57	9848.85	17	6354.73	18
2008-09	33770.39	18	12854.71	6	12867.72	7087.63	19955.35	20915.68	13486.96	39	7428.72	31
2009-10	32802.44	15	15751.09	13	12498.72	8286.25	20784.97	17051.35	10253.57	19	6797.78	21
2010-11	33950.52	19	17816.46	23	12523.60	8416.84	20940.44	16134.05	9649.10	15	6484.95	19
2011-12	36872.04	22	17797.33	22	12477.94	7740.36	20218.29	19074.71	11772.16	30	7302.55	29
2012-13	27706.54	3	13144.38	7	11973.16	8049.11	20022.28	14562.17	8708.06	7	5854.11	12
2013-14	27941.57	4	15445.12	12	12963.54	6802.07	19765.61	12496.46	8195.97	4	4300.49	2
2014-15	46876.37	40	22116.28	32	12084.46	9543.09	21627.55	24760.09	13834.78	40	10925.31	41
2015-16	28880.93	6	17413.33	21	12373.93	7628.46	20002.39	11467.60	7094.12	2	4373.49	3
2016-17	53686.97	43	26661.36	40	11726.62	9001.45	20728.06	27025.61	15289.37	43	11736.24	43
2017-18	37649.96	23	18308.76	24	11889.04	7844.91	19733.95	19341.20	11652.42	29	7688.78	33
2018-19	31992.71	13	16099.88	14	12599.69	6856.07	19455.76	15892.83	10292.31	20	5600.52	8
Average	**36594.80**		**18818.47**		**12375.63**	**8039.45**	20415.08	**17776.33**	**10731.19**		**7045.14**	

:1/10 years drought :1/5 year drought

Source: JICA Survey Team

Annex 3.2-1 Demands of Surface Water, Ground Water and Others for South Chattogram Region

(1) Percentage of demand of surface water, ground water and others

The percentages of surface water, groundwater, and others (rainwater, ponds, etc.) for each upazilla are shown in Table 1.

Table 1 Intake Percentages of Water Sources by Upazila

No	District	Upazila	River Basin	Surface water (River water)	Ground water	Others
1	Bandarban	Rowangchhari	Sangu river	7	62	31
2		Ruma	Sangu river	8	74	18
3		Thanchi	Sangu river	41	41	18
4		Alikadam	Matamuhuri river	28	28	45
5		Lama	Matamuhuri river	18	18	64
6		Naikhongchhari	Bakkhali river	22	22	55
7		Bandarban Sadar	Sangu river	18	18	64
8	Chattogram	Mirsharai	Outside of study area	2	2	96
9		Sandwip	Outside of study area	0	6	94
10		Anwara	Sangu river	4	4	93
11		Boalkhali	Sangu river	2	2	97
12		Chandanais	Sangu river	2	2	96
13		Lohagora	Sangu river	4	4	93
14		Patia	Sangu river	2	2	96
15		Satkania	Sangu river	3	3	94
16		Bashkhali	Outside of target basin	2	2	95
17		Sitakunda	Outside of target basin	2	2	96
18		Chattogram Metr	Karnafuli river	50	2	48
19		Fatikchhari	Karnafuli river	6	6	88
20		Hathazari	Karnafuli river	0	6	94
21		Rangunia	Karnafuli river	4	4	92
22		Rauzan	Karnafuli river	2	2	97
23	Cox’s Bazar	Kutubdia	Outside of target basin	0	4	96
24		Moheshkhali	Outside of target basin	1	9	90
25		Pekua	Outside of target basin	1	1	98
26		Teknaf	Outside of target basin	10	10	80
27		Ukhia	Outside of target basin	2	15	84
28		Chakaria	Matamuhuri river	1	7	92
29		Cox's Bazar Sadar	Bakkhali river	0	3	96
30		Ramu	Bakkhali river	1	10	88
31	Khagrachari	Matiranga	Outside of target basin	3	28	69
32		Ramgarh	Outside of target basin	0	35	65

Annex 3.2-1 Demands of Surface Water, Ground Water and Others for South Chattogram Region

No	District	Upazila	River Basin	Surface water (River water)	Ground water	Others
33		Dighinala	Karnafuli river	17	17	66
34		Khagrachari Sadar	Karnafuli river	10	10	80
35		Laksmichhari	Karnafuli river	39	39	22
36		Mohalchhari	Karnafuli river	3	31	66
37		Manikchhari	Karnafuli river	3	29	68
38		Panchhari	Karnafuli river	3	27	71
39	Rangamati	Baghaichhari	Karnafuli river	31	31	38
40		Barkal	Karnafuli river	45	45	11
41		Belaichhari	Karnafuli river	35	35	30
42		Juraichhari	Karnafuli river	68	0	32
43		Kaptai	Karnafuli river	39	0	62
44		Betbunia	Karnafuli river	22	22	56
45		Langadu	Karnafuli river	73	0	27
46		Nannerchar	Karnafuli river	34	34	32
47		Rangamati Sadar	Karnafuli river	25	0	75
48		Rajasthali	Karnafuli river	0	32	68

Note: The source of tap water is assumed to be groundwater except for Chattogram City. In other areas, water sources are composed of surface water (river water), ground water, rainwater, ponds, etc. based on the regional characteristics of each area.
Source: JICA Study Team

(2) Amount of the demand of surface water, ground water and others

The amount of demand of surface water, groundwater, and others (rainwater, ponds, etc.) for each upazilla are shown in Table 2.

Table 2 Amount of Demand of Water Sources by Upaliza (m^3/day)

No	District	Upazila	River Basin	Surface water (River water)	Ground water	Others
1	Bandarban	Rowangchhari	Sangu river	164	737	1,475
2		Ruma	Sangu river	209	464	1,881
3		Thanchi	Sangu river	862	389	862
4		Alikadam	Matamuhuri river	1,192	1,923	1,192
5		Lama	Matamuhuri river	1,736	6,129	1,736
6		Naikhongchhari	Bakkhali river	1,217	3,023	1,217
7		Bandarban Sadar	Sangu river	1,378	4,987	1,378
8	Chattogram	Mirsharai	Outside of study area	-	-	-
9		Sandwip	Outside of study area	-	-	-
10		Anwara	Sangu river	832	21,128	832
11		Boalkhali	Sangu river	353	18,937	353
12		Chandanais	Sangu river	461	19,581	461
13		Lohagora	Sangu river	924	22,792	924
14		Patia	Sangu river	1,022	44,420	1,022
15		Satkania	Sangu river	966	31,983	966
16		Bashkhali	Outside of target basin	910	36,107	910
17		Sitakunda	Outside of target basin	768	32,608	768
18		Chattogram Metr	Karnafuli river	114,563	108,782	4,705
19		Fatikchhari	Karnafuli river	2,731	40,826	2,731
20		Hathazari	Karnafuli river	0	35,849	2,205
21		Rangunia	Karnafuli river	1,178	27,475	1,178

Annex 3.2-1 Demands of Surface Water, Ground Water and Others for South Chattogram Region

No	District	Upazila	River Basin	Surface water (River water)	Ground water	Others
22		Rauzan	Karnafuli river	497	27,429	497
23	Cox's Bazar	Kutubdia	Outside of target basin	0	10,538	462
24		Moheshkhali	Outside of target basin	285	25,395	2,568
25		Pekua	Outside of target basin	136	14,864	136
26		Teknaf	Outside of target basin	2,346	18,539	2,346
27		Ukhia	Outside of target basin	301	15,229	2,705
28		Chakaria	Matamuhuri river	330	38,458	2,966
29		Cox's Bazar Sadar	Bakkhali river	149	38,897	1,345
30		Ramu	Bakkhali river	273	20,747	2,453
31	Khagrachari	Matiranga	Outside of target basin	344	7,651	3,094
32		Ramgarh	Outside of target basin	0	4,144	2,192
33		Dighinala	Karnafuli river	1,523	6,018	1,523
34		Khagrachari Sadar	Karnafuli river	986	7,885	986
35		Laksmichhari	Karnafuli river	895	501	895
36		Mohalchhari	Karnafuli river	154	2,944	1,389
37		Manikchhari	Karnafuli river	176	3,694	1,586
38		Panchhari	Karnafuli river	161	3,846	1,449
39	Rangamati	Baghaichhari	Karnafuli river	2,668	3,201	2,668
40		Barkal	Karnafuli river	1,884	452	1,884
41		Belaichhari	Karnafuli river	862	739	862
42		Juraichhari	Karnafuli river	1,673	791	0
43		Kaptai	Karnafuli river	2,038	3,247	0
44		Betbunia	Karnafuli river	1,175	2,930	1,175
45		Langadu	Karnafuli river	5,239	1,977	0
46		Nannerchar	Karnafuli river	1,322	1,224	1,322
47		Rangamati Sadar	Karnafuli river	2,794	8,217	0
48		Rajasthali	Karnafuli river	0	1,547	741

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 1：Surface Irrigation Water Proportion for each Upazila (1/2)

Chattogram Division 2017-18

		DTW	STW	TW Total	LLP	Total	Groundwater %	Surface Water %
	Upazila	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)		
Chattogram District								
1	Sandip	0	0	0	0	0	0.00%	0.00%
2	Mirersharai	0	0	0	1,413	1,413	0.00%	100.00%
3	Sitakunda	0	0	0	106	106	0.00%	100.00%
4	D.muring	0	0	0	56	56	0.00%	100.00%
5	Panshlaish	0	0	0	350	350	0.00%	100.00%
6	Hathazari	15	2,130	2,145	3,295	5,440	39.43%	60.57%
7	FatikChari	20	3,182	3,202	3,480	6,682	47.92%	52.08%
8	Raujan	30	1,625	1,655	4,098	5,753	28.77%	71.23%
9	Rangunia	0	3,375	3,375	6,610	9,985	33.80%	66.20%
10	Boalkhali	80	1,258	1,338	815	2,153	62.15%	37.85%
11	Patiya	0	1,936	1,936	1,520	3,456	56.02%	43.98%
12	Chandanais	0	2,825	2,825	2,478	5,303	53.27%	46.73%
13	Lohagora	235	2,195	2,430	1,210	3,640	66.76%	33.24%
14	Satkania	156	2,202	2,358	3,365	5,723	41.20%	58.80%
15	BashKhali	135	4,885	5,020	1,200	6,220	80.71%	19.29%
16	Anowara	0	2,602	2,602	2,700	5,302	49.08%	50.92%
Total		671	28,215	28,886	32,696	61,582	46.91%	53.09%
Cox's Bazar District								
1	Chakaria	0	4,958	4,958	12,008	16,966	29.22%	70.78%
2	Paykua	0	570	570	6,000	6,570	8.68%	91.32%
3	Ramu	0	3,302	3,302	4,110	7,412	44.55%	55.45%
4	Sadar	400	5,143	5,543	3,070	8,613	64.36%	35.64%
5	Ukiya	0	4,000	4,000	646	4,646	86.10%	13.90%
6	Taknaf	0	1,520	1,520	105	1,625	93.54%	6.46%
7	Moheskhali	0	4,252	4,252	45	4,297	98.95%	1.05%
8	Kutubodia	0	2,541	2,541	400	2,941	86.40%	13.60%
Total		400	26,286	26,686	26,384	53,070	50.28%	49.72%
Rangamati District								
1	Sadar	0	0	0	786	786	0.00%	100.00%
2	Naniarchar	0	0	0	732	732	0.00%	100.00%
3	Kawakhali	0	0	0	762	762	0.00%	100.00%
4	Barkal	0	0	0	1,329	1,329	0.00%	100.00%
5	Juraichari	0	0	0	810	810	0.00%	100.00%
6	Longadu	0	0	0	2,378	2,378	0.00%	100.00%
7	Banghaichari	25	0	25	1,898	1,923	1.30%	98.70%
8	Kaptai	0	0	0	477	477	0.00%	100.00%
9	Rajesthali	0	0	0	409	409	0.00%	100.00%
10	Bilaichari	0	0	0	290	290	0.00%	100.00%
Total		25	0	25	9,871	9,896	0.25%	99.75%
Bandarban District								
1	Sadar	0	0	0	673	673	0.00%	100.00%
2	Roangchari	0	0	0	440	440	0.00%	100.00%
3	Ruma	0	0	0	173	173	0.00%	100.00%
4	Thanchi	0	0	0	571	571	0.00%	100.00%
5	Lama	0	321	321	1,327	1,648	19.48%	80.52%
6	Alikadam	0	30	30	977	1,007	2.98%	97.02%
7	Naikhangchari	0	165	165	861	1,026	16.08%	83.92%
Total		0	516	516	5,022	5,538	9.32%	90.68%
Total (4 districts)		1,096	55,017	56,113	73,973	130,086	43.14%	56.86%

Annex 3.2-2 Agricultural water demand

Attachment 1：Surface Irrigation Water Proportion for each Upazila (2/2)

Khagrachari District								
1	Sadar	0	0	0	1,420	1,420	0.00%	100.00%
2	Panchari	0	0	0	1,080	1,080	0.00%	100.00%
3	Dighinala	0	0	0	1,562	1,562	0.00%	100.00%
4	Mohalchari	0	0	0	1,541	1,541	0.00%	100.00%
5	Matiranga	0	0	0	1,525	1,525	0.00%	100.00%
6	Ramgarh	0	50	50	569	619	8.08%	91.92%
7	Manikchari	0	125	125	638	763	16.38%	83.62%
8	Lakshrnichari	0	0	0	753	753	0.00%	100.00%
Total		0	175	175	9,088	9,263	1.89%	98.11%

Source: Minor Irrigation Survey Report 2017-2018（BADC）

Annex 3.2-2 Agricultural water demand

Attachment 2：Typical Cropping Patterns in the Chattogram Region with the Occupancy Rate

List of cropping patterns in Chattogram Region, 2014-15. Source: Diversity of Cropping Systems in Chattogram Region (BRRI)

	Cropping pattern	Area (ha)	% of NCA	Cumulative %		Cropping pattern	Area (ha)	% of NCA
1	Boro – Fallow – T. Aman	150,280	23.52%		36	Boro – Vegetab – T. Aman	1,900	0.30%
2	Fallow – Fallow – T. Aman	125,600	19.66%	43.18%	37	Vegetab – Boro – Fallow	1,800	0.28%
3	Boro – Fallow – Fallow	48,710	7.62%	50.80%	38	Potato – Boro – T. Aman	1,650	0.26%
4	Grasspea – Fallow – T. Aman	30,640	4.80%	55.60%	39	Fallow – Vegetab – T. Aman	1,480	0.23%
5	Fallow – Aus – T. Aman	27,140	4.25%	59.84%	40	Fallow – Aus – Fallow	1,000	0.16%
6	Soybean – Aus – T. Aman	22,600	3.54%	63.38%	41	Boro – Aus – Fallow	900	0.14%
7	Soybean – Jute – T. Aman	19,400	3.04%	66.42%	42	Chilli – Aus – Fallow	770	0.12%
8	Soybean – Fallow – T. Aman	18,670	2.92%	69.34%	43	Pea – Fallow – T. Aman	730	0.11%
9	Vegetab – Fallow – T. Aman	17,715	2.77%	72.11%	44	Soybean – Aus – Fallow	700	0.11%
10	Grasspea – Aus – T. Aman	16,740	2.62%	74.73%	45	Vegetab – Groundnut – T. Aman	700	0.11%
11	Boro – Aus – T. Aman	16,070	2.52%	77.25%	46	Mustard – Boro – T. Aman	660	0.10%
12	Felon – Fallow – T. Aman	14,630	2.29%	79.54%	47	Tobacco – Sesbania	600	0.09%
13	Chilli – Fallow – T. Aman	9,450	1.48%	81.01%	48	Maize – Fallow – T. Aman	595	0.09%
14	Groundnut – Fallow – T. Aman	8,630	1.35%	**82.36%**	49	Garlic – Fallow – T. Aman	535	0.08%
15	Vegetab – Vegetab – T. Aman	8,505	1.33%		50	Lentil – Aus – T. Aman	500	0.08%
16	Groundnut – Aus – T. Aman	8,350	1.31%		51	Coriander – Fallow – T. Aman	475	0.07%
17	Vegetab – Boro – T. Aman	8,150	1.28%		52	Groundnut – Fallow – Fallow	440	0.07%
18	Mungbean – Aus – T. Aman	7,040	1.10%		53	Felon – Aus – Fallow	420	0.07%
19	Vegetab – Aus – T. Aman	5,500	0.86%		54	Tobacco – Fallow – T. Aman	400	0.06%
20	Vegetab – Vegetab – Vegetab	5,235	0.82%		55	Muskmelon – Fallow – T. Aman	345	0.05%
21	Felon – Aus – T. Aman	5,045	0.79%		56	Mustard – Aus – T. Aman	345	0.05%
22	Potato – Fallow – T. Aman	4,555	0.71%		57	Chilli – Fallow – Fallow	300	0.05%
23	S.Potato – Fallow – T. Aman	4,390	0.69%		58	S.Potato – Fallow – Fallow	300	0.05%
24	Mungbean – Fallow – T. Aman	4,335	0.68%		59	Mustard – Boro – Aus – T. Aman	270	0.04%
25	Soybean – B.Aman	4,300	0.67%		60	Felon – Fallow – Fallow	260	0.04%
26	Vegetab – Fallow – Fallow	3,920	0.61%		61	Coriander – Fallow – Fallow	250	0.04%
27	Vegetab – Aus – Fallow	2,900	0.45%		62	Grasspea – B.Aman	250	0.04%
28	Boro – B.Aman	2,850	0.45%		63	Vegetab – Boro – Aus – T. Aman	250	0.04%
29	W.Melon – Fallow – T. Aman	2,790	0.44%		64	Onion – Fallow – T. Aman	245	0.04%
30	Vegetab – Vegetab – Fallow	2,560	0.40%		65	Potato – Sesame – T. Aman	200	0.03%
31	Chilli – Aus – T. Aman	2,450	0.38%		66	W.Melon – Fallow – Fallow	195	0.03%
32	Lentil – Fallow – T. Aman	2,440	0.38%		67	Sesame – Fallow – T. Aman	175	0.03%
33	Mustard – Fallow – T. Aman	2,370	0.37%		68	Potato – Aus – T. Aman	165	0.03%
34	S.Potato – Aus – T. Aman	2,150	0.34%		69	Chilli – Vegetab – Fallow	130	0.02%
35	Soybean – Fallow – Fallow	2,000	0.31%		70-90	Other 24 patterns	910	0.14%
	Sub-total	618,110				Sub-total	20,845	
						Total	**638,955**	

Source: Diversity of Cropping Systems in Chittagon Region (BRRI: 2017)

Attachment 2'：Sample of Cropping Pattern and Demand Supply Gap According to Each Crop Season
(Sangu River Basin 2011)

Summary of Water Requirement (Sangu River Basin, Chattogram (Chattogram Observatory)) (Value with cropping ratio applied)

Month		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec		Annual
		I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	
Season		Rabi (Dry Season): Boro						Kharifu I (Pre Monsoon Season): Aus				K II		Kharif (Wet) Season										K II		
																Kharifu II (Monsoon Season): Aman								Rabi (Dry Season): Boro		
days		15	16	14	14	15	16	15	15	15	16	15	15	15	16	15	16	15	15	15	16	15	15	15	16	365
1. Evapotranspiration (Eto)	mm/day	3.1	4.3	4.5	4.8	5.9	4.9	5.1	4.8	5.5	4.3	4.7	3.0	4.4	4.0	3.4	4.0	3.9	4.0	4.0	4.0	4.1	3.9	3.6	3.2	
	mm	47	69	63	67	89	78	77	72	83	69	71	45	66	64	51	64	59	60	60	64	62	59	54	51	1,540
Gross Water Requirements (GWR)																										
1. Boro-Fallow-T. Aman (23.52%)	m^3/ha	254	370	335	351	441	129	334	207	0	0	0	0	0	0	0	0	0	0	238	270	277	268	255	627	4,358
2. Fallow-Fallow-T. Aman (19.66%)	m^3/ha	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	199	226	232	224	213	0	1,094
3. Boro-Fallow-Fallow (7.62%)	m^3/ha	82	120	108	114	143	42	108	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	203	988
4. Grasspea-Fallow-T. Aman (4.80%)	m^3/ha	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	55	57	55	52	0	267
5. Fallow-Aus-T. Aman (4.25%)	m^3/ha	0	0	0	0	0	63	65	39	23	0	0	0	0	0	0	0	0	0	43	49	50	48	46	0	427
6. Soybean-Aus-T. Aman (3.54%)	m^3/ha	32	47	43	18	23	52	54	33	19	0	0	0	0	0	0	0	0	0	36	41	42	40	38	0	518
7. Soybean-Jute-T. Aman (3.04%)	m^3/ha	27	40	37	15	20	0	39	18	3	0	0	0	0	0	0	0	0	0	31	35	36	35	33	0	369
8. Soybean-Fallow-T. Aman (2.92%)	m^3/ha	26	39	35	15	19	0	0	0	0	0	0	0	0	0	0	0	0	0	30	34	34	33	32	0	296
9. Vegetable-Fallow-T. Aman (2.77%)	m^3/ha	23	33	31	28	37	0	0	0	0	0	0	0	0	0	0	0	0	0	28	32	33	32	30	0	305
10. Grasspea-Aus-T. Aman (2.62%)	m^3/ha	0	0	0	0	0	39	40	24	14	0	0	0	0	0	0	0	0	0	27	30	31	30	28	0	263
11. Boro-Aus-T. Aman (2.52%)	m^3/ha	27	40	36	38	47	14	36	55	14	0	0	0	0	0	0	27	0	0	26	29	30	29	27	67	540
12. Felon-Fallow-T. Aman (2.29%)	m^3/ha	20	30	28	12	15	0	0	0	0	0	0	0	0	0	0	0	0	0	23	26	27	26	25	0	232
13. Chilli-Fallow-T. Aman (1.48%)	m^3/ha	13	20	18	7	10	0	0	0	0	0	0	0	0	0	0	0	0	0	15	17	17	17	16	0	150
Total (81.01%)	m^3/ha	505	738	670	597	756	338	675	444	73	0	0	0	0	0	0	27	0	0	744	844	866	838	796	898	9,808
Total (100.00%)	m^3/ha	623	911	827	738	933	417	833	548	91	0	0	0	0	0	0	33	0	0	918	1,042	1,068	1,034	982	1,108	12,107

Source: JICA Study Team

Attachment 3：Irrigated Land Area of each Upazila in Karunafuli River Basin

		Area (Topo Data)	Ir. Propotion	Irrigated Land	S. Ir. Propotion	S. Ir. Area
		Farm Land	Ir. Land/farm land			
District	Upazila	(ha)	(%)	(ha)	(%)	(ha)
Chattogram	Mirsharai	0.00	59.23	0.00	100.00	0.00
	Sitakunda	0.52	59.23	0.31	100.00	0.31
	D.muring	0.00	59.23	0.00	100.00	0.00
	Panshlaish	13.01	59.23	7.71	100.00	7.71
	Hathazari	10,070.37	59.23	5,964.68	60.57	3,612.81
	FatikChari	22,717.37	59.23	13,455.50	52.08	7,007.62
	Raujan	13,109.67	59.23	7,764.86	71.23	5,530.91
	Rangunia	15,420.13	59.23	9,133.34	66.20	6,046.27
	Boalkhali	1,721.87	59.23	1,019.86	37.85	386.02
	Patiya	2,806.64	59.23	1,662.37	43.98	731.11
	Chandanais	14.51	59.23	8.59	46.73	4.02
	Bakalia	192.54	59.23	114.04	19.29	22.00
	Bayejid Bostar	671.59	59.23	397.78	100.00	397.78
	Chandgaon	616.81	59.23	365.34	100.00	365.34
	Chittagong Po	0.00	59.23	0.00	100.00	0.00
	Khulshi	40.24	59.23	23.83	100.00	23.83
	Kotwali	21.50	59.23	12.73	100.00	12.73
	Patenga	4.04	59.23	2.39	100.00	2.39
Rangamati	Sadar	842.07	59.23	498.76	100.00	498.76
	Naniarchar	1,747.66	59.23	1,035.14	100.00	1,035.14
	Kawakhali	2,453.35	59.23	1,453.12	100.00	1,453.12
	Barkal	1,105.65	59.23	654.87	100.00	654.87
	Juraichari	1,126.90	59.23	667.47	100.00	667.47
	Longadu	2,298.19	59.23	1,361.22	100.00	1,361.22
	Banghaichari	6,208.02	59.23	3,677.01	98.70	3,629.21
	Kaptai	833.95	59.23	493.95	100.00	493.95
	Rajesthali	1,035.82	59.23	613.51	100.00	613.51
	Bilaichari	1,070.20	59.23	633.88	100.00	633.88
Bandarban	Sadar	593.76	59.23	351.68	100.00	351.68
	Roangchari	57.49	59.23	34.05	100.00	34.05
	Ruma	0.00	59.23	0.00	100.00	0.00
Khagrachari	Sadar	4,470.29	59.23	2,647.75	100.00	4,470.29
	Panchari	3,538.34	59.23	2,095.76	100.00	3,538.34
	Dighinala	7,892.75	59.23	4,674.88	100.00	7,892.75
	Mohalchari	3,493.01	59.23	2,068.91	100.00	3,493.01
	Matiranga	0.00	59.23	0.00	100.00	0.00
	Ramgarh	993.78	59.23	588.62	91.92	913.48
	Manikchari	2,786.42	59.23	1,650.40	83.62	2,330.00
	Lakshrnichari	1,107.21	59.23	655.80	100.00	1,107.21

S. Ir: Surface Irrigation

Source: JICA Study Team

Attachment 4：Irrigated Land Area of each Upazila in Sangu River Basin

		Area (Topo Data)	Ir. Propotion	Irrigated Land	S. Ir. Propotion	S. Ir. Area
		Farm Land	Ir. Land/farm land			
District	Upazila	(ha)	(%)	(ha)	(%)	(ha)
Chattogram	Rangunia	0.00	59.23	0.00	66.20	0.00
	Boalkhali	2,898.70	59.23	1,716.90	37.85	649.85
	Patiya	9,145.28	59.23	5,416.75	43.98	2,382.29
	Chandanais	7,303.28	59.23	4,325.73	46.73	2,021.41
	Lohagora	10,863.25	59.23	6,434.30	33.24	2,138.76
	Satkania	13,719.21	59.23	8,125.89	58.80	4,778.02
	BashKhali	1,100.57	59.23	651.87	19.29	125.75
	Anowara	5,333.50	59.23	3,159.03	50.92	1,608.58
Cox's Bazar	Chakaria	0.08	59.23	0.05	70.78	0.03
Rangamati	Belai Chhari	21.50	59.23	12.73	100.00	12.73
Bandarban	Sadar	1,924.27	59.23	1,139.74	100.00	1,139.74
	Roangchari	1,012.49	59.23	599.70	100.00	599.70
	Ruma	447.81	59.23	265.24	100.00	265.24
	Thanchi	822.96	59.23	487.44	100.00	487.44
	Lama	954.72	59.23	565.48	80.52	455.33
	Alikadam	0.00	59.23	0.00	97.02	0.00

S. Ir: Surface Irrigation

Source: JICA Study Team

Attachment 5：Irrigated Land Area of each Upazila in Matamhuri River Basin

		Area (Topo Data)	Ir. Propotion	Irrigated Land	S. Ir. Propotion	S. Ir. Area
		Farm Land	Ir. Land/farm land			
District	Upazila	(ha)	(%)	(ha)	(%)	(ha)
Chattogram						
	Lohagora	21.43	59.23	12.69	33.24	4.22
	BashKhali	0.00	59.23	0.00	19.29	0.00
Cox's Bazar						
	Chakaria	13,240.25	59.23	7,842.20	70.78	5,550.71
	Paykua	1,198.02	59.23	709.59	91.32	648.00
Rangamati						
Bandarban						
	Sadar	9.32	59.23	5.52	100	5.52
	Ruma	0	59.23	0	100	0.00
	Thanchi	0	59.23	0	100	0.00
	Lama	2,582.20	59.23	1,529.44	80.52	1,231.50
	Alikadam	67.15	59.23	39.772945	97.02	38.59
	Naikhangchari	19.22	59.23	11.38	83.92	9.55

S. Ir: Surface Irrigation

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 6：Irrigated Land Area of each Upazila in Bakkhali River Basin

		Area (Topo Data)	Ir. Propotion	Irrigated Land	S. Ir. Propotion	S. Ir. Area
		Farm Land	Ir. Land/farm land			
District	Upazila	(ha)	(%)	(ha)	(%)	(ha)
Chattogram						
Cox's Bazar						
	Chakaria	112.94	59.23	66.90	70.78	47.35
	Ramu	16,653.22	59.23	9,863.70	55.45	5,469.42
	Sadar	3,786.02	59.23	2,242.46	35.64	799.21
Rangamati						
Bandarban						
	Lama	5.54	59.23	3.28	80.52	2.64
	Alikadam	0	59.23	0.00	97.02	0.00
	Naikhangchari	1,513.74	59.23	896.59	83.92	752.42

S. Ir: Surface Irrigation

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 7：Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1/9) (1966 - 1971)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1966	1	0.0	0.0	0.0	0.0	1.6	3.1	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1966	2	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
1966	3	0.0	0.0	0.0	0.0	2.3	4.5	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1966	4	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1966	5	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1966	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	7	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1966	8	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1966	9	0.0	0.0	0.0	0.0	0.5	0.9	0.7	0.8	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6	0.3	0.0	0.1	0.2	0.1
1966	10	0.0	0.0	0.0	0.0	1.4	2.7	2.1	2.3	0.1	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.3
1966	11	0.0	0.0	0.0	0.0	2.3	4.6	3.6	3.9	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1966	12	0.0	0.0	0.0	0.0	1.8	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.3	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
1967	1	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	1.9	0.9	0.0	0.2	0.6	0.3
1967	2	0.0	0.0	0.0	0.0	1.9	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1967	3	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1967	4	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1967	5	0.0	0.0	0.0	0.0	0.6	1.1	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1967	6	0.0	0.0	0.0	0.0	0.4	0.9	0.7	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6	0.3	0.0	0.1	0.2	0.1
1967	7	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
1967	8	0.0	0.0	0.0	0.0	1.3	2.6	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
1967	9	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1967	10	0.0	0.0	0.0	0.0	1.1	2.1	1.7	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1967	11	0.0	0.0	0.0	0.0	2.6	5.1	4.1	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1967	12	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1968	1	0.0	0.0	0.0	0.0	1.8	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1968	2	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1968	3	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1968	4	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1968	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	7	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
1968	8	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1968	9	0.0	0.0	0.0	0.0	0.7	1.4	1.1	1.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
1968	10	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1968	11	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
1968	12	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1969	1	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
1969	2	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1969	3	0.0	0.0	0.0	0.0	2.4	4.6	3.6	3.9	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1969	4	0.0	0.0	0.0	0.0	1.0	2.0	1.6	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.2	0.4	0.2
1969	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	6	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1969	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	8	0.0	0.0	0.0	0.0	1.0	2.0	1.6	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.3	0.6	0.0	0.2	0.4	0.2
1969	9	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	10	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1969	11	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1969	12	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.3	0.3	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1970	1	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1970	2	0.0	0.0	0.0	0.0	1.4	2.7	2.1	2.3	0.1	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.3
1970	3	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1970	4	0.0	0.0	0.0	0.0	2.3	4.5	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1970	5	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.8	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.4	0.3	0.6	0.3	0.0	0.1	0.2	0.1
1970	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	8	0.0	0.0	0.0	0.0	1.8	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1970	9	0.0	0.0	0.0	0.0	0.6	1.2	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.8	0.4	0.0	0.1	0.2	0.1
1970	10	0.0	0.0	0.0	0.0	1.0	2.0	1.6	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.3	0.6	0.0	0.2	0.4	0.2
1970	11	0.0	0.0	0.0	0.0	1.4	2.6	2.1	2.3	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.2
1970	12	0.0	0.0	0.0	0.0	3.3	6.4	5.0	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1971	1	0.0	0.0	0.0	0.0	1.8	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.3	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1971	2	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1971	3	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1971	4	0.0	0.0	0.0	0.0	1.6	3.1	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1971	5	0.0	0.0	0.0	0.0	0.4	0.8	0.6	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.2	0.1
1971	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	7	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.2	0.0	0.0	0.1	0.0
1971	8	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1971	9	0.0	0.0	0.0	0.0	1.0	2.0	1.6	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.3	0.6	0.0	0.2	0.4	0.2
1971	10	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1971	11	0.0	0.0	0.0	0.0	2.2	4.2	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
1971	12	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 7：Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2/9) (1972 - 1977)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1972	1	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1972	2	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.1	2.6	1.1	0.0	0.3	0.8	0.4
1972	3	0.0	0.0	0.0	0.0	2.9	5.5	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1972	4	0.0	0.0	0.0	0.0	2.4	4.6	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1972	5	0.0	0.0	0.0	0.0	0.6	1.1	0.9	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1972	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1972	7	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1972	8	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.9	1.9	0.8	0.0	0.2	0.6	0.3
1972	9	0.0	0.0	0.0	0.0	2.1	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1972	10	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
1972	11	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1972	12	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1973	1	0.0	0.0	0.0	0.0	1.9	3.7	3.0	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1973	2	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1973	3	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1973	4	0.0	0.0	0.0	0.0	1.1	2.1	1.7	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1973	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	7	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	9	0.0	0.0	0.0	0.0	1.5	3.0	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1973	10	0.0	0.0	0.0	0.0	1.4	2.8	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.3	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.3
1973	11	0.0	0.0	0.0	0.0	1.1	2.0	1.6	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1973	12	0.0	0.0	0.0	0.0	3.4	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1974	1	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1974	2	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.8	0.4
1974	3	0.0	0.0	0.0	0.0	2.9	5.6	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1974	4	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.3	1.0	0.0	0.3	0.7	0.3
1974	5	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
1974	6	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
1974	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	8	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1974	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	10	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.8	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.4	0.3	0.6	0.3	0.0	0.1	0.2	0.1
1974	11	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1974	12	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1975	1	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1975	2	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1975	3	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1975	4	0.0	0.0	0.0	0.0	1.5	2.8	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.8	1.9	0.8	0.0	0.2	0.6	0.3
1975	5	0.0	0.0	0.0	0.0	0.6	1.1	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1975	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	8	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
1975	9	0.0	0.0	0.0	0.0	0.9	1.8	1.4	1.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.3	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.5	1.2	0.5	0.0	0.1	0.3	0.2
1975	10	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1975	11	0.0	0.0	0.0	0.0	1.4	2.8	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.5	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.8	1.9	0.8	0.0	0.2	0.6	0.3
1975	12	0.0	0.0	0.0	0.0	3.5	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1976	1	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1976	2	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1976	3	0.0	0.0	0.0	0.0	3.1	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1976	4	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
1976	5	0.0	0.0	0.0	0.0	0.3	0.6	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1976	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	8	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1976	9	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1976	10	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1976	11	0.0	0.0	0.0	0.0	1.6	3.1	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1976	12	0.0	0.0	0.0	0.0	3.5	6.9	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1977	1	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
1977	2	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
1977	3	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.5	1.2	0.5
1977	4	0.0	0.0	0.0	0.0	0.4	0.8	0.6	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.2	0.1
1977	5	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	8	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
1977	9	0.0	0.0	0.0	0.0	1.2	2.3	1.8	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1977	10	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
1977	11	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1977	12	0.0	0.0	0.0	0.0	3.6	6.9	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 7：Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (3/9) (1978 - 1983)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1978	1	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.1	2.6	1.1	0.0	0.3	0.8	0.4
1978	2	0.0	0.0	0.0	0.0	2.1	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1978	3	0.0	0.0	0.0	0.0	3.0	5.9	4.6	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
1978	4	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1978	5	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.2	0.0	0.0	0.1	0.0
1978	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	7	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
1978	8	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1978	9	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1978	10	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1978	11	0.0	0.0	0.0	0.0	3.2	6.3	5.0	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
1978	12	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1979	1	0.0	0.0	0.0	0.0	2.0	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1979	2	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1979	3	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1979	4	0.0	0.0	0.0	0.0	2.3	4.5	3.6	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1979	5	0.0	0.0	0.0	0.0	0.3	0.6	0.5	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1979	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	9	0.0	0.0	0.0	0.0	0.4	0.7	0.6	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.4	0.0	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
1979	10	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1979	11	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1979	12	0.0	0.0	0.0	0.0	3.1	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1980	1	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1980	2	0.0	0.0	0.0	0.0	1.3	2.5	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.7	0.7	0.0	0.2	0.5	0.2
1980	3	0.0	0.0	0.0	0.0	2.1	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1980	4	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
1980	5	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1980	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	8	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1980	9	0.0	0.0	0.0	0.0	0.4	0.8	0.6	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.2	0.1
1980	10	0.0	0.0	0.0	0.0	0.7	1.4	1.1	1.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
1980	11	0.0	0.0	0.0	0.0	3.3	6.3	5.0	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
1980	12	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1981	1	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1981	2	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1981	3	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1981	4	0.0	0.0	0.0	0.0	0.4	0.7	0.6	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
1981	5	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.1	0.0	0.0	0.1	0.0
1981	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	7	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1981	8	0.0	0.0	0.0	0.0	2.8	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1981	9	0.0	0.0	0.0	0.0	0.7	1.3	1.1	1.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
1981	10	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1981	11	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
1981	12	0.0	0.0	0.0	0.0	3.8	7.3	5.8	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.4	0.7
1982	1	0.0	0.0	0.0	0.0	2.1	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1982	2	0.0	0.0	0.0	0.0	1.5	2.8	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.5	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.8	1.9	0.8	0.0	0.2	0.6	0.3
1982	3	0.0	0.0	0.0	0.0	3.3	6.3	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
1982	4	0.0	0.0	0.0	0.0	2.3	4.4	3.4	3.8	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1982	5	0.0	0.0	0.0	0.0	0.6	1.2	1.0	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.8	0.4	0.0	0.1	0.2	0.1
1982	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	7	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1982	8	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1982	9	0.0	0.0	0.0	0.0	0.5	0.9	0.7	0.8	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6	0.3	0.0	0.1	0.2	0.1
1982	10	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1982	11	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.3	0.3	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.9	4.1	1.8	0.0	0.5	1.2	0.6
1982	12	0.0	0.0	0.0	0.0	3.8	7.4	5.9	6.4	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1983	1	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1983	2	0.0	0.0	0.0	0.0	1.8	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1983	3	0.0	0.0	0.0	0.0	2.1	4.1	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1983	4	0.0	0.0	0.0	0.0	1.0	1.9	1.5	1.6	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.1	0.4	0.2
1983	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	6	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1983	7	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1983	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	9	0.0	0.0	0.0	0.0	1.2	2.3	1.8	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1983	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	11	0.0	0.0	0.0	0.0	1.0	2.0	1.6	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.2	0.4	0.2
1983	12	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 7：Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (4/9) (1984 - 1989)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1984	1	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1984	2	0.0	0.0	0.0	0.0	2.3	4.5	3.6	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1984	3	0.0	0.0	0.0	0.0	3.3	6.3	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
1984	4	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
1984	5	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1984	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	7	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1984	8	0.0	0.0	0.0	0.0	1.1	2.2	1.8	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1984	9	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1984	10	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1984	11	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1984	12	0.0	0.0	0.0	0.0	4.0	7.7	6.1	6.6	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1985	1	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.8	0.4
1985	2	0.0	0.0	0.0	0.0	2.3	4.5	3.5	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1985	3	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
1985	4	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1985	5	0.0	0.0	0.0	0.0	0.3	0.6	0.5	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1985	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	7	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1985	8	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1985	9	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1985	10	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1985	11	0.0	0.0	0.0	0.0	1.7	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1985	12	0.0	0.0	0.0	0.0	3.9	7.5	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1986	1	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
1986	2	0.0	0.0	0.0	0.0	2.3	4.5	3.5	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1986	3	0.0	0.0	0.0	0.0	3.5	6.8	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1986	4	0.0	0.0	0.0	0.0	1.6	3.2	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1986	5	0.0	0.0	0.0	0.0	0.6	1.2	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.4	0.8	0.3	0.0	0.1	0.2	0.1
1986	6	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1986	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1986	8	0.0	0.0	0.0	0.0	2.3	4.4	3.4	3.8	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1986	9	0.0	0.0	0.0	0.0	0.4	0.7	0.5	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.4	0.0	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
1986	10	0.0	0.0	0.0	0.0	2.1	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1986	11	0.0	0.0	0.0	0.0	1.6	3.1	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1986	12	0.0	0.0	0.0	0.0	4.0	7.8	6.1	6.7	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.5	0.7
1987	1	0.0	0.0	0.0	0.0	1.9	3.8	3.0	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1987	2	0.0	0.0	0.0	0.0	1.7	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1987	3	0.0	0.0	0.0	0.0	2.1	4.1	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1987	4	0.0	0.0	0.0	0.0	0.3	0.6	0.5	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1987	5	0.0	0.0	0.0	0.0	0.6	1.2	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.4	0.8	0.3	0.0	0.1	0.2	0.1
1987	6	0.0	0.0	0.0	0.0	0.4	0.7	0.6	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
1987	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	8	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1987	9	0.0	0.0	0.0	0.0	1.0	1.9	1.5	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.1	0.4	0.2
1987	10	0.0	0.0	0.0	0.0	3.7	7.3	5.7	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1987	11	0.0	0.0	0.0	0.0	1.4	2.7	2.1	2.3	0.1	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.3
1987	12	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1988	1	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1988	2	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1988	3	0.0	0.0	0.0	0.0	2.3	4.5	3.6	3.9	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1988	4	0.0	0.0	0.0	0.0	1.1	2.1	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1988	5	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
1988	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	8	0.0	0.0	0.0	0.0	0.6	1.2	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.8	0.4	0.0	0.1	0.2	0.1
1988	9	0.0	0.0	0.0	0.0	0.6	1.1	0.9	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1988	10	0.0	0.0	0.0	0.0	1.4	2.8	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.8	1.9	0.8	0.0	0.2	0.6	0.3
1988	11	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
1988	12	0.0	0.0	0.0	0.0	3.8	7.3	5.8	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.4	0.7
1989	1	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
1989	2	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1989	3	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1989	4	0.0	0.0	0.0	0.0	1.5	3.0	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.2	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1989	5	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1989	6	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1989	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	8	0.0	0.0	0.0	0.0	4.7	9.0	7.1	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
1989	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	11	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.0	0.5
1989	12	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 7：Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (5/9) (1990 - 1995)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1990	1	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
1990	2	0.0	0.0	0.0	0.0	2.1	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1990	3	0.0	0.0	0.0	0.0	1.9	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1990	4	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1990	5	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
1990	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	8	0.0	0.0	0.0	0.0	4.7	9.0	7.1	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
1990	9	0.0	0.0	0.0	0.0	0.7	1.3	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.8	0.4	0.0	0.1	0.3	0.1
1990	10	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
1990	11	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1990	12	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1991	1	0.0	0.0	0.0	0.0	2.1	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1991	2	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1991	3	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1991	4	0.0	0.0	0.0	0.0	1.2	2.2	1.8	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1991	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	8	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1991	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	10	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1991	11	0.0	0.0	0.0	0.0	1.7	3.2	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.2	0.6	0.3
1991	12	0.0	0.0	0.0	0.0	4.0	7.8	6.1	6.7	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.5	0.7
1992	1	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1992	2	0.0	0.0	0.0	0.0	1.2	2.4	1.9	2.1	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1992	3	0.0	0.0	0.0	0.0	3.5	6.9	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.3	0.6
1992	4	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1992	5	0.0	0.0	0.0	0.0	0.6	1.1	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.8	0.3	0.0	0.1	0.2	0.1
1992	6	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1992	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	8	0.0	0.0	0.0	0.0	3.3	6.3	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
1992	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	10	0.0	0.0	0.0	0.0	1.3	2.6	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
1992	11	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1992	12	0.0	0.0	0.0	0.0	3.9	7.6	6.0	6.6	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1993	1	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1993	2	0.0	0.0	0.0	0.0	1.3	2.4	1.9	2.1	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1993	3	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1993	4	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1993	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	7	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1993	8	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1993	9	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1993	10	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1993	11	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1993	12	0.0	0.0	0.0	0.0	4.4	8.5	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.7	2.5	0.0	0.7	1.7	0.8
1994	1	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1994	2	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1994	3	0.0	0.0	0.0	0.0	1.9	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1994	4	0.0	0.0	0.0	0.0	0.6	1.2	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.8	0.4	0.0	0.1	0.2	0.1
1994	5	0.0	0.0	0.0	0.0	0.8	1.6	1.3	1.4	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.2	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.1
1994	6	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1994	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	8	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.5
1994	9	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1994	10	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.5
1994	11	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1994	12	0.0	0.0	0.0	0.0	4.4	8.5	6.7	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
1995	1	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1995	2	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1995	3	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1995	4	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1995	5	0.0	0.0	0.0	0.0	0.4	0.8	0.7	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.6	0.2	0.0	0.1	0.2	0.1
1995	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	8	0.0	0.0	0.0	0.0	1.5	3.0	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.2	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1995	9	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	1.9	0.9	0.0	0.2	0.6	0.3
1995	10	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1995	11	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	12	0.0	0.0	0.0	0.0	4.5	8.7	6.9	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 7：Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (6/9) (1996 - 2001)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1996	1	0.0	0.0	0.0	0.0	2.4	4.6	3.6	3.9	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1996	2	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.5	3.5	1.5	0.0	0.4	1.0	0.5
1996	3	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1996	4	0.0	0.0	0.0	0.0	2.3	4.5	3.6	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1996	5	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1996	6	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
1996	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	8	0.0	0.0	0.0	0.0	0.2	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1996	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	10	0.0	0.0	0.0	0.0	1.5	3.0	2.3	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1996	11	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1996	12	0.0	0.0	0.0	0.0	4.5	8.7	6.9	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
1997	1	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1997	2	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1997	3	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1997	4	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1997	5	0.0	0.0	0.0	0.0	0.4	0.8	0.7	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6	0.2	0.0	0.1	0.2	0.1
1997	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	8	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1997	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	10	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1997	11	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1997	12	0.0	0.0	0.0	0.0	4.3	8.3	6.5	7.1	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
1998	1	0.0	0.0	0.0	0.0	2.1	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1998	2	0.0	0.0	0.0	0.0	1.7	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1998	3	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1998	4	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
1998	5	0.0	0.0	0.0	0.0	0.4	0.8	0.6	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.2	0.1
1998	6	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1998	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	8	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1998	9	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1998	10	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1998	11	0.0	0.0	0.0	0.0	3.7	7.3	5.7	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.9	2.1	0.0	0.6	1.4	0.7
1998	12	0.0	0.0	0.0	0.0	4.9	9.4	7.4	8.1	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
1999	1	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1999	2	0.0	0.0	0.0	0.0	3.2	6.3	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
1999	3	0.0	0.0	0.0	0.0	4.3	8.4	6.6	7.2	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.6	1.7	0.8
1999	4	0.0	0.0	0.0	0.0	4.1	8.0	6.3	6.9	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1999	5	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1999	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	8	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
1999	9	0.0	0.0	0.0	0.0	1.0	1.9	1.5	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.1	0.4	0.2
1999	10	0.0	0.0	0.0	0.0	1.5	3.0	2.3	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1999	11	0.0	0.0	0.0	0.0	4.3	8.4	6.6	7.2	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.6	1.6	0.8
1999	12	0.0	0.0	0.0	0.0	2.8	5.5	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
2000	1	0.0	0.0	0.0	0.0	2.2	4.2	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
2000	2	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
2000	3	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2000	4	0.0	0.0	0.0	0.0	1.3	2.6	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
2000	5	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.2	0.0	0.0	0.1	0.0
2000	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	7	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.2	0.0	0.0	0.1	0.0
2000	8	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2000	9	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2000	10	0.0	0.0	0.0	0.0	1.1	2.1	1.7	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
2000	11	0.0	0.0	0.0	0.0	3.2	6.1	4.9	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2000	12	0.0	0.0	0.0	0.0	4.8	9.3	7.4	8.1	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.8	0.0	0.7	1.8	0.9
2001	1	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2001	2	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2001	3	0.0	0.0	0.0	0.0	4.2	8.2	6.5	7.1	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
2001	4	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
2001	5	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
2001	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	8	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
2001	9	0.0	0.0	0.0	0.0	1.2	2.3	1.8	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.5	0.7	0.0	0.2	0.4	0.2
2001	10	0.0	0.0	0.0	0.0	1.3	2.6	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
2001	11	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2001	12	0.0	0.0	0.0	0.0	5.0	9.7	7.6	8.3	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.9	0.0	0.7	1.9	0.9

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 7：Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (7/9) (2002 - 2007)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2002	1	0.0	0.0	0.0	0.0	2.6	5.1	4.1	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2002	2	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2002	3	0.0	0.0	0.0	0.0	3.8	7.3	5.8	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.4	0.7
2002	4	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
2002	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	6	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	8	0.0	0.0	0.0	0.0	1.8	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2002	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	10	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.3	0.6
2002	11	0.0	0.0	0.0	0.0	2.0	3.9	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
2002	12	0.0	0.0	0.0	0.0	4.8	9.3	7.3	8.0	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.7	0.0	0.7	1.8	0.9
2003	1	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2003	2	0.0	0.0	0.0	0.0	3.1	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2003	3	0.0	0.0	0.0	0.0	3.6	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2003	4	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2003	5	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2003	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	7	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2003	8	0.0	0.0	0.0	0.0	4.2	8.2	6.5	7.1	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
2003	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	10	0.0	0.0	0.0	0.0	3.2	6.3	5.0	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
2003	11	0.0	0.0	0.0	0.0	4.6	8.9	7.0	7.7	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	5.9	2.6	0.0	0.7	1.8	0.8
2003	12	0.0	0.0	0.0	0.0	4.0	7.7	6.0	6.6	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
2004	1	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2004	2	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2004	3	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2004	4	0.0	0.0	0.0	0.0	1.1	2.2	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
2004	5	0.0	0.0	0.0	0.0	0.8	1.5	1.2	1.3	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.5	1.0	0.5	0.0	0.1	0.3	0.1
2004	6	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
2004	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	8	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2004	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	10	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2004	11	0.0	0.0	0.0	0.0	4.5	8.8	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
2004	12	0.0	0.0	0.0	0.0	5.1	10.0	7.9	8.6	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	0.9	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.6	2.9	0.0	0.8	2.0	0.9
2005	1	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
2005	2	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2005	3	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2005	4	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
2005	5	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
2005	6	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.1	0.0	0.0	0.1	0.0
2005	7	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2005	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	9	0.0	0.0	0.0	0.0	0.7	1.4	1.1	1.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
2005	10	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
2005	11	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2005	12	0.0	0.0	0.0	0.0	5.1	9.8	7.8	8.5	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.6	2.9	0.0	0.8	1.9	0.9
2006	1	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
2006	2	0.0	0.0	0.0	0.0	3.0	5.9	4.6	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
2006	3	0.0	0.0	0.0	0.0	4.4	8.5	6.7	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
2006	4	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
2006	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	8	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.5	3.5	1.5	0.0	0.4	1.0	0.5
2006	9	0.0	0.0	0.0	0.0	1.3	2.5	2.0	2.1	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.7	0.7	0.0	0.2	0.5	0.2
2006	10	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2006	11	0.0	0.0	0.0	0.0	3.8	7.3	5.7	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.9	2.1	0.0	0.6	1.4	0.7
2006	12	0.0	0.0	0.0	0.0	5.1	9.8	7.7	8.5	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	1.9	0.9
2007	1	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2007	2	0.0	0.0	0.0	0.0	1.7	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
2007	3	0.0	0.0	0.0	0.0	3.7	7.3	5.7	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.9	2.1	0.0	0.6	1.4	0.7
2007	4	0.0	0.0	0.0	0.0	1.4	2.7	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.3
2007	5	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
2007	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	8	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.1	0.0	0.5	1.4	0.7
2007	9	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	1.9	0.9	0.0	0.2	0.6	0.3
2007	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	11	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2007	12	0.0	0.0	0.0	0.0	5.1	9.8	7.8	8.5	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.6	2.9	0.0	0.8	1.9	0.9

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 7：Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (8/9) (2008 - 2013)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2008	1	0.0	0.0	0.0	0.0	2.1	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2008	2	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.5	1.1	0.5
2008	3	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2008	4	0.0	0.0	0.0	0.0	4.4	8.5	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.7	2.5	0.0	0.7	1.7	0.8
2008	5	0.0	0.0	0.0	0.0	0.6	1.3	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.8	0.4	0.0	0.1	0.2	0.1
2008	6	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
2008	7	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
2008	8	0.0	0.0	0.0	0.0	4.1	7.9	6.2	6.8	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
2008	9	0.0	0.0	0.0	0.0	1.8	3.5	2.7	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2008	10	0.0	0.0	0.0	0.0	1.4	2.6	2.1	2.3	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
2008	11	0.0	0.0	0.0	0.0	3.9	7.6	6.0	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.0	2.2	0.0	0.6	1.5	0.7
2008	12	0.0	0.0	0.0	0.0	5.1	10.0	7.9	8.6	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	0.9	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	2.9	0.0	0.8	2.0	0.9
2009	1	0.0	0.0	0.0	0.0	3.0	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
2009	2	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2009	3	0.0	0.0	0.0	0.0	4.4	8.5	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.7	2.5	0.0	0.7	1.7	0.8
2009	4	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.3	0.6
2009	5	0.0	0.0	0.0	0.0	0.5	0.9	0.7	0.8	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6	0.3	0.0	0.1	0.2	0.1
2009	6	0.0	0.0	0.0	0.0	0.4	0.7	0.6	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
2009	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	8	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
2009	9	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
2009	10	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2009	11	0.0	0.0	0.0	0.0	3.3	6.4	5.0	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2009	12	0.0	0.0	0.0	0.0	5.3	10.3	8.1	8.8	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.1	6.8	3.0	0.0	0.8	2.0	1.0
2010	1	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2010	2	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2010	3	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
2010	4	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2010	5	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
2010	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	8	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
2010	9	0.0	0.0	0.0	0.0	1.7	3.2	2.5	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.1	0.9	0.0	0.2	0.6	0.3
2010	10	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.8	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.4	0.3	0.6	0.3	0.0	0.1	0.2	0.1
2010	11	0.0	0.0	0.0	0.0	3.5	6.8	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2010	12	0.0	0.0	0.0	0.0	4.9	9.5	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
2011	1	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2011	2	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2011	3	0.0	0.0	0.0	0.0	4.0	7.8	6.1	6.7	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.5	0.7
2011	4	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.5	1.2	0.5
2011	5	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
2011	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	8	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2011	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	10	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2011	11	0.0	0.0	0.0	0.0	4.8	9.3	7.3	8.0	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.7	0.0	0.7	1.8	0.9
2011	12	0.0	0.0	0.0	0.0	5.3	10.3	8.1	8.9	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.0	0.0	0.8	2.0	1.0
2012	1	0.0	0.0	0.0	0.0	3.0	5.7	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2012	2	0.0	0.0	0.0	0.0	3.5	6.8	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2012	3	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
2012	4	0.0	0.0	0.0	0.0	0.9	1.7	1.3	1.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.3	0.9	0.1	0.1	0.2	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.2
2012	5	0.0	0.0	0.0	0.0	0.4	0.7	0.6	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
2012	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	8	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
2012	9	0.0	0.0	0.0	0.0	0.5	0.9	0.7	0.8	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6	0.3	0.0	0.1	0.2	0.1
2012	10	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2012	11	0.0	0.0	0.0	0.0	4.0	7.7	6.1	6.7	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
2012	12	0.0	0.0	0.0	0.0	5.4	10.4	8.2	9.0	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	7.0	3.1	0.0	0.8	2.1	1.0
2013	1	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
2013	2	0.0	0.0	0.0	0.0	3.2	6.3	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
2013	3	0.0	0.0	0.0	0.0	4.6	8.8	7.0	7.6	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.7	0.8
2013	4	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2013	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	6	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
2013	7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	8	0.0	0.0	0.0	0.0	4.6	9.0	7.1	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.7	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
2013	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	10	0.0	0.0	0.0	0.0	1.2	2.4	1.9	2.1	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
2013	11	0.0	0.0	0.0	0.0	4.7	9.0	7.1	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
2013	12	0.0	0.0	0.0	0.0	5.3	10.4	8.2	8.9	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.1	0.0	0.8	2.0	1.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 7：Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (9/9) (2014 - 2019)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2014	1	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2014	2	0.0	0.0	0.0	0.0	2.8	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2014	3	0.0	0.0	0.0	0.0	4.4	8.5	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
2014	4	0.0	0.0	0.0	0.0	4.5	8.7	6.9	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
2014	5	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
2014	6	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
2014	7	0.0	0.0	0.0	0.0	0.4	0.8	0.6	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
2014	8	0.0	0.0	0.0	0.0	3.1	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2014	9	0.0	0.0	0.0	0.0	1.1	2.1	1.6	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
2014	10	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
2014	11	0.0	0.0	0.0	0.0	4.5	8.8	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.7	0.8
2014	12	0.0	0.0	0.0	0.0	5.4	10.5	8.3	9.0	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	4.0	3.1	7.0	3.1	0.0	0.8	2.1	1.0
2015	1	0.0	0.0	0.0	0.0	3.4	6.5	5.2	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2015	2	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2015	3	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
2015	4	0.0	0.0	0.0	0.0	0.4	0.7	0.5	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.4	0.0	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
2015	5	0.0	0.0	0.0	0.0	0.7	1.3	1.1	1.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
2015	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	8	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
2015	9	0.0	0.0	0.0	0.0	0.7	1.4	1.1	1.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
2015	10	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2015	11	0.0	0.0	0.0	0.0	4.5	8.7	6.9	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
2015	12	0.0	0.0	0.0	0.0	5.2	10.1	8.0	8.7	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
2016	1	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.0	0.5
2016	2	0.0	0.0	0.0	0.0	1.7	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2016	3	0.0	0.0	0.0	0.0	4.4	8.5	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
2016	4	0.0	0.0	0.0	0.0	4.1	7.9	6.2	6.8	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.2	2.3	0.0	0.6	1.5	0.7
2016	5	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.2	0.0	0.0	0.1	0.0
2016	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	8	0.0	0.0	0.0	0.0	4.5	8.7	6.8	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
2016	9	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
2016	10	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2016	11	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
2016	12	0.0	0.0	0.0	0.0	5.6	10.9	8.6	9.4	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.7	0.8	1.0	1.0	0.5	0.1	0.0	4.1	3.3	7.3	3.2	0.0	0.8	2.1	1.0
2017	1	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2017	2	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2017	3	0.0	0.0	0.0	0.0	2.8	5.4	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2017	4	0.0	0.0	0.0	0.0	1.3	2.5	1.9	2.1	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
2017	5	0.0	0.0	0.0	0.0	0.6	1.2	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.8	0.4	0.0	0.1	0.2	0.1
2017	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	8	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
2017	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	10	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
2017	11	0.0	0.0	0.0	0.0	4.3	8.3	6.6	7.2	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.1	2.5	5.6	2.5	0.0	0.6	1.6	0.8
2017	12	0.0	0.0	0.0	0.0	4.8	9.2	7.3	8.0	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.6	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.1	2.7	0.0	0.7	1.8	0.9
2018	1	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
2018	2	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2018	3	0.0	0.0	0.0	0.0	4.5	8.8	7.0	7.6	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.7	0.8
2018	4	0.0	0.0	0.0	0.0	0.8	1.6	1.3	1.4	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.2
2018	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	8	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2018	9	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2018	10	0.0	0.0	0.0	0.0	0.8	1.5	1.2	1.3	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.4	1.0	0.4	0.0	0.1	0.3	0.1
2018	11	0.0	0.0	0.0	0.0	4.9	9.5	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
2018	12	0.0	0.0	0.0	0.0	4.9	9.4	7.4	8.1	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
2019	1	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2019	2	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	1.0	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.4	0.0	0.4	1.0	0.5
2019	3	0.0	0.0	0.0	0.0	4.3	8.3	6.6	7.2	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.1	2.5	5.5	2.5	0.0	0.6	1.6	0.8
2019	4	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
2019	5	0.0	0.0	0.0	0.0	0.5	1.1	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
2019	6	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2019	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	8	0.0	0.0	0.0	0.0	1.0	2.0	1.6	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.3	0.6	0.0	0.2	0.4	0.2
2019	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	10	0.0	0.0	0.0	0.0	1.5	2.8	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.5	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.8	1.9	0.8	0.0	0.2	0.6	0.3
2019	11	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2019	12	0.0	0.0	0.0	0.0	5.6	10.9	8.6	9.4	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.7	0.8	1.0	1.0	0.5	0.1	0.0	4.1	3.3	7.3	3.2	0.0	0.8	2.2	1.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 8：Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s)
(1/9) (1966 - 1971)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1966	1	0.0	0.2	0.9	0.8	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1966	2	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1966	3	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1966	4	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1966	5	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1966	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	9	0.0	0.1	0.3	0.3	0.3	0.6	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0
1966	10	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1966	11	0.0	0.5	1.8	1.6	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1966	12	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1967	1	0.0	0.3	1.1	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1967	2	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1967	3	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1967	4	0.0	0.2	0.9	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1967	5	0.0	0.1	0.3	0.3	0.3	0.7	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1967	6	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1967	7	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1967	8	0.0	0.1	0.3	0.3	0.3	0.6	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0
1967	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1967	10	0.0	0.2	0.8	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1967	11	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1967	12	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1968	1	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1968	2	0.0	0.3	1.2	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1968	3	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1968	4	0.0	0.3	1.2	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1968	5	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	7	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	9	0.0	0.2	0.9	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1968	10	0.0	0.5	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1968	11	0.0	0.5	1.9	1.6	1.7	3.7	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1968	12	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1969	1	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1969	2	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1969	3	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1969	4	0.0	0.2	0.8	0.7	0.7	1.6	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1969	5	0.0	0.1	0.5	0.4	0.4	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1969	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	10	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1969	11	0.0	0.3	1.0	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1969	12	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1970	1	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1970	2	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1970	3	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1970	4	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1970	5	0.0	0.1	0.3	0.2	0.2	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0
1970	6	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	8	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1970	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	11	0.0	0.2	0.9	0.7	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1970	12	0.0	0.6	2.2	1.8	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1971	1	0.0	0.3	1.2	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1971	2	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1971	3	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1971	4	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1971	5	0.0	0.1	0.5	0.4	0.4	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1971	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	10	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1971	11	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1971	12	0.0	0.6	2.3	1.9	2.0	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 8：Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s)
(2/9) (1972 - 1977)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1972	1	0.0	0.4	1.4	1.2	1.2	2.8	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0
1972	2	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1972	3	0.0	0.5	1.8	1.6	1.7	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1972	4	0.0	0.2	0.7	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1972	5	0.0	0.1	0.3	0.3	0.3	0.6	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0
1972	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1972	7	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1972	8	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1972	9	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1972	10	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1972	11	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1972	12	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1973	1	0.0	0.3	1.2	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1973	2	0.0	0.3	1.2	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1973	3	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1973	4	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1973	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	7	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	8	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1973	9	0.0	0.1	0.5	0.4	0.4	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1973	10	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1973	11	0.0	0.2	0.6	0.5	0.5	1.1	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.0
1973	12	0.0	0.5	1.8	1.6	1.7	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1974	1	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1974	2	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1974	3	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1974	4	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1974	5	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	8	0.0	0.3	1.0	0.8	0.9	1.9	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1974	9	0.0	0.1	0.3	0.2	0.2	0.6	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0
1974	10	0.0	0.3	0.9	0.8	0.9	1.9	0.1	0.6	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1974	11	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1974	12	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1975	1	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1975	2	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1975	3	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1975	4	0.0	0.4	1.4	1.2	1.2	2.7	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0
1975	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	8	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1975	9	0.0	0.1	0.5	0.5	0.5	1.1	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.0
1975	10	0.0	0.1	0.4	0.4	0.4	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1975	11	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1975	12	0.0	0.6	2.4	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1976	1	0.0	0.4	1.4	1.2	1.3	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1976	2	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1976	3	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1976	4	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1976	5	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1976	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	8	0.0	0.1	0.3	0.3	0.3	0.6	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1976	9	0.0	0.4	1.4	1.2	1.3	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1976	10	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1976	11	0.0	0.3	1.1	0.9	1.0	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1976	12	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1977	1	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1977	2	0.0	0.3	1.2	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1977	3	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1977	4	0.0	0.1	0.4	0.4	0.4	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1977	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	9	0.0	0.3	1.0	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1977	10	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1977	11	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1977	12	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 8：Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s)
(3/9) (1978 - 1983)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1978	1	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1978	2	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1978	3	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1978	4	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1978	5	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1978	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	7	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	8	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1978	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	10	0.0	0.2	0.7	0.6	0.6	1.3	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1978	11	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1978	12	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1979	1	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1979	2	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1979	3	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1979	4	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1979	5	0.0	0.1	0.5	0.4	0.5	1.0	0.0	0.4	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1979	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	8	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1979	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	10	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1979	11	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1979	12	0.0	0.6	2.3	1.9	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1980	1	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1980	2	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1980	3	0.0	0.5	1.7	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1980	4	0.0	0.5	1.8	1.6	1.7	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1980	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	6	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	8	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	9	0.0	0.2	0.7	0.6	0.6	1.3	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1980	10	0.0	0.1	0.3	0.3	0.3	0.6	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0
1980	11	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1980	12	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1981	1	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1981	2	0.0	0.5	1.7	1.5	1.5	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1981	3	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1981	4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	5	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1981	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	8	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1981	9	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1981	10	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1981	11	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1981	12	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1982	1	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1982	2	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1982	3	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1982	4	0.0	0.1	0.4	0.3	0.4	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1982	5	0.0	0.2	0.6	0.5	0.6	1.3	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1982	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	7	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1982	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	10	0.0	0.7	2.7	2.3	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1982	11	0.0	0.5	1.8	1.6	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1982	12	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1983	1	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1983	2	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1983	3	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1983	4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	5	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1983	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	9	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1983	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	11	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1983	12	0.0	0.7	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 8：Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s)
(4/9) (1984 - 1989)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1984	1	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1984	2	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
1984	3	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1984	4	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1984	5	0.0	0.1	0.3	0.3	0.3	0.6	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1984	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	8	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1984	9	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1984	10	0.0	0.2	0.7	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1984	11	0.0	0.7	2.6	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1984	12	0.0	0.7	2.7	2.3	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1985	1	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1985	2	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
1985	3	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1985	4	0.0	0.3	1.2	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1985	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	8	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1985	9	0.0	0.2	0.8	0.7	0.7	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1985	10	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1985	11	0.0	0.4	1.4	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.2	0.3	0.3	0.0
1985	12	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1986	1	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1986	2	0.0	0.5	1.8	1.5	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1986	3	0.0	0.7	2.5	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1986	4	0.0	0.3	0.9	0.8	0.8	1.9	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1986	5	0.0	0.1	0.3	0.3	0.3	0.6	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1986	6	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1986	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1986	8	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1986	9	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1986	10	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1986	11	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1986	12	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1987	1	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1987	2	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1987	3	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1987	4	0.0	0.2	0.7	0.6	0.6	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1987	5	0.0	0.2	0.7	0.6	0.6	1.3	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1987	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	8	0.0	0.6	2.1	1.8	1.9	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1987	9	0.0	0.2	0.9	0.7	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1987	10	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1987	11	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1987	12	0.0	0.8	2.8	2.4	2.5	5.7	0.1	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.5	0.0
1988	1	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1988	2	0.0	0.4	1.4	1.2	1.3	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1988	3	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.4	0.4	0.0
1988	4	0.0	0.2	0.9	0.7	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1988	5	0.0	0.1	0.2	0.2	0.2	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1988	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	7	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	8	0.0	0.1	0.3	0.2	0.2	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0
1988	9	0.0	0.2	0.7	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1988	10	0.0	0.1	0.4	0.3	0.3	0.7	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1988	11	0.0	0.7	2.5	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1988	12	0.0	0.8	2.9	2.5	2.6	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1989	1	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
1989	2	0.0	0.5	1.7	1.5	1.5	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1989	3	0.0	0.7	2.5	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1989	4	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1989	5	0.0	0.1	0.5	0.4	0.5	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1989	6	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	8	0.0	1.3	4.6	3.9	4.1	9.3	0.2	3.1	0.0	0.0	2.2	1.2	0.5	0.9	0.9	0.0
1989	9	0.0	0.2	0.8	0.7	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1989	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	11	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1989	12	0.0	0.8	2.9	2.4	2.6	5.8	0.2	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 8：Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s)
(5/9) (1990 - 1995)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1990	1	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1990	2	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1990	3	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1990	4	0.0	0.2	0.6	0.5	0.5	1.2	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1990	5	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1990	6	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	8	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1990	9	0.0	0.2	0.9	0.8	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1990	10	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1990	11	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1990	12	0.0	0.7	2.5	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1991	1	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1991	2	0.0	0.5	1.7	1.5	1.5	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1991	3	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1991	4	0.0	0.1	0.5	0.4	0.5	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1991	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	8	0.0	1.3	4.7	4.0	4.3	9.5	0.3	3.2	0.0	0.0	2.3	1.2	0.5	1.0	0.9	0.0
1991	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	11	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1991	12	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1992	1	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1992	2	0.0	0.2	0.7	0.6	0.6	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1992	3	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.6	0.2	0.4	0.4	0.0
1992	4	0.0	0.6	2.4	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1992	5	0.0	0.1	0.4	0.3	0.3	0.7	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1992	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	8	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1992	9	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	10	0.0	0.2	0.9	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1992	11	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1992	12	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1993	1	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1993	2	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1993	3	0.0	0.3	1.1	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1993	4	0.0	0.2	0.9	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1993	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	10	0.0	0.9	3.2	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.4	0.6	0.6	0.0
1993	11	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
1993	12	0.0	0.8	3.0	2.6	2.7	6.1	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1994	1	0.0	0.5	1.9	1.6	1.7	3.7	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1994	2	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1994	3	0.0	0.3	1.0	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1994	4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	5	0.0	0.1	0.3	0.3	0.3	0.7	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1994	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	8	0.0	0.1	0.4	0.4	0.4	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1994	9	0.0	0.4	1.4	1.2	1.3	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1994	10	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1994	11	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1994	12	0.0	0.8	3.1	2.6	2.7	6.1	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1995	1	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1995	2	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1995	3	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1995	4	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1995	5	0.0	0.1	0.3	0.3	0.3	0.7	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1995	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	8	0.0	0.2	0.8	0.7	0.7	1.6	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1995	9	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1995	10	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1995	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	12	0.0	0.9	3.1	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 8：Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s)
(6/9) (1996 - 2001)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1996	1	0.0	0.5	1.8	1.6	1.7	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1996	2	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1996	3	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1996	4	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1996	5	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1996	6	0.0	0.1	0.3	0.3	0.3	0.7	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1996	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	9	0.0	0.3	1.2	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1996	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	11	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1996	12	0.0	0.9	3.1	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1997	1	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1997	2	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1997	3	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1997	4	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1997	5	0.0	0.1	0.3	0.3	0.3	0.6	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0
1997	6	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	8	0.0	0.1	0.5	0.4	0.4	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1997	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	10	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1997	11	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1997	12	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1998	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	3	0.0	0.4	1.6	1.4	1.5	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1998	4	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1998	5	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1998	6	0.0	0.2	0.6	0.5	0.5	1.2	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.0
1998	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	9	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1998	10	0.0	1.0	3.8	3.2	3.4	7.5	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1998	11	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1998	12	0.0	0.9	3.3	2.8	2.9	6.5	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1999	1	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1999	2	0.0	0.6	2.3	1.9	2.1	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1999	3	0.0	0.8	2.9	2.4	2.6	5.7	0.2	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.5	0.0
1999	4	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1999	5	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	11	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1999	12	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2000	1	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2000	2	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2000	3	0.0	0.6	2.4	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2000	4	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2000	5	0.0	0.1	0.3	0.3	0.3	0.6	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0
2000	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	9	0.0	0.2	0.8	0.7	0.7	1.6	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
2000	10	0.0	0.1	0.4	0.4	0.4	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2000	11	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2000	12	0.0	0.9	3.4	2.9	3.0	6.7	0.2	2.3	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2001	1	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2001	2	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2001	3	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2001	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	5	0.0	0.1	0.4	0.3	0.3	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2001	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	8	0.0	0.9	3.3	2.8	2.9	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2001	9	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.2	0.3	0.3	0.0
2001	10	0.0	0.3	1.0	0.8	0.9	1.9	0.1	0.6	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
2001	11	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2001	12	0.0	0.9	3.4	2.9	3.0	6.8	0.2	2.3	0.0	0.0	1.6	0.9	0.4	0.7	0.6	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 8：Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s)
(7/9) (2002 - 2007)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2002	1	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2002	2	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2002	3	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2002	4	0.0	0.5	1.8	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2002	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	8	0.0	0.4	1.6	1.4	1.5	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2002	9	0.0	0.2	0.9	0.8	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
2002	10	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
2002	11	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2002	12	0.0	0.9	3.4	2.9	3.0	6.8	0.2	2.3	0.0	0.0	1.6	0.9	0.4	0.7	0.6	0.0
2003	1	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2003	2	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2003	3	0.0	0.7	2.5	2.1	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2003	4	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2003	5	0.0	0.2	0.8	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
2003	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	8	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2003	9	0.0	0.5	1.7	1.5	1.5	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2003	10	0.0	0.5	1.8	1.5	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
2003	11	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
2003	12	0.0	0.9	3.3	2.8	3.0	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2004	1	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2004	2	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2004	3	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2004	4	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2004	5	0.0	0.1	0.3	0.2	0.2	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0
2004	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	8	0.0	1.0	3.7	3.2	3.3	7.5	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
2004	9	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2004	10	0.0	1.0	3.5	3.0	3.1	7.0	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2004	11	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
2004	12	0.0	1.0	3.6	3.0	3.2	7.2	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2005	1	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2005	2	0.0	0.6	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2005	3	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
2005	4	0.0	0.2	0.9	0.8	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
2005	5	0.0	0.1	0.5	0.4	0.5	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
2005	6	0.0	0.1	0.3	0.3	0.3	0.6	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0
2005	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	9	0.0	0.2	0.9	0.8	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
2005	10	0.0	1.0	3.5	3.0	3.2	7.1	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2005	11	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2005	12	0.0	0.9	3.5	2.9	3.1	6.9	0.2	2.3	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2006	1	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.6	0.2	0.4	0.4	0.0
2006	2	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2006	3	0.0	0.8	3.1	2.6	2.8	6.2	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2006	4	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.8	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
2006	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	6	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	8	0.0	0.8	3.0	2.5	2.7	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2006	9	0.0	0.1	0.4	0.4	0.4	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2006	10	0.0	0.6	2.3	1.9	2.0	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2006	11	0.0	0.8	2.8	2.4	2.5	5.7	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2006	12	0.0	1.0	3.6	3.0	3.2	7.2	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2007	1	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2007	2	0.0	0.3	1.1	0.9	1.0	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2007	3	0.0	0.9	3.3	2.8	2.9	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2007	4	0.0	0.2	0.7	0.6	0.6	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
2007	5	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	8	0.0	0.1	0.5	0.4	0.4	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
2007	9	0.0	0.2	0.7	0.6	0.6	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
2007	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	11	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
2007	12	0.0	1.0	3.6	3.1	3.3	7.3	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 8：Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s)
(8/9) (2008 - 2013)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2008	1	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2008	2	0.0	0.6	2.3	1.9	2.1	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2008	3	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2008	4	0.0	0.8	3.0	2.6	2.7	6.1	0.2	2.0	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2008	5	0.0	0.0	0.2	0.1	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2008	6	0.0	0.1	0.2	0.2	0.2	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0
2008	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	8	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2008	9	0.0	0.3	1.0	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2008	10	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
2008	11	0.0	0.7	2.5	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2008	12	0.0	1.0	3.6	3.1	3.3	7.3	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2009	1	0.0	0.7	2.5	2.1	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2009	2	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2009	3	0.0	0.8	3.0	2.6	2.7	6.1	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2009	4	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2009	5	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2009	6	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	8	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
2009	9	0.0	0.1	0.3	0.3	0.3	0.6	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0
2009	10	0.0	0.3	1.1	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2009	11	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2009	12	0.0	1.0	3.8	3.2	3.4	7.6	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
2010	1	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2010	2	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2010	3	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2010	4	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
2010	5	0.0	0.1	0.5	0.4	0.5	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
2010	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	7	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	8	0.0	0.2	0.9	0.8	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
2010	9	0.0	0.9	3.3	2.8	3.0	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2010	10	0.0	0.5	1.7	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2010	11	0.0	1.0	3.7	3.1	3.3	7.4	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
2010	12	0.0	1.0	3.6	3.1	3.2	7.3	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2011	1	0.0	0.7	2.5	2.1	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2011	2	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2011	3	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2011	4	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2011	5	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2011	6	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	8	0.0	0.1	0.2	0.2	0.2	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
2011	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	10	0.0	1.1	3.9	3.3	3.5	7.8	0.2	2.6	0.0	0.0	1.9	1.0	0.4	0.8	0.7	0.0
2011	11	0.0	1.0	3.7	3.1	3.3	7.4	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
2011	12	0.0	1.1	3.9	3.3	3.5	7.8	0.2	2.6	0.0	0.0	1.9	1.0	0.4	0.8	0.7	0.0
2012	1	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2012	2	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2012	3	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2012	4	0.0	0.3	1.0	0.9	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2012	5	0.0	0.2	0.7	0.6	0.6	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
2012	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	8	0.0	0.5	1.7	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2012	9	0.0	0.1	0.5	0.4	0.5	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
2012	10	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2012	11	0.0	1.0	3.5	3.0	3.1	7.0	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2012	12	0.0	1.1	4.0	3.4	3.6	8.0	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
2013	1	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2013	2	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2013	3	0.0	0.9	3.2	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.4	0.6	0.6	0.0
2013	4	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2013	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	6	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	8	0.0	0.9	3.3	2.8	2.9	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2013	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	11	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.1	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
2013	12	0.0	1.0	3.6	3.1	3.3	7.3	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 8：Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s)
(9/9) (2014 - 2019)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2014	1	0.0	0.6	2.3	1.9	2.0	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2014	2	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2014	3	0.0	0.8	3.1	2.6	2.7	6.1	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2014	4	0.0	0.8	2.8	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2014	5	0.0	0.1	0.3	0.3	0.3	0.6	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2014	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	9	0.0	0.2	0.6	0.5	0.5	1.1	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.0
2014	10	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2014	11	0.0	1.1	3.9	3.3	3.5	7.8	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
2014	12	0.0	1.1	4.0	3.4	3.6	8.0	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
2015	1	0.0	0.7	2.5	2.1	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2015	2	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2015	3	0.0	1.0	3.8	3.2	3.4	7.7	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
2015	4	0.0	0.1	0.3	0.3	0.3	0.7	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2015	5	0.0	0.2	0.7	0.6	0.6	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
2015	6	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2015	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	8	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2015	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	10	0.0	1.1	4.1	3.5	3.7	8.2	0.2	2.7	0.0	0.0	1.9	1.0	0.5	0.8	0.8	0.0
2015	11	0.0	1.0	3.6	3.0	3.2	7.2	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2015	12	0.0	1.0	3.8	3.2	3.4	7.6	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
2016	1	0.0	0.6	2.4	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2016	2	0.0	0.6	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2016	3	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2016	4	0.0	0.8	3.0	2.6	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
2016	5	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2016	6	0.0	0.1	0.4	0.3	0.4	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2016	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	8	0.0	0.2	0.9	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
2016	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	10	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2016	11	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2016	12	0.0	1.1	4.1	3.5	3.7	8.3	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.8	0.8	0.0
2017	1	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
2017	2	0.0	0.8	2.9	2.5	2.6	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2017	3	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2017	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	5	0.0	0.2	0.6	0.5	0.5	1.1	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.0
2017	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	8	0.0	0.1	0.3	0.3	0.3	0.7	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2017	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	10	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2017	11	0.0	1.1	3.9	3.3	3.5	7.7	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
2017	12	0.0	1.0	3.6	3.1	3.2	7.3	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2018	1	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2018	2	0.0	0.7	2.5	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2018	3	0.0	0.9	3.2	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.4	0.6	0.6	0.0
2018	4	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
2018	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	8	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2018	9	0.0	0.4	1.5	1.2	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2018	10	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2018	11	0.0	1.0	3.8	3.3	3.4	7.7	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
2018	12	0.0	1.1	3.9	3.3	3.5	7.9	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
2019	1	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2019	2	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2019	3	0.0	1.0	3.6	3.0	3.2	7.2	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2019	4	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2019	5	0.0	0.1	0.5	0.4	0.4	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
2019	6	0.0	0.1	0.4	0.3	0.3	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2019	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	8	0.0	0.2	0.6	0.5	0.6	1.3	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
2019	9	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2019	10	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
2019	11	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2019	12	0.0	1.1	4.1	3.5	3.7	8.2	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.8	0.8	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 9：Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1/9) (1966 - 1971)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1966	1	0.0	0.1	2.3	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1966	2	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1966	3	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1966	4	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1966	5	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
1966	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	9	0.0	0.0	0.8	0.4	0.0	0.0	0.0	0.2	0.1	0.0
1966	10	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1966	11	0.0	0.3	4.6	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1966	12	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.5	0.1
1967	1	0.0	0.1	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.0
1967	2	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1967	3	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1967	4	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1967	5	0.0	0.0	0.9	0.5	0.0	0.0	0.0	0.2	0.1	0.0
1967	6	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1967	7	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1967	8	0.0	0.0	0.8	0.4	0.0	0.0	0.0	0.2	0.1	0.0
1967	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1967	10	0.0	0.1	1.9	1.1	0.0	0.0	0.0	0.5	0.3	0.0
1967	11	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
1967	12	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.8	0.1
1968	1	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.5	0.1
1968	2	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1968	3	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1968	4	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1968	5	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	7	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1968	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	9	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1968	10	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1968	11	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1968	12	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1969	1	0.0	0.2	3.2	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1969	2	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1969	3	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1969	4	0.0	0.1	2.0	1.1	0.0	0.0	0.0	0.5	0.3	0.0
1969	5	0.0	0.1	1.2	0.7	0.0	0.0	0.0	0.3	0.2	0.0
1969	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	10	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1969	11	0.0	0.1	2.6	1.5	0.0	0.0	0.0	0.7	0.4	0.0
1969	12	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1970	1	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1970	2	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1970	3	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1970	4	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.6	0.3	0.0
1970	5	0.0	0.0	0.7	0.4	0.0	0.0	0.0	0.2	0.1	0.0
1970	6	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1970	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	8	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1970	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	11	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1970	12	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1971	1	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1971	2	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1971	3	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
1971	4	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1971	5	0.0	0.1	1.2	0.6	0.0	0.0	0.0	0.3	0.2	0.0
1971	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	7	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1971	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	10	0.0	0.2	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1971	11	0.0	0.2	2.8	1.6	0.0	0.0	0.0	0.7	0.4	0.1
1971	12	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 9：Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2/9) (1972 - 1977)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1972	1	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1972	2	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1972	3	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1972	4	0.0	0.1	1.9	1.0	0.0	0.0	0.0	0.5	0.3	0.0
1972	5	0.0	0.0	0.8	0.4	0.0	0.0	0.0	0.2	0.1	0.0
1972	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1972	7	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1972	8	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
1972	9	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
1972	10	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.4	0.1
1972	11	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1972	12	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1973	1	0.0	0.2	3.2	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1973	2	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1973	3	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1973	4	0.0	0.2	3.4	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1973	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	7	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1973	8	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1973	9	0.0	0.1	1.2	0.6	0.0	0.0	0.0	0.3	0.2	0.0
1973	10	0.0	0.2	3.2	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1973	11	0.0	0.1	1.4	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1973	12	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1974	1	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.5	0.1
1974	2	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1974	3	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1974	4	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1974	5	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1974	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	8	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1974	9	0.0	0.0	0.7	0.4	0.0	0.0	0.0	0.2	0.1	0.0
1974	10	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1974	11	0.0	0.2	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1974	12	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1
1975	1	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
1975	2	0.0	0.2	3.7	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1975	3	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1975	4	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1975	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	8	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1975	9	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.4	0.2	0.0
1975	10	0.0	0.1	1.1	0.6	0.0	0.0	0.0	0.3	0.1	0.0
1975	11	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1975	12	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1976	1	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
1976	2	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1976	3	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1976	4	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1976	5	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1976	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	8	0.0	0.0	0.8	0.4	0.0	0.0	0.0	0.2	0.1	0.0
1976	9	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1976	10	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1976	11	0.0	0.1	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1976	12	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1
1977	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1977	2	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1977	3	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1977	4	0.0	0.1	1.1	0.6	0.0	0.0	0.0	0.3	0.2	0.0
1977	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	8	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	9	0.0	0.1	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.0
1977	10	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1977	11	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1977	12	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 9：Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (3/9) (1978 - 1983)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1978	1	0.0	0.2	4.1	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1978	2	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1978	3	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1978	4	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1978	5	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.0	0.0
1978	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	7	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1978	8	0.0	0.2	3.7	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1978	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	10	0.0	0.1	1.7	0.9	0.0	0.0	0.0	0.4	0.2	0.0
1978	11	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1978	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1979	1	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1979	2	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1979	3	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1979	4	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1979	5	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.3	0.2	0.0
1979	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	8	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1979	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	10	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1979	11	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1979	12	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1980	1	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1980	2	0.0	0.2	4.1	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1980	3	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
1980	4	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1980	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	6	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1980	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	8	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1980	9	0.0	0.1	1.7	0.9	0.0	0.0	0.0	0.4	0.2	0.0
1980	10	0.0	0.0	0.8	0.4	0.0	0.0	0.0	0.2	0.1	0.0
1980	11	0.0	0.3	6.1	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1980	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1981	1	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.4	0.1
1981	2	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1981	3	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1981	4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	5	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1981	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	8	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1981	9	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.5	0.1
1981	10	0.0	0.4	7.0	3.9	0.0	0.0	0.0	1.8	1.0	0.1
1981	11	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1981	12	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1982	1	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1982	2	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1982	3	0.0	0.3	5.7	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1982	4	0.0	0.1	1.0	0.6	0.0	0.0	0.0	0.3	0.1	0.0
1982	5	0.0	0.1	1.6	0.9	0.0	0.0	0.0	0.4	0.2	0.0
1982	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	7	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
1982	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	10	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
1982	11	0.0	0.3	4.6	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1982	12	0.0	0.4	6.8	3.7	0.0	0.0	0.0	1.8	1.0	0.1
1983	1	0.0	0.2	3.6	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1983	2	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1983	3	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1983	4	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1983	5	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.0	0.0
1983	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	7	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1983	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	9	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1983	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	11	0.0	0.2	3.2	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1983	12	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 9：Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (4/9) (1984 - 1989)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1984	1	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1984	2	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1984	3	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1984	4	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1984	5	0.0	0.0	0.8	0.4	0.0	0.0	0.0	0.2	0.1	0.0
1984	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	8	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1984	9	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1984	10	0.0	0.1	1.9	1.0	0.0	0.0	0.0	0.5	0.3	0.0
1984	11	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1984	12	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
1985	1	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1985	2	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1985	3	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1985	4	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1985	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	8	0.0	0.2	4.1	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1985	9	0.0	0.1	2.1	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1985	10	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1985	11	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1985	12	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1986	1	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1986	2	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1986	3	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1986	4	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1986	5	0.0	0.0	0.8	0.5	0.0	0.0	0.0	0.2	0.1	0.0
1986	6	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1986	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1986	8	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1986	9	0.0	0.2	3.0	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1986	10	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1986	11	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1986	12	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1987	1	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1987	2	0.0	0.2	4.3	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1987	3	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1987	4	0.0	0.1	1.7	1.0	0.0	0.0	0.0	0.5	0.2	0.0
1987	5	0.0	0.1	1.6	0.9	0.0	0.0	0.0	0.4	0.2	0.0
1987	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	8	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1987	9	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1987	10	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1987	11	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1987	12	0.0	0.4	7.2	3.9	0.0	0.0	0.0	1.9	1.0	0.1
1988	1	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1988	2	0.0	0.2	3.5	2.0	0.0	0.0	0.0	0.9	0.5	0.1
1988	3	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1988	4	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1988	5	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.2	0.1	0.0
1988	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	7	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1988	8	0.0	0.0	0.7	0.4	0.0	0.0	0.0	0.2	0.1	0.0
1988	9	0.0	0.1	1.9	1.0	0.0	0.0	0.0	0.5	0.3	0.0
1988	10	0.0	0.1	0.9	0.5	0.0	0.0	0.0	0.2	0.1	0.0
1988	11	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1988	12	0.0	0.4	7.4	4.1	0.0	0.0	0.0	1.9	1.0	0.1
1989	1	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1989	2	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1989	3	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1989	4	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1989	5	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.3	0.2	0.0
1989	6	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1989	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	8	0.0	0.7	11.7	6.4	0.0	0.0	0.0	3.1	1.6	0.2
1989	9	0.0	0.1	1.9	1.1	0.0	0.0	0.0	0.5	0.3	0.0
1989	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	11	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1989	12	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 9：Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (5/9) (1990 - 1995)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1990	1	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1990	2	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1990	3	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1990	4	0.0	0.1	1.5	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1990	5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
1990	6	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1990	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	8	0.0	0.4	7.1	3.9	0.0	0.0	0.0	1.9	1.0	0.1
1990	9	0.0	0.1	2.3	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1990	10	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1990	11	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1990	12	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1991	1	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1991	2	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1991	3	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1991	4	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.3	0.2	0.0
1991	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	8	0.0	0.7	12.0	6.6	0.0	0.0	0.0	3.2	1.7	0.2
1991	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	11	0.0	0.2	3.7	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1991	12	0.0	0.4	7.0	3.9	0.0	0.0	0.0	1.8	1.0	0.1
1992	1	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1992	2	0.0	0.1	1.8	1.0	0.0	0.0	0.0	0.5	0.3	0.0
1992	3	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1992	4	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1992	5	0.0	0.1	0.9	0.5	0.0	0.0	0.0	0.2	0.1	0.0
1992	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	8	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1992	9	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1992	10	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1992	11	0.0	0.3	6.1	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1992	12	0.0	0.4	7.1	3.9	0.0	0.0	0.0	1.9	1.0	0.1
1993	1	0.0	0.2	4.1	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1993	2	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1993	3	0.0	0.1	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.0
1993	4	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1993	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	10	0.0	0.4	8.0	4.4	0.0	0.0	0.0	2.1	1.1	0.1
1993	11	0.0	0.4	6.6	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1993	12	0.0	0.4	7.7	4.2	0.0	0.0	0.0	2.0	1.1	0.1
1994	1	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1994	2	0.0	0.3	5.0	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1994	3	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1994	4	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1994	5	0.0	0.0	0.9	0.5	0.0	0.0	0.0	0.2	0.1	0.0
1994	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	8	0.0	0.1	1.1	0.6	0.0	0.0	0.0	0.3	0.2	0.0
1994	9	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1994	10	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1994	11	0.0	0.4	6.6	3.7	0.0	0.0	0.0	1.7	0.9	0.1
1994	12	0.0	0.4	7.8	4.3	0.0	0.0	0.0	2.0	1.1	0.1
1995	1	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1995	2	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1995	3	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1995	4	0.0	0.3	5.7	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1995	5	0.0	0.0	0.9	0.5	0.0	0.0	0.0	0.2	0.1	0.0
1995	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	8	0.0	0.1	2.0	1.1	0.0	0.0	0.0	0.5	0.3	0.0
1995	9	0.0	0.2	4.1	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1995	10	0.0	0.3	5.0	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1995	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	12	0.0	0.4	7.9	4.4	0.0	0.0	0.0	2.1	1.1	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 9：Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (6/9) (1996 - 2001)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1996	1	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1996	2	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1996	3	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1996	4	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1996	5	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1996	6	0.0	0.0	0.9	0.5	0.0	0.0	0.0	0.2	0.1	0.0
1996	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	8	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	9	0.0	0.2	3.0	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1996	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	11	0.0	0.4	7.0	3.9	0.0	0.0	0.0	1.8	1.0	0.1
1996	12	0.0	0.4	7.9	4.4	0.0	0.0	0.0	2.1	1.1	0.1
1997	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1997	2	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1997	3	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1997	4	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1997	5	0.0	0.0	0.8	0.4	0.0	0.0	0.0	0.2	0.1	0.0
1997	6	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1997	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	8	0.0	0.1	1.2	0.6	0.0	0.0	0.0	0.3	0.2	0.0
1997	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	10	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1997	11	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1997	12	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
1998	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	3	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1998	4	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1998	5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
1998	6	0.0	0.1	1.5	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1998	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	9	0.0	0.2	3.0	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1998	10	0.0	0.5	9.5	5.2	0.0	0.0	0.0	2.5	1.3	0.2
1998	11	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1998	12	0.0	0.5	8.3	4.5	0.0	0.0	0.0	2.2	1.2	0.2
1999	1	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1999	2	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1999	3	0.0	0.4	7.2	4.0	0.0	0.0	0.0	1.9	1.0	0.1
1999	4	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1999	5	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1999	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	11	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1999	12	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2000	1	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2000	2	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.8	0.1
2000	3	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
2000	4	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2000	5	0.0	0.0	0.8	0.4	0.0	0.0	0.0	0.2	0.1	0.0
2000	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	8	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	9	0.0	0.1	2.0	1.1	0.0	0.0	0.0	0.5	0.3	0.0
2000	10	0.0	0.1	1.1	0.6	0.0	0.0	0.0	0.3	0.2	0.0
2000	11	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2000	12	0.0	0.5	8.5	4.7	0.0	0.0	0.0	2.2	1.2	0.2
2001	1	0.0	0.3	5.0	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2001	2	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2001	3	0.0	0.4	7.4	4.0	0.0	0.0	0.0	1.9	1.0	0.1
2001	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	5	0.0	0.1	1.0	0.5	0.0	0.0	0.0	0.3	0.1	0.0
2001	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	8	0.0	0.5	8.3	4.6	0.0	0.0	0.0	2.2	1.2	0.2
2001	9	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
2001	10	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
2001	11	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2001	12	0.0	0.5	8.6	4.7	0.0	0.0	0.0	2.3	1.2	0.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 9：Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (7/9) (2002 - 2007)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2002	1	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.8	0.1
2002	2	0.0	0.3	5.9	3.3	0.0	0.0	0.0	1.6	0.8	0.1
2002	3	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1
2002	4	0.0	0.2	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2002	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	8	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2002	9	0.0	0.1	2.3	1.2	0.0	0.0	0.0	0.6	0.3	0.0
2002	10	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
2002	11	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2002	12	0.0	0.5	8.6	4.7	0.0	0.0	0.0	2.3	1.2	0.2
2003	1	0.0	0.3	5.2	2.8	0.0	0.0	0.0	1.4	0.7	0.1
2003	2	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2003	3	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2003	4	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2003	5	0.0	0.1	1.9	1.0	0.0	0.0	0.0	0.5	0.3	0.0
2003	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	8	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2003	9	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2003	10	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2003	11	0.0	0.5	8.1	4.5	0.0	0.0	0.0	2.1	1.1	0.2
2003	12	0.0	0.5	8.4	4.6	0.0	0.0	0.0	2.2	1.2	0.2
2004	1	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.4	0.7	0.1
2004	2	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1
2004	3	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
2004	4	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2004	5	0.0	0.0	0.7	0.4	0.0	0.0	0.0	0.2	0.1	0.0
2004	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	8	0.0	0.5	9.4	5.2	0.0	0.0	0.0	2.5	1.3	0.2
2004	9	0.0	0.2	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
2004	10	0.0	0.5	8.9	4.9	0.0	0.0	0.0	2.3	1.2	0.2
2004	11	0.0	0.5	8.1	4.5	0.0	0.0	0.0	2.1	1.1	0.2
2004	12	0.0	0.5	9.1	5.0	0.0	0.0	0.0	2.4	1.3	0.2
2005	1	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2005	2	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
2005	3	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2005	4	0.0	0.1	2.3	1.3	0.0	0.0	0.0	0.6	0.3	0.0
2005	5	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.3	0.2	0.0
2005	6	0.0	0.0	0.8	0.4	0.0	0.0	0.0	0.2	0.1	0.0
2005	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	9	0.0	0.1	2.3	1.3	0.0	0.0	0.0	0.6	0.3	0.0
2005	10	0.0	0.5	8.9	4.9	0.0	0.0	0.0	2.3	1.3	0.2
2005	11	0.0	0.4	6.8	3.7	0.0	0.0	0.0	1.8	1.0	0.1
2005	12	0.0	0.5	8.8	4.8	0.0	0.0	0.0	2.3	1.2	0.2
2006	1	0.0	0.3	5.5	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2006	2	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2006	3	0.0	0.4	7.9	4.3	0.0	0.0	0.0	2.1	1.1	0.1
2006	4	0.0	0.4	6.6	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2006	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	6	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2006	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	8	0.0	0.4	7.5	4.1	0.0	0.0	0.0	2.0	1.1	0.1
2006	9	0.0	0.1	1.1	0.6	0.0	0.0	0.0	0.3	0.2	0.0
2006	10	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2006	11	0.0	0.4	7.1	3.9	0.0	0.0	0.0	1.9	1.0	0.1
2006	12	0.0	0.5	9.0	5.0	0.0	0.0	0.0	2.4	1.3	0.2
2007	1	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2007	2	0.0	0.1	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
2007	3	0.0	0.5	8.3	4.6	0.0	0.0	0.0	2.2	1.2	0.2
2007	4	0.0	0.1	1.8	1.0	0.0	0.0	0.0	0.5	0.2	0.0
2007	5	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2007	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	8	0.0	0.1	1.2	0.7	0.0	0.0	0.0	0.3	0.2	0.0
2007	9	0.0	0.1	1.8	1.0	0.0	0.0	0.0	0.5	0.2	0.0
2007	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	11	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
2007	12	0.0	0.5	9.2	5.1	0.0	0.0	0.0	2.4	1.3	0.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 9：Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (8/9) (2008 - 2013)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2008	1	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2008	2	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2008	3	0.0	0.4	7.1	3.9	0.0	0.0	0.0	1.9	1.0	0.1
2008	4	0.0	0.4	7.7	4.2	0.0	0.0	0.0	2.0	1.1	0.1
2008	5	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
2008	6	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.2	0.1	0.0
2008	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	8	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2008	9	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0
2008	10	0.0	0.2	3.2	1.7	0.0	0.0	0.0	0.8	0.4	0.1
2008	11	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2008	12	0.0	0.5	9.2	5.0	0.0	0.0	0.0	2.4	1.3	0.2
2009	1	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2009	2	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.7	0.9	0.1
2009	3	0.0	0.4	7.7	4.2	0.0	0.0	0.0	2.0	1.1	0.1
2009	4	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2009	5	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
2009	6	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
2009	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	8	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
2009	9	0.0	0.0	0.8	0.4	0.0	0.0	0.0	0.2	0.1	0.0
2009	10	0.0	0.1	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
2009	11	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2009	12	0.0	0.5	9.6	5.3	0.0	0.0	0.0	2.5	1.4	0.2
2010	1	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2010	2	0.0	0.4	6.8	3.7	0.0	0.0	0.0	1.8	1.0	0.1
2010	3	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.7	0.9	0.1
2010	4	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2010	5	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.3	0.2	0.0
2010	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	7	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
2010	8	0.0	0.1	2.3	1.2	0.0	0.0	0.0	0.6	0.3	0.0
2010	9	0.0	0.5	8.4	4.6	0.0	0.0	0.0	2.2	1.2	0.2
2010	10	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
2010	11	0.0	0.5	9.4	5.2	0.0	0.0	0.0	2.5	1.3	0.2
2010	12	0.0	0.5	9.2	5.0	0.0	0.0	0.0	2.4	1.3	0.2
2011	1	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2011	2	0.0	0.4	6.6	3.7	0.0	0.0	0.0	1.7	0.9	0.1
2011	3	0.0	0.4	7.5	4.1	0.0	0.0	0.0	2.0	1.1	0.1
2011	4	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2011	5	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
2011	6	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2011	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	8	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.2	0.1	0.0
2011	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	10	0.0	0.5	9.8	5.4	0.0	0.0	0.0	2.6	1.4	0.2
2011	11	0.0	0.5	9.4	5.1	0.0	0.0	0.0	2.5	1.3	0.2
2011	12	0.0	0.6	9.9	5.4	0.0	0.0	0.0	2.6	1.4	0.2
2012	1	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2012	2	0.0	0.4	7.0	3.9	0.0	0.0	0.0	1.8	1.0	0.1
2012	3	0.0	0.4	7.1	3.9	0.0	0.0	0.0	1.9	1.0	0.1
2012	4	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0
2012	5	0.0	0.1	1.7	0.9	0.0	0.0	0.0	0.4	0.2	0.0
2012	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	8	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
2012	9	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.3	0.2	0.0
2012	10	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2012	11	0.0	0.5	8.9	4.9	0.0	0.0	0.0	2.3	1.2	0.2
2012	12	0.0	0.6	10.0	5.5	0.0	0.0	0.0	2.6	1.4	0.2
2013	1	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2013	2	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2013	3	0.0	0.4	8.0	4.4	0.0	0.0	0.0	2.1	1.1	0.1
2013	4	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2013	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	6	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
2013	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	8	0.0	0.5	8.3	4.6	0.0	0.0	0.0	2.2	1.2	0.2
2013	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	11	0.0	0.4	8.1	4.4	0.0	0.0	0.0	2.1	1.1	0.2
2013	12	0.0	0.5	9.2	5.1	0.0	0.0	0.0	2.4	1.3	0.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 9：Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (9/9) (2014 - 2019)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2014	1	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2014	2	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2014	3	0.0	0.4	7.7	4.2	0.0	0.0	0.0	2.0	1.1	0.1
2014	4	0.0	0.4	7.0	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2014	5	0.0	0.0	0.8	0.4	0.0	0.0	0.0	0.2	0.1	0.0
2014	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	9	0.0	0.1	1.4	0.8	0.0	0.0	0.0	0.4	0.2	0.0
2014	10	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2014	11	0.0	0.5	9.8	5.4	0.0	0.0	0.0	2.6	1.4	0.2
2014	12	0.0	0.6	10.1	5.6	0.0	0.0	0.0	2.6	1.4	0.2
2015	1	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2015	2	0.0	0.4	6.6	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2015	3	0.0	0.5	9.7	5.3	0.0	0.0	0.0	2.5	1.4	0.2
2015	4	0.0	0.0	0.8	0.5	0.0	0.0	0.0	0.2	0.1	0.0
2015	5	0.0	0.1	1.8	1.0	0.0	0.0	0.0	0.5	0.2	0.0
2015	6	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
2015	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	8	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2015	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	10	0.0	0.6	10.3	5.7	0.0	0.0	0.0	2.7	1.5	0.2
2015	11	0.0	0.5	9.0	5.0	0.0	0.0	0.0	2.4	1.3	0.2
2015	12	0.0	0.5	9.6	5.3	0.0	0.0	0.0	2.5	1.4	0.2
2016	1	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
2016	2	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
2016	3	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2016	4	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
2016	5	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
2016	6	0.0	0.1	1.0	0.6	0.0	0.0	0.0	0.3	0.1	0.0
2016	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	8	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
2016	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	10	0.0	0.3	6.1	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2016	11	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2016	12	0.0	0.6	10.4	5.7	0.0	0.0	0.0	2.7	1.5	0.2
2017	1	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
2017	2	0.0	0.4	7.4	4.1	0.0	0.0	0.0	1.9	1.0	0.1
2017	3	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2017	4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	5	0.0	0.1	1.4	0.8	0.0	0.0	0.0	0.4	0.2	0.0
2017	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	8	0.0	0.0	0.9	0.5	0.0	0.0	0.0	0.2	0.1	0.0
2017	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	10	0.0	0.3	5.0	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2017	11	0.0	0.5	9.7	5.4	0.0	0.0	0.0	2.6	1.4	0.2
2017	12	0.0	0.5	9.2	5.0	0.0	0.0	0.0	2.4	1.3	0.2
2018	1	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2018	2	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2018	3	0.0	0.4	8.0	4.4	0.0	0.0	0.0	2.1	1.1	0.2
2018	4	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2018	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	8	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2018	9	0.0	0.2	3.7	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2018	10	0.0	0.2	3.7	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2018	11	0.0	0.5	9.7	5.3	0.0	0.0	0.0	2.5	1.4	0.2
2018	12	0.0	0.6	10.0	5.5	0.0	0.0	0.0	2.6	1.4	0.2
2019	1	0.0	0.4	7.1	3.9	0.0	0.0	0.0	1.9	1.0	0.1
2019	2	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2019	3	0.0	0.5	9.0	5.0	0.0	0.0	0.0	2.4	1.3	0.2
2019	4	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2019	5	0.0	0.1	1.2	0.7	0.0	0.0	0.0	0.3	0.2	0.0
2019	6	0.0	0.1	1.0	0.5	0.0	0.0	0.0	0.3	0.1	0.0
2019	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	8	0.0	0.1	1.6	0.9	0.0	0.0	0.0	0.4	0.2	0.0
2019	9	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
2019	10	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2019	11	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2019	12	0.0	0.6	10.4	5.7	0.0	0.0	0.0	2.7	1.5	0.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 10：Gross Water Requirements of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (1/5) (1966 - 1977)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1966	1	0.0	2.9	0.4	0.0	0.0	0.4
1966	2	0.0	3.1	0.5	0.0	0.0	0.4
1966	3	0.0	3.0	0.4	0.0	0.0	0.4
1966	4	0.0	3.5	0.5	0.0	0.0	0.5
1966	5	0.0	0.9	0.1	0.0	0.0	0.1
1966	6	0.0	0.0	0.0	0.0	0.0	0.0
1966	7	0.0	0.0	0.0	0.0	0.0	0.0
1966	8	0.0	0.0	0.0	0.0	0.0	0.0
1966	9	0.0	0.0	0.0	0.0	0.0	0.0
1966	10	0.0	2.6	0.4	0.0	0.0	0.4
1966	11	0.0	3.5	0.5	0.0	0.0	0.5
1966	12	0.0	4.6	0.7	0.0	0.0	0.6
1967	1	0.0	2.1	0.3	0.0	0.0	0.3
1967	2	0.0	3.2	0.5	0.0	0.0	0.4
1967	3	0.0	4.1	0.6	0.0	0.0	0.6
1967	4	0.0	3.4	0.5	0.0	0.0	0.5
1967	5	0.0	0.9	0.1	0.0	0.0	0.1
1967	6	0.0	0.0	0.0	0.0	0.0	0.0
1967	7	0.0	0.0	0.0	0.0	0.0	0.0
1967	8	0.0	0.0	0.0	0.0	0.0	0.0
1967	9	0.0	0.0	0.0	0.0	0.0	0.0
1967	10	0.0	0.6	0.1	0.0	0.0	0.1
1967	11	0.0	4.9	0.7	0.0	0.0	0.7
1967	12	0.0	5.1	0.7	0.0	0.0	0.7
1968	1	0.0	2.6	0.4	0.0	0.0	0.4
1968	2	0.0	2.6	0.4	0.0	0.0	0.4
1968	3	0.0	4.2	0.6	0.0	0.0	0.6
1968	4	0.0	3.2	0.5	0.0	0.0	0.4
1968	5	0.0	0.0	0.0	0.0	0.0	0.0
1968	6	0.0	0.0	0.0	0.0	0.0	0.0
1968	7	0.0	0.0	0.0	0.0	0.0	0.0
1968	8	0.0	0.0	0.0	0.0	0.0	0.0
1968	9	0.0	1.3	0.2	0.0	0.0	0.2
1968	10	0.0	0.0	0.0	0.0	0.0	0.0
1968	11	0.0	4.6	0.7	0.0	0.0	0.6
1968	12	0.0	5.3	0.8	0.0	0.0	0.7
1969	1	0.0	3.3	0.5	0.0	0.0	0.5
1969	2	0.0	3.3	0.5	0.0	0.0	0.5
1969	3	0.0	3.2	0.5	0.0	0.0	0.4
1969	4	0.0	2.6	0.4	0.0	0.0	0.4
1969	5	0.0	1.0	0.1	0.0	0.0	0.1
1969	6	0.0	0.0	0.0	0.0	0.0	0.0
1969	7	0.0	0.0	0.0	0.0	0.0	0.0
1969	8	0.0	0.0	0.0	0.0	0.0	0.0
1969	9	0.0	1.3	0.2	0.0	0.0	0.2
1969	10	0.0	3.0	0.4	0.0	0.0	0.4
1969	11	0.0	4.7	0.7	0.0	0.0	0.6
1969	12	0.0	5.0	0.7	0.0	0.0	0.7
1970	1	0.0	3.2	0.5	0.0	0.0	0.4
1970	2	0.0	2.6	0.4	0.0	0.0	0.4
1970	3	0.0	4.4	0.6	0.0	0.0	0.6
1970	4	0.0	3.2	0.5	0.0	0.0	0.4
1970	5	0.0	0.2	0.0	0.0	0.0	0.0
1970	6	0.0	0.0	0.0	0.0	0.0	0.0
1970	7	0.0	0.0	0.0	0.0	0.0	0.0
1970	8	0.0	0.1	0.0	0.0	0.0	0.0
1970	9	0.0	0.3	0.0	0.0	0.0	0.0
1970	10	0.0	0.0	0.0	0.0	0.0	0.0
1970	11	0.0	3.2	0.5	0.0	0.0	0.4
1970	12	0.0	5.3	0.8	0.0	0.0	0.7
1971	1	0.0	3.3	0.5	0.0	0.0	0.4
1971	2	0.0	3.3	0.5	0.0	0.0	0.5
1971	3	0.0	4.5	0.7	0.0	0.0	0.6
1971	4	0.0	4.0	0.6	0.0	0.0	0.5
1971	5	0.0	0.7	0.1	0.0	0.0	0.1
1971	6	0.0	0.0	0.0	0.0	0.0	0.0
1971	7	0.0	0.0	0.0	0.0	0.0	0.0
1971	8	0.0	0.0	0.0	0.0	0.0	0.0
1971	9	0.0	3.0	0.4	0.0	0.0	0.4
1971	10	0.0	1.9	0.3	0.0	0.0	0.3
1971	11	0.0	2.7	0.4	0.0	0.0	0.4
1971	12	0.0	5.4	0.8	0.0	0.0	0.7

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1972	1	0.0	3.3	0.5	0.0	0.0	0.5
1972	2	0.0	3.6	0.5	0.0	0.0	0.5
1972	3	0.0	4.5	0.7	0.0	0.0	0.6
1972	4	0.0	3.7	0.5	0.0	0.0	0.5
1972	5	0.0	0.8	0.1	0.0	0.0	0.1
1972	6	0.0	0.5	0.1	0.0	0.0	0.1
1972	7	0.0	0.0	0.0	0.0	0.0	0.0
1972	8	0.0	0.0	0.0	0.0	0.0	0.0
1972	9	0.0	4.9	0.7	0.0	0.0	0.7
1972	10	0.0	3.3	0.5	0.0	0.0	0.5
1972	11	0.0	5.1	0.7	0.0	0.0	0.7
1972	12	0.0	5.6	0.8	0.0	0.0	0.8
1973	1	0.0	3.7	0.5	0.0	0.0	0.5
1973	2	0.0	3.6	0.5	0.0	0.0	0.5
1973	3	0.0	4.9	0.7	0.0	0.0	0.7
1973	4	0.0	4.6	0.7	0.0	0.0	0.6
1973	5	0.0	0.0	0.0	0.0	0.0	0.0
1973	6	0.0	0.0	0.0	0.0	0.0	0.0
1973	7	0.0	0.0	0.0	0.0	0.0	0.0
1973	8	0.0	0.6	0.1	0.0	0.0	0.1
1973	9	0.0	0.1	0.0	0.0	0.0	0.0
1973	10	0.0	1.8	0.3	0.0	0.0	0.3
1973	11	0.0	0.1	0.0	0.0	0.0	0.0
1973	12	0.0	5.1	0.7	0.0	0.0	0.7
1974	1	0.0	3.4	0.5	0.0	0.0	0.5
1974	2	0.0	3.6	0.5	0.0	0.0	0.5
1974	3	0.0	2.2	0.3	0.0	0.0	0.3
1974	4	0.0	3.2	0.5	0.0	0.0	0.4
1974	5	0.0	0.2	0.0	0.0	0.0	0.0
1974	6	0.0	0.1	0.0	0.0	0.0	0.0
1974	7	0.0	0.0	0.0	0.0	0.0	0.0
1974	8	0.0	0.0	0.0	0.0	0.0	0.0
1974	9	0.0	1.7	0.2	0.0	0.0	0.2
1974	10	0.0	3.5	0.5	0.0	0.0	0.5
1974	11	0.0	2.6	0.4	0.0	0.0	0.4
1974	12	0.0	5.5	0.8	0.0	0.0	0.8
1975	1	0.0	3.4	0.5	0.0	0.0	0.5
1975	2	0.0	3.4	0.5	0.0	0.0	0.5
1975	3	0.0	4.8	0.7	0.0	0.0	0.7
1975	4	0.0	4.4	0.6	0.0	0.0	0.6
1975	5	0.0	0.2	0.0	0.0	0.0	0.0
1975	6	0.0	0.0	0.0	0.0	0.0	0.0
1975	7	0.0	0.0	0.0	0.0	0.0	0.0
1975	8	0.0	1.3	0.2	0.0	0.0	0.2
1975	9	0.0	0.5	0.1	0.0	0.0	0.1
1975	10	0.0	0.6	0.1	0.0	0.0	0.1
1975	11	0.0	2.0	0.3	0.0	0.0	0.3
1975	12	0.0	4.9	0.7	0.0	0.0	0.7
1976	1	0.0	3.4	0.5	0.0	0.0	0.5
1976	2	0.0	3.6	0.5	0.0	0.0	0.5
1976	3	0.0	4.8	0.7	0.0	0.0	0.7
1976	4	0.0	3.2	0.5	0.0	0.0	0.4
1976	5	0.0	0.3	0.0	0.0	0.0	0.0
1976	6	0.0	0.0	0.0	0.0	0.0	0.0
1976	7	0.0	0.0	0.0	0.0	0.0	0.0
1976	8	0.0	0.1	0.0	0.0	0.0	0.0
1976	9	0.0	5.5	0.8	0.0	0.0	0.8
1976	10	0.0	3.3	0.5	0.0	0.0	0.5
1976	11	0.0	2.7	0.4	0.0	0.0	0.4
1976	12	0.0	5.7	0.8	0.0	0.0	0.8
1977	1	0.0	3.6	0.5	0.0	0.0	0.5
1977	2	0.0	3.1	0.5	0.0	0.0	0.4
1977	3	0.0	4.8	0.7	0.0	0.0	0.7
1977	4	0.0	1.2	0.2	0.0	0.0	0.2
1977	5	0.0	0.0	0.0	0.0	0.0	0.0
1977	6	0.0	0.2	0.0	0.0	0.0	0.0
1977	7	0.0	0.0	0.0	0.0	0.0	0.0
1977	8	0.0	0.0	0.0	0.0	0.0	0.0
1977	9	0.0	0.8	0.1	0.0	0.0	0.1
1977	10	0.0	5.6	0.8	0.0	0.0	0.8
1977	11	0.0	3.8	0.6	0.0	0.0	0.5
1977	12	0.0	5.3	0.8	0.0	0.0	0.7

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 10：Gross Water Requirements of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (2/5) (1978 - 1989)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1978	1	0.0	3.6	0.5	0.0	0.0	0.5
1978	2	0.0	3.7	0.5	0.0	0.0	0.5
1978	3	0.0	4.9	0.7	0.0	0.0	0.7
1978	4	0.0	2.1	0.3	0.0	0.0	0.3
1978	5	0.0	0.1	0.0	0.0	0.0	0.0
1978	6	0.0	0.0	0.0	0.0	0.0	0.0
1978	7	0.0	0.3	0.0	0.0	0.0	0.0
1978	8	0.0	0.1	0.0	0.0	0.0	0.0
1978	9	0.0	0.0	0.0	0.0	0.0	0.0
1978	10	0.0	1.7	0.2	0.0	0.0	0.2
1978	11	0.0	5.6	0.8	0.0	0.0	0.8
1978	12	0.1	6.1	0.9	0.0	0.0	0.8
1979	1	0.0	3.7	0.5	0.0	0.0	0.5
1979	2	0.0	3.8	0.6	0.0	0.0	0.5
1979	3	0.0	5.2	0.8	0.0	0.0	0.7
1979	4	0.0	4.8	0.7	0.0	0.0	0.7
1979	5	0.0	1.4	0.2	0.0	0.0	0.2
1979	6	0.0	0.5	0.1	0.0	0.0	0.1
1979	7	0.0	0.2	0.0	0.0	0.0	0.0
1979	8	0.0	3.6	0.5	0.0	0.0	0.5
1979	9	0.0	3.0	0.4	0.0	0.0	0.4
1979	10	0.1	6.7	1.0	0.0	0.0	0.9
1979	11	0.0	5.7	0.8	0.0	0.0	0.8
1979	12	0.1	5.9	0.9	0.0	0.0	0.8
1980	1	0.0	4.0	0.6	0.0	0.0	0.5
1980	2	0.0	4.0	0.6	0.0	0.0	0.6
1980	3	0.0	4.7	0.7	0.0	0.0	0.6
1980	4	0.0	4.8	0.7	0.0	0.0	0.7
1980	5	0.0	0.9	0.1	0.0	0.0	0.1
1980	6	0.0	0.0	0.0	0.0	0.0	0.0
1980	7	0.0	0.2	0.0	0.0	0.0	0.0
1980	8	0.0	3.3	0.5	0.0	0.0	0.4
1980	9	0.0	1.8	0.3	0.0	0.0	0.2
1980	10	0.0	2.5	0.4	0.0	0.0	0.3
1980	11	0.0	5.8	0.8	0.0	0.0	0.8
1980	12	0.1	6.0	0.9	0.0	0.0	0.8
1981	1	0.0	3.2	0.5	0.0	0.0	0.4
1981	2	0.0	3.8	0.6	0.0	0.0	0.5
1981	3	0.0	4.4	0.6	0.0	0.0	0.6
1981	4	0.0	1.8	0.3	0.0	0.0	0.2
1981	5	0.0	0.7	0.1	0.0	0.0	0.1
1981	6	0.0	0.0	0.0	0.0	0.0	0.0
1981	7	0.0	0.0	0.0	0.0	0.0	0.0
1981	8	0.0	1.4	0.2	0.0	0.0	0.2
1981	9	0.0	2.7	0.4	0.0	0.0	0.4
1981	10	0.0	5.1	0.7	0.0	0.0	0.7
1981	11	0.0	5.2	0.8	0.0	0.0	0.7
1981	12	0.0	5.1	0.8	0.0	0.0	0.7
1982	1	0.0	4.0	0.6	0.0	0.0	0.5
1982	2	0.0	3.4	0.5	0.0	0.0	0.5
1982	3	0.0	5.3	0.8	0.0	0.0	0.7
1982	4	0.0	2.7	0.4	0.0	0.0	0.4
1982	5	0.0	1.6	0.2	0.0	0.0	0.2
1982	6	0.0	0.0	0.0	0.0	0.0	0.0
1982	7	0.0	0.0	0.0	0.0	0.0	0.0
1982	8	0.0	0.0	0.0	0.0	0.0	0.0
1982	9	0.0	0.0	0.0	0.0	0.0	0.0
1982	10	0.1	6.6	1.0	0.0	0.0	0.9
1982	11	0.0	2.8	0.4	0.0	0.0	0.4
1982	12	0.1	6.2	0.9	0.0	0.0	0.8
1983	1	0.0	3.5	0.5	0.0	0.0	0.5
1983	2	0.0	2.9	0.4	0.0	0.0	0.4
1983	3	0.0	4.6	0.7	0.0	0.0	0.6
1983	4	0.0	2.6	0.4	0.0	0.0	0.4
1983	5	0.0	0.2	0.0	0.0	0.0	0.0
1983	6	0.0	0.0	0.0	0.0	0.0	0.0
1983	7	0.0	0.0	0.0	0.0	0.0	0.0
1983	8	0.0	0.0	0.0	0.0	0.0	0.0
1983	9	0.0	0.0	0.0	0.0	0.0	0.0
1983	10	0.0	0.9	0.1	0.0	0.0	0.1
1983	11	0.0	2.5	0.4	0.0	0.0	0.3
1983	12	0.0	5.4	0.8	0.0	0.0	0.7

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1984	1	0.0	3.8	0.6	0.0	0.0	0.5
1984	2	0.0	4.0	0.6	0.0	0.0	0.6
1984	3	0.0	4.9	0.7	0.0	0.0	0.7
1984	4	0.0	3.3	0.5	0.0	0.0	0.5
1984	5	0.0	0.5	0.1	0.0	0.0	0.1
1984	6	0.0	0.0	0.0	0.0	0.0	0.0
1984	7	0.0	0.0	0.0	0.0	0.0	0.0
1984	8	0.0	0.0	0.0	0.0	0.0	0.0
1984	9	0.0	3.9	0.6	0.0	0.0	0.5
1984	10	0.0	3.4	0.5	0.0	0.0	0.5
1984	11	0.1	6.0	0.9	0.0	0.0	0.8
1984	12	0.1	6.3	0.9	0.0	0.0	0.9
1985	1	0.0	3.9	0.6	0.0	0.0	0.5
1985	2	0.0	3.9	0.6	0.0	0.0	0.5
1985	3	0.0	4.6	0.7	0.0	0.0	0.6
1985	4	0.0	3.5	0.5	0.0	0.0	0.5
1985	5	0.0	0.0	0.0	0.0	0.0	0.0
1985	6	0.0	0.0	0.0	0.0	0.0	0.0
1985	7	0.0	0.0	0.0	0.0	0.0	0.0
1985	8	0.0	2.7	0.4	0.0	0.0	0.4
1985	9	0.0	1.0	0.1	0.0	0.0	0.1
1985	10	0.0	5.3	0.8	0.0	0.0	0.7
1985	11	0.0	3.1	0.5	0.0	0.0	0.4
1985	12	0.1	6.6	1.0	0.0	0.0	0.9
1986	1	0.0	4.1	0.6	0.0	0.0	0.6
1986	2	0.0	4.4	0.6	0.0	0.0	0.6
1986	3	0.0	5.4	0.8	0.0	0.0	0.7
1986	4	0.0	4.4	0.6	0.0	0.0	0.6
1986	5	0.0	0.8	0.1	0.0	0.0	0.1
1986	6	0.0	0.3	0.0	0.0	0.0	0.0
1986	7	0.0	0.0	0.0	0.0	0.0	0.0
1986	8	0.0	3.4	0.5	0.0	0.0	0.5
1986	9	0.0	0.0	0.0	0.0	0.0	0.0
1986	10	0.0	3.7	0.5	0.0	0.0	0.5
1986	11	0.0	2.9	0.4	0.0	0.0	0.4
1986	12	0.1	6.7	1.0	0.0	0.0	0.9
1987	1	0.0	4.2	0.6	0.0	0.0	0.6
1987	2	0.0	2.9	0.4	0.0	0.0	0.4
1987	3	0.0	5.3	0.8	0.0	0.0	0.7
1987	4	0.0	1.7	0.2	0.0	0.0	0.2
1987	5	0.0	1.5	0.2	0.0	0.0	0.2
1987	6	0.0	0.0	0.0	0.0	0.0	0.0
1987	7	0.0	0.0	0.0	0.0	0.0	0.0
1987	8	0.0	0.6	0.1	0.0	0.0	0.1
1987	9	0.0	1.2	0.2	0.0	0.0	0.2
1987	10	0.0	5.0	0.7	0.0	0.0	0.7
1987	11	0.0	3.1	0.5	0.0	0.0	0.4
1987	12	0.1	6.2	0.9	0.0	0.0	0.9
1988	1	0.0	4.3	0.6	0.0	0.0	0.6
1988	2	0.0	4.3	0.6	0.0	0.0	0.6
1988	3	0.0	5.5	0.8	0.0	0.0	0.8
1988	4	0.0	2.6	0.4	0.0	0.0	0.4
1988	5	0.0	0.4	0.1	0.0	0.0	0.1
1988	6	0.0	0.0	0.0	0.0	0.0	0.0
1988	7	0.0	0.0	0.0	0.0	0.0	0.0
1988	8	0.0	0.0	0.0	0.0	0.0	0.0
1988	9	0.0	1.1	0.2	0.0	0.0	0.2
1988	10	0.0	2.8	0.4	0.0	0.0	0.4
1988	11	0.0	3.5	0.5	0.0	0.0	0.5
1988	12	0.0	4.4	0.6	0.0	0.0	0.6
1989	1	0.0	4.3	0.6	0.0	0.0	0.6
1989	2	0.0	3.9	0.6	0.0	0.0	0.5
1989	3	0.1	5.9	0.9	0.0	0.0	0.8
1989	4	0.0	2.8	0.4	0.0	0.0	0.4
1989	5	0.0	1.3	0.2	0.0	0.0	0.2
1989	6	0.0	0.0	0.0	0.0	0.0	0.0
1989	7	0.0	0.0	0.0	0.0	0.0	0.0
1989	8	0.1	6.5	0.9	0.0	0.0	0.9
1989	9	0.0	0.0	0.0	0.0	0.0	0.0
1989	10	0.0	0.0	0.0	0.0	0.0	0.0
1989	11	0.0	5.6	0.8	0.0	0.0	0.8
1989	12	0.1	6.9	1.0	0.0	0.0	0.9

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 10：Gross Water Requirements of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (3/5) (1990 - 2001)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1990	1	0.0	4.0	0.6	0.0	0.0	0.6
1990	2	0.0	2.9	0.4	0.0	0.0	0.4
1990	3	0.0	3.0	0.4	0.0	0.0	0.4
1990	4	0.0	2.5	0.4	0.0	0.0	0.3
1990	5	0.0	0.3	0.0	0.0	0.0	0.0
1990	6	0.0	0.0	0.0	0.0	0.0	0.0
1990	7	0.0	0.0	0.0	0.0	0.0	0.0
1990	8	0.0	5.0	0.7	0.0	0.0	0.7
1990	9	0.0	2.0	0.3	0.0	0.0	0.3
1990	10	0.0	4.0	0.6	0.0	0.0	0.5
1990	11	0.0	3.2	0.5	0.0	0.0	0.4
1990	12	0.1	6.5	1.0	0.0	0.0	0.9
1991	1	0.0	4.3	0.6	0.0	0.0	0.6
1991	2	0.0	4.5	0.7	0.0	0.0	0.6
1991	3	0.0	5.2	0.8	0.0	0.0	0.7
1991	4	0.0	2.6	0.4	0.0	0.0	0.4
1991	5	0.0	0.4	0.1	0.0	0.0	0.0
1991	6	0.0	0.0	0.0	0.0	0.0	0.0
1991	7	0.0	0.0	0.0	0.0	0.0	0.0
1991	8	0.0	0.0	0.0	0.0	0.0	0.0
1991	9	0.0	0.0	0.0	0.0	0.0	0.0
1991	10	0.0	1.7	0.2	0.0	0.0	0.2
1991	11	0.0	3.4	0.5	0.0	0.0	0.5
1991	12	0.1	6.6	1.0	0.0	0.0	0.9
1992	1	0.0	3.9	0.6	0.0	0.0	0.5
1992	2	0.0	3.0	0.4	0.0	0.0	0.4
1992	3	0.0	5.4	0.8	0.0	0.0	0.7
1992	4	0.0	5.4	0.8	0.0	0.0	0.7
1992	5	0.0	0.9	0.1	0.0	0.0	0.1
1992	6	0.0	0.3	0.0	0.0	0.0	0.0
1992	7	0.0	0.0	0.0	0.0	0.0	0.0
1992	8	0.0	2.7	0.4	0.0	0.0	0.4
1992	9	0.0	0.5	0.1	0.0	0.0	0.1
1992	10	0.0	0.4	0.1	0.0	0.0	0.1
1992	11	0.0	3.0	0.4	0.0	0.0	0.4
1992	12	0.1	7.0	1.0	0.0	0.0	1.0
1993	1	0.0	3.5	0.5	0.0	0.0	0.5
1993	2	0.0	2.8	0.4	0.0	0.0	0.4
1993	3	0.0	4.0	0.6	0.0	0.0	0.6
1993	4	0.0	3.7	0.5	0.0	0.0	0.5
1993	5	0.0	0.0	0.0	0.0	0.0	0.0
1993	6	0.0	0.0	0.0	0.0	0.0	0.0
1993	7	0.0	0.0	0.0	0.0	0.0	0.0
1993	8	0.0	0.0	0.0	0.0	0.0	0.0
1993	9	0.0	1.5	0.2	0.0	0.0	0.2
1993	10	0.0	2.5	0.4	0.0	0.0	0.3
1993	11	0.0	5.2	0.8	0.0	0.0	0.7
1993	12	0.1	7.2	1.1	0.0	0.0	1.0
1994	1	0.0	4.5	0.7	0.0	0.0	0.6
1994	2	0.0	4.4	0.6	0.0	0.0	0.6
1994	3	0.0	2.8	0.4	0.0	0.0	0.4
1994	4	0.0	1.9	0.3	0.0	0.0	0.3
1994	5	0.0	0.6	0.1	0.0	0.0	0.1
1994	6	0.0	0.0	0.0	0.0	0.0	0.0
1994	7	0.0	0.0	0.0	0.0	0.0	0.0
1994	8	0.0	0.1	0.0	0.0	0.0	0.0
1994	9	0.0	1.2	0.2	0.0	0.0	0.2
1994	10	0.0	4.8	0.7	0.0	0.0	0.7
1994	11	0.0	5.4	0.8	0.0	0.0	0.7
1994	12	0.1	7.3	1.1	0.0	0.0	1.0
1995	1	0.0	4.7	0.7	0.0	0.0	0.6
1995	2	0.0	4.2	0.6	0.0	0.0	0.6
1995	3	0.1	6.5	1.0	0.0	0.0	0.9
1995	4	0.0	5.4	0.8	0.0	0.0	0.7
1995	5	0.0	0.6	0.1	0.0	0.0	0.1
1995	6	0.0	0.0	0.0	0.0	0.0	0.0
1995	7	0.0	0.0	0.0	0.0	0.0	0.0
1995	8	0.0	0.0	0.0	0.0	0.0	0.0
1995	9	0.0	0.2	0.0	0.0	0.0	0.0
1995	10	0.1	6.5	0.9	0.0	0.0	0.9
1995	11	0.0	0.0	0.0	0.0	0.0	0.0
1995	12	0.1	7.3	1.1	0.0	0.0	1.0

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1996	1	0.0	4.7	0.7	0.0	0.0	0.7
1996	2	0.0	3.3	0.5	0.0	0.0	0.5
1996	3	0.1	6.0	0.9	0.0	0.0	0.8
1996	4	0.0	4.0	0.6	0.0	0.0	0.5
1996	5	0.0	0.2	0.0	0.0	0.0	0.0
1996	6	0.0	0.6	0.1	0.0	0.0	0.1
1996	7	0.0	0.0	0.0	0.0	0.0	0.0
1996	8	0.0	0.0	0.0	0.0	0.0	0.0
1996	9	0.0	1.3	0.2	0.0	0.0	0.2
1996	10	0.0	0.0	0.0	0.0	0.0	0.0
1996	11	0.1	6.5	0.9	0.0	0.0	0.9
1996	12	0.1	7.5	1.1	0.0	0.0	1.0
1997	1	0.0	4.8	0.7	0.0	0.0	0.7
1997	2	0.0	4.2	0.6	0.0	0.0	0.6
1997	3	0.0	5.2	0.8	0.0	0.0	0.7
1997	4	0.0	5.3	0.8	0.0	0.0	0.7
1997	5	0.0	1.1	0.2	0.0	0.0	0.1
1997	6	0.0	0.0	0.0	0.0	0.0	0.0
1997	7	0.0	0.0	0.0	0.0	0.0	0.0
1997	8	0.0	0.9	0.1	0.0	0.0	0.1
1997	9	0.0	0.0	0.0	0.0	0.0	0.0
1997	10	0.0	4.4	0.6	0.0	0.0	0.6
1997	11	0.1	6.0	0.9	0.0	0.0	0.8
1997	12	0.1	6.5	1.0	0.0	0.0	0.9
1998	1	0.0	4.0	0.6	0.0	0.0	0.6
1998	2	0.0	4.2	0.6	0.0	0.0	0.6
1998	3	0.1	6.3	0.9	0.0	0.0	0.9
1998	4	0.0	3.0	0.4	0.0	0.0	0.4
1998	5	0.0	1.0	0.2	0.0	0.0	0.1
1998	6	0.0	0.2	0.0	0.0	0.0	0.0
1998	7	0.0	0.0	0.0	0.0	0.0	0.0
1998	8	0.0	0.0	0.0	0.0	0.0	0.0
1998	9	0.0	4.0	0.6	0.0	0.0	0.5
1998	10	0.0	3.6	0.5	0.0	0.0	0.5
1998	11	0.0	4.5	0.7	0.0	0.0	0.6
1998	12	0.1	7.9	1.2	0.0	0.0	1.1
1999	1	0.0	5.0	0.7	0.0	0.0	0.7
1999	2	0.0	5.5	0.8	0.0	0.0	0.8
1999	3	0.1	6.6	1.0	0.0	0.0	0.9
1999	4	0.1	6.1	0.9	0.0	0.0	0.8
1999	5	0.0	0.2	0.0	0.0	0.0	0.0
1999	6	0.0	0.0	0.0	0.0	0.0	0.0
1999	7	0.0	0.0	0.0	0.0	0.0	0.0
1999	8	0.0	0.0	0.0	0.0	0.0	0.0
1999	9	0.0	0.0	0.0	0.0	0.0	0.0
1999	10	0.0	0.7	0.1	0.0	0.0	0.1
1999	11	0.1	7.5	1.1	0.0	0.0	1.0
1999	12	0.0	4.0	0.6	0.0	0.0	0.6
2000	1	0.0	5.0	0.7	0.0	0.0	0.7
2000	2	0.0	5.3	0.8	0.0	0.0	0.7
2000	3	0.0	4.7	0.7	0.0	0.0	0.7
2000	4	0.0	5.1	0.7	0.0	0.0	0.7
2000	5	0.0	0.0	0.0	0.0	0.0	0.0
2000	6	0.0	0.0	0.0	0.0	0.0	0.0
2000	7	0.0	0.0	0.0	0.0	0.0	0.0
2000	8	0.0	0.0	0.0	0.0	0.0	0.0
2000	9	0.0	1.9	0.3	0.0	0.0	0.3
2000	10	0.0	0.0	0.0	0.0	0.0	0.0
2000	11	0.1	7.0	1.0	0.0	0.0	1.0
2000	12	0.1	8.1	1.2	0.0	0.0	1.1
2001	1	0.0	5.2	0.8	0.0	0.0	0.7
2001	2	0.0	4.6	0.7	0.0	0.0	0.6
2001	3	0.1	7.2	1.0	0.0	0.0	1.0
2001	4	0.1	6.4	0.9	0.0	0.0	0.9
2001	5	0.0	0.5	0.1	0.0	0.0	0.1
2001	6	0.0	0.0	0.0	0.0	0.0	0.0
2001	7	0.0	0.0	0.0	0.0	0.0	0.0
2001	8	0.0	0.0	0.0	0.0	0.0	0.0
2001	9	0.0	1.9	0.3	0.0	0.0	0.3
2001	10	0.0	1.0	0.1	0.0	0.0	0.1
2001	11	0.0	3.7	0.5	0.0	0.0	0.5
2001	12	0.1	8.1	1.2	0.0	0.0	1.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 10：Gross Water Requirements of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (4/5) (2002 - 2013)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2002	1	0.0	4.2	0.6	0.0	0.0	0.6
2002	2	0.0	5.5	0.8	0.0	0.0	0.8
2002	3	0.1	6.0	0.9	0.0	0.0	0.8
2002	4	0.0	4.2	0.6	0.0	0.0	0.6
2002	5	0.0	0.0	0.0	0.0	0.0	0.0
2002	6	0.0	0.0	0.0	0.0	0.0	0.0
2002	7	0.0	0.0	0.0	0.0	0.0	0.0
2002	8	0.0	0.0	0.0	0.0	0.0	0.0
2002	9	0.0	0.2	0.0	0.0	0.0	0.0
2002	10	0.0	0.5	0.1	0.0	0.0	0.1
2002	11	0.0	2.1	0.3	0.0	0.0	0.3
2002	12	0.1	8.0	1.2	0.0	0.0	1.1
2003	1	0.0	4.8	0.7	0.0	0.0	0.7
2003	2	0.0	5.2	0.8	0.0	0.0	0.7
2003	3	0.0	5.4	0.8	0.0	0.0	0.7
2003	4	0.1	6.5	0.9	0.0	0.0	0.9
2003	5	0.0	0.0	0.0	0.0	0.0	0.0
2003	6	0.0	0.0	0.0	0.0	0.0	0.0
2003	7	0.0	0.0	0.0	0.0	0.0	0.0
2003	8	0.0	0.0	0.0	0.0	0.0	0.0
2003	9	0.0	3.2	0.5	0.0	0.0	0.4
2003	10	0.0	4.4	0.6	0.0	0.0	0.6
2003	11	0.1	7.7	1.1	0.0	0.0	1.1
2003	12	0.1	8.3	1.2	0.0	0.0	1.1
2004	1	0.0	4.8	0.7	0.0	0.0	0.7
2004	2	0.0	5.5	0.8	0.0	0.0	0.8
2004	3	0.1	6.9	1.0	0.0	0.0	1.0
2004	4	0.0	1.7	0.2	0.0	0.0	0.2
2004	5	0.0	1.1	0.2	0.0	0.0	0.1
2004	6	0.0	0.3	0.0	0.0	0.0	0.0
2004	7	0.0	0.0	0.0	0.0	0.0	0.0
2004	8	0.0	0.1	0.0	0.0	0.0	0.0
2004	9	0.0	3.6	0.5	0.0	0.0	0.5
2004	10	0.0	3.2	0.5	0.0	0.0	0.4
2004	11	0.1	7.8	1.1	0.0	0.0	1.1
2004	12	0.1	8.5	1.2	0.0	0.0	1.2
2005	1	0.0	5.0	0.7	0.0	0.0	0.7
2005	2	0.0	5.4	0.8	0.0	0.0	0.7
2005	3	0.1	6.2	0.9	0.0	0.0	0.9
2005	4	0.0	4.2	0.6	0.0	0.0	0.6
2005	5	0.0	0.9	0.1	0.0	0.0	0.1
2005	6	0.0	0.0	0.0	0.0	0.0	0.0
2005	7	0.0	0.0	0.0	0.0	0.0	0.0
2005	8	0.0	0.0	0.0	0.0	0.0	0.0
2005	9	0.0	0.0	0.0	0.0	0.0	0.0
2005	10	0.0	2.1	0.3	0.0	0.0	0.3
2005	11	0.1	6.8	1.0	0.0	0.0	0.9
2005	12	0.1	7.5	1.1	0.0	0.0	1.0
2006	1	0.0	5.1	0.7	0.0	0.0	0.7
2006	2	0.0	5.1	0.7	0.0	0.0	0.7
2006	3	0.1	7.2	1.0	0.0	0.0	1.0
2006	4	0.0	4.1	0.6	0.0	0.0	0.6
2006	5	0.0	0.0	0.0	0.0	0.0	0.0
2006	6	0.0	0.6	0.1	0.0	0.0	0.1
2006	7	0.0	0.0	0.0	0.0	0.0	0.0
2006	8	0.0	4.3	0.6	0.0	0.0	0.6
2006	9	0.0	0.2	0.0	0.0	0.0	0.0
2006	10	0.1	6.1	0.9	0.0	0.0	0.8
2006	11	0.1	7.2	1.1	0.0	0.0	1.0
2006	12	0.1	8.4	1.2	0.0	0.0	1.2
2007	1	0.0	5.0	0.7	0.0	0.0	0.7
2007	2	0.0	3.4	0.5	0.0	0.0	0.5
2007	3	0.1	7.0	1.0	0.0	0.0	1.0
2007	4	0.0	4.2	0.6	0.0	0.0	0.6
2007	5	0.0	0.1	0.0	0.0	0.0	0.0
2007	6	0.0	0.0	0.0	0.0	0.0	0.0
2007	7	0.0	0.0	0.0	0.0	0.0	0.0
2007	8	0.0	0.4	0.1	0.0	0.0	0.0
2007	9	0.0	1.7	0.3	0.0	0.0	0.2
2007	10	0.0	0.0	0.0	0.0	0.0	0.0
2007	11	0.0	2.7	0.4	0.0	0.0	0.4
2007	12	0.1	8.4	1.2	0.0	0.0	1.2

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2008	1	0.0	4.9	0.7	0.0	0.0	0.7
2008	2	0.0	4.4	0.6	0.0	0.0	0.6
2008	3	0.1	6.7	1.0	0.0	0.0	0.9
2008	4	0.1	7.1	1.0	0.0	0.0	1.0
2008	5	0.0	0.9	0.1	0.0	0.0	0.1
2008	6	0.0	0.1	0.0	0.0	0.0	0.0
2008	7	0.0	0.0	0.0	0.0	0.0	0.0
2008	8	0.0	0.4	0.1	0.0	0.0	0.1
2008	9	0.0	0.0	0.0	0.0	0.0	0.0
2008	10	0.0	2.7	0.4	0.0	0.0	0.4
2008	11	0.1	8.0	1.2	0.0	0.0	1.1
2008	12	0.1	8.6	1.3	0.0	0.0	1.2
2009	1	0.0	5.6	0.8	0.0	0.0	0.8
2009	2	0.1	6.3	0.9	0.0	0.0	0.9
2009	3	0.1	7.0	1.0	0.0	0.0	1.0
2009	4	0.0	4.1	0.6	0.0	0.0	0.6
2009	5	0.0	0.9	0.1	0.0	0.0	0.1
2009	6	0.0	0.2	0.0	0.0	0.0	0.0
2009	7	0.0	0.0	0.0	0.0	0.0	0.0
2009	8	0.0	0.0	0.0	0.0	0.0	0.0
2009	9	0.0	0.0	0.0	0.0	0.0	0.0
2009	10	0.0	5.0	0.7	0.0	0.0	0.7
2009	11	0.0	5.7	0.8	0.0	0.0	0.8
2009	12	0.1	8.8	1.3	0.0	0.0	1.2
2010	1	0.0	5.7	0.8	0.0	0.0	0.8
2010	2	0.1	6.1	0.9	0.0	0.0	0.8
2010	3	0.1	7.0	1.0	0.0	0.0	1.0
2010	4	0.1	6.6	1.0	0.0	0.0	0.9
2010	5	0.0	1.0	0.1	0.0	0.0	0.1
2010	6	0.0	0.0	0.0	0.0	0.0	0.0
2010	7	0.0	0.0	0.0	0.0	0.0	0.0
2010	8	0.0	4.1	0.6	0.0	0.0	0.6
2010	9	0.0	1.8	0.3	0.0	0.0	0.2
2010	10	0.0	4.1	0.6	0.0	0.0	0.6
2010	11	0.1	7.8	1.1	0.0	0.0	1.1
2010	12	0.1	5.9	0.9	0.0	0.0	0.8
2011	1	0.0	5.5	0.8	0.0	0.0	0.8
2011	2	0.1	5.9	0.9	0.0	0.0	0.8
2011	3	0.1	7.6	1.1	0.0	0.0	1.0
2011	4	0.0	3.7	0.5	0.0	0.0	0.5
2011	5	0.0	0.6	0.1	0.0	0.0	0.1
2011	6	0.0	0.0	0.0	0.0	0.0	0.0
2011	7	0.0	0.0	0.0	0.0	0.0	0.0
2011	8	0.0	0.1	0.0	0.0	0.0	0.0
2011	9	0.0	0.0	0.0	0.0	0.0	0.0
2011	10	0.0	2.8	0.4	0.0	0.0	0.4
2011	11	0.1	7.9	1.2	0.0	0.0	1.1
2011	12	0.1	8.5	1.2	0.0	0.0	1.2
2012	1	0.0	5.3	0.8	0.0	0.0	0.7
2012	2	0.0	5.7	0.8	0.0	0.0	0.8
2012	3	0.0	4.8	0.7	0.0	0.0	0.7
2012	4	0.0	3.1	0.5	0.0	0.0	0.4
2012	5	0.0	0.3	0.0	0.0	0.0	0.0
2012	6	0.0	0.0	0.0	0.0	0.0	0.0
2012	7	0.0	0.0	0.0	0.0	0.0	0.0
2012	8	0.0	0.2	0.0	0.0	0.0	0.0
2012	9	0.0	3.7	0.5	0.0	0.0	0.5
2012	10	0.0	5.3	0.8	0.0	0.0	0.7
2012	11	0.1	7.6	1.1	0.0	0.0	1.1
2012	12	0.1	9.0	1.3	0.0	0.0	1.2
2013	1	0.0	5.5	0.8	0.0	0.0	0.8
2013	2	0.1	5.8	0.9	0.0	0.0	0.8
2013	3	0.1	7.3	1.1	0.0	0.0	1.0
2013	4	0.0	5.5	0.8	0.0	0.0	0.8
2013	5	0.0	0.0	0.0	0.0	0.0	0.0
2013	6	0.0	0.0	0.0	0.0	0.0	0.0
2013	7	0.0	0.0	0.0	0.0	0.0	0.0
2013	8	0.1	5.8	0.8	0.0	0.0	0.8
2013	9	0.0	0.9	0.1	0.0	0.0	0.1
2013	10	0.0	0.0	0.0	0.0	0.0	0.0
2013	11	0.1	7.9	1.2	0.0	0.0	1.1
2013	12	0.1	8.7	1.3	0.0	0.0	1.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 10：Gross Water Requirements of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (5/5) (2014 - 2019)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2014	1	0.0	5.3	0.8	0.0	0.0	0.7
2014	2	0.0	4.7	0.7	0.0	0.0	0.6
2014	3	0.1	7.5	1.1	0.0	0.0	1.0
2014	4	0.1	7.2	1.0	0.0	0.0	1.0
2014	5	0.0	1.3	0.2	0.0	0.0	0.2
2014	6	0.0	0.7	0.1	0.0	0.0	0.1
2014	7	0.0	0.0	0.0	0.0	0.0	0.0
2014	8	0.0	0.0	0.0	0.0	0.0	0.0
2014	9	0.0	2.9	0.4	0.0	0.0	0.4
2014	10	0.1	8.5	1.2	0.0	0.0	1.2
2014	11	0.1	7.9	1.2	0.0	0.0	1.1
2014	12	0.1	8.7	1.3	0.0	0.0	1.2
2015	1	0.0	5.1	0.8	0.0	0.0	0.7
2015	2	0.0	5.3	0.8	0.0	0.0	0.7
2015	3	0.1	7.4	1.1	0.0	0.0	1.0
2015	4	0.0	4.9	0.7	0.0	0.0	0.7
2015	5	0.0	1.6	0.2	0.0	0.0	0.2
2015	6	0.0	0.0	0.0	0.0	0.0	0.0
2015	7	0.0	0.0	0.0	0.0	0.0	0.0
2015	8	0.0	5.4	0.8	0.0	0.0	0.7
2015	9	0.0	0.0	0.0	0.0	0.0	0.0
2015	10	0.0	3.3	0.5	0.0	0.0	0.5
2015	11	0.1	6.4	0.9	0.0	0.0	0.9
2015	12	0.1	7.8	1.1	0.0	0.0	1.1
2016	1	0.0	5.0	0.7	0.0	0.0	0.7
2016	2	0.0	5.4	0.8	0.0	0.0	0.7
2016	3	0.1	6.4	0.9	0.0	0.0	0.9
2016	4	0.1	6.3	0.9	0.0	0.0	0.9
2016	5	0.0	0.7	0.1	0.0	0.0	0.1
2016	6	0.0	1.0	0.1	0.0	0.0	0.1
2016	7	0.0	0.0	0.0	0.0	0.0	0.0
2016	8	0.0	0.1	0.0	0.0	0.0	0.0
2016	9	0.0	0.3	0.0	0.0	0.0	0.0
2016	10	0.0	3.7	0.5	0.0	0.0	0.5
2016	11	0.1	6.5	1.0	0.0	0.0	0.9
2016	12	0.1	9.2	1.3	0.0	0.0	1.3
2017	1	0.1	6.1	0.9	0.0	0.0	0.8
2017	2	0.1	6.0	0.9	0.0	0.0	0.8
2017	3	0.0	4.1	0.6	0.0	0.0	0.6
2017	4	0.0	1.7	0.2	0.0	0.0	0.2
2017	5	0.0	1.3	0.2	0.0	0.0	0.2
2017	6	0.0	0.0	0.0	0.0	0.0	0.0
2017	7	0.0	0.0	0.0	0.0	0.0	0.0
2017	8	0.0	0.1	0.0	0.0	0.0	0.0
2017	9	0.0	0.0	0.0	0.0	0.0	0.0
2017	10	0.0	3.5	0.5	0.0	0.0	0.5
2017	11	0.1	8.1	1.2	0.0	0.0	1.1
2017	12	0.1	7.6	1.1	0.0	0.0	1.0
2018	1	0.0	4.6	0.7	0.0	0.0	0.6
2018	2	0.0	5.7	0.8	0.0	0.0	0.8
2018	3	0.1	7.4	1.1	0.0	0.0	1.0
2018	4	0.1	6.0	0.9	0.0	0.0	0.8
2018	5	0.0	0.9	0.1	0.0	0.0	0.1
2018	6	0.0	0.0	0.0	0.0	0.0	0.0
2018	7	0.0	0.0	0.0	0.0	0.0	0.0
2018	8	0.0	5.2	0.8	0.0	0.0	0.7
2018	9	0.0	2.9	0.4	0.0	0.0	0.4
2018	10	0.0	2.4	0.3	0.0	0.0	0.3
2018	11	0.1	8.1	1.2	0.0	0.0	1.1
2018	12	0.1	9.0	1.3	0.0	0.0	1.2
2019	1	0.1	5.8	0.9	0.0	0.0	0.8
2019	2	0.0	5.5	0.8	0.0	0.0	0.8
2019	3	0.0	5.8	0.8	0.0	0.0	0.8
2019	4	0.1	7.4	1.1	0.0	0.0	1.0
2019	5	0.0	1.7	0.2	0.0	0.0	0.2
2019	6	0.0	0.6	0.1	0.0	0.0	0.1
2019	7	0.0	0.0	0.0	0.0	0.0	0.0
2019	8	0.0	0.6	0.1	0.0	0.0	0.1
2019	9	0.0	1.8	0.3	0.0	0.0	0.2
2019	10	0.0	5.5	0.8	0.0	0.0	0.8
2019	11	0.0	5.5	0.8	0.0	0.0	0.8
2019	12	0.1	9.7	1.4	0.0	0.0	1.3

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 11：Reduced Water of each Upazila and for each Month in Karunafuri River Basin (m^3/s) (1/9) (1966 - 1971)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1966	1	0.0	0.0	0.0	0.0	1.0	2.0	1.5	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.2	0.4	0.2
1966	2	0.0	0.0	0.0	0.0	1.1	2.1	1.7	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1966	3	0.0	0.0	0.0	0.0	1.5	3.0	2.3	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1966	4	0.0	0.0	0.0	0.0	1.6	3.0	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1966	5	0.0	0.0	0.0	0.0	1.0	1.9	1.5	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.1	0.4	0.2
1966	6	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1966	7	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1966	8	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1966	9	0.0	0.0	0.0	0.0	1.3	2.5	2.0	2.1	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.7	0.7	0.0	0.2	0.5	0.2
1966	10	0.0	0.0	0.0	0.0	1.9	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1966	11	0.0	0.0	0.0	0.0	1.5	3.0	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1966	12	0.0	0.0	0.0	0.0	1.6	3.1	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1967	1	0.0	0.0	0.0	0.0	1.0	2.0	1.6	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.2	0.4	0.2
1967	2	0.0	0.0	0.0	0.0	1.1	2.2	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1967	3	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1967	4	0.0	0.0	0.0	0.0	1.5	2.8	2.2	2.5	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.8	1.9	0.8	0.0	0.2	0.6	0.3
1967	5	0.0	0.0	0.0	0.0	0.7	1.3	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
1967	6	0.0	0.0	0.0	0.0	0.7	1.3	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
1967	7	0.0	0.0	0.0	0.0	2.1	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1967	8	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1967	9	0.0	0.0	0.0	0.0	1.4	2.6	2.1	2.3	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.2
1967	10	0.0	0.0	0.0	0.0	1.7	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1967	11	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1967	12	0.0	0.0	0.0	0.0	1.9	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1968	1	0.0	0.0	0.0	0.0	1.1	2.1	1.6	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1968	2	0.0	0.0	0.0	0.0	1.2	2.3	1.8	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1968	3	0.0	0.0	0.0	0.0	1.6	3.1	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1968	4	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1968	5	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1968	6	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.5
1968	7	0.0	0.0	0.0	0.0	5.0	9.7	7.6	8.4	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.7	1.9	0.9
1968	8	0.0	0.0	0.0	0.0	3.1	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1968	9	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1968	10	0.0	0.0	0.0	0.0	1.4	2.6	2.1	2.3	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.2
1968	11	0.0	0.0	0.0	0.0	1.6	3.1	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1968	12	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1969	1	0.0	0.0	0.0	0.0	1.0	2.0	1.6	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.2	0.4	0.2
1969	2	0.0	0.0	0.0	0.0	1.1	2.2	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.6	0.0	0.2	0.4	0.2
1969	3	0.0	0.0	0.0	0.0	1.6	3.2	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.1	0.9	0.0	0.2	0.6	0.3
1969	4	0.0	0.0	0.0	0.0	1.6	3.0	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1969	5	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1969	6	0.0	0.0	0.0	0.0	0.6	1.2	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.8	0.4	0.0	0.1	0.2	0.1
1969	7	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1969	8	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1969	9	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1969	10	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.3	1.0	0.0	0.3	0.7	0.3
1969	11	0.0	0.0	0.0	0.0	1.5	2.8	2.2	2.5	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.8	1.9	0.8	0.0	0.2	0.6	0.3
1969	12	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1970	1	0.0	0.0	0.0	0.0	1.1	2.0	1.6	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1970	2	0.0	0.0	0.0	0.0	1.1	2.1	1.7	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1970	3	0.0	0.0	0.0	0.0	1.7	3.2	2.5	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.1	0.9	0.0	0.2	0.6	0.3
1970	4	0.0	0.0	0.0	0.0	1.6	3.0	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1970	5	0.0	0.0	0.0	0.0	0.8	1.6	1.3	1.4	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.2
1970	6	0.0	0.0	0.0	0.0	1.3	2.6	2.1	2.3	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
1970	7	0.0	0.0	0.0	0.0	6.3	12.1	9.6	10.5	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.6	8.1	3.6	0.0	0.9	2.4	1.1
1970	8	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1970	9	0.0	0.0	0.0	0.0	1.4	2.6	2.1	2.3	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.2
1970	10	0.0	0.0	0.0	0.0	1.4	2.7	2.1	2.3	0.1	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.2
1970	11	0.0	0.0	0.0	0.0	1.3	2.6	2.1	2.3	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
1970	12	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.6	1.1	0.0	0.3	0.8	0.4
1971	1	0.0	0.0	0.0	0.0	1.1	2.2	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.6	0.0	0.2	0.4	0.2
1971	2	0.0	0.0	0.0	0.0	1.2	2.2	1.8	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1971	3	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
1971	4	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	1.9	0.8	0.0	0.2	0.6	0.3
1971	5	0.0	0.0	0.0	0.0	0.9	1.7	1.4	1.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.3	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.5	1.2	0.5	0.0	0.1	0.3	0.2
1971	6	0.0	0.0	0.0	0.0	3.5	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1971	7	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1971	8	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
1971	9	0.0	0.0	0.0	0.0	1.4	2.8	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.8	1.9	0.8	0.0	0.2	0.6	0.3
1971	10	0.0	0.0	0.0	0.0	1.8	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1971	11	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1971	12	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 11：Reduced Water of each Upazila and for each Month in Karunafuri River Basin (m^3/s) (2/9) (1972 - 1977)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1972	1	0.0	0.0	0.0	0.0	1.1	2.2	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.6	0.0	0.2	0.4	0.2
1972	2	0.0	0.0	0.0	0.0	1.2	2.3	1.8	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.5	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1972	3	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1972	4	0.0	0.0	0.0	0.0	1.6	3.1	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1972	5	0.0	0.0	0.0	0.0	0.9	1.7	1.3	1.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.3	0.9	0.1	0.1	0.2	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.2
1972	6	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1972	7	0.0	0.0	0.0	0.0	1.8	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1972	8	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1972	9	0.0	0.0	0.0	0.0	1.8	3.5	2.7	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1972	10	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.8	0.4
1972	11	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1972	12	0.0	0.0	0.0	0.0	2.0	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1973	1	0.0	0.0	0.0	0.0	1.2	2.2	1.8	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1973	2	0.0	0.0	0.0	0.0	1.2	2.4	1.9	2.1	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1973	3	0.0	0.0	0.0	0.0	1.7	3.2	2.5	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.1	1.0	0.0	0.2	0.6	0.3
1973	4	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1973	5	0.0	0.0	0.0	0.0	1.9	3.8	3.0	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1973	6	0.0	0.0	0.0	0.0	2.3	4.5	3.6	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.3	0.9	0.4
1973	7	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1973	8	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.5
1973	9	0.0	0.0	0.0	0.0	1.6	3.1	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1973	10	0.0	0.0	0.0	0.0	1.6	3.0	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1973	11	0.0	0.0	0.0	0.0	1.3	2.5	2.0	2.1	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.7	0.7	0.0	0.2	0.5	0.2
1973	12	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1974	1	0.0	0.0	0.0	0.0	1.1	2.2	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1974	2	0.0	0.0	0.0	0.0	1.2	2.3	1.8	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.5	0.7	0.0	0.2	0.5	0.2
1974	3	0.0	0.0	0.0	0.0	1.7	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1974	4	0.0	0.0	0.0	0.0	1.6	3.0	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1974	5	0.0	0.0	0.0	0.0	1.2	2.4	1.9	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1974	6	0.0	0.0	0.0	0.0	2.4	4.6	3.6	3.9	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1974	7	0.0	0.0	0.0	0.0	2.6	4.9	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1974	8	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1974	9	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1974	10	0.0	0.0	0.0	0.0	1.6	3.1	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1974	11	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
1974	12	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1975	1	0.0	0.0	0.0	0.0	1.1	2.2	1.8	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1975	2	0.0	0.0	0.0	0.0	1.2	2.3	1.8	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.5	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1975	3	0.0	0.0	0.0	0.0	1.8	3.5	2.7	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1975	4	0.0	0.0	0.0	0.0	1.8	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1975	5	0.0	0.0	0.0	0.0	0.9	1.8	1.4	1.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.3	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.5	1.2	0.5	0.0	0.1	0.3	0.2
1975	6	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
1975	7	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1975	8	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
1975	9	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1975	10	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1975	11	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	1.9	0.8	0.0	0.2	0.6	0.3
1975	12	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1976	1	0.0	0.0	0.0	0.0	1.2	2.3	1.8	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1976	2	0.0	0.0	0.0	0.0	1.2	2.4	1.9	2.1	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1976	3	0.0	0.0	0.0	0.0	1.8	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.3	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1976	4	0.0	0.0	0.0	0.0	1.7	3.2	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.2	0.6	0.3
1976	5	0.0	0.0	0.0	0.0	1.1	2.2	1.8	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1976	6	0.0	0.0	0.0	0.0	4.7	9.1	7.2	7.9	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.9	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.1	2.7	0.0	0.7	1.8	0.9
1976	7	0.0	0.0	0.0	0.0	4.2	8.2	6.4	7.0	0.4	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1976	8	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1976	9	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1976	10	0.0	0.0	0.0	0.0	2.1	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1976	11	0.0	0.0	0.0	0.0	1.7	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1976	12	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1977	1	0.0	0.0	0.0	0.0	1.1	2.2	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1977	2	0.0	0.0	0.0	0.0	1.2	2.3	1.8	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1977	3	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1977	4	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1977	5	0.0	0.0	0.0	0.0	1.4	2.7	2.1	2.3	0.1	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.3
1977	6	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
1977	7	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
1977	8	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1977	9	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1977	10	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1977	11	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1977	12	0.0	0.0	0.0	0.0	2.1	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 11：Reduced Water of each Upazila and for each Month in Karunafuri River Basin (m^3/s) (3/9) (1978 - 1983)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1978	1	0.0	0.0	0.0	0.0	1.2	2.3	1.8	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.5	0.7	0.0	0.2	0.5	0.2
1978	2	0.0	0.0	0.0	0.0	1.3	2.5	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.7	0.7	0.0	0.2	0.5	0.2
1978	3	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
1978	4	0.0	0.0	0.0	0.0	1.8	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1978	5	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1978	6	0.0	0.0	0.0	0.0	3.9	7.6	6.0	6.6	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1978	7	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1978	8	0.0	0.0	0.0	0.0	3.8	7.5	5.9	6.4	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1978	9	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1978	10	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1978	11	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1978	12	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.8	0.4
1979	1	0.0	0.0	0.0	0.0	1.2	2.4	1.9	2.1	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1979	2	0.0	0.0	0.0	0.0	1.3	2.5	2.0	2.1	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.7	0.7	0.0	0.2	0.5	0.2
1979	3	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1979	4	0.0	0.0	0.0	0.0	1.7	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1979	5	0.0	0.0	0.0	0.0	1.2	2.2	1.8	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1979	6	0.0	0.0	0.0	0.0	2.9	5.6	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1979	7	0.0	0.0	0.0	0.0	4.0	7.8	6.1	6.7	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.5	0.7
1979	8	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1979	9	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.8	0.4
1979	10	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1979	11	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1979	12	0.0	0.0	0.0	0.0	2.0	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1980	1	0.0	0.0	0.0	0.0	1.2	2.3	1.8	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1980	2	0.0	0.0	0.0	0.0	1.2	2.3	1.8	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.5	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1980	3	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1980	4	0.0	0.0	0.0	0.0	1.9	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1980	5	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1980	6	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1980	7	0.0	0.0	0.0	0.0	5.7	11.0	8.7	9.5	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.7	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.3	3.2	0.0	0.8	2.2	1.0
1980	8	0.0	0.0	0.0	0.0	3.8	7.4	5.9	6.4	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1980	9	0.0	0.0	0.0	0.0	1.7	3.2	2.5	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.1	1.0	0.0	0.2	0.6	0.3
1980	10	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1980	11	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1980	12	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1981	1	0.0	0.0	0.0	0.0	1.2	2.4	1.9	2.1	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1981	2	0.0	0.0	0.0	0.0	1.3	2.6	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
1981	3	0.0	0.0	0.0	0.0	2.4	4.6	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1981	4	0.0	0.0	0.0	0.0	1.6	3.0	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1981	5	0.0	0.0	0.0	0.0	2.1	4.1	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1981	6	0.0	0.0	0.0	0.0	1.9	3.8	3.0	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1981	7	0.0	0.0	0.0	0.0	1.6	3.1	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1981	8	0.0	0.0	0.0	0.0	4.2	8.2	6.5	7.1	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
1981	9	0.0	0.0	0.0	0.0	2.6	4.9	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1981	10	0.0	0.0	0.0	0.0	2.2	4.4	3.4	3.8	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1981	11	0.0	0.0	0.0	0.0	1.9	3.7	3.0	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1981	12	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1982	1	0.0	0.0	0.0	0.0	1.3	2.5	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.7	0.7	0.0	0.2	0.5	0.2
1982	2	0.0	0.0	0.0	0.0	1.3	2.5	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.7	0.7	0.0	0.2	0.5	0.2
1982	3	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1982	4	0.0	0.0	0.0	0.0	1.8	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1982	5	0.0	0.0	0.0	0.0	1.0	1.9	1.5	1.6	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.1	0.4	0.2
1982	6	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1982	7	0.0	0.0	0.0	0.0	1.4	2.8	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.8	1.9	0.8	0.0	0.2	0.6	0.3
1982	8	0.0	0.0	0.0	0.0	3.0	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
1982	9	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1982	10	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1982	11	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1982	12	0.0	0.0	0.0	0.0	2.3	4.5	3.5	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1983	1	0.0	0.0	0.0	0.0	1.3	2.5	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.7	0.7	0.0	0.2	0.5	0.2
1983	2	0.0	0.0	0.0	0.0	1.3	2.6	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
1983	3	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1983	4	0.0	0.0	0.0	0.0	1.7	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1983	5	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1983	6	0.0	0.0	0.0	0.0	1.7	3.2	2.5	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.1	0.9	0.0	0.2	0.6	0.3
1983	7	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
1983	8	0.0	0.0	0.0	0.0	4.5	8.6	6.8	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
1983	9	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1983	10	0.0	0.0	0.0	0.0	1.6	3.2	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1983	11	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1983	12	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 11：Reduced Water of each Upazila and for each Month in Karunafuri River Basin (m^3/s) (4/9) (1984 - 1989)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1984	1	0.0	0.0	0.0	0.0	1.2	2.4	1.9	2.1	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1984	2	0.0	0.0	0.0	0.0	1.4	2.7	2.1	2.3	0.1	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.3
1984	3	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1984	4	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1984	5	0.0	0.0	0.0	0.0	3.8	7.3	5.8	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.4	0.7
1984	6	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
1984	7	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1984	8	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1984	9	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1984	10	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1984	11	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1984	12	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1985	1	0.0	0.0	0.0	0.0	1.3	2.6	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
1985	2	0.0	0.0	0.0	0.0	1.4	2.7	2.1	2.3	0.1	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.3
1985	3	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.6	1.1	0.0	0.3	0.8	0.4
1985	4	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1985	5	0.0	0.0	0.0	0.0	1.3	2.5	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.8	1.7	0.7	0.0	0.2	0.5	0.2
1985	6	0.0	0.0	0.0	0.0	2.5	4.9	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.5	3.2	1.4	0.0	0.4	1.0	0.5
1985	7	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1985	8	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
1985	9	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1985	10	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1985	11	0.0	0.0	0.0	0.0	1.6	3.1	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1985	12	0.0	0.0	0.0	0.0	2.4	4.6	3.6	3.9	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1986	1	0.0	0.0	0.0	0.0	1.3	2.6	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
1986	2	0.0	0.0	0.0	0.0	1.4	2.7	2.1	2.3	0.1	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.3
1986	3	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1986	4	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1986	5	0.0	0.0	0.0	0.0	0.9	1.8	1.4	1.6	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.5	1.2	0.5	0.0	0.1	0.4	0.2
1986	6	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.8	0.4
1986	7	0.0	0.0	0.0	0.0	4.8	9.3	7.4	8.0	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.8	0.0	0.7	1.8	0.9
1986	8	0.0	0.0	0.0	0.0	4.2	8.2	6.5	7.1	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
1986	9	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1986	10	0.0	0.0	0.0	0.0	2.0	3.9	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1986	11	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1986	12	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1987	1	0.0	0.0	0.0	0.0	1.2	2.3	1.8	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.5	0.7	0.0	0.2	0.5	0.2
1987	2	0.0	0.0	0.0	0.0	1.3	2.5	1.9	2.1	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1987	3	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1987	4	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1987	5	0.0	0.0	0.0	0.0	1.0	1.9	1.5	1.6	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.1	0.4	0.2
1987	6	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1987	7	0.0	0.0	0.0	0.0	3.9	7.6	6.0	6.6	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.2	0.0	0.6	1.5	0.7
1987	8	0.0	0.0	0.0	0.0	5.4	10.5	8.3	9.0	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	4.0	3.1	7.0	3.1	0.0	0.8	2.1	1.0
1987	9	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1987	10	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.5
1987	11	0.0	0.0	0.0	0.0	1.5	2.8	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.8	1.9	0.8	0.0	0.2	0.6	0.3
1987	12	0.0	0.0	0.0	0.0	2.3	4.5	3.5	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1988	1	0.0	0.0	0.0	0.0	1.4	2.6	2.1	2.3	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.2
1988	2	0.0	0.0	0.0	0.0	1.5	2.8	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.5	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.8	1.9	0.8	0.0	0.2	0.6	0.3
1988	3	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1988	4	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1988	5	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1988	6	0.0	0.0	0.0	0.0	4.8	9.3	7.3	8.0	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.7	0.0	0.7	1.8	0.9
1988	7	0.0	0.0	0.0	0.0	4.3	8.3	6.6	7.2	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.1	2.5	5.5	2.5	0.0	0.6	1.6	0.8
1988	8	0.0	0.0	0.0	0.0	4.0	7.7	6.1	6.6	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1988	9	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
1988	10	0.0	0.0	0.0	0.0	2.3	4.5	3.6	3.9	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1988	11	0.0	0.0	0.0	0.0	1.9	3.7	3.0	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1988	12	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1989	1	0.0	0.0	0.0	0.0	1.3	2.5	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
1989	2	0.0	0.0	0.0	0.0	1.4	2.8	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.3
1989	3	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1989	4	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1989	5	0.0	0.0	0.0	0.0	1.4	2.6	2.1	2.3	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.2
1989	6	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1989	7	0.0	0.0	0.0	0.0	5.2	10.2	8.0	8.8	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.8	3.0	0.0	0.8	2.0	1.0
1989	8	0.0	0.0	0.0	0.0	3.9	7.6	6.0	6.6	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.2	0.0	0.6	1.5	0.7
1989	9	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1989	10	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1989	11	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1989	12	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.5

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 11：Reduced Water of each Upazila and for each Month in Karunafuri River Basin (m^3/s) (5/9) (1990 - 1995)

Karunafuli River Basin

	District	Chattogram																	
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga
1990	1	0.0	0.0	0.0	0.0	1.3	2.6	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1990	2	0.0	0.0	0.0	0.0	1.4	2.7	2.1	2.3	0.1	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0
1990	3	0.0	0.0	0.0	0.0	1.9	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1990	4	0.0	0.0	0.0	0.0	2.3	4.5	3.6	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
1990	5	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
1990	6	0.0	0.0	0.0	0.0	2.5	4.9	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1990	7	0.0	0.0	0.0	0.0	4.3	8.3	6.5	7.1	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0
1990	8	0.0	0.0	0.0	0.0	3.9	7.6	6.0	6.6	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
1990	9	0.0	0.0	0.0	0.0	1.7	3.2	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1990	10	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1990	11	0.0	0.0	0.0	0.0	1.7	3.2	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1990	12	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
1991	1	0.0	0.0	0.0	0.0	1.3	2.5	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1991	2	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1991	3	0.0	0.0	0.0	0.0	2.1	4.1	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1991	4	0.0	0.0	0.0	0.0	1.8	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1991	5	0.0	0.0	0.0	0.0	3.8	7.3	5.8	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
1991	6	0.0	0.0	0.0	0.0	4.0	7.8	6.2	6.8	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
1991	7	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1991	8	0.0	0.0	0.0	0.0	4.0	7.9	6.2	6.8	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
1991	9	0.0	0.0	0.0	0.0	2.2	4.2	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1991	10	0.0	0.0	0.0	0.0	2.1	4.1	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1991	11	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1991	12	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1992	1	0.0	0.0	0.0	0.0	1.3	2.5	2.0	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1992	2	0.0	0.0	0.0	0.0	1.4	2.6	2.1	2.3	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1992	3	0.0	0.0	0.0	0.0	2.1	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1992	4	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1992	5	0.0	0.0	0.0	0.0	1.3	2.4	1.9	2.1	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1992	6	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1992	7	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1992	8	0.0	0.0	0.0	0.0	3.5	6.9	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
1992	9	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1992	10	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1992	11	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1992	12	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
1993	1	0.0	0.0	0.0	0.0	1.3	2.6	2.1	2.2	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1993	2	0.0	0.0	0.0	0.0	1.8	3.4	2.7	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1993	3	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
1993	4	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1993	5	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.3	0.3	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0
1993	6	0.0	0.0	0.0	0.0	5.2	10.2	8.0	8.8	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0
1993	7	0.0	0.0	0.0	0.0	6.4	12.5	9.9	10.8	0.7	1.3	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0
1993	8	0.0	0.0	0.0	0.0	4.9	9.6	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0
1993	9	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1993	10	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
1993	11	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
1993	12	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1994	1	0.0	0.0	0.0	0.0	1.5	2.8	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0
1994	2	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1994	3	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1994	4	0.0	0.0	0.0	0.0	1.8	3.5	2.7	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1994	5	0.0	0.0	0.0	0.0	1.1	2.2	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1994	6	0.0	0.0	0.0	0.0	1.8	3.4	2.7	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1994	7	0.0	0.0	0.0	0.0	2.1	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1994	8	0.0	0.0	0.0	0.0	3.3	6.4	5.0	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0
1994	9	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1994	10	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1994	11	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1994	12	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1995	1	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0
1995	2	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1995	3	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
1995	4	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
1995	5	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
1995	6	0.0	0.0	0.0	0.0	2.3	4.5	3.6	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
1995	7	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0
1995	8	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0
1995	9	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1995	10	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1995	11	0.0	0.0	0.0	0.0	1.5	3.0	2.3	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1995	12	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0

	District	Rangamati										Bandarban			Khagrachari							
	Upazila	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1990	1	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
1990	2	0.2	0.4	0.6	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.2
1990	3	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1990	4	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1990	5	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1990	6	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.5	3.2	1.4	0.0	0.4	1.0	0.5
1990	7	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
1990	8	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.2	0.0	0.6	1.5	0.7
1990	9	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.2	0.6	0.3
1990	10	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1990	11	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
1990	12	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1991	1	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.7	0.7	0.0	0.2	0.5	0.2
1991	2	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	1.9	0.9	0.0	0.2	0.6	0.3
1991	3	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1991	4	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.3	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
1991	5	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.4	0.7
1991	6	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.3	5.2	2.3	0.0	0.6	1.5	0.7
1991	7	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1991	8	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.3	5.2	2.3	0.0	0.6	1.5	0.7
1991	9	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
1991	10	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1991	11	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1991	12	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.5
1992	1	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.7	0.0	0.2	0.5	0.2
1992	2	0.2	0.4	0.5	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.2
1992	3	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1992	4	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1992	5	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1992	6	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1992	7	0.3	0.6	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1992	8	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1992	9	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
1992	10	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
1992	11	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1992	12	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1993	1	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
1993	2	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1993	3	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1993	4	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1993	5	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1993	6	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.8	3.0	0.0	0.8	2.0	1.0
1993	7	0.9	1.8	2.6	1.2	1.2	2.4	6.5	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.3	3.7	0.0	1.0	2.5	1.2
1993	8	0.7	1.4	2.0	0.9	0.9	1.9	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
1993	9	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1993	10	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1993	11	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1993	12	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1994	1	0.2	0.4	0.6	0.3	0.3	0.5	1.5	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.8	1.9	0.8	0.0	0.2	0.6	0.3
1994	2	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1994	3	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1994	4	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1994	5	0.2	0.3	0.5	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1994	6	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1994	7	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1994	8	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1994	9	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1994	10	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1994	11	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1994	12	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1995	1	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.9	1.9	0.8	0.0	0.2	0.6	0.3
1995	2	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	1.9	0.9	0.0	0.2	0.6	0.3
1995	3	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1995	4	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1995	5	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1995	6	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1995	7	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1995	8	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1995	9	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1995	10	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1995	11	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1995	12	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 11：Reduced Water of each Upazila and for each Month in Karunafuri River Basin (m^3/s) (6/9) (1996 - 2001)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1996	1	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	1.9	0.8	0.0	0.2	0.6	0.3
1996	2	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1996	3	0.0	0.0	0.0	0.0	3.0	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
1996	4	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1996	5	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1996	6	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.1	1.8	0.0	0.5	1.2	0.6
1996	7	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1996	8	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1996	9	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1996	10	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1996	11	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1996	12	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
1997	1	0.0	0.0	0.0	0.0	1.6	3.0	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1997	2	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1997	3	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1997	4	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.1	2.6	1.1	0.0	0.3	0.8	0.4
1997	5	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1997	6	0.0	0.0	0.0	0.0	3.6	6.9	5.4	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1997	7	0.0	0.0	0.0	0.0	4.6	8.9	7.0	7.7	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	6.0	2.6	0.0	0.7	1.8	0.8
1997	8	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1997	9	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1997	10	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1997	11	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1997	12	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1998	1	0.0	0.0	0.0	0.0	1.4	2.8	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.8	1.9	0.8	0.0	0.2	0.5	0.3
1998	2	0.0	0.0	0.0	0.0	1.6	3.1	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1998	3	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1998	4	0.0	0.0	0.0	0.0	2.1	4.1	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1998	5	0.0	0.0	0.0	0.0	4.9	9.5	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
1998	6	0.0	0.0	0.0	0.0	2.2	4.2	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
1998	7	0.0	0.0	0.0	0.0	7.5	14.6	11.5	12.6	0.8	1.5	0.0	0.0	0.8	0.8	0.0	0.0	0.0	0.0	1.0	2.2	3.0	1.4	1.4	2.8	7.6	1.0	1.3	1.3	0.7	0.1	0.0	5.5	4.4	9.8	4.3	0.0	1.1	2.9	1.4
1998	8	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.3	0.6
1998	9	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1998	10	0.0	0.0	0.0	0.0	2.8	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1998	11	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1998	12	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1999	1	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1999	2	0.0	0.0	0.0	0.0	1.9	3.8	3.0	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1999	3	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1999	4	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.5
1999	5	0.0	0.0	0.0	0.0	2.8	5.5	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
1999	6	0.0	0.0	0.0	0.0	8.0	15.5	12.2	13.4	0.9	1.6	0.0	0.0	0.9	0.8	0.0	0.1	0.0	0.0	1.1	2.3	3.2	1.4	1.5	3.0	8.0	1.1	1.4	1.4	0.8	0.1	0.0	5.9	4.6	10.4	4.6	0.0	1.2	3.1	1.5
1999	7	0.0	0.0	0.0	0.0	4.2	8.2	6.5	7.1	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
1999	8	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1999	9	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1999	10	0.0	0.0	0.0	0.0	2.0	3.9	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1999	11	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1999	12	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	1.0	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.4	0.0	0.4	1.0	0.5
2000	1	0.0	0.0	0.0	0.0	1.6	3.1	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
2000	2	0.0	0.0	0.0	0.0	1.6	3.1	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
2000	3	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
2000	4	0.0	0.0	0.0	0.0	2.3	4.5	3.5	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
2000	5	0.0	0.0	0.0	0.0	5.2	10.1	8.0	8.7	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
2000	6	0.0	0.0	0.0	0.0	4.1	7.9	6.3	6.8	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
2000	7	0.0	0.0	0.0	0.0	1.7	3.2	2.5	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.1	0.9	0.0	0.2	0.6	0.3
2000	8	0.0	0.0	0.0	0.0	3.9	7.6	6.0	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.0	2.2	0.0	0.6	1.5	0.7
2000	9	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2000	10	0.0	0.0	0.0	0.0	3.2	6.3	5.0	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
2000	11	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
2000	12	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
2001	1	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
2001	2	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
2001	3	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2001	4	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
2001	5	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2001	6	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2001	7	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	1.0	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2001	8	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
2001	9	0.0	0.0	0.0	0.0	2.2	4.4	3.4	3.8	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
2001	10	0.0	0.0	0.0	0.0	2.1	4.1	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
2001	11	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.1	2.6	1.1	0.0	0.3	0.8	0.4
2001	12	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 11：Reduced Water of each Upazila and for each Month in Karunafuri River Basin (m^3/s) (7/9) (2002 - 2007)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2002	1	0.0	0.0	0.0	0.0	1.7	3.2	2.5	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.1	0.9	0.0	0.2	0.6	0.3
2002	2	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2002	3	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2002	4	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.8	0.4
2002	5	0.0	0.0	0.0	0.0	4.1	7.9	6.2	6.8	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.2	2.3	0.0	0.6	1.5	0.7
2002	6	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
2002	7	0.0	0.0	0.0	0.0	6.3	12.2	9.6	10.5	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.7	8.2	3.6	0.0	0.9	2.4	1.1
2002	8	0.0	0.0	0.0	0.0	4.5	8.8	7.0	7.6	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.7	0.8
2002	9	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2002	10	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
2002	11	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2002	12	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2003	1	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
2003	2	0.0	0.0	0.0	0.0	1.8	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.3	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2003	3	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
2003	4	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.5
2003	5	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2003	6	0.0	0.0	0.0	0.0	8.1	15.7	12.4	13.6	0.9	1.6	0.0	0.0	0.9	0.8	0.0	0.1	0.0	0.0	1.1	2.3	3.3	1.5	1.5	3.1	8.2	1.1	1.4	1.4	0.8	0.1	0.0	5.9	4.7	10.5	4.6	0.0	1.2	3.1	1.5
2003	7	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
2003	8	0.0	0.0	0.0	0.0	4.2	8.2	6.4	7.0	0.4	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2003	9	0.0	0.0	0.0	0.0	2.8	5.4	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2003	10	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2003	11	0.0	0.0	0.0	0.0	2.8	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2003	12	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2004	1	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
2004	2	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
2004	3	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2004	4	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
2004	5	0.0	0.0	0.0	0.0	1.3	2.6	2.1	2.3	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
2004	6	0.0	0.0	0.0	0.0	6.5	12.5	9.9	10.8	0.7	1.3	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.6	1.2	1.2	2.4	6.5	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.4	3.7	0.0	1.0	2.5	1.2
2004	7	0.0	0.0	0.0	0.0	8.1	15.8	12.4	13.6	0.9	1.6	0.0	0.0	0.9	0.8	0.0	0.1	0.0	0.0	1.1	2.3	3.3	1.5	1.5	3.1	8.2	1.1	1.4	1.4	0.8	0.1	0.0	6.0	4.7	10.5	4.7	0.0	1.2	3.1	1.5
2004	8	0.0	0.0	0.0	0.0	4.2	8.2	6.5	7.1	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
2004	9	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
2004	10	0.0	0.0	0.0	0.0	3.0	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2004	11	0.0	0.0	0.0	0.0	2.7	5.3	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
2004	12	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2005	1	0.0	0.0	0.0	0.0	1.7	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2005	2	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
2005	3	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2005	4	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2005	5	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.8	0.4
2005	6	0.0	0.0	0.0	0.0	1.5	3.0	2.3	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
2005	7	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2005	8	0.0	0.0	0.0	0.0	4.9	9.5	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.4	2.8	0.0	0.7	1.9	0.9
2005	9	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
2005	10	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2005	11	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
2005	12	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2006	1	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.7	0.3
2006	2	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
2006	3	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2006	4	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.5
2006	5	0.0	0.0	0.0	0.0	5.4	10.5	8.3	9.0	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	4.0	3.1	7.0	3.1	0.0	0.8	2.1	1.0
2006	6	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2006	7	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2006	8	0.0	0.0	0.0	0.0	4.5	8.6	6.8	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
2006	9	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2006	10	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2006	11	0.0	0.0	0.0	0.0	2.4	4.6	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2006	12	0.0	0.0	0.0	0.0	3.0	5.9	4.6	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
2007	1	0.0	0.0	0.0	0.0	1.6	3.0	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
2007	2	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	1.9	0.9	0.0	0.2	0.6	0.3
2007	3	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.5
2007	4	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
2007	5	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
2007	6	0.0	0.0	0.0	0.0	4.6	8.9	7.0	7.7	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	6.0	2.6	0.0	0.7	1.8	0.8
2007	7	0.0	0.0	0.0	0.0	5.5	10.7	8.5	9.3	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.1	1.0
2007	8	0.0	0.0	0.0	0.0	4.2	8.2	6.5	7.1	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
2007	9	0.0	0.0	0.0	0.0	5.1	9.8	7.8	8.5	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.6	2.9	0.0	0.8	1.9	0.9
2007	10	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
2007	11	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2007	12	0.0	0.0	0.0	0.0	3.0	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 11：Reduced Water of each Upazila and for each Month in Karunafuri River Basin (m^3/s) (8/9) (2008 - 2013)

		Karunafuli River Basin																	
	District	Chattogram																	
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga
2008	1	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2008	2	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2008	3	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2008	4	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2008	5	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2008	6	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2008	7	0.0	0.0	0.0	0.0	3.5	6.9	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
2008	8	0.0	0.0	0.0	0.0	5.6	10.8	8.5	9.3	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0
2008	9	0.0	0.0	0.0	0.0	3.0	5.7	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2008	10	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2008	11	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2008	12	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2009	1	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2009	2	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2009	3	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2009	4	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2009	5	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
2009	6	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2009	7	0.0	0.0	0.0	0.0	5.1	9.8	7.8	8.5	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0
2009	8	0.0	0.0	0.0	0.0	5.4	10.6	8.3	9.1	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0
2009	9	0.0	0.0	0.0	0.0	2.5	4.9	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2009	10	0.0	0.0	0.0	0.0	3.8	7.4	5.8	6.4	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
2009	11	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
2009	12	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2010	1	0.0	0.0	0.0	0.0	1.8	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2010	2	0.0	0.0	0.0	0.0	1.9	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2010	3	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2010	4	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
2010	5	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
2010	6	0.0	0.0	0.0	0.0	5.2	10.2	8.0	8.8	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0
2010	7	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
2010	8	0.0	0.0	0.0	0.0	4.1	8.0	6.3	6.9	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0
2010	9	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
2010	10	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2010	11	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
2010	12	0.0	0.0	0.0	0.0	3.1	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2011	1	0.0	0.0	0.0	0.0	1.8	3.4	2.7	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2011	2	0.0	0.0	0.0	0.0	2.0	3.9	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2011	3	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2011	4	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
2011	5	0.0	0.0	0.0	0.0	1.7	3.2	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2011	6	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0
2011	7	0.0	0.0	0.0	0.0	3.7	7.3	5.7	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
2011	8	0.0	0.0	0.0	0.0	4.6	9.0	7.1	7.7	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0
2011	9	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0
2011	10	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2011	11	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2011	12	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.3	0.3	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0
2012	1	0.0	0.0	0.0	0.0	1.8	3.4	2.7	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2012	2	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2012	3	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2012	4	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2012	5	0.0	0.0	0.0	0.0	1.8	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2012	6	0.0	0.0	0.0	0.0	6.8	13.2	10.4	11.4	0.7	1.4	0.0	0.0	0.8	0.7	0.0	0.0	0.0	0.0
2012	7	0.0	0.0	0.0	0.0	4.0	7.8	6.1	6.7	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
2012	8	0.0	0.0	0.0	0.0	4.1	8.0	6.3	6.9	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0
2012	9	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
2012	10	0.0	0.0	0.0	0.0	4.7	9.1	7.2	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0
2012	11	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2012	12	0.0	0.0	0.0	0.0	3.2	6.3	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0
2013	1	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2013	2	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2013	3	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2013	4	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2013	5	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
2013	6	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
2013	7	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
2013	8	0.0	0.0	0.0	0.0	4.4	8.6	6.8	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0
2013	9	0.0	0.0	0.0	0.0	3.9	7.6	6.0	6.6	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
2013	10	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
2013	11	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2013	12	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0

		Karunafuli River Basin									
	District	Rangamati									
	Upazila	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari
2008	1	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3
2008	2	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3
2008	3	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4
2008	4	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5
2008	5	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3
2008	6	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4
2008	7	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6
2008	8	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0
2008	9	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5
2008	10	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4
2008	11	0.4	0.7	1.0	0.5	0.5	1.0	2.5	0.3	0.4	0.4
2008	12	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5
2009	1	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3
2009	2	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4
2009	3	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5
2009	4	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5
2009	5	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4
2009	6	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5
2009	7	0.7	1.5	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9
2009	8	0.8	1.6	2.2	1.0	1.0	2.1	5.5	0.7	0.9	1.0
2009	9	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4
2009	10	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7
2009	11	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4
2009	12	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6
2010	1	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3
2010	2	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3
2010	3	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5
2010	4	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4
2010	5	0.5	1.0	1.4	0.6	0.7	1.3	3.5	0.5	0.6	0.6
2010	6	0.7	1.5	2.1	0.9	1.0	2.0	5.3	0.7	0.9	0.9
2010	7	0.3	0.7	1.0	0.4	0.5	0.9	2.4	0.3	0.4	0.4
2010	8	0.6	1.2	1.7	0.7	0.8	1.6	4.1	0.6	0.7	0.7
2010	9	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4
2010	10	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4
2010	11	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4
2010	12	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5
2011	1	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3
2011	2	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3
2011	3	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5
2011	4	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4
2011	5	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3
2011	6	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7
2011	7	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7
2011	8	0.6	1.3	1.9	0.8	0.9	1.7	4.6	0.6	0.8	0.8
2011	9	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6
2011	10	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5
2011	11	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5
2011	12	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6
2012	1	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3
2012	2	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4
2012	3	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5
2012	4	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5
2012	5	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3
2012	6	0.9	2.0	2.7	1.2	1.3	2.6	6.8	0.9	1.2	1.2
2012	7	0.6	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7
2012	8	0.6	1.2	1.7	0.7	0.8	1.6	4.1	0.6	0.7	0.7
2012	9	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4
2012	10	0.6	1.3	1.9	0.8	0.9	1.8	4.7	0.6	0.8	0.8
2012	11	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5
2012	12	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6
2013	1	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3
2013	2	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3
2013	3	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5
2013	4	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5
2013	5	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6
2013	6	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4
2013	7	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4
2013	8	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8
2013	9	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7
2013	10	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4
2013	11	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5
2013	12	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6

		Karunafuli River Basin										
	District	Bandarban			Khagrachari							
	Upazila	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2008	1	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
2008	2	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2008	3	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2008	4	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2008	5	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2008	6	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
2008	7	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
2008	8	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.1	1.0
2008	9	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2008	10	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
2008	11	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2008	12	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2009	1	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
2009	2	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
2009	3	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2009	4	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2009	5	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2009	6	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2009	7	0.5	0.0	0.0	3.7	2.9	6.6	2.9	0.0	0.8	1.9	0.9
2009	8	0.5	0.1	0.0	4.0	3.2	7.0	3.1	0.0	0.8	2.1	1.0
2009	9	0.2	0.0	0.0	1.8	1.5	3.2	1.4	0.0	0.4	1.0	0.5
2009	10	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
2009	11	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2009	12	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2010	1	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2010	2	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2010	3	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2010	4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2010	5	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.3	0.6
2010	6	0.5	0.0	0.0	3.8	3.0	6.8	3.0	0.0	0.8	2.0	1.0
2010	7	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
2010	8	0.4	0.0	0.0	3.0	2.4	5.3	2.4	0.0	0.6	1.6	0.7
2010	9	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
2010	10	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2010	11	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
2010	12	0.3	0.0	0.0	2.2	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2011	1	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2011	2	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
2011	3	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2011	4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
2011	5	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
2011	6	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2011	7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
2011	8	0.5	0.0	0.0	3.4	2.7	6.0	2.6	0.0	0.7	1.8	0.8
2011	9	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2011	10	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2011	11	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
2011	12	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2012	1	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2012	2	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2012	3	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2012	4	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
2012	5	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2012	6	0.7	0.1	0.0	5.0	4.0	8.8	3.9	0.0	1.0	2.6	1.2
2012	7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.5	0.7
2012	8	0.4	0.0	0.0	3.0	2.4	5.3	2.4	0.0	0.6	1.6	0.7
2012	9	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
2012	10	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
2012	11	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2012	12	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
2013	1	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
2013	2	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
2013	3	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2013	4	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2013	5	0.3	0.0	0.0	2.6	2.1	4.6	2.1	0.0	0.5	1.4	0.7
2013	6	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2013	7	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
2013	8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
2013	9	0.4	0.0	0.0	2.9	2.3	5.1	2.2	0.0	0.6	1.5	0.7
2013	10	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2013	11	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2013	12	0.3	0.0	0.0	2.3	1.9	4.1	1.8	0.0	0.5	1.2	0.6

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 11：Reduced Water of each Upazila and for each Month in Karunafuri River Basin (m^3/s) (9/9) (2014 - 2019)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2014	1	0.0	0.0	0.0	0.0	1.8	3.4	2.7	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2014	2	0.0	0.0	0.0	0.0	1.8	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2014	3	0.0	0.0	0.0	0.0	2.8	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2014	4	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
2014	5	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
2014	6	0.0	0.0	0.0	0.0	5.2	10.0	7.9	8.6	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
2014	7	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
2014	8	0.0	0.0	0.0	0.0	4.3	8.3	6.6	7.2	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.1	2.5	5.5	2.5	0.0	0.6	1.6	0.8
2014	9	0.0	0.0	0.0	0.0	3.3	6.4	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
2014	10	0.0	0.0	0.0	0.0	3.0	5.7	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2014	11	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2014	12	0.0	0.0	0.0	0.0	3.2	6.3	5.0	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
2015	1	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
2015	2	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2015	3	0.0	0.0	0.0	0.0	2.6	5.1	4.1	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2015	4	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.8	0.4
2015	5	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
2015	6	0.0	0.0	0.0	0.0	4.7	9.2	7.2	7.9	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.6	0.8	0.8	0.5	0.0	0.0	3.5	2.7	6.1	2.7	0.0	0.7	1.8	0.9
2015	7	0.0	0.0	0.0	0.0	8.7	16.9	13.3	14.6	0.9	1.8	0.0	0.1	1.0	0.9	0.0	0.1	0.0	0.0	1.2	2.5	3.5	1.6	1.6	3.3	8.7	1.2	1.5	1.5	0.8	0.1	0.0	6.4	5.0	11.3	5.0	0.0	1.3	3.3	1.6
2015	8	0.0	0.0	0.0	0.0	7.0	13.6	10.7	11.7	0.7	1.4	0.0	0.0	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.6	7.0	1.0	1.2	1.2	0.7	0.1	0.0	5.1	4.1	9.1	4.0	0.0	1.0	2.7	1.3
2015	9	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
2015	10	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2015	11	0.0	0.0	0.0	0.0	2.8	5.4	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2015	12	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2016	1	0.0	0.0	0.0	0.0	1.7	3.2	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
2016	2	0.0	0.0	0.0	0.0	1.8	3.4	2.7	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2016	3	0.0	0.0	0.0	0.0	2.7	5.3	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
2016	4	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
2016	5	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.5
2016	6	0.0	0.0	0.0	0.0	4.4	8.4	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
2016	7	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2016	8	0.0	0.0	0.0	0.0	4.7	9.1	7.2	7.9	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.9	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.1	2.7	0.0	0.7	1.8	0.9
2016	9	0.0	0.0	0.0	0.0	2.8	5.4	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2016	10	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2016	11	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2016	12	0.0	0.0	0.0	0.0	3.4	6.5	5.2	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2017	1	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
2017	2	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
2017	3	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2017	4	0.0	0.0	0.0	0.0	4.1	7.9	6.3	6.8	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
2017	5	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
2017	6	0.0	0.0	0.0	0.0	10.2	19.7	15.6	17.0	1.1	2.1	0.0	0.1	1.1	1.0	0.0	0.1	0.0	0.0	1.4	2.9	4.1	1.8	1.9	3.8	10.2	1.4	1.7	1.8	1.0	0.1	0.0	7.5	5.9	13.2	5.8	0.0	1.5	3.9	1.8
2017	7	0.0	0.0	0.0	0.0	5.9	11.4	9.0	9.8	0.6	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.2	1.1
2017	8	0.0	0.0	0.0	0.0	5.4	10.6	8.3	9.1	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.0	5.5	0.7	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.0	3.1	0.0	0.8	2.1	1.0
2017	9	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2017	10	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2017	11	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
2017	12	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2018	1	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
2018	2	0.0	0.0	0.0	0.0	1.8	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2018	3	0.0	0.0	0.0	0.0	2.8	5.4	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2018	4	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2018	5	0.0	0.0	0.0	0.0	2.5	4.9	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.5	3.3	1.4	0.0	0.4	1.0	0.5
2018	6	0.0	0.0	0.0	0.0	9.0	17.4	13.7	15.0	1.0	1.8	0.0	0.1	1.0	0.9	0.0	0.1	0.0	0.0	1.2	2.6	3.6	1.6	1.7	3.4	9.0	1.2	1.5	1.6	0.9	0.1	0.0	6.6	5.2	11.6	5.1	0.0	1.3	3.4	1.6
2018	7	0.0	0.0	0.0	0.0	4.4	8.4	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
2018	8	0.0	0.0	0.0	0.0	4.6	8.9	7.0	7.7	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	5.9	2.6	0.0	0.7	1.8	0.8
2018	9	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2018	10	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
2018	11	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2018	12	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
2019	1	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2019	2	0.0	0.0	0.0	0.0	1.8	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.3	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
2019	3	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
2019	4	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2019	5	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
2019	6	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2019	7	0.0	0.0	0.0	0.0	9.9	19.2	15.2	16.6	1.1	2.0	0.0	0.1	1.1	1.0	0.0	0.1	0.0	0.0	1.4	2.8	4.0	1.8	1.8	3.7	10.0	1.4	1.7	1.7	1.0	0.1	0.0	7.3	5.7	12.8	5.7	0.0	1.5	3.8	1.8
2019	8	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
2019	9	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2019	10	0.0	0.0	0.0	0.0	2.4	4.6	3.6	3.9	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
2019	11	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2019	12	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 12：Reduced Water of each Upazila and for each Month in Sangu River Basin (m^3/s) (1/9)

(1966 - 1971)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1966	1	0.0	0.2	0.7	0.6	0.6	1.3	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1966	2	0.0	0.2	0.8	0.7	0.7	1.6	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1966	3	0.0	0.3	1.0	0.9	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1966	4	0.0	0.3	1.0	0.9	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1966	5	0.0	0.2	0.7	0.6	0.6	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1966	6	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1966	7	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1966	8	0.0	0.9	3.3	2.8	3.0	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1966	9	0.0	0.3	1.0	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1966	10	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1966	11	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1966	12	0.0	0.3	1.0	0.9	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1967	1	0.0	0.2	0.7	0.6	0.6	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1967	2	0.0	0.2	0.7	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1967	3	0.0	0.3	1.0	0.9	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1967	4	0.0	0.3	1.0	0.8	0.9	1.9	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1967	5	0.0	0.1	0.5	0.5	0.5	1.1	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.0
1967	6	0.0	0.2	0.7	0.6	0.6	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1967	7	0.0	0.5	1.8	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1967	8	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1967	9	0.0	0.3	1.0	0.8	0.9	1.9	0.1	0.6	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1967	10	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1967	11	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1967	12	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1968	1	0.0	0.2	0.8	0.7	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1968	2	0.0	0.2	0.8	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1968	3	0.0	0.3	1.1	0.9	1.0	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1968	4	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1968	5	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1968	6	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1968	7	0.0	0.8	3.0	2.6	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
1968	8	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1968	9	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1968	10	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1968	11	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1968	12	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1969	1	0.0	0.2	0.8	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1969	2	0.0	0.2	0.8	0.7	0.7	1.6	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1969	3	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1969	4	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1969	5	0.0	0.1	0.5	0.4	0.4	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1969	6	0.0	0.6	2.3	1.9	2.0	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1969	7	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1969	8	0.0	0.6	2.3	1.9	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1969	9	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1969	10	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1969	11	0.0	0.2	0.9	0.7	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1969	12	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1970	1	0.0	0.2	0.8	0.7	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1970	2	0.0	0.2	0.8	0.7	0.7	1.6	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1970	3	0.0	0.3	1.1	0.9	1.0	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1970	4	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1970	5	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1970	6	0.0	0.2	0.9	0.8	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1970	7	0.0	0.9	3.3	2.8	2.9	6.5	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1970	8	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1970	9	0.0	0.3	1.2	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1970	10	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1970	11	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1970	12	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1971	1	0.0	0.2	0.7	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1971	2	0.0	0.2	0.8	0.7	0.7	1.6	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1971	3	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1971	4	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1971	5	0.0	0.1	0.5	0.4	0.4	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1971	6	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1971	7	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1971	8	0.0	0.7	2.7	2.3	2.4	5.5	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1971	9	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1971	10	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1971	11	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1971	12	0.0	0.4	1.4	1.2	1.2	2.7	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 12：Reduced Water of each Upazila and for each Month in Sangu River Basin (m^3/s) (2/9)

(1972 - 1977)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1972	1	0.0	0.2	0.8	0.7	0.7	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1972	2	0.0	0.2	0.8	0.7	0.7	1.6	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1972	3	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1972	4	0.0	0.3	1.0	0.9	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1972	5	0.0	0.2	0.7	0.6	0.6	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1972	6	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1972	7	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1972	8	0.0	0.5	1.9	1.7	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1972	9	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1972	10	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1972	11	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1972	12	0.0	0.4	1.4	1.2	1.2	2.8	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0
1973	1	0.0	0.2	0.8	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1973	2	0.0	0.2	0.9	0.7	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1973	3	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1973	4	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1973	5	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1973	6	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1973	7	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1973	8	0.0	0.5	1.9	1.6	1.7	3.7	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1973	9	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1973	10	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1973	11	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1973	12	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1974	1	0.0	0.2	0.8	0.7	0.7	1.6	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1974	2	0.0	0.2	0.9	0.7	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1974	3	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1974	4	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1974	5	0.0	0.2	0.8	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1974	6	0.0	1.4	5.1	4.3	4.5	10.2	0.3	3.4	0.0	0.0	2.4	1.3	0.6	1.0	1.0	0.0
1974	7	0.0	0.9	3.4	2.9	3.1	6.9	0.2	2.3	0.0	0.0	1.6	0.9	0.4	0.7	0.7	0.0
1974	8	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1974	9	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1974	10	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1974	11	0.0	0.3	1.0	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1974	12	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1975	1	0.0	0.2	0.9	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1975	2	0.0	0.2	0.9	0.8	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1975	3	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1975	4	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1975	5	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1975	6	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1975	7	0.0	1.0	3.8	3.2	3.4	7.6	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
1975	8	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1975	9	0.0	0.4	1.4	1.2	1.3	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1975	10	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1975	11	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1975	12	0.0	0.4	1.4	1.2	1.3	2.8	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1976	1	0.0	0.2	0.8	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1976	2	0.0	0.2	0.9	0.8	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1976	3	0.0	0.3	1.2	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1976	4	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1976	5	0.0	0.3	1.0	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1976	6	0.0	1.4	5.2	4.4	4.7	10.4	0.3	3.5	0.0	0.0	2.5	1.3	0.6	1.1	1.0	0.0
1976	7	0.0	1.4	5.1	4.4	4.6	10.3	0.3	3.5	0.0	0.0	2.5	1.3	0.6	1.1	1.0	0.0
1976	8	0.0	0.5	1.7	1.5	1.5	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1976	9	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1976	10	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1976	11	0.0	0.3	1.0	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1976	12	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1977	1	0.0	0.2	0.9	0.8	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1977	2	0.0	0.2	0.8	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1977	3	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1977	4	0.0	0.6	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1977	5	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1977	6	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1977	7	0.0	0.7	2.7	2.3	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1977	8	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1977	9	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1977	10	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1977	11	0.0	0.3	1.2	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1977	12	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 12：Reduced Water of each Upazila and for each Month in Sangu River Basin (m^3/s) (3/9)

(1978 - 1983)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1978	1	0.0	0.3	1.0	0.8	0.9	1.9	0.1	0.6	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1978	2	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1978	3	0.0	0.4	1.4	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.2	0.3	0.3	0.0
1978	4	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1978	5	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1978	6	0.0	0.6	2.3	1.9	2.0	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1978	7	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1978	8	0.0	0.7	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1978	9	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1978	10	0.0	0.4	1.4	1.2	1.3	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1978	11	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1978	12	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1979	1	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1979	2	0.0	0.3	1.0	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1979	3	0.0	0.4	1.4	1.2	1.2	2.8	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0
1979	4	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1979	5	0.0	0.2	0.7	0.6	0.6	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1979	6	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
1979	7	0.0	0.5	1.9	1.6	1.7	3.7	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1979	8	0.0	1.0	3.7	3.1	3.3	7.4	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1979	9	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1979	10	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1979	11	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1979	12	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1980	1	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1980	2	0.0	0.3	1.0	0.9	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1980	3	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1980	4	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1980	5	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1980	6	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1980	7	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1980	8	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
1980	9	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1980	10	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1980	11	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1980	12	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1981	1	0.0	0.2	0.9	0.8	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1981	2	0.0	0.3	1.1	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1981	3	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1981	4	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1981	5	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1981	6	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1981	7	0.0	0.6	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1981	8	0.0	0.7	2.7	2.3	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1981	9	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1981	10	0.0	0.5	1.7	1.5	1.5	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1981	11	0.0	0.4	1.5	1.2	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1981	12	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1982	1	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1982	2	0.0	0.3	1.0	0.8	0.9	1.9	0.1	0.6	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1982	3	0.0	0.4	1.4	1.2	1.3	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1982	4	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1982	5	0.0	0.2	0.6	0.5	0.5	1.2	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.0
1982	6	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1982	7	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1982	8	0.0	0.9	3.4	2.9	3.1	6.9	0.2	2.3	0.0	0.0	1.6	0.9	0.4	0.7	0.7	0.0
1982	9	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1982	10	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1982	11	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1982	12	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1983	1	0.0	0.2	0.9	0.8	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1983	2	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1983	3	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1983	4	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1983	5	0.0	0.3	1.0	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1983	6	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1983	7	0.0	0.8	3.1	2.6	2.8	6.2	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1983	8	0.0	1.2	4.2	3.6	3.8	8.5	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1983	9	0.0	0.4	1.4	1.2	1.2	2.7	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0
1983	10	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1983	11	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1983	12	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 12：Reduced Water of each Upazila and for each Month in Sangu River Basin (m^3/s) (4/9)

(1984 - 1989)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1984	1	0.0	0.3	0.9	0.8	0.8	1.9	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1984	2	0.0	0.3	1.1	0.9	1.0	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1984	3	0.0	0.4	1.4	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.2	0.3	0.3	0.0
1984	4	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1984	5	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1984	6	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1984	7	0.0	1.3	4.6	3.9	4.2	9.3	0.2	3.1	0.0	0.0	2.2	1.2	0.5	0.9	0.9	0.0
1984	8	0.0	0.7	2.5	2.1	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1984	9	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1984	10	0.0	0.3	1.3	1.1	1.1	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1984	11	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1984	12	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1985	1	0.0	0.3	1.1	0.9	1.0	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1985	2	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1985	3	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1985	4	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1985	5	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1985	6	0.0	0.8	2.8	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1985	7	0.0	1.1	3.9	3.3	3.5	7.7	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
1985	8	0.0	0.6	2.3	1.9	2.0	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1985	9	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1985	10	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1985	11	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1985	12	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1986	1	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1986	2	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1986	3	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1986	4	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1986	5	0.0	0.2	0.9	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1986	6	0.0	0.8	3.0	2.5	2.6	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1986	7	0.0	0.9	3.2	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.4	0.6	0.6	0.0
1986	8	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1986	9	0.0	0.4	1.4	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.2	0.3	0.3	0.0
1986	10	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
1986	11	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1986	12	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1987	1	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1987	2	0.0	0.3	1.0	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1987	3	0.0	0.4	1.4	1.2	1.3	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1987	4	0.0	0.4	1.4	1.2	1.2	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1987	5	0.0	0.2	0.6	0.5	0.5	1.2	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1987	6	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1987	7	0.0	1.5	5.4	4.6	4.8	10.8	0.3	3.6	0.0	0.0	2.6	1.4	0.6	1.1	1.0	0.0
1987	8	0.0	1.0	3.8	3.2	3.4	7.6	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1987	9	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1987	10	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1987	11	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1987	12	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1988	1	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1988	2	0.0	0.3	1.1	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1988	3	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1988	4	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1988	5	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1988	6	0.0	0.6	2.4	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1988	7	0.0	0.9	3.4	2.9	3.0	6.7	0.2	2.3	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1988	8	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1988	9	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1988	10	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1988	11	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1988	12	0.0	0.5	1.8	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1989	1	0.0	0.3	1.1	0.9	1.0	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1989	2	0.0	0.3	1.1	0.9	1.0	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1989	3	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1989	4	0.0	0.5	1.9	1.6	1.7	3.7	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1989	5	0.0	0.2	0.9	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1989	6	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1989	7	0.0	1.2	4.4	3.7	3.9	8.7	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
1989	8	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
1989	9	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1989	10	0.0	0.7	2.4	2.1	2.2	4.8	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1989	11	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1989	12	0.0	0.5	1.7	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 12：Reduced Water of each Upazila and for each Month in Sangu River Basin (m^3/s) (5/9)

(1990 - 1995)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1990	1	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1990	2	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1990	3	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1990	4	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1990	5	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1990	6	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1990	7	0.0	1.3	4.6	3.9	4.1	9.2	0.2	3.1	0.0	0.0	2.2	1.2	0.5	0.9	0.9	0.0
1990	8	0.0	0.7	2.5	2.1	2.3	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1990	9	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1990	10	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1990	11	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1990	12	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1991	1	0.0	0.3	0.9	0.8	0.8	1.9	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1991	2	0.0	0.3	1.0	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1991	3	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1991	4	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1991	5	0.0	0.8	2.9	2.5	2.6	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1991	6	0.0	0.9	3.3	2.8	3.0	6.7	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1991	7	0.0	1.0	3.7	3.1	3.3	7.3	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.7	0.7	0.0
1991	8	0.0	0.8	3.1	2.6	2.8	6.2	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1991	9	0.0	0.5	1.8	1.5	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1991	10	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1991	11	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1991	12	0.0	0.5	1.7	1.5	1.5	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1992	1	0.0	0.3	1.0	0.8	0.9	1.9	0.1	0.6	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1992	2	0.0	0.2	0.9	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1992	3	0.0	0.4	1.4	1.2	1.2	2.8	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0
1992	4	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1992	5	0.0	0.3	1.2	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1992	6	0.0	0.9	3.2	2.8	2.9	6.5	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1992	7	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1992	8	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1992	9	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1992	10	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1992	11	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1992	12	0.0	0.5	1.7	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1993	1	0.0	0.3	1.0	0.9	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1993	2	0.0	0.3	1.1	0.9	1.0	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1993	3	0.0	0.6	2.4	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1993	4	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1993	5	0.0	0.8	3.0	2.6	2.7	6.1	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1993	6	0.0	1.2	4.2	3.6	3.8	8.5	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1993	7	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1993	8	0.0	1.2	4.2	3.6	3.8	8.5	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1993	9	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1993	10	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1993	11	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1993	12	0.0	0.5	1.8	1.5	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1994	1	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1994	2	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1994	3	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.6	0.2	0.4	0.4	0.0
1994	4	0.0	0.5	1.9	1.6	1.7	3.7	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1994	5	0.0	0.3	1.0	0.8	0.9	1.9	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1994	6	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1994	7	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1994	8	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1994	9	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1994	10	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1994	11	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1994	12	0.0	0.5	1.8	1.6	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1995	1	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1995	2	0.0	0.3	1.1	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1995	3	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1995	4	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1995	5	0.0	0.6	2.1	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1995	6	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1995	7	0.0	1.1	4.2	3.5	3.7	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1995	8	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1995	9	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1995	10	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1995	11	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1995	12	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 12：Reduced Water of each Upazila and for each Month in Sangu River Basin (m^3/s) (6/9)

(1996 - 2001)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1996	1	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1996	2	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1996	3	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
1996	4	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1996	5	0.0	0.5	1.8	1.6	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1996	6	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1996	7	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1996	8	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
1996	9	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1996	10	0.0	0.6	2.1	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1996	11	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1996	12	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1997	1	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1997	2	0.0	0.3	1.1	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1997	3	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1997	4	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1997	5	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1997	6	0.0	0.5	1.9	1.6	1.7	3.7	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1997	7	0.0	1.8	6.5	5.5	5.8	13.0	0.3	4.4	0.0	0.0	3.1	1.6	0.7	1.3	1.2	0.0
1997	8	0.0	0.7	2.7	2.3	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1997	9	0.0	1.0	3.7	3.2	3.4	7.5	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1997	10	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1997	11	0.0	0.4	1.6	1.4	1.5	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1997	12	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1998	1	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1998	2	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1998	3	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1998	4	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1998	5	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1998	6	0.0	0.2	0.6	0.5	0.6	1.3	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1998	7	0.0	1.4	5.1	4.3	4.5	10.1	0.3	3.4	0.0	0.0	2.4	1.3	0.6	1.0	1.0	0.0
1998	8	0.0	1.6	5.8	4.9	5.2	11.6	0.3	3.9	0.0	0.0	2.8	1.5	0.6	1.2	1.1	0.0
1998	9	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1998	10	0.0	0.6	2.3	1.9	2.0	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1998	11	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1998	12	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1999	1	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1999	2	0.0	0.4	1.4	1.2	1.2	2.8	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0
1999	3	0.0	0.5	1.7	1.5	1.5	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1999	4	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1999	5	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1999	6	0.0	1.5	5.6	4.7	5.0	11.1	0.3	3.8	0.0	0.0	2.7	1.4	0.6	1.1	1.1	0.0
1999	7	0.0	0.9	3.5	2.9	3.1	7.0	0.2	2.3	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1999	8	0.0	1.3	4.8	4.1	4.3	9.7	0.3	3.3	0.0	0.0	2.3	1.2	0.5	1.0	0.9	0.0
1999	9	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1999	10	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1999	11	0.0	0.5	1.7	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1999	12	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2000	1	0.0	0.3	1.2	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
2000	2	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
2000	3	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2000	4	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2000	5	0.0	1.0	3.6	3.0	3.2	7.2	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2000	6	0.0	0.8	2.9	2.5	2.6	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2000	7	0.0	0.9	3.3	2.8	3.0	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2000	8	0.0	0.8	3.0	2.5	2.7	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2000	9	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.2	0.3	0.3	0.0
2000	10	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2000	11	0.0	0.5	1.7	1.5	1.5	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2000	12	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2001	1	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
2001	2	0.0	0.3	1.2	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
2001	3	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
2001	4	0.0	0.7	2.7	2.3	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2001	5	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.8	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
2001	6	0.0	0.8	3.0	2.6	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
2001	7	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2001	8	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2001	9	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2001	10	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2001	11	0.0	0.4	1.4	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.2	0.3	0.3	0.0
2001	12	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 12：Reduced Water of each Upazila and for each Month in Sangu River Basin (m^3/s) (7/9)

(2002 - 2007)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2002	1	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
2002	2	0.0	0.4	1.4	1.2	1.3	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2002	3	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2002	4	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2002	5	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.4	0.4	0.0
2002	6	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2002	7	0.0	1.3	4.9	4.1	4.4	9.8	0.3	3.3	0.0	0.0	2.3	1.2	0.5	1.0	0.9	0.0
2002	8	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2002	9	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2002	10	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2002	11	0.0	0.4	1.4	1.2	1.2	2.7	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0
2002	12	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2003	1	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
2003	2	0.0	0.4	1.4	1.2	1.2	2.8	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0
2003	3	0.0	0.5	1.7	1.5	1.5	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2003	4	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2003	5	0.0	0.2	0.7	0.6	0.6	1.3	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
2003	6	0.0	1.7	6.1	5.2	5.5	12.3	0.3	4.2	0.0	0.0	2.9	1.5	0.7	1.3	1.2	0.0
2003	7	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2003	8	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
2003	9	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2003	10	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2003	11	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2003	12	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2004	1	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
2004	2	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2004	3	0.0	0.5	1.8	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2004	4	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2004	5	0.0	0.3	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
2004	6	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2004	7	0.0	1.2	4.3	3.7	3.9	8.7	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
2004	8	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
2004	9	0.0	1.1	3.9	3.3	3.5	7.8	0.2	2.6	0.0	0.0	1.9	1.0	0.4	0.8	0.7	0.0
2004	10	0.0	0.6	2.2	1.8	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2004	11	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2004	12	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2005	1	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.2	0.3	0.3	0.0
2005	2	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2005	3	0.0	0.5	1.7	1.5	1.5	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2005	4	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2005	5	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2005	6	0.0	0.3	1.1	1.0	1.0	2.2	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2005	7	0.0	1.0	3.5	3.0	3.1	7.0	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2005	8	0.0	1.0	3.5	3.0	3.1	7.0	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2005	9	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.8	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
2005	10	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.6	0.2	0.4	0.4	0.0
2005	11	0.0	0.5	1.8	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2005	12	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2006	1	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
2006	2	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
2006	3	0.0	0.5	1.9	1.6	1.7	3.7	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2006	4	0.0	0.5	1.7	1.5	1.5	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2006	5	0.0	1.1	4.1	3.5	3.7	8.2	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.8	0.8	0.0
2006	6	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2006	7	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2006	8	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2006	9	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.8	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
2006	10	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
2006	11	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
2006	12	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2007	1	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
2007	2	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
2007	3	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2007	4	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2007	5	0.0	0.4	1.4	1.2	1.3	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2007	6	0.0	1.7	6.1	5.2	5.5	12.3	0.3	4.1	0.0	0.0	2.9	1.5	0.7	1.3	1.2	0.0
2007	7	0.0	1.3	4.9	4.2	4.4	9.9	0.3	3.3	0.0	0.0	2.4	1.2	0.6	1.0	0.9	0.0
2007	8	0.0	0.9	3.4	2.9	3.0	6.8	0.2	2.3	0.0	0.0	1.6	0.9	0.4	0.7	0.6	0.0
2007	9	0.0	0.9	3.4	2.9	3.0	6.8	0.2	2.3	0.0	0.0	1.6	0.9	0.4	0.7	0.6	0.0
2007	10	0.0	0.9	3.1	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2007	11	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
2007	12	0.0	0.6	2.2	1.8	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 12：Reduced Water of each Upazila and for each Month in Sangu River Basin (m^3/s) (8/9)

(2008 - 2013)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2008	1	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
2008	2	0.0	0.4	1.4	1.2	1.3	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2008	3	0.0	0.5	1.7	1.5	1.5	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2008	4	0.0	0.5	1.8	1.5	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
2008	5	0.0	0.4	1.4	1.2	1.3	2.8	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2008	6	0.0	1.1	4.0	3.4	3.6	8.1	0.2	2.7	0.0	0.0	1.9	1.0	0.5	0.8	0.8	0.0
2008	7	0.0	1.4	5.1	4.4	4.6	10.3	0.3	3.5	0.0	0.0	2.5	1.3	0.6	1.1	1.0	0.0
2008	8	0.0	1.4	5.0	4.3	4.5	10.1	0.3	3.4	0.0	0.0	2.4	1.3	0.6	1.0	1.0	0.0
2008	9	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2008	10	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2008	11	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
2008	12	0.0	0.6	2.2	1.8	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2009	1	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2009	2	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2009	3	0.0	0.5	1.8	1.6	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
2009	4	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2009	5	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2009	6	0.0	0.5	1.8	1.6	1.7	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2009	7	0.0	1.5	5.4	4.6	4.9	10.9	0.3	3.7	0.0	0.0	2.6	1.4	0.6	1.1	1.0	0.0
2009	8	0.0	1.1	4.1	3.5	3.7	8.2	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.8	0.8	0.0
2009	9	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2009	10	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2009	11	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2009	12	0.0	0.6	2.3	1.9	2.0	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2010	1	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2010	2	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2010	3	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2010	4	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
2010	5	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2010	6	0.0	1.5	5.4	4.5	4.8	10.7	0.3	3.6	0.0	0.0	2.6	1.3	0.6	1.1	1.0	0.0
2010	7	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2010	8	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2010	9	0.0	0.6	2.3	1.9	2.0	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2010	10	0.0	0.7	2.7	2.3	2.4	5.5	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2010	11	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
2010	12	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
2011	1	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2011	2	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2011	3	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2011	4	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2011	5	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2011	6	0.0	0.5	1.8	1.6	1.7	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2011	7	0.0	0.8	2.9	2.4	2.6	5.8	0.2	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2011	8	0.0	1.0	3.7	3.1	3.3	7.4	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
2011	9	0.0	1.1	3.9	3.3	3.5	7.8	0.2	2.6	0.0	0.0	1.9	1.0	0.4	0.8	0.7	0.0
2011	10	0.0	0.7	2.4	2.1	2.2	4.8	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2011	11	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
2011	12	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2012	1	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2012	2	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2012	3	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2012	4	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.6	0.2	0.4	0.4	0.0
2012	5	0.0	0.3	1.0	0.8	0.9	1.9	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
2012	6	0.0	1.9	7.1	6.0	6.4	14.3	0.4	4.8	0.0	0.0	3.4	1.8	0.8	1.5	1.4	0.0
2012	7	0.0	0.9	3.4	2.8	3.0	6.7	0.2	2.3	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2012	8	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2012	9	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2012	10	0.0	1.0	3.7	3.1	3.3	7.4	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
2012	11	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2012	12	0.0	0.6	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2013	1	0.0	0.4	1.4	1.2	1.3	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2013	2	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2013	3	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2013	4	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2013	5	0.0	0.8	2.9	2.5	2.6	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2013	6	0.0	0.8	2.9	2.4	2.6	5.7	0.2	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.5	0.0
2013	7	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
2013	8	0.0	0.9	3.4	2.9	3.1	6.9	0.2	2.3	0.0	0.0	1.6	0.9	0.4	0.7	0.7	0.0
2013	9	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2013	10	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2013	11	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2013	12	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 12：Reduced Water of each Upazila and for each Month in Sangu River Basin (m^3/s) (9/9)

(2014 - 2019)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2014	1	0.0	0.4	1.4	1.2	1.2	2.7	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0
2014	2	0.0	0.4	1.4	1.2	1.3	2.8	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2014	3	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2014	4	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
2014	5	0.0	0.7	2.5	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2014	6	0.0	2.2	8.0	6.8	7.2	16.1	0.4	5.4	0.0	0.0	3.9	2.0	0.9	1.6	1.5	0.0
2014	7	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2014	8	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
2014	9	0.0	0.6	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2014	10	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2014	11	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2014	12	0.0	0.7	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2015	1	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2015	2	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2015	3	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2015	4	0.0	0.5	1.8	1.5	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
2015	5	0.0	0.3	1.0	0.9	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2015	6	0.0	1.2	4.3	3.7	3.9	8.6	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
2015	7	0.0	2.4	8.9	7.5	8.0	17.8	0.5	6.0	0.0	0.0	4.2	2.2	1.0	1.8	1.7	0.0
2015	8	0.0	1.3	4.9	4.2	4.4	9.9	0.3	3.3	0.0	0.0	2.4	1.2	0.5	1.0	0.9	0.0
2015	9	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2015	10	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2015	11	0.0	0.6	2.2	1.8	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2015	12	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2016	1	0.0	0.4	1.4	1.2	1.3	2.8	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2016	2	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2016	3	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2016	4	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2016	5	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2016	6	0.0	0.5	1.7	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2016	7	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
2016	8	0.0	0.8	2.9	2.5	2.6	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2016	9	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2016	10	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.4	0.4	0.0
2016	11	0.0	0.5	1.7	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2016	12	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2017	1	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
2017	2	0.0	0.5	1.8	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2017	3	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2017	4	0.0	0.6	2.3	1.9	2.0	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2017	5	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2017	6	0.0	1.1	4.1	3.4	3.6	8.1	0.2	2.7	0.0	0.0	1.9	1.0	0.5	0.8	0.8	0.0
2017	7	0.0	0.8	3.0	2.5	2.7	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2017	8	0.0	0.8	2.8	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2017	9	0.0	1.0	3.7	3.2	3.3	7.5	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
2017	10	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2017	11	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2017	12	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2018	1	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2018	2	0.0	0.4	1.5	1.2	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2018	3	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2018	4	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2018	5	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2018	6	0.0	1.2	4.3	3.7	3.9	8.6	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
2018	7	0.0	1.1	3.9	3.3	3.5	7.8	0.2	2.6	0.0	0.0	1.9	1.0	0.4	0.8	0.7	0.0
2018	8	0.0	0.8	2.8	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2018	9	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2018	10	0.0	0.9	3.4	2.9	3.0	6.8	0.2	2.3	0.0	0.0	1.6	0.9	0.4	0.7	0.6	0.0
2018	11	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2018	12	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2019	1	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2019	2	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2019	3	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2019	4	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2019	5	0.0	0.4	1.4	1.2	1.2	2.8	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0
2019	6	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2019	7	0.0	1.5	5.5	4.7	5.0	11.1	0.3	3.7	0.0	0.0	2.7	1.4	0.6	1.1	1.1	0.0
2019	8	0.0	0.8	3.0	2.6	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
2019	9	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2019	10	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2019	11	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2019	12	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 13：Reduced Water of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1/9)

(1966 - 1971)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1966	1	0.0	0.1	1.7	0.9	0.0	0.0	0.0	0.4	0.2	0.0
1966	2	0.0	0.1	2.0	1.1	0.0	0.0	0.0	0.5	0.3	0.0
1966	3	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1966	4	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1966	5	0.0	0.1	1.7	1.0	0.0	0.0	0.0	0.5	0.2	0.0
1966	6	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1966	7	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1966	8	0.0	0.5	8.3	4.6	0.0	0.0	0.0	2.2	1.2	0.2
1966	9	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1966	10	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1966	11	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1966	12	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1967	1	0.0	0.1	1.7	1.0	0.0	0.0	0.0	0.5	0.2	0.0
1967	2	0.0	0.1	1.9	1.0	0.0	0.0	0.0	0.5	0.3	0.0
1967	3	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1967	4	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1967	5	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.4	0.2	0.0
1967	6	0.0	0.1	1.7	1.0	0.0	0.0	0.0	0.5	0.2	0.0
1967	7	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
1967	8	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1967	9	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1967	10	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1967	11	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1967	12	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.5	0.1
1968	1	0.0	0.1	2.0	1.1	0.0	0.0	0.0	0.5	0.3	0.0
1968	2	0.0	0.1	1.9	1.1	0.0	0.0	0.0	0.5	0.3	0.0
1968	3	0.0	0.2	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1968	4	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1968	5	0.0	0.2	3.0	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1968	6	0.0	0.3	6.3	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1968	7	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
1968	8	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1968	9	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1968	10	0.0	0.2	3.0	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1968	11	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.7	0.4	0.1
1968	12	0.0	0.2	3.4	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1969	1	0.0	0.1	1.9	1.0	0.0	0.0	0.0	0.5	0.3	0.0
1969	2	0.0	0.1	2.0	1.1	0.0	0.0	0.0	0.5	0.3	0.0
1969	3	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1969	4	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1969	5	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.3	0.2	0.0
1969	6	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1969	7	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1969	8	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1969	9	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1969	10	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1969	11	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1969	12	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.5	0.1
1970	1	0.0	0.1	2.0	1.1	0.0	0.0	0.0	0.5	0.3	0.0
1970	2	0.0	0.1	2.0	1.1	0.0	0.0	0.0	0.5	0.3	0.0
1970	3	0.0	0.2	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1970	4	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1970	5	0.0	0.2	3.0	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1970	6	0.0	0.1	2.3	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1970	7	0.0	0.5	8.3	4.5	0.0	0.0	0.0	2.2	1.2	0.2
1970	8	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1970	9	0.0	0.2	3.2	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1970	10	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1970	11	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1970	12	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1971	1	0.0	0.1	1.8	1.0	0.0	0.0	0.0	0.5	0.3	0.0
1971	2	0.0	0.1	2.0	1.1	0.0	0.0	0.0	0.5	0.3	0.0
1971	3	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1971	4	0.0	0.2	2.8	1.6	0.0	0.0	0.0	0.7	0.4	0.1
1971	5	0.0	0.1	1.2	0.6	0.0	0.0	0.0	0.3	0.2	0.0
1971	6	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
1971	7	0.0	0.4	7.1	3.9	0.0	0.0	0.0	1.9	1.0	0.1
1971	8	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1971	9	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1971	10	0.0	0.2	3.0	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1971	11	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1971	12	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 13：Reduced Water of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2/9)

(1972 - 1977)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1972	1	0.0	0.1	2.1	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1972	2	0.0	0.1	2.0	1.1	0.0	0.0	0.0	0.5	0.3	0.0
1972	3	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1972	4	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1972	5	0.0	0.1	1.8	1.0	0.0	0.0	0.0	0.5	0.3	0.0
1972	6	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1972	7	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1972	8	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1972	9	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1972	10	0.0	0.2	3.0	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1972	11	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1972	12	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1973	1	0.0	0.1	2.1	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1973	2	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1973	3	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1973	4	0.0	0.2	2.8	1.6	0.0	0.0	0.0	0.7	0.4	0.1
1973	5	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1973	6	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1973	7	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1973	8	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1973	9	0.0	0.2	3.2	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1973	10	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1973	11	0.0	0.2	3.0	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1973	12	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1974	1	0.0	0.1	2.0	1.1	0.0	0.0	0.0	0.5	0.3	0.0
1974	2	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1974	3	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1974	4	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1974	5	0.0	0.1	2.1	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1974	6	0.0	0.7	12.8	7.1	0.0	0.0	0.1	3.4	1.8	0.2
1974	7	0.0	0.5	8.7	4.8	0.0	0.0	0.0	2.3	1.2	0.2
1974	8	0.0	0.4	6.8	3.7	0.0	0.0	0.0	1.8	1.0	0.1
1974	9	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1974	10	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.7	0.4	0.1
1974	11	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1974	12	0.0	0.2	3.6	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1975	1	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1975	2	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1975	3	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1975	4	0.0	0.2	2.8	1.6	0.0	0.0	0.0	0.7	0.4	0.1
1975	5	0.0	0.2	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1975	6	0.0	0.2	3.7	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1975	7	0.0	0.5	9.7	5.3	0.0	0.0	0.0	2.5	1.4	0.2
1975	8	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
1975	9	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1975	10	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1975	11	0.0	0.2	3.0	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1975	12	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
1976	1	0.0	0.1	2.1	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1976	2	0.0	0.1	2.3	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1976	3	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1976	4	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1976	5	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1976	6	0.0	0.7	13.2	7.2	0.0	0.0	0.1	3.5	1.9	0.2
1976	7	0.0	0.7	13.0	7.2	0.0	0.0	0.1	3.4	1.8	0.2
1976	8	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1976	9	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.4	0.1
1976	10	0.0	0.2	3.6	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1976	11	0.0	0.1	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.0
1976	12	0.0	0.2	3.6	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1977	1	0.0	0.1	2.3	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1977	2	0.0	0.1	2.1	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1977	3	0.0	0.2	3.0	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1977	4	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1977	5	0.0	0.2	3.0	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1977	6	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1977	7	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
1977	8	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1977	9	0.0	0.2	3.0	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1977	10	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1977	11	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1977	12	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 13：Reduced Water of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (3/9)

(1978 - 1983)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1978	1	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1978	2	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.6	0.3	0.0
1978	3	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1978	4	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.7	0.4	0.1
1978	5	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.4	0.1
1978	6	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1978	7	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.4	0.1
1978	8	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.9	0.1
1978	9	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1978	10	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1978	11	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1978	12	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1979	1	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1979	2	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1979	3	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1979	4	0.0	0.2	3.0	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1979	5	0.0	0.1	1.8	1.0	0.0	0.0	0.0	0.5	0.3	0.0
1979	6	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1979	7	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1979	8	0.0	0.5	9.3	5.1	0.0	0.0	0.0	2.4	1.3	0.2
1979	9	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1979	10	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1979	11	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
1979	12	0.0	0.2	3.7	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1980	1	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1980	2	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1980	3	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1980	4	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1980	5	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1980	6	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1980	7	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1980	8	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
1980	9	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1980	10	0.0	0.2	3.6	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1980	11	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1980	12	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1981	1	0.0	0.1	2.3	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1981	2	0.0	0.1	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1981	3	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1981	4	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1981	5	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1981	6	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1981	7	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1981	8	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
1981	9	0.0	0.3	5.0	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1981	10	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1981	11	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1981	12	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1982	1	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1982	2	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1982	3	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1982	4	0.0	0.2	2.8	1.6	0.0	0.0	0.0	0.7	0.4	0.1
1982	5	0.0	0.1	1.5	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1982	6	0.0	0.3	6.3	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1982	7	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1982	8	0.0	0.5	8.6	4.8	0.0	0.0	0.0	2.3	1.2	0.2
1982	9	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1982	10	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1982	11	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.4	0.1
1982	12	0.0	0.2	4.1	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1983	1	0.0	0.1	2.3	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1983	2	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1983	3	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1983	4	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1983	5	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1983	6	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1983	7	0.0	0.4	7.8	4.3	0.0	0.0	0.0	2.0	1.1	0.1
1983	8	0.0	0.6	10.7	5.9	0.0	0.0	0.0	2.8	1.5	0.2
1983	9	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1983	10	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1983	11	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1983	12	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 13：Reduced Water of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (4/9)

(1984 - 1989)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1984	1	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1984	2	0.0	0.2	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1984	3	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1984	4	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1984	5	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1984	6	0.0	0.4	7.1	3.9	0.0	0.0	0.0	1.9	1.0	0.1
1984	7	0.0	0.7	11.7	6.5	0.0	0.0	0.0	3.1	1.7	0.2
1984	8	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1984	9	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1984	10	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.5	0.1
1984	11	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1984	12	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1985	1	0.0	0.2	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1985	2	0.0	0.2	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1985	3	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1985	4	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.4	0.1
1985	5	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1985	6	0.0	0.4	7.0	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1985	7	0.0	0.5	9.7	5.4	0.0	0.0	0.0	2.6	1.4	0.2
1985	8	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1985	9	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.5	0.1
1985	10	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1985	11	0.0	0.2	3.7	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1985	12	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1986	1	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1986	2	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1986	3	0.0	0.2	3.7	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1986	4	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1986	5	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1986	6	0.0	0.4	7.5	4.1	0.0	0.0	0.0	2.0	1.1	0.1
1986	7	0.0	0.4	8.0	4.4	0.0	0.0	0.0	2.1	1.1	0.1
1986	8	0.0	0.3	6.1	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1986	9	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1986	10	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1986	11	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1986	12	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1987	1	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.6	0.3	0.0
1987	2	0.0	0.1	2.6	1.5	0.0	0.0	0.0	0.7	0.4	0.0
1987	3	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1987	4	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1987	5	0.0	0.1	1.5	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1987	6	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1987	7	0.0	0.8	13.6	7.5	0.0	0.0	0.1	3.6	1.9	0.3
1987	8	0.0	0.5	9.5	5.2	0.0	0.0	0.0	2.5	1.3	0.2
1987	9	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
1987	10	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1987	11	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1987	12	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1988	1	0.0	0.2	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1988	2	0.0	0.1	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1988	3	0.0	0.2	3.7	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1988	4	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1988	5	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1988	6	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1988	7	0.0	0.5	8.5	4.7	0.0	0.0	0.0	2.2	1.2	0.2
1988	8	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
1988	9	0.0	0.2	3.6	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1988	10	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1988	11	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1988	12	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
1989	1	0.0	0.2	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1989	2	0.0	0.1	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1989	3	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1989	4	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1989	5	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1989	6	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1989	7	0.0	0.6	11.0	6.1	0.0	0.0	0.0	2.9	1.6	0.2
1989	8	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
1989	9	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1989	10	0.0	0.3	6.1	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1989	11	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1989	12	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 13：Reduced Water of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (5/9)

(1990 - 1995)

		Matamhuri River Basin										
	District	Chattogram	Cox's Bazar				Bandarban					
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari	
1990	1	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.3	0.0	
1990	2	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0	
1990	3	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1	
1990	4	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1	
1990	5	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.4	0.1	
1990	6	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1	
1990	7	0.0	0.7	11.7	6.4	0.0	0.0	0.0	3.1	1.6	0.2	
1990	8	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1	
1990	9	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1	
1990	10	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1	
1990	11	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.5	0.1	
1990	12	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1	
1991	1	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0	
1991	2	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0	
1991	3	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1	
1991	4	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1	
1991	5	0.0	0.4	7.4	4.1	0.0	0.0	0.0	1.9	1.0	0.1	
1991	6	0.0	0.5	8.4	4.6	0.0	0.0	0.0	2.2	1.2	0.2	
1991	7	0.0	0.5	9.3	5.1	0.0	0.0	0.0	2.4	1.3	0.2	
1991	8	0.0	0.4	7.8	4.3	0.0	0.0	0.0	2.0	1.1	0.1	
1991	9	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1	
1991	10	0.0	0.2	4.1	2.2	0.0	0.0	0.0	1.1	0.6	0.1	
1991	11	0.0	0.2	3.0	1.6	0.0	0.0	0.0	0.8	0.4	0.1	
1991	12	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1	
1992	1	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0	
1992	2	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0	
1992	3	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1	
1992	4	0.0	0.2	3.6	2.0	0.0	0.0	0.0	1.0	0.5	0.1	
1992	5	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1	
1992	6	0.0	0.5	8.2	4.5	0.0	0.0	0.0	2.2	1.2	0.2	
1992	7	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1	
1992	8	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1	
1992	9	0.0	0.2	3.0	1.7	0.0	0.0	0.0	0.8	0.4	0.1	
1992	10	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1	
1992	11	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1	
1992	12	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1	
1993	1	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0	
1993	2	0.0	0.2	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1	
1993	3	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1	
1993	4	0.0	0.2	3.6	2.0	0.0	0.0	0.0	1.0	0.5	0.1	
1993	5	0.0	0.4	7.7	4.2	0.0	0.0	0.0	2.0	1.1	0.1	
1993	6	0.0	0.6	10.7	5.9	0.0	0.0	0.0	2.8	1.5	0.2	
1993	7	0.0	0.4	7.4	4.1	0.0	0.0	0.0	1.9	1.0	0.1	
1993	8	0.0	0.6	10.7	5.9	0.0	0.0	0.0	2.8	1.5	0.2	
1993	9	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1	
1993	10	0.0	0.3	5.0	2.7	0.0	0.0	0.0	1.3	0.7	0.1	
1993	11	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1	
1993	12	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.7	0.1	
1994	1	0.0	0.2	2.8	1.6	0.0	0.0	0.0	0.7	0.4	0.1	
1994	2	0.0	0.2	3.0	1.7	0.0	0.0	0.0	0.8	0.4	0.1	
1994	3	0.0	0.3	5.5	3.1	0.0	0.0	0.0	1.5	0.8	0.1	
1994	4	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1	
1994	5	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0	
1994	6	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1	
1994	7	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1	
1994	8	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1	
1994	9	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1	
1994	10	0.0	0.2	4.1	2.2	0.0	0.0	0.0	1.1	0.6	0.1	
1994	11	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1	
1994	12	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1	
1995	1	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1	
1995	2	0.0	0.1	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.0	
1995	3	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1	
1995	4	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1	
1995	5	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1	
1995	6	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1	
1995	7	0.0	0.6	10.6	5.8	0.0	0.0	0.0	2.8	1.5	0.2	
1995	8	0.0	0.4	7.1	3.9	0.0	0.0	0.0	1.9	1.0	0.1	
1995	9	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1	
1995	10	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1	
1995	11	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1	
1995	12	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1	

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 13：Reduced Water of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (6/9)

(1996 - 2001)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1996	1	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1996	2	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1996	3	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1996	4	0.0	0.2	3.2	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1996	5	0.0	0.3	4.6	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1996	6	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.8	0.1
1996	7	0.0	0.3	5.9	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1996	8	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
1996	9	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1996	10	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1996	11	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1996	12	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1997	1	0.0	0.2	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1997	2	0.0	0.1	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.0
1997	3	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1997	4	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1997	5	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1997	6	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1997	7	0.0	0.9	16.4	9.0	0.0	0.0	0.1	4.3	2.3	0.3
1997	8	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
1997	9	0.0	0.5	9.4	5.2	0.0	0.0	0.0	2.5	1.3	0.2
1997	10	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
1997	11	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1997	12	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1998	1	0.0	0.2	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1998	2	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1998	3	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1998	4	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1998	5	0.0	0.4	6.8	3.7	0.0	0.0	0.0	1.8	1.0	0.1
1998	6	0.0	0.1	1.6	0.9	0.0	0.0	0.0	0.4	0.2	0.0
1998	7	0.0	0.7	12.8	7.0	0.0	0.0	0.1	3.4	1.8	0.2
1998	8	0.0	0.8	14.6	8.1	0.0	0.0	0.1	3.8	2.1	0.3
1998	9	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1998	10	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1998	11	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1998	12	0.0	0.3	5.0	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1999	1	0.0	0.2	3.0	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1999	2	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1999	3	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1999	4	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1999	5	0.0	0.3	5.9	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1999	6	0.0	0.8	14.1	7.7	0.0	0.0	0.1	3.7	2.0	0.3
1999	7	0.0	0.5	8.8	4.8	0.0	0.0	0.0	2.3	1.2	0.2
1999	8	0.0	0.7	12.2	6.7	0.0	0.0	0.0	3.2	1.7	0.2
1999	9	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1999	10	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1999	11	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
1999	12	0.0	0.2	4.1	2.2	0.0	0.0	0.0	1.1	0.6	0.1
2000	1	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
2000	2	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.5	0.1
2000	3	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1
2000	4	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2000	5	0.0	0.5	9.0	5.0	0.0	0.0	0.0	2.4	1.3	0.2
2000	6	0.0	0.4	7.4	4.1	0.0	0.0	0.0	1.9	1.0	0.1
2000	7	0.0	0.5	8.3	4.6	0.0	0.0	0.0	2.2	1.2	0.2
2000	8	0.0	0.4	7.5	4.1	0.0	0.0	0.0	2.0	1.1	0.1
2000	9	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
2000	10	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2000	11	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2000	12	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2001	1	0.0	0.2	3.0	1.6	0.0	0.0	0.0	0.8	0.4	0.1
2001	2	0.0	0.2	3.2	1.7	0.0	0.0	0.0	0.8	0.4	0.1
2001	3	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2001	4	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
2001	5	0.0	0.4	6.6	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2001	6	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
2001	7	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2001	8	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
2001	9	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2001	10	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2001	11	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
2001	12	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.4	0.7	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 13：Reduced Water of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (7/9)

(2002 - 2007)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2002	1	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.5	0.1
2002	2	0.0	0.2	3.5	2.0	0.0	0.0	0.0	0.9	0.5	0.1
2002	3	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2002	4	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2002	5	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2002	6	0.0	0.3	5.0	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2002	7	0.0	0.7	12.4	6.8	0.0	0.0	0.0	3.2	1.7	0.2
2002	8	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.7	0.9	0.1
2002	9	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2002	10	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2002	11	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
2002	12	0.0	0.3	5.2	2.8	0.0	0.0	0.0	1.4	0.7	0.1
2003	1	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
2003	2	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
2003	3	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2003	4	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2003	5	0.0	0.1	1.7	0.9	0.0	0.0	0.0	0.4	0.2	0.0
2003	6	0.0	0.9	15.6	8.6	0.0	0.0	0.1	4.1	2.2	0.3
2003	7	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2003	8	0.0	0.4	6.6	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2003	9	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2003	10	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2003	11	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2003	12	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2004	1	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
2004	2	0.0	0.2	3.6	2.0	0.0	0.0	0.0	1.0	0.5	0.1
2004	3	0.0	0.2	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2004	4	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2004	5	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.9	0.5	0.1
2004	6	0.0	0.4	7.5	4.1	0.0	0.0	0.0	2.0	1.1	0.1
2004	7	0.0	0.6	10.9	6.0	0.0	0.0	0.0	2.9	1.5	0.2
2004	8	0.0	0.4	7.5	4.2	0.0	0.0	0.0	2.0	1.1	0.1
2004	9	0.0	0.6	9.9	5.4	0.0	0.0	0.0	2.6	1.4	0.2
2004	10	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2004	11	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2004	12	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2005	1	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
2005	2	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
2005	3	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2005	4	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2005	5	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
2005	6	0.0	0.2	2.8	1.6	0.0	0.0	0.0	0.7	0.4	0.1
2005	7	0.0	0.5	8.8	4.9	0.0	0.0	0.0	2.3	1.2	0.2
2005	8	0.0	0.5	8.8	4.9	0.0	0.0	0.0	2.3	1.2	0.2
2005	9	0.0	0.4	6.6	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2005	10	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2005	11	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
2005	12	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2006	1	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
2006	2	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
2006	3	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
2006	4	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2006	5	0.0	0.6	10.4	5.7	0.0	0.0	0.0	2.7	1.5	0.2
2006	6	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2006	7	0.0	0.4	7.4	4.1	0.0	0.0	0.0	1.9	1.0	0.1
2006	8	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
2006	9	0.0	0.4	6.6	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2006	10	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2006	11	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2006	12	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2007	1	0.0	0.2	3.2	1.7	0.0	0.0	0.0	0.8	0.4	0.1
2007	2	0.0	0.2	3.0	1.7	0.0	0.0	0.0	0.8	0.4	0.1
2007	3	0.0	0.3	5.0	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2007	4	0.0	0.2	3.7	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2007	5	0.0	0.2	3.5	2.0	0.0	0.0	0.0	0.9	0.5	0.1
2007	6	0.0	0.9	15.5	8.6	0.0	0.0	0.1	4.1	2.2	0.3
2007	7	0.0	0.7	12.5	6.9	0.0	0.0	0.0	3.3	1.8	0.2
2007	8	0.0	0.5	8.6	4.7	0.0	0.0	0.0	2.3	1.2	0.2
2007	9	0.0	0.5	8.6	4.7	0.0	0.0	0.0	2.2	1.2	0.2
2007	10	0.0	0.4	7.9	4.4	0.0	0.0	0.0	2.1	1.1	0.1
2007	11	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
2007	12	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 13：Reduced Water of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (8/9)

(2008 - 2013)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2008	1	0.0	0.2	3.2	1.7	0.0	0.0	0.0	0.8	0.4	0.1
2008	2	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
2008	3	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2008	4	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2008	5	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
2008	6	0.0	0.6	10.2	5.6	0.0	0.0	0.0	2.7	1.4	0.2
2008	7	0.0	0.7	13.0	7.2	0.0	0.0	0.1	3.4	1.8	0.2
2008	8	0.0	0.7	12.7	7.0	0.0	0.0	0.1	3.3	1.8	0.2
2008	9	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2008	10	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2008	11	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2008	12	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2009	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2009	2	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2009	3	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.7	0.1
2009	4	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2009	5	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2009	6	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
2009	7	0.0	0.8	13.7	7.5	0.0	0.0	0.1	3.6	1.9	0.3
2009	8	0.0	0.6	10.3	5.7	0.0	0.0	0.0	2.7	1.5	0.2
2009	9	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1
2009	10	0.0	0.3	5.9	3.3	0.0	0.0	0.0	1.5	0.8	0.1
2009	11	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
2009	12	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2010	1	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
2010	2	0.0	0.2	4.1	2.2	0.0	0.0	0.0	1.1	0.6	0.1
2010	3	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2010	4	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2010	5	0.0	0.2	4.3	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2010	6	0.0	0.8	13.6	7.5	0.0	0.0	0.1	3.6	1.9	0.3
2010	7	0.0	0.2	4.3	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2010	8	0.0	0.4	7.5	4.1	0.0	0.0	0.0	2.0	1.1	0.1
2010	9	0.0	0.3	5.7	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2010	10	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2010	11	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2010	12	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2011	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2011	2	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2011	3	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2011	4	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2011	5	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2011	6	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
2011	7	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
2011	8	0.0	0.5	9.3	5.1	0.0	0.0	0.0	2.4	1.3	0.2
2011	9	0.0	0.6	9.9	5.4	0.0	0.0	0.0	2.6	1.4	0.2
2011	10	0.0	0.3	6.1	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2011	11	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2011	12	0.0	0.3	5.9	3.3	0.0	0.0	0.0	1.6	0.8	0.1
2012	1	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2012	2	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2012	3	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
2012	4	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.5	0.8	0.1
2012	5	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
2012	6	0.0	1.0	18.0	9.9	0.0	0.0	0.1	4.7	2.5	0.3
2012	7	0.0	0.5	8.5	4.7	0.0	0.0	0.0	2.2	1.2	0.2
2012	8	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2012	9	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
2012	10	0.0	0.5	9.3	5.1	0.0	0.0	0.0	2.4	1.3	0.2
2012	11	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2012	12	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
2013	1	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
2013	2	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2013	3	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
2013	4	0.0	0.2	4.3	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2013	5	0.0	0.4	7.4	4.1	0.0	0.0	0.0	1.9	1.0	0.1
2013	6	0.0	0.4	7.2	4.0	0.0	0.0	0.0	1.9	1.0	0.1
2013	7	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2013	8	0.0	0.5	8.7	4.8	0.0	0.0	0.0	2.3	1.2	0.2
2013	9	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2013	10	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2013	11	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2013	12	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 13：Reduced Water of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (9/9)

(2014 - 2019)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2014	1	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
2014	2	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
2014	3	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2014	4	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2014	5	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2014	6	0.0	1.1	20.4	11.2	0.0	0.0	0.1	5.3	2.9	0.4
2014	7	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2014	8	0.0	0.5	8.1	4.4	0.0	0.0	0.0	2.1	1.1	0.2
2014	9	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
2014	10	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2014	11	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2014	12	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1
2015	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2015	2	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2015	3	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2015	4	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.7	0.1
2015	5	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0
2015	6	0.0	0.6	10.9	6.0	0.0	0.0	0.0	2.9	1.5	0.2
2015	7	0.0	1.3	22.5	12.4	0.0	0.0	0.1	5.9	3.2	0.4
2015	8	0.0	0.7	12.5	6.9	0.0	0.0	0.0	3.3	1.8	0.2
2015	9	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1
2015	10	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2015	11	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2015	12	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2016	1	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
2016	2	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2016	3	0.0	0.3	5.2	2.8	0.0	0.0	0.0	1.4	0.7	0.1
2016	4	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2016	5	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2016	6	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
2016	7	0.0	0.5	8.1	4.5	0.0	0.0	0.0	2.1	1.1	0.2
2016	8	0.0	0.4	7.4	4.1	0.0	0.0	0.0	1.9	1.0	0.1
2016	9	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2016	10	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2016	11	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
2016	12	0.0	0.3	6.3	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2017	1	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2017	2	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
2017	3	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2017	4	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2017	5	0.0	0.3	5.2	2.8	0.0	0.0	0.0	1.4	0.7	0.1
2017	6	0.0	0.6	10.3	5.6	0.0	0.0	0.0	2.7	1.4	0.2
2017	7	0.0	0.4	7.5	4.1	0.0	0.0	0.0	2.0	1.1	0.1
2017	8	0.0	0.4	7.0	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2017	9	0.0	0.5	9.4	5.2	0.0	0.0	0.0	2.5	1.3	0.2
2017	10	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2017	11	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2017	12	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2018	1	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
2018	2	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
2018	3	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2018	4	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2018	5	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
2018	6	0.0	0.6	10.9	6.0	0.0	0.0	0.0	2.9	1.5	0.2
2018	7	0.0	0.5	9.9	5.4	0.0	0.0	0.0	2.6	1.4	0.2
2018	8	0.0	0.4	7.0	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2018	9	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
2018	10	0.0	0.5	8.6	4.7	0.0	0.0	0.0	2.3	1.2	0.2
2018	11	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2018	12	0.0	0.3	6.3	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2019	1	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2019	2	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2019	3	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2019	4	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2019	5	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
2019	6	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
2019	7	0.0	0.8	14.0	7.7	0.0	0.0	0.1	3.7	2.0	0.3
2019	8	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
2019	9	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2019	10	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2019	11	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2019	12	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.6	0.9	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 14：Reduced Water of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (1/5)
(1966 - 1977)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1966	1	0.0	1.9	0.3	0.0	0.0	0.3
1966	2	0.0	1.9	0.3	0.0	0.0	0.3
1966	3	0.0	2.4	0.3	0.0	0.0	0.3
1966	4	0.0	2.3	0.3	0.0	0.0	0.3
1966	5	0.0	1.0	0.1	0.0	0.0	0.1
1966	6	0.1	10.7	1.6	0.0	0.0	1.5
1966	7	0.0	4.9	0.7	0.0	0.0	0.7
1966	8	0.1	7.5	1.1	0.0	0.0	1.0
1966	9	0.0	2.7	0.4	0.0	0.0	0.4
1966	10	0.0	2.9	0.4	0.0	0.0	0.4
1966	11	0.0	2.5	0.4	0.0	0.0	0.3
1966	12	0.0	2.9	0.4	0.0	0.0	0.4
1967	1	0.0	1.7	0.2	0.0	0.0	0.2
1967	2	0.0	1.9	0.3	0.0	0.0	0.3
1967	3	0.0	2.5	0.4	0.0	0.0	0.3
1967	4	0.0	2.4	0.3	0.0	0.0	0.3
1967	5	0.0	1.2	0.2	0.0	0.0	0.2
1967	6	0.0	4.9	0.7	0.0	0.0	0.7
1967	7	0.1	8.3	1.2	0.0	0.0	1.1
1967	8	0.1	7.1	1.0	0.0	0.0	1.0
1967	9	0.1	6.8	1.0	0.0	0.0	0.9
1967	10	0.0	2.3	0.3	0.0	0.0	0.3
1967	11	0.0	2.9	0.4	0.0	0.0	0.4
1967	12	0.0	3.1	0.4	0.0	0.0	0.4
1968	1	0.0	1.9	0.3	0.0	0.0	0.3
1968	2	0.0	1.9	0.3	0.0	0.0	0.3
1968	3	0.0	2.6	0.4	0.0	0.0	0.4
1968	4	0.0	2.4	0.3	0.0	0.0	0.3
1968	5	0.0	2.5	0.4	0.0	0.0	0.3
1968	6	0.1	7.9	1.1	0.0	0.0	1.1
1968	7	0.1	6.8	1.0	0.0	0.0	0.9
1968	8	0.1	6.4	0.9	0.0	0.0	0.9
1968	9	0.0	2.2	0.3	0.0	0.0	0.3
1968	10	0.0	2.1	0.3	0.0	0.0	0.3
1968	11	0.0	2.8	0.4	0.0	0.0	0.4
1968	12	0.0	3.2	0.5	0.0	0.0	0.4
1969	1	0.0	2.0	0.3	0.0	0.0	0.3
1969	2	0.0	2.0	0.3	0.0	0.0	0.3
1969	3	0.0	2.5	0.4	0.0	0.0	0.3
1969	4	0.0	2.3	0.3	0.0	0.0	0.3
1969	5	0.0	1.3	0.2	0.0	0.0	0.2
1969	6	0.1	7.0	1.0	0.0	0.0	1.0
1969	7	0.1	8.7	1.3	0.0	0.0	1.2
1969	8	0.1	9.2	1.3	0.0	0.0	1.3
1969	9	0.0	4.2	0.6	0.0	0.0	0.6
1969	10	0.0	2.7	0.4	0.0	0.0	0.4
1969	11	0.0	2.9	0.4	0.0	0.0	0.4
1969	12	0.0	3.0	0.4	0.0	0.0	0.4
1970	1	0.0	1.9	0.3	0.0	0.0	0.3
1970	2	0.0	1.9	0.3	0.0	0.0	0.3
1970	3	0.0	2.7	0.4	0.0	0.0	0.4
1970	4	0.0	2.4	0.4	0.0	0.0	0.3
1970	5	0.0	2.6	0.4	0.0	0.0	0.4
1970	6	0.0	4.3	0.6	0.0	0.0	0.6
1970	7	0.1	10.6	1.5	0.0	0.0	1.5
1970	8	0.0	4.5	0.7	0.0	0.0	0.6
1970	9	0.0	2.5	0.4	0.0	0.0	0.3
1970	10	0.0	3.4	0.5	0.0	0.0	0.5
1970	11	0.0	2.4	0.4	0.0	0.0	0.3
1970	12	0.0	3.2	0.5	0.0	0.0	0.4
1971	1	0.0	2.0	0.3	0.0	0.0	0.3
1971	2	0.0	2.0	0.3	0.0	0.0	0.3
1971	3	0.0	2.7	0.4	0.0	0.0	0.4
1971	4	0.0	2.6	0.4	0.0	0.0	0.4
1971	5	0.0	1.6	0.2	0.0	0.0	0.2
1971	6	0.1	8.9	1.3	0.0	0.0	1.2
1971	7	0.1	11.5	1.7	0.0	0.0	1.6
1971	8	0.0	5.1	0.7	0.0	0.0	0.7
1971	9	0.0	2.6	0.4	0.0	0.0	0.4
1971	10	0.0	2.4	0.4	0.0	0.0	0.3
1971	11	0.0	2.3	0.3	0.0	0.0	0.3
1971	12	0.0	3.2	0.5	0.0	0.0	0.4

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1972	1	0.0	2.0	0.3	0.0	0.0	0.3
1972	2	0.0	2.2	0.3	0.0	0.0	0.3
1972	3	0.0	2.7	0.4	0.0	0.0	0.4
1972	4	0.0	2.6	0.4	0.0	0.0	0.4
1972	5	0.0	1.4	0.2	0.0	0.0	0.2
1972	6	0.0	2.5	0.4	0.0	0.0	0.3
1972	7	0.0	2.5	0.4	0.0	0.0	0.3
1972	8	0.1	6.4	0.9	0.0	0.0	0.9
1972	9	0.0	3.4	0.5	0.0	0.0	0.5
1972	10	0.0	5.3	0.8	0.0	0.0	0.7
1972	11	0.0	3.0	0.4	0.0	0.0	0.4
1972	12	0.0	3.4	0.5	0.0	0.0	0.5
1973	1	0.0	2.2	0.3	0.0	0.0	0.3
1973	2	0.0	2.2	0.3	0.0	0.0	0.3
1973	3	0.0	2.9	0.4	0.0	0.0	0.4
1973	4	0.0	2.8	0.4	0.0	0.0	0.4
1973	5	0.0	3.9	0.6	0.0	0.0	0.5
1973	6	0.1	6.1	0.9	0.0	0.0	0.8
1973	7	0.1	6.8	1.0	0.0	0.0	0.9
1973	8	0.0	4.0	0.6	0.0	0.0	0.5
1973	9	0.0	3.1	0.4	0.0	0.0	0.4
1973	10	0.0	3.0	0.4	0.0	0.0	0.4
1973	11	0.0	2.0	0.3	0.0	0.0	0.3
1973	12	0.0	3.2	0.5	0.0	0.0	0.4
1974	1	0.0	2.1	0.3	0.0	0.0	0.3
1974	2	0.0	2.2	0.3	0.0	0.0	0.3
1974	3	0.0	2.6	0.4	0.0	0.0	0.4
1974	4	0.0	2.5	0.4	0.0	0.0	0.3
1974	5	0.0	4.0	0.6	0.0	0.0	0.5
1974	6	0.1	6.6	1.0	0.0	0.0	0.9
1974	7	0.1	10.2	1.5	0.0	0.0	1.4
1974	8	0.1	8.4	1.2	0.0	0.0	1.2
1974	9	0.0	2.7	0.4	0.0	0.0	0.4
1974	10	0.0	3.0	0.4	0.0	0.0	0.4
1974	11	0.0	2.3	0.3	0.0	0.0	0.3
1974	12	0.0	3.3	0.5	0.0	0.0	0.5
1975	1	0.0	2.0	0.3	0.0	0.0	0.3
1975	2	0.0	2.0	0.3	0.0	0.0	0.3
1975	3	0.0	2.9	0.4	0.0	0.0	0.4
1975	4	0.0	2.7	0.4	0.0	0.0	0.4
1975	5	0.0	2.1	0.3	0.0	0.0	0.3
1975	6	0.0	3.9	0.6	0.0	0.0	0.5
1975	7	0.1	10.4	1.5	0.0	0.0	1.4
1975	8	0.0	4.5	0.7	0.0	0.0	0.6
1975	9	0.0	2.5	0.4	0.0	0.0	0.3
1975	10	0.0	5.7	0.8	0.0	0.0	0.8
1975	11	0.0	3.6	0.5	0.0	0.0	0.5
1975	12	0.0	3.1	0.5	0.0	0.0	0.4
1976	1	0.0	2.0	0.3	0.0	0.0	0.3
1976	2	0.0	2.2	0.3	0.0	0.0	0.3
1976	3	0.0	2.9	0.4	0.0	0.0	0.4
1976	4	0.0	2.6	0.4	0.0	0.0	0.4
1976	5	0.0	2.2	0.3	0.0	0.0	0.3
1976	6	0.1	7.2	1.1	0.0	0.0	1.0
1976	7	0.1	11.3	1.7	0.0	0.0	1.6
1976	8	0.0	5.5	0.8	0.0	0.0	0.8
1976	9	0.0	3.7	0.5	0.0	0.0	0.5
1976	10	0.0	3.9	0.6	0.0	0.0	0.5
1976	11	0.0	3.9	0.6	0.0	0.0	0.5
1976	12	0.0	3.4	0.5	0.0	0.0	0.5
1977	1	0.0	2.2	0.3	0.0	0.0	0.3
1977	2	0.0	2.1	0.3	0.0	0.0	0.3
1977	3	0.0	2.9	0.4	0.0	0.0	0.4
1977	4	0.0	5.4	0.8	0.0	0.0	0.7
1977	5	0.0	2.9	0.4	0.0	0.0	0.4
1977	6	0.1	7.8	1.1	0.0	0.0	1.1
1977	7	0.1	8.9	1.3	0.0	0.0	1.2
1977	8	0.0	5.4	0.8	0.0	0.0	0.7
1977	9	0.0	2.4	0.4	0.0	0.0	0.3
1977	10	0.0	3.5	0.5	0.0	0.0	0.5
1977	11	0.0	2.7	0.4	0.0	0.0	0.4
1977	12	0.0	3.4	0.5	0.0	0.0	0.5

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 14：Reduced Water of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (2/5)
(1978 - 1989)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1978	1	0.0	2.1	0.3	0.0	0.0	0.3
1978	2	0.0	2.2	0.3	0.0	0.0	0.3
1978	3	0.0	2.9	0.4	0.0	0.0	0.4
1978	4	0.0	3.5	0.5	0.0	0.0	0.5
1978	5	0.0	4.4	0.6	0.0	0.0	0.6
1978	6	0.0	5.2	0.8	0.0	0.0	0.7
1978	7	0.0	4.7	0.7	0.0	0.0	0.6
1978	8	0.0	4.8	0.7	0.0	0.0	0.7
1978	9	0.0	4.0	0.6	0.0	0.0	0.6
1978	10	0.0	2.6	0.4	0.0	0.0	0.4
1978	11	0.0	3.4	0.5	0.0	0.0	0.5
1978	12	0.0	3.6	0.5	0.0	0.0	0.5
1979	1	0.0	2.2	0.3	0.0	0.0	0.3
1979	2	0.0	2.3	0.3	0.0	0.0	0.3
1979	3	0.0	3.1	0.5	0.0	0.0	0.4
1979	4	0.0	2.9	0.4	0.0	0.0	0.4
1979	5	0.0	1.0	0.2	0.0	0.0	0.1
1979	6	0.0	1.5	0.2	0.0	0.0	0.2
1979	7	0.0	1.8	0.3	0.0	0.0	0.2
1979	8	0.0	5.0	0.7	0.0	0.0	0.7
1979	9	0.0	2.7	0.4	0.0	0.0	0.4
1979	10	0.0	4.1	0.6	0.0	0.0	0.6
1979	11	0.0	3.4	0.5	0.0	0.0	0.5
1979	12	0.0	3.6	0.5	0.0	0.0	0.5
1980	1	0.0	2.4	0.3	0.0	0.0	0.3
1980	2	0.0	2.4	0.4	0.0	0.0	0.3
1980	3	0.0	3.0	0.4	0.0	0.0	0.4
1980	4	0.0	2.9	0.4	0.0	0.0	0.4
1980	5	0.0	1.5	0.2	0.0	0.0	0.2
1980	6	0.0	2.2	0.3	0.0	0.0	0.3
1980	7	0.0	1.7	0.3	0.0	0.0	0.2
1980	8	0.0	4.3	0.6	0.0	0.0	0.6
1980	9	0.0	2.9	0.4	0.0	0.0	0.4
1980	10	0.0	3.1	0.4	0.0	0.0	0.4
1980	11	0.0	3.5	0.5	0.0	0.0	0.5
1980	12	0.0	3.6	0.5	0.0	0.0	0.5
1981	1	0.0	2.2	0.3	0.0	0.0	0.3
1981	2	0.0	2.3	0.3	0.0	0.0	0.3
1981	3	0.0	3.0	0.4	0.0	0.0	0.4
1981	4	0.0	3.0	0.4	0.0	0.0	0.4
1981	5	0.0	2.5	0.4	0.0	0.0	0.3
1981	6	0.1	6.2	0.9	0.0	0.0	0.8
1981	7	0.1	7.3	1.1	0.0	0.0	1.0
1981	8	0.0	4.7	0.7	0.0	0.0	0.6
1981	9	0.0	5.4	0.8	0.0	0.0	0.7
1981	10	0.0	3.6	0.5	0.0	0.0	0.5
1981	11	0.0	3.2	0.5	0.0	0.0	0.4
1981	12	0.0	3.3	0.5	0.0	0.0	0.5
1982	1	0.0	2.4	0.3	0.0	0.0	0.3
1982	2	0.0	2.2	0.3	0.0	0.0	0.3
1982	3	0.0	3.3	0.5	0.0	0.0	0.4
1982	4	0.0	2.7	0.4	0.0	0.0	0.4
1982	5	0.0	1.2	0.2	0.0	0.0	0.2
1982	6	0.1	10.6	1.5	0.0	0.0	1.5
1982	7	0.1	7.7	1.1	0.0	0.0	1.1
1982	8	0.1	7.5	1.1	0.0	0.0	1.0
1982	9	0.0	4.3	0.6	0.0	0.0	0.6
1982	10	0.0	4.0	0.6	0.0	0.0	0.5
1982	11	0.0	2.8	0.4	0.0	0.0	0.4
1982	12	0.0	3.7	0.5	0.0	0.0	0.5
1983	1	0.0	2.2	0.3	0.0	0.0	0.3
1983	2	0.0	2.1	0.3	0.0	0.0	0.3
1983	3	0.0	2.9	0.4	0.0	0.0	0.4
1983	4	0.0	2.7	0.4	0.0	0.0	0.4
1983	5	0.0	2.4	0.4	0.0	0.0	0.3
1983	6	0.1	6.5	0.9	0.0	0.0	0.9
1983	7	0.1	9.2	1.3	0.0	0.0	1.3
1983	8	0.1	8.0	1.2	0.0	0.0	1.1
1983	9	0.0	3.1	0.5	0.0	0.0	0.4
1983	10	0.0	4.0	0.6	0.0	0.0	0.5
1983	11	0.0	4.1	0.6	0.0	0.0	0.6
1983	12	0.0	3.6	0.5	0.0	0.0	0.5

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1984	1	0.0	2.3	0.3	0.0	0.0	0.3
1984	2	0.0	2.4	0.4	0.0	0.0	0.3
1984	3	0.0	2.9	0.4	0.0	0.0	0.4
1984	4	0.0	2.6	0.4	0.0	0.0	0.4
1984	5	0.0	3.3	0.5	0.0	0.0	0.4
1984	6	0.1	11.6	1.7	0.0	0.0	1.6
1984	7	0.1	6.6	1.0	0.0	0.0	0.9
1984	8	0.1	7.4	1.1	0.0	0.0	1.0
1984	9	0.0	4.9	0.7	0.0	0.0	0.7
1984	10	0.0	3.2	0.5	0.0	0.0	0.4
1984	11	0.0	3.6	0.5	0.0	0.0	0.5
1984	12	0.0	3.8	0.6	0.0	0.0	0.5
1985	1	0.0	2.4	0.3	0.0	0.0	0.3
1985	2	0.0	2.4	0.3	0.0	0.0	0.3
1985	3	0.0	3.0	0.4	0.0	0.0	0.4
1985	4	0.0	2.8	0.4	0.0	0.0	0.4
1985	5	0.0	4.4	0.6	0.0	0.0	0.6
1985	6	0.1	9.4	1.4	0.0	0.0	1.3
1985	7	0.1	10.2	1.5	0.0	0.0	1.4
1985	8	0.1	7.7	1.1	0.0	0.0	1.1
1985	9	0.0	3.0	0.4	0.0	0.0	0.4
1985	10	0.0	3.9	0.6	0.0	0.0	0.5
1985	11	0.0	5.1	0.7	0.0	0.0	0.7
1985	12	0.0	4.0	0.6	0.0	0.0	0.5
1986	1	0.0	2.4	0.4	0.0	0.0	0.3
1986	2	0.0	2.6	0.4	0.0	0.0	0.4
1986	3	0.0	3.3	0.5	0.0	0.0	0.4
1986	4	0.0	3.1	0.5	0.0	0.0	0.4
1986	5	0.0	1.8	0.3	0.0	0.0	0.2
1986	6	0.1	8.8	1.3	0.0	0.0	1.2
1986	7	0.1	7.4	1.1	0.0	0.0	1.0
1986	8	0.0	5.1	0.7	0.0	0.0	0.7
1986	9	0.0	3.0	0.4	0.0	0.0	0.4
1986	10	0.0	4.4	0.6	0.0	0.0	0.6
1986	11	0.0	2.8	0.4	0.0	0.0	0.4
1986	12	0.0	4.0	0.6	0.0	0.0	0.6
1987	1	0.0	2.5	0.4	0.0	0.0	0.3
1987	2	0.0	2.3	0.3	0.0	0.0	0.3
1987	3	0.0	3.3	0.5	0.0	0.0	0.4
1987	4	0.0	2.8	0.4	0.0	0.0	0.4
1987	5	0.0	1.4	0.2	0.0	0.0	0.2
1987	6	0.1	8.1	1.2	0.0	0.0	1.1
1987	7	0.2	17.8	2.6	0.0	0.0	2.4
1987	8	0.1	12.6	1.8	0.0	0.0	1.7
1987	9	0.0	4.6	0.7	0.0	0.0	0.6
1987	10	0.0	3.8	0.6	0.0	0.0	0.5
1987	11	0.0	2.8	0.4	0.0	0.0	0.4
1987	12	0.0	3.8	0.6	0.0	0.0	0.5
1988	1	0.0	2.6	0.4	0.0	0.0	0.4
1988	2	0.0	2.6	0.4	0.0	0.0	0.4
1988	3	0.0	3.4	0.5	0.0	0.0	0.5
1988	4	0.0	3.1	0.5	0.0	0.0	0.4
1988	5	0.0	3.5	0.5	0.0	0.0	0.5
1988	6	0.1	12.5	1.8	0.0	0.0	1.7
1988	7	0.1	7.4	1.1	0.0	0.0	1.0
1988	8	0.1	8.8	1.3	0.0	0.0	1.2
1988	9	0.0	5.6	0.8	0.0	0.0	0.8
1988	10	0.0	3.4	0.5	0.0	0.0	0.5
1988	11	0.0	2.9	0.4	0.0	0.0	0.4
1988	12	0.0	3.4	0.5	0.0	0.0	0.5
1989	1	0.0	2.6	0.4	0.0	0.0	0.4
1989	2	0.0	2.4	0.4	0.0	0.0	0.3
1989	3	0.0	3.5	0.5	0.0	0.0	0.5
1989	4	0.0	3.2	0.5	0.0	0.0	0.4
1989	5	0.0	1.6	0.2	0.0	0.0	0.2
1989	6	0.1	7.4	1.1	0.0	0.0	1.0
1989	7	0.1	8.4	1.2	0.0	0.0	1.2
1989	8	0.0	5.6	0.8	0.0	0.0	0.8
1989	9	0.0	4.4	0.6	0.0	0.0	0.6
1989	10	0.0	5.0	0.7	0.0	0.0	0.7
1989	11	0.0	3.6	0.5	0.0	0.0	0.5
1989	12	0.0	4.1	0.6	0.0	0.0	0.6

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 14：Reduced Water of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (3/5)
(1990 - 2001)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1990	1	0.0	2.4	0.4	0.0	0.0	0.3
1990	2	0.0	2.4	0.4	0.0	0.0	0.3
1990	3	0.0	3.5	0.5	0.0	0.0	0.5
1990	4	0.0	2.8	0.4	0.0	0.0	0.4
1990	5	0.0	2.8	0.4	0.0	0.0	0.4
1990	6	0.1	11.7	1.7	0.0	0.0	1.6
1990	7	0.1	11.8	1.7	0.0	0.0	1.6
1990	8	0.0	5.7	0.8	0.0	0.0	0.8
1990	9	0.0	3.9	0.6	0.0	0.0	0.5
1990	10	0.0	5.3	0.8	0.0	0.0	0.7
1990	11	0.0	4.4	0.6	0.0	0.0	0.6
1990	12	0.0	4.1	0.6	0.0	0.0	0.6
1991	1	0.0	2.6	0.4	0.0	0.0	0.4
1991	2	0.0	2.7	0.4	0.0	0.0	0.4
1991	3	0.0	3.3	0.5	0.0	0.0	0.5
1991	4	0.0	3.3	0.5	0.0	0.0	0.5
1991	5	0.0	2.3	0.3	0.0	0.0	0.3
1991	6	0.1	12.8	1.9	0.0	0.0	1.8
1991	7	0.1	8.7	1.3	0.0	0.0	1.2
1991	8	0.1	7.8	1.1	0.0	0.0	1.1
1991	9	0.0	4.9	0.7	0.0	0.0	0.7
1991	10	0.0	3.1	0.5	0.0	0.0	0.4
1991	11	0.0	2.9	0.4	0.0	0.0	0.4
1991	12	0.0	4.1	0.6	0.0	0.0	0.6
1992	1	0.0	2.4	0.3	0.0	0.0	0.3
1992	2	0.0	2.2	0.3	0.0	0.0	0.3
1992	3	0.0	3.2	0.5	0.0	0.0	0.4
1992	4	0.0	3.2	0.5	0.0	0.0	0.4
1992	5	0.0	2.0	0.3	0.0	0.0	0.3
1992	6	0.1	7.9	1.2	0.0	0.0	1.1
1992	7	0.1	8.3	1.2	0.0	0.0	1.1
1992	8	0.1	6.1	0.9	0.0	0.0	0.8
1992	9	0.0	3.6	0.5	0.0	0.0	0.5
1992	10	0.0	2.6	0.4	0.0	0.0	0.4
1992	11	0.0	2.8	0.4	0.0	0.0	0.4
1992	12	0.0	4.3	0.6	0.0	0.0	0.6
1993	1	0.0	2.5	0.4	0.0	0.0	0.3
1993	2	0.0	2.5	0.4	0.0	0.0	0.3
1993	3	0.0	3.4	0.5	0.0	0.0	0.5
1993	4	0.0	3.2	0.5	0.0	0.0	0.4
1993	5	0.0	5.1	0.8	0.0	0.0	0.7
1993	6	0.1	8.5	1.2	0.0	0.0	1.2
1993	7	0.1	6.9	1.0	0.0	0.0	0.9
1993	8	0.1	7.5	1.1	0.0	0.0	1.0
1993	9	0.0	3.4	0.5	0.0	0.0	0.5
1993	10	0.0	3.2	0.5	0.0	0.0	0.4
1993	11	0.0	3.5	0.5	0.0	0.0	0.5
1993	12	0.0	4.3	0.6	0.0	0.0	0.6
1994	1	0.0	2.7	0.4	0.0	0.0	0.4
1994	2	0.0	2.8	0.4	0.0	0.0	0.4
1994	3	0.0	4.1	0.6	0.0	0.0	0.6
1994	4	0.0	3.5	0.5	0.0	0.0	0.5
1994	5	0.0	3.5	0.5	0.0	0.0	0.5
1994	6	0.1	10.5	1.5	0.0	0.0	1.4
1994	7	0.1	7.9	1.2	0.0	0.0	1.1
1994	8	0.0	5.4	0.8	0.0	0.0	0.7
1994	9	0.0	3.4	0.5	0.0	0.0	0.5
1994	10	0.0	3.8	0.6	0.0	0.0	0.5
1994	11	0.0	3.6	0.5	0.0	0.0	0.5
1994	12	0.0	4.4	0.6	0.0	0.0	0.6
1995	1	0.0	2.8	0.4	0.0	0.0	0.4
1995	2	0.0	2.6	0.4	0.0	0.0	0.4
1995	3	0.0	4.0	0.6	0.0	0.0	0.5
1995	4	0.0	3.5	0.5	0.0	0.0	0.5
1995	5	0.0	4.5	0.7	0.0	0.0	0.6
1995	6	0.1	5.9	0.9	0.0	0.0	0.8
1995	7	0.1	10.1	1.5	0.0	0.0	1.4
1995	8	0.1	5.8	0.8	0.0	0.0	0.8
1995	9	0.0	4.9	0.7	0.0	0.0	0.7
1995	10	0.0	4.4	0.6	0.0	0.0	0.6
1995	11	0.0	4.2	0.6	0.0	0.0	0.6
1995	12	0.0	4.4	0.6	0.0	0.0	0.6

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1996	1	0.0	2.8	0.4	0.0	0.0	0.4
1996	2	0.0	2.9	0.4	0.0	0.0	0.4
1996	3	0.0	3.6	0.5	0.0	0.0	0.5
1996	4	0.0	3.2	0.5	0.0	0.0	0.4
1996	5	0.0	3.1	0.4	0.0	0.0	0.4
1996	6	0.1	7.4	1.1	0.0	0.0	1.0
1996	7	0.1	9.9	1.4	0.0	0.0	1.4
1996	8	0.1	7.4	1.1	0.0	0.0	1.0
1996	9	0.1	6.3	0.9	0.0	0.0	0.9
1996	10	0.0	4.7	0.7	0.0	0.0	0.6
1996	11	0.0	4.0	0.6	0.0	0.0	0.5
1996	12	0.0	4.5	0.7	0.0	0.0	0.6
1997	1	0.0	2.9	0.4	0.0	0.0	0.4
1997	2	0.0	2.7	0.4	0.0	0.0	0.4
1997	3	0.0	3.6	0.5	0.0	0.0	0.5
1997	4	0.0	3.5	0.5	0.0	0.0	0.5
1997	5	0.0	3.6	0.5	0.0	0.0	0.5
1997	6	0.0	4.1	0.6	0.0	0.0	0.6
1997	7	0.1	13.5	2.0	0.0	0.0	1.9
1997	8	0.1	7.1	1.0	0.0	0.0	1.0
1997	9	0.1	6.8	1.0	0.0	0.0	0.9
1997	10	0.0	4.5	0.7	0.0	0.0	0.6
1997	11	0.0	4.0	0.6	0.0	0.0	0.5
1997	12	0.0	4.3	0.6	0.0	0.0	0.6
1998	1	0.0	2.6	0.4	0.0	0.0	0.4
1998	2	0.0	2.7	0.4	0.0	0.0	0.4
1998	3	0.0	4.0	0.6	0.0	0.0	0.6
1998	4	0.0	3.4	0.5	0.0	0.0	0.5
1998	5	0.0	4.7	0.7	0.0	0.0	0.6
1998	6	0.0	4.1	0.6	0.0	0.0	0.6
1998	7	0.1	13.5	2.0	0.0	0.0	1.9
1998	8	0.1	12.4	1.8	0.0	0.0	1.7
1998	9	0.1	5.8	0.9	0.0	0.0	0.8
1998	10	0.0	4.1	0.6	0.0	0.0	0.6
1998	11	0.0	3.7	0.5	0.0	0.0	0.5
1998	12	0.0	4.7	0.7	0.0	0.0	0.7
1999	1	0.0	3.0	0.4	0.0	0.0	0.4
1999	2	0.0	3.3	0.5	0.0	0.0	0.5
1999	3	0.0	4.0	0.6	0.0	0.0	0.5
1999	4	0.0	3.8	0.6	0.0	0.0	0.5
1999	5	0.1	6.4	0.9	0.0	0.0	0.9
1999	6	0.1	9.2	1.4	0.0	0.0	1.3
1999	7	0.1	10.0	1.5	0.0	0.0	1.4
1999	8	0.1	12.3	1.8	0.0	0.0	1.7
1999	9	0.0	4.2	0.6	0.0	0.0	0.6
1999	10	0.0	3.4	0.5	0.0	0.0	0.5
1999	11	0.0	4.5	0.7	0.0	0.0	0.6
1999	12	0.0	3.7	0.5	0.0	0.0	0.5
2000	1	0.0	3.0	0.4	0.0	0.0	0.4
2000	2	0.0	3.2	0.5	0.0	0.0	0.4
2000	3	0.0	3.9	0.6	0.0	0.0	0.5
2000	4	0.0	3.8	0.5	0.0	0.0	0.5
2000	5	0.1	6.5	0.9	0.0	0.0	0.9
2000	6	0.1	9.2	1.3	0.0	0.0	1.3
2000	7	0.1	14.2	2.1	0.0	0.0	2.0
2000	8	0.1	9.5	1.4	0.0	0.0	1.3
2000	9	0.1	6.6	1.0	0.0	0.0	0.9
2000	10	0.0	4.6	0.7	0.0	0.0	0.6
2000	11	0.0	4.4	0.6	0.0	0.0	0.6
2000	12	0.0	4.9	0.7	0.0	0.0	0.7
2001	1	0.0	3.1	0.5	0.0	0.0	0.4
2001	2	0.0	3.0	0.4	0.0	0.0	0.4
2001	3	0.0	4.3	0.6	0.0	0.0	0.6
2001	4	0.0	3.9	0.6	0.0	0.0	0.5
2001	5	0.0	4.5	0.7	0.0	0.0	0.6
2001	6	0.1	15.2	2.2	0.0	0.0	2.1
2001	7	0.1	10.0	1.5	0.0	0.0	1.4
2001	8	0.1	5.9	0.9	0.0	0.0	0.8
2001	9	0.1	5.9	0.9	0.0	0.0	0.8
2001	10	0.0	3.2	0.5	0.0	0.0	0.4
2001	11	0.0	3.7	0.5	0.0	0.0	0.5
2001	12	0.0	4.9	0.7	0.0	0.0	0.7

Source: JICA Study Team

Attachment 14：Reduced Water of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (4/5)

(2002 - 2013)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2002	1	0.0	2.8	0.4	0.0	0.0	0.4
2002	2	0.0	3.3	0.5	0.0	0.0	0.5
2002	3	0.0	4.1	0.6	0.0	0.0	0.6
2002	4	0.0	3.6	0.5	0.0	0.0	0.5
2002	5	0.0	5.5	0.8	0.0	0.0	0.8
2002	6	0.0	5.6	0.8	0.0	0.0	0.8
2002	7	0.1	13.8	2.0	0.0	0.0	1.9
2002	8	0.1	7.4	1.1	0.0	0.0	1.0
2002	9	0.0	3.6	0.5	0.0	0.0	0.5
2002	10	0.0	4.0	0.6	0.0	0.0	0.5
2002	11	0.0	3.7	0.5	0.0	0.0	0.5
2002	12	0.0	4.8	0.7	0.0	0.0	0.7
2003	1	0.0	2.9	0.4	0.0	0.0	0.4
2003	2	0.0	3.2	0.5	0.0	0.0	0.4
2003	3	0.0	4.0	0.6	0.0	0.0	0.5
2003	4	0.0	4.0	0.6	0.0	0.0	0.5
2003	5	0.1	6.5	1.0	0.0	0.0	0.9
2003	6	0.1	15.3	2.2	0.0	0.0	2.1
2003	7	0.1	10.1	1.5	0.0	0.0	1.4
2003	8	0.1	7.4	1.1	0.0	0.0	1.0
2003	9	0.1	5.8	0.9	0.0	0.0	0.8
2003	10	0.0	5.0	0.7	0.0	0.0	0.7
2003	11	0.0	4.6	0.7	0.0	0.0	0.6
2003	12	0.0	5.0	0.7	0.0	0.0	0.7
2004	1	0.0	2.9	0.4	0.0	0.0	0.4
2004	2	0.0	3.3	0.5	0.0	0.0	0.5
2004	3	0.0	4.2	0.6	0.0	0.0	0.6
2004	4	0.0	3.3	0.5	0.0	0.0	0.5
2004	5	0.0	3.5	0.5	0.0	0.0	0.5
2004	6	0.1	8.2	1.2	0.0	0.0	1.1
2004	7	0.1	8.6	1.3	0.0	0.0	1.2
2004	8	0.1	7.9	1.2	0.0	0.0	1.1
2004	9	0.1	7.1	1.0	0.0	0.0	1.0
2004	10	0.0	4.7	0.7	0.0	0.0	0.6
2004	11	0.0	4.7	0.7	0.0	0.0	0.6
2004	12	0.0	5.1	0.7	0.0	0.0	0.7
2005	1	0.0	3.1	0.5	0.0	0.0	0.4
2005	2	0.0	3.2	0.5	0.0	0.0	0.4
2005	3	0.0	4.0	0.6	0.0	0.0	0.6
2005	4	0.0	3.8	0.6	0.0	0.0	0.5
2005	5	0.0	2.6	0.4	0.0	0.0	0.4
2005	6	0.1	9.8	1.4	0.0	0.0	1.3
2005	7	0.1	7.0	1.0	0.0	0.0	1.0
2005	8	0.1	11.1	1.6	0.0	0.0	1.5
2005	9	0.0	3.9	0.6	0.0	0.0	0.5
2005	10	0.0	4.2	0.6	0.0	0.0	0.6
2005	11	0.0	4.3	0.6	0.0	0.0	0.6
2005	12	0.0	4.8	0.7	0.0	0.0	0.7
2006	1	0.0	3.0	0.4	0.0	0.0	0.4
2006	2	0.0	3.0	0.4	0.0	0.0	0.4
2006	3	0.0	4.3	0.6	0.0	0.0	0.6
2006	4	0.0	3.8	0.6	0.0	0.0	0.5
2006	5	0.1	9.3	1.4	0.0	0.0	1.3
2006	6	0.1	8.1	1.2	0.0	0.0	1.1
2006	7	0.1	9.4	1.4	0.0	0.0	1.3
2006	8	0.1	7.1	1.0	0.0	0.0	1.0
2006	9	0.1	8.0	1.2	0.0	0.0	1.1
2006	10	0.0	4.6	0.7	0.0	0.0	0.6
2006	11	0.0	4.5	0.7	0.0	0.0	0.6
2006	12	0.0	5.1	0.7	0.0	0.0	0.7
2007	1	0.0	3.0	0.4	0.0	0.0	0.4
2007	2	0.0	2.8	0.4	0.0	0.0	0.4
2007	3	0.0	4.2	0.6	0.0	0.0	0.6
2007	4	0.0	3.7	0.5	0.0	0.0	0.5
2007	5	0.0	4.4	0.6	0.0	0.0	0.6
2007	6	0.1	7.5	1.1	0.0	0.0	1.0
2007	7	0.1	15.0	2.2	0.0	0.0	2.1
2007	8	0.1	6.4	0.9	0.0	0.0	0.9
2007	9	0.1	5.9	0.9	0.0	0.0	0.8
2007	10	0.1	5.8	0.8	0.0	0.0	0.8
2007	11	0.0	3.1	0.5	0.0	0.0	0.4
2007	12	0.0	5.1	0.7	0.0	0.0	0.7

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2008	1	0.0	3.1	0.5	0.0	0.0	0.4
2008	2	0.0	3.2	0.5	0.0	0.0	0.4
2008	3	0.0	4.1	0.6	0.0	0.0	0.6
2008	4	0.0	4.3	0.6	0.0	0.0	0.6
2008	5	0.0	3.4	0.5	0.0	0.0	0.5
2008	6	0.1	15.7	2.3	0.0	0.0	2.2
2008	7	0.1	15.2	2.2	0.0	0.0	2.1
2008	8	0.1	8.2	1.2	0.0	0.0	1.1
2008	9	0.0	4.6	0.7	0.0	0.0	0.6
2008	10	0.0	3.8	0.6	0.0	0.0	0.5
2008	11	0.0	4.9	0.7	0.0	0.0	0.7
2008	12	0.0	5.2	0.8	0.0	0.0	0.7
2009	1	0.0	3.4	0.5	0.0	0.0	0.5
2009	2	0.0	3.8	0.6	0.0	0.0	0.5
2009	3	0.0	4.2	0.6	0.0	0.0	0.6
2009	4	0.0	4.0	0.6	0.0	0.0	0.6
2009	5	0.0	3.4	0.5	0.0	0.0	0.5
2009	6	0.0	4.0	0.6	0.0	0.0	0.6
2009	7	0.1	11.7	1.7	0.0	0.0	1.6
2009	8	0.1	11.3	1.7	0.0	0.0	1.6
2009	9	0.1	5.8	0.9	0.0	0.0	0.8
2009	10	0.0	4.6	0.7	0.0	0.0	0.6
2009	11	0.0	4.1	0.6	0.0	0.0	0.6
2009	12	0.0	5.3	0.8	0.0	0.0	0.7
2010	1	0.0	3.4	0.5	0.0	0.0	0.5
2010	2	0.0	3.7	0.5	0.0	0.0	0.5
2010	3	0.0	4.4	0.6	0.0	0.0	0.6
2010	4	0.0	4.1	0.6	0.0	0.0	0.6
2010	5	0.1	9.3	1.4	0.0	0.0	1.3
2010	6	0.1	11.9	1.7	0.0	0.0	1.6
2010	7	0.1	6.0	0.9	0.0	0.0	0.8
2010	8	0.1	8.5	1.2	0.0	0.0	1.2
2010	9	0.0	4.2	0.6	0.0	0.0	0.6
2010	10	0.1	7.0	1.0	0.0	0.0	1.0
2010	11	0.0	4.9	0.7	0.0	0.0	0.7
2010	12	0.0	4.4	0.6	0.0	0.0	0.6
2011	1	0.0	3.4	0.5	0.0	0.0	0.5
2011	2	0.0	3.5	0.5	0.0	0.0	0.5
2011	3	0.0	4.6	0.7	0.0	0.0	0.6
2011	4	0.0	3.7	0.5	0.0	0.0	0.5
2011	5	0.0	4.0	0.6	0.0	0.0	0.5
2011	6	0.1	11.3	1.7	0.0	0.0	1.6
2011	7	0.1	10.7	1.6	0.0	0.0	1.5
2011	8	0.1	15.1	2.2	0.0	0.0	2.1
2011	9	0.1	8.5	1.2	0.0	0.0	1.2
2011	10	0.0	5.1	0.7	0.0	0.0	0.7
2011	11	0.0	4.7	0.7	0.0	0.0	0.7
2011	12	0.0	5.1	0.8	0.0	0.0	0.7
2012	1	0.0	3.2	0.5	0.0	0.0	0.4
2012	2	0.0	3.4	0.5	0.0	0.0	0.5
2012	3	0.0	4.3	0.6	0.0	0.0	0.6
2012	4	0.0	3.7	0.5	0.0	0.0	0.5
2012	5	0.0	3.3	0.5	0.0	0.0	0.5
2012	6	0.1	13.6	2.0	0.0	0.0	1.9
2012	7	0.1	14.0	2.0	0.0	0.0	1.9
2012	8	0.1	10.0	1.5	0.0	0.0	1.4
2012	9	0.1	5.9	0.9	0.0	0.0	0.8
2012	10	0.1	6.4	0.9	0.0	0.0	0.9
2012	11	0.0	4.8	0.7	0.0	0.0	0.7
2012	12	0.0	5.4	0.8	0.0	0.0	0.7
2013	1	0.0	3.3	0.5	0.0	0.0	0.5
2013	2	0.0	3.5	0.5	0.0	0.0	0.5
2013	3	0.0	4.4	0.6	0.0	0.0	0.6
2013	4	0.0	4.0	0.6	0.0	0.0	0.5
2013	5	0.1	8.7	1.3	0.0	0.0	1.2
2013	6	0.1	10.9	1.6	0.0	0.0	1.5
2013	7	0.1	9.6	1.4	0.0	0.0	1.3
2013	8	0.1	16.0	2.3	0.0	0.0	2.2
2013	9	0.0	3.5	0.5	0.0	0.0	0.5
2013	10	0.0	5.2	0.8	0.0	0.0	0.7
2013	11	0.0	4.7	0.7	0.0	0.0	0.7
2013	12	0.0	5.2	0.8	0.0	0.0	0.7

Source: JICA Study Team

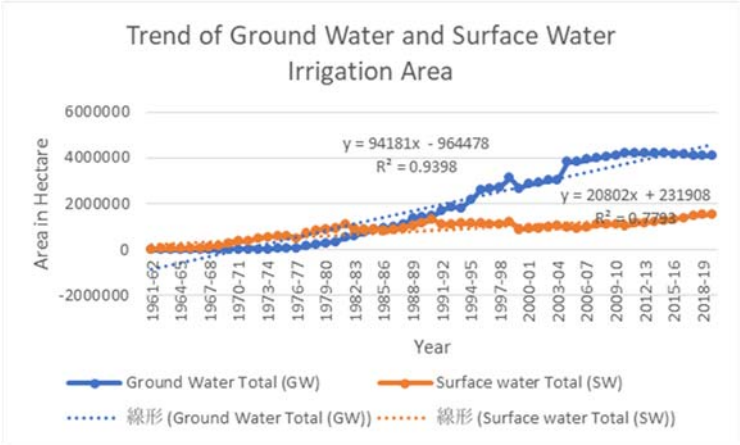
Attachment 14：Reduced Water of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (5/5)
(2014 - 2019)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2014	1	0.0	3.2	0.5	0.0	0.0	0.4
2014	2	0.0	3.2	0.5	0.0	0.0	0.4
2014	3	0.0	4.5	0.7	0.0	0.0	0.6
2014	4	0.0	4.4	0.6	0.0	0.0	0.6
2014	5	0.0	2.5	0.4	0.0	0.0	0.3
2014	6	0.1	8.9	1.3	0.0	0.0	1.2
2014	7	0.1	9.0	1.3	0.0	0.0	1.2
2014	8	0.1	7.7	1.1	0.0	0.0	1.1
2014	9	0.0	5.0	0.7	0.0	0.0	0.7
2014	10	0.0	5.6	0.8	0.0	0.0	0.8
2014	11	0.0	4.7	0.7	0.0	0.0	0.7
2014	12	0.0	5.2	0.8	0.0	0.0	0.7
2015	1	0.0	3.2	0.5	0.0	0.0	0.4
2015	2	0.0	3.2	0.5	0.0	0.0	0.4
2015	3	0.0	4.7	0.7	0.0	0.0	0.6
2015	4	0.0	3.8	0.6	0.0	0.0	0.5
2015	5	0.0	2.2	0.3	0.0	0.0	0.3
2015	6	0.2	20.0	2.9	0.0	0.0	2.8
2015	7	0.2	17.8	2.6	0.0	0.0	2.5
2015	8	0.1	11.6	1.7	0.0	0.0	1.6
2015	9	0.1	7.9	1.1	0.0	0.0	1.1
2015	10	0.0	4.6	0.7	0.0	0.0	0.6
2015	11	0.0	4.3	0.6	0.0	0.0	0.6
2015	12	0.0	5.0	0.7	0.0	0.0	0.7
2016	1	0.0	3.0	0.4	0.0	0.0	0.4
2016	2	0.0	3.2	0.5	0.0	0.0	0.4
2016	3	0.0	4.2	0.6	0.0	0.0	0.6
2016	4	0.0	4.1	0.6	0.0	0.0	0.6
2016	5	0.0	5.0	0.7	0.0	0.0	0.7
2016	6	0.1	7.5	1.1	0.0	0.0	1.0
2016	7	0.1	14.3	2.1	0.0	0.0	2.0
2016	8	0.1	6.1	0.9	0.0	0.0	0.8
2016	9	0.0	4.2	0.6	0.0	0.0	0.6
2016	10	0.1	7.6	1.1	0.0	0.0	1.0
2016	11	0.0	4.5	0.7	0.0	0.0	0.6
2016	12	0.0	5.5	0.8	0.0	0.0	0.8
2017	1	0.0	3.7	0.5	0.0	0.0	0.5
2017	2	0.0	3.6	0.5	0.0	0.0	0.5
2017	3	0.0	5.3	0.8	0.0	0.0	0.7
2017	4	0.0	5.7	0.8	0.0	0.0	0.8
2017	5	0.0	2.6	0.4	0.0	0.0	0.4
2017	6	0.1	7.0	1.0	0.0	0.0	1.0
2017	7	0.2	18.6	2.7	0.0	0.0	2.6
2017	8	0.1	6.9	1.0	0.0	0.0	1.0
2017	9	0.1	6.8	1.0	0.0	0.0	0.9
2017	10	0.0	4.0	0.6	0.0	0.0	0.6
2017	11	0.0	5.0	0.7	0.0	0.0	0.7
2017	12	0.0	5.0	0.7	0.0	0.0	0.7
2018	1	0.0	3.1	0.5	0.0	0.0	0.4
2018	2	0.0	3.4	0.5	0.0	0.0	0.5
2018	3	0.0	4.5	0.7	0.0	0.0	0.6
2018	4	0.0	4.4	0.6	0.0	0.0	0.6
2018	5	0.0	2.8	0.4	0.0	0.0	0.4
2018	6	0.1	12.9	1.9	0.0	0.0	1.8
2018	7	0.1	16.3	2.4	0.0	0.0	2.2
2018	8	0.1	8.3	1.2	0.0	0.0	1.1
2018	9	0.1	6.2	0.9	0.0	0.0	0.9
2018	10	0.1	6.6	1.0	0.0	0.0	0.9
2018	11	0.0	4.9	0.7	0.0	0.0	0.7
2018	12	0.0	5.5	0.8	0.0	0.0	0.8
2019	1	0.0	3.5	0.5	0.0	0.0	0.5
2019	2	0.0	3.5	0.5	0.0	0.0	0.5
2019	3	0.0	4.5	0.7	0.0	0.0	0.6
2019	4	0.0	4.7	0.7	0.0	0.0	0.6
2019	5	0.0	2.3	0.3	0.0	0.0	0.3
2019	6	0.0	3.3	0.5	0.0	0.0	0.5
2019	7	0.1	12.5	1.8	0.0	0.0	1.7
2019	8	0.1	5.8	0.8	0.0	0.0	0.8
2019	9	0.1	9.3	1.4	0.0	0.0	1.3
2019	10	0.1	6.7	1.0	0.0	0.0	0.9
2019	11	0.0	4.3	0.6	0.0	0.0	0.6
2019	12	0.1	5.8	0.9	0.0	0.0	0.8

Source: JICA Study Team

Attachment 15：Consideration of Increase in Surface Water Irrigation due to Restrictions on Groundwater Use

The problem of groundwater level decline due to the increase in groundwater use for agriculture has arisen in Bangladesh, and the National Water Policy 1999 showed the movement of regulation on the use of groundwater. However, the movement was not strict and became ineffective until the Bangladesh Water Act 2013 was issued. With the Water Resources Act 2013, the Government of Bangladesh has started to tighten regulations on the use of groundwater. However, in reality, it was difficult to regulate local farmers, and it has not progressed smoothly. Nevertheless, looking at the trends in groundwater irrigation and surface water irrigation estimated from the trend of irrigation facilities from 1961 to 2019 in accordance with the Minor Irrigation Survey Report 2019-20, (BADC), the amount of groundwater irrigation seems suddenly decreasing starting in 2010.



Source: Minor Irrigation Survey Report 2019-20, BADC

Historical Trend of Irrigation Area by Ground Water and Surface Water (1961-62 to 2018-20)

This rate of decrease of groundwater irrigation amount from 2010 was calculated to be 0.36%/year. However, this figure will not have a significant impact on the seven years up to the short-term target year (2019-2026), so it can be ignored, and 14.4% will be adopted for the short-term target year. In the long-term target plan, since the period is long as 22 years from 2019, although the growth rate is 0.36%/year which is a slight growth rate, but it will be 7.92% in 22 years, so it will be taken into consideration. Regarding groundwater development, its future development is impossible if the current groundwater level is declining, it is presumed that the amount of groundwater irrigation will shift to surface water irrigation, taking into consideration that the Government of Bangladesh is also making effort to reduce groundwater irrigation amount. Therefore, 28.8% shall be applied to the growth rate of the irrigated area from 2011 to 2041, and the ratio of surface water for each Upazila used to calculate the irrigated area shall be revised by considering the reduction rate of groundwater irrigation amount, and the revised value shall be used together.

Annex 3.2-2 Agricultural water demand

Attachment 16：Revised Surface Water Proportion for Each Upazila

Chattogram Division

		Groundwater %	Surface Water %
	Upazila	Revised	Revised
Chattogram District			
1	Sandip	0.00%	0.00%
2	Mirersharai	0.00%	100.00%
3	Sitakunda	0.00%	100.00%
4	D.muring	0.00%	100.00%
5	Panshlaish	0.00%	100.00%
6	Hathazari	36.31%	63.69%
7	FatikChari	44.12%	55.88%
8	Raujan	26.49%	73.51%
9	Rangunia	31.12%	68.88%
10	Boalkhali	57.22%	42.78%
11	Patiya	51.58%	48.42%
12	Chandanais	49.05%	50.95%
13	Lohagora	61.47%	38.53%
14	Satkania	37.94%	62.06%
15	BashKhali	74.32%	25.68%
16	Anowara	45.19%	54.81%
Total		43.19%	56.81%
Cox's Bazar District			
1	Chakaria	26.91%	73.09%
2	Paykua	7.99%	92.01%
3	Ramu	41.02%	58.98%
4	Sadar	59.26%	40.74%
5	Ukiya	79.28%	20.72%
6	Taknaf	86.13%	13.87%
7	Moheskhali	91.12%	8.88%
8	Kutubodia	79.56%	20.44%
Total		46.30%	53.70%
Rangamati District			
1	Sadar	0.00%	100.00%
2	Naniarchar	0.00%	100.00%
3	Kawakhali	0.00%	100.00%
4	Barkal	0.00%	100.00%
5	Juraichari	0.00%	100.00%
6	Longadu	0.00%	100.00%
7	Banghaichari	1.20%	98.80%
8	Kaptai	0.00%	100.00%
9	Rajesthali	0.00%	100.00%
10	Bilaichari	0.00%	100.00%
Total		0.23%	99.77%

Chattogram Division

		Groundwater %	Surface Water %
	Upazila	Revised	Revised
Bandarban District			
1	Sadar	0.00%	100.00%
2	Roangchari	0.00%	100.00%
3	Ruma	0.00%	100.00%
4	Thanchi	0.00%	100.00%
5	Lama	17.94%	82.06%
6	Alikadam	2.74%	97.26%
7	Naikhangchari	14.81%	85.19%
Total		8.58%	91.42%
Khagrachari District			
1	Sadar	0.00%	100.00%
2	Panchari	0.00%	100.00%
3	Dighinala	0.00%	100.00%
4	Mohalchari	0.00%	100.00%
5	Matiranga	0.00%	100.00%
6	Ramgarh	7.44%	92.56%
7	Manikchari	15.09%	84.91%
8	Lakshrnichari	0.00%	100.00%
Total		1.74%	98.26%

Annex 3.2-2 Agricultural water demand

Attachment 17：Forecasted Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2026: 1966 - 1971) (1/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1966	1	0.0	0.0	0.0	0.0	3.3	6.3	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
1966	2	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1966	3	0.0	0.0	0.0	0.0	4.6	9.0	7.1	7.7	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.7	4.6	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.6	0.0	0.7	1.8	0.8
1966	4	0.0	0.0	0.0	0.0	4.5	8.8	7.0	7.6	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.7	0.8
1966	5	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1966	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	7	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1966	8	0.0	0.0	0.0	0.0	5.2	10.1	8.0	8.7	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.8	3.0	0.0	0.8	2.0	0.9
1966	9	0.0	0.0	0.0	0.0	1.0	1.9	1.5	1.6	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.2	0.5	0.0	0.1	0.4	0.2
1966	10	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1966	11	0.0	0.0	0.0	0.0	4.7	9.2	7.2	7.9	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.5	2.7	6.1	2.7	0.0	0.7	1.8	0.9
1966	12	0.0	0.0	0.0	0.0	3.7	7.2	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1967	1	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
1967	2	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1967	3	0.0	0.0	0.0	0.0	3.7	7.3	5.7	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1967	4	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1967	5	0.0	0.0	0.0	0.0	1.1	2.2	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.6	0.0	0.2	0.4	0.2
1967	6	0.0	0.0	0.0	0.0	0.9	1.7	1.3	1.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.3	0.9	0.1	0.1	0.2	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.2
1967	7	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1967	8	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1967	9	0.0	0.0	0.0	0.0	1.0	2.0	1.5	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.2	0.4	0.2
1967	10	0.0	0.0	0.0	0.0	2.1	4.1	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1967	11	0.0	0.0	0.0	0.0	5.2	10.2	8.0	8.8	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.8	3.0	0.0	0.8	2.0	1.0
1967	12	0.0	0.0	0.0	0.0	6.1	11.9	9.4	10.3	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.8	2.5	1.1	1.1	2.3	6.2	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.6	7.9	3.5	0.0	0.9	2.3	1.1
1968	1	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1968	2	0.0	0.0	0.0	0.0	3.7	7.3	5.7	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.9	2.1	0.0	0.6	1.4	0.7
1968	3	0.0	0.0	0.0	0.0	4.8	9.4	7.4	8.1	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.8	0.0	0.7	1.8	0.9
1968	4	0.0	0.0	0.0	0.0	4.2	8.2	6.5	7.1	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.5	2.4	0.0	0.6	1.6	0.8
1968	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	7	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1968	8	0.0	0.0	0.0	0.0	3.9	7.5	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1968	9	0.0	0.0	0.0	0.0	1.4	2.6	2.1	2.3	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.2
1968	10	0.0	0.0	0.0	0.0	0.3	0.6	0.5	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1968	11	0.0	0.0	0.0	0.0	5.3	10.2	8.1	8.8	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.1	6.8	3.0	0.0	0.8	2.0	1.0
1968	12	0.0	0.0	0.0	0.0	6.1	11.9	9.4	10.3	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.8	2.5	1.1	1.1	2.3	6.2	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.6	7.9	3.5	0.0	0.9	2.3	1.1
1969	1	0.0	0.0	0.0	0.0	3.2	6.3	5.0	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
1969	2	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1969	3	0.0	0.0	0.0	0.0	4.5	8.8	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
1969	4	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1969	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	6	0.0	0.0	0.0	0.0	1.0	2.0	1.6	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.2	0.4	0.2
1969	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	8	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1969	9	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1969	10	0.0	0.0	0.0	0.0	5.0	9.7	7.7	8.4	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	1.9	0.9
1969	11	0.0	0.0	0.0	0.0	4.0	7.9	6.2	6.8	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.3	5.2	2.3	0.0	0.6	1.5	0.7
1969	12	0.0	0.0	0.0	0.0	6.1	11.8	9.3	10.2	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.5	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.5	7.9	3.5	0.0	0.9	2.3	1.1
1970	1	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
1970	2	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1970	3	0.0	0.0	0.0	0.0	5.0	9.6	7.6	8.3	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
1970	4	0.0	0.0	0.0	0.0	4.3	8.4	6.6	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.6	1.7	0.8
1970	5	0.0	0.0	0.0	0.0	0.9	1.8	1.4	1.6	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.5	1.2	0.5	0.0	0.1	0.4	0.2
1970	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	8	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1970	9	0.0	0.0	0.0	0.0	1.2	2.3	1.8	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.5	0.7	0.0	0.2	0.5	0.2
1970	10	0.0	0.0	0.0	0.0	1.9	3.8	3.0	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1970	11	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1970	12	0.0	0.0	0.0	0.0	6.2	12.0	9.5	10.4	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.1	2.3	6.2	0.8	1.1	1.1	0.6	0.1	0.0	4.6	3.6	8.0	3.6	0.0	0.9	2.4	1.1
1971	1	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1971	2	0.0	0.0	0.0	0.0	3.6	6.9	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1971	3	0.0	0.0	0.0	0.0	5.2	10.1	8.0	8.7	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
1971	4	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
1971	5	0.0	0.0	0.0	0.0	0.7	1.4	1.1	1.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
1971	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	7	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.8	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.4	0.3	0.6	0.3	0.0	0.1	0.2	0.1
1971	8	0.0	0.0	0.0	0.0	0.4	0.9	0.7	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6	0.3	0.0	0.1	0.2	0.1
1971	9	0.0	0.0	0.0	0.0	1.9	3.7	3.0	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1971	10	0.0	0.0	0.0	0.0	4.6	8.9	7.0	7.7	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	5.9	2.6	0.0	0.7	1.8	0.8
1971	11	0.0	0.0	0.0	0.0	4.1	7.9	6.2	6.8	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1971	12	0.0	0.0	0.0	0.0	6.2	12.0	9.5	10.3	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.1	2.3	6.2	0.8	1.1	1.1	0.6	0.1	0.0	4.5	3.6	8.0	3.5	0.0	0.9	2.4	1.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 17：Forecasted Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2026: 1972 - 1977) (2/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1972	1	0.0	0.0	0.0	0.0	3.5	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1972	2	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1972	3	0.0	0.0	0.0	0.0	5.2	10.1	8.0	8.7	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
1972	4	0.0	0.0	0.0	0.0	4.4	8.5	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.7	2.5	0.0	0.7	1.7	0.8
1972	5	0.0	0.0	0.0	0.0	1.0	2.0	1.6	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.2	0.4	0.2
1972	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1972	7	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.8	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1972	8	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
1972	9	0.0	0.0	0.0	0.0	3.9	7.6	6.0	6.6	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.2	0.0	0.6	1.5	0.7
1972	10	0.0	0.0	0.0	0.0	5.2	10.0	7.9	8.6	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
1972	11	0.0	0.0	0.0	0.0	5.4	10.5	8.3	9.1	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.0	5.5	0.7	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.0	3.1	0.0	0.8	2.1	1.0
1972	12	0.0	0.0	0.0	0.0	6.2	12.1	9.6	10.4	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.6	8.1	3.6	0.0	0.9	2.4	1.1
1973	1	0.0	0.0	0.0	0.0	3.5	6.8	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1973	2	0.0	0.0	0.0	0.0	3.7	7.3	5.7	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1973	3	0.0	0.0	0.0	0.0	4.4	8.6	6.8	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.5	0.0	0.7	1.7	0.8
1973	4	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1973	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	7	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1973	8	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1973	9	0.0	0.0	0.0	0.0	2.8	5.4	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1973	10	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1973	11	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1973	12	0.0	0.0	0.0	0.0	6.0	11.7	9.3	10.1	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.5	0.0	0.9	2.3	1.1
1974	1	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1974	2	0.0	0.0	0.0	0.0	3.5	6.8	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1974	3	0.0	0.0	0.0	0.0	5.2	10.0	7.9	8.6	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
1974	4	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
1974	5	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1974	6	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1974	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	8	0.0	0.0	0.0	0.0	4.4	8.5	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.7	2.5	0.0	0.7	1.7	0.8
1974	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	10	0.0	0.0	0.0	0.0	0.9	1.7	1.4	1.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.3	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.5	1.2	0.5	0.0	0.1	0.3	0.2
1974	11	0.0	0.0	0.0	0.0	4.6	9.0	7.1	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.7	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
1974	12	0.0	0.0	0.0	0.0	6.0	11.6	9.2	10.0	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.0	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.4	0.0	0.9	2.3	1.1
1975	1	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1975	2	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1975	3	0.0	0.0	0.0	0.0	5.1	9.9	7.8	8.5	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	3.0	6.6	2.9	0.0	0.8	2.0	0.9
1975	4	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1975	5	0.0	0.0	0.0	0.0	1.0	1.9	1.5	1.6	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.1	0.4	0.2
1975	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	8	0.0	0.0	0.0	0.0	3.8	7.4	5.9	6.4	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1975	9	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1975	10	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1975	11	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	1.0	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1975	12	0.0	0.0	0.0	0.0	6.1	11.8	9.3	10.2	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.5	7.9	3.5	0.0	0.9	2.3	1.1
1976	1	0.0	0.0	0.0	0.0	3.4	6.5	5.2	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1976	2	0.0	0.0	0.0	0.0	3.6	6.9	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1976	3	0.0	0.0	0.0	0.0	5.3	10.2	8.1	8.8	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.1	6.8	3.0	0.0	0.8	2.0	1.0
1976	4	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
1976	5	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.8	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.4	0.3	0.6	0.3	0.0	0.1	0.2	0.1
1976	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	8	0.0	0.0	0.0	0.0	3.3	6.3	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1976	9	0.0	0.0	0.0	0.0	0.4	0.8	0.6	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.2	0.1
1976	10	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1976	11	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1976	12	0.0	0.0	0.0	0.0	6.1	11.8	9.3	10.2	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.5	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.5	7.9	3.5	0.0	0.9	2.3	1.1
1977	1	0.0	0.0	0.0	0.0	2.8	5.5	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1977	2	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1977	3	0.0	0.0	0.0	0.0	5.1	9.9	7.8	8.6	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.6	2.9	0.0	0.8	2.0	0.9
1977	4	0.0	0.0	0.0	0.0	0.7	1.4	1.1	1.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
1977	5	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1977	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	8	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1977	9	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.6	1.1	0.0	0.3	0.8	0.4
1977	10	0.0	0.0	0.0	0.0	4.8	9.3	7.3	8.0	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.7	0.0	0.7	1.8	0.9
1977	11	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1977	12	0.0	0.0	0.0	0.0	6.1	11.8	9.3	10.2	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.5	7.9	3.5	0.0	0.9	2.3	1.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 17：Forecasted Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2026: 1978 - 1983) (3/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1978	1	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1978	2	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1978	3	0.0	0.0	0.0	0.0	5.1	9.9	7.8	8.5	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.6	2.9	0.0	0.8	1.9	0.9
1978	4	0.0	0.0	0.0	0.0	4.9	9.5	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
1978	5	0.0	0.0	0.0	0.0	0.4	0.9	0.7	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6	0.3	0.0	0.1	0.2	0.1
1978	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	7	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1978	8	0.0	0.0	0.0	0.0	5.5	10.8	8.5	9.3	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.1	1.0
1978	9	0.0	0.0	0.0	0.0	0.3	0.6	0.5	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1978	10	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1978	11	0.0	0.0	0.0	0.0	5.4	10.5	8.3	9.1	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.6	2.2	1.0	1.0	2.0	5.4	0.7	0.9	1.0	0.5	0.1	0.0	4.0	3.1	7.0	3.1	0.0	0.8	2.1	1.0
1978	12	0.0	0.0	0.0	0.0	6.2	11.9	9.4	10.3	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.8	2.5	1.1	1.1	2.3	6.2	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.6	8.0	3.5	0.0	0.9	2.4	1.1
1979	1	0.0	0.0	0.0	0.0	3.4	6.5	5.2	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1979	2	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1979	3	0.0	0.0	0.0	0.0	5.2	10.1	8.0	8.7	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.8	3.0	0.0	0.8	2.0	0.9
1979	4	0.0	0.0	0.0	0.0	3.9	7.5	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1979	5	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1979	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	9	0.0	0.0	0.0	0.0	0.6	1.2	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.8	0.3	0.0	0.1	0.2	0.1
1979	10	0.0	0.0	0.0	0.0	4.6	8.9	7.0	7.7	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	5.9	2.6	0.0	0.7	1.8	0.8
1979	11	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1979	12	0.0	0.0	0.0	0.0	5.1	9.8	7.7	8.5	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	1.9	0.9
1980	1	0.0	0.0	0.0	0.0	3.0	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
1980	2	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1980	3	0.0	0.0	0.0	0.0	3.5	6.8	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1980	4	0.0	0.0	0.0	0.0	4.4	8.6	6.8	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.8	0.8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
1980	5	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0
1980	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	8	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1980	9	0.0	0.0	0.0	0.0	0.7	1.3	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
1980	10	0.0	0.0	0.0	0.0	1.2	2.2	1.8	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1980	11	0.0	0.0	0.0	0.0	5.3	10.3	8.1	8.9	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.1	6.9	3.0	0.0	0.8	2.0	1.0
1980	12	0.0	0.0	0.0	0.0	6.1	11.8	9.3	10.2	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.9	3.5	0.0	0.9	2.3	1.1
1981	1	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1981	2	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1981	3	0.0	0.0	0.0	0.0	3.2	6.3	5.0	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
1981	4	0.0	0.0	0.0	0.0	0.6	1.2	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.4	0.8	0.3	0.0	0.1	0.2	0.1
1981	5	0.0	0.0	0.0	0.0	0.4	0.8	0.6	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.2	0.1
1981	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	7	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.0
1981	8	0.0	0.0	0.0	0.0	4.4	8.6	6.8	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.8	0.8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
1981	9	0.0	0.0	0.0	0.0	1.1	2.1	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1981	10	0.0	0.0	0.0	0.0	5.4	10.4	8.2	9.0	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.1	0.0	0.8	2.1	1.0
1981	11	0.0	0.0	0.0	0.0	4.8	9.3	7.3	8.0	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.7	0.0	0.7	1.8	0.9
1981	12	0.0	0.0	0.0	0.0	6.1	11.8	9.3	10.2	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.5	7.9	3.5	0.0	0.9	2.3	1.1
1982	1	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1982	2	0.0	0.0	0.0	0.0	2.3	4.5	3.5	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1982	3	0.0	0.0	0.0	0.0	5.2	10.1	7.9	8.7	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
1982	4	0.0	0.0	0.0	0.0	3.6	6.9	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1982	5	0.0	0.0	0.0	0.0	1.0	1.9	1.5	1.6	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.1	0.4	0.2
1982	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	7	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.0
1982	8	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1982	9	0.0	0.0	0.0	0.0	0.7	1.4	1.1	1.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
1982	10	0.0	0.0	0.0	0.0	5.3	10.3	8.1	8.9	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.1	6.8	3.0	0.0	0.8	2.0	1.0
1982	11	0.0	0.0	0.0	0.0	5.1	9.8	7.7	8.5	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	1.9	0.9
1982	12	0.0	0.0	0.0	0.0	6.1	11.8	9.3	10.2	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.5	7.9	3.5	0.0	0.9	2.3	1.1
1983	1	0.0	0.0	0.0	0.0	3.4	6.5	5.2	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1983	2	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
1983	3	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1983	4	0.0	0.0	0.0	0.0	1.5	3.0	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.2	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1983	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	6	0.0	0.0	0.0	0.0	0.3	0.6	0.5	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1983	7	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
1983	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	9	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
1983	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	11	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1983	12	0.0	0.0	0.0	0.0	5.4	10.4	8.2	9.0	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.1	0.0	0.8	2.0	1.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 17：Forecasted Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2026: 1984 - 1989) (4/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1984	1	0.0	0.0	0.0	0.0	3.0	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1984	2	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.1	0.0	0.5	1.4	0.7
1984	3	0.0	0.0	0.0	0.0	5.0	9.8	7.7	8.4	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	1.9	0.9
1984	4	0.0	0.0	0.0	0.0	4.2	8.2	6.4	7.0	0.4	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1984	5	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1984	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	7	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1984	8	0.0	0.0	0.0	0.0	1.8	3.4	2.7	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1984	9	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1984	10	0.0	0.0	0.0	0.0	4.0	7.7	6.1	6.7	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1984	11	0.0	0.0	0.0	0.0	5.2	10.1	8.0	8.7	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.8	3.0	0.0	0.8	2.0	0.9
1984	12	0.0	0.0	0.0	0.0	6.1	11.9	9.4	10.2	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.8	2.5	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.5	7.9	3.5	0.0	0.9	2.3	1.1
1985	1	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1985	2	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.3	0.6
1985	3	0.0	0.0	0.0	0.0	4.2	8.1	6.4	6.9	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1985	4	0.0	0.0	0.0	0.0	4.3	8.3	6.5	7.2	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
1985	5	0.0	0.0	0.0	0.0	0.5	0.9	0.7	0.8	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6	0.3	0.0	0.1	0.2	0.1
1985	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	7	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1985	8	0.0	0.0	0.0	0.0	0.3	0.7	0.5	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.4	0.2	0.0	0.1	0.1	0.1
1985	9	0.0	0.0	0.0	0.0	3.9	7.5	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1985	10	0.0	0.0	0.0	0.0	5.6	11.0	8.6	9.5	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.7	0.8	1.0	1.0	0.5	0.1	0.0	4.1	3.3	7.3	3.2	0.0	0.8	2.2	1.0
1985	11	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1985	12	0.0	0.0	0.0	0.0	5.9	11.4	9.0	9.8	0.6	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.2	1.1
1986	1	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1986	2	0.0	0.0	0.0	0.0	3.5	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1986	3	0.0	0.0	0.0	0.0	5.2	10.2	8.0	8.8	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.8	3.0	0.0	0.8	2.0	1.0
1986	4	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1986	5	0.0	0.0	0.0	0.0	0.9	1.8	1.4	1.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.3	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.5	1.2	0.5	0.0	0.1	0.3	0.2
1986	6	0.0	0.0	0.0	0.0	0.3	0.6	0.5	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1986	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1986	8	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1986	9	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1986	10	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
1986	11	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1986	12	0.0	0.0	0.0	0.0	6.0	11.7	9.2	10.1	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.5	0.0	0.9	2.3	1.1
1987	1	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1987	2	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1987	3	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1987	4	0.0	0.0	0.0	0.0	0.5	0.9	0.7	0.8	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6	0.3	0.0	0.1	0.2	0.1
1987	5	0.0	0.0	0.0	0.0	0.9	1.7	1.4	1.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.3	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.5	1.2	0.5	0.0	0.1	0.3	0.2
1987	6	0.0	0.0	0.0	0.0	0.6	1.1	0.9	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1987	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	8	0.0	0.0	0.0	0.0	0.8	1.5	1.2	1.3	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.4	1.0	0.4	0.0	0.1	0.3	0.1
1987	9	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	1.9	0.8	0.0	0.2	0.6	0.3
1987	10	0.0	0.0	0.0	0.0	5.6	10.8	8.5	9.3	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.1	1.0
1987	11	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1987	12	0.0	0.0	0.0	0.0	5.5	10.7	8.5	9.2	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.1	1.0
1988	1	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1988	2	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1988	3	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1988	4	0.0	0.0	0.0	0.0	1.6	3.2	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1988	5	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0
1988	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	8	0.0	0.0	0.0	0.0	0.9	1.8	1.4	1.6	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.5	1.2	0.5	0.0	0.1	0.4	0.2
1988	9	0.0	0.0	0.0	0.0	0.8	1.6	1.3	1.4	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.2
1988	10	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1988	11	0.0	0.0	0.0	0.0	4.4	8.5	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.7	2.5	0.0	0.7	1.7	0.8
1988	12	0.0	0.0	0.0	0.0	5.5	10.7	8.5	9.2	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.5	0.8	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.1	3.2	0.0	0.8	2.1	1.0
1989	1	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1989	2	0.0	0.0	0.0	0.0	3.3	6.3	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
1989	3	0.0	0.0	0.0	0.0	4.9	9.5	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.4	2.8	0.0	0.7	1.9	0.9
1989	4	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1989	5	0.0	0.0	0.0	0.0	0.8	1.5	1.2	1.3	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.4	1.0	0.4	0.0	0.1	0.3	0.1
1989	6	0.0	0.0	0.0	0.0	0.4	0.8	0.6	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.2	0.1
1989	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	8	0.0	0.0	0.0	0.0	6.8	13.1	10.3	11.3	0.7	1.4	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.8	0.9	1.1	1.2	0.7	0.1	0.0	5.0	3.9	8.7	3.9	0.0	1.0	2.6	1.2
1989	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	11	0.0	0.0	0.0	0.0	4.0	7.7	6.1	6.7	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1989	12	0.0	0.0	0.0	0.0	6.0	11.7	9.2	10.1	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.5	0.0	0.9	2.3	1.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 17：Forecasted Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2026: 1990 - 1995) (5/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1990	1	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1990	2	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1990	3	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1990	4	0.0	0.0	0.0	0.0	0.4	0.7	0.6	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.4	0.0	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
1990	5	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1990	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	8	0.0	0.0	0.0	0.0	6.7	12.9	10.2	11.2	0.7	1.3	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.7	0.9	1.1	1.2	0.6	0.1	0.0	4.9	3.9	8.6	3.8	0.0	1.0	2.5	1.2
1990	9	0.0	0.0	0.0	0.0	0.9	1.8	1.4	1.6	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.5	1.2	0.5	0.0	0.1	0.4	0.2
1990	10	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1990	11	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1990	12	0.0	0.0	0.0	0.0	5.0	9.8	7.7	8.4	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	1.9	0.9
1991	1	0.0	0.0	0.0	0.0	2.9	5.6	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1991	2	0.0	0.0	0.0	0.0	3.5	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1991	3	0.0	0.0	0.0	0.0	4.7	9.2	7.2	7.9	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.5	2.7	6.1	2.7	0.0	0.7	1.8	0.9
1991	4	0.0	0.0	0.0	0.0	1.6	3.2	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.1	0.9	0.0	0.2	0.6	0.3
1991	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	8	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1991	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	10	0.0	0.0	0.0	0.0	3.5	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1991	11	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1991	12	0.0	0.0	0.0	0.0	5.7	11.0	8.7	9.5	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.7	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.3	3.3	0.0	0.9	2.2	1.0
1992	1	0.0	0.0	0.0	0.0	3.1	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
1992	2	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1992	3	0.0	0.0	0.0	0.0	4.9	9.6	7.6	8.3	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
1992	4	0.0	0.0	0.0	0.0	4.4	8.5	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
1992	5	0.0	0.0	0.0	0.0	0.8	1.6	1.3	1.4	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.2	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.1
1992	6	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1992	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	8	0.0	0.0	0.0	0.0	4.6	8.9	7.0	7.7	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	5.9	2.6	0.0	0.7	1.7	0.8
1992	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	10	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1992	11	0.0	0.0	0.0	0.0	4.6	9.0	7.1	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.7	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
1992	12	0.0	0.0	0.0	0.0	5.5	10.7	8.4	9.2	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.5	0.8	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.1	3.2	0.0	0.8	2.1	1.0
1993	1	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1993	2	0.0	0.0	0.0	0.0	1.7	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1993	3	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1993	4	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
1993	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	7	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1993	8	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1993	9	0.0	0.0	0.0	0.0	0.7	1.4	1.1	1.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
1993	10	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1993	11	0.0	0.0	0.0	0.0	5.1	9.9	7.8	8.5	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	3.0	6.6	2.9	0.0	0.8	1.9	0.9
1993	12	0.0	0.0	0.0	0.0	6.1	11.8	9.3	10.2	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.9	3.5	0.0	0.9	2.3	1.1
1994	1	0.0	0.0	0.0	0.0	3.2	6.3	5.0	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
1994	2	0.0	0.0	0.0	0.0	3.6	6.9	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1994	3	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1994	4	0.0	0.0	0.0	0.0	0.9	1.7	1.3	1.4	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.3	0.9	0.1	0.1	0.2	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.2
1994	5	0.0	0.0	0.0	0.0	1.1	2.2	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.6	0.0	0.2	0.4	0.2
1994	6	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.2	0.0	0.0	0.1	0.0
1994	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	8	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1994	9	0.0	0.0	0.0	0.0	2.8	5.4	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1994	10	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1994	11	0.0	0.0	0.0	0.0	4.6	9.0	7.1	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.7	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
1994	12	0.0	0.0	0.0	0.0	6.0	11.7	9.2	10.1	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.0	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.4	0.0	0.9	2.3	1.1
1995	1	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1995	2	0.0	0.0	0.0	0.0	3.3	6.4	5.0	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1995	3	0.0	0.0	0.0	0.0	4.9	9.6	7.6	8.3	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
1995	4	0.0	0.0	0.0	0.0	4.5	8.7	6.9	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
1995	5	0.0	0.0	0.0	0.0	0.6	1.1	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1995	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	8	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1995	9	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1995	10	0.0	0.0	0.0	0.0	2.3	4.5	3.6	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.3	0.9	0.4
1995	11	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1995	12	0.0	0.0	0.0	0.0	6.1	11.7	9.3	10.1	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.5	0.0	0.9	2.3	1.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 17：Forecasted Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2026: 1996 - 2001) (6/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1996	1	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1996	2	0.0	0.0	0.0	0.0	3.6	6.9	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1996	3	0.0	0.0	0.0	0.0	2.9	5.6	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1996	4	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1996	5	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1996	6	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0
1996	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	8	0.0	0.0	0.0	0.0	0.3	0.6	0.5	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1996	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	10	0.0	0.0	0.0	0.0	2.0	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1996	11	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1996	12	0.0	0.0	0.0	0.0	6.0	11.6	9.2	10.0	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.0	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.4	0.0	0.9	2.3	1.1
1997	1	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1997	2	0.0	0.0	0.0	0.0	3.3	6.3	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
1997	3	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1997	4	0.0	0.0	0.0	0.0	3.9	7.5	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1997	5	0.0	0.0	0.0	0.0	0.6	1.1	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1997	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	8	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1997	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	10	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1997	11	0.0	0.0	0.0	0.0	4.9	9.5	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.4	2.8	0.0	0.7	1.9	0.9
1997	12	0.0	0.0	0.0	0.0	5.6	10.9	8.6	9.4	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.7	0.8	1.0	1.0	0.5	0.1	0.0	4.1	3.3	7.3	3.2	0.0	0.8	2.2	1.0
1998	1	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1998	2	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1998	3	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
1998	4	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.8	0.4
1998	5	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1998	6	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1998	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	8	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1998	9	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1998	10	0.0	0.0	0.0	0.0	4.4	8.6	6.8	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.8	0.8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
1998	11	0.0	0.0	0.0	0.0	4.9	9.5	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
1998	12	0.0	0.0	0.0	0.0	6.4	12.3	9.7	10.6	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.6	1.2	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.2	3.6	0.0	1.0	2.4	1.2
1999	1	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1999	2	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1999	3	0.0	0.0	0.0	0.0	5.6	10.8	8.6	9.4	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.1	1.0
1999	4	0.0	0.0	0.0	0.0	5.4	10.4	8.2	9.0	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.1	0.0	0.8	2.0	1.0
1999	5	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1999	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	8	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0
1999	9	0.0	0.0	0.0	0.0	1.3	2.5	2.0	2.1	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1999	10	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.1	2.6	1.1	0.0	0.3	0.8	0.4
1999	11	0.0	0.0	0.0	0.0	5.6	10.8	8.5	9.3	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.1	1.0
1999	12	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
2000	1	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2000	2	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
2000	3	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2000	4	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
2000	5	0.0	0.0	0.0	0.0	0.3	0.7	0.5	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.1	0.1	0.1
2000	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	7	0.0	0.0	0.0	0.0	0.3	0.7	0.5	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.1	0.1	0.1
2000	8	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2000	9	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2000	10	0.0	0.0	0.0	0.0	1.4	2.7	2.1	2.3	0.1	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.3
2000	11	0.0	0.0	0.0	0.0	4.1	7.9	6.2	6.8	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.2	2.3	0.0	0.6	1.5	0.7
2000	12	0.0	0.0	0.0	0.0	6.2	12.0	9.4	10.3	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.1	2.3	6.2	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.6	8.0	3.5	0.0	0.9	2.4	1.1
2001	1	0.0	0.0	0.0	0.0	3.6	6.9	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
2001	2	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
2001	3	0.0	0.0	0.0	0.0	5.4	10.4	8.2	9.0	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	7.0	3.1	0.0	0.8	2.1	1.0
2001	4	0.0	0.0	0.0	0.0	4.7	9.0	7.1	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
2001	5	0.0	0.0	0.0	0.0	0.6	1.3	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.8	0.4	0.0	0.1	0.2	0.1
2001	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	8	0.0	0.0	0.0	0.0	2.1	4.1	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
2001	9	0.0	0.0	0.0	0.0	1.5	2.9	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	1.9	0.8	0.0	0.2	0.6	0.3
2001	10	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
2001	11	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2001	12	0.0	0.0	0.0	0.0	6.3	12.2	9.6	10.5	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.7	8.1	3.6	0.0	0.9	2.4	1.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 17：Forecasted Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2026: 2002 - 2007) (7/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2002	1	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2002	2	0.0	0.0	0.0	0.0	3.9	7.6	6.0	6.6	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.2	0.0	0.6	1.5	0.7
2002	3	0.0	0.0	0.0	0.0	4.7	9.1	7.2	7.9	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.3	1.9	0.9	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.5	2.7	6.1	2.7	0.0	0.7	1.8	0.9
2002	4	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2002	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	6	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2002	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	8	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
2002	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	10	0.0	0.0	0.0	0.0	4.4	8.6	6.7	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
2002	11	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.5
2002	12	0.0	0.0	0.0	0.0	6.0	11.6	9.2	10.0	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.0	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.7	3.4	0.0	0.9	2.3	1.1
2003	1	0.0	0.0	0.0	0.0	3.3	6.3	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
2003	2	0.0	0.0	0.0	0.0	3.8	7.3	5.8	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.4	0.7
2003	3	0.0	0.0	0.0	0.0	4.5	8.8	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
2003	4	0.0	0.0	0.0	0.0	3.9	7.5	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
2003	5	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2003	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	7	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2003	8	0.0	0.0	0.0	0.0	5.3	10.2	8.0	8.8	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.0	6.8	3.0	0.0	0.8	2.0	1.0
2003	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	10	0.0	0.0	0.0	0.0	4.0	7.8	6.1	6.7	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.5	0.7
2003	11	0.0	0.0	0.0	0.0	5.7	11.0	8.7	9.5	0.6	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.1	5.7	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
2003	12	0.0	0.0	0.0	0.0	4.9	9.5	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
2004	1	0.0	0.0	0.0	0.0	3.2	6.3	5.0	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
2004	2	0.0	0.0	0.0	0.0	3.9	7.5	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
2004	3	0.0	0.0	0.0	0.0	5.1	10.0	7.9	8.6	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	0.9	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.6	2.9	0.0	0.8	2.0	0.9
2004	4	0.0	0.0	0.0	0.0	1.4	2.7	2.1	2.3	0.1	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.2
2004	5	0.0	0.0	0.0	0.0	1.0	1.9	1.5	1.6	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.1	0.4	0.2
2004	6	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
2004	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	8	0.0	0.0	0.0	0.0	5.1	9.9	7.8	8.5	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	3.0	6.6	2.9	0.0	0.8	1.9	0.9
2004	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	10	0.0	0.0	0.0	0.0	3.2	6.3	5.0	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
2004	11	0.0	0.0	0.0	0.0	5.5	10.7	8.5	9.3	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.1	1.0
2004	12	0.0	0.0	0.0	0.0	6.3	12.2	9.6	10.5	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.7	8.1	3.6	0.0	0.9	2.4	1.1
2005	1	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2005	2	0.0	0.0	0.0	0.0	4.0	7.8	6.1	6.7	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.5	0.7
2005	3	0.0	0.0	0.0	0.0	3.7	7.3	5.7	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
2005	4	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2005	5	0.0	0.0	0.0	0.0	0.3	0.6	0.5	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
2005	6	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
2005	7	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2005	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	9	0.0	0.0	0.0	0.0	0.9	1.7	1.3	1.4	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.3	0.9	0.1	0.1	0.2	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.2
2005	10	0.0	0.0	0.0	0.0	3.0	5.7	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2005	11	0.0	0.0	0.0	0.0	3.8	7.3	5.8	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.4	0.7
2005	12	0.0	0.0	0.0	0.0	6.2	11.9	9.4	10.3	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.8	2.5	1.1	1.1	2.3	6.2	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.6	8.0	3.5	0.0	0.9	2.4	1.1
2006	1	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
2006	2	0.0	0.0	0.0	0.0	3.6	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2006	3	0.0	0.0	0.0	0.0	5.3	10.3	8.1	8.9	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.1	6.8	3.0	0.0	0.8	2.0	1.0
2006	4	0.0	0.0	0.0	0.0	4.4	8.6	6.8	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.8	0.8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
2006	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	8	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
2006	9	0.0	0.0	0.0	0.0	1.5	3.0	2.3	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
2006	10	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
2006	11	0.0	0.0	0.0	0.0	4.5	8.7	6.9	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
2006	12	0.0	0.0	0.0	0.0	6.1	11.8	9.3	10.2	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.5	7.9	3.5	0.0	0.9	2.3	1.1
2007	1	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2007	2	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2007	3	0.0	0.0	0.0	0.0	4.5	8.6	6.8	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
2007	4	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
2007	5	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
2007	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	8	0.0	0.0	0.0	0.0	4.3	8.3	6.5	7.1	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
2007	9	0.0	0.0	0.0	0.0	1.8	3.5	2.7	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2007	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	11	0.0	0.0	0.0	0.0	2.9	5.5	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
2007	12	0.0	0.0	0.0	0.0	6.0	11.7	9.2	10.1	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.5	0.0	0.9	2.3	1.1

Source: JICA Study Team

Attachment 17：Forecasted Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2026: 2008 - 2013) (8/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2008	1	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2008	2	0.0	0.0	0.0	0.0	3.5	6.9	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
2008	3	0.0	0.0	0.0	0.0	4.9	9.5	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
2008	4	0.0	0.0	0.0	0.0	5.1	10.0	7.9	8.6	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	2.9	0.0	0.8	2.0	0.9
2008	5	0.0	0.0	0.0	0.0	0.8	1.5	1.2	1.3	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.4	1.0	0.4	0.0	0.1	0.3	0.1
2008	6	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
2008	7	0.0	0.0	0.0	0.0	0.3	0.6	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
2008	8	0.0	0.0	0.0	0.0	4.8	9.3	7.3	8.0	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.7	0.0	0.7	1.8	0.9
2008	9	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2008	10	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
2008	11	0.0	0.0	0.0	0.0	4.6	8.9	7.0	7.7	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	5.9	2.6	0.0	0.7	1.8	0.8
2008	12	0.0	0.0	0.0	0.0	6.1	11.7	9.3	10.1	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.5	0.0	0.9	2.3	1.1
2009	1	0.0	0.0	0.0	0.0	3.6	6.9	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
2009	2	0.0	0.0	0.0	0.0	3.9	7.5	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
2009	3	0.0	0.0	0.0	0.0	5.1	9.9	7.8	8.5	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	3.0	6.6	2.9	0.0	0.8	1.9	0.9
2009	4	0.0	0.0	0.0	0.0	4.1	8.0	6.3	6.9	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.6	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.4	0.0	0.6	1.6	0.7
2009	5	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
2009	6	0.0	0.0	0.0	0.0	0.4	0.9	0.7	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6	0.3	0.0	0.1	0.2	0.1
2009	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	8	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2009	9	0.0	0.0	0.0	0.0	0.6	1.2	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.4	0.8	0.3	0.0	0.1	0.2	0.1
2009	10	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
2009	11	0.0	0.0	0.0	0.0	3.8	7.4	5.9	6.4	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
2009	12	0.0	0.0	0.0	0.0	6.2	12.0	9.4	10.3	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.1	2.3	6.2	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.6	8.0	3.5	0.0	0.9	2.4	1.1
2010	1	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2010	2	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
2010	3	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2010	4	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2010	5	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
2010	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	8	0.0	0.0	0.0	0.0	0.3	0.6	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
2010	9	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
2010	10	0.0	0.0	0.0	0.0	0.6	1.1	0.9	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
2010	11	0.0	0.0	0.0	0.0	4.0	7.8	6.2	6.7	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.0	0.6	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.5	0.7
2010	12	0.0	0.0	0.0	0.0	5.6	10.9	8.6	9.4	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.7	0.8	1.0	1.0	0.5	0.1	0.0	4.1	3.3	7.3	3.2	0.0	0.8	2.1	1.0
2011	1	0.0	0.0	0.0	0.0	3.4	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2011	2	0.0	0.0	0.0	0.0	3.8	7.3	5.8	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.4	0.7
2011	3	0.0	0.0	0.0	0.0	4.6	8.9	7.0	7.7	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	5.9	2.6	0.0	0.7	1.8	0.8
2011	4	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2011	5	0.0	0.0	0.0	0.0	0.6	1.1	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.8	0.3	0.0	0.1	0.2	0.1
2011	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	8	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2011	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	10	0.0	0.0	0.0	0.0	3.8	7.4	5.8	6.4	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
2011	11	0.0	0.0	0.0	0.0	5.5	10.6	8.4	9.2	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.5	0.7	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.1	3.1	0.0	0.8	2.1	1.0
2011	12	0.0	0.0	0.0	0.0	6.1	11.8	9.3	10.2	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.5	7.9	3.5	0.0	0.9	2.3	1.1
2012	1	0.0	0.0	0.0	0.0	3.4	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2012	2	0.0	0.0	0.0	0.0	4.0	7.7	6.0	6.6	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
2012	3	0.0	0.0	0.0	0.0	3.9	7.5	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
2012	4	0.0	0.0	0.0	0.0	1.0	1.9	1.5	1.6	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.1	0.4	0.2
2012	5	0.0	0.0	0.0	0.0	0.4	0.8	0.7	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.6	0.2	0.0	0.1	0.2	0.1
2012	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	8	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
2012	9	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
2012	10	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.3	0.6
2012	11	0.0	0.0	0.0	0.0	4.5	8.7	6.9	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
2012	12	0.0	0.0	0.0	0.0	6.1	11.8	9.3	10.2	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.5	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.5	7.9	3.5	0.0	0.9	2.3	1.1
2013	1	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
2013	2	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2013	3	0.0	0.0	0.0	0.0	5.1	9.9	7.8	8.6	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	3.0	6.6	2.9	0.0	0.8	2.0	0.9
2013	4	0.0	0.0	0.0	0.0	3.5	6.9	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
2013	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	6	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
2013	7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	8	0.0	0.0	0.0	0.0	5.2	10.1	8.0	8.7	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
2013	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	10	0.0	0.0	0.0	0.0	1.4	2.7	2.1	2.3	0.1	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.3
2013	11	0.0	0.0	0.0	0.0	5.2	10.1	8.0	8.8	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.8	3.0	0.0	0.8	2.0	0.9
2013	12	0.0	0.0	0.0	0.0	6.0	11.6	9.2	10.0	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.0	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.4	0.0	0.9	2.3	1.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 17：Forecasted Gross Water Requirements of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2026: 2014 - 2019) (9/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2014	1	0.0	0.0	0.0	0.0	3.3	6.3	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
2014	2	0.0	0.0	0.0	0.0	3.1	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2014	3	0.0	0.0	0.0	0.0	4.8	9.4	7.4	8.1	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
2014	4	0.0	0.0	0.0	0.0	5.0	9.7	7.6	8.3	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.7	2.9	6.4	2.9	0.0	0.7	1.9	0.9
2014	5	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0
2014	6	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
2014	7	0.0	0.0	0.0	0.0	0.4	0.8	0.7	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.6	0.2	0.0	0.1	0.2	0.1
2014	8	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2014	9	0.0	0.0	0.0	0.0	1.2	2.3	1.8	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.5	0.7	0.0	0.2	0.5	0.2
2014	10	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2014	11	0.0	0.0	0.0	0.0	5.0	9.8	7.7	8.4	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	1.9	0.9
2014	12	0.0	0.0	0.0	0.0	6.0	11.6	9.2	10.0	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.0	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.4	0.0	0.9	2.3	1.1
2015	1	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
2015	2	0.0	0.0	0.0	0.0	3.9	7.5	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
2015	3	0.0	0.0	0.0	0.0	4.1	7.9	6.2	6.8	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
2015	4	0.0	0.0	0.0	0.0	0.4	0.8	0.6	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
2015	5	0.0	0.0	0.0	0.0	0.8	1.5	1.2	1.3	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.4	1.0	0.4	0.0	0.1	0.3	0.1
2015	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	8	0.0	0.0	0.0	0.0	1.9	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2015	9	0.0	0.0	0.0	0.0	0.8	1.5	1.2	1.3	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.5	1.0	0.5	0.0	0.1	0.3	0.1
2015	10	0.0	0.0	0.0	0.0	2.9	5.5	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
2015	11	0.0	0.0	0.0	0.0	4.9	9.6	7.5	8.3	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
2015	12	0.0	0.0	0.0	0.0	5.7	11.1	8.8	9.6	0.6	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
2016	1	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
2016	2	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
2016	3	0.0	0.0	0.0	0.0	4.8	9.2	7.3	8.0	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.7	0.0	0.7	1.8	0.9
2016	4	0.0	0.0	0.0	0.0	4.4	8.6	6.8	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.8	0.8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
2016	5	0.0	0.0	0.0	0.0	0.3	0.6	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
2016	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	8	0.0	0.0	0.0	0.0	4.9	9.5	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
2016	9	0.0	0.0	0.0	0.0	1.7	3.3	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
2016	10	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2016	11	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
2016	12	0.0	0.0	0.0	0.0	6.1	11.9	9.4	10.3	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.8	2.5	1.1	1.1	2.3	6.2	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.6	7.9	3.5	0.0	0.9	2.3	1.1
2017	1	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
2017	2	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
2017	3	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
2017	4	0.0	0.0	0.0	0.0	1.4	2.7	2.1	2.3	0.1	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.2
2017	5	0.0	0.0	0.0	0.0	0.7	1.3	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
2017	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	8	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
2017	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	10	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
2017	11	0.0	0.0	0.0	0.0	4.6	9.0	7.1	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
2017	12	0.0	0.0	0.0	0.0	5.1	10.0	7.9	8.6	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	0.9	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	2.9	0.0	0.8	2.0	0.9
2018	1	0.0	0.0	0.0	0.0	2.9	5.6	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2018	2	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2018	3	0.0	0.0	0.0	0.0	4.9	9.5	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
2018	4	0.0	0.0	0.0	0.0	0.9	1.7	1.4	1.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.3	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.5	1.2	0.5	0.0	0.1	0.3	0.2
2018	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	8	0.0	0.0	0.0	0.0	3.9	7.5	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
2018	9	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2018	10	0.0	0.0	0.0	0.0	0.8	1.6	1.2	1.4	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.2	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.1
2018	11	0.0	0.0	0.0	0.0	5.2	10.2	8.0	8.8	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.8	3.0	0.0	0.8	2.0	1.0
2018	12	0.0	0.0	0.0	0.0	5.2	10.1	8.0	8.7	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
2019	1	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2019	2	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
2019	3	0.0	0.0	0.0	0.0	4.6	8.8	7.0	7.6	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.7	0.8
2019	4	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
2019	5	0.0	0.0	0.0	0.0	0.6	1.1	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.8	0.3	0.0	0.1	0.2	0.1
2019	6	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2019	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	8	0.0	0.0	0.0	0.0	1.1	2.1	1.7	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
2019	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	10	0.0	0.0	0.0	0.0	1.5	3.0	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
2019	11	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2019	12	0.0	0.0	0.0	0.0	6.0	11.6	9.2	10.0	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.0	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.4	0.0	0.9	2.3	1.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 18：Forecasted Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s) (2026: 1966 - 1971) (1/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1966	1	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1966	2	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.8	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
1966	3	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
1966	4	0.0	0.8	3.0	2.5	2.7	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1966	5	0.0	0.1	0.4	0.4	0.4	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1966	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	9	0.0	0.2	0.6	0.5	0.5	1.2	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1966	10	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1966	11	0.0	1.0	3.7	3.1	3.3	7.4	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1966	12	0.0	0.7	2.6	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1967	1	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1967	2	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1967	3	0.0	0.8	2.9	2.4	2.6	5.8	0.2	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.5	0.0
1967	4	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1967	5	0.0	0.2	0.7	0.6	0.6	1.3	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1967	6	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1967	7	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1967	8	0.0	0.2	0.6	0.5	0.5	1.2	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1967	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1967	10	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1967	11	0.0	1.0	3.7	3.2	3.3	7.5	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1967	12	0.0	1.1	4.2	3.5	3.7	8.4	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.9	0.8	0.0
1968	1	0.0	0.7	2.5	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1968	2	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1968	3	0.0	0.8	2.9	2.5	2.6	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1968	4	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1968	5	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	7	0.0	0.0	0.2	0.1	0.2	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1968	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	9	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1968	10	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
1968	11	0.0	1.0	3.6	3.1	3.3	7.3	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1968	12	0.0	1.2	4.3	3.7	3.9	8.6	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
1969	1	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1969	2	0.0	0.7	2.6	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1969	3	0.0	0.6	2.2	1.8	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1969	4	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1969	5	0.0	0.3	0.9	0.8	0.8	1.9	0.0	0.6	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1969	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	10	0.0	1.0	3.8	3.3	3.4	7.7	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
1969	11	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1969	12	0.0	1.1	4.1	3.4	3.6	8.1	0.2	2.7	0.0	0.0	1.9	1.0	0.5	0.8	0.8	0.0
1970	1	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1970	2	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1970	3	0.0	0.8	3.0	2.6	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
1970	4	0.0	0.5	1.8	1.6	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1970	5	0.0	0.1	0.5	0.4	0.4	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1970	6	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1970	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	8	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1970	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	11	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1970	12	0.0	1.1	4.1	3.5	3.7	8.2	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.8	0.8	0.0
1971	1	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1971	2	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1971	3	0.0	1.0	3.5	3.0	3.2	7.0	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1971	4	0.0	0.8	2.9	2.4	2.6	5.8	0.2	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.5	0.0
1971	5	0.0	0.2	0.8	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1971	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	7	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	10	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1971	11	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1971	12	0.0	1.2	4.2	3.6	3.8	8.5	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 18：Forecasted Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s) (2026: 1972 - 1977) (2/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1972	1	0.0	0.7	2.5	2.1	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1972	2	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1972	3	0.0	0.9	3.4	2.9	3.0	6.7	0.2	2.3	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1972	4	0.0	0.4	1.4	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.2	0.3	0.3	0.0
1972	5	0.0	0.2	0.6	0.5	0.5	1.1	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.0
1972	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1972	7	0.0	0.0	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1972	8	0.0	0.1	0.4	0.3	0.4	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1972	9	0.0	0.9	3.5	2.9	3.1	6.9	0.2	2.3	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1972	10	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1972	11	0.0	0.9	3.2	2.8	2.9	6.5	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1972	12	0.0	1.2	4.2	3.6	3.8	8.5	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1973	1	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1973	2	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1973	3	0.0	0.9	3.4	2.9	3.0	6.8	0.2	2.3	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1973	4	0.0	0.7	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1973	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	7	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1973	8	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1973	9	0.0	0.2	0.8	0.7	0.7	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1973	10	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1973	11	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1973	12	0.0	0.9	3.3	2.8	3.0	6.7	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1974	1	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1974	2	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.8	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
1974	3	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.6	0.2	0.4	0.4	0.0
1974	4	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1974	5	0.0	0.0	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1974	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	8	0.0	0.5	1.7	1.5	1.5	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1974	9	0.0	0.1	0.5	0.4	0.4	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1974	10	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1974	11	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1974	12	0.0	1.2	4.3	3.6	3.8	8.5	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1975	1	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1975	2	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1975	3	0.0	1.0	3.6	3.0	3.2	7.2	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1975	4	0.0	0.7	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1975	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	8	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1975	9	0.0	0.3	0.9	0.8	0.8	1.9	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1975	10	0.0	0.2	0.7	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1975	11	0.0	0.9	3.5	2.9	3.1	6.9	0.2	2.3	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1975	12	0.0	1.1	4.1	3.5	3.7	8.3	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.8	0.8	0.0
1976	1	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1976	2	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.8	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
1976	3	0.0	1.0	3.6	3.0	3.2	7.2	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1976	4	0.0	1.0	3.5	3.0	3.1	7.0	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1976	5	0.0	0.1	0.2	0.2	0.2	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1976	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	8	0.0	0.1	0.5	0.5	0.5	1.1	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.0
1976	9	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1976	10	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1976	11	0.0	0.5	1.8	1.5	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1976	12	0.0	1.1	4.1	3.5	3.7	8.3	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.8	0.8	0.0
1977	1	0.0	0.7	2.5	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1977	2	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1977	3	0.0	0.9	3.4	2.9	3.0	6.8	0.2	2.3	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1977	4	0.0	0.2	0.8	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1977	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	9	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
1977	10	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.6	0.2	0.4	0.4	0.0
1977	11	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1977	12	0.0	1.2	4.2	3.6	3.8	8.5	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 18：Forecasted Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s) (2026: 1978 - 1983) (3/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1978	1	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1978	2	0.0	0.7	2.7	2.3	2.4	5.5	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1978	3	0.0	1.0	3.7	3.2	3.4	7.5	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1978	4	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1978	5	0.0	0.1	0.2	0.2	0.2	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1978	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	7	0.0	0.0	0.2	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1978	8	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1978	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	10	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1978	11	0.0	1.0	3.8	3.2	3.4	7.5	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1978	12	0.0	1.2	4.3	3.7	3.9	8.6	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
1979	1	0.0	0.8	2.8	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1979	2	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1979	3	0.0	1.0	3.8	3.2	3.4	7.6	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
1979	4	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1979	5	0.0	0.2	0.9	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1979	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	8	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1979	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	10	0.0	1.0	3.7	3.1	3.3	7.4	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1979	11	0.0	1.0	3.8	3.2	3.4	7.7	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
1979	12	0.0	1.0	3.8	3.2	3.4	7.6	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
1980	1	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1980	2	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1980	3	0.0	0.8	2.8	2.4	2.5	5.7	0.1	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.5	0.0
1980	4	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
1980	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	6	0.0	0.0	0.2	0.1	0.2	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1980	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	8	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1980	9	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1980	10	0.0	0.1	0.5	0.4	0.4	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1980	11	0.0	1.1	3.9	3.3	3.5	7.9	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
1980	12	0.0	1.1	4.2	3.6	3.8	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1981	1	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1981	2	0.0	0.8	2.8	2.3	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1981	3	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1981	4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	5	0.0	0.1	0.2	0.2	0.2	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1981	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	8	0.0	1.0	3.6	3.1	3.3	7.3	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1981	9	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1981	10	0.0	1.2	4.5	3.8	4.0	8.9	0.2	3.0	0.0	0.0	2.1	1.1	0.5	0.9	0.9	0.0
1981	11	0.0	1.1	3.9	3.3	3.5	7.9	0.2	2.6	0.0	0.0	1.9	1.0	0.4	0.8	0.7	0.0
1981	12	0.0	1.1	4.0	3.4	3.6	8.1	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
1982	1	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1982	2	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1982	3	0.0	1.0	3.6	3.0	3.2	7.2	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1982	4	0.0	0.2	0.7	0.6	0.6	1.3	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1982	5	0.0	0.3	1.0	0.9	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1982	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	7	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1982	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	10	0.0	1.2	4.2	3.6	3.8	8.5	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1982	11	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1982	12	0.0	1.2	4.3	3.6	3.8	8.5	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1983	1	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1983	2	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1983	3	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1983	4	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	5	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1983	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	7	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	9	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1983	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	11	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1983	12	0.0	1.0	3.7	3.2	3.4	7.5	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 18：Forecasted Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s) (2026: 1984 - 1989) (4/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1984	1	0.0	0.6	2.3	1.9	2.0	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1984	2	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1984	3	0.0	0.9	3.5	3.0	3.1	7.0	0.2	2.3	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1984	4	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1984	5	0.0	0.1	0.5	0.4	0.4	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1984	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	8	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1984	9	0.0	0.7	2.6	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1984	10	0.0	0.3	1.2	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1984	11	0.0	1.1	4.0	3.4	3.5	7.9	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
1984	12	0.0	1.1	4.1	3.5	3.7	8.2	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.8	0.8	0.0
1985	1	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1985	2	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1985	3	0.0	0.7	2.5	2.1	2.3	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1985	4	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1985	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	8	0.0	0.7	2.5	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1985	9	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1985	10	0.0	1.1	4.1	3.5	3.7	8.3	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.8	0.8	0.0
1985	11	0.0	0.6	2.1	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1985	12	0.0	1.1	4.1	3.5	3.7	8.3	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.8	0.8	0.0
1986	1	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1986	2	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1986	3	0.0	1.0	3.7	3.2	3.3	7.4	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1986	4	0.0	0.4	1.4	1.2	1.3	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1986	5	0.0	0.1	0.5	0.4	0.4	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1986	6	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1986	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1986	8	0.0	0.9	3.3	2.8	2.9	6.5	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1986	9	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
1986	10	0.0	0.7	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1986	11	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1986	12	0.0	1.1	4.1	3.5	3.7	8.2	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.8	0.8	0.0
1987	1	0.0	0.6	2.4	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1987	2	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1987	3	0.0	0.8	3.1	2.6	2.8	6.2	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1987	4	0.0	0.3	1.0	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1987	5	0.0	0.3	1.0	0.8	0.9	1.9	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1987	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	8	0.0	0.8	3.1	2.6	2.8	6.2	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1987	9	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1987	10	0.0	0.9	3.2	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.4	0.6	0.6	0.0
1987	11	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1987	12	0.0	1.1	4.2	3.6	3.8	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1988	1	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1988	2	0.0	0.6	2.1	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1988	3	0.0	0.9	3.2	2.7	2.9	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
1988	4	0.0	0.3	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1988	5	0.0	0.1	0.3	0.3	0.3	0.7	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1988	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	7	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1988	8	0.0	0.1	0.4	0.3	0.3	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1988	9	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1988	10	0.0	0.1	0.5	0.5	0.5	1.1	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.0
1988	11	0.0	1.0	3.7	3.2	3.3	7.5	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1988	12	0.0	1.2	4.3	3.6	3.9	8.6	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
1989	1	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
1989	2	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1989	3	0.0	1.0	3.7	3.1	3.3	7.4	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1989	4	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
1989	5	0.0	0.2	0.7	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1989	6	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	8	0.0	1.8	6.7	5.7	6.0	13.4	0.4	4.5	0.0	0.0	3.2	1.7	0.7	1.4	1.3	0.0
1989	9	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1989	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	11	0.0	1.0	3.7	3.2	3.3	7.5	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1989	12	0.0	1.1	4.2	3.5	3.8	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 18：Forecasted Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s) (2026: 1990 - 1995) (5/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1990	1	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1990	2	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1990	3	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1990	4	0.0	0.2	0.9	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1990	5	0.0	0.0	0.2	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1990	6	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	8	0.0	1.1	4.0	3.4	3.6	8.1	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
1990	9	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1990	10	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1990	11	0.0	0.7	2.6	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1990	12	0.0	1.0	3.6	3.1	3.3	7.3	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1991	1	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1991	2	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1991	3	0.0	0.9	3.4	2.9	3.1	6.9	0.2	2.3	0.0	0.0	1.6	0.9	0.4	0.7	0.7	0.0
1991	4	0.0	0.2	0.7	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1991	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	8	0.0	1.8	6.7	5.7	6.0	13.5	0.4	4.5	0.0	0.0	3.2	1.7	0.7	1.4	1.3	0.0
1991	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	11	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1991	12	0.0	1.1	3.9	3.3	3.5	7.9	0.2	2.6	0.0	0.0	1.9	1.0	0.4	0.8	0.7	0.0
1992	1	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1992	2	0.0	0.3	1.0	0.9	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1992	3	0.0	0.8	3.1	2.6	2.8	6.2	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1992	4	0.0	0.9	3.3	2.8	3.0	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1992	5	0.0	0.1	0.5	0.4	0.5	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1992	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	8	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1992	9	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1992	10	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1992	11	0.0	0.9	3.4	2.9	3.0	6.8	0.2	2.3	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1992	12	0.0	1.1	3.9	3.3	3.5	7.9	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
1993	1	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1993	2	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1993	3	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1993	4	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1993	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	10	0.0	1.2	4.4	3.7	3.9	8.7	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
1993	11	0.0	1.0	3.6	3.0	3.2	7.2	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1993	12	0.0	1.1	4.2	3.6	3.8	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1994	1	0.0	0.7	2.5	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1994	2	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1994	3	0.0	0.4	1.4	1.2	1.3	2.8	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1994	4	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	5	0.0	0.1	0.5	0.4	0.4	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1994	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	8	0.0	0.2	0.6	0.5	0.5	1.2	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.0
1994	9	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1994	10	0.0	0.8	2.8	2.4	2.5	5.7	0.1	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.5	0.0
1994	11	0.0	1.0	3.6	3.0	3.2	7.2	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1994	12	0.0	1.1	4.2	3.6	3.8	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1995	1	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
1995	2	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1995	3	0.0	0.9	3.1	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1995	4	0.0	0.8	3.1	2.6	2.7	6.1	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1995	5	0.0	0.1	0.5	0.4	0.4	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1995	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	8	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1995	9	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1995	10	0.0	0.7	2.7	2.3	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1995	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	12	0.0	1.2	4.2	3.6	3.8	8.5	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 18：Forecasted Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s) (2026: 1996 - 2001) (6/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1996	1	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1996	2	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1996	3	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1996	4	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1996	5	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1996	6	0.0	0.1	0.5	0.4	0.4	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
1996	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	9	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1996	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	11	0.0	1.0	3.7	3.2	3.3	7.5	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1996	12	0.0	1.1	4.2	3.6	3.8	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1997	1	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1997	2	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1997	3	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1997	4	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.4	0.4	0.0
1997	5	0.0	0.1	0.4	0.3	0.4	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
1997	6	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	8	0.0	0.2	0.6	0.5	0.5	1.2	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
1997	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	10	0.0	1.0	3.6	3.1	3.2	7.2	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1997	11	0.0	0.8	3.0	2.6	2.7	6.1	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1997	12	0.0	1.0	3.8	3.3	3.4	7.7	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
1998	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	3	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1998	4	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1998	5	0.0	0.0	0.2	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1998	6	0.0	0.2	0.8	0.7	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
1998	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	9	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1998	10	0.0	1.3	4.9	4.2	4.4	9.8	0.3	3.3	0.0	0.0	2.3	1.2	0.5	1.0	0.9	0.0
1998	11	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1998	12	0.0	1.2	4.3	3.6	3.8	8.6	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1999	1	0.0	0.7	2.5	2.1	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1999	2	0.0	0.8	3.0	2.5	2.7	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1999	3	0.0	1.0	3.7	3.1	3.3	7.4	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1999	4	0.0	1.0	3.5	3.0	3.2	7.1	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1999	5	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	11	0.0	1.0	3.5	3.0	3.2	7.1	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1999	12	0.0	0.7	2.5	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2000	1	0.0	0.6	2.2	1.8	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2000	2	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2000	3	0.0	0.8	3.0	2.6	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
2000	4	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2000	5	0.0	0.1	0.4	0.3	0.3	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2000	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	9	0.0	0.3	1.0	0.8	0.9	2.0	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
2000	10	0.0	0.1	0.5	0.5	0.5	1.1	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.0
2000	11	0.0	0.9	3.5	2.9	3.1	6.9	0.2	2.3	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2000	12	0.0	1.2	4.3	3.6	3.9	8.6	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
2001	1	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2001	2	0.0	0.7	2.5	2.1	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2001	3	0.0	1.0	3.7	3.1	3.3	7.4	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
2001	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	5	0.0	0.1	0.5	0.4	0.4	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
2001	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	8	0.0	1.1	4.1	3.5	3.7	8.3	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.8	0.8	0.0
2001	9	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2001	10	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
2001	11	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2001	12	0.0	1.2	4.3	3.6	3.9	8.6	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 18：Forecasted Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s) (2026: 2002 - 2007) (7/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2002	1	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2002	2	0.0	0.8	2.9	2.5	2.6	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2002	3	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2002	4	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
2002	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	8	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2002	9	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2002	10	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2002	11	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2002	12	0.0	1.2	4.3	3.6	3.8	8.5	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
2003	1	0.0	0.7	2.5	2.1	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2003	2	0.0	0.8	2.9	2.4	2.6	5.7	0.2	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.5	0.0
2003	3	0.0	0.9	3.1	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2003	4	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
2003	5	0.0	0.3	0.9	0.8	0.8	1.9	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
2003	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	8	0.0	0.8	2.9	2.4	2.6	5.8	0.2	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2003	9	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2003	10	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2003	11	0.0	1.1	4.0	3.4	3.6	8.0	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
2003	12	0.0	1.1	4.1	3.5	3.7	8.2	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.8	0.8	0.0
2004	1	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2004	2	0.0	0.8	2.9	2.5	2.6	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2004	3	0.0	1.0	3.6	3.0	3.2	7.1	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2004	4	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2004	5	0.0	0.1	0.3	0.3	0.3	0.7	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2004	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	8	0.0	1.2	4.6	3.9	4.1	9.2	0.2	3.1	0.0	0.0	2.2	1.1	0.5	0.9	0.9	0.0
2004	9	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
2004	10	0.0	1.2	4.3	3.6	3.9	8.6	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
2004	11	0.0	1.1	3.9	3.3	3.5	7.9	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
2004	12	0.0	1.2	4.4	3.7	3.9	8.8	0.2	3.0	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
2005	1	0.0	0.7	2.7	2.3	2.4	5.5	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2005	2	0.0	0.8	2.9	2.4	2.6	5.8	0.2	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2005	3	0.0	0.7	2.7	2.3	2.4	5.5	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2005	4	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2005	5	0.0	0.2	0.6	0.5	0.6	1.2	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
2005	6	0.0	0.1	0.4	0.3	0.3	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2005	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	9	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2005	10	0.0	1.2	4.3	3.6	3.8	8.6	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
2005	11	0.0	0.9	3.3	2.8	2.9	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2005	12	0.0	1.1	4.2	3.6	3.8	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
2006	1	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2006	2	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2006	3	0.0	1.0	3.7	3.2	3.4	7.5	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
2006	4	0.0	0.9	3.1	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2006	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	6	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	8	0.0	1.0	3.6	3.0	3.2	7.1	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2006	9	0.0	0.1	0.5	0.4	0.5	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
2006	10	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2006	11	0.0	0.9	3.4	2.9	3.0	6.8	0.2	2.3	0.0	0.0	1.6	0.9	0.4	0.7	0.6	0.0
2006	12	0.0	1.2	4.3	3.6	3.9	8.6	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
2007	1	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2007	2	0.0	0.3	1.3	1.1	1.1	2.5	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
2007	3	0.0	1.1	3.9	3.3	3.5	7.8	0.2	2.6	0.0	0.0	1.9	1.0	0.4	0.8	0.7	0.0
2007	4	0.0	0.2	0.8	0.7	0.7	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
2007	5	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	8	0.0	0.2	0.6	0.5	0.5	1.2	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.0
2007	9	0.0	0.2	0.8	0.7	0.7	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
2007	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	11	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2007	12	0.0	1.2	4.3	3.7	3.9	8.7	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 18：Forecasted Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s) (2026: 2008 - 2013) (8/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2008	1	0.0	0.5	1.9	1.6	1.7	3.7	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2008	2	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2008	3	0.0	0.9	3.3	2.8	3.0	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2008	4	0.0	1.0	3.6	3.0	3.2	7.2	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2008	5	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
2008	6	0.0	0.1	0.3	0.2	0.3	0.6	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0
2008	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	8	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
2008	9	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
2008	10	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2008	11	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
2008	12	0.0	1.2	4.3	3.6	3.8	8.6	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
2009	1	0.0	0.8	2.9	2.5	2.6	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2009	2	0.0	0.8	3.1	2.6	2.8	6.2	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2009	3	0.0	1.0	3.5	3.0	3.2	7.1	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2009	4	0.0	0.5	1.8	1.6	1.7	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2009	5	0.0	0.0	0.2	0.1	0.2	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2009	6	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2009	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	8	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2009	9	0.0	0.1	0.3	0.3	0.3	0.7	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2009	10	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
2009	11	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
2009	12	0.0	1.2	4.4	3.8	4.0	8.9	0.2	3.0	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
2010	1	0.0	0.8	2.8	2.4	2.5	5.7	0.1	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.5	0.0
2010	2	0.0	0.8	3.1	2.6	2.8	6.2	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2010	3	0.0	0.8	3.0	2.6	2.7	6.1	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2010	4	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
2010	5	0.0	0.2	0.6	0.5	0.5	1.2	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
2010	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	7	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	8	0.0	0.3	1.0	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2010	9	0.0	1.0	3.8	3.2	3.4	7.6	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
2010	10	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2010	11	0.0	1.2	4.3	3.6	3.8	8.6	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
2010	12	0.0	1.1	4.2	3.5	3.8	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
2011	1	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2011	2	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
2011	3	0.0	0.9	3.4	2.9	3.1	6.8	0.2	2.3	0.0	0.0	1.6	0.9	0.4	0.7	0.7	0.0
2011	4	0.0	0.6	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2011	5	0.0	0.1	0.2	0.2	0.2	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
2011	6	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	8	0.0	0.1	0.3	0.2	0.2	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0
2011	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	10	0.0	1.2	4.4	3.8	4.0	8.9	0.2	3.0	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
2011	11	0.0	1.2	4.2	3.6	3.8	8.5	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
2011	12	0.0	1.2	4.5	3.8	4.0	9.0	0.2	3.0	0.0	0.0	2.1	1.1	0.5	0.9	0.9	0.0
2012	1	0.0	0.8	2.9	2.5	2.6	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2012	2	0.0	0.9	3.2	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.4	0.6	0.6	0.0
2012	3	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
2012	4	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2012	5	0.0	0.2	0.8	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
2012	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	8	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2012	9	0.0	0.2	0.6	0.5	0.5	1.1	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.1	0.1	0.0
2012	10	0.0	0.6	2.4	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2012	11	0.0	1.1	4.0	3.4	3.6	8.0	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
2012	12	0.0	1.2	4.5	3.8	4.0	9.0	0.2	3.0	0.0	0.0	2.2	1.1	0.5	0.9	0.9	0.0
2013	1	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.8	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
2013	2	0.0	0.8	3.1	2.6	2.8	6.2	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2013	3	0.0	1.0	3.5	3.0	3.2	7.1	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2013	4	0.0	0.6	2.2	1.8	1.9	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2013	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	6	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	8	0.0	1.0	3.7	3.1	3.3	7.4	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
2013	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	11	0.0	1.0	3.6	3.0	3.2	7.2	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2013	12	0.0	1.1	4.1	3.5	3.7	8.2	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.8	0.8	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 18：Forecasted Gross Water Requirements of each Upazila and for each Month in Sangu River Basin (m^3/s) (2026: 2014 - 2019) (9/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2014	1	0.0	0.7	2.5	2.1	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2014	2	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
2014	3	0.0	0.9	3.4	2.9	3.0	6.8	0.2	2.3	0.0	0.0	1.6	0.9	0.4	0.7	0.6	0.0
2014	4	0.0	0.8	3.1	2.6	2.7	6.1	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2014	5	0.0	0.1	0.4	0.3	0.3	0.7	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2014	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	9	0.0	0.2	0.6	0.5	0.6	1.3	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
2014	10	0.0	0.8	2.8	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2014	11	0.0	1.2	4.3	3.6	3.9	8.6	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
2014	12	0.0	1.2	4.4	3.8	4.0	8.9	0.2	3.0	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
2015	1	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2015	2	0.0	0.8	2.9	2.4	2.6	5.8	0.2	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2015	3	0.0	1.1	4.2	3.6	3.8	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
2015	4	0.0	0.1	0.4	0.3	0.3	0.7	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2015	5	0.0	0.2	0.8	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.4	0.2	0.1	0.2	0.1	0.0
2015	6	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
2015	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	8	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2015	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	10	0.0	1.2	4.5	3.8	4.0	9.0	0.2	3.0	0.0	0.0	2.1	1.1	0.5	0.9	0.9	0.0
2015	11	0.0	1.1	3.9	3.3	3.5	7.9	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
2015	12	0.0	1.1	4.2	3.6	3.8	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
2016	1	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2016	2	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.8	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
2016	3	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2016	4	0.0	0.9	3.3	2.8	2.9	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2016	5	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
2016	6	0.0	0.1	0.4	0.4	0.4	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2016	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	8	0.0	0.3	0.9	0.8	0.8	1.9	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
2016	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	10	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2016	11	0.0	0.6	2.2	1.8	1.9	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2016	12	0.0	1.2	4.5	3.8	4.0	9.0	0.2	3.0	0.0	0.0	2.2	1.1	0.5	0.9	0.9	0.0
2017	1	0.0	0.9	3.2	2.7	2.9	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
2017	2	0.0	0.9	3.2	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.4	0.6	0.6	0.0
2017	3	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2017	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	5	0.0	0.2	0.6	0.5	0.5	1.2	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
2017	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	8	0.0	0.1	0.4	0.3	0.3	0.7	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2017	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	10	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2017	11	0.0	1.1	4.2	3.5	3.7	8.4	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.9	0.8	0.0
2017	12	0.0	1.1	3.9	3.3	3.5	7.9	0.2	2.6	0.0	0.0	1.9	1.0	0.4	0.8	0.7	0.0
2018	1	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.8	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
2018	2	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2018	3	0.0	0.9	3.4	2.9	3.0	6.8	0.2	2.3	0.0	0.0	1.6	0.9	0.4	0.7	0.6	0.0
2018	4	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2018	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	8	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2018	9	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2018	10	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2018	11	0.0	1.1	4.1	3.5	3.7	8.2	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.8	0.8	0.0
2018	12	0.0	1.2	4.2	3.6	3.8	8.5	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
2019	1	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
2019	2	0.0	0.7	2.7	2.3	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2019	3	0.0	1.0	3.8	3.2	3.4	7.6	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
2019	4	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2019	5	0.0	0.1	0.5	0.4	0.5	1.0	0.0	0.4	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.0
2019	6	0.0	0.1	0.4	0.4	0.4	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.0
2019	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	8	0.0	0.2	0.7	0.6	0.6	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.1	0.1	0.0
2019	9	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2019	10	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2019	11	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2019	12	0.0	1.2	4.4	3.7	3.9	8.7	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 19：Forecasted Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2026: 1966 - 1971) (1/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1966	1	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1966	2	0.0	0.4	6.6	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1966	3	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
1966	4	0.0	0.4	7.5	4.1	0.0	0.0	0.0	2.0	1.1	0.1
1966	5	0.0	0.1	1.1	0.6	0.0	0.0	0.0	0.3	0.1	0.0
1966	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	9	0.0	0.1	1.5	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1966	10	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1966	11	0.0	0.5	9.4	5.2	0.0	0.0	0.0	2.5	1.3	0.2
1966	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1967	1	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1967	2	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1967	3	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
1967	4	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1967	5	0.0	0.1	1.7	0.9	0.0	0.0	0.0	0.4	0.2	0.0
1967	6	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
1967	7	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
1967	8	0.0	0.1	1.5	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1967	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1967	10	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1967	11	0.0	0.5	9.4	5.2	0.0	0.0	0.0	2.5	1.3	0.2
1967	12	0.0	0.6	10.6	5.8	0.0	0.0	0.0	2.8	1.5	0.2
1968	1	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1968	2	0.0	0.3	5.7	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1968	3	0.0	0.4	7.4	4.1	0.0	0.0	0.0	1.9	1.0	0.1
1968	4	0.0	0.3	6.1	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1968	5	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1968	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	7	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1968	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	9	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1968	10	0.0	0.5	8.1	4.5	0.0	0.0	0.0	2.1	1.1	0.2
1968	11	0.0	0.5	9.2	5.0	0.0	0.0	0.0	2.4	1.3	0.2
1968	12	0.0	0.6	10.9	6.0	0.0	0.0	0.0	2.9	1.5	0.2
1969	1	0.0	0.3	6.1	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1969	2	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1969	3	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1969	4	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1969	5	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1969	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	10	0.0	0.5	9.7	5.3	0.0	0.0	0.0	2.5	1.4	0.2
1969	11	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1969	12	0.0	0.6	10.3	5.7	0.0	0.0	0.0	2.7	1.4	0.2
1970	1	0.0	0.3	6.1	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1970	2	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1970	3	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
1970	4	0.0	0.3	4.6	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1970	5	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.3	0.2	0.0
1970	6	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
1970	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	8	0.0	0.4	7.0	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1970	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	11	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1970	12	0.0	0.6	10.4	5.7	0.0	0.0	0.0	2.7	1.5	0.2
1971	1	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1971	2	0.0	0.3	6.1	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1971	3	0.0	0.5	8.9	4.9	0.0	0.0	0.0	2.3	1.3	0.2
1971	4	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
1971	5	0.0	0.1	2.1	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1971	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	7	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1971	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	10	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1971	11	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1971	12	0.0	0.6	10.7	5.9	0.0	0.0	0.0	2.8	1.5	0.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 19：Forecasted Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2026: 1972 - 1977) (2/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1972	1	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1972	2	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1972	3	0.0	0.5	8.5	4.7	0.0	0.0	0.0	2.2	1.2	0.2
1972	4	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1972	5	0.0	0.1	1.4	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1972	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1972	7	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1972	8	0.0	0.1	1.0	0.6	0.0	0.0	0.0	0.3	0.1	0.0
1972	9	0.0	0.5	8.7	4.8	0.0	0.0	0.0	2.3	1.2	0.2
1972	10	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1972	11	0.0	0.5	8.2	4.5	0.0	0.0	0.0	2.2	1.2	0.2
1972	12	0.0	0.6	10.7	5.9	0.0	0.0	0.0	2.8	1.5	0.2
1973	1	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1973	2	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1973	3	0.0	0.5	8.5	4.7	0.0	0.0	0.0	2.2	1.2	0.2
1973	4	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.9	0.1
1973	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	7	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
1973	8	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1973	9	0.0	0.1	2.1	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1973	10	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1973	11	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1973	12	0.0	0.5	8.4	4.6	0.0	0.0	0.0	2.2	1.2	0.2
1974	1	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1974	2	0.0	0.4	6.6	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1974	3	0.0	0.3	5.5	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1974	4	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1974	5	0.0	0.0	0.5	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1974	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	8	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1974	9	0.0	0.1	1.2	0.7	0.0	0.0	0.0	0.3	0.2	0.0
1974	10	0.0	0.2	4.3	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1974	11	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1974	12	0.0	0.6	10.8	5.9	0.0	0.0	0.0	2.8	1.5	0.2
1975	1	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1975	2	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1975	3	0.0	0.5	9.1	5.0	0.0	0.0	0.0	2.4	1.3	0.2
1975	4	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1
1975	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	8	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
1975	9	0.0	0.1	2.3	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1975	10	0.0	0.1	1.9	1.0	0.0	0.0	0.0	0.5	0.3	0.0
1975	11	0.0	0.5	8.7	4.8	0.0	0.0	0.0	2.3	1.2	0.2
1975	12	0.0	0.6	10.4	5.7	0.0	0.0	0.0	2.7	1.5	0.2
1976	1	0.0	0.3	6.1	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1976	2	0.0	0.4	6.6	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1976	3	0.0	0.5	9.0	5.0	0.0	0.0	0.0	2.4	1.3	0.2
1976	4	0.0	0.5	8.8	4.9	0.0	0.0	0.0	2.3	1.2	0.2
1976	5	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.2	0.1	0.0
1976	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	8	0.0	0.1	1.4	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1976	9	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1
1976	10	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1976	11	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.7	0.1
1976	12	0.0	0.6	10.5	5.8	0.0	0.0	0.0	2.7	1.5	0.2
1977	1	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1977	2	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1977	3	0.0	0.5	8.5	4.7	0.0	0.0	0.0	2.2	1.2	0.2
1977	4	0.0	0.1	1.9	1.0	0.0	0.0	0.0	0.5	0.3	0.0
1977	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	8	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	9	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1977	10	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.5	0.8	0.1
1977	11	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
1977	12	0.0	0.6	10.7	5.9	0.0	0.0	0.0	2.8	1.5	0.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 19：Forecasted Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2026: 1978 - 1983) (3/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1978	1	0.0	0.4	6.8	3.7	0.0	0.0	0.0	1.8	1.0	0.1
1978	2	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1978	3	0.0	0.5	9.5	5.2	0.0	0.0	0.0	2.5	1.3	0.2
1978	4	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1978	5	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.2	0.1	0.0
1978	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	7	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1978	8	0.0	0.3	6.3	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1978	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	10	0.0	0.2	2.8	1.6	0.0	0.0	0.0	0.7	0.4	0.1
1978	11	0.0	0.5	9.5	5.2	0.0	0.0	0.0	2.5	1.3	0.2
1978	12	0.0	0.6	10.9	6.0	0.0	0.0	0.0	2.9	1.5	0.2
1979	1	0.0	0.4	7.0	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1979	2	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1979	3	0.0	0.5	9.6	5.3	0.0	0.0	0.0	2.5	1.4	0.2
1979	4	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1
1979	5	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1979	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	8	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1979	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	10	0.0	0.5	9.3	5.1	0.0	0.0	0.0	2.4	1.3	0.2
1979	11	0.0	0.5	9.7	5.3	0.0	0.0	0.0	2.5	1.4	0.2
1979	12	0.0	0.5	9.6	5.3	0.0	0.0	0.0	2.5	1.4	0.2
1980	1	0.0	0.4	6.8	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1980	2	0.0	0.4	6.6	3.7	0.0	0.0	0.0	1.7	0.9	0.1
1980	3	0.0	0.4	7.2	3.9	0.0	0.0	0.0	1.9	1.0	0.1
1980	4	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
1980	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	6	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1980	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	8	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
1980	9	0.0	0.2	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1980	10	0.0	0.1	1.2	0.7	0.0	0.0	0.0	0.3	0.2	0.0
1980	11	0.0	0.6	10.0	5.5	0.0	0.0	0.0	2.6	1.4	0.2
1980	12	0.0	0.6	10.6	5.8	0.0	0.0	0.0	2.8	1.5	0.2
1981	1	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1981	2	0.0	0.4	7.0	3.9	0.0	0.0	0.0	1.8	1.0	0.1
1981	3	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1981	4	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1981	5	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.2	0.1	0.0
1981	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	8	0.0	0.5	9.2	5.1	0.0	0.0	0.0	2.4	1.3	0.2
1981	9	0.0	0.3	5.2	2.8	0.0	0.0	0.0	1.4	0.7	0.1
1981	10	0.0	0.6	11.3	6.2	0.0	0.0	0.0	3.0	1.6	0.2
1981	11	0.0	0.6	9.9	5.5	0.0	0.0	0.0	2.6	1.4	0.2
1981	12	0.0	0.6	10.2	5.6	0.0	0.0	0.0	2.7	1.4	0.2
1982	1	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
1982	2	0.0	0.3	5.4	2.9	0.0	0.0	0.0	1.4	0.8	0.1
1982	3	0.0	0.5	9.1	5.0	0.0	0.0	0.0	2.4	1.3	0.2
1982	4	0.0	0.1	1.6	0.9	0.0	0.0	0.0	0.4	0.2	0.0
1982	5	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1982	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	7	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
1982	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	10	0.0	0.6	10.7	5.9	0.0	0.0	0.0	2.8	1.5	0.2
1982	11	0.0	0.4	7.4	4.1	0.0	0.0	0.0	1.9	1.0	0.1
1982	12	0.0	0.6	10.8	5.9	0.0	0.0	0.0	2.8	1.5	0.2
1983	1	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1983	2	0.0	0.3	6.1	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1983	3	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1983	4	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1983	5	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
1983	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	7	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1983	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	9	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1983	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	11	0.0	0.3	5.0	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1983	12	0.0	0.5	9.5	5.2	0.0	0.0	0.0	2.5	1.3	0.2

Source: JICA Study Team

Attachment 19：Forecasted Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2026: 1984 - 1989) (4/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1984	1	0.0	0.3	5.7	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1984	2	0.0	0.4	7.0	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1984	3	0.0	0.5	8.8	4.8	0.0	0.0	0.0	2.3	1.2	0.2
1984	4	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1984	5	0.0	0.1	1.2	0.7	0.0	0.0	0.0	0.3	0.2	0.0
1984	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	8	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1984	9	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1984	10	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1984	11	0.0	0.6	10.0	5.5	0.0	0.0	0.0	2.6	1.4	0.2
1984	12	0.0	0.6	10.4	5.7	0.0	0.0	0.0	2.7	1.5	0.2
1985	1	0.0	0.4	6.8	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1985	2	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1985	3	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1985	4	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
1985	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	8	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1985	9	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.5	0.1
1985	10	0.0	0.6	10.5	5.8	0.0	0.0	0.0	2.7	1.5	0.2
1985	11	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1985	12	0.0	0.6	10.5	5.8	0.0	0.0	0.0	2.7	1.5	0.2
1986	1	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.6	0.9	0.1
1986	2	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1986	3	0.0	0.5	9.4	5.2	0.0	0.0	0.0	2.5	1.3	0.2
1986	4	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1986	5	0.0	0.1	1.2	0.7	0.0	0.0	0.0	0.3	0.2	0.0
1986	6	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1986	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1986	8	0.0	0.5	8.3	4.5	0.0	0.0	0.0	2.2	1.2	0.2
1986	9	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1986	10	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1
1986	11	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1986	12	0.0	0.6	10.4	5.7	0.0	0.0	0.0	2.7	1.5	0.2
1987	1	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1987	2	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1987	3	0.0	0.4	7.8	4.3	0.0	0.0	0.0	2.0	1.1	0.1
1987	4	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1987	5	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1987	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	8	0.0	0.4	7.8	4.3	0.0	0.0	0.0	2.0	1.1	0.1
1987	9	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1987	10	0.0	0.4	8.0	4.4	0.0	0.0	0.0	2.1	1.1	0.1
1987	11	0.0	0.3	6.3	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1987	12	0.0	0.6	10.7	5.9	0.0	0.0	0.0	2.8	1.5	0.2
1988	1	0.0	0.4	6.6	3.7	0.0	0.0	0.0	1.7	0.9	0.1
1988	2	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1988	3	0.0	0.5	8.2	4.5	0.0	0.0	0.0	2.1	1.1	0.2
1988	4	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1988	5	0.0	0.0	0.8	0.5	0.0	0.0	0.0	0.2	0.1	0.0
1988	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	7	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1988	8	0.0	0.1	1.0	0.5	0.0	0.0	0.0	0.3	0.1	0.0
1988	9	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1988	10	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.4	0.2	0.0
1988	11	0.0	0.5	9.4	5.2	0.0	0.0	0.0	2.5	1.3	0.2
1988	12	0.0	0.6	10.9	6.0	0.0	0.0	0.0	2.9	1.5	0.2
1989	1	0.0	0.4	6.6	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1989	2	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.6	0.9	0.1
1989	3	0.0	0.5	9.3	5.1	0.0	0.0	0.0	2.4	1.3	0.2
1989	4	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1989	5	0.0	0.1	1.8	1.0	0.0	0.0	0.0	0.5	0.3	0.0
1989	6	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1989	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	8	0.0	0.9	16.9	9.3	0.0	0.0	0.1	4.4	2.4	0.3
1989	9	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1989	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	11	0.0	0.5	9.4	5.2	0.0	0.0	0.0	2.5	1.3	0.2
1989	12	0.0	0.6	10.6	5.8	0.0	0.0	0.0	2.8	1.5	0.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 19：Forecasted Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2026: 1990 - 1995) (5/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1990	1	0.0	0.3	5.9	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1990	2	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1990	3	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1990	4	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1990	5	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1990	6	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1990	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	8	0.0	0.6	10.2	5.6	0.0	0.0	0.0	2.7	1.4	0.2
1990	9	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1990	10	0.0	0.3	5.9	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1990	11	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1990	12	0.0	0.5	9.2	5.1	0.0	0.0	0.0	2.4	1.3	0.2
1991	1	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1991	2	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1991	3	0.0	0.5	8.7	4.8	0.0	0.0	0.0	2.3	1.2	0.2
1991	4	0.0	0.1	1.9	1.0	0.0	0.0	0.0	0.5	0.3	0.0
1991	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	8	0.0	0.9	17.0	9.4	0.0	0.0	0.1	4.5	2.4	0.3
1991	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	11	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1991	12	0.0	0.6	9.9	5.5	0.0	0.0	0.0	2.6	1.4	0.2
1992	1	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1992	2	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
1992	3	0.0	0.4	7.8	4.3	0.0	0.0	0.0	2.0	1.1	0.1
1992	4	0.0	0.5	8.3	4.6	0.0	0.0	0.0	2.2	1.2	0.2
1992	5	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.3	0.2	0.0
1992	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	8	0.0	0.4	6.8	3.7	0.0	0.0	0.0	1.8	1.0	0.1
1992	9	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
1992	10	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1992	11	0.0	0.5	8.5	4.7	0.0	0.0	0.0	2.2	1.2	0.2
1992	12	0.0	0.6	10.0	5.5	0.0	0.0	0.0	2.6	1.4	0.2
1993	1	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1993	2	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1993	3	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1993	4	0.0	0.2	3.0	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1993	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	10	0.0	0.6	11.0	6.1	0.0	0.0	0.0	2.9	1.6	0.2
1993	11	0.0	0.5	9.1	5.0	0.0	0.0	0.0	2.4	1.3	0.2
1993	12	0.0	0.6	10.6	5.9	0.0	0.0	0.0	2.8	1.5	0.2
1994	1	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1994	2	0.0	0.4	6.8	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1994	3	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
1994	4	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1994	5	0.0	0.1	1.2	0.7	0.0	0.0	0.0	0.3	0.2	0.0
1994	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	8	0.0	0.1	1.5	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1994	9	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1994	10	0.0	0.4	7.2	4.0	0.0	0.0	0.0	1.9	1.0	0.1
1994	11	0.0	0.5	9.1	5.0	0.0	0.0	0.0	2.4	1.3	0.2
1994	12	0.0	0.6	10.6	5.8	0.0	0.0	0.0	2.8	1.5	0.2
1995	1	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1995	2	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1995	3	0.0	0.4	8.0	4.4	0.0	0.0	0.0	2.1	1.1	0.1
1995	4	0.0	0.4	7.8	4.3	0.0	0.0	0.0	2.0	1.1	0.1
1995	5	0.0	0.1	1.2	0.7	0.0	0.0	0.0	0.3	0.2	0.0
1995	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	8	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1995	9	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1995	10	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
1995	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	12	0.0	0.6	10.7	5.9	0.0	0.0	0.0	2.8	1.5	0.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 19：Forecasted Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2026: 1996 - 2001) (6/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1996	1	0.0	0.3	6.3	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1996	2	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1996	3	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1996	4	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1996	5	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1996	6	0.0	0.1	1.1	0.6	0.0	0.0	0.0	0.3	0.2	0.0
1996	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	8	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	9	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1996	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	11	0.0	0.5	9.4	5.2	0.0	0.0	0.0	2.5	1.3	0.2
1996	12	0.0	0.6	10.6	5.8	0.0	0.0	0.0	2.8	1.5	0.2
1997	1	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1997	2	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1997	3	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1997	4	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1997	5	0.0	0.1	1.0	0.6	0.0	0.0	0.0	0.3	0.1	0.0
1997	6	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1997	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	8	0.0	0.1	1.5	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1997	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	10	0.0	0.5	9.1	5.0	0.0	0.0	0.0	2.4	1.3	0.2
1997	11	0.0	0.4	7.7	4.2	0.0	0.0	0.0	2.0	1.1	0.1
1997	12	0.0	0.5	9.7	5.3	0.0	0.0	0.0	2.5	1.4	0.2
1998	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	3	0.0	0.3	5.4	2.9	0.0	0.0	0.0	1.4	0.8	0.1
1998	4	0.0	0.4	6.6	3.7	0.0	0.0	0.0	1.7	0.9	0.1
1998	5	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1998	6	0.0	0.1	2.0	1.1	0.0	0.0	0.0	0.5	0.3	0.0
1998	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	9	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1998	10	0.0	0.7	12.4	6.8	0.0	0.0	0.0	3.3	1.8	0.2
1998	11	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
1998	12	0.0	0.6	10.8	5.9	0.0	0.0	0.0	2.8	1.5	0.2
1999	1	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1999	2	0.0	0.4	7.5	4.1	0.0	0.0	0.0	2.0	1.1	0.1
1999	3	0.0	0.5	9.3	5.1	0.0	0.0	0.0	2.5	1.3	0.2
1999	4	0.0	0.5	9.0	4.9	0.0	0.0	0.0	2.4	1.3	0.2
1999	5	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1999	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	11	0.0	0.5	8.9	4.9	0.0	0.0	0.0	2.3	1.3	0.2
1999	12	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2000	1	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2000	2	0.0	0.4	6.8	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2000	3	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
2000	4	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2000	5	0.0	0.1	1.0	0.5	0.0	0.0	0.0	0.3	0.1	0.0
2000	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	8	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	9	0.0	0.1	2.5	1.4	0.0	0.0	0.0	0.7	0.4	0.0
2000	10	0.0	0.1	1.4	0.7	0.0	0.0	0.0	0.4	0.2	0.0
2000	11	0.0	0.5	8.8	4.8	0.0	0.0	0.0	2.3	1.2	0.2
2000	12	0.0	0.6	10.9	6.0	0.0	0.0	0.0	2.9	1.5	0.2
2001	1	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2001	2	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2001	3	0.0	0.5	9.3	5.1	0.0	0.0	0.0	2.4	1.3	0.2
2001	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	5	0.0	0.1	1.2	0.7	0.0	0.0	0.0	0.3	0.2	0.0
2001	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	8	0.0	0.6	10.5	5.8	0.0	0.0	0.0	2.8	1.5	0.2
2001	9	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2001	10	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
2001	11	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
2001	12	0.0	0.6	10.9	6.0	0.0	0.0	0.0	2.8	1.5	0.2

Source: JICA Study Team

Attachment 19：Forecasted Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2026: 2002 - 2007) (7/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2002	1	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
2002	2	0.0	0.4	7.4	4.1	0.0	0.0	0.0	1.9	1.0	0.1
2002	3	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2002	4	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2002	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	8	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2002	9	0.0	0.2	2.8	1.6	0.0	0.0	0.0	0.7	0.4	0.1
2002	10	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2002	11	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
2002	12	0.0	0.6	10.8	5.9	0.0	0.0	0.0	2.8	1.5	0.2
2003	1	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2003	2	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
2003	3	0.0	0.4	7.9	4.4	0.0	0.0	0.0	2.1	1.1	0.1
2003	4	0.0	0.5	8.1	4.4	0.0	0.0	0.0	2.1	1.1	0.2
2003	5	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
2003	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	8	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
2003	9	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2003	10	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2003	11	0.0	0.6	10.0	5.5	0.0	0.0	0.0	2.6	1.4	0.2
2003	12	0.0	0.6	10.4	5.7	0.0	0.0	0.0	2.7	1.5	0.2
2004	1	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2004	2	0.0	0.4	7.4	4.1	0.0	0.0	0.0	2.0	1.0	0.1
2004	3	0.0	0.5	9.0	4.9	0.0	0.0	0.0	2.4	1.3	0.2
2004	4	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2004	5	0.0	0.0	0.8	0.5	0.0	0.0	0.0	0.2	0.1	0.0
2004	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	8	0.0	0.6	11.6	6.4	0.0	0.0	0.0	3.0	1.6	0.2
2004	9	0.0	0.2	3.4	1.8	0.0	0.0	0.0	0.9	0.5	0.1
2004	10	0.0	0.6	10.9	6.0	0.0	0.0	0.0	2.8	1.5	0.2
2004	11	0.0	0.6	10.0	5.5	0.0	0.0	0.0	2.6	1.4	0.2
2004	12	0.0	0.6	11.1	6.1	0.0	0.0	0.0	2.9	1.6	0.2
2005	1	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2005	2	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
2005	3	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2005	4	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
2005	5	0.0	0.1	1.6	0.9	0.0	0.0	0.0	0.4	0.2	0.0
2005	6	0.0	0.1	0.9	0.5	0.0	0.0	0.0	0.2	0.1	0.0
2005	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	9	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
2005	10	0.0	0.6	10.9	6.0	0.0	0.0	0.0	2.8	1.5	0.2
2005	11	0.0	0.5	8.3	4.5	0.0	0.0	0.0	2.2	1.2	0.2
2005	12	0.0	0.6	10.6	5.9	0.0	0.0	0.0	2.8	1.5	0.2
2006	1	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.7	0.9	0.1
2006	2	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2006	3	0.0	0.5	9.5	5.2	0.0	0.0	0.0	2.5	1.3	0.2
2006	4	0.0	0.4	7.9	4.4	0.0	0.0	0.0	2.1	1.1	0.1
2006	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	6	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2006	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	8	0.0	0.5	9.0	5.0	0.0	0.0	0.0	2.4	1.3	0.2
2006	9	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.3	0.2	0.0
2006	10	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2006	11	0.0	0.5	8.6	4.7	0.0	0.0	0.0	2.2	1.2	0.2
2006	12	0.0	0.6	10.9	6.0	0.0	0.0	0.0	2.9	1.5	0.2
2007	1	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2007	2	0.0	0.2	3.2	1.8	0.0	0.0	0.0	0.8	0.4	0.1
2007	3	0.0	0.5	9.8	5.4	0.0	0.0	0.0	2.6	1.4	0.2
2007	4	0.0	0.1	2.1	1.2	0.0	0.0	0.0	0.5	0.3	0.0
2007	5	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2007	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	8	0.0	0.1	1.5	0.8	0.0	0.0	0.0	0.4	0.2	0.0
2007	9	0.0	0.1	2.1	1.1	0.0	0.0	0.0	0.5	0.3	0.0
2007	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	11	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
2007	12	0.0	0.6	10.9	6.0	0.0	0.0	0.0	2.9	1.5	0.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 19：Forecasted Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2026: 2008 - 2013) (8/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2008	1	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
2008	2	0.0	0.4	6.8	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2008	3	0.0	0.5	8.4	4.6	0.0	0.0	0.0	2.2	1.2	0.2
2008	4	0.0	0.5	9.0	5.0	0.0	0.0	0.0	2.4	1.3	0.2
2008	5	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
2008	6	0.0	0.0	0.7	0.4	0.0	0.0	0.0	0.2	0.1	0.0
2008	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	8	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2008	9	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
2008	10	0.0	0.2	3.7	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2008	11	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
2008	12	0.0	0.6	10.8	5.9	0.0	0.0	0.0	2.8	1.5	0.2
2009	1	0.0	0.4	7.5	4.1	0.0	0.0	0.0	2.0	1.1	0.1
2009	2	0.0	0.4	7.8	4.3	0.0	0.0	0.0	2.0	1.1	0.1
2009	3	0.0	0.5	9.0	4.9	0.0	0.0	0.0	2.4	1.3	0.2
2009	4	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
2009	5	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
2009	6	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
2009	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	8	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2009	9	0.0	0.0	0.9	0.5	0.0	0.0	0.0	0.2	0.1	0.0
2009	10	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
2009	11	0.0	0.5	8.1	4.5	0.0	0.0	0.0	2.1	1.1	0.2
2009	12	0.0	0.6	11.2	6.2	0.0	0.0	0.0	2.9	1.6	0.2
2010	1	0.0	0.4	7.2	3.9	0.0	0.0	0.0	1.9	1.0	0.1
2010	2	0.0	0.4	7.8	4.3	0.0	0.0	0.0	2.1	1.1	0.1
2010	3	0.0	0.4	7.7	4.2	0.0	0.0	0.0	2.0	1.1	0.1
2010	4	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2010	5	0.0	0.1	1.5	0.8	0.0	0.0	0.0	0.4	0.2	0.0
2010	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	7	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
2010	8	0.0	0.1	2.6	1.4	0.0	0.0	0.0	0.7	0.4	0.0
2010	9	0.0	0.5	9.6	5.3	0.0	0.0	0.0	2.5	1.4	0.2
2010	10	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2010	11	0.0	0.6	10.8	6.0	0.0	0.0	0.0	2.8	1.5	0.2
2010	12	0.0	0.6	10.6	5.8	0.0	0.0	0.0	2.8	1.5	0.2
2011	1	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
2011	2	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
2011	3	0.0	0.5	8.6	4.7	0.0	0.0	0.0	2.3	1.2	0.2
2011	4	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
2011	5	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.2	0.1	0.0
2011	6	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2011	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	8	0.0	0.0	0.7	0.4	0.0	0.0	0.0	0.2	0.1	0.0
2011	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	10	0.0	0.6	11.2	6.2	0.0	0.0	0.0	2.9	1.6	0.2
2011	11	0.0	0.6	10.7	5.9	0.0	0.0	0.0	2.8	1.5	0.2
2011	12	0.0	0.6	11.3	6.2	0.0	0.0	0.0	3.0	1.6	0.2
2012	1	0.0	0.4	7.4	4.1	0.0	0.0	0.0	1.9	1.0	0.1
2012	2	0.0	0.4	8.0	4.4	0.0	0.0	0.0	2.1	1.1	0.1
2012	3	0.0	0.5	8.1	4.4	0.0	0.0	0.0	2.1	1.1	0.2
2012	4	0.0	0.2	2.9	1.6	0.0	0.0	0.0	0.8	0.4	0.1
2012	5	0.0	0.1	1.9	1.1	0.0	0.0	0.0	0.5	0.3	0.0
2012	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	8	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2012	9	0.0	0.1	1.4	0.8	0.0	0.0	0.0	0.4	0.2	0.0
2012	10	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
2012	11	0.0	0.6	10.0	5.5	0.0	0.0	0.0	2.6	1.4	0.2
2012	12	0.0	0.6	11.4	6.3	0.0	0.0	0.0	3.0	1.6	0.2
2013	1	0.0	0.4	6.6	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2013	2	0.0	0.4	7.8	4.3	0.0	0.0	0.0	2.0	1.1	0.1
2013	3	0.0	0.5	9.0	4.9	0.0	0.0	0.0	2.4	1.3	0.2
2013	4	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2013	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	6	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0
2013	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	8	0.0	0.5	9.3	5.1	0.0	0.0	0.0	2.4	1.3	0.2
2013	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	11	0.0	0.5	9.0	5.0	0.0	0.0	0.0	2.4	1.3	0.2
2013	12	0.0	0.6	10.3	5.7	0.0	0.0	0.0	2.7	1.5	0.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 19：Forecasted Gross Water Requirements of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2026: 2014 - 2019) (9/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2014	1	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2014	2	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2014	3	0.0	0.5	8.6	4.7	0.0	0.0	0.0	2.3	1.2	0.2
2014	4	0.0	0.4	7.8	4.3	0.0	0.0	0.0	2.0	1.1	0.1
2014	5	0.0	0.1	0.9	0.5	0.0	0.0	0.0	0.2	0.1	0.0
2014	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	9	0.0	0.1	1.6	0.9	0.0	0.0	0.0	0.4	0.2	0.0
2014	10	0.0	0.4	7.0	3.9	0.0	0.0	0.0	1.8	1.0	0.1
2014	11	0.0	0.6	10.9	6.0	0.0	0.0	0.0	2.9	1.5	0.2
2014	12	0.0	0.6	11.2	6.2	0.0	0.0	0.0	2.9	1.6	0.2
2015	1	0.0	0.4	7.0	3.9	0.0	0.0	0.0	1.8	1.0	0.1
2015	2	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
2015	3	0.0	0.6	10.7	5.9	0.0	0.0	0.0	2.8	1.5	0.2
2015	4	0.0	0.1	0.9	0.5	0.0	0.0	0.0	0.2	0.1	0.0
2015	5	0.0	0.1	1.9	1.1	0.0	0.0	0.0	0.5	0.3	0.0
2015	6	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
2015	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	8	0.0	0.4	6.8	3.7	0.0	0.0	0.0	1.8	1.0	0.1
2015	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	10	0.0	0.6	11.4	6.2	0.0	0.0	0.0	3.0	1.6	0.2
2015	11	0.0	0.6	9.9	5.5	0.0	0.0	0.0	2.6	1.4	0.2
2015	12	0.0	0.6	10.6	5.8	0.0	0.0	0.0	2.8	1.5	0.2
2016	1	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2016	2	0.0	0.4	6.6	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2016	3	0.0	0.4	7.1	3.9	0.0	0.0	0.0	1.9	1.0	0.1
2016	4	0.0	0.5	8.3	4.6	0.0	0.0	0.0	2.2	1.2	0.2
2016	5	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
2016	6	0.0	0.1	1.1	0.6	0.0	0.0	0.0	0.3	0.2	0.0
2016	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	8	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
2016	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	10	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
2016	11	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2016	12	0.0	0.6	11.4	6.3	0.0	0.0	0.0	3.0	1.6	0.2
2017	1	0.0	0.5	8.2	4.5	0.0	0.0	0.0	2.1	1.2	0.2
2017	2	0.0	0.4	8.0	4.4	0.0	0.0	0.0	2.1	1.1	0.1
2017	3	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2017	4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	5	0.0	0.1	1.5	0.9	0.0	0.0	0.0	0.4	0.2	0.0
2017	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	8	0.0	0.1	0.9	0.5	0.0	0.0	0.0	0.2	0.1	0.0
2017	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	10	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2017	11	0.0	0.6	10.5	5.8	0.0	0.0	0.0	2.8	1.5	0.2
2017	12	0.0	0.6	9.9	5.5	0.0	0.0	0.0	2.6	1.4	0.2
2018	1	0.0	0.4	6.6	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2018	2	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.7	0.9	0.1
2018	3	0.0	0.5	8.6	4.7	0.0	0.0	0.0	2.3	1.2	0.2
2018	4	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1
2018	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	8	0.0	0.2	4.1	2.2	0.0	0.0	0.0	1.1	0.6	0.1
2018	9	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2018	10	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1
2018	11	0.0	0.6	10.4	5.7	0.0	0.0	0.0	2.7	1.5	0.2
2018	12	0.0	0.6	10.7	5.9	0.0	0.0	0.0	2.8	1.5	0.2
2019	1	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
2019	2	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
2019	3	0.0	0.5	9.6	5.3	0.0	0.0	0.0	2.5	1.4	0.2
2019	4	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2019	5	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.3	0.2	0.0
2019	6	0.0	0.1	1.0	0.6	0.0	0.0	0.0	0.3	0.1	0.0
2019	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	8	0.0	0.1	1.7	0.9	0.0	0.0	0.0	0.4	0.2	0.0
2019	9	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
2019	10	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
2019	11	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2019	12	0.0	0.6	11.0	6.1	0.0	0.0	0.0	2.9	1.6	0.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 20：Forecasted Gross Water Requirements of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (2026: 1966 - 1977) (1/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1966	1	0.1	5.9	0.9	0.0	0.0	0.8
1966	2	0.1	6.3	0.9	0.0	0.0	0.9
1966	3	0.1	6.0	0.9	0.0	0.0	0.8
1966	4	0.1	7.0	1.0	0.0	0.0	1.0
1966	5	0.0	1.9	0.3	0.0	0.0	0.3
1966	6	0.0	0.0	0.0	0.0	0.0	0.0
1966	7	0.0	0.0	0.0	0.0	0.0	0.0
1966	8	0.0	0.0	0.0	0.0	0.0	0.0
1966	9	0.0	0.0	0.0	0.0	0.0	0.0
1966	10	0.0	5.3	0.8	0.0	0.0	0.7
1966	11	0.1	7.1	1.0	0.0	0.0	1.0
1966	12	0.1	9.3	1.4	0.0	0.0	1.3
1967	1	0.0	4.2	0.6	0.0	0.0	0.6
1967	2	0.1	6.3	0.9	0.0	0.0	0.9
1967	3	0.1	8.1	1.2	0.0	0.0	1.1
1967	4	0.1	6.8	1.0	0.0	0.0	0.9
1967	5	0.0	1.8	0.3	0.0	0.0	0.3
1967	6	0.0	0.0	0.0	0.0	0.0	0.0
1967	7	0.0	0.0	0.0	0.0	0.0	0.0
1967	8	0.0	0.0	0.0	0.0	0.0	0.0
1967	9	0.0	0.0	0.0	0.0	0.0	0.0
1967	10	0.0	1.3	0.2	0.0	0.0	0.2
1967	11	0.1	9.6	1.4	0.0	0.0	1.3
1967	12	0.1	10.1	1.5	0.0	0.0	1.4
1968	1	0.0	5.1	0.7	0.0	0.0	0.7
1968	2	0.0	5.1	0.8	0.0	0.0	0.7
1968	3	0.1	8.1	1.2	0.0	0.0	1.1
1968	4	0.1	6.3	0.9	0.0	0.0	0.9
1968	5	0.0	0.1	0.0	0.0	0.0	0.0
1968	6	0.0	0.0	0.0	0.0	0.0	0.0
1968	7	0.0	0.0	0.0	0.0	0.0	0.0
1968	8	0.0	0.0	0.0	0.0	0.0	0.0
1968	9	0.0	2.5	0.4	0.0	0.0	0.3
1968	10	0.0	0.0	0.0	0.0	0.0	0.0
1968	11	0.1	9.0	1.3	0.0	0.0	1.2
1968	12	0.1	10.4	1.5	0.0	0.0	1.4
1969	1	0.1	6.3	0.9	0.0	0.0	0.9
1969	2	0.1	6.3	0.9	0.0	0.0	0.9
1969	3	0.1	6.1	0.9	0.0	0.0	0.8
1969	4	0.0	5.0	0.7	0.0	0.0	0.7
1969	5	0.0	1.8	0.3	0.0	0.0	0.3
1969	6	0.0	0.0	0.0	0.0	0.0	0.0
1969	7	0.0	0.0	0.0	0.0	0.0	0.0
1969	8	0.0	0.0	0.0	0.0	0.0	0.0
1969	9	0.0	2.4	0.4	0.0	0.0	0.3
1969	10	0.1	5.8	0.8	0.0	0.0	0.8
1969	11	0.1	9.0	1.3	0.0	0.0	1.2
1969	12	0.1	9.7	1.4	0.0	0.0	1.3
1970	1	0.1	6.0	0.9	0.0	0.0	0.8
1970	2	0.0	4.9	0.7	0.0	0.0	0.7
1970	3	0.1	8.4	1.2	0.0	0.0	1.2
1970	4	0.1	6.0	0.9	0.0	0.0	0.8
1970	5	0.0	0.3	0.0	0.0	0.0	0.0
1970	6	0.0	0.0	0.0	0.0	0.0	0.0
1970	7	0.0	0.0	0.0	0.0	0.0	0.0
1970	8	0.0	0.1	0.0	0.0	0.0	0.0
1970	9	0.0	0.6	0.1	0.0	0.0	0.1
1970	10	0.0	0.0	0.0	0.0	0.0	0.0
1970	11	0.1	6.0	0.9	0.0	0.0	0.8
1970	12	0.1	9.9	1.5	0.0	0.0	1.4
1971	1	0.1	6.0	0.9	0.0	0.0	0.8
1971	2	0.1	6.1	0.9	0.0	0.0	0.8
1971	3	0.1	8.3	1.2	0.0	0.0	1.1
1971	4	0.1	7.3	1.1	0.0	0.0	1.0
1971	5	0.0	1.2	0.2	0.0	0.0	0.2
1971	6	0.0	0.0	0.0	0.0	0.0	0.0
1971	7	0.0	0.0	0.0	0.0	0.0	0.0
1971	8	0.0	0.0	0.0	0.0	0.0	0.0
1971	9	0.0	5.5	0.8	0.0	0.0	0.8
1971	10	0.0	3.6	0.5	0.0	0.0	0.5
1971	11	0.0	5.0	0.7	0.0	0.0	0.7
1971	12	0.1	10.0	1.5	0.0	0.0	1.4

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1972	1	0.1	6.1	0.9	0.0	0.0	0.8
1972	2	0.1	6.6	1.0	0.0	0.0	0.9
1972	3	0.1	8.3	1.2	0.0	0.0	1.1
1972	4	0.1	6.7	1.0	0.0	0.0	0.9
1972	5	0.0	1.5	0.2	0.0	0.0	0.2
1972	6	0.0	0.8	0.1	0.0	0.0	0.1
1972	7	0.0	0.0	0.0	0.0	0.0	0.0
1972	8	0.0	0.0	0.0	0.0	0.0	0.0
1972	9	0.1	9.0	1.3	0.0	0.0	1.2
1972	10	0.1	6.0	0.9	0.0	0.0	0.8
1972	11	0.1	9.3	1.4	0.0	0.0	1.3
1972	12	0.1	10.3	1.5	0.0	0.0	1.4
1973	1	0.1	6.6	1.0	0.0	0.0	0.9
1973	2	0.1	6.5	0.9	0.0	0.0	0.9
1973	3	0.1	8.8	1.3	0.0	0.0	1.2
1973	4	0.1	8.2	1.2	0.0	0.0	1.1
1973	5	0.0	0.0	0.0	0.0	0.0	0.0
1973	6	0.0	0.0	0.0	0.0	0.0	0.0
1973	7	0.0	0.0	0.0	0.0	0.0	0.0
1973	8	0.0	1.0	0.2	0.0	0.0	0.1
1973	9	0.0	0.2	0.0	0.0	0.0	0.0
1973	10	0.0	3.3	0.5	0.0	0.0	0.5
1973	11	0.0	0.3	0.0	0.0	0.0	0.0
1973	12	0.1	9.2	1.3	0.0	0.0	1.3
1974	1	0.1	6.0	0.9	0.0	0.0	0.8
1974	2	0.1	6.4	0.9	0.0	0.0	0.9
1974	3	0.0	4.0	0.6	0.0	0.0	0.5
1974	4	0.0	5.7	0.8	0.0	0.0	0.8
1974	5	0.0	0.4	0.1	0.0	0.0	0.1
1974	6	0.0	0.1	0.0	0.0	0.0	0.0
1974	7	0.0	0.0	0.0	0.0	0.0	0.0
1974	8	0.0	0.0	0.0	0.0	0.0	0.0
1974	9	0.0	2.9	0.4	0.0	0.0	0.4
1974	10	0.1	6.2	0.9	0.0	0.0	0.9
1974	11	0.0	4.7	0.7	0.0	0.0	0.6
1974	12	0.1	9.8	1.4	0.0	0.0	1.4
1975	1	0.1	5.9	0.9	0.0	0.0	0.8
1975	2	0.1	5.9	0.9	0.0	0.0	0.8
1975	3	0.1	8.4	1.2	0.0	0.0	1.2
1975	4	0.1	7.7	1.1	0.0	0.0	1.1
1975	5	0.0	0.3	0.0	0.0	0.0	0.0
1975	6	0.0	0.0	0.0	0.0	0.0	0.0
1975	7	0.0	0.0	0.0	0.0	0.0	0.0
1975	8	0.0	2.2	0.3	0.0	0.0	0.3
1975	9	0.0	0.8	0.1	0.0	0.0	0.1
1975	10	0.0	1.1	0.2	0.0	0.0	0.2
1975	11	0.0	3.6	0.5	0.0	0.0	0.5
1975	12	0.1	8.6	1.2	0.0	0.0	1.2
1976	1	0.1	5.8	0.9	0.0	0.0	0.8
1976	2	0.1	6.2	0.9	0.0	0.0	0.9
1976	3	0.1	8.3	1.2	0.0	0.0	1.1
1976	4	0.0	5.6	0.8	0.0	0.0	0.8
1976	5	0.0	0.6	0.1	0.0	0.0	0.1
1976	6	0.0	0.0	0.0	0.0	0.0	0.0
1976	7	0.0	0.0	0.0	0.0	0.0	0.0
1976	8	0.0	0.1	0.0	0.0	0.0	0.0
1976	9	0.1	9.4	1.4	0.0	0.0	1.3
1976	10	0.0	5.7	0.8	0.0	0.0	0.8
1976	11	0.0	4.7	0.7	0.0	0.0	0.6
1976	12	0.1	9.8	1.4	0.0	0.0	1.3
1977	1	0.1	6.1	0.9	0.0	0.0	0.8
1977	2	0.0	5.3	0.8	0.0	0.0	0.7
1977	3	0.1	8.2	1.2	0.0	0.0	1.1
1977	4	0.0	2.0	0.3	0.0	0.0	0.3
1977	5	0.0	0.0	0.0	0.0	0.0	0.0
1977	6	0.0	0.3	0.0	0.0	0.0	0.0
1977	7	0.0	0.0	0.0	0.0	0.0	0.0
1977	8	0.0	0.0	0.0	0.0	0.0	0.0
1977	9	0.0	1.3	0.2	0.0	0.0	0.2
1977	10	0.1	9.4	1.4	0.0	0.0	1.3
1977	11	0.1	6.5	1.0	0.0	0.0	0.9
1977	12	0.1	8.9	1.3	0.0	0.0	1.2

Source: JICA Study Team

Attachment 20：Forecasted Gross Water Requirements of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (2026: 1978 - 1989) (2/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1978	1	0.1	6.0	0.9	0.0	0.0	0.8
1978	2	0.1	6.2	0.9	0.0	0.0	0.9
1978	3	0.1	8.2	1.2	0.0	0.0	1.1
1978	4	0.0	3.5	0.5	0.0	0.0	0.5
1978	5	0.0	0.1	0.0	0.0	0.0	0.0
1978	6	0.0	0.0	0.0	0.0	0.0	0.0
1978	7	0.0	0.6	0.1	0.0	0.0	0.1
1978	8	0.0	0.2	0.0	0.0	0.0	0.0
1978	9	0.0	0.0	0.0	0.0	0.0	0.0
1978	10	0.0	2.8	0.4	0.0	0.0	0.4
1978	11	0.1	9.4	1.4	0.0	0.0	1.3
1978	12	0.1	10.1	1.5	0.0	0.0	1.4
1979	1	0.1	6.2	0.9	0.0	0.0	0.8
1979	2	0.1	6.3	0.9	0.0	0.0	0.9
1979	3	0.1	8.5	1.2	0.0	0.0	1.2
1979	4	0.1	7.9	1.2	0.0	0.0	1.1
1979	5	0.0	2.3	0.3	0.0	0.0	0.3
1979	6	0.0	0.9	0.1	0.0	0.0	0.1
1979	7	0.0	0.4	0.1	0.0	0.0	0.0
1979	8	0.1	5.9	0.9	0.0	0.0	0.8
1979	9	0.0	4.9	0.7	0.0	0.0	0.7
1979	10	0.1	11.0	1.6	0.0	0.0	1.5
1979	11	0.1	9.5	1.4	0.0	0.0	1.3
1979	12	0.1	9.7	1.4	0.0	0.0	1.3
1980	1	0.1	6.5	0.9	0.0	0.0	0.9
1980	2	0.1	6.5	1.0	0.0	0.0	0.9
1980	3	0.1	7.6	1.1	0.0	0.0	1.0
1980	4	0.1	7.8	1.1	0.0	0.0	1.1
1980	5	0.0	1.4	0.2	0.0	0.0	0.2
1980	6	0.0	0.1	0.0	0.0	0.0	0.0
1980	7	0.0	0.3	0.0	0.0	0.0	0.0
1980	8	0.0	5.3	0.8	0.0	0.0	0.7
1980	9	0.0	2.9	0.4	0.0	0.0	0.4
1980	10	0.0	4.1	0.6	0.0	0.0	0.6
1980	11	0.1	9.4	1.4	0.0	0.0	1.3
1980	12	0.1	9.8	1.4	0.0	0.0	1.3
1981	1	0.0	5.1	0.7	0.0	0.0	0.7
1981	2	0.1	6.2	0.9	0.0	0.0	0.8
1981	3	0.1	7.1	1.0	0.0	0.0	1.0
1981	4	0.0	2.9	0.4	0.0	0.0	0.4
1981	5	0.0	1.1	0.2	0.0	0.0	0.2
1981	6	0.0	0.0	0.0	0.0	0.0	0.0
1981	7	0.0	0.0	0.0	0.0	0.0	0.0
1981	8	0.0	2.2	0.3	0.0	0.0	0.3
1981	9	0.0	4.4	0.6	0.0	0.0	0.6
1981	10	0.1	8.2	1.2	0.0	0.0	1.1
1981	11	0.1	8.3	1.2	0.0	0.0	1.1
1981	12	0.1	8.3	1.2	0.0	0.0	1.1
1982	1	0.1	6.3	0.9	0.0	0.0	0.9
1982	2	0.0	5.4	0.8	0.0	0.0	0.7
1982	3	0.1	8.3	1.2	0.0	0.0	1.1
1982	4	0.0	4.2	0.6	0.0	0.0	0.6
1982	5	0.0	2.5	0.4	0.0	0.0	0.3
1982	6	0.0	0.0	0.0	0.0	0.0	0.0
1982	7	0.0	0.1	0.0	0.0	0.0	0.0
1982	8	0.0	0.0	0.0	0.0	0.0	0.0
1982	9	0.0	0.0	0.0	0.0	0.0	0.0
1982	10	0.1	10.5	1.5	0.0	0.0	1.4
1982	11	0.0	4.5	0.7	0.0	0.0	0.6
1982	12	0.1	9.8	1.4	0.0	0.0	1.3
1983	1	0.0	5.5	0.8	0.0	0.0	0.8
1983	2	0.0	4.5	0.7	0.0	0.0	0.6
1983	3	0.1	7.2	1.0	0.0	0.0	1.0
1983	4	0.0	4.0	0.6	0.0	0.0	0.6
1983	5	0.0	0.3	0.0	0.0	0.0	0.0
1983	6	0.0	0.0	0.0	0.0	0.0	0.0
1983	7	0.0	0.0	0.0	0.0	0.0	0.0
1983	8	0.0	0.0	0.0	0.0	0.0	0.0
1983	9	0.0	0.0	0.0	0.0	0.0	0.0
1983	10	0.0	1.4	0.2	0.0	0.0	0.2
1983	11	0.0	3.9	0.6	0.0	0.0	0.5
1983	12	0.1	8.4	1.2	0.0	0.0	1.2

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1984	1	0.1	5.9	0.9	0.0	0.0	0.8
1984	2	0.1	6.2	0.9	0.0	0.0	0.9
1984	3	0.1	7.6	1.1	0.0	0.0	1.0
1984	4	0.0	5.2	0.8	0.0	0.0	0.7
1984	5	0.0	0.7	0.1	0.0	0.0	0.1
1984	6	0.0	0.0	0.0	0.0	0.0	0.0
1984	7	0.0	0.0	0.0	0.0	0.0	0.0
1984	8	0.0	0.0	0.0	0.0	0.0	0.0
1984	9	0.1	6.0	0.9	0.0	0.0	0.8
1984	10	0.0	5.2	0.8	0.0	0.0	0.7
1984	11	0.1	9.3	1.4	0.0	0.0	1.3
1984	12	0.1	9.8	1.4	0.0	0.0	1.3
1985	1	0.1	5.9	0.9	0.0	0.0	0.8
1985	2	0.1	6.0	0.9	0.0	0.0	0.8
1985	3	0.1	7.0	1.0	0.0	0.0	1.0
1985	4	0.0	5.4	0.8	0.0	0.0	0.7
1985	5	0.0	0.0	0.0	0.0	0.0	0.0
1985	6	0.0	0.0	0.0	0.0	0.0	0.0
1985	7	0.0	0.0	0.0	0.0	0.0	0.0
1985	8	0.0	4.1	0.6	0.0	0.0	0.6
1985	9	0.0	1.5	0.2	0.0	0.0	0.2
1985	10	0.1	8.1	1.2	0.0	0.0	1.1
1985	11	0.0	4.8	0.7	0.0	0.0	0.7
1985	12	0.1	10.1	1.5	0.0	0.0	1.4
1986	1	0.1	6.1	0.9	0.0	0.0	0.8
1986	2	0.1	6.6	1.0	0.0	0.0	0.9
1986	3	0.1	8.2	1.2	0.0	0.0	1.1
1986	4	0.1	6.6	1.0	0.0	0.0	0.9
1986	5	0.0	1.3	0.2	0.0	0.0	0.2
1986	6	0.0	0.5	0.1	0.0	0.0	0.1
1986	7	0.0	0.0	0.0	0.0	0.0	0.0
1986	8	0.0	5.2	0.8	0.0	0.0	0.7
1986	9	0.0	0.0	0.0	0.0	0.0	0.0
1986	10	0.0	5.6	0.8	0.0	0.0	0.8
1986	11	0.0	4.4	0.6	0.0	0.0	0.6
1986	12	0.1	10.1	1.5	0.0	0.0	1.4
1987	1	0.1	6.2	0.9	0.0	0.0	0.9
1987	2	0.0	4.4	0.6	0.0	0.0	0.6
1987	3	0.1	7.9	1.2	0.0	0.0	1.1
1987	4	0.0	2.5	0.4	0.0	0.0	0.3
1987	5	0.0	2.3	0.3	0.0	0.0	0.3
1987	6	0.0	0.0	0.0	0.0	0.0	0.0
1987	7	0.0	0.0	0.0	0.0	0.0	0.0
1987	8	0.0	0.9	0.1	0.0	0.0	0.1
1987	9	0.0	1.8	0.3	0.0	0.0	0.2
1987	10	0.1	7.5	1.1	0.0	0.0	1.0
1987	11	0.0	4.6	0.7	0.0	0.0	0.6
1987	12	0.1	9.2	1.3	0.0	0.0	1.3
1988	1	0.1	6.4	0.9	0.0	0.0	0.9
1988	2	0.1	6.3	0.9	0.0	0.0	0.9
1988	3	0.1	8.0	1.2	0.0	0.0	1.1
1988	4	0.0	3.8	0.6	0.0	0.0	0.5
1988	5	0.0	0.6	0.1	0.0	0.0	0.1
1988	6	0.0	0.0	0.0	0.0	0.0	0.0
1988	7	0.0	0.0	0.0	0.0	0.0	0.0
1988	8	0.0	0.0	0.0	0.0	0.0	0.0
1988	9	0.0	1.6	0.2	0.0	0.0	0.2
1988	10	0.0	4.1	0.6	0.0	0.0	0.6
1988	11	0.0	5.1	0.7	0.0	0.0	0.7
1988	12	0.1	6.4	0.9	0.0	0.0	0.9
1989	1	0.1	6.2	0.9	0.0	0.0	0.9
1989	2	0.0	5.7	0.8	0.0	0.0	0.8
1989	3	0.1	8.5	1.2	0.0	0.0	1.2
1989	4	0.0	4.1	0.6	0.0	0.0	0.6
1989	5	0.0	1.9	0.3	0.0	0.0	0.3
1989	6	0.0	0.0	0.0	0.0	0.0	0.0
1989	7	0.0	0.0	0.0	0.0	0.0	0.0
1989	8	0.1	9.4	1.4	0.0	0.0	1.3
1989	9	0.0	0.0	0.0	0.0	0.0	0.0
1989	10	0.0	0.0	0.0	0.0	0.0	0.0
1989	11	0.1	8.1	1.2	0.0	0.0	1.1
1989	12	0.1	10.0	1.5	0.0	0.0	1.4

Source: JICA Study Team

Attachment 20：Forecasted Gross Water Requirements of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (2026: 1990 - 2001) (3/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1990	1	0.1	5.8	0.8	0.0	0.0	0.8
1990	2	0.0	4.1	0.6	0.0	0.0	0.6
1990	3	0.0	4.3	0.6	0.0	0.0	0.6
1990	4	0.0	3.6	0.5	0.0	0.0	0.5
1990	5	0.0	0.5	0.1	0.0	0.0	0.1
1990	6	0.0	0.0	0.0	0.0	0.0	0.0
1990	7	0.0	0.0	0.0	0.0	0.0	0.0
1990	8	0.1	7.2	1.1	0.0	0.0	1.0
1990	9	0.0	2.9	0.4	0.0	0.0	0.4
1990	10	0.0	5.7	0.8	0.0	0.0	0.8
1990	11	0.0	4.6	0.7	0.0	0.0	0.6
1990	12	0.1	9.3	1.4	0.0	0.0	1.3
1991	1	0.1	6.0	0.9	0.0	0.0	0.8
1991	2	0.1	6.3	0.9	0.0	0.0	0.9
1991	3	0.1	7.4	1.1	0.0	0.0	1.0
1991	4	0.0	3.7	0.5	0.0	0.0	0.5
1991	5	0.0	0.5	0.1	0.0	0.0	0.1
1991	6	0.0	0.0	0.0	0.0	0.0	0.0
1991	7	0.0	0.0	0.0	0.0	0.0	0.0
1991	8	0.0	0.0	0.0	0.0	0.0	0.0
1991	9	0.0	0.0	0.0	0.0	0.0	0.0
1991	10	0.0	2.4	0.3	0.0	0.0	0.3
1991	11	0.0	4.8	0.7	0.0	0.0	0.7
1991	12	0.1	9.3	1.4	0.0	0.0	1.3
1992	1	0.0	5.5	0.8	0.0	0.0	0.8
1992	2	0.0	4.2	0.6	0.0	0.0	0.6
1992	3	0.1	7.5	1.1	0.0	0.0	1.0
1992	4	0.1	7.5	1.1	0.0	0.0	1.0
1992	5	0.0	1.2	0.2	0.0	0.0	0.2
1992	6	0.0	0.5	0.1	0.0	0.0	0.1
1992	7	0.0	0.0	0.0	0.0	0.0	0.0
1992	8	0.0	3.8	0.6	0.0	0.0	0.5
1992	9	0.0	0.7	0.1	0.0	0.0	0.1
1992	10	0.0	0.5	0.1	0.0	0.0	0.1
1992	11	0.0	4.2	0.6	0.0	0.0	0.6
1992	12	0.1	9.8	1.4	0.0	0.0	1.3
1993	1	0.0	4.9	0.7	0.0	0.0	0.7
1993	2	0.0	3.8	0.6	0.0	0.0	0.5
1993	3	0.0	5.5	0.8	0.0	0.0	0.8
1993	4	0.0	5.1	0.8	0.0	0.0	0.7
1993	5	0.0	0.0	0.0	0.0	0.0	0.0
1993	6	0.0	0.0	0.0	0.0	0.0	0.0
1993	7	0.0	0.0	0.0	0.0	0.0	0.0
1993	8	0.0	0.0	0.0	0.0	0.0	0.0
1993	9	0.0	2.1	0.3	0.0	0.0	0.3
1993	10	0.0	3.4	0.5	0.0	0.0	0.5
1993	11	0.1	7.2	1.1	0.0	0.0	1.0
1993	12	0.1	10.0	1.5	0.0	0.0	1.4
1994	1	0.1	6.1	0.9	0.0	0.0	0.8
1994	2	0.1	6.0	0.9	0.0	0.0	0.8
1994	3	0.0	3.8	0.5	0.0	0.0	0.5
1994	4	0.0	2.5	0.4	0.0	0.0	0.3
1994	5	0.0	0.8	0.1	0.0	0.0	0.1
1994	6	0.0	0.0	0.0	0.0	0.0	0.0
1994	7	0.0	0.0	0.0	0.0	0.0	0.0
1994	8	0.0	0.1	0.0	0.0	0.0	0.0
1994	9	0.0	1.6	0.2	0.0	0.0	0.2
1994	10	0.1	6.6	1.0	0.0	0.0	0.9
1994	11	0.1	7.4	1.1	0.0	0.0	1.0
1994	12	0.1	10.0	1.5	0.0	0.0	1.4
1995	1	0.1	6.3	0.9	0.0	0.0	0.9
1995	2	0.0	5.7	0.8	0.0	0.0	0.8
1995	3	0.1	8.8	1.3	0.0	0.0	1.2
1995	4	0.1	7.3	1.1	0.0	0.0	1.0
1995	5	0.0	0.8	0.1	0.0	0.0	0.1
1995	6	0.0	0.0	0.0	0.0	0.0	0.0
1995	7	0.0	0.0	0.0	0.0	0.0	0.0
1995	8	0.0	0.0	0.0	0.0	0.0	0.0
1995	9	0.0	0.2	0.0	0.0	0.0	0.0
1995	10	0.1	8.8	1.3	0.0	0.0	1.2
1995	11	0.0	0.0	0.0	0.0	0.0	0.0
1995	12	0.1	9.9	1.5	0.0	0.0	1.4

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1996	1	0.1	6.3	0.9	0.0	0.0	0.9
1996	2	0.0	4.5	0.7	0.0	0.0	0.6
1996	3	0.1	8.0	1.2	0.0	0.0	1.1
1996	4	0.0	5.3	0.8	0.0	0.0	0.7
1996	5	0.0	0.3	0.0	0.0	0.0	0.0
1996	6	0.0	0.8	0.1	0.0	0.0	0.1
1996	7	0.0	0.0	0.0	0.0	0.0	0.0
1996	8	0.0	0.0	0.0	0.0	0.0	0.0
1996	9	0.0	1.7	0.2	0.0	0.0	0.2
1996	10	0.0	0.0	0.0	0.0	0.0	0.0
1996	11	0.1	8.7	1.3	0.0	0.0	1.2
1996	12	0.1	10.0	1.5	0.0	0.0	1.4
1997	1	0.1	6.4	0.9	0.0	0.0	0.9
1997	2	0.0	5.6	0.8	0.0	0.0	0.8
1997	3	0.1	6.9	1.0	0.0	0.0	1.0
1997	4	0.1	7.0	1.0	0.0	0.0	1.0
1997	5	0.0	1.4	0.2	0.0	0.0	0.2
1997	6	0.0	0.0	0.0	0.0	0.0	0.0
1997	7	0.0	0.0	0.0	0.0	0.0	0.0
1997	8	0.0	1.2	0.2	0.0	0.0	0.2
1997	9	0.0	0.0	0.0	0.0	0.0	0.0
1997	10	0.0	5.8	0.8	0.0	0.0	0.8
1997	11	0.1	7.9	1.2	0.0	0.0	1.1
1997	12	0.1	8.6	1.3	0.0	0.0	1.2
1998	1	0.0	5.3	0.8	0.0	0.0	0.7
1998	2	0.0	5.5	0.8	0.0	0.0	0.8
1998	3	0.1	8.2	1.2	0.0	0.0	1.1
1998	4	0.0	3.9	0.6	0.0	0.0	0.5
1998	5	0.0	1.4	0.2	0.0	0.0	0.2
1998	6	0.0	0.3	0.0	0.0	0.0	0.0
1998	7	0.0	0.0	0.0	0.0	0.0	0.0
1998	8	0.0	0.0	0.0	0.0	0.0	0.0
1998	9	0.0	5.2	0.8	0.0	0.0	0.7
1998	10	0.0	4.7	0.7	0.0	0.0	0.7
1998	11	0.1	5.9	0.9	0.0	0.0	0.8
1998	12	0.1	10.3	1.5	0.0	0.0	1.4
1999	1	0.1	6.5	0.9	0.0	0.0	0.9
1999	2	0.1	7.1	1.0	0.0	0.0	1.0
1999	3	0.1	8.6	1.3	0.0	0.0	1.2
1999	4	0.1	7.9	1.2	0.0	0.0	1.1
1999	5	0.0	0.3	0.0	0.0	0.0	0.0
1999	6	0.0	0.0	0.0	0.0	0.0	0.0
1999	7	0.0	0.0	0.0	0.0	0.0	0.0
1999	8	0.0	0.0	0.0	0.0	0.0	0.0
1999	9	0.0	0.0	0.0	0.0	0.0	0.0
1999	10	0.0	0.9	0.1	0.0	0.0	0.1
1999	11	0.1	9.8	1.4	0.0	0.0	1.3
1999	12	0.0	5.2	0.8	0.0	0.0	0.7
2000	1	0.1	6.4	0.9	0.0	0.0	0.9
2000	2	0.1	6.8	1.0	0.0	0.0	0.9
2000	3	0.1	6.1	0.9	0.0	0.0	0.8
2000	4	0.1	6.5	0.9	0.0	0.0	0.9
2000	5	0.0	0.0	0.0	0.0	0.0	0.0
2000	6	0.0	0.0	0.0	0.0	0.0	0.0
2000	7	0.0	0.0	0.0	0.0	0.0	0.0
2000	8	0.0	0.0	0.0	0.0	0.0	0.0
2000	9	0.0	2.4	0.3	0.0	0.0	0.3
2000	10	0.0	0.0	0.0	0.0	0.0	0.0
2000	11	0.1	9.0	1.3	0.0	0.0	1.2
2000	12	0.1	10.3	1.5	0.0	0.0	1.4
2001	1	0.1	6.6	1.0	0.0	0.0	0.9
2001	2	0.1	5.8	0.8	0.0	0.0	0.8
2001	3	0.1	9.1	1.3	0.0	0.0	1.3
2001	4	0.1	8.1	1.2	0.0	0.0	1.1
2001	5	0.0	0.7	0.1	0.0	0.0	0.1
2001	6	0.0	0.0	0.0	0.0	0.0	0.0
2001	7	0.0	0.0	0.0	0.0	0.0	0.0
2001	8	0.0	0.0	0.0	0.0	0.0	0.0
2001	9	0.0	2.4	0.3	0.0	0.0	0.3
2001	10	0.0	1.3	0.2	0.0	0.0	0.2
2001	11	0.0	4.7	0.7	0.0	0.0	0.6
2001	12	0.1	10.2	1.5	0.0	0.0	1.4

Source: JICA Study Team

Attachment 20：Forecasted Gross Water Requirements of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (2026: 2002 - 2013) (4/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2002	1	0.0	5.3	0.8	0.0	0.0	0.7
2002	2	0.1	6.9	1.0	0.0	0.0	1.0
2002	3	0.1	7.6	1.1	0.0	0.0	1.0
2002	4	0.0	5.3	0.8	0.0	0.0	0.7
2002	5	0.0	0.0	0.0	0.0	0.0	0.0
2002	6	0.0	0.0	0.0	0.0	0.0	0.0
2002	7	0.0	0.0	0.0	0.0	0.0	0.0
2002	8	0.0	0.0	0.0	0.0	0.0	0.0
2002	9	0.0	0.2	0.0	0.0	0.0	0.0
2002	10	0.0	0.6	0.1	0.0	0.0	0.1
2002	11	0.0	2.6	0.4	0.0	0.0	0.4
2002	12	0.1	10.0	1.5	0.0	0.0	1.4
2003	1	0.1	5.9	0.9	0.0	0.0	0.8
2003	2	0.1	6.4	0.9	0.0	0.0	0.9
2003	3	0.1	6.6	1.0	0.0	0.0	0.9
2003	4	0.1	8.0	1.2	0.0	0.0	1.1
2003	5	0.0	0.0	0.0	0.0	0.0	0.0
2003	6	0.0	0.0	0.0	0.0	0.0	0.0
2003	7	0.0	0.0	0.0	0.0	0.0	0.0
2003	8	0.0	0.0	0.0	0.0	0.0	0.0
2003	9	0.0	4.0	0.6	0.0	0.0	0.5
2003	10	0.0	5.5	0.8	0.0	0.0	0.8
2003	11	0.1	9.5	1.4	0.0	0.0	1.3
2003	12	0.1	10.2	1.5	0.0	0.0	1.4
2004	1	0.1	5.9	0.9	0.0	0.0	0.8
2004	2	0.1	6.8	1.0	0.0	0.0	0.9
2004	3	0.1	8.5	1.2	0.0	0.0	1.2
2004	4	0.0	2.0	0.3	0.0	0.0	0.3
2004	5	0.0	1.3	0.2	0.0	0.0	0.2
2004	6	0.0	0.4	0.1	0.0	0.0	0.1
2004	7	0.0	0.0	0.0	0.0	0.0	0.0
2004	8	0.0	0.2	0.0	0.0	0.0	0.0
2004	9	0.0	4.4	0.6	0.0	0.0	0.6
2004	10	0.0	3.9	0.6	0.0	0.0	0.5
2004	11	0.1	9.6	1.4	0.0	0.0	1.3
2004	12	0.1	10.4	1.5	0.0	0.0	1.4
2005	1	0.1	6.1	0.9	0.0	0.0	0.8
2005	2	0.1	6.5	1.0	0.0	0.0	0.9
2005	3	0.1	7.5	1.1	0.0	0.0	1.0
2005	4	0.0	5.0	0.7	0.0	0.0	0.7
2005	5	0.0	1.1	0.2	0.0	0.0	0.2
2005	6	0.0	0.0	0.0	0.0	0.0	0.0
2005	7	0.0	0.0	0.0	0.0	0.0	0.0
2005	8	0.0	0.0	0.0	0.0	0.0	0.0
2005	9	0.0	0.0	0.0	0.0	0.0	0.0
2005	10	0.0	2.6	0.4	0.0	0.0	0.4
2005	11	0.1	8.2	1.2	0.0	0.0	1.1
2005	12	0.1	9.2	1.3	0.0	0.0	1.3
2006	1	0.1	6.1	0.9	0.0	0.0	0.8
2006	2	0.1	6.1	0.9	0.0	0.0	0.8
2006	3	0.1	8.6	1.3	0.0	0.0	1.2
2006	4	0.0	4.9	0.7	0.0	0.0	0.7
2006	5	0.0	0.0	0.0	0.0	0.0	0.0
2006	6	0.0	0.7	0.1	0.0	0.0	0.1
2006	7	0.0	0.0	0.0	0.0	0.0	0.0
2006	8	0.0	5.2	0.8	0.0	0.0	0.7
2006	9	0.0	0.2	0.0	0.0	0.0	0.0
2006	10	0.1	7.4	1.1	0.0	0.0	1.0
2006	11	0.1	8.7	1.3	0.0	0.0	1.2
2006	12	0.1	10.1	1.5	0.0	0.0	1.4
2007	1	0.1	5.9	0.9	0.0	0.0	0.8
2007	2	0.0	4.0	0.6	0.0	0.0	0.6
2007	3	0.1	8.4	1.2	0.0	0.0	1.2
2007	4	0.0	5.0	0.7	0.0	0.0	0.7
2007	5	0.0	0.1	0.0	0.0	0.0	0.0
2007	6	0.0	0.0	0.0	0.0	0.0	0.0
2007	7	0.0	0.0	0.0	0.0	0.0	0.0
2007	8	0.0	0.4	0.1	0.0	0.0	0.1
2007	9	0.0	2.1	0.3	0.0	0.0	0.3
2007	10	0.0	0.0	0.0	0.0	0.0	0.0
2007	11	0.0	3.2	0.5	0.0	0.0	0.4
2007	12	0.1	10.0	1.5	0.0	0.0	1.4

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2008	1	0.0	5.8	0.8	0.0	0.0	0.8
2008	2	0.0	5.2	0.8	0.0	0.0	0.7
2008	3	0.1	7.9	1.2	0.0	0.0	1.1
2008	4	0.1	8.4	1.2	0.0	0.0	1.2
2008	5	0.0	1.0	0.2	0.0	0.0	0.1
2008	6	0.0	0.1	0.0	0.0	0.0	0.0
2008	7	0.0	0.0	0.0	0.0	0.0	0.0
2008	8	0.0	0.5	0.1	0.0	0.0	0.1
2008	9	0.0	0.0	0.0	0.0	0.0	0.0
2008	10	0.0	3.2	0.5	0.0	0.0	0.4
2008	11	0.1	9.5	1.4	0.0	0.0	1.3
2008	12	0.1	10.1	1.5	0.0	0.0	1.4
2009	1	0.1	6.5	1.0	0.0	0.0	0.9
2009	2	0.1	7.4	1.1	0.0	0.0	1.0
2009	3	0.1	8.2	1.2	0.0	0.0	1.1
2009	4	0.0	4.8	0.7	0.0	0.0	0.7
2009	5	0.0	1.1	0.2	0.0	0.0	0.1
2009	6	0.0	0.2	0.0	0.0	0.0	0.0
2009	7	0.0	0.0	0.0	0.0	0.0	0.0
2009	8	0.0	0.0	0.0	0.0	0.0	0.0
2009	9	0.0	0.0	0.0	0.0	0.0	0.0
2009	10	0.1	5.9	0.9	0.0	0.0	0.8
2009	11	0.1	6.7	1.0	0.0	0.0	0.9
2009	12	0.1	10.3	1.5	0.0	0.0	1.4
2010	1	0.1	6.5	1.0	0.0	0.0	0.9
2010	2	0.1	7.0	1.0	0.0	0.0	1.0
2010	3	0.1	8.1	1.2	0.0	0.0	1.1
2010	4	0.1	7.6	1.1	0.0	0.0	1.0
2010	5	0.0	1.1	0.2	0.0	0.0	0.2
2010	6	0.0	0.0	0.0	0.0	0.0	0.0
2010	7	0.0	0.0	0.0	0.0	0.0	0.0
2010	8	0.0	4.7	0.7	0.0	0.0	0.6
2010	9	0.0	2.1	0.3	0.0	0.0	0.3
2010	10	0.0	4.7	0.7	0.0	0.0	0.6
2010	11	0.1	9.0	1.3	0.0	0.0	1.2
2010	12	0.1	6.8	1.0	0.0	0.0	0.9
2011	1	0.1	6.3	0.9	0.0	0.0	0.9
2011	2	0.1	6.7	1.0	0.0	0.0	0.9
2011	3	0.1	8.7	1.3	0.0	0.0	1.2
2011	4	0.0	4.3	0.6	0.0	0.0	0.6
2011	5	0.0	0.7	0.1	0.0	0.0	0.1
2011	6	0.0	0.0	0.0	0.0	0.0	0.0
2011	7	0.0	0.0	0.0	0.0	0.0	0.0
2011	8	0.0	0.1	0.0	0.0	0.0	0.0
2011	9	0.0	0.0	0.0	0.0	0.0	0.0
2011	10	0.0	3.2	0.5	0.0	0.0	0.4
2011	11	0.1	9.0	1.3	0.0	0.0	1.2
2011	12	0.1	9.7	1.4	0.0	0.0	1.3
2012	1	0.1	6.0	0.9	0.0	0.0	0.8
2012	2	0.1	6.4	0.9	0.0	0.0	0.9
2012	3	0.0	5.5	0.8	0.0	0.0	0.8
2012	4	0.0	3.5	0.5	0.0	0.0	0.5
2012	5	0.0	0.3	0.1	0.0	0.0	0.0
2012	6	0.0	0.0	0.0	0.0	0.0	0.0
2012	7	0.0	0.0	0.0	0.0	0.0	0.0
2012	8	0.0	0.2	0.0	0.0	0.0	0.0
2012	9	0.0	4.2	0.6	0.0	0.0	0.6
2012	10	0.1	5.9	0.9	0.0	0.0	0.8
2012	11	0.1	8.7	1.3	0.0	0.0	1.2
2012	12	0.1	10.2	1.5	0.0	0.0	1.4
2013	1	0.1	6.2	0.9	0.0	0.0	0.9
2013	2	0.1	6.6	1.0	0.0	0.0	0.9
2013	3	0.1	8.1	1.2	0.0	0.0	1.1
2013	4	0.1	6.1	0.9	0.0	0.0	0.8
2013	5	0.0	0.0	0.0	0.0	0.0	0.0
2013	6	0.0	0.0	0.0	0.0	0.0	0.0
2013	7	0.0	0.0	0.0	0.0	0.0	0.0
2013	8	0.1	6.5	1.0	0.0	0.0	0.9
2013	9	0.0	1.0	0.1	0.0	0.0	0.1
2013	10	0.0	0.0	0.0	0.0	0.0	0.0
2013	11	0.1	8.9	1.3	0.0	0.0	1.2
2013	12	0.1	9.7	1.4	0.0	0.0	1.3

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 20：Forecasted Gross Water Requirements of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (2026: 2014 - 2019) (5/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2014	1	0.1	5.9	0.9	0.0	0.0	0.8
2014	2	0.0	5.2	0.8	0.0	0.0	0.7
2014	3	0.1	8.3	1.2	0.0	0.0	1.1
2014	4	0.1	8.0	1.2	0.0	0.0	1.1
2014	5	0.0	1.4	0.2	0.0	0.0	0.2
2014	6	0.0	0.7	0.1	0.0	0.0	0.1
2014	7	0.0	0.0	0.0	0.0	0.0	0.0
2014	8	0.0	0.0	0.0	0.0	0.0	0.0
2014	9	0.0	3.2	0.5	0.0	0.0	0.4
2014	10	0.1	9.4	1.4	0.0	0.0	1.3
2014	11	0.1	8.8	1.3	0.0	0.0	1.2
2014	12	0.1	9.7	1.4	0.0	0.0	1.3
2015	1	0.0	5.7	0.8	0.0	0.0	0.8
2015	2	0.1	5.9	0.9	0.0	0.0	0.8
2015	3	0.1	8.2	1.2	0.0	0.0	1.1
2015	4	0.0	5.4	0.8	0.0	0.0	0.7
2015	5	0.0	1.7	0.3	0.0	0.0	0.2
2015	6	0.0	0.0	0.0	0.0	0.0	0.0
2015	7	0.0	0.0	0.0	0.0	0.0	0.0
2015	8	0.1	6.0	0.9	0.0	0.0	0.8
2015	9	0.0	0.0	0.0	0.0	0.0	0.0
2015	10	0.0	3.6	0.5	0.0	0.0	0.5
2015	11	0.1	7.0	1.0	0.0	0.0	1.0
2015	12	0.1	8.6	1.3	0.0	0.0	1.2
2016	1	0.0	5.5	0.8	0.0	0.0	0.8
2016	2	0.1	5.8	0.9	0.0	0.0	0.8
2016	3	0.1	7.0	1.0	0.0	0.0	1.0
2016	4	0.1	6.9	1.0	0.0	0.0	0.9
2016	5	0.0	0.8	0.1	0.0	0.0	0.1
2016	6	0.0	1.1	0.2	0.0	0.0	0.2
2016	7	0.0	0.0	0.0	0.0	0.0	0.0
2016	8	0.0	0.1	0.0	0.0	0.0	0.0
2016	9	0.0	0.4	0.1	0.0	0.0	0.1
2016	10	0.0	4.0	0.6	0.0	0.0	0.6
2016	11	0.1	7.1	1.0	0.0	0.0	1.0
2016	12	0.1	10.0	1.5	0.0	0.0	1.4
2017	1	0.1	6.6	1.0	0.0	0.0	0.9
2017	2	0.1	6.5	0.9	0.0	0.0	0.9
2017	3	0.0	4.4	0.6	0.0	0.0	0.6
2017	4	0.0	1.8	0.3	0.0	0.0	0.3
2017	5	0.0	1.4	0.2	0.0	0.0	0.2
2017	6	0.0	0.0	0.0	0.0	0.0	0.0
2017	7	0.0	0.0	0.0	0.0	0.0	0.0
2017	8	0.0	0.1	0.0	0.0	0.0	0.0
2017	9	0.0	0.0	0.0	0.0	0.0	0.0
2017	10	0.0	3.8	0.6	0.0	0.0	0.5
2017	11	0.1	8.7	1.3	0.0	0.0	1.2
2017	12	0.1	8.2	1.2	0.0	0.0	1.1
2018	1	0.0	5.0	0.7	0.0	0.0	0.7
2018	2	0.1	6.1	0.9	0.0	0.0	0.8
2018	3	0.1	8.0	1.2	0.0	0.0	1.1
2018	4	0.1	6.5	0.9	0.0	0.0	0.9
2018	5	0.0	1.0	0.1	0.0	0.0	0.1
2018	6	0.0	0.0	0.0	0.0	0.0	0.0
2018	7	0.0	0.0	0.0	0.0	0.0	0.0
2018	8	0.0	5.6	0.8	0.0	0.0	0.8
2018	9	0.0	3.1	0.5	0.0	0.0	0.4
2018	10	0.0	2.6	0.4	0.0	0.0	0.4
2018	11	0.1	8.6	1.3	0.0	0.0	1.2
2018	12	0.1	9.7	1.4	0.0	0.0	1.3
2019	1	0.1	6.2	0.9	0.0	0.0	0.9
2019	2	0.1	5.8	0.9	0.0	0.0	0.8
2019	3	0.1	6.1	0.9	0.0	0.0	0.8
2019	4	0.1	7.9	1.2	0.0	0.0	1.1
2019	5	0.0	1.8	0.3	0.0	0.0	0.2
2019	6	0.0	0.6	0.1	0.0	0.0	0.1
2019	7	0.0	0.0	0.0	0.0	0.0	0.0
2019	8	0.0	0.6	0.1	0.0	0.0	0.1
2019	9	0.0	1.9	0.3	0.0	0.0	0.3
2019	10	0.1	5.9	0.9	0.0	0.0	0.8
2019	11	0.1	5.8	0.9	0.0	0.0	0.8
2019	12	0.1	10.3	1.5	0.0	0.0	1.4

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 21：Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1966 - 1971) (1/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1966	1	0.0	0.0	0.0	0.0	3.9	7.7	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1966	2	0.0	0.0	0.0	0.0	4.3	8.6	6.5	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1966	3	0.0	0.0	0.0	0.0	5.5	10.8	8.2	9.1	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
1966	4	0.0	0.0	0.0	0.0	5.4	10.7	8.1	8.9	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	0.9	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.6	2.9	0.0	0.8	2.0	0.9
1966	5	0.0	0.0	0.0	0.0	0.6	1.2	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.8	0.3	0.0	0.1	0.2	0.1
1966	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	7	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1966	8	0.0	0.0	0.0	0.0	6.2	12.2	9.3	10.2	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.3	1.1
1966	9	0.0	0.0	0.0	0.0	1.1	2.2	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1966	10	0.0	0.0	0.0	0.0	3.3	6.6	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1966	11	0.0	0.0	0.0	0.0	5.6	11.1	8.4	9.3	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.0	0.0	0.8	2.1	1.0
1966	12	0.0	0.0	0.0	0.0	4.4	8.6	6.6	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1967	1	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1967	2	0.0	0.0	0.0	0.0	4.4	8.6	6.5	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1967	3	0.0	0.0	0.0	0.0	4.4	8.8	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.5	2.4	0.0	0.6	1.6	0.8
1967	4	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.3	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1967	5	0.0	0.0	0.0	0.0	1.3	2.7	2.0	2.2	0.2	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.7	0.7	0.0	0.2	0.5	0.2
1967	6	0.0	0.0	0.0	0.0	1.0	2.0	1.5	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.1	0.4	0.2
1967	7	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1967	8	0.0	0.0	0.0	0.0	3.1	6.1	4.7	5.1	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1967	9	0.0	0.0	0.0	0.0	1.2	2.4	1.8	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.6	0.0	0.2	0.4	0.2
1967	10	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1967	11	0.0	0.0	0.0	0.0	6.2	12.3	9.3	10.3	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.3	1.1
1967	12	0.0	0.0	0.0	0.0	7.3	14.4	10.9	12.0	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.1	4.0	8.9	4.0	0.0	1.0	2.7	1.3
1968	1	0.0	0.0	0.0	0.0	4.1	8.0	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1968	2	0.0	0.0	0.0	0.0	4.4	8.8	6.7	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.5	2.4	0.0	0.6	1.6	0.8
1968	3	0.0	0.0	0.0	0.0	5.7	11.3	8.6	9.5	0.7	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.6	2.2	1.0	1.0	2.0	5.5	0.7	0.9	1.0	0.5	0.1	0.0	4.0	3.1	7.0	3.1	0.0	0.8	2.1	1.0
1968	4	0.0	0.0	0.0	0.0	5.0	9.9	7.5	8.3	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.7	0.0	0.7	1.8	0.9
1968	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	7	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1968	8	0.0	0.0	0.0	0.0	4.6	9.1	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
1968	9	0.0	0.0	0.0	0.0	1.6	3.2	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1968	10	0.0	0.0	0.0	0.0	0.4	0.7	0.6	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.4	0.0	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
1968	11	0.0	0.0	0.0	0.0	6.2	12.3	9.4	10.3	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	6.0	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.7	3.4	0.0	0.9	2.3	1.1
1968	12	0.0	0.0	0.0	0.0	7.3	14.4	10.9	12.0	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.6	7.0	0.9	1.2	1.2	0.7	0.1	0.0	5.1	4.0	8.9	4.0	0.0	1.0	2.7	1.3
1969	1	0.0	0.0	0.0	0.0	3.8	7.6	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.6	1.4	0.7
1969	2	0.0	0.0	0.0	0.0	4.3	8.4	6.4	7.1	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1969	3	0.0	0.0	0.0	0.0	5.3	10.6	8.0	8.8	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.6	2.9	0.0	0.8	2.0	0.9
1969	4	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.8	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1969	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	6	0.0	0.0	0.0	0.0	1.2	2.4	1.8	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1969	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	8	0.0	0.0	0.0	0.0	2.4	4.7	3.5	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1969	9	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1969	10	0.0	0.0	0.0	0.0	5.9	11.8	8.9	9.8	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.7	0.8	1.0	1.0	0.6	0.1	0.0	4.1	3.3	7.3	3.2	0.0	0.9	2.2	1.0
1969	11	0.0	0.0	0.0	0.0	4.8	9.5	7.2	7.9	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.8	0.8
1969	12	0.0	0.0	0.0	0.0	7.2	14.3	10.9	12.0	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.8	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.9	3.9	0.0	1.0	2.7	1.2
1970	1	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1970	2	0.0	0.0	0.0	0.0	3.1	6.1	4.7	5.1	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1970	3	0.0	0.0	0.0	0.0	5.9	11.7	8.8	9.8	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.6	0.8	1.0	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.2	1.0
1970	4	0.0	0.0	0.0	0.0	5.1	10.2	7.7	8.5	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
1970	5	0.0	0.0	0.0	0.0	1.1	2.2	1.7	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1970	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	8	0.0	0.0	0.0	0.0	3.9	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1970	9	0.0	0.0	0.0	0.0	1.4	2.8	2.1	2.3	0.2	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
1970	10	0.0	0.0	0.0	0.0	2.3	4.5	3.4	3.8	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1970	11	0.0	0.0	0.0	0.0	3.0	6.0	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1970	12	0.0	0.0	0.0	0.0	7.4	14.5	11.0	12.2	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.6	7.0	1.0	1.2	1.2	0.7	0.1	0.0	5.1	4.1	9.0	4.0	0.0	1.1	2.7	1.3
1971	1	0.0	0.0	0.0	0.0	4.0	8.0	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1971	2	0.0	0.0	0.0	0.0	4.2	8.4	6.3	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.6	0.7
1971	3	0.0	0.0	0.0	0.0	6.2	12.2	9.3	10.2	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.3	1.1
1971	4	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1971	5	0.0	0.0	0.0	0.0	0.9	1.7	1.3	1.4	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.2	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.1
1971	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	7	0.0	0.0	0.0	0.0	0.6	1.2	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1971	8	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1971	9	0.0	0.0	0.0	0.0	2.3	4.5	3.4	3.8	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1971	10	0.0	0.0	0.0	0.0	5.4	10.8	8.2	9.0	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
1971	11	0.0	0.0	0.0	0.0	4.8	9.5	7.2	8.0	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	5.9	2.6	0.0	0.7	1.8	0.8
1971	12	0.0	0.0	0.0	0.0	7.3	14.5	11.0	12.1	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.6	7.0	1.0	1.2	1.2	0.7	0.1	0.0	5.1	4.0	9.0	4.0	0.0	1.0	2.7	1.3

Source: JICA Study Team

Attachment 21：Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1972 - 1977) (2/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1972	1	0.0	0.0	0.0	0.0	4.1	8.1	6.1	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.0	2.2	0.0	0.6	1.5	0.7
1972	2	0.0	0.0	0.0	0.0	4.3	8.5	6.4	7.1	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1972	3	0.0	0.0	0.0	0.0	6.2	12.2	9.3	10.2	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.3	1.1
1972	4	0.0	0.0	0.0	0.0	5.2	10.2	7.8	8.6	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
1972	5	0.0	0.0	0.0	0.0	1.2	2.4	1.8	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.4	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.7	1.5	0.7	0.0	0.2	0.4	0.2
1972	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1972	7	0.0	0.0	0.0	0.0	0.6	1.2	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1972	8	0.0	0.0	0.0	0.0	3.2	6.3	4.8	5.3	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.5
1972	9	0.0	0.0	0.0	0.0	4.6	9.2	7.0	7.7	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.8	0.8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
1972	10	0.0	0.0	0.0	0.0	6.1	12.1	9.2	10.1	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.3	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.5	3.3	0.0	0.9	2.3	1.1
1972	11	0.0	0.0	0.0	0.0	6.4	12.7	9.7	10.7	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.8	2.5	1.1	1.1	2.3	6.2	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.5	7.9	3.5	0.0	0.9	2.4	1.1
1972	12	0.0	0.0	0.0	0.0	7.4	14.6	11.1	12.2	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.6	7.1	1.0	1.2	1.2	0.7	0.1	0.0	5.1	4.1	9.1	4.0	0.0	1.1	2.7	1.3
1973	1	0.0	0.0	0.0	0.0	4.1	8.2	6.2	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.2	0.0	0.6	1.5	0.7
1973	2	0.0	0.0	0.0	0.0	4.4	8.8	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1973	3	0.0	0.0	0.0	0.0	5.3	10.4	7.9	8.7	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	1.9	0.9
1973	4	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.8	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.9	0.4
1973	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	7	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1973	8	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1973	9	0.0	0.0	0.0	0.0	3.3	6.5	4.9	5.4	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1973	10	0.0	0.0	0.0	0.0	3.0	6.0	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
1973	11	0.0	0.0	0.0	0.0	2.3	4.5	3.4	3.7	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1973	12	0.0	0.0	0.0	0.0	7.2	14.2	10.8	11.9	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.7	1.2	1.3	2.6	6.8	0.9	1.2	1.2	0.7	0.1	0.0	5.0	3.9	8.8	3.9	0.0	1.0	2.6	1.2
1974	1	0.0	0.0	0.0	0.0	4.0	7.8	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1974	2	0.0	0.0	0.0	0.0	4.1	8.2	6.2	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1974	3	0.0	0.0	0.0	0.0	6.1	12.1	9.2	10.1	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.3	1.1	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.5	3.3	0.0	0.9	2.3	1.1
1974	4	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1974	5	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1974	6	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1974	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	8	0.0	0.0	0.0	0.0	5.2	10.2	7.8	8.6	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
1974	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	10	0.0	0.0	0.0	0.0	1.1	2.1	1.6	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.2	0.4	0.2
1974	11	0.0	0.0	0.0	0.0	5.5	10.9	8.2	9.1	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
1974	12	0.0	0.0	0.0	0.0	7.1	14.1	10.7	11.8	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.8	0.9	1.1	1.2	0.7	0.1	0.0	5.0	3.9	8.7	3.9	0.0	1.0	2.6	1.2
1975	1	0.0	0.0	0.0	0.0	4.0	7.8	5.9	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1975	2	0.0	0.0	0.0	0.0	4.2	8.2	6.2	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1975	3	0.0	0.0	0.0	0.0	6.0	12.0	9.1	10.0	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
1975	4	0.0	0.0	0.0	0.0	3.0	6.0	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1975	5	0.0	0.0	0.0	0.0	1.1	2.3	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1975	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	8	0.0	0.0	0.0	0.0	4.5	9.0	6.8	7.5	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.6	1.7	0.8
1975	9	0.0	0.0	0.0	0.0	1.9	3.7	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1975	10	0.0	0.0	0.0	0.0	3.9	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.5	0.7
1975	11	0.0	0.0	0.0	0.0	3.0	5.9	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1975	12	0.0	0.0	0.0	0.0	7.2	14.2	10.8	11.9	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.8	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.9	3.9	0.0	1.0	2.7	1.2
1976	1	0.0	0.0	0.0	0.0	4.0	7.9	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1976	2	0.0	0.0	0.0	0.0	4.2	8.4	6.3	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.6	0.7
1976	3	0.0	0.0	0.0	0.0	6.2	12.4	9.4	10.3	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	6.0	0.8	1.0	1.0	0.6	0.1	0.0	4.4	3.4	7.7	3.4	0.0	0.9	2.3	1.1
1976	4	0.0	0.0	0.0	0.0	3.4	6.8	5.1	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1976	5	0.0	0.0	0.0	0.0	0.6	1.2	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1976	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	8	0.0	0.0	0.0	0.0	3.9	7.7	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1976	9	0.0	0.0	0.0	0.0	0.5	1.0	0.7	0.8	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6	0.3	0.0	0.1	0.2	0.1
1976	10	0.0	0.0	0.0	0.0	4.0	8.0	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1976	11	0.0	0.0	0.0	0.0	3.3	6.5	4.9	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1976	12	0.0	0.0	0.0	0.0	7.2	14.3	10.8	11.9	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.8	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.9	3.9	0.0	1.0	2.7	1.2
1977	1	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.9	4.1	1.8	0.0	0.5	1.2	0.6
1977	2	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1977	3	0.0	0.0	0.0	0.0	6.1	12.0	9.1	10.0	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.3	1.0	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.5	3.3	0.0	0.9	2.2	1.0
1977	4	0.0	0.0	0.0	0.0	0.8	1.7	1.3	1.4	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.5	1.0	0.5	0.0	0.1	0.3	0.1
1977	5	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1977	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	8	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1977	9	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.9	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1977	10	0.0	0.0	0.0	0.0	5.7	11.2	8.5	9.4	0.7	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	4.0	3.1	7.0	3.1	0.0	0.8	2.1	1.0
1977	11	0.0	0.0	0.0	0.0	5.0	9.8	7.5	8.2	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.6	0.8	0.8	0.5	0.0	0.0	3.5	2.7	6.1	2.7	0.0	0.7	1.8	0.9
1977	12	0.0	0.0	0.0	0.0	7.2	14.2	10.8	11.9	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.8	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.9	3.9	0.0	1.0	2.7	1.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 21：Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1978 - 1983) (3/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1978	1	0.0	0.0	0.0	0.0	3.9	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1978	2	0.0	0.0	0.0	0.0	4.3	8.4	6.4	7.1	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.3	5.2	2.3	0.0	0.6	1.6	0.7
1978	3	0.0	0.0	0.0	0.0	6.0	11.9	9.0	10.0	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
1978	4	0.0	0.0	0.0	0.0	5.8	11.5	8.7	9.6	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.5	0.8	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.1	3.2	0.0	0.8	2.1	1.0
1978	5	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.4	0.3	0.6	0.3	0.0	0.1	0.2	0.1
1978	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	7	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1978	8	0.0	0.0	0.0	0.0	6.6	13.0	9.9	10.9	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.6	8.1	3.6	0.0	0.9	2.4	1.1
1978	9	0.0	0.0	0.0	0.0	0.4	0.7	0.5	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.4	0.2	0.0	0.1	0.1	0.1
1978	10	0.0	0.0	0.0	0.0	4.0	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1978	11	0.0	0.0	0.0	0.0	6.4	12.7	9.6	10.6	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.5	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.5	7.9	3.5	0.0	0.9	2.4	1.1
1978	12	0.0	0.0	0.0	0.0	7.3	14.4	10.9	12.1	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.6	7.0	0.9	1.2	1.2	0.7	0.1	0.0	5.1	4.0	9.0	4.0	0.0	1.0	2.7	1.3
1979	1	0.0	0.0	0.0	0.0	4.0	7.9	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1979	2	0.0	0.0	0.0	0.0	4.1	8.2	6.2	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1979	3	0.0	0.0	0.0	0.0	6.2	12.2	9.3	10.2	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.3	1.1
1979	4	0.0	0.0	0.0	0.0	4.6	9.0	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
1979	5	0.0	0.0	0.0	0.0	0.6	1.2	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1979	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	9	0.0	0.0	0.0	0.0	0.7	1.4	1.1	1.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
1979	10	0.0	0.0	0.0	0.0	5.4	10.8	8.2	9.0	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
1979	11	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
1979	12	0.0	0.0	0.0	0.0	6.0	11.9	9.0	9.9	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.1	5.7	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
1980	1	0.0	0.0	0.0	0.0	3.6	7.1	5.4	6.0	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1980	2	0.0	0.0	0.0	0.0	2.5	4.9	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1980	3	0.0	0.0	0.0	0.0	4.1	8.2	6.2	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1980	4	0.0	0.0	0.0	0.0	5.2	10.4	7.9	8.7	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.8	1.9	0.9
1980	5	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1980	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	8	0.0	0.0	0.0	0.0	4.1	8.1	6.1	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.3	5.0	2.2	0.0	0.6	1.5	0.7
1980	9	0.0	0.0	0.0	0.0	0.8	1.6	1.2	1.3	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	1.0	0.4	0.0	0.1	0.3	0.1
1980	10	0.0	0.0	0.0	0.0	1.4	2.7	2.0	2.3	0.2	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.7	0.0	0.2	0.5	0.2
1980	11	0.0	0.0	0.0	0.0	6.3	12.4	9.4	10.4	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	6.0	0.8	1.0	1.0	0.6	0.1	0.0	4.4	3.5	7.7	3.4	0.0	0.9	2.3	1.1
1980	12	0.0	0.0	0.0	0.0	7.2	14.2	10.8	11.9	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.7	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.8	3.9	0.0	1.0	2.7	1.2
1981	1	0.0	0.0	0.0	0.0	3.9	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.5	0.7
1981	2	0.0	0.0	0.0	0.0	3.9	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1981	3	0.0	0.0	0.0	0.0	3.8	7.6	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.6	1.4	0.7
1981	4	0.0	0.0	0.0	0.0	0.7	1.4	1.1	1.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
1981	5	0.0	0.0	0.0	0.0	0.5	1.0	0.7	0.8	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6	0.3	0.0	0.1	0.2	0.1
1981	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	7	0.0	0.0	0.0	0.0	0.3	0.6	0.5	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1981	8	0.0	0.0	0.0	0.0	5.2	10.4	7.9	8.7	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.7	2.9	6.4	2.9	0.0	0.8	1.9	0.9
1981	9	0.0	0.0	0.0	0.0	1.3	2.6	2.0	2.2	0.2	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1981	10	0.0	0.0	0.0	0.0	6.4	12.6	9.5	10.5	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.5	0.0	0.9	2.3	1.1
1981	11	0.0	0.0	0.0	0.0	5.7	11.2	8.5	9.4	0.7	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	4.0	3.1	7.0	3.1	0.0	0.8	2.1	1.0
1981	12	0.0	0.0	0.0	0.0	7.2	14.3	10.8	11.9	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.8	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.9	3.9	0.0	1.0	2.7	1.2
1982	1	0.0	0.0	0.0	0.0	4.0	8.0	6.0	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1982	2	0.0	0.0	0.0	0.0	2.7	5.4	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1982	3	0.0	0.0	0.0	0.0	6.1	12.1	9.2	10.2	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.3	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.3	0.0	0.9	2.3	1.1
1982	4	0.0	0.0	0.0	0.0	4.2	8.4	6.4	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.6	0.7
1982	5	0.0	0.0	0.0	0.0	1.2	2.3	1.8	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1982	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	7	0.0	0.0	0.0	0.0	0.3	0.6	0.5	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1982	8	0.0	0.0	0.0	0.0	3.9	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1982	9	0.0	0.0	0.0	0.0	0.9	1.7	1.3	1.4	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.2	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.1
1982	10	0.0	0.0	0.0	0.0	6.3	12.4	9.4	10.4	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	6.0	0.8	1.0	1.0	0.6	0.1	0.0	4.4	3.5	7.7	3.4	0.0	0.9	2.3	1.1
1982	11	0.0	0.0	0.0	0.0	6.0	11.9	9.0	9.9	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.1	5.7	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
1982	12	0.0	0.0	0.0	0.0	7.2	14.2	10.8	11.9	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.8	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.9	3.9	0.0	1.0	2.7	1.2
1983	1	0.0	0.0	0.0	0.0	4.0	7.9	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1983	2	0.0	0.0	0.0	0.0	3.4	6.8	5.1	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1983	3	0.0	0.0	0.0	0.0	3.9	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.5	0.7
1983	4	0.0	0.0	0.0	0.0	1.8	3.6	2.7	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1983	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	6	0.0	0.0	0.0	0.0	0.4	0.7	0.5	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.4	0.2	0.0	0.1	0.1	0.1
1983	7	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
1983	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	9	0.0	0.0	0.0	0.0	2.2	4.3	3.2	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1983	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	11	0.0	0.0	0.0	0.0	1.9	3.7	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1983	12	0.0	0.0	0.0	0.0	6.3	12.5	9.5	10.5	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.4	0.0	0.9	2.3	1.1

Source: JICA Study Team

Attachment 21：Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1984 - 1989) (4/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1984	1	0.0	0.0	0.0	0.0	3.5	6.9	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1984	2	0.0	0.0	0.0	0.0	4.3	8.4	6.4	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.3	5.2	2.3	0.0	0.6	1.6	0.7
1984	3	0.0	0.0	0.0	0.0	6.0	11.8	8.9	9.9	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.7	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.3	3.2	0.0	0.9	2.2	1.0
1984	4	0.0	0.0	0.0	0.0	5.0	9.9	7.5	8.2	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.6	0.8	0.8	0.5	0.0	0.0	3.5	2.7	6.1	2.7	0.0	0.7	1.8	0.9
1984	5	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
1984	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	7	0.0	0.0	0.0	0.0	0.3	0.6	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1984	8	0.0	0.0	0.0	0.0	2.1	4.2	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1984	9	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
1984	10	0.0	0.0	0.0	0.0	4.7	9.3	7.1	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
1984	11	0.0	0.0	0.0	0.0	6.2	12.2	9.3	10.2	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.3	1.1
1984	12	0.0	0.0	0.0	0.0	7.2	14.3	10.9	12.0	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.8	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.9	3.9	0.0	1.0	2.7	1.2
1985	1	0.0	0.0	0.0	0.0	4.0	7.9	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1985	2	0.0	0.0	0.0	0.0	4.2	8.3	6.3	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1985	3	0.0	0.0	0.0	0.0	4.9	9.7	7.4	8.1	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
1985	4	0.0	0.0	0.0	0.0	5.1	10.0	7.6	8.4	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.8	0.0	0.7	1.9	0.9
1985	5	0.0	0.0	0.0	0.0	0.6	1.1	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1985	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	7	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
1985	8	0.0	0.0	0.0	0.0	0.4	0.8	0.6	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
1985	9	0.0	0.0	0.0	0.0	4.6	9.1	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
1985	10	0.0	0.0	0.0	0.0	6.7	13.2	10.0	11.1	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.6	1.2	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.2	3.6	0.0	1.0	2.5	1.2
1985	11	0.0	0.0	0.0	0.0	3.1	6.2	4.7	5.2	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.5	1.2	0.5
1985	12	0.0	0.0	0.0	0.0	7.0	13.8	10.5	11.5	0.8	1.3	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.7	0.9	1.1	1.2	0.6	0.1	0.0	4.9	3.8	8.6	3.8	0.0	1.0	2.6	1.2
1986	1	0.0	0.0	0.0	0.0	3.9	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1986	2	0.0	0.0	0.0	0.0	4.1	8.1	6.2	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.2	0.0	0.6	1.5	0.7
1986	3	0.0	0.0	0.0	0.0	6.2	12.3	9.3	10.3	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.3	1.1
1986	4	0.0	0.0	0.0	0.0	2.9	5.8	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1986	5	0.0	0.0	0.0	0.0	1.1	2.1	1.6	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.3	0.6	0.0	0.2	0.4	0.2
1986	6	0.0	0.0	0.0	0.0	0.4	0.7	0.5	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.1	0.1	0.1
1986	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1986	8	0.0	0.0	0.0	0.0	4.0	7.9	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1986	9	0.0	0.0	0.0	0.0	0.6	1.3	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.4	0.8	0.3	0.0	0.1	0.2	0.1
1986	10	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1986	11	0.0	0.0	0.0	0.0	2.9	5.7	4.3	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1986	12	0.0	0.0	0.0	0.0	7.1	14.1	10.7	11.8	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.3	2.6	6.8	0.9	1.2	1.2	0.7	0.1	0.0	5.0	3.9	8.8	3.9	0.0	1.0	2.6	1.2
1987	1	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1987	2	0.0	0.0	0.0	0.0	3.1	6.0	4.6	5.1	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1987	3	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1987	4	0.0	0.0	0.0	0.0	0.6	1.1	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.7	0.3	0.0	0.1	0.2	0.1
1987	5	0.0	0.0	0.0	0.0	1.1	2.1	1.6	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.2	0.4	0.2
1987	6	0.0	0.0	0.0	0.0	0.7	1.3	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.8	0.4	0.0	0.1	0.2	0.1
1987	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	8	0.0	0.0	0.0	0.0	0.9	1.8	1.4	1.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.3	0.9	0.1	0.1	0.2	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.2
1987	9	0.0	0.0	0.0	0.0	1.8	3.5	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
1987	10	0.0	0.0	0.0	0.0	6.6	13.0	9.9	10.9	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.6	8.1	3.6	0.0	0.9	2.4	1.1
1987	11	0.0	0.0	0.0	0.0	2.5	4.9	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1987	12	0.0	0.0	0.0	0.0	6.5	13.0	9.8	10.8	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.1	2.3	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.6	8.1	3.6	0.0	0.9	2.4	1.1
1988	1	0.0	0.0	0.0	0.0	3.9	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.5	0.7
1988	2	0.0	0.0	0.0	0.0	4.0	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1988	3	0.0	0.0	0.0	0.0	4.1	8.1	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1988	4	0.0	0.0	0.0	0.0	1.9	3.8	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.3	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
1988	5	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1988	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	8	0.0	0.0	0.0	0.0	1.1	2.2	1.7	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1988	9	0.0	0.0	0.0	0.0	1.0	1.9	1.5	1.6	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.5	1.2	0.5	0.0	0.1	0.4	0.2
1988	10	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1988	11	0.0	0.0	0.0	0.0	5.2	10.2	7.8	8.6	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
1988	12	0.0	0.0	0.0	0.0	6.5	12.9	9.8	10.8	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.1	2.3	6.3	0.8	1.1	1.1	0.6	0.1	0.0	4.6	3.6	8.0	3.6	0.0	0.9	2.4	1.1
1989	1	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1989	2	0.0	0.0	0.0	0.0	3.9	7.7	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1989	3	0.0	0.0	0.0	0.0	5.8	11.5	8.7	9.6	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.1	1.0
1989	4	0.0	0.0	0.0	0.0	2.6	5.2	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.5	3.3	1.4	0.0	0.4	1.0	0.5
1989	5	0.0	0.0	0.0	0.0	0.9	1.8	1.4	1.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.3	0.9	0.1	0.1	0.2	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.2
1989	6	0.0	0.0	0.0	0.0	0.5	1.0	0.7	0.8	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6	0.3	0.0	0.1	0.2	0.1
1989	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	8	0.0	0.0	0.0	0.0	8.0	15.8	12.0	13.3	0.9	1.5	0.0	0.1	0.8	0.8	0.0	0.1	0.0	0.0	1.1	2.2	3.1	1.4	1.4	2.9	7.7	1.0	1.3	1.3	0.7	0.1	0.0	5.6	4.4	9.8	4.4	0.0	1.1	3.0	1.4
1989	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	11	0.0	0.0	0.0	0.0	4.7	9.3	7.1	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
1989	12	0.0	0.0	0.0	0.0	7.1	14.1	10.7	11.8	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.3	2.6	6.8	0.9	1.2	1.2	0.7	0.1	0.0	5.0	3.9	8.8	3.9	0.0	1.0	2.6	1.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 21：Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1990 - 1995) (5/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1990	1	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1990	2	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1990	3	0.0	0.0	0.0	0.0	3.1	6.2	4.7	5.2	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.5	1.2	0.5
1990	4	0.0	0.0	0.0	0.0	0.4	0.8	0.6	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.2	0.1
1990	5	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1990	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	8	0.0	0.0	0.0	0.0	7.9	15.6	11.9	13.1	0.9	1.5	0.0	0.1	0.8	0.8	0.0	0.0	0.0	0.0	1.0	2.2	3.0	1.4	1.4	2.8	7.5	1.0	1.3	1.3	0.7	0.1	0.0	5.5	4.4	9.7	4.3	0.0	1.1	2.9	1.4
1990	9	0.0	0.0	0.0	0.0	1.1	2.2	1.7	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
1990	10	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1990	11	0.0	0.0	0.0	0.0	3.1	6.1	4.6	5.1	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1990	12	0.0	0.0	0.0	0.0	6.0	11.8	8.9	9.9	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.7	0.8	1.0	1.0	0.6	0.1	0.0	4.1	3.3	7.3	3.2	0.0	0.9	2.2	1.0
1991	1	0.0	0.0	0.0	0.0	3.4	6.8	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1991	2	0.0	0.0	0.0	0.0	4.1	8.1	6.2	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.0	2.2	0.0	0.6	1.5	0.7
1991	3	0.0	0.0	0.0	0.0	5.6	11.1	8.4	9.3	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.0	0.0	0.8	2.1	1.0
1991	4	0.0	0.0	0.0	0.0	1.9	3.8	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1991	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	8	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1991	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	10	0.0	0.0	0.0	0.0	4.1	8.1	6.1	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.3	5.0	2.2	0.0	0.6	1.5	0.7
1991	11	0.0	0.0	0.0	0.0	2.8	5.5	4.2	4.6	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1991	12	0.0	0.0	0.0	0.0	6.7	13.3	10.1	11.1	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.6	1.2	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.3	3.7	0.0	1.0	2.5	1.2
1992	1	0.0	0.0	0.0	0.0	3.6	7.1	5.4	6.0	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1992	2	0.0	0.0	0.0	0.0	2.0	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.8	0.4
1992	3	0.0	0.0	0.0	0.0	5.9	11.6	8.8	9.7	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.2	1.0
1992	4	0.0	0.0	0.0	0.0	5.2	10.2	7.8	8.5	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
1992	5	0.0	0.0	0.0	0.0	1.0	1.9	1.5	1.6	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.3	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.5	1.2	0.5	0.0	0.1	0.4	0.2
1992	6	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1992	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	8	0.0	0.0	0.0	0.0	5.4	10.7	8.1	9.0	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	2.9	0.0	0.8	2.0	0.9
1992	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	10	0.0	0.0	0.0	0.0	2.2	4.4	3.3	3.7	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1992	11	0.0	0.0	0.0	0.0	5.5	10.9	8.3	9.1	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.8	3.0	0.0	0.8	2.0	0.9
1992	12	0.0	0.0	0.0	0.0	6.5	12.9	9.8	10.8	0.7	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.1	2.3	6.2	0.8	1.1	1.1	0.6	0.1	0.0	4.5	3.6	8.0	3.5	0.0	0.9	2.4	1.1
1993	1	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
1993	2	0.0	0.0	0.0	0.0	2.1	4.1	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.8	0.4
1993	3	0.0	0.0	0.0	0.0	2.6	5.1	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.4
1993	4	0.0	0.0	0.0	0.0	2.6	5.1	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.4
1993	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	7	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1993	8	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
1993	9	0.0	0.0	0.0	0.0	0.9	1.7	1.3	1.4	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.6	0.5	1.0	0.5	0.0	0.1	0.3	0.1
1993	10	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1993	11	0.0	0.0	0.0	0.0	6.0	12.0	9.1	10.0	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
1993	12	0.0	0.0	0.0	0.0	7.2	14.2	10.8	11.9	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.7	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.8	3.9	0.0	1.0	2.7	1.2
1994	1	0.0	0.0	0.0	0.0	3.8	7.6	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.6	1.4	0.7
1994	2	0.0	0.0	0.0	0.0	4.2	8.3	6.3	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.6	0.7
1994	3	0.0	0.0	0.0	0.0	3.0	6.0	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1994	4	0.0	0.0	0.0	0.0	1.0	2.0	1.5	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.1	0.4	0.2
1994	5	0.0	0.0	0.0	0.0	1.3	2.6	2.0	2.2	0.2	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.3	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1994	6	0.0	0.0	0.0	0.0	0.3	0.6	0.5	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1994	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	8	0.0	0.0	0.0	0.0	4.0	8.0	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1994	9	0.0	0.0	0.0	0.0	3.3	6.5	4.9	5.4	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1994	10	0.0	0.0	0.0	0.0	4.0	8.0	6.0	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1994	11	0.0	0.0	0.0	0.0	5.5	10.9	8.2	9.1	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
1994	12	0.0	0.0	0.0	0.0	7.1	14.1	10.7	11.8	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.3	2.6	6.8	0.9	1.2	1.2	0.7	0.1	0.0	5.0	3.9	8.8	3.9	0.0	1.0	2.6	1.2
1995	1	0.0	0.0	0.0	0.0	3.9	7.7	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1995	2	0.0	0.0	0.0	0.0	3.9	7.7	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1995	3	0.0	0.0	0.0	0.0	5.9	11.6	8.8	9.7	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.2	1.0
1995	4	0.0	0.0	0.0	0.0	5.3	10.5	8.0	8.8	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	2.0	0.9
1995	5	0.0	0.0	0.0	0.0	0.7	1.3	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.8	0.4	0.0	0.1	0.3	0.1
1995	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	8	0.0	0.0	0.0	0.0	2.5	4.9	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1995	9	0.0	0.0	0.0	0.0	2.4	4.8	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1995	10	0.0	0.0	0.0	0.0	2.8	5.5	4.1	4.6	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1995	11	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1995	12	0.0	0.0	0.0	0.0	7.2	14.2	10.8	11.9	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.7	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.8	3.9	0.0	1.0	2.6	1.2

Source: JICA Study Team

Attachment 21：Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1996 - 2001) (6/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1996	1	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1996	2	0.0	0.0	0.0	0.0	4.2	8.4	6.3	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.6	0.7
1996	3	0.0	0.0	0.0	0.0	3.4	6.8	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1996	4	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
1996	5	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
1996	6	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1996	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	8	0.0	0.0	0.0	0.0	0.4	0.7	0.6	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.4	0.0	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
1996	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	10	0.0	0.0	0.0	0.0	2.4	4.8	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1996	11	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1996	12	0.0	0.0	0.0	0.0	7.1	14.0	10.7	11.7	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.8	0.9	1.1	1.2	0.7	0.1	0.0	4.9	3.9	8.7	3.9	0.0	1.0	2.6	1.2
1997	1	0.0	0.0	0.0	0.0	4.0	8.0	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1997	2	0.0	0.0	0.0	0.0	3.9	7.7	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1997	3	0.0	0.0	0.0	0.0	2.7	5.3	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1997	4	0.0	0.0	0.0	0.0	4.6	9.0	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
1997	5	0.0	0.0	0.0	0.0	0.7	1.3	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.8	0.4	0.0	0.1	0.2	0.1
1997	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	8	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1997	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	10	0.0	0.0	0.0	0.0	4.0	7.9	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1997	11	0.0	0.0	0.0	0.0	5.8	11.5	8.7	9.6	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.1	1.0
1997	12	0.0	0.0	0.0	0.0	6.7	13.2	10.0	11.0	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.7	8.2	3.6	0.0	1.0	2.5	1.2
1998	1	0.0	0.0	0.0	0.0	3.3	6.6	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1998	2	0.0	0.0	0.0	0.0	2.7	5.3	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1998	3	0.0	0.0	0.0	0.0	3.4	6.6	5.0	5.6	0.4	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1998	4	0.0	0.0	0.0	0.0	2.6	5.2	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.5
1998	5	0.0	0.0	0.0	0.0	0.6	1.2	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.8	0.3	0.0	0.1	0.2	0.1
1998	6	0.0	0.0	0.0	0.0	0.3	0.6	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.2	0.0	0.0	0.1	0.0
1998	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	8	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1998	9	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
1998	10	0.0	0.0	0.0	0.0	5.2	10.4	7.9	8.7	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.7	2.9	6.4	2.9	0.0	0.8	1.9	0.9
1998	11	0.0	0.0	0.0	0.0	5.8	11.5	8.7	9.6	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.5	0.8	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.1	3.2	0.0	0.8	2.1	1.0
1998	12	0.0	0.0	0.0	0.0	7.5	14.9	11.3	12.5	0.9	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.1	2.9	1.3	1.3	2.7	7.2	1.0	1.2	1.3	0.7	0.1	0.0	5.2	4.2	9.3	4.1	0.0	1.1	2.8	1.3
1999	1	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.3	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1999	2	0.0	0.0	0.0	0.0	4.9	9.8	7.4	8.2	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.9	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.1	2.7	0.0	0.7	1.8	0.9
1999	3	0.0	0.0	0.0	0.0	6.6	13.1	9.9	11.0	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.7	8.1	3.6	0.0	0.9	2.4	1.1
1999	4	0.0	0.0	0.0	0.0	6.3	12.5	9.5	10.5	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.5	0.0	0.9	2.3	1.1
1999	5	0.0	0.0	0.0	0.0	0.3	0.6	0.5	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
1999	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	8	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
1999	9	0.0	0.0	0.0	0.0	1.5	3.0	2.3	2.5	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.8	1.9	0.8	0.0	0.2	0.6	0.3
1999	10	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1999	11	0.0	0.0	0.0	0.0	6.6	13.0	9.9	10.9	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.6	8.1	3.6	0.0	0.9	2.4	1.1
1999	12	0.0	0.0	0.0	0.0	4.4	8.6	6.5	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2000	1	0.0	0.0	0.0	0.0	3.3	6.6	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2000	2	0.0	0.0	0.0	0.0	4.1	8.0	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
2000	3	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
2000	4	0.0	0.0	0.0	0.0	2.0	3.9	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
2000	5	0.0	0.0	0.0	0.0	0.4	0.8	0.6	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
2000	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	7	0.0	0.0	0.0	0.0	0.4	0.8	0.6	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
2000	8	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2000	9	0.0	0.0	0.0	0.0	3.1	6.2	4.7	5.2	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.5	1.2	0.5
2000	10	0.0	0.0	0.0	0.0	1.7	3.3	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
2000	11	0.0	0.0	0.0	0.0	4.8	9.5	7.2	7.9	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.8	0.8
2000	12	0.0	0.0	0.0	0.0	7.3	14.4	11.0	12.1	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.6	7.0	0.9	1.2	1.2	0.7	0.1	0.0	5.1	4.0	9.0	4.0	0.0	1.0	2.7	1.3
2001	1	0.0	0.0	0.0	0.0	4.2	8.3	6.3	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.6	0.7
2001	2	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.3	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2001	3	0.0	0.0	0.0	0.0	6.4	12.6	9.6	10.5	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.5	0.0	0.9	2.3	1.1
2001	4	0.0	0.0	0.0	0.0	5.5	10.9	8.3	9.1	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.8	3.0	0.0	0.8	2.0	1.0
2001	5	0.0	0.0	0.0	0.0	0.8	1.5	1.1	1.3	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
2001	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	8	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2001	9	0.0	0.0	0.0	0.0	1.7	3.5	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.1	1.0	0.0	0.3	0.6	0.3
2001	10	0.0	0.0	0.0	0.0	2.0	4.0	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
2001	11	0.0	0.0	0.0	0.0	3.1	6.1	4.7	5.1	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2001	12	0.0	0.0	0.0	0.0	7.5	14.8	11.2	12.3	0.9	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.9	1.3	1.3	2.7	7.1	1.0	1.2	1.2	0.7	0.1	0.0	5.2	4.1	9.2	4.1	0.0	1.1	2.8	1.3

Source: JICA Study Team

Attachment 21：Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2002 - 2007) (7/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2002	1	0.0	0.0	0.0	0.0	3.9	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
2002	2	0.0	0.0	0.0	0.0	4.6	9.2	7.0	7.7	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.8	0.8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
2002	3	0.0	0.0	0.0	0.0	5.6	11.0	8.4	9.2	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.1	6.9	3.0	0.0	0.8	2.1	1.0
2002	4	0.0	0.0	0.0	0.0	4.3	8.4	6.4	7.1	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.2	2.3	0.0	0.6	1.6	0.7
2002	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	6	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2002	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	8	0.0	0.0	0.0	0.0	2.6	5.1	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.4
2002	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	10	0.0	0.0	0.0	0.0	5.2	10.3	7.8	8.6	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
2002	11	0.0	0.0	0.0	0.0	2.9	5.8	4.4	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2002	12	0.0	0.0	0.0	0.0	7.1	14.0	10.6	11.7	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.8	0.9	1.1	1.2	0.7	0.1	0.0	4.9	3.9	8.7	3.9	0.0	1.0	2.6	1.2
2003	1	0.0	0.0	0.0	0.0	3.9	7.6	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.6	1.4	0.7
2003	2	0.0	0.0	0.0	0.0	4.5	8.9	6.7	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.7	0.8
2003	3	0.0	0.0	0.0	0.0	5.3	10.6	8.0	8.8	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.6	2.9	0.0	0.8	2.0	0.9
2003	4	0.0	0.0	0.0	0.0	4.6	9.0	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
2003	5	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2003	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	7	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
2003	8	0.0	0.0	0.0	0.0	6.2	12.3	9.3	10.3	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	6.0	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.7	3.4	0.0	0.9	2.3	1.1
2003	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	10	0.0	0.0	0.0	0.0	4.8	9.4	7.1	7.9	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.8	0.8
2003	11	0.0	0.0	0.0	0.0	6.7	13.3	10.1	11.1	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.6	1.2	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.3	3.7	0.0	1.0	2.5	1.2
2003	12	0.0	0.0	0.0	0.0	5.8	11.5	8.7	9.6	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.5	0.8	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.1	3.2	0.0	0.8	2.1	1.0
2004	1	0.0	0.0	0.0	0.0	3.8	7.6	5.8	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2004	2	0.0	0.0	0.0	0.0	4.6	9.1	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
2004	3	0.0	0.0	0.0	0.0	6.1	12.0	9.1	10.1	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.3	1.0	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.4	7.5	3.3	0.0	0.9	2.2	1.0
2004	4	0.0	0.0	0.0	0.0	1.6	3.2	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
2004	5	0.0	0.0	0.0	0.0	1.1	2.3	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.2	0.2	0.4	1.1	0.1	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
2004	6	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
2004	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	8	0.0	0.0	0.0	0.0	6.0	12.0	9.1	10.0	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
2004	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	10	0.0	0.0	0.0	0.0	3.8	7.6	5.8	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2004	11	0.0	0.0	0.0	0.0	6.6	13.0	9.8	10.9	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.3	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.6	8.1	3.6	0.0	0.9	2.4	1.1
2004	12	0.0	0.0	0.0	0.0	7.4	14.7	11.2	12.3	0.9	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.7	7.1	1.0	1.2	1.2	0.7	0.1	0.0	5.2	4.1	9.2	4.1	0.0	1.1	2.7	1.3
2005	1	0.0	0.0	0.0	0.0	4.2	8.2	6.2	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
2005	2	0.0	0.0	0.0	0.0	4.8	9.4	7.1	7.9	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.8	0.8
2005	3	0.0	0.0	0.0	0.0	4.4	8.8	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.5	2.4	0.0	0.6	1.6	0.8
2005	4	0.0	0.0	0.0	0.0	2.5	4.9	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
2005	5	0.0	0.0	0.0	0.0	0.4	0.7	0.6	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.4	0.0	0.1	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.2	0.0	0.1	0.1	0.1
2005	6	0.0	0.0	0.0	0.0	0.3	0.6	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.0
2005	7	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2005	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	9	0.0	0.0	0.0	0.0	1.0	2.0	1.5	1.7	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.1	0.4	0.2
2005	10	0.0	0.0	0.0	0.0	3.5	6.9	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2005	11	0.0	0.0	0.0	0.0	4.4	8.8	6.7	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
2005	12	0.0	0.0	0.0	0.0	7.3	14.4	10.9	12.1	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.6	7.0	0.9	1.2	1.2	0.7	0.1	0.0	5.1	4.0	9.0	4.0	0.0	1.0	2.7	1.3
2006	1	0.0	0.0	0.0	0.0	4.0	8.0	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
2006	2	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.1	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
2006	3	0.0	0.0	0.0	0.0	6.3	12.4	9.4	10.4	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	6.0	0.8	1.0	1.0	0.6	0.1	0.0	4.4	3.5	7.7	3.4	0.0	0.9	2.3	1.1
2006	4	0.0	0.0	0.0	0.0	5.2	10.4	7.9	8.7	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.9	0.0	0.8	1.9	0.9
2006	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	8	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2006	9	0.0	0.0	0.0	0.0	1.8	3.6	2.7	3.0	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
2006	10	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2006	11	0.0	0.0	0.0	0.0	5.3	10.6	8.0	8.8	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.6	2.9	0.0	0.8	2.0	0.9
2006	12	0.0	0.0	0.0	0.0	7.2	14.2	10.8	11.9	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.7	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.8	3.9	0.0	1.0	2.7	1.2
2007	1	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
2007	2	0.0	0.0	0.0	0.0	2.4	4.8	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.4	0.9	0.4
2007	3	0.0	0.0	0.0	0.0	5.3	10.4	7.9	8.7	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	1.9	0.9
2007	4	0.0	0.0	0.0	0.0	2.0	3.9	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2007	5	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
2007	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	8	0.0	0.0	0.0	0.0	5.1	10.0	7.6	8.4	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.8	0.0	0.7	1.9	0.9
2007	9	0.0	0.0	0.0	0.0	2.1	4.2	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
2007	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	11	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
2007	12	0.0	0.0	0.0	0.0	7.1	14.1	10.7	11.8	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.3	2.6	6.8	0.9	1.2	1.2	0.7	0.1	0.0	5.0	3.9	8.8	3.9	0.0	1.0	2.6	1.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 21：Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2008 - 2013) (8/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2008	1	0.0	0.0	0.0	0.0	2.9	5.7	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.1	0.5
2008	2	0.0	0.0	0.0	0.0	4.2	8.3	6.3	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.5	0.7
2008	3	0.0	0.0	0.0	0.0	5.8	11.5	8.7	9.6	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.1	1.0
2008	4	0.0	0.0	0.0	0.0	6.1	12.1	9.2	10.1	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.3	1.1	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.4	7.5	3.3	0.0	0.9	2.2	1.1
2008	5	0.0	0.0	0.0	0.0	0.9	1.8	1.4	1.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.3	0.9	0.1	0.1	0.2	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.2
2008	6	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
2008	7	0.0	0.0	0.0	0.0	0.3	0.7	0.5	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
2008	8	0.0	0.0	0.0	0.0	5.7	11.2	8.5	9.4	0.7	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	7.0	3.1	0.0	0.8	2.1	1.0
2008	9	0.0	0.0	0.0	0.0	2.5	4.9	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2008	10	0.0	0.0	0.0	0.0	1.9	3.7	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2008	11	0.0	0.0	0.0	0.0	5.4	10.8	8.2	9.0	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
2008	12	0.0	0.0	0.0	0.0	7.2	14.2	10.8	11.9	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.7	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.8	3.9	0.0	1.0	2.6	1.2
2009	1	0.0	0.0	0.0	0.0	4.2	8.3	6.3	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.6	0.7
2009	2	0.0	0.0	0.0	0.0	4.6	9.1	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.7	2.5	0.0	0.7	1.7	0.8
2009	3	0.0	0.0	0.0	0.0	6.0	11.9	9.1	10.0	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
2009	4	0.0	0.0	0.0	0.0	4.9	9.6	7.3	8.1	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.7	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
2009	5	0.0	0.0	0.0	0.0	0.6	1.3	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.8	0.3	0.0	0.1	0.2	0.1
2009	6	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.9	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.4	0.3	0.6	0.3	0.0	0.1	0.2	0.1
2009	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	8	0.0	0.0	0.0	0.0	3.9	7.7	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
2009	9	0.0	0.0	0.0	0.0	0.7	1.4	1.1	1.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.9	0.4	0.0	0.1	0.3	0.1
2009	10	0.0	0.0	0.0	0.0	2.6	5.1	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.4
2009	11	0.0	0.0	0.0	0.0	4.5	9.0	6.8	7.5	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
2009	12	0.0	0.0	0.0	0.0	7.3	14.5	11.0	12.1	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.6	7.0	0.9	1.2	1.2	0.7	0.1	0.0	5.1	4.0	9.0	4.0	0.0	1.0	2.7	1.3
2010	1	0.0	0.0	0.0	0.0	4.0	7.9	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
2010	2	0.0	0.0	0.0	0.0	4.1	8.0	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
2010	3	0.0	0.0	0.0	0.0	3.7	7.3	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.4	0.6
2010	4	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2010	5	0.0	0.0	0.0	0.0	0.3	0.6	0.4	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
2010	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	8	0.0	0.0	0.0	0.0	0.3	0.7	0.5	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
2010	9	0.0	0.0	0.0	0.0	2.3	4.5	3.4	3.7	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
2010	10	0.0	0.0	0.0	0.0	0.7	1.3	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.8	0.4	0.0	0.1	0.2	0.1
2010	11	0.0	0.0	0.0	0.0	4.8	9.4	7.2	7.9	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.8	0.8
2010	12	0.0	0.0	0.0	0.0	6.7	13.2	10.0	11.0	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.7	8.2	3.6	0.0	1.0	2.5	1.2
2011	1	0.0	0.0	0.0	0.0	4.0	7.9	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
2011	2	0.0	0.0	0.0	0.0	4.5	8.9	6.7	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
2011	3	0.0	0.0	0.0	0.0	5.4	10.8	8.2	9.0	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
2011	4	0.0	0.0	0.0	0.0	4.1	8.1	6.1	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.3	5.0	2.2	0.0	0.6	1.5	0.7
2011	5	0.0	0.0	0.0	0.0	0.7	1.4	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.8	0.4	0.0	0.1	0.3	0.1
2011	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	8	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
2011	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	10	0.0	0.0	0.0	0.0	4.5	8.9	6.8	7.5	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.1	2.5	5.5	2.5	0.0	0.6	1.7	0.8
2011	11	0.0	0.0	0.0	0.0	6.5	12.8	9.7	10.7	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.1	2.3	6.2	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.6	8.0	3.5	0.0	0.9	2.4	1.1
2011	12	0.0	0.0	0.0	0.0	7.2	14.2	10.8	11.9	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.8	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.9	3.9	0.0	1.0	2.7	1.2
2012	1	0.0	0.0	0.0	0.0	4.0	7.9	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
2012	2	0.0	0.0	0.0	0.0	4.7	9.3	7.0	7.7	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.5	0.0	0.7	1.7	0.8
2012	3	0.0	0.0	0.0	0.0	4.6	9.0	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
2012	4	0.0	0.0	0.0	0.0	1.2	2.3	1.7	1.9	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.2	0.2	0.4	1.1	0.2	0.2	0.2	0.1	0.0	0.0	0.8	0.6	1.4	0.6	0.0	0.2	0.4	0.2
2012	5	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.8	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.4	0.3	0.6	0.3	0.0	0.1	0.2	0.1
2012	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	8	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2012	9	0.0	0.0	0.0	0.0	0.6	1.2	0.9	1.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.6	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.3	0.8	0.3	0.0	0.1	0.2	0.1
2012	10	0.0	0.0	0.0	0.0	4.2	8.2	6.3	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
2012	11	0.0	0.0	0.0	0.0	5.3	10.6	8.0	8.8	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.6	2.9	0.0	0.8	2.0	0.9
2012	12	0.0	0.0	0.0	0.0	7.2	14.3	10.8	12.0	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.8	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.9	3.9	0.0	1.0	2.7	1.2
2013	1	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2013	2	0.0	0.0	0.0	0.0	4.3	8.5	6.4	7.1	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
2013	3	0.0	0.0	0.0	0.0	6.1	12.0	9.1	10.0	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
2013	4	0.0	0.0	0.0	0.0	4.2	8.3	6.3	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.5	0.7
2013	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	6	0.0	0.0	0.0	0.0	0.2	0.4	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3	0.1	0.0	0.0	0.1	0.0
2013	7	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	8	0.0	0.0	0.0	0.0	6.2	12.2	9.3	10.2	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.3	1.1
2013	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	10	0.0	0.0	0.0	0.0	1.7	3.3	2.5	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
2013	11	0.0	0.0	0.0	0.0	6.2	12.3	9.3	10.3	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.3	1.1
2013	12	0.0	0.0	0.0	0.0	7.1	14.0	10.7	11.7	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.8	0.9	1.1	1.2	0.7	0.1	0.0	4.9	3.9	8.7	3.9	0.0	1.0	2.6	1.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 21：Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2014 - 2019) (9/9)

	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
2014	1	0.0	0.0	0.0	0.0	3.9	7.7	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
2014	2	0.0	0.0	0.0	0.0	3.6	7.2	5.4	6.0	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2014	3	0.0	0.0	0.0	0.0	5.7	11.4	8.6	9.5	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.5	0.7	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.1	3.1	0.0	0.8	2.1	1.0
2014	4	0.0	0.0	0.0	0.0	5.9	11.7	8.9	9.8	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.6	0.8	1.0	1.0	0.5	0.1	0.0	4.1	3.3	7.3	3.2	0.0	0.8	2.2	1.0
2014	5	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
2014	6	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.1	0.0
2014	7	0.0	0.0	0.0	0.0	0.5	1.0	0.8	0.8	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.5	0.1	0.1	0.1	0.0	0.0	0.0	0.4	0.3	0.6	0.3	0.0	0.1	0.2	0.1
2014	8	0.0	0.0	0.0	0.0	4.0	8.0	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
2014	9	0.0	0.0	0.0	0.0	1.4	2.8	2.1	2.3	0.2	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.7	0.8	0.0	0.2	0.5	0.2
2014	10	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
2014	11	0.0	0.0	0.0	0.0	6.0	11.8	9.0	9.9	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.7	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.3	3.3	0.0	0.9	2.2	1.0
2014	12	0.0	0.0	0.0	0.0	7.1	14.1	10.7	11.8	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.8	0.9	1.1	1.2	0.7	0.1	0.0	5.0	3.9	8.7	3.9	0.0	1.0	2.6	1.2
2015	1	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.3	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2015	2	0.0	0.0	0.0	0.0	4.6	9.0	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
2015	3	0.0	0.0	0.0	0.0	4.8	9.5	7.2	8.0	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.7	5.9	2.6	0.0	0.7	1.8	0.8
2015	4	0.0	0.0	0.0	0.0	0.5	0.9	0.7	0.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.3	0.6	0.3	0.0	0.1	0.2	0.1
2015	5	0.0	0.0	0.0	0.0	0.9	1.8	1.4	1.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.3	0.9	0.1	0.1	0.2	0.1	0.0	0.0	0.6	0.5	1.1	0.5	0.0	0.1	0.3	0.2
2015	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	8	0.0	0.0	0.0	0.0	2.2	4.3	3.3	3.6	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2015	9	0.0	0.0	0.0	0.0	0.9	1.8	1.4	1.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.3	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.5	1.1	0.5	0.0	0.1	0.3	0.2
2015	10	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
2015	11	0.0	0.0	0.0	0.0	5.8	11.6	8.8	9.7	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.2	1.0
2015	12	0.0	0.0	0.0	0.0	6.8	13.5	10.2	11.3	0.8	1.3	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.6	1.2	1.2	2.4	6.5	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.8	8.4	3.7	0.0	1.0	2.5	1.2
2016	1	0.0	0.0	0.0	0.0	3.6	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2016	2	0.0	0.0	0.0	0.0	2.3	4.5	3.4	3.7	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
2016	3	0.0	0.0	0.0	0.0	5.6	11.2	8.5	9.3	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.1	0.0	0.8	2.1	1.0
2016	4	0.0	0.0	0.0	0.0	5.2	10.4	7.9	8.7	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.9	0.0	0.8	1.9	0.9
2016	5	0.0	0.0	0.0	0.0	0.3	0.7	0.5	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.4	0.2	0.0	0.0	0.1	0.1
2016	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	7	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	8	0.0	0.0	0.0	0.0	5.8	11.4	8.7	9.6	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.5	0.8	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.1	3.1	0.0	0.8	2.1	1.0
2016	9	0.0	0.0	0.0	0.0	2.0	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.8	0.4
2016	10	0.0	0.0	0.0	0.0	3.1	6.2	4.7	5.2	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2016	11	0.0	0.0	0.0	0.0	2.9	5.8	4.4	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2016	12	0.0	0.0	0.0	0.0	7.3	14.4	10.9	12.0	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.6	7.0	0.9	1.2	1.2	0.7	0.1	0.0	5.1	4.0	8.9	4.0	0.0	1.0	2.7	1.3
2017	1	0.0	0.0	0.0	0.0	4.1	8.0	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
2017	2	0.0	0.0	0.0	0.0	4.1	8.0	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
2017	3	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2017	4	0.0	0.0	0.0	0.0	1.6	3.2	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
2017	5	0.0	0.0	0.0	0.0	0.8	1.6	1.2	1.3	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.3	0.8	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	1.0	0.4	0.0	0.1	0.3	0.1
2017	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	8	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
2017	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	10	0.0	0.0	0.0	0.0	2.6	5.1	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
2017	11	0.0	0.0	0.0	0.0	5.5	10.9	8.3	9.1	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.8	3.0	0.0	0.8	2.0	1.0
2017	12	0.0	0.0	0.0	0.0	6.1	12.0	9.1	10.1	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.3	1.0	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.4	7.5	3.3	0.0	0.9	2.2	1.1
2018	1	0.0	0.0	0.0	0.0	3.4	6.8	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
2018	2	0.0	0.0	0.0	0.0	3.9	7.7	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
2018	3	0.0	0.0	0.0	0.0	5.8	11.4	8.7	9.6	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.5	0.8	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.1	3.1	0.0	0.8	2.1	1.0
2018	4	0.0	0.0	0.0	0.0	1.1	2.1	1.6	1.8	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.4	1.0	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.6	1.3	0.6	0.0	0.2	0.4	0.2
2018	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	8	0.0	0.0	0.0	0.0	4.6	9.1	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
2018	9	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2018	10	0.0	0.0	0.0	0.0	1.0	1.9	1.5	1.6	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.2	0.3	0.9	0.1	0.2	0.2	0.1	0.0	0.0	0.7	0.5	1.2	0.5	0.0	0.1	0.4	0.2
2018	11	0.0	0.0	0.0	0.0	6.2	12.3	9.3	10.3	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.3	1.1
2018	12	0.0	0.0	0.0	0.0	6.2	12.2	9.3	10.2	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.3	1.1
2019	1	0.0	0.0	0.0	0.0	4.0	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
2019	2	0.0	0.0	0.0	0.0	3.2	6.3	4.8	5.3	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.5
2019	3	0.0	0.0	0.0	0.0	5.4	10.7	8.1	8.9	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	0.9	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.6	2.9	0.0	0.8	2.0	0.9
2019	4	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2019	5	0.0	0.0	0.0	0.0	0.7	1.4	1.0	1.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.2	0.7	0.1	0.1	0.1	0.1	0.0	0.0	0.5	0.4	0.8	0.4	0.0	0.1	0.3	0.1
2019	6	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2019	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	8	0.0	0.0	0.0	0.0	1.3	2.6	1.9	2.1	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.2	0.5	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
2019	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	10	0.0	0.0	0.0	0.0	1.8	3.6	2.8	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2019	11	0.0	0.0	0.0	0.0	3.0	6.0	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
2019	12	0.0	0.0	0.0	0.0	7.1	14.0	10.7	11.8	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.8	0.9	1.1	1.2	0.7	0.1	0.0	4.9	3.9	8.7	3.9	0.0	1.0	2.6	1.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 22 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (1966 - 1971) (1/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1966	1	0.0	0.6	2.3	1.9	2.1	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1966	2	0.0	0.9	3.2	2.7	3.0	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1966	3	0.0	1.0	3.7	3.1	3.5	7.1	0.2	2.5	0.0	0.0	1.6	0.8	0.4	0.1	0.7	0.0
1966	4	0.0	1.0	3.7	3.1	3.5	7.0	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
1966	5	0.0	0.1	0.5	0.4	0.5	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.0	0.1	0.0
1966	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	9	0.0	0.2	0.8	0.6	0.7	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.0	0.1	0.0
1966	10	0.0	0.8	2.9	2.4	2.7	5.5	0.2	1.9	0.0	0.0	1.2	0.7	0.3	0.0	0.5	0.0
1966	11	0.0	1.3	4.6	3.9	4.3	8.8	0.3	3.0	0.0	0.0	2.0	1.0	0.5	0.1	0.8	0.0
1966	12	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1967	1	0.0	0.7	2.6	2.2	2.4	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1967	2	0.0	0.8	3.0	2.5	2.9	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1967	3	0.0	1.0	3.6	3.0	3.4	6.8	0.2	2.4	0.0	0.0	1.5	0.8	0.4	0.1	0.6	0.0
1967	4	0.0	0.6	2.1	1.8	2.0	4.1	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1967	5	0.0	0.2	0.8	0.7	0.8	1.6	0.1	0.5	0.0	0.0	0.4	0.2	0.1	0.0	0.1	0.0
1967	6	0.0	0.0	0.2	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1967	7	0.0	0.0	0.2	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1967	8	0.0	0.2	0.7	0.6	0.7	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.0	0.1	0.0
1967	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1967	10	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1967	11	0.0	1.3	4.6	3.9	4.4	8.9	0.3	3.1	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
1967	12	0.0	1.4	5.2	4.3	4.9	9.9	0.3	3.4	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
1968	1	0.0	0.9	3.0	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1968	2	0.0	0.8	2.8	2.4	2.7	5.4	0.2	1.9	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1968	3	0.0	1.0	3.6	3.0	3.4	7.0	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
1968	4	0.0	0.8	3.0	2.5	2.8	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1968	5	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	7	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1968	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	9	0.0	0.6	2.1	1.7	2.0	4.0	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1968	10	0.0	1.1	4.0	3.3	3.8	7.7	0.3	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1968	11	0.0	1.3	4.5	3.8	4.2	8.6	0.3	3.0	0.0	0.0	2.0	1.0	0.5	0.1	0.8	0.0
1968	12	0.0	1.5	5.3	4.5	5.0	10.3	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1969	1	0.0	0.8	3.0	2.5	2.8	5.7	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1969	2	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1969	3	0.0	0.8	2.7	2.3	2.5	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1969	4	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1969	5	0.0	0.3	1.2	1.0	1.1	2.2	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.0	0.2	0.0
1969	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	10	0.0	1.3	4.8	4.0	4.5	9.1	0.3	3.1	0.0	0.0	2.1	1.1	0.5	0.1	0.8	0.0
1969	11	0.0	0.7	2.5	2.1	2.3	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1969	12	0.0	1.4	5.0	4.2	4.8	9.7	0.3	3.3	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
1970	1	0.0	0.8	3.0	2.5	2.8	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1970	2	0.0	0.8	2.9	2.4	2.7	5.5	0.2	1.9	0.0	0.0	1.2	0.7	0.3	0.0	0.5	0.0
1970	3	0.0	1.0	3.7	3.1	3.5	7.2	0.2	2.5	0.0	0.0	1.6	0.9	0.4	0.1	0.7	0.0
1970	4	0.0	0.6	2.3	1.9	2.1	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1970	5	0.0	0.2	0.6	0.5	0.6	1.2	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.0	0.1	0.0
1970	6	0.0	0.0	0.2	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1970	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	8	0.0	1.0	3.4	2.9	3.2	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1970	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	11	0.0	0.6	2.1	1.7	1.9	3.9	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1970	12	0.0	1.4	5.1	4.3	4.8	9.8	0.3	3.4	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
1971	1	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1971	2	0.0	0.8	3.0	2.5	2.8	5.7	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1971	3	0.0	1.2	4.4	3.7	4.1	8.4	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1971	4	0.0	1.0	3.6	3.0	3.4	6.8	0.2	2.4	0.0	0.0	1.5	0.8	0.4	0.1	0.6	0.0
1971	5	0.0	0.3	1.1	0.9	1.0	2.0	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.0	0.2	0.0
1971	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	7	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	10	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1971	11	0.0	0.7	2.6	2.2	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1971	12	0.0	1.5	5.2	4.4	5.0	10.1	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 22 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (1972 - 1977) (2/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1972	1	0.0	0.9	3.1	2.6	3.0	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1972	2	0.0	0.8	2.8	2.3	2.6	5.4	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1972	3	0.0	1.2	4.2	3.5	3.9	8.0	0.3	2.8	0.0	0.0	1.8	1.0	0.4	0.1	0.7	0.0
1972	4	0.0	0.5	1.7	1.4	1.6	3.2	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1972	5	0.0	0.2	0.7	0.6	0.7	1.3	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.0	0.1	0.0
1972	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1972	7	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1972	8	0.0	0.1	0.5	0.4	0.5	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0
1972	9	0.0	1.2	4.3	3.6	4.0	8.2	0.3	2.8	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1972	10	0.0	0.8	2.8	2.4	2.7	5.5	0.2	1.9	0.0	0.0	1.2	0.7	0.3	0.0	0.5	0.0
1972	11	0.0	1.1	4.0	3.4	3.8	7.7	0.3	2.7	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1972	12	0.0	1.5	5.2	4.4	4.9	10.1	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1973	1	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1973	2	0.0	0.7	2.6	2.2	2.4	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1973	3	0.0	1.2	4.2	3.5	4.0	8.0	0.3	2.8	0.0	0.0	1.8	1.0	0.4	0.1	0.7	0.0
1973	4	0.0	0.8	3.0	2.5	2.8	5.7	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1973	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	7	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1973	8	0.0	0.7	2.5	2.1	2.3	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1973	9	0.0	0.3	1.0	0.9	1.0	2.0	0.1	0.7	0.0	0.0	0.4	0.2	0.1	0.0	0.2	0.0
1973	10	0.0	0.8	2.8	2.4	2.6	5.4	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1973	11	0.0	0.3	1.2	1.0	1.2	2.4	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.0	0.2	0.0
1973	12	0.0	1.2	4.1	3.5	3.9	7.9	0.3	2.7	0.0	0.0	1.8	0.9	0.4	0.1	0.7	0.0
1974	1	0.0	0.8	2.8	2.3	2.6	5.4	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1974	2	0.0	0.9	3.2	2.7	3.0	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1974	3	0.0	0.8	2.7	2.3	2.6	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1974	4	0.0	0.8	2.7	2.3	2.6	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1974	5	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1974	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	8	0.0	0.6	2.1	1.8	2.0	4.1	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1974	9	0.0	0.2	0.6	0.5	0.6	1.2	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.0	0.1	0.0
1974	10	0.0	0.6	2.1	1.8	2.0	4.0	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1974	11	0.0	0.7	2.4	2.0	2.2	4.5	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1974	12	0.0	1.5	5.3	4.4	5.0	10.1	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1975	1	0.0	0.9	3.1	2.6	2.9	6.0	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1975	2	0.0	0.9	3.2	2.7	3.0	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1975	3	0.0	1.2	4.4	3.7	4.2	8.5	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1975	4	0.0	0.8	3.0	2.5	2.8	5.7	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1975	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	8	0.0	1.0	3.6	3.0	3.4	6.9	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
1975	9	0.0	0.3	1.2	1.0	1.1	2.2	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.0	0.2	0.0
1975	10	0.0	0.3	0.9	0.8	0.9	1.8	0.1	0.6	0.0	0.0	0.4	0.2	0.1	0.0	0.2	0.0
1975	11	0.0	1.2	4.3	3.6	4.0	8.2	0.3	2.8	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1975	12	0.0	1.4	5.1	4.3	4.8	9.8	0.3	3.4	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
1976	1	0.0	0.8	3.0	2.5	2.8	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1976	2	0.0	0.9	3.2	2.7	3.1	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1976	3	0.0	1.2	4.4	3.7	4.2	8.5	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1976	4	0.0	1.2	4.3	3.6	4.1	8.3	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1976	5	0.0	0.1	0.3	0.3	0.3	0.6	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0
1976	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	8	0.0	0.2	0.7	0.6	0.6	1.3	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.0	0.1	0.0
1976	9	0.0	0.8	3.0	2.5	2.8	5.7	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1976	10	0.0	0.8	2.7	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1976	11	0.0	0.6	2.3	1.9	2.1	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1976	12	0.0	1.4	5.1	4.3	4.8	9.8	0.3	3.4	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
1977	1	0.0	0.9	3.1	2.6	3.0	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1977	2	0.0	0.7	2.5	2.1	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
1977	3	0.0	1.2	4.2	3.5	4.0	8.0	0.3	2.8	0.0	0.0	1.8	1.0	0.4	0.1	0.7	0.0
1977	4	0.0	0.3	0.9	0.8	0.9	1.8	0.1	0.6	0.0	0.0	0.4	0.2	0.1	0.0	0.2	0.0
1977	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	9	0.0	0.6	2.2	1.9	2.1	4.2	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1977	10	0.0	0.8	2.7	2.3	2.6	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1977	11	0.0	1.0	3.6	3.0	3.4	6.9	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
1977	12	0.0	1.5	5.2	4.4	5.0	10.1	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 22 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (1978 - 1983) (3/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1978	1	0.0	0.9	3.3	2.8	3.1	6.4	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
1978	2	0.0	0.9	3.4	2.8	3.2	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1978	3	0.0	1.3	4.6	3.9	4.4	8.9	0.3	3.1	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
1978	4	0.0	0.7	2.4	2.0	2.2	4.6	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1978	5	0.0	0.1	0.3	0.2	0.3	0.6	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0
1978	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	7	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1978	8	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1978	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	10	0.0	0.4	1.4	1.2	1.3	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.0	0.2	0.0
1978	11	0.0	1.3	4.7	3.9	4.4	8.9	0.3	3.1	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
1978	12	0.0	1.5	5.3	4.5	5.0	10.3	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1979	1	0.0	1.0	3.4	2.9	3.2	6.6	0.2	2.3	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1979	2	0.0	0.9	3.4	2.8	3.2	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1979	3	0.0	1.3	4.7	4.0	4.5	9.1	0.3	3.1	0.0	0.0	2.1	1.1	0.5	0.1	0.8	0.0
1979	4	0.0	0.8	3.0	2.5	2.8	5.7	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1979	5	0.0	0.3	1.1	0.9	1.0	2.0	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.0	0.2	0.0
1979	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	8	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1979	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	10	0.0	1.3	4.6	3.8	4.3	8.8	0.3	3.0	0.0	0.0	2.0	1.0	0.5	0.1	0.8	0.0
1979	11	0.0	1.3	4.7	4.0	4.5	9.1	0.3	3.1	0.0	0.0	2.1	1.1	0.5	0.1	0.8	0.0
1979	12	0.0	1.3	4.7	4.0	4.4	9.0	0.3	3.1	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
1980	1	0.0	0.9	3.4	2.8	3.2	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1980	2	0.0	0.9	3.3	2.7	3.1	6.3	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1980	3	0.0	1.0	3.5	2.9	3.3	6.7	0.2	2.3	0.0	0.0	1.5	0.8	0.4	0.1	0.6	0.0
1980	4	0.0	1.0	3.7	3.1	3.5	7.1	0.2	2.5	0.0	0.0	1.6	0.8	0.4	0.1	0.7	0.0
1980	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	6	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1980	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	8	0.0	0.0	0.2	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1980	9	0.0	0.4	1.3	1.1	1.3	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.0	0.2	0.0
1980	10	0.0	0.2	0.6	0.5	0.6	1.2	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.0	0.1	0.0
1980	11	0.0	1.4	4.9	4.1	4.6	9.4	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
1980	12	0.0	1.5	5.2	4.4	4.9	10.0	0.3	3.4	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1981	1	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1981	2	0.0	1.0	3.4	2.9	3.2	6.6	0.2	2.3	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1981	3	0.0	0.8	2.9	2.4	2.7	5.5	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1981	4	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	5	0.0	0.1	0.3	0.2	0.3	0.6	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0
1981	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	8	0.0	1.3	4.5	3.8	4.3	8.7	0.3	3.0	0.0	0.0	2.0	1.0	0.5	0.1	0.8	0.0
1981	9	0.0	0.7	2.5	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1981	10	0.0	1.5	5.5	4.6	5.2	10.6	0.4	3.6	0.0	0.0	2.4	1.3	0.6	0.1	1.0	0.0
1981	11	0.0	1.4	4.9	4.1	4.6	9.3	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
1981	12	0.0	1.4	5.0	4.2	4.7	9.6	0.3	3.3	0.0	0.0	2.2	1.1	0.5	0.1	0.9	0.0
1982	1	0.0	0.9	3.3	2.8	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1982	2	0.0	0.7	2.6	2.2	2.5	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1982	3	0.0	1.2	4.4	3.7	4.2	8.5	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1982	4	0.0	0.2	0.8	0.7	0.8	1.6	0.1	0.5	0.0	0.0	0.4	0.2	0.1	0.0	0.1	0.0
1982	5	0.0	0.4	1.3	1.1	1.2	2.4	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.0	0.2	0.0
1982	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	7	0.0	0.1	0.2	0.2	0.2	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1982	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	10	0.0	1.5	5.2	4.4	4.9	10.1	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1982	11	0.0	1.0	3.6	3.0	3.4	6.9	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
1982	12	0.0	1.5	5.3	4.4	5.0	10.2	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1983	1	0.0	0.8	2.8	2.3	2.6	5.4	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1983	2	0.0	0.8	3.0	2.5	2.8	5.7	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1983	3	0.0	0.8	2.9	2.4	2.7	5.5	0.2	1.9	0.0	0.0	1.2	0.7	0.3	0.0	0.5	0.0
1983	4	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	5	0.0	0.1	0.3	0.2	0.3	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
1983	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	7	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	9	0.0	0.7	2.6	2.2	2.5	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1983	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	11	0.0	0.7	2.4	2.0	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
1983	12	0.0	1.3	4.6	3.9	4.4	8.9	0.3	3.1	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 22 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (1984 - 1989) (4/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1984	1	0.0	0.8	2.8	2.4	2.7	5.4	0.2	1.9	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1984	2	0.0	1.0	3.4	2.9	3.2	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1984	3	0.0	1.2	4.3	3.6	4.1	8.3	0.3	2.8	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1984	4	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1984	5	0.0	0.2	0.6	0.5	0.6	1.2	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.0	0.1	0.0
1984	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	8	0.0	0.8	2.9	2.4	2.7	5.5	0.2	1.9	0.0	0.0	1.2	0.7	0.3	0.0	0.5	0.0
1984	9	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1984	10	0.0	0.4	1.4	1.2	1.4	2.8	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.0	0.3	0.0
1984	11	0.0	1.4	4.9	4.1	4.6	9.4	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
1984	12	0.0	1.4	5.1	4.3	4.8	9.8	0.3	3.4	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
1985	1	0.0	0.9	3.3	2.8	3.2	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1985	2	0.0	0.9	3.4	2.8	3.2	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1985	3	0.0	0.9	3.1	2.6	2.9	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1985	4	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1985	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	8	0.0	0.9	3.0	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1985	9	0.0	0.4	1.6	1.3	1.5	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1985	10	0.0	1.4	5.1	4.3	4.8	9.9	0.3	3.4	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
1985	11	0.0	0.7	2.6	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1985	12	0.0	1.4	5.1	4.3	4.8	9.9	0.3	3.4	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
1986	1	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1986	2	0.0	1.0	3.4	2.9	3.2	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1986	3	0.0	1.3	4.6	3.9	4.4	8.8	0.3	3.0	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
1986	4	0.0	0.5	1.7	1.5	1.6	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1986	5	0.0	0.2	0.6	0.5	0.6	1.2	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.0	0.1	0.0
1986	6	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1986	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1986	8	0.0	1.1	4.0	3.4	3.8	7.8	0.3	2.7	0.0	0.0	1.8	0.9	0.4	0.1	0.7	0.0
1986	9	0.0	0.6	2.2	1.9	2.1	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1986	10	0.0	0.8	3.0	2.5	2.8	5.7	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1986	11	0.0	0.7	2.4	2.0	2.3	4.6	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1986	12	0.0	1.4	5.1	4.3	4.8	9.8	0.3	3.4	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
1987	1	0.0	0.8	2.9	2.5	2.8	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1987	2	0.0	0.9	3.1	2.6	2.9	6.0	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1987	3	0.0	1.1	3.8	3.2	3.6	7.3	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1987	4	0.0	0.4	1.3	1.1	1.2	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.0	0.2	0.0
1987	5	0.0	0.3	1.2	1.0	1.1	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.0	0.2	0.0
1987	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	8	0.0	1.1	3.8	3.2	3.6	7.3	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1987	9	0.0	0.5	1.6	1.4	1.5	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1987	10	0.0	1.1	3.9	3.3	3.7	7.5	0.2	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1987	11	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1987	12	0.0	1.5	5.2	4.4	4.9	10.0	0.3	3.4	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1988	1	0.0	0.9	3.3	2.7	3.1	6.3	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1988	2	0.0	0.7	2.6	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1988	3	0.0	1.1	4.0	3.4	3.8	7.7	0.3	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1988	4	0.0	0.4	1.6	1.3	1.5	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1988	5	0.0	0.1	0.4	0.3	0.4	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0
1988	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	7	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1988	8	0.0	0.1	0.5	0.4	0.5	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0
1988	9	0.0	0.4	1.3	1.1	1.3	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.0	0.2	0.0
1988	10	0.0	0.2	0.7	0.6	0.6	1.3	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.0	0.1	0.0
1988	11	0.0	1.3	4.6	3.9	4.4	8.9	0.3	3.0	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
1988	12	0.0	1.5	5.3	4.5	5.0	10.2	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1989	1	0.0	0.9	3.2	2.7	3.0	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1989	2	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1989	3	0.0	1.3	4.6	3.8	4.3	8.8	0.3	3.0	0.0	0.0	2.0	1.0	0.5	0.1	0.8	0.0
1989	4	0.0	0.6	2.2	1.9	2.1	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1989	5	0.0	0.3	0.9	0.8	0.9	1.7	0.1	0.6	0.0	0.0	0.4	0.2	0.1	0.0	0.2	0.0
1989	6	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	8	0.0	2.3	8.3	7.0	7.8	16.0	0.5	5.5	0.0	0.0	3.6	1.9	0.8	0.1	1.5	0.0
1989	9	0.0	0.4	1.4	1.2	1.3	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.0	0.2	0.0
1989	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	11	0.0	1.3	4.6	3.9	4.4	8.9	0.3	3.0	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
1989	12	0.0	1.5	5.2	4.4	4.9	10.0	0.3	3.4	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 22 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (1990 - 1995) (5/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1990	1	0.0	0.8	2.9	2.4	2.7	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1990	2	0.0	0.7	2.6	2.2	2.5	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1990	3	0.0	0.8	2.7	2.3	2.5	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1990	4	0.0	0.3	1.1	0.9	1.0	2.1	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.0	0.2	0.0
1990	5	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1990	6	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	8	0.0	1.4	5.0	4.2	4.7	9.6	0.3	3.3	0.0	0.0	2.2	1.1	0.5	0.1	0.9	0.0
1990	9	0.0	0.5	1.6	1.4	1.5	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1990	10	0.0	0.8	2.9	2.4	2.7	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1990	11	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1990	12	0.0	1.3	4.5	3.8	4.3	8.7	0.3	3.0	0.0	0.0	2.0	1.0	0.5	0.1	0.8	0.0
1991	1	0.0	0.8	2.7	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1991	2	0.0	0.8	3.0	2.5	2.9	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1991	3	0.0	1.2	4.3	3.6	4.0	8.2	0.3	2.8	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1991	4	0.0	0.3	0.9	0.8	0.9	1.7	0.1	0.6	0.0	0.0	0.4	0.2	0.1	0.0	0.2	0.0
1991	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	8	0.0	2.3	8.3	7.0	7.9	16.0	0.5	5.5	0.0	0.0	3.6	1.9	0.8	0.1	1.5	0.0
1991	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	11	0.0	0.7	2.6	2.2	2.4	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1991	12	0.0	1.4	4.9	4.1	4.6	9.4	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
1992	1	0.0	0.8	2.7	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1992	2	0.0	0.3	1.2	1.0	1.2	2.4	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.0	0.2	0.0
1992	3	0.0	1.1	3.8	3.2	3.6	7.3	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1992	4	0.0	1.1	4.1	3.4	3.9	7.9	0.3	2.7	0.0	0.0	1.8	0.9	0.4	0.1	0.7	0.0
1992	5	0.0	0.2	0.6	0.5	0.6	1.2	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.0	0.1	0.0
1992	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	8	0.0	0.9	3.3	2.8	3.1	6.4	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
1992	9	0.0	0.0	0.2	0.1	0.2	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1992	10	0.0	0.4	1.5	1.3	1.4	2.9	0.1	1.0	0.0	0.0	0.7	0.3	0.2	0.0	0.3	0.0
1992	11	0.0	1.2	4.2	3.5	4.0	8.0	0.3	2.8	0.0	0.0	1.8	1.0	0.4	0.1	0.7	0.0
1992	12	0.0	1.4	4.9	4.1	4.6	9.4	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
1993	1	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1993	2	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1993	3	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1993	4	0.0	0.4	1.5	1.2	1.4	2.8	0.1	1.0	0.0	0.0	0.6	0.3	0.1	0.0	0.3	0.0
1993	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	10	0.0	1.5	5.4	4.5	5.1	10.4	0.3	3.6	0.0	0.0	2.3	1.2	0.5	0.1	1.0	0.0
1993	11	0.0	1.2	4.4	3.7	4.2	8.5	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1993	12	0.0	1.5	5.2	4.4	4.9	10.0	0.3	3.4	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1994	1	0.0	0.9	3.1	2.6	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1994	2	0.0	0.9	3.3	2.8	3.2	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1994	3	0.0	0.5	1.7	1.5	1.7	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1994	4	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	5	0.0	0.2	0.6	0.5	0.6	1.1	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.0	0.1	0.0
1994	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	8	0.0	0.2	0.7	0.6	0.7	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.0	0.1	0.0
1994	9	0.0	0.7	2.4	2.0	2.2	4.5	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1994	10	0.0	1.0	3.5	3.0	3.3	6.8	0.2	2.3	0.0	0.0	1.5	0.8	0.4	0.1	0.6	0.0
1994	11	0.0	1.2	4.4	3.7	4.2	8.5	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1994	12	0.0	1.5	5.2	4.4	4.9	10.0	0.3	3.4	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1995	1	0.0	0.9	3.2	2.7	3.0	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1995	2	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1995	3	0.0	1.1	3.9	3.3	3.7	7.5	0.2	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1995	4	0.0	1.1	3.8	3.2	3.6	7.3	0.2	2.5	0.0	0.0	1.6	0.9	0.4	0.1	0.7	0.0
1995	5	0.0	0.2	0.6	0.5	0.6	1.1	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.0	0.1	0.0
1995	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	8	0.0	0.4	1.3	1.1	1.3	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.0	0.2	0.0
1995	9	0.0	0.8	2.7	2.3	2.5	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1995	10	0.0	0.9	3.3	2.8	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
1995	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	12	0.0	1.5	5.2	4.4	5.0	10.1	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 22 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (1996 - 2001) (6/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1996	1	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1996	2	0.0	0.6	2.2	1.9	2.1	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1996	3	0.0	0.6	2.0	1.7	1.9	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1996	4	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1996	5	0.0	0.0	0.2	0.1	0.2	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1996	6	0.0	0.2	0.6	0.5	0.5	1.1	0.0	0.4	0.0	0.0	0.2	0.1	0.1	0.0	0.1	0.0
1996	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	9	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1996	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	11	0.0	1.3	4.6	3.9	4.4	8.9	0.3	3.0	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
1996	12	0.0	1.5	5.2	4.4	4.9	10.0	0.3	3.4	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1997	1	0.0	0.7	2.4	2.1	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
1997	2	0.0	0.7	2.4	2.0	2.2	4.5	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1997	3	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1997	4	0.0	0.8	2.7	2.3	2.6	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1997	5	0.0	0.1	0.5	0.4	0.5	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.0	0.1	0.0
1997	6	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1997	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	8	0.0	0.2	0.8	0.6	0.7	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.0	0.1	0.0
1997	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	10	0.0	1.3	4.5	3.8	4.2	8.6	0.3	3.0	0.0	0.0	1.9	1.0	0.5	0.1	0.8	0.0
1997	11	0.0	1.1	3.8	3.2	3.6	7.3	0.2	2.5	0.0	0.0	1.6	0.9	0.4	0.1	0.7	0.0
1997	12	0.0	1.3	4.8	4.0	4.5	9.1	0.3	3.1	0.0	0.0	2.1	1.1	0.5	0.1	0.8	0.0
1998	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	3	0.0	0.7	2.6	2.2	2.5	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1998	4	0.0	0.9	3.3	2.7	3.1	6.3	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1998	5	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
1998	6	0.0	0.3	1.0	0.8	0.9	1.8	0.1	0.6	0.0	0.0	0.4	0.2	0.1	0.0	0.2	0.0
1998	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	9	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1998	10	0.0	1.7	6.1	5.1	5.8	11.7	0.4	4.0	0.0	0.0	2.6	1.4	0.6	0.1	1.1	0.0
1998	11	0.0	1.0	3.6	3.0	3.4	6.9	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
1998	12	0.0	1.5	5.3	4.4	5.0	10.2	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1999	1	0.0	0.9	3.1	2.6	3.0	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1999	2	0.0	1.0	3.7	3.1	3.5	7.1	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.7	0.0
1999	3	0.0	1.3	4.6	3.8	4.3	8.8	0.3	3.0	0.0	0.0	2.0	1.0	0.5	0.1	0.8	0.0
1999	4	0.0	1.2	4.4	3.7	4.2	8.4	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1999	5	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	11	0.0	1.2	4.4	3.7	4.1	8.4	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1999	12	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
2000	1	0.0	0.8	2.7	2.3	2.6	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2000	2	0.0	0.9	3.3	2.8	3.2	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
2000	3	0.0	1.0	3.7	3.1	3.5	7.2	0.2	2.5	0.0	0.0	1.6	0.9	0.4	0.1	0.7	0.0
2000	4	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
2000	5	0.0	0.1	0.5	0.4	0.4	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0
2000	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	9	0.0	0.3	1.2	1.0	1.2	2.4	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.0	0.2	0.0
2000	10	0.0	0.2	0.7	0.6	0.6	1.3	0.0	0.4	0.0	0.0	0.3	0.2	0.1	0.0	0.1	0.0
2000	11	0.0	1.2	4.3	3.6	4.1	8.3	0.3	2.8	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
2000	12	0.0	1.5	5.3	4.5	5.0	10.2	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2001	1	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
2001	2	0.0	0.9	3.1	2.6	3.0	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2001	3	0.0	1.3	4.6	3.8	4.3	8.8	0.3	3.0	0.0	0.0	2.0	1.0	0.5	0.1	0.8	0.0
2001	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	5	0.0	0.2	0.6	0.5	0.6	1.1	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.0	0.1	0.0
2001	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	8	0.0	1.4	5.1	4.3	4.9	9.9	0.3	3.4	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
2001	9	0.0	0.6	2.1	1.8	2.0	4.1	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2001	10	0.0	0.4	1.5	1.3	1.4	2.9	0.1	1.0	0.0	0.0	0.7	0.3	0.2	0.0	0.3	0.0
2001	11	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2001	12	0.0	1.5	5.3	4.5	5.0	10.2	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 22 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (2002 - 2007) (7/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2002	1	0.0	0.9	3.3	2.7	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2002	2	0.0	1.0	3.6	3.0	3.4	7.0	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
2002	3	0.0	0.7	2.5	2.1	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
2002	4	0.0	0.8	2.7	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2002	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	8	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
2002	9	0.0	0.4	1.4	1.2	1.3	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.0	0.2	0.0
2002	10	0.0	0.6	2.0	1.7	1.9	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2002	11	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2002	12	0.0	1.5	5.3	4.4	5.0	10.1	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2003	1	0.0	0.9	3.1	2.6	3.0	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2003	2	0.0	1.0	3.6	3.0	3.4	6.8	0.2	2.3	0.0	0.0	1.5	0.8	0.4	0.1	0.6	0.0
2003	3	0.0	1.1	3.9	3.3	3.7	7.5	0.2	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2003	4	0.0	1.1	4.0	3.3	3.7	7.6	0.3	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2003	5	0.0	0.3	1.2	1.0	1.1	2.2	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.0	0.2	0.0
2003	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	8	0.0	1.0	3.6	3.0	3.4	6.9	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
2003	9	0.0	0.7	2.6	2.2	2.5	5.1	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2003	10	0.0	0.8	2.8	2.4	2.6	5.4	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2003	11	0.0	1.4	4.9	4.1	4.6	9.5	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
2003	12	0.0	1.4	5.1	4.3	4.8	9.8	0.3	3.4	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
2004	1	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
2004	2	0.0	1.0	3.6	3.1	3.4	7.0	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
2004	3	0.0	1.2	4.4	3.7	4.2	8.5	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
2004	4	0.0	0.7	2.5	2.1	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
2004	5	0.0	0.1	0.4	0.3	0.4	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0
2004	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	8	0.0	1.6	5.7	4.8	5.3	10.9	0.4	3.7	0.0	0.0	2.5	1.3	0.6	0.1	1.0	0.0
2004	9	0.0	0.5	1.6	1.4	1.6	3.2	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
2004	10	0.0	1.5	5.3	4.5	5.0	10.2	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2004	11	0.0	1.4	4.9	4.1	4.6	9.4	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
2004	12	0.0	1.5	5.4	4.6	5.1	10.5	0.3	3.6	0.0	0.0	2.4	1.2	0.6	0.1	1.0	0.0
2005	1	0.0	0.9	3.4	2.8	3.2	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
2005	2	0.0	1.0	3.6	3.0	3.4	6.9	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
2005	3	0.0	0.9	3.4	2.8	3.2	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
2005	4	0.0	0.4	1.4	1.2	1.3	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.0	0.2	0.0
2005	5	0.0	0.2	0.8	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.0	0.1	0.0
2005	6	0.0	0.1	0.5	0.4	0.4	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0
2005	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	9	0.0	0.4	1.4	1.2	1.3	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.0	0.2	0.0
2005	10	0.0	1.5	5.3	4.5	5.0	10.2	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2005	11	0.0	1.1	4.0	3.4	3.8	7.8	0.3	2.7	0.0	0.0	1.8	0.9	0.4	0.1	0.7	0.0
2005	12	0.0	1.5	5.2	4.4	4.9	10.0	0.3	3.4	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2006	1	0.0	0.9	3.3	2.7	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2006	2	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2006	3	0.0	1.3	4.6	3.9	4.4	8.9	0.3	3.1	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
2006	4	0.0	1.1	3.9	3.3	3.7	7.5	0.2	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2006	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	6	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	8	0.0	1.2	4.4	3.7	4.2	8.5	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
2006	9	0.0	0.2	0.6	0.5	0.6	1.2	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.0	0.1	0.0
2006	10	0.0	0.9	3.4	2.8	3.2	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
2006	11	0.0	1.2	4.2	3.5	4.0	8.1	0.3	2.8	0.0	0.0	1.8	1.0	0.4	0.1	0.7	0.0
2006	12	0.0	1.5	5.3	4.5	5.0	10.2	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2007	1	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
2007	2	0.0	0.4	1.6	1.3	1.5	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
2007	3	0.0	1.4	4.8	4.1	4.6	9.3	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
2007	4	0.0	0.3	1.0	0.9	1.0	2.0	0.1	0.7	0.0	0.0	0.4	0.2	0.1	0.0	0.2	0.0
2007	5	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	8	0.0	0.2	0.7	0.6	0.7	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.0	0.1	0.0
2007	9	0.0	0.3	1.0	0.9	1.0	2.0	0.1	0.7	0.0	0.0	0.4	0.2	0.1	0.0	0.2	0.0
2007	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	11	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2007	12	0.0	1.5	5.4	4.5	5.1	10.3	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 22 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (2008 - 2013) (8/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2008	1	0.0	0.6	2.3	1.9	2.2	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2008	2	0.0	0.9	3.3	2.8	3.2	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
2008	3	0.0	1.1	4.1	3.4	3.9	7.9	0.3	2.7	0.0	0.0	1.8	0.9	0.4	0.1	0.7	0.0
2008	4	0.0	1.2	4.4	3.7	4.2	8.5	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
2008	5	0.0	0.1	0.3	0.2	0.2	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
2008	6	0.0	0.1	0.4	0.3	0.3	0.7	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0
2008	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	8	0.0	0.6	2.2	1.9	2.1	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2008	9	0.0	0.4	1.5	1.3	1.4	2.9	0.1	1.0	0.0	0.0	0.7	0.3	0.2	0.0	0.3	0.0
2008	10	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2008	11	0.0	1.0	3.7	3.1	3.5	7.1	0.2	2.5	0.0	0.0	1.6	0.8	0.4	0.1	0.7	0.0
2008	12	0.0	1.5	5.3	4.4	5.0	10.2	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2009	1	0.0	1.0	3.7	3.1	3.5	7.0	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
2009	2	0.0	1.1	3.8	3.2	3.6	7.3	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2009	3	0.0	1.2	4.4	3.7	4.2	8.4	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
2009	4	0.0	0.6	2.3	1.9	2.2	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2009	5	0.0	0.1	0.2	0.2	0.2	0.4	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2009	6	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2009	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	8	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2009	9	0.0	0.1	0.4	0.4	0.4	0.8	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0
2009	10	0.0	0.4	1.5	1.3	1.4	2.9	0.1	1.0	0.0	0.0	0.7	0.3	0.2	0.0	0.3	0.0
2009	11	0.0	1.1	4.0	3.3	3.7	7.6	0.3	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2009	12	0.0	1.5	5.5	4.6	5.2	10.6	0.4	3.6	0.0	0.0	2.4	1.3	0.6	0.1	1.0	0.0
2010	1	0.0	1.0	3.5	2.9	3.3	6.7	0.2	2.3	0.0	0.0	1.5	0.8	0.4	0.1	0.6	0.0
2010	2	0.0	1.1	3.8	3.2	3.6	7.4	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2010	3	0.0	1.1	3.8	3.2	3.6	7.3	0.2	2.5	0.0	0.0	1.6	0.9	0.4	0.1	0.7	0.0
2010	4	0.0	0.9	3.2	2.7	3.0	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2010	5	0.0	0.2	0.7	0.6	0.7	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.0	0.1	0.0
2010	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	7	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2010	8	0.0	0.4	1.3	1.1	1.2	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.0	0.2	0.0
2010	9	0.0	1.3	4.7	4.0	4.5	9.1	0.3	3.1	0.0	0.0	2.1	1.1	0.5	0.1	0.8	0.0
2010	10	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
2010	11	0.0	1.5	5.3	4.5	5.0	10.2	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2010	12	0.0	1.5	5.2	4.4	4.9	10.0	0.3	3.4	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2011	1	0.0	1.0	3.6	3.0	3.4	6.9	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
2011	2	0.0	1.0	3.7	3.1	3.5	7.2	0.2	2.5	0.0	0.0	1.6	0.9	0.4	0.1	0.7	0.0
2011	3	0.0	1.2	4.2	3.5	4.0	8.1	0.3	2.8	0.0	0.0	1.8	1.0	0.4	0.1	0.7	0.0
2011	4	0.0	0.8	2.9	2.5	2.8	5.7	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
2011	5	0.0	0.1	0.3	0.2	0.3	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
2011	6	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	8	0.0	0.1	0.3	0.3	0.3	0.6	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0
2011	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	10	0.0	1.5	5.5	4.6	5.2	10.5	0.4	3.6	0.0	0.0	2.4	1.3	0.6	0.1	1.0	0.0
2011	11	0.0	1.5	5.2	4.4	5.0	10.1	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2011	12	0.0	1.6	5.5	4.7	5.2	10.7	0.4	3.7	0.0	0.0	2.4	1.3	0.6	0.1	1.0	0.0
2012	1	0.0	1.0	3.6	3.0	3.4	7.0	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
2012	2	0.0	1.1	3.9	3.3	3.7	7.5	0.2	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2012	3	0.0	1.1	3.9	3.3	3.7	7.6	0.3	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2012	4	0.0	0.4	1.4	1.2	1.3	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.0	0.3	0.0
2012	5	0.0	0.3	0.9	0.8	0.9	1.8	0.1	0.6	0.0	0.0	0.4	0.2	0.1	0.0	0.2	0.0
2012	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	8	0.0	0.7	2.4	2.1	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
2012	9	0.0	0.2	0.7	0.6	0.7	1.4	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.0	0.1	0.0
2012	10	0.0	0.8	2.9	2.5	2.8	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
2012	11	0.0	1.4	4.9	4.1	4.6	9.5	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
2012	12	0.0	1.6	5.6	4.7	5.3	10.7	0.4	3.7	0.0	0.0	2.4	1.3	0.6	0.1	1.0	0.0
2013	1	0.0	0.9	3.2	2.7	3.1	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2013	2	0.0	1.1	3.8	3.2	3.6	7.3	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2013	3	0.0	1.2	4.4	3.7	4.2	8.5	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
2013	4	0.0	0.8	2.7	2.3	2.5	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2013	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	6	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2013	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	8	0.0	1.3	4.6	3.8	4.3	8.8	0.3	3.0	0.0	0.0	2.0	1.0	0.5	0.1	0.8	0.0
2013	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	11	0.0	1.2	4.4	3.7	4.2	8.5	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
2013	12	0.0	1.4	5.1	4.3	4.8	9.7	0.3	3.3	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 22 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (2014 - 2019) (9/9)

		Sang River Basin															
	District	Chattogram								Cox's Bazar	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2014	1	0.0	0.9	3.1	2.6	3.0	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2014	2	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2014	3	0.0	1.2	4.2	3.5	4.0	8.1	0.3	2.8	0.0	0.0	1.8	1.0	0.4	0.1	0.7	0.0
2014	4	0.0	1.1	3.8	3.2	3.6	7.3	0.2	2.5	0.0	0.0	1.6	0.9	0.4	0.1	0.7	0.0
2014	5	0.0	0.1	0.4	0.4	0.4	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0
2014	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	9	0.0	0.2	0.8	0.7	0.7	1.5	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.0	0.1	0.0
2014	10	0.0	1.0	3.4	2.9	3.2	6.6	0.2	2.3	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
2014	11	0.0	1.5	5.3	4.5	5.0	10.2	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2014	12	0.0	1.5	5.5	4.6	5.2	10.6	0.4	3.6	0.0	0.0	2.4	1.3	0.6	0.1	1.0	0.0
2015	1	0.0	1.0	3.4	2.9	3.3	6.6	0.2	2.3	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
2015	2	0.0	1.0	3.6	3.0	3.4	6.9	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
2015	3	0.0	1.5	5.2	4.4	4.9	10.0	0.3	3.4	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2015	4	0.0	0.1	0.4	0.4	0.4	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0
2015	5	0.0	0.3	0.9	0.8	0.9	1.8	0.1	0.6	0.0	0.0	0.4	0.2	0.1	0.0	0.2	0.0
2015	6	0.0	0.1	0.3	0.2	0.3	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
2015	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	8	0.0	0.9	3.3	2.8	3.2	6.4	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
2015	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	10	0.0	1.6	5.6	4.7	5.3	10.7	0.4	3.7	0.0	0.0	2.4	1.3	0.6	0.1	1.0	0.0
2015	11	0.0	1.4	4.9	4.1	4.6	9.4	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
2015	12	0.0	1.5	5.2	4.4	4.9	10.0	0.3	3.4	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2016	1	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2016	2	0.0	0.9	3.2	2.7	3.0	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2016	3	0.0	1.0	3.5	2.9	3.3	6.7	0.2	2.3	0.0	0.0	1.5	0.8	0.4	0.1	0.6	0.0
2016	4	0.0	1.1	4.1	3.4	3.8	7.8	0.3	2.7	0.0	0.0	1.8	0.9	0.4	0.1	0.7	0.0
2016	5	0.0	0.1	0.3	0.2	0.2	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
2016	6	0.0	0.2	0.5	0.5	0.5	1.0	0.0	0.4	0.0	0.0	0.2	0.1	0.1	0.0	0.1	0.0
2016	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	8	0.0	0.3	1.2	1.0	1.1	2.2	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.0	0.2	0.0
2016	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	10	0.0	0.9	3.3	2.8	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2016	11	0.0	0.8	2.7	2.3	2.5	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2016	12	0.0	1.6	5.6	4.7	5.3	10.7	0.4	3.7	0.0	0.0	2.4	1.3	0.6	0.1	1.0	0.0
2017	1	0.0	1.1	4.0	3.4	3.8	7.7	0.3	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2017	2	0.0	1.1	3.9	3.3	3.7	7.5	0.2	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2017	3	0.0	0.8	3.0	2.5	2.8	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
2017	4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	5	0.0	0.2	0.8	0.6	0.7	1.5	0.0	0.5	0.0	0.0	0.3	0.2	0.1	0.0	0.1	0.0
2017	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	8	0.0	0.1	0.5	0.4	0.4	0.9	0.0	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.1	0.0
2017	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	10	0.0	0.7	2.6	2.2	2.5	5.1	0.2	1.7	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2017	11	0.0	1.4	5.2	4.3	4.9	9.9	0.3	3.4	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
2017	12	0.0	1.4	4.9	4.1	4.6	9.3	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
2018	1	0.0	0.9	3.2	2.7	3.1	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2018	2	0.0	0.9	3.3	2.7	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2018	3	0.0	1.2	4.2	3.5	4.0	8.1	0.3	2.8	0.0	0.0	1.8	1.0	0.4	0.1	0.7	0.0
2018	4	0.0	0.8	3.0	2.5	2.8	5.7	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
2018	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	8	0.0	0.6	2.0	1.7	1.9	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2018	9	0.0	0.5	2.0	1.6	1.8	3.8	0.1	1.3	0.0	0.0	0.9	0.4	0.2	0.0	0.3	0.0
2018	10	0.0	0.5	2.0	1.6	1.9	3.8	0.1	1.3	0.0	0.0	0.9	0.4	0.2	0.0	0.3	0.0
2018	11	0.0	1.4	5.1	4.3	4.8	9.8	0.3	3.4	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
2018	12	0.0	1.5	5.2	4.4	5.0	10.1	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2019	1	0.0	1.0	3.7	3.1	3.5	7.1	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.7	0.0
2019	2	0.0	0.9	3.3	2.8	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
2019	3	0.0	1.3	4.7	3.9	4.4	9.0	0.3	3.1	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
2019	4	0.0	0.8	2.9	2.4	2.7	5.5	0.2	1.9	0.0	0.0	1.2	0.7	0.3	0.0	0.5	0.0
2019	5	0.0	0.2	0.6	0.5	0.6	1.2	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.0	0.1	0.0
2019	6	0.0	0.1	0.5	0.4	0.5	1.0	0.0	0.3	0.0	0.0	0.2	0.1	0.1	0.0	0.1	0.0
2019	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	8	0.0	0.2	0.8	0.7	0.8	1.6	0.1	0.6	0.0	0.0	0.4	0.2	0.1	0.0	0.1	0.0
2019	9	0.0	0.0	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
2019	10	0.0	0.7	2.4	2.0	2.2	4.5	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2019	11	0.0	0.7	2.5	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
2019	12	0.0	1.5	5.4	4.5	5.1	10.4	0.3	3.6	0.0	0.0	2.3	1.2	0.5	0.1	1.0	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 23 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1966 - 1971) (1/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1966	1	0.0	0.3	5.3	2.9	0.0	0.0	0.2	1.4	0.7	0.1
1966	2	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
1966	3	0.0	0.5	8.8	4.7	0.0	0.0	0.3	2.3	1.2	0.2
1966	4	0.0	0.5	8.7	4.7	0.0	0.0	0.3	2.3	1.2	0.2
1966	5	0.0	0.1	1.2	0.7	0.0	0.0	0.0	0.3	0.2	0.0
1966	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1966	9	0.0	0.1	1.8	1.0	0.0	0.0	0.1	0.5	0.2	0.0
1966	10	0.0	0.4	6.8	3.7	0.0	0.0	0.2	1.8	0.9	0.1
1966	11	0.0	0.7	10.9	5.8	0.0	0.0	0.4	2.8	1.5	0.2
1966	12	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1967	1	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1967	2	0.0	0.4	7.2	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1967	3	0.0	0.5	8.5	4.5	0.0	0.0	0.3	2.2	1.2	0.2
1967	4	0.0	0.3	5.0	2.7	0.0	0.0	0.2	1.3	0.7	0.1
1967	5	0.0	0.1	2.0	1.1	0.0	0.0	0.1	0.5	0.3	0.0
1967	6	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1967	7	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1967	8	0.0	0.1	1.8	0.9	0.0	0.0	0.1	0.5	0.2	0.0
1967	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1967	10	0.0	0.3	4.4	2.4	0.0	0.0	0.1	1.1	0.6	0.1
1967	11	0.0	0.7	11.0	5.9	0.0	0.0	0.4	2.8	1.5	0.2
1967	12	0.0	0.8	12.3	6.6	0.0	0.0	0.4	3.2	1.7	0.2
1968	1	0.0	0.4	7.2	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1968	2	0.0	0.4	6.7	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1968	3	0.0	0.5	8.6	4.6	0.0	0.0	0.3	2.2	1.2	0.2
1968	4	0.0	0.4	7.1	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1968	5	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1968	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	7	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
1968	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1968	9	0.0	0.3	4.9	2.6	0.0	0.0	0.2	1.3	0.7	0.1
1968	10	0.0	0.6	9.5	5.1	0.0	0.0	0.3	2.4	1.3	0.2
1968	11	0.0	0.7	10.7	5.7	0.0	0.0	0.3	2.8	1.5	0.2
1968	12	0.0	0.8	12.7	6.8	0.0	0.0	0.4	3.3	1.7	0.2
1969	1	0.0	0.4	7.1	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1969	2	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1969	3	0.0	0.4	6.4	3.4	0.0	0.0	0.2	1.7	0.9	0.1
1969	4	0.0	0.3	4.4	2.4	0.0	0.0	0.1	1.1	0.6	0.1
1969	5	0.0	0.2	2.8	1.5	0.0	0.0	0.1	0.7	0.4	0.1
1969	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1969	10	0.0	0.7	11.3	6.1	0.0	0.0	0.4	2.9	1.5	0.2
1969	11	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1969	12	0.0	0.7	12.0	6.4	0.0	0.0	0.4	3.1	1.6	0.2
1970	1	0.0	0.4	7.1	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1970	2	0.0	0.4	6.8	3.6	0.0	0.0	0.2	1.8	0.9	0.1
1970	3	0.0	0.5	8.9	4.8	0.0	0.0	0.3	2.3	1.2	0.2
1970	4	0.0	0.3	5.4	2.9	0.0	0.0	0.2	1.4	0.7	0.1
1970	5	0.0	0.1	1.5	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1970	6	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1970	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	8	0.0	0.5	8.1	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1970	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1970	11	0.0	0.3	4.9	2.6	0.0	0.0	0.2	1.3	0.7	0.1
1970	12	0.0	0.7	12.1	6.5	0.0	0.0	0.4	3.1	1.7	0.2
1971	1	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1971	2	0.0	0.4	7.1	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1971	3	0.0	0.6	10.3	5.5	0.0	0.0	0.3	2.7	1.4	0.2
1971	4	0.0	0.5	8.5	4.5	0.0	0.0	0.3	2.2	1.2	0.2
1971	5	0.0	0.2	2.5	1.3	0.0	0.0	0.1	0.6	0.3	0.0
1971	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	7	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1971	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1971	10	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1971	11	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1971	12	0.0	0.8	12.4	6.7	0.0	0.0	0.4	3.2	1.7	0.2

Source: JICA Study Team

Attachment 23 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1972 - 1977) (2/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1972	1	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1972	2	0.0	0.4	6.6	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1972	3	0.0	0.6	9.9	5.3	0.0	0.0	0.3	2.6	1.4	0.2
1972	4	0.0	0.2	4.0	2.1	0.0	0.0	0.1	1.0	0.5	0.1
1972	5	0.0	0.1	1.7	0.9	0.0	0.0	0.1	0.4	0.2	0.0
1972	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1972	7	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
1972	8	0.0	0.1	1.2	0.6	0.0	0.0	0.0	0.3	0.2	0.0
1972	9	0.0	0.6	10.2	5.5	0.0	0.0	0.3	2.6	1.4	0.2
1972	10	0.0	0.4	6.8	3.6	0.0	0.0	0.2	1.8	0.9	0.1
1972	11	0.0	0.6	9.6	5.1	0.0	0.0	0.3	2.5	1.3	0.2
1972	12	0.0	0.8	12.4	6.7	0.0	0.0	0.4	3.2	1.7	0.2
1973	1	0.0	0.4	6.6	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1973	2	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1973	3	0.0	0.6	9.9	5.3	0.0	0.0	0.3	2.6	1.4	0.2
1973	4	0.0	0.4	7.0	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1973	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1973	7	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
1973	8	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1973	9	0.0	0.2	2.4	1.3	0.0	0.0	0.1	0.6	0.3	0.0
1973	10	0.0	0.4	6.6	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1973	11	0.0	0.2	2.9	1.6	0.0	0.0	0.1	0.8	0.4	0.1
1973	12	0.0	0.6	9.8	5.3	0.0	0.0	0.3	2.5	1.3	0.2
1974	1	0.0	0.4	6.6	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1974	2	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
1974	3	0.0	0.4	6.4	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1974	4	0.0	0.4	6.4	3.4	0.0	0.0	0.2	1.7	0.9	0.1
1974	5	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
1974	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1974	8	0.0	0.3	5.0	2.7	0.0	0.0	0.2	1.3	0.7	0.1
1974	9	0.0	0.1	1.4	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1974	10	0.0	0.3	5.0	2.7	0.0	0.0	0.2	1.3	0.7	0.1
1974	11	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.5	0.8	0.1
1974	12	0.0	0.8	12.5	6.7	0.0	0.0	0.4	3.2	1.7	0.2
1975	1	0.0	0.5	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1975	2	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
1975	3	0.0	0.7	10.5	5.7	0.0	0.0	0.3	2.7	1.4	0.2
1975	4	0.0	0.4	7.0	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1975	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1975	8	0.0	0.5	8.5	4.6	0.0	0.0	0.3	2.2	1.2	0.2
1975	9	0.0	0.2	2.7	1.5	0.0	0.0	0.1	0.7	0.4	0.1
1975	10	0.0	0.1	2.2	1.2	0.0	0.0	0.1	0.6	0.3	0.0
1975	11	0.0	0.6	10.2	5.5	0.0	0.0	0.3	2.6	1.4	0.2
1975	12	0.0	0.7	12.1	6.5	0.0	0.0	0.4	3.1	1.7	0.2
1976	1	0.0	0.4	7.1	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1976	2	0.0	0.5	7.7	4.1	0.0	0.0	0.2	2.0	1.0	0.1
1976	3	0.0	0.6	10.5	5.6	0.0	0.0	0.3	2.7	1.4	0.2
1976	4	0.0	0.6	10.3	5.5	0.0	0.0	0.3	2.7	1.4	0.2
1976	5	0.0	0.0	0.7	0.4	0.0	0.0	0.0	0.2	0.1	0.0
1976	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1976	8	0.0	0.1	1.6	0.9	0.0	0.0	0.1	0.4	0.2	0.0
1976	9	0.0	0.4	7.1	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1976	10	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1976	11	0.0	0.3	5.4	2.9	0.0	0.0	0.2	1.4	0.7	0.1
1976	12	0.0	0.8	12.2	6.5	0.0	0.0	0.4	3.1	1.7	0.2
1977	1	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1977	2	0.0	0.4	5.8	3.1	0.0	0.0	0.2	1.5	0.8	0.1
1977	3	0.0	0.6	9.9	5.3	0.0	0.0	0.3	2.6	1.4	0.2
1977	4	0.0	0.1	2.2	1.2	0.0	0.0	0.1	0.6	0.3	0.0
1977	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977	8	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1977	9	0.0	0.3	5.2	2.8	0.0	0.0	0.2	1.4	0.7	0.1
1977	10	0.0	0.4	6.4	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1977	11	0.0	0.5	8.5	4.6	0.0	0.0	0.3	2.2	1.2	0.2
1977	12	0.0	0.8	12.5	6.7	0.0	0.0	0.4	3.2	1.7	0.2

Source: JICA Study Team

Attachment 23 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1978 - 1983) (3/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1978	1	0.0	0.5	7.9	4.2	0.0	0.0	0.3	2.0	1.1	0.1
1978	2	0.0	0.5	8.0	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1978	3	0.0	0.7	11.0	5.9	0.0	0.0	0.4	2.9	1.5	0.2
1978	4	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.5	0.8	0.1
1978	5	0.0	0.0	0.7	0.4	0.0	0.0	0.0	0.2	0.1	0.0
1978	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	7	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1978	8	0.0	0.4	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1978	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978	10	0.0	0.2	3.3	1.8	0.0	0.0	0.1	0.9	0.5	0.1
1978	11	0.0	0.7	11.0	5.9	0.0	0.0	0.4	2.9	1.5	0.2
1978	12	0.0	0.8	12.7	6.8	0.0	0.0	0.4	3.3	1.7	0.2
1979	1	0.0	0.5	8.1	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1979	2	0.0	0.5	8.0	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1979	3	0.0	0.7	11.2	6.0	0.0	0.0	0.4	2.9	1.5	0.2
1979	4	0.0	0.4	7.1	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1979	5	0.0	0.2	2.5	1.4	0.0	0.0	0.1	0.7	0.3	0.0
1979	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	8	0.0	0.4	6.4	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1979	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979	10	0.0	0.7	10.8	5.8	0.0	0.0	0.4	2.8	1.5	0.2
1979	11	0.0	0.7	11.2	6.0	0.0	0.0	0.4	2.9	1.5	0.2
1979	12	0.0	0.7	11.2	6.0	0.0	0.0	0.4	2.9	1.5	0.2
1980	1	0.0	0.5	8.0	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1980	2	0.0	0.5	7.7	4.1	0.0	0.0	0.2	2.0	1.1	0.1
1980	3	0.0	0.5	8.3	4.5	0.0	0.0	0.3	2.2	1.1	0.2
1980	4	0.0	0.5	8.8	4.7	0.0	0.0	0.3	2.3	1.2	0.2
1980	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	6	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
1980	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980	8	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.0	0.0
1980	9	0.0	0.2	3.2	1.7	0.0	0.0	0.1	0.8	0.4	0.1
1980	10	0.0	0.1	1.5	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1980	11	0.0	0.7	11.6	6.2	0.0	0.0	0.4	3.0	1.6	0.2
1980	12	0.0	0.8	12.4	6.6	0.0	0.0	0.4	3.2	1.7	0.2
1981	1	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1981	2	0.0	0.5	8.1	4.4	0.0	0.0	0.3	2.1	1.1	0.2
1981	3	0.0	0.4	6.8	3.7	0.0	0.0	0.2	1.8	0.9	0.1
1981	4	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1981	5	0.0	0.0	0.7	0.4	0.0	0.0	0.0	0.2	0.1	0.0
1981	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981	8	0.0	0.7	10.7	5.7	0.0	0.0	0.3	2.8	1.5	0.2
1981	9	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.6	0.8	0.1
1981	10	0.0	0.8	13.1	7.0	0.0	0.0	0.4	3.4	1.8	0.2
1981	11	0.0	0.7	11.5	6.2	0.0	0.0	0.4	3.0	1.6	0.2
1981	12	0.0	0.7	11.8	6.3	0.0	0.0	0.4	3.1	1.6	0.2
1982	1	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
1982	2	0.0	0.4	6.2	3.3	0.0	0.0	0.2	1.6	0.9	0.1
1982	3	0.0	0.7	10.6	5.7	0.0	0.0	0.3	2.7	1.4	0.2
1982	4	0.0	0.1	1.9	1.0	0.0	0.0	0.1	0.5	0.3	0.0
1982	5	0.0	0.2	3.0	1.6	0.0	0.0	0.1	0.8	0.4	0.1
1982	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	7	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.2	0.1	0.0
1982	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982	10	0.0	0.8	12.4	6.7	0.0	0.0	0.4	3.2	1.7	0.2
1982	11	0.0	0.5	8.6	4.6	0.0	0.0	0.3	2.2	1.2	0.2
1982	12	0.0	0.8	12.5	6.7	0.0	0.0	0.4	3.2	1.7	0.2
1983	1	0.0	0.4	6.6	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1983	2	0.0	0.4	7.1	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1983	3	0.0	0.4	6.8	3.6	0.0	0.0	0.2	1.8	0.9	0.1
1983	4	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1983	5	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.2	0.1	0.0
1983	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	7	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1983	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	9	0.0	0.4	6.2	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1983	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983	11	0.0	0.4	5.8	3.1	0.0	0.0	0.2	1.5	0.8	0.1
1983	12	0.0	0.7	11.0	5.9	0.0	0.0	0.4	2.8	1.5	0.2

Source: JICA Study Team

Attachment 23 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1984 - 1989) (4/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1984	1	0.0	0.4	6.7	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1984	2	0.0	0.5	8.1	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1984	3	0.0	0.6	10.2	5.5	0.0	0.0	0.3	2.6	1.4	0.2
1984	4	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1984	5	0.0	0.1	1.4	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1984	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	8	0.0	0.4	6.8	3.7	0.0	0.0	0.2	1.8	0.9	0.1
1984	9	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1984	10	0.0	0.2	3.4	1.8	0.0	0.0	0.1	0.9	0.5	0.1
1984	11	0.0	0.7	11.6	6.2	0.0	0.0	0.4	3.0	1.6	0.2
1984	12	0.0	0.7	12.1	6.5	0.0	0.0	0.4	3.1	1.6	0.2
1985	1	0.0	0.5	8.0	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1985	2	0.0	0.5	8.0	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1985	3	0.0	0.5	7.4	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1985	4	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
1985	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985	8	0.0	0.4	7.2	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1985	9	0.0	0.2	3.7	2.0	0.0	0.0	0.1	1.0	0.5	0.1
1985	10	0.0	0.8	12.2	6.5	0.0	0.0	0.4	3.2	1.7	0.2
1985	11	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1985	12	0.0	0.8	12.2	6.5	0.0	0.0	0.4	3.1	1.7	0.2
1986	1	0.0	0.5	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1986	2	0.0	0.5	8.1	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1986	3	0.0	0.7	10.9	5.9	0.0	0.0	0.4	2.8	1.5	0.2
1986	4	0.0	0.3	4.1	2.2	0.0	0.0	0.1	1.1	0.6	0.1
1986	5	0.0	0.1	1.4	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1986	6	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
1986	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1986	8	0.0	0.6	9.6	5.2	0.0	0.0	0.3	2.5	1.3	0.2
1986	9	0.0	0.3	5.3	2.8	0.0	0.0	0.2	1.4	0.7	0.1
1986	10	0.0	0.4	7.0	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1986	11	0.0	0.4	5.7	3.1	0.0	0.0	0.2	1.5	0.8	0.1
1986	12	0.0	0.7	12.1	6.5	0.0	0.0	0.4	3.1	1.7	0.2
1987	1	0.0	0.4	7.0	3.7	0.0	0.0	0.2	1.8	1.0	0.1
1987	2	0.0	0.5	7.4	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1987	3	0.0	0.6	9.1	4.9	0.0	0.0	0.3	2.3	1.2	0.2
1987	4	0.0	0.2	3.0	1.6	0.0	0.0	0.1	0.8	0.4	0.1
1987	5	0.0	0.2	2.8	1.5	0.0	0.0	0.1	0.7	0.4	0.1
1987	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	8	0.0	0.6	9.0	4.8	0.0	0.0	0.3	2.3	1.2	0.2
1987	9	0.0	0.2	3.8	2.1	0.0	0.0	0.1	1.0	0.5	0.1
1987	10	0.0	0.6	9.3	5.0	0.0	0.0	0.3	2.4	1.3	0.2
1987	11	0.0	0.5	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1987	12	0.0	0.8	12.4	6.7	0.0	0.0	0.4	3.2	1.7	0.2
1988	1	0.0	0.5	7.7	4.1	0.0	0.0	0.3	2.0	1.1	0.1
1988	2	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1988	3	0.0	0.6	9.5	5.1	0.0	0.0	0.3	2.5	1.3	0.2
1988	4	0.0	0.2	3.8	2.0	0.0	0.0	0.1	1.0	0.5	0.1
1988	5	0.0	0.1	1.0	0.5	0.0	0.0	0.0	0.3	0.1	0.0
1988	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988	7	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
1988	8	0.0	0.1	1.1	0.6	0.0	0.0	0.0	0.3	0.2	0.0
1988	9	0.0	0.2	3.2	1.7	0.0	0.0	0.1	0.8	0.4	0.1
1988	10	0.0	0.1	1.6	0.8	0.0	0.0	0.1	0.4	0.2	0.0
1988	11	0.0	0.7	11.0	5.9	0.0	0.0	0.4	2.8	1.5	0.2
1988	12	0.0	0.8	12.6	6.8	0.0	0.0	0.4	3.3	1.7	0.2
1989	1	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
1989	2	0.0	0.5	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1989	3	0.0	0.7	10.8	5.8	0.0	0.0	0.4	2.8	1.5	0.2
1989	4	0.0	0.3	5.3	2.8	0.0	0.0	0.2	1.4	0.7	0.1
1989	5	0.0	0.1	2.1	1.1	0.0	0.0	0.1	0.6	0.3	0.0
1989	6	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1989	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	8	0.0	1.2	19.7	10.6	0.0	0.0	0.6	5.1	2.7	0.4
1989	9	0.0	0.2	3.3	1.8	0.0	0.0	0.1	0.8	0.4	0.1
1989	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989	11	0.0	0.7	11.0	5.9	0.0	0.0	0.4	2.8	1.5	0.2
1989	12	0.0	0.8	12.3	6.6	0.0	0.0	0.4	3.2	1.7	0.2

Source: JICA Study Team

Attachment 23 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1990 - 1995) (5/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1990	1	0.0	0.4	6.9	3.7	0.0	0.0	0.2	1.8	0.9	0.1
1990	2	0.0	0.4	6.2	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1990	3	0.0	0.4	6.4	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1990	4	0.0	0.2	2.6	1.4	0.0	0.0	0.1	0.7	0.3	0.0
1990	5	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
1990	6	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1990	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990	8	0.0	0.7	11.9	6.4	0.0	0.0	0.4	3.1	1.6	0.2
1990	9	0.0	0.2	3.8	2.1	0.0	0.0	0.1	1.0	0.5	0.1
1990	10	0.0	0.4	6.9	3.7	0.0	0.0	0.2	1.8	0.9	0.1
1990	11	0.0	0.5	7.5	4.0	0.0	0.0	0.2	2.0	1.0	0.1
1990	12	0.0	0.7	10.7	5.8	0.0	0.0	0.3	2.8	1.5	0.2
1991	1	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1991	2	0.0	0.4	7.2	3.8	0.0	0.0	0.2	1.9	1.0	0.1
1991	3	0.0	0.6	10.1	5.4	0.0	0.0	0.3	2.6	1.4	0.2
1991	4	0.0	0.1	2.2	1.2	0.0	0.0	0.1	0.6	0.3	0.0
1991	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	8	0.0	1.2	19.8	10.6	0.0	0.0	0.6	5.1	2.7	0.4
1991	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991	11	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1991	12	0.0	0.7	11.5	6.2	0.0	0.0	0.4	3.0	1.6	0.2
1992	1	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1992	2	0.0	0.2	3.0	1.6	0.0	0.0	0.1	0.8	0.4	0.1
1992	3	0.0	0.6	9.0	4.8	0.0	0.0	0.3	2.3	1.2	0.2
1992	4	0.0	0.6	9.7	5.2	0.0	0.0	0.3	2.5	1.3	0.2
1992	5	0.0	0.1	1.5	0.8	0.0	0.0	0.0	0.4	0.2	0.0
1992	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992	8	0.0	0.5	7.9	4.2	0.0	0.0	0.3	2.0	1.1	0.1
1992	9	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1992	10	0.0	0.2	3.6	1.9	0.0	0.0	0.1	0.9	0.5	0.1
1992	11	0.0	0.6	9.9	5.3	0.0	0.0	0.3	2.6	1.4	0.2
1992	12	0.0	0.7	11.6	6.2	0.0	0.0	0.4	3.0	1.6	0.2
1993	1	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1993	2	0.0	0.3	4.6	2.5	0.0	0.0	0.1	1.2	0.6	0.1
1993	3	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1993	4	0.0	0.2	3.5	1.9	0.0	0.0	0.1	0.9	0.5	0.1
1993	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993	10	0.0	0.8	12.8	6.9	0.0	0.0	0.4	3.3	1.8	0.2
1993	11	0.0	0.7	10.5	5.7	0.0	0.0	0.3	2.7	1.4	0.2
1993	12	0.0	0.8	12.4	6.6	0.0	0.0	0.4	3.2	1.7	0.2
1994	1	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1994	2	0.0	0.5	7.9	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1994	3	0.0	0.3	4.1	2.2	0.0	0.0	0.1	1.1	0.6	0.1
1994	4	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
1994	5	0.0	0.1	1.4	0.7	0.0	0.0	0.0	0.4	0.2	0.0
1994	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994	8	0.0	0.1	1.7	0.9	0.0	0.0	0.1	0.4	0.2	0.0
1994	9	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.5	0.8	0.1
1994	10	0.0	0.5	8.3	4.5	0.0	0.0	0.3	2.2	1.1	0.2
1994	11	0.0	0.7	10.6	5.7	0.0	0.0	0.3	2.7	1.4	0.2
1994	12	0.0	0.8	12.3	6.6	0.0	0.0	0.4	3.2	1.7	0.2
1995	1	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
1995	2	0.0	0.4	6.6	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1995	3	0.0	0.6	9.2	5.0	0.0	0.0	0.3	2.4	1.3	0.2
1995	4	0.0	0.6	9.0	4.8	0.0	0.0	0.3	2.3	1.2	0.2
1995	5	0.0	0.1	1.4	0.7	0.0	0.0	0.0	0.4	0.2	0.0
1995	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	8	0.0	0.2	3.2	1.7	0.0	0.0	0.1	0.8	0.4	0.1
1995	9	0.0	0.4	6.4	3.4	0.0	0.0	0.2	1.7	0.9	0.1
1995	10	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
1995	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995	12	0.0	0.8	12.4	6.7	0.0	0.0	0.4	3.2	1.7	0.2

Source: JICA Study Team

Attachment 23 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1996 - 2001) (6/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1996	1	0.0	0.4	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1996	2	0.0	0.3	5.3	2.8	0.0	0.0	0.2	1.4	0.7	0.1
1996	3	0.0	0.3	4.8	2.6	0.0	0.0	0.2	1.2	0.7	0.1
1996	4	0.0	0.3	4.4	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1996	5	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.1	0.1	0.0
1996	6	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.3	0.2	0.0
1996	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	8	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	9	0.0	0.3	4.6	2.5	0.0	0.0	0.1	1.2	0.6	0.1
1996	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996	11	0.0	0.7	10.9	5.9	0.0	0.0	0.4	2.8	1.5	0.2
1996	12	0.0	0.8	12.3	6.6	0.0	0.0	0.4	3.2	1.7	0.2
1997	1	0.0	0.4	5.8	3.1	0.0	0.0	0.2	1.5	0.8	0.1
1997	2	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.5	0.8	0.1
1997	3	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1997	4	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1997	5	0.0	0.1	1.2	0.6	0.0	0.0	0.0	0.3	0.2	0.0
1997	6	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
1997	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	8	0.0	0.1	1.8	1.0	0.0	0.0	0.1	0.5	0.2	0.0
1997	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997	10	0.0	0.7	10.6	5.7	0.0	0.0	0.3	2.8	1.5	0.2
1997	11	0.0	0.6	9.0	4.8	0.0	0.0	0.3	2.3	1.2	0.2
1997	12	0.0	0.7	11.3	6.1	0.0	0.0	0.4	2.9	1.5	0.2
1998	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	3	0.0	0.4	6.2	3.3	0.0	0.0	0.2	1.6	0.9	0.1
1998	4	0.0	0.5	7.7	4.1	0.0	0.0	0.3	2.0	1.1	0.1
1998	5	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
1998	6	0.0	0.1	2.3	1.2	0.0	0.0	0.1	0.6	0.3	0.0
1998	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	9	0.0	0.3	4.6	2.5	0.0	0.0	0.1	1.2	0.6	0.1
1998	10	0.0	0.9	14.4	7.8	0.0	0.0	0.5	3.7	2.0	0.3
1998	11	0.0	0.5	8.5	4.6	0.0	0.0	0.3	2.2	1.2	0.2
1998	12	0.0	0.8	12.6	6.7	0.0	0.0	0.4	3.3	1.7	0.2
1999	1	0.0	0.5	7.4	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1999	2	0.0	0.5	8.7	4.7	0.0	0.0	0.3	2.3	1.2	0.2
1999	3	0.0	0.7	10.9	5.8	0.0	0.0	0.4	2.8	1.5	0.2
1999	4	0.0	0.6	10.4	5.6	0.0	0.0	0.3	2.7	1.4	0.2
1999	5	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
1999	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	11	0.0	0.6	10.4	5.6	0.0	0.0	0.3	2.7	1.4	0.2
1999	12	0.0	0.4	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
2000	1	0.0	0.4	6.4	3.4	0.0	0.0	0.2	1.7	0.9	0.1
2000	2	0.0	0.5	7.9	4.3	0.0	0.0	0.3	2.1	1.1	0.1
2000	3	0.0	0.5	8.9	4.8	0.0	0.0	0.3	2.3	1.2	0.2
2000	4	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
2000	5	0.0	0.1	1.1	0.6	0.0	0.0	0.0	0.3	0.2	0.0
2000	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	8	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	9	0.0	0.2	2.9	1.6	0.0	0.0	0.1	0.8	0.4	0.1
2000	10	0.0	0.1	1.6	0.9	0.0	0.0	0.1	0.4	0.2	0.0
2000	11	0.0	0.6	10.2	5.5	0.0	0.0	0.3	2.6	1.4	0.2
2000	12	0.0	0.8	12.6	6.8	0.0	0.0	0.4	3.3	1.7	0.2
2001	1	0.0	0.5	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
2001	2	0.0	0.5	7.4	4.0	0.0	0.0	0.2	1.9	1.0	0.1
2001	3	0.0	0.7	10.8	5.8	0.0	0.0	0.4	2.8	1.5	0.2
2001	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	5	0.0	0.1	1.4	0.8	0.0	0.0	0.0	0.4	0.2	0.0
2001	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	8	0.0	0.8	12.2	6.6	0.0	0.0	0.4	3.2	1.7	0.2
2001	9	0.0	0.3	5.0	2.7	0.0	0.0	0.2	1.3	0.7	0.1
2001	10	0.0	0.2	3.6	1.9	0.0	0.0	0.1	0.9	0.5	0.1
2001	11	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
2001	12	0.0	0.8	12.6	6.8	0.0	0.0	0.4	3.3	1.7	0.2

Source: JICA Study Team

Attachment 23 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2002 - 2007) (7/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2002	1	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2002	2	0.0	0.5	8.6	4.6	0.0	0.0	0.3	2.2	1.2	0.2
2002	3	0.0	0.4	5.8	3.1	0.0	0.0	0.2	1.5	0.8	0.1
2002	4	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
2002	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002	8	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.5	0.8	0.1
2002	9	0.0	0.2	3.3	1.8	0.0	0.0	0.1	0.9	0.5	0.1
2002	10	0.0	0.3	4.8	2.6	0.0	0.0	0.2	1.2	0.7	0.1
2002	11	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
2002	12	0.0	0.8	12.5	6.7	0.0	0.0	0.4	3.2	1.7	0.2
2003	1	0.0	0.5	7.4	4.0	0.0	0.0	0.2	1.9	1.0	0.1
2003	2	0.0	0.5	8.4	4.5	0.0	0.0	0.3	2.2	1.2	0.2
2003	3	0.0	0.6	9.2	5.0	0.0	0.0	0.3	2.4	1.3	0.2
2003	4	0.0	0.6	9.4	5.0	0.0	0.0	0.3	2.4	1.3	0.2
2003	5	0.0	0.2	2.7	1.5	0.0	0.0	0.1	0.7	0.4	0.1
2003	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003	8	0.0	0.5	8.5	4.6	0.0	0.0	0.3	2.2	1.2	0.2
2003	9	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2003	10	0.0	0.4	6.6	3.6	0.0	0.0	0.2	1.7	0.9	0.1
2003	11	0.0	0.7	11.7	6.3	0.0	0.0	0.4	3.0	1.6	0.2
2003	12	0.0	0.7	12.0	6.5	0.0	0.0	0.4	3.1	1.6	0.2
2004	1	0.0	0.5	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
2004	2	0.0	0.5	8.7	4.6	0.0	0.0	0.3	2.2	1.2	0.2
2004	3	0.0	0.6	10.5	5.6	0.0	0.0	0.3	2.7	1.4	0.2
2004	4	0.0	0.4	5.9	3.1	0.0	0.0	0.2	1.5	0.8	0.1
2004	5	0.0	0.1	1.0	0.5	0.0	0.0	0.0	0.3	0.1	0.0
2004	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004	8	0.0	0.8	13.4	7.2	0.0	0.0	0.4	3.5	1.8	0.2
2004	9	0.0	0.2	3.9	2.1	0.0	0.0	0.1	1.0	0.5	0.1
2004	10	0.0	0.8	12.6	6.8	0.0	0.0	0.4	3.3	1.7	0.2
2004	11	0.0	0.7	11.6	6.2	0.0	0.0	0.4	3.0	1.6	0.2
2004	12	0.0	0.8	12.9	6.9	0.0	0.0	0.4	3.3	1.8	0.2
2005	1	0.0	0.5	8.0	4.3	0.0	0.0	0.3	2.1	1.1	0.1
2005	2	0.0	0.5	8.5	4.6	0.0	0.0	0.3	2.2	1.2	0.2
2005	3	0.0	0.5	8.0	4.3	0.0	0.0	0.3	2.1	1.1	0.1
2005	4	0.0	0.2	3.3	1.7	0.0	0.0	0.1	0.8	0.4	0.1
2005	5	0.0	0.1	1.8	1.0	0.0	0.0	0.1	0.5	0.2	0.0
2005	6	0.0	0.1	1.1	0.6	0.0	0.0	0.0	0.3	0.2	0.0
2005	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005	9	0.0	0.2	3.3	1.8	0.0	0.0	0.1	0.8	0.4	0.1
2005	10	0.0	0.8	12.6	6.8	0.0	0.0	0.4	3.3	1.7	0.2
2005	11	0.0	0.6	9.6	5.2	0.0	0.0	0.3	2.5	1.3	0.2
2005	12	0.0	0.8	12.4	6.6	0.0	0.0	0.4	3.2	1.7	0.2
2006	1	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2006	2	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
2006	3	0.0	0.7	11.0	5.9	0.0	0.0	0.4	2.9	1.5	0.2
2006	4	0.0	0.6	9.2	4.9	0.0	0.0	0.3	2.4	1.3	0.2
2006	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	6	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0
2006	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006	8	0.0	0.6	10.5	5.6	0.0	0.0	0.3	2.7	1.4	0.2
2006	9	0.0	0.1	1.5	0.8	0.0	0.0	0.0	0.4	0.2	0.0
2006	10	0.0	0.5	8.0	4.3	0.0	0.0	0.3	2.1	1.1	0.1
2006	11	0.0	0.6	10.0	5.3	0.0	0.0	0.3	2.6	1.4	0.2
2006	12	0.0	0.8	12.6	6.8	0.0	0.0	0.4	3.3	1.7	0.2
2007	1	0.0	0.5	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
2007	2	0.0	0.2	3.7	2.0	0.0	0.0	0.1	1.0	0.5	0.1
2007	3	0.0	0.7	11.4	6.1	0.0	0.0	0.4	3.0	1.6	0.2
2007	4	0.0	0.2	2.4	1.3	0.0	0.0	0.1	0.6	0.3	0.0
2007	5	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2007	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	8	0.0	0.1	1.7	0.9	0.0	0.0	0.1	0.4	0.2	0.0
2007	9	0.0	0.1	2.4	1.3	0.0	0.0	0.1	0.6	0.3	0.0
2007	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	11	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
2007	12	0.0	0.8	12.7	6.8	0.0	0.0	0.4	3.3	1.7	0.2

Source: JICA Study Team

Attachment 23 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2008 - 2013) (8/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2008	1	0.0	0.3	5.5	2.9	0.0	0.0	0.2	1.4	0.7	0.1
2008	2	0.0	0.5	7.9	4.3	0.0	0.0	0.3	2.1	1.1	0.1
2008	3	0.0	0.6	9.7	5.2	0.0	0.0	0.3	2.5	1.3	0.2
2008	4	0.0	0.7	10.5	5.6	0.0	0.0	0.3	2.7	1.4	0.2
2008	5	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.2	0.1	0.0
2008	6	0.0	0.1	0.8	0.5	0.0	0.0	0.0	0.2	0.1	0.0
2008	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	8	0.0	0.3	5.3	2.8	0.0	0.0	0.2	1.4	0.7	0.1
2008	9	0.0	0.2	3.6	1.9	0.0	0.0	0.1	0.9	0.5	0.1
2008	10	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
2008	11	0.0	0.5	8.8	4.7	0.0	0.0	0.3	2.3	1.2	0.2
2008	12	0.0	0.8	12.6	6.7	0.0	0.0	0.4	3.3	1.7	0.2
2009	1	0.0	0.5	8.7	4.7	0.0	0.0	0.3	2.2	1.2	0.2
2009	2	0.0	0.6	9.0	4.8	0.0	0.0	0.3	2.3	1.2	0.2
2009	3	0.0	0.6	10.4	5.6	0.0	0.0	0.3	2.7	1.4	0.2
2009	4	0.0	0.3	5.4	2.9	0.0	0.0	0.2	1.4	0.7	0.1
2009	5	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.1	0.1	0.0
2009	6	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
2009	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	8	0.0	0.3	4.6	2.5	0.0	0.0	0.1	1.2	0.6	0.1
2009	9	0.0	0.1	1.0	0.5	0.0	0.0	0.0	0.3	0.1	0.0
2009	10	0.0	0.2	3.6	1.9	0.0	0.0	0.1	0.9	0.5	0.1
2009	11	0.0	0.6	9.4	5.0	0.0	0.0	0.3	2.4	1.3	0.2
2009	12	0.0	0.8	13.0	7.0	0.0	0.0	0.4	3.4	1.8	0.2
2010	1	0.0	0.5	8.3	4.5	0.0	0.0	0.3	2.2	1.1	0.2
2010	2	0.0	0.6	9.1	4.9	0.0	0.0	0.3	2.4	1.2	0.2
2010	3	0.0	0.6	9.0	4.8	0.0	0.0	0.3	2.3	1.2	0.2
2010	4	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
2010	5	0.0	0.1	1.8	0.9	0.0	0.0	0.1	0.5	0.2	0.0
2010	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	7	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
2010	8	0.0	0.2	3.0	1.6	0.0	0.0	0.1	0.8	0.4	0.1
2010	9	0.0	0.7	11.2	6.0	0.0	0.0	0.4	2.9	1.5	0.2
2010	10	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
2010	11	0.0	0.8	12.6	6.8	0.0	0.0	0.4	3.3	1.7	0.2
2010	12	0.0	0.8	12.3	6.6	0.0	0.0	0.4	3.2	1.7	0.2
2011	1	0.0	0.5	8.5	4.6	0.0	0.0	0.3	2.2	1.2	0.2
2011	2	0.0	0.5	8.8	4.7	0.0	0.0	0.3	2.3	1.2	0.2
2011	3	0.0	0.6	10.0	5.4	0.0	0.0	0.3	2.6	1.4	0.2
2011	4	0.0	0.4	7.0	3.8	0.0	0.0	0.2	1.8	1.0	0.1
2011	5	0.0	0.0	0.7	0.4	0.0	0.0	0.0	0.2	0.1	0.0
2011	6	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
2011	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	8	0.0	0.0	0.8	0.4	0.0	0.0	0.0	0.2	0.1	0.0
2011	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	10	0.0	0.8	13.0	7.0	0.0	0.0	0.4	3.4	1.8	0.2
2011	11	0.0	0.8	12.4	6.7	0.0	0.0	0.4	3.2	1.7	0.2
2011	12	0.0	0.8	13.2	7.1	0.0	0.0	0.4	3.4	1.8	0.2
2012	1	0.0	0.5	8.6	4.6	0.0	0.0	0.3	2.2	1.2	0.2
2012	2	0.0	0.6	9.3	5.0	0.0	0.0	0.3	2.4	1.3	0.2
2012	3	0.0	0.6	9.4	5.0	0.0	0.0	0.3	2.4	1.3	0.2
2012	4	0.0	0.2	3.4	1.8	0.0	0.0	0.1	0.9	0.5	0.1
2012	5	0.0	0.1	2.2	1.2	0.0	0.0	0.1	0.6	0.3	0.0
2012	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	8	0.0	0.4	5.8	3.1	0.0	0.0	0.2	1.5	0.8	0.1
2012	9	0.0	0.1	1.7	0.9	0.0	0.0	0.1	0.4	0.2	0.0
2012	10	0.0	0.4	6.9	3.7	0.0	0.0	0.2	1.8	0.9	0.1
2012	11	0.0	0.7	11.7	6.3	0.0	0.0	0.4	3.0	1.6	0.2
2012	12	0.0	0.8	13.2	7.1	0.0	0.0	0.4	3.4	1.8	0.2
2013	1	0.0	0.5	7.7	4.1	0.0	0.0	0.2	2.0	1.1	0.1
2013	2	0.0	0.6	9.1	4.9	0.0	0.0	0.3	2.3	1.2	0.2
2013	3	0.0	0.6	10.4	5.6	0.0	0.0	0.3	2.7	1.4	0.2
2013	4	0.0	0.4	6.4	3.4	0.0	0.0	0.2	1.7	0.9	0.1
2013	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	6	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
2013	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	8	0.0	0.7	10.8	5.8	0.0	0.0	0.4	2.8	1.5	0.2
2013	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	11	0.0	0.6	10.5	5.6	0.0	0.0	0.3	2.7	1.4	0.2
2013	12	0.0	0.7	12.0	6.5	0.0	0.0	0.4	3.1	1.6	0.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 23 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2014 - 2019) (9/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2014	1	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
2014	2	0.0	0.4	6.6	3.5	0.0	0.0	0.2	1.7	0.9	0.1
2014	3	0.0	0.6	10.0	5.4	0.0	0.0	0.3	2.6	1.4	0.2
2014	4	0.0	0.6	9.0	4.8	0.0	0.0	0.3	2.3	1.2	0.2
2014	5	0.0	0.1	1.1	0.6	0.0	0.0	0.0	0.3	0.1	0.0
2014	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	9	0.0	0.1	1.8	1.0	0.0	0.0	0.1	0.5	0.3	0.0
2014	10	0.0	0.5	8.1	4.4	0.0	0.0	0.3	2.1	1.1	0.1
2014	11	0.0	0.8	12.6	6.8	0.0	0.0	0.4	3.3	1.7	0.2
2014	12	0.0	0.8	13.0	7.0	0.0	0.0	0.4	3.4	1.8	0.2
2015	1	0.0	0.5	8.2	4.4	0.0	0.0	0.3	2.1	1.1	0.2
2015	2	0.0	0.5	8.5	4.6	0.0	0.0	0.3	2.2	1.2	0.2
2015	3	0.0	0.8	12.4	6.7	0.0	0.0	0.4	3.2	1.7	0.2
2015	4	0.0	0.1	1.1	0.6	0.0	0.0	0.0	0.3	0.1	0.0
2015	5	0.0	0.1	2.2	1.2	0.0	0.0	0.1	0.6	0.3	0.0
2015	6	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.2	0.1	0.0
2015	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	8	0.0	0.5	7.9	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2015	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	10	0.0	0.8	13.2	7.1	0.0	0.0	0.4	3.4	1.8	0.2
2015	11	0.0	0.7	11.6	6.2	0.0	0.0	0.4	3.0	1.6	0.2
2015	12	0.0	0.8	12.4	6.6	0.0	0.0	0.4	3.2	1.7	0.2
2016	1	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
2016	2	0.0	0.5	7.7	4.1	0.0	0.0	0.2	2.0	1.0	0.1
2016	3	0.0	0.5	8.3	4.4	0.0	0.0	0.3	2.1	1.1	0.2
2016	4	0.0	0.6	9.7	5.2	0.0	0.0	0.3	2.5	1.3	0.2
2016	5	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.2	0.1	0.0
2016	6	0.0	0.1	1.3	0.7	0.0	0.0	0.0	0.3	0.2	0.0
2016	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	8	0.0	0.2	2.7	1.5	0.0	0.0	0.1	0.7	0.4	0.1
2016	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2016	10	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2016	11	0.0	0.4	6.4	3.4	0.0	0.0	0.2	1.7	0.9	0.1
2016	12	0.0	0.8	13.2	7.1	0.0	0.0	0.4	3.4	1.8	0.2
2017	1	0.0	0.6	9.5	5.1	0.0	0.0	0.3	2.5	1.3	0.2
2017	2	0.0	0.6	9.3	5.0	0.0	0.0	0.3	2.4	1.3	0.2
2017	3	0.0	0.4	7.2	3.8	0.0	0.0	0.2	1.9	1.0	0.1
2017	4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	5	0.0	0.1	1.8	1.0	0.0	0.0	0.1	0.5	0.2	0.0
2017	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	8	0.0	0.1	1.1	0.6	0.0	0.0	0.0	0.3	0.1	0.0
2017	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2017	10	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2017	11	0.0	0.8	12.3	6.6	0.0	0.0	0.4	3.2	1.7	0.2
2017	12	0.0	0.7	11.5	6.2	0.0	0.0	0.4	3.0	1.6	0.2
2018	1	0.0	0.5	7.7	4.1	0.0	0.0	0.2	2.0	1.0	0.1
2018	2	0.0	0.5	7.7	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2018	3	0.0	0.6	10.0	5.4	0.0	0.0	0.3	2.6	1.4	0.2
2018	4	0.0	0.4	7.0	3.8	0.0	0.0	0.2	1.8	1.0	0.1
2018	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018	8	0.0	0.3	4.8	2.6	0.0	0.0	0.2	1.2	0.6	0.1
2018	9	0.0	0.3	4.6	2.5	0.0	0.0	0.2	1.2	0.6	0.1
2018	10	0.0	0.3	4.7	2.5	0.0	0.0	0.2	1.2	0.6	0.1
2018	11	0.0	0.7	12.1	6.5	0.0	0.0	0.4	3.1	1.7	0.2
2018	12	0.0	0.8	12.4	6.7	0.0	0.0	0.4	3.2	1.7	0.2
2019	1	0.0	0.5	8.8	4.7	0.0	0.0	0.3	2.3	1.2	0.2
2019	2	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2019	3	0.0	0.7	11.2	6.0	0.0	0.0	0.4	2.9	1.5	0.2
2019	4	0.0	0.4	6.8	3.7	0.0	0.0	0.2	1.8	0.9	0.1
2019	5	0.0	0.1	1.5	0.8	0.0	0.0	0.0	0.4	0.2	0.0
2019	6	0.0	0.1	1.2	0.7	0.0	0.0	0.0	0.3	0.2	0.0
2019	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2019	8	0.0	0.1	2.0	1.1	0.0	0.0	0.1	0.5	0.3	0.0
2019	9	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0
2019	10	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
2019	11	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.6	0.8	0.1
2019	12	0.0	0.8	12.8	6.9	0.0	0.0	0.4	3.3	1.8	0.2

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 24 : Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (1966 - 1977) (1/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1966	1	0.1	7.1	1.1	0.0	0.0	0.9
1966	2	0.1	7.5	1.2	0.0	0.0	1.0
1966	3	0.1	7.2	1.1	0.0	0.0	0.9
1966	4	0.1	8.4	1.3	0.0	0.0	1.1
1966	5	0.0	2.3	0.4	0.0	0.0	0.3
1966	6	0.0	0.0	0.0	0.0	0.0	0.0
1966	7	0.0	0.0	0.0	0.0	0.0	0.0
1966	8	0.0	0.0	0.0	0.0	0.0	0.0
1966	9	0.0	0.0	0.0	0.0	0.0	0.0
1966	10	0.1	6.3	1.0	0.0	0.0	0.8
1966	11	0.1	8.5	1.3	0.0	0.0	1.1
1966	12	0.1	11.2	1.8	0.0	0.0	1.5
1967	1	0.0	5.0	0.8	0.0	0.0	0.7
1967	2	0.1	7.5	1.2	0.0	0.0	1.0
1967	3	0.1	9.7	1.5	0.0	0.0	1.3
1967	4	0.1	8.2	1.3	0.0	0.0	1.1
1967	5	0.0	2.2	0.3	0.0	0.0	0.3
1967	6	0.0	0.0	0.0	0.0	0.0	0.0
1967	7	0.0	0.0	0.0	0.0	0.0	0.0
1967	8	0.0	0.0	0.0	0.0	0.0	0.0
1967	9	0.0	0.0	0.0	0.0	0.0	0.0
1967	10	0.0	1.5	0.2	0.0	0.0	0.2
1967	11	0.1	11.5	1.8	0.0	0.0	1.5
1967	12	0.1	12.1	1.9	0.0	0.0	1.6
1968	1	0.1	6.1	1.0	0.0	0.0	0.8
1968	2	0.1	6.2	1.0	0.0	0.0	0.8
1968	3	0.1	9.8	1.5	0.0	0.0	1.3
1968	4	0.1	7.5	1.2	0.0	0.0	1.0
1968	5	0.0	0.1	0.0	0.0	0.0	0.0
1968	6	0.0	0.0	0.0	0.0	0.0	0.0
1968	7	0.0	0.0	0.0	0.0	0.0	0.0
1968	8	0.0	0.0	0.0	0.0	0.0	0.0
1968	9	0.0	3.0	0.5	0.0	0.0	0.4
1968	10	0.0	0.0	0.0	0.0	0.0	0.0
1968	11	0.1	10.8	1.7	0.0	0.0	1.4
1968	12	0.1	12.4	2.0	0.0	0.0	1.6
1969	1	0.1	7.6	1.2	0.0	0.0	1.0
1969	2	0.1	7.5	1.2	0.0	0.0	1.0
1969	3	0.1	7.3	1.1	0.0	0.0	1.0
1969	4	0.1	6.0	0.9	0.0	0.0	0.8
1969	5	0.0	2.2	0.3	0.0	0.0	0.3
1969	6	0.0	0.0	0.0	0.0	0.0	0.0
1969	7	0.0	0.0	0.0	0.0	0.0	0.0
1969	8	0.0	0.0	0.0	0.0	0.0	0.0
1969	9	0.0	2.9	0.5	0.0	0.0	0.4
1969	10	0.1	7.0	1.1	0.0	0.0	0.9
1969	11	0.1	10.7	1.7	0.0	0.0	1.4
1969	12	0.1	11.6	1.8	0.0	0.0	1.5
1970	1	0.1	7.2	1.1	0.0	0.0	0.9
1970	2	0.0	5.9	0.9	0.0	0.0	0.8
1970	3	0.1	10.0	1.6	0.0	0.0	1.3
1970	4	0.1	7.2	1.1	0.0	0.0	0.9
1970	5	0.0	0.4	0.1	0.0	0.0	0.0
1970	6	0.0	0.0	0.0	0.0	0.0	0.0
1970	7	0.0	0.0	0.0	0.0	0.0	0.0
1970	8	0.0	0.1	0.0	0.0	0.0	0.0
1970	9	0.0	0.7	0.1	0.0	0.0	0.1
1970	10	0.0	0.0	0.0	0.0	0.0	0.0
1970	11	0.1	7.2	1.1	0.0	0.0	0.9
1970	12	0.1	11.9	1.9	0.0	0.0	1.6
1971	1	0.1	7.2	1.1	0.0	0.0	0.9
1971	2	0.1	7.3	1.1	0.0	0.0	1.0
1971	3	0.1	9.9	1.6	0.0	0.0	1.3
1971	4	0.1	8.8	1.4	0.0	0.0	1.2
1971	5	0.0	1.5	0.2	0.0	0.0	0.2
1971	6	0.0	0.0	0.0	0.0	0.0	0.0
1971	7	0.0	0.0	0.0	0.0	0.0	0.0
1971	8	0.0	0.0	0.0	0.0	0.0	0.0
1971	9	0.1	6.6	1.0	0.0	0.0	0.9
1971	10	0.0	4.3	0.7	0.0	0.0	0.6
1971	11	0.0	5.9	0.9	0.0	0.0	0.8
1971	12	0.1	11.9	1.9	0.0	0.0	1.6

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1972	1	0.1	7.3	1.1	0.0	0.0	1.0
1972	2	0.1	7.9	1.2	0.0	0.0	1.0
1972	3	0.1	9.9	1.6	0.0	0.0	1.3
1972	4	0.1	8.0	1.3	0.0	0.0	1.1
1972	5	0.0	1.8	0.3	0.0	0.0	0.2
1972	6	0.0	1.0	0.2	0.0	0.0	0.1
1972	7	0.0	0.0	0.0	0.0	0.0	0.0
1972	8	0.0	0.0	0.0	0.0	0.0	0.0
1972	9	0.1	10.7	1.7	0.0	0.0	1.4
1972	10	0.1	7.2	1.1	0.0	0.0	0.9
1972	11	0.1	11.1	1.7	0.0	0.0	1.5
1972	12	0.1	12.3	1.9	0.0	0.0	1.6
1973	1	0.1	7.9	1.2	0.0	0.0	1.0
1973	2	0.1	7.7	1.2	0.0	0.0	1.0
1973	3	0.1	10.5	1.7	0.0	0.0	1.4
1973	4	0.1	9.8	1.5	0.0	0.0	1.3
1973	5	0.0	0.0	0.0	0.0	0.0	0.0
1973	6	0.0	0.0	0.0	0.0	0.0	0.0
1973	7	0.0	0.0	0.0	0.0	0.0	0.0
1973	8	0.0	1.3	0.2	0.0	0.0	0.2
1973	9	0.0	0.3	0.0	0.0	0.0	0.0
1973	10	0.0	3.9	0.6	0.0	0.0	0.5
1973	11	0.0	0.3	0.0	0.0	0.0	0.0
1973	12	0.1	11.0	1.7	0.0	0.0	1.4
1974	1	0.1	7.2	1.1	0.0	0.0	0.9
1974	2	0.1	7.7	1.2	0.0	0.0	1.0
1974	3	0.0	4.8	0.8	0.0	0.0	0.6
1974	4	0.1	6.8	1.1	0.0	0.0	0.9
1974	5	0.0	0.5	0.1	0.0	0.0	0.1
1974	6	0.0	0.2	0.0	0.0	0.0	0.0
1974	7	0.0	0.0	0.0	0.0	0.0	0.0
1974	8	0.0	0.0	0.0	0.0	0.0	0.0
1974	9	0.0	3.5	0.6	0.0	0.0	0.5
1974	10	0.1	7.5	1.2	0.0	0.0	1.0
1974	11	0.0	5.6	0.9	0.0	0.0	0.7
1974	12	0.1	11.8	1.8	0.0	0.0	1.5
1975	1	0.1	7.0	1.1	0.0	0.0	0.9
1975	2	0.1	7.1	1.1	0.0	0.0	0.9
1975	3	0.1	10.1	1.6	0.0	0.0	1.3
1975	4	0.1	9.2	1.4	0.0	0.0	1.2
1975	5	0.0	0.4	0.1	0.0	0.0	0.0
1975	6	0.0	0.0	0.0	0.0	0.0	0.0
1975	7	0.0	0.0	0.0	0.0	0.0	0.0
1975	8	0.0	2.7	0.4	0.0	0.0	0.4
1975	9	0.0	1.0	0.2	0.0	0.0	0.1
1975	10	0.0	1.3	0.2	0.0	0.0	0.2
1975	11	0.0	4.3	0.7	0.0	0.0	0.6
1975	12	0.1	10.2	1.6	0.0	0.0	1.3
1976	1	0.1	7.0	1.1	0.0	0.0	0.9
1976	2	0.1	7.4	1.2	0.0	0.0	1.0
1976	3	0.1	10.0	1.6	0.0	0.0	1.3
1976	4	0.1	6.7	1.0	0.0	0.0	0.9
1976	5	0.0	0.7	0.1	0.0	0.0	0.1
1976	6	0.0	0.0	0.0	0.0	0.0	0.0
1976	7	0.0	0.0	0.0	0.0	0.0	0.0
1976	8	0.0	0.1	0.0	0.0	0.0	0.0
1976	9	0.1	11.3	1.8	0.0	0.0	1.5
1976	10	0.1	6.8	1.1	0.0	0.0	0.9
1976	11	0.0	5.7	0.9	0.0	0.0	0.7
1976	12	0.1	11.7	1.8	0.0	0.0	1.5
1977	1	0.1	7.3	1.2	0.0	0.0	1.0
1977	2	0.1	6.4	1.0	0.0	0.0	0.8
1977	3	0.1	9.8	1.5	0.0	0.0	1.3
1977	4	0.0	2.4	0.4	0.0	0.0	0.3
1977	5	0.0	0.0	0.0	0.0	0.0	0.0
1977	6	0.0	0.3	0.0	0.0	0.0	0.0
1977	7	0.0	0.0	0.0	0.0	0.0	0.0
1977	8	0.0	0.0	0.0	0.0	0.0	0.0
1977	9	0.0	1.6	0.2	0.0	0.0	0.2
1977	10	0.1	11.3	1.8	0.0	0.0	1.5
1977	11	0.1	7.8	1.2	0.0	0.0	1.0
1977	12	0.1	10.7	1.7	0.0	0.0	1.4

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 24 : Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (1978 - 1989) (2/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1978	1	0.1	7.1	1.1	0.0	0.0	0.9
1978	2	0.1	7.5	1.2	0.0	0.0	1.0
1978	3	0.1	9.8	1.5	0.0	0.0	1.3
1978	4	0.0	4.1	0.6	0.0	0.0	0.5
1978	5	0.0	0.1	0.0	0.0	0.0	0.0
1978	6	0.0	0.0	0.0	0.0	0.0	0.0
1978	7	0.0	0.7	0.1	0.0	0.0	0.1
1978	8	0.0	0.2	0.0	0.0	0.0	0.0
1978	9	0.0	0.0	0.0	0.0	0.0	0.0
1978	10	0.0	3.4	0.5	0.0	0.0	0.4
1978	11	0.1	11.2	1.8	0.0	0.0	1.5
1978	12	0.1	12.1	1.9	0.0	0.0	1.6
1979	1	0.1	7.4	1.2	0.0	0.0	1.0
1979	2	0.1	7.6	1.2	0.0	0.0	1.0
1979	3	0.1	10.2	1.6	0.0	0.0	1.3
1979	4	0.1	9.5	1.5	0.0	0.0	1.2
1979	5	0.0	2.8	0.4	0.0	0.0	0.4
1979	6	0.0	1.0	0.2	0.0	0.0	0.1
1979	7	0.0	0.4	0.1	0.0	0.0	0.1
1979	8	0.1	7.1	1.1	0.0	0.0	0.9
1979	9	0.0	5.9	0.9	0.0	0.0	0.8
1979	10	0.1	13.2	2.1	0.0	0.0	1.7
1979	11	0.1	11.4	1.8	0.0	0.0	1.5
1979	12	0.1	11.6	1.8	0.0	0.0	1.5
1980	1	0.1	7.7	1.2	0.0	0.0	1.0
1980	2	0.1	7.8	1.2	0.0	0.0	1.0
1980	3	0.1	9.1	1.4	0.0	0.0	1.2
1980	4	0.1	9.3	1.5	0.0	0.0	1.2
1980	5	0.0	1.7	0.3	0.0	0.0	0.2
1980	6	0.0	0.1	0.0	0.0	0.0	0.0
1980	7	0.0	0.4	0.1	0.0	0.0	0.1
1980	8	0.1	6.4	1.0	0.0	0.0	0.8
1980	9	0.0	3.5	0.6	0.0	0.0	0.5
1980	10	0.0	5.0	0.8	0.0	0.0	0.7
1980	11	0.1	11.2	1.8	0.0	0.0	1.5
1980	12	0.1	11.7	1.8	0.0	0.0	1.5
1981	1	0.1	6.1	1.0	0.0	0.0	0.8
1981	2	0.1	7.4	1.2	0.0	0.0	1.0
1981	3	0.1	8.5	1.3	0.0	0.0	1.1
1981	4	0.0	3.5	0.5	0.0	0.0	0.5
1981	5	0.0	1.3	0.2	0.0	0.0	0.2
1981	6	0.0	0.0	0.0	0.0	0.0	0.0
1981	7	0.0	0.0	0.0	0.0	0.0	0.0
1981	8	0.0	2.6	0.4	0.0	0.0	0.3
1981	9	0.0	5.2	0.8	0.0	0.0	0.7
1981	10	0.1	9.9	1.5	0.0	0.0	1.3
1981	11	0.1	10.0	1.6	0.0	0.0	1.3
1981	12	0.1	9.9	1.6	0.0	0.0	1.3
1982	1	0.1	7.5	1.2	0.0	0.0	1.0
1982	2	0.1	6.4	1.0	0.0	0.0	0.8
1982	3	0.1	10.0	1.6	0.0	0.0	1.3
1982	4	0.0	5.1	0.8	0.0	0.0	0.7
1982	5	0.0	3.0	0.5	0.0	0.0	0.4
1982	6	0.0	0.0	0.0	0.0	0.0	0.0
1982	7	0.0	0.1	0.0	0.0	0.0	0.0
1982	8	0.0	0.0	0.0	0.0	0.0	0.0
1982	9	0.0	0.0	0.0	0.0	0.0	0.0
1982	10	0.1	12.6	2.0	0.0	0.0	1.6
1982	11	0.0	5.4	0.8	0.0	0.0	0.7
1982	12	0.1	11.7	1.8	0.0	0.0	1.5
1983	1	0.1	6.5	1.0	0.0	0.0	0.9
1983	2	0.0	5.3	0.8	0.0	0.0	0.7
1983	3	0.1	8.6	1.3	0.0	0.0	1.1
1983	4	0.0	4.8	0.8	0.0	0.0	0.6
1983	5	0.0	0.3	0.0	0.0	0.0	0.0
1983	6	0.0	0.0	0.0	0.0	0.0	0.0
1983	7	0.0	0.0	0.0	0.0	0.0	0.0
1983	8	0.0	0.0	0.0	0.0	0.0	0.0
1983	9	0.0	0.0	0.0	0.0	0.0	0.0
1983	10	0.0	1.7	0.3	0.0	0.0	0.2
1983	11	0.0	4.6	0.7	0.0	0.0	0.6
1983	12	0.1	10.1	1.6	0.0	0.0	1.3

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1984	1	0.1	7.1	1.1	0.0	0.0	0.9
1984	2	0.1	7.4	1.2	0.0	0.0	1.0
1984	3	0.1	9.0	1.4	0.0	0.0	1.2
1984	4	0.1	6.2	1.0	0.0	0.0	0.8
1984	5	0.0	0.8	0.1	0.0	0.0	0.1
1984	6	0.0	0.0	0.0	0.0	0.0	0.0
1984	7	0.0	0.0	0.0	0.0	0.0	0.0
1984	8	0.0	0.0	0.0	0.0	0.0	0.0
1984	9	0.1	7.2	1.1	0.0	0.0	0.9
1984	10	0.1	6.2	1.0	0.0	0.0	0.8
1984	11	0.1	11.1	1.7	0.0	0.0	1.5
1984	12	0.1	11.7	1.8	0.0	0.0	1.5
1985	1	0.1	7.0	1.1	0.0	0.0	0.9
1985	2	0.1	7.2	1.1	0.0	0.0	0.9
1985	3	0.1	8.3	1.3	0.0	0.0	1.1
1985	4	0.1	6.4	1.0	0.0	0.0	0.8
1985	5	0.0	0.0	0.0	0.0	0.0	0.0
1985	6	0.0	0.0	0.0	0.0	0.0	0.0
1985	7	0.0	0.0	0.0	0.0	0.0	0.0
1985	8	0.0	4.9	0.8	0.0	0.0	0.6
1985	9	0.0	1.9	0.3	0.0	0.0	0.2
1985	10	0.1	9.7	1.5	0.0	0.0	1.3
1985	11	0.0	5.7	0.9	0.0	0.0	0.7
1985	12	0.1	12.1	1.9	0.0	0.0	1.6
1986	1	0.1	7.4	1.2	0.0	0.0	1.0
1986	2	0.1	7.9	1.2	0.0	0.0	1.0
1986	3	0.1	9.8	1.5	0.0	0.0	1.3
1986	4	0.1	7.9	1.2	0.0	0.0	1.0
1986	5	0.0	1.5	0.2	0.0	0.0	0.2
1986	6	0.0	0.6	0.1	0.0	0.0	0.1
1986	7	0.0	0.0	0.0	0.0	0.0	0.0
1986	8	0.1	6.2	1.0	0.0	0.0	0.8
1986	9	0.0	0.0	0.0	0.0	0.0	0.0
1986	10	0.1	6.7	1.1	0.0	0.0	0.9
1986	11	0.0	5.3	0.8	0.0	0.0	0.7
1986	12	0.1	12.1	1.9	0.0	0.0	1.6
1987	1	0.1	7.5	1.2	0.0	0.0	1.0
1987	2	0.0	5.2	0.8	0.0	0.0	0.7
1987	3	0.1	9.4	1.5	0.0	0.0	1.2
1987	4	0.0	2.9	0.5	0.0	0.0	0.4
1987	5	0.0	2.7	0.4	0.0	0.0	0.4
1987	6	0.0	0.0	0.0	0.0	0.0	0.0
1987	7	0.0	0.0	0.0	0.0	0.0	0.0
1987	8	0.0	1.1	0.2	0.0	0.0	0.1
1987	9	0.0	2.1	0.3	0.0	0.0	0.3
1987	10	0.1	9.0	1.4	0.0	0.0	1.2
1987	11	0.0	5.5	0.9	0.0	0.0	0.7
1987	12	0.1	11.1	1.7	0.0	0.0	1.5
1988	1	0.1	7.6	1.2	0.0	0.0	1.0
1988	2	0.1	7.6	1.2	0.0	0.0	1.0
1988	3	0.1	9.6	1.5	0.0	0.0	1.3
1988	4	0.0	4.5	0.7	0.0	0.0	0.6
1988	5	0.0	0.7	0.1	0.0	0.0	0.1
1988	6	0.0	0.0	0.0	0.0	0.0	0.0
1988	7	0.0	0.0	0.0	0.0	0.0	0.0
1988	8	0.0	0.0	0.0	0.0	0.0	0.0
1988	9	0.0	1.9	0.3	0.0	0.0	0.3
1988	10	0.0	5.0	0.8	0.0	0.0	0.7
1988	11	0.1	6.1	1.0	0.0	0.0	0.8
1988	12	0.1	7.7	1.2	0.0	0.0	1.0
1989	1	0.1	7.5	1.2	0.0	0.0	1.0
1989	2	0.1	6.8	1.1	0.0	0.0	0.9
1989	3	0.1	10.2	1.6	0.0	0.0	1.3
1989	4	0.0	4.9	0.8	0.0	0.0	0.6
1989	5	0.0	2.3	0.4	0.0	0.0	0.3
1989	6	0.0	0.0	0.0	0.0	0.0	0.0
1989	7	0.0	0.0	0.0	0.0	0.0	0.0
1989	8	0.1	11.2	1.8	0.0	0.0	1.5
1989	9	0.0	0.0	0.0	0.0	0.0	0.0
1989	10	0.0	0.0	0.0	0.0	0.0	0.0
1989	11	0.1	9.7	1.5	0.0	0.0	1.3
1989	12	0.1	12.0	1.9	0.0	0.0	1.6

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 24 : Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (1990 - 2001) (3/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1990	1	0.1	6.9	1.1	0.0	0.0	0.9
1990	2	0.0	4.9	0.8	0.0	0.0	0.6
1990	3	0.0	5.2	0.8	0.0	0.0	0.7
1990	4	0.0	4.3	0.7	0.0	0.0	0.6
1990	5	0.0	0.6	0.1	0.0	0.0	0.1
1990	6	0.0	0.0	0.0	0.0	0.0	0.0
1990	7	0.0	0.0	0.0	0.0	0.0	0.0
1990	8	0.1	8.6	1.4	0.0	0.0	1.1
1990	9	0.0	3.5	0.5	0.0	0.0	0.5
1990	10	0.1	6.8	1.1	0.0	0.0	0.9
1990	11	0.0	5.6	0.9	0.0	0.0	0.7
1990	12	0.1	11.2	1.8	0.0	0.0	1.5
1991	1	0.1	7.2	1.1	0.0	0.0	1.0
1991	2	0.1	7.6	1.2	0.0	0.0	1.0
1991	3	0.1	8.8	1.4	0.0	0.0	1.2
1991	4	0.0	4.4	0.7	0.0	0.0	0.6
1991	5	0.0	0.6	0.1	0.0	0.0	0.1
1991	6	0.0	0.0	0.0	0.0	0.0	0.0
1991	7	0.0	0.0	0.0	0.0	0.0	0.0
1991	8	0.0	0.0	0.0	0.0	0.0	0.0
1991	9	0.0	0.0	0.0	0.0	0.0	0.0
1991	10	0.0	2.8	0.4	0.0	0.0	0.4
1991	11	0.0	5.7	0.9	0.0	0.0	0.8
1991	12	0.1	11.1	1.8	0.0	0.0	1.5
1992	1	0.1	6.6	1.0	0.0	0.0	0.9
1992	2	0.0	5.0	0.8	0.0	0.0	0.7
1992	3	0.1	9.0	1.4	0.0	0.0	1.2
1992	4	0.1	9.0	1.4	0.0	0.0	1.2
1992	5	0.0	1.4	0.2	0.0	0.0	0.2
1992	6	0.0	0.6	0.1	0.0	0.0	0.1
1992	7	0.0	0.0	0.0	0.0	0.0	0.0
1992	8	0.0	4.6	0.7	0.0	0.0	0.6
1992	9	0.0	0.9	0.1	0.0	0.0	0.1
1992	10	0.0	0.6	0.1	0.0	0.0	0.1
1992	11	0.0	5.1	0.8	0.0	0.0	0.7
1992	12	0.1	11.7	1.8	0.0	0.0	1.5
1993	1	0.0	5.8	0.9	0.0	0.0	0.8
1993	2	0.0	4.6	0.7	0.0	0.0	0.6
1993	3	0.1	6.6	1.0	0.0	0.0	0.9
1993	4	0.1	6.1	1.0	0.0	0.0	0.8
1993	5	0.0	0.0	0.0	0.0	0.0	0.0
1993	6	0.0	0.0	0.0	0.0	0.0	0.0
1993	7	0.0	0.0	0.0	0.0	0.0	0.0
1993	8	0.0	0.0	0.0	0.0	0.0	0.0
1993	9	0.0	2.5	0.4	0.0	0.0	0.3
1993	10	0.0	4.1	0.6	0.0	0.0	0.5
1993	11	0.1	8.7	1.4	0.0	0.0	1.1
1993	12	0.1	12.0	1.9	0.0	0.0	1.6
1994	1	0.1	7.3	1.1	0.0	0.0	1.0
1994	2	0.1	7.2	1.1	0.0	0.0	0.9
1994	3	0.0	4.5	0.7	0.0	0.0	0.6
1994	4	0.0	3.0	0.5	0.0	0.0	0.4
1994	5	0.0	1.0	0.2	0.0	0.0	0.1
1994	6	0.0	0.0	0.0	0.0	0.0	0.0
1994	7	0.0	0.0	0.0	0.0	0.0	0.0
1994	8	0.0	0.1	0.0	0.0	0.0	0.0
1994	9	0.0	1.9	0.3	0.0	0.0	0.2
1994	10	0.1	7.9	1.2	0.0	0.0	1.0
1994	11	0.1	8.8	1.4	0.0	0.0	1.2
1994	12	0.1	11.9	1.9	0.0	0.0	1.6
1995	1	0.1	7.5	1.2	0.0	0.0	1.0
1995	2	0.1	6.8	1.1	0.0	0.0	0.9
1995	3	0.1	10.5	1.7	0.0	0.0	1.4
1995	4	0.1	8.8	1.4	0.0	0.0	1.2
1995	5	0.0	0.9	0.1	0.0	0.0	0.1
1995	6	0.0	0.0	0.0	0.0	0.0	0.0
1995	7	0.0	0.0	0.0	0.0	0.0	0.0
1995	8	0.0	0.0	0.0	0.0	0.0	0.0
1995	9	0.0	0.3	0.0	0.0	0.0	0.0
1995	10	0.1	10.5	1.6	0.0	0.0	1.4
1995	11	0.0	0.0	0.0	0.0	0.0	0.0
1995	12	0.1	11.9	1.9	0.0	0.0	1.6

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1996	1	0.1	7.6	1.2	0.0	0.0	1.0
1996	2	0.0	5.3	0.8	0.0	0.0	0.7
1996	3	0.1	9.5	1.5	0.0	0.0	1.3
1996	4	0.1	6.4	1.0	0.0	0.0	0.8
1996	5	0.0	0.3	0.1	0.0	0.0	0.0
1996	6	0.0	0.9	0.1	0.0	0.0	0.1
1996	7	0.0	0.0	0.0	0.0	0.0	0.0
1996	8	0.0	0.0	0.0	0.0	0.0	0.0
1996	9	0.0	2.0	0.3	0.0	0.0	0.3
1996	10	0.0	0.0	0.0	0.0	0.0	0.0
1996	11	0.1	10.4	1.6	0.0	0.0	1.4
1996	12	0.1	12.0	1.9	0.0	0.0	1.6
1997	1	0.1	7.6	1.2	0.0	0.0	1.0
1997	2	0.1	6.7	1.0	0.0	0.0	0.9
1997	3	0.1	8.3	1.3	0.0	0.0	1.1
1997	4	0.1	8.4	1.3	0.0	0.0	1.1
1997	5	0.0	1.7	0.3	0.0	0.0	0.2
1997	6	0.0	0.0	0.0	0.0	0.0	0.0
1997	7	0.0	0.0	0.0	0.0	0.0	0.0
1997	8	0.0	1.5	0.2	0.0	0.0	0.2
1997	9	0.0	0.0	0.0	0.0	0.0	0.0
1997	10	0.1	6.9	1.1	0.0	0.0	0.9
1997	11	0.1	9.4	1.5	0.0	0.0	1.2
1997	12	0.1	10.3	1.6	0.0	0.0	1.4
1998	1	0.1	6.3	1.0	0.0	0.0	0.8
1998	2	0.1	6.6	1.0	0.0	0.0	0.9
1998	3	0.1	9.9	1.6	0.0	0.0	1.3
1998	4	0.0	4.7	0.7	0.0	0.0	0.6
1998	5	0.0	1.6	0.3	0.0	0.0	0.2
1998	6	0.0	0.4	0.1	0.0	0.0	0.1
1998	7	0.0	0.0	0.0	0.0	0.0	0.0
1998	8	0.0	0.0	0.0	0.0	0.0	0.0
1998	9	0.1	6.2	1.0	0.0	0.0	0.8
1998	10	0.0	5.7	0.9	0.0	0.0	0.7
1998	11	0.1	7.1	1.1	0.0	0.0	0.9
1998	12	0.1	12.4	1.9	0.0	0.0	1.6
1999	1	0.1	7.7	1.2	0.0	0.0	1.0
1999	2	0.1	8.5	1.3	0.0	0.0	1.1
1999	3	0.1	10.3	1.6	0.0	0.0	1.3
1999	4	0.1	9.5	1.5	0.0	0.0	1.2
1999	5	0.0	0.3	0.1	0.0	0.0	0.0
1999	6	0.0	0.0	0.0	0.0	0.0	0.0
1999	7	0.0	0.0	0.0	0.0	0.0	0.0
1999	8	0.0	0.0	0.0	0.0	0.0	0.0
1999	9	0.0	0.0	0.0	0.0	0.0	0.0
1999	10	0.0	1.1	0.2	0.0	0.0	0.1
1999	11	0.1	11.7	1.8	0.0	0.0	1.5
1999	12	0.1	6.2	1.0	0.0	0.0	0.8
2000	1	0.1	7.7	1.2	0.0	0.0	1.0
2000	2	0.1	8.1	1.3	0.0	0.0	1.1
2000	3	0.1	7.3	1.1	0.0	0.0	1.0
2000	4	0.1	7.8	1.2	0.0	0.0	1.0
2000	5	0.0	0.0	0.0	0.0	0.0	0.0
2000	6	0.0	0.0	0.0	0.0	0.0	0.0
2000	7	0.0	0.0	0.0	0.0	0.0	0.0
2000	8	0.0	0.0	0.0	0.0	0.0	0.0
2000	9	0.0	2.9	0.4	0.0	0.0	0.4
2000	10	0.0	0.0	0.0	0.0	0.0	0.0
2000	11	0.1	10.8	1.7	0.0	0.0	1.4
2000	12	0.1	12.4	1.9	0.0	0.0	1.6
2001	1	0.1	8.0	1.2	0.0	0.0	1.0
2001	2	0.1	6.9	1.1	0.0	0.0	0.9
2001	3	0.1	10.9	1.7	0.0	0.0	1.4
2001	4	0.1	9.7	1.5	0.0	0.0	1.3
2001	5	0.0	0.8	0.1	0.0	0.0	0.1
2001	6	0.0	0.0	0.0	0.0	0.0	0.0
2001	7	0.0	0.0	0.0	0.0	0.0	0.0
2001	8	0.0	0.1	0.0	0.0	0.0	0.0
2001	9	0.0	2.9	0.4	0.0	0.0	0.4
2001	10	0.0	1.5	0.2	0.0	0.0	0.2
2001	11	0.0	5.6	0.9	0.0	0.0	0.7
2001	12	0.1	12.3	1.9	0.0	0.0	1.6

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 24 : Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (2002 - 2013) (4/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2002	1	0.1	6.3	1.0	0.0	0.0	0.8
2002	2	0.1	8.3	1.3	0.0	0.0	1.1
2002	3	0.1	9.0	1.4	0.0	0.0	1.2
2002	4	0.1	6.3	1.0	0.0	0.0	0.8
2002	5	0.0	0.0	0.0	0.0	0.0	0.0
2002	6	0.0	0.0	0.0	0.0	0.0	0.0
2002	7	0.0	0.0	0.0	0.0	0.0	0.0
2002	8	0.0	0.0	0.0	0.0	0.0	0.0
2002	9	0.0	0.2	0.0	0.0	0.0	0.0
2002	10	0.0	0.7	0.1	0.0	0.0	0.1
2002	11	0.0	3.1	0.5	0.0	0.0	0.4
2002	12	0.1	12.0	1.9	0.0	0.0	1.6
2003	1	0.1	7.1	1.1	0.0	0.0	0.9
2003	2	0.1	7.7	1.2	0.0	0.0	1.0
2003	3	0.1	8.0	1.3	0.0	0.0	1.0
2003	4	0.1	9.6	1.5	0.0	0.0	1.3
2003	5	0.0	0.0	0.0	0.0	0.0	0.0
2003	6	0.0	0.0	0.0	0.0	0.0	0.0
2003	7	0.0	0.0	0.0	0.0	0.0	0.0
2003	8	0.0	0.1	0.0	0.0	0.0	0.0
2003	9	0.0	4.7	0.7	0.0	0.0	0.6
2003	10	0.1	6.6	1.0	0.0	0.0	0.9
2003	11	0.1	11.4	1.8	0.0	0.0	1.5
2003	12	0.1	12.3	1.9	0.0	0.0	1.6
2004	1	0.1	7.1	1.1	0.0	0.0	0.9
2004	2	0.1	8.1	1.3	0.0	0.0	1.1
2004	3	0.1	10.1	1.6	0.0	0.0	1.3
2004	4	0.0	2.4	0.4	0.0	0.0	0.3
2004	5	0.0	1.6	0.2	0.0	0.0	0.2
2004	6	0.0	0.5	0.1	0.0	0.0	0.1
2004	7	0.0	0.0	0.0	0.0	0.0	0.0
2004	8	0.0	0.2	0.0	0.0	0.0	0.0
2004	9	0.0	5.2	0.8	0.0	0.0	0.7
2004	10	0.0	4.6	0.7	0.0	0.0	0.6
2004	11	0.1	11.5	1.8	0.0	0.0	1.5
2004	12	0.1	12.5	2.0	0.0	0.0	1.6
2005	1	0.1	7.3	1.1	0.0	0.0	1.0
2005	2	0.1	7.8	1.2	0.0	0.0	1.0
2005	3	0.1	9.0	1.4	0.0	0.0	1.2
2005	4	0.1	6.0	0.9	0.0	0.0	0.8
2005	5	0.0	1.4	0.2	0.0	0.0	0.2
2005	6	0.0	0.0	0.0	0.0	0.0	0.0
2005	7	0.0	0.0	0.0	0.0	0.0	0.0
2005	8	0.0	0.0	0.0	0.0	0.0	0.0
2005	9	0.0	0.0	0.0	0.0	0.0	0.0
2005	10	0.0	3.1	0.5	0.0	0.0	0.4
2005	11	0.1	9.8	1.5	0.0	0.0	1.3
2005	12	0.1	11.0	1.7	0.0	0.0	1.4
2006	1	0.1	7.3	1.1	0.0	0.0	1.0
2006	2	0.1	7.3	1.1	0.0	0.0	1.0
2006	3	0.1	10.3	1.6	0.0	0.0	1.4
2006	4	0.0	5.9	0.9	0.0	0.0	0.8
2006	5	0.0	0.0	0.0	0.0	0.0	0.0
2006	6	0.0	0.9	0.1	0.0	0.0	0.1
2006	7	0.0	0.0	0.0	0.0	0.0	0.0
2006	8	0.1	6.2	1.0	0.0	0.0	0.8
2006	9	0.0	0.2	0.0	0.0	0.0	0.0
2006	10	0.1	8.8	1.4	0.0	0.0	1.2
2006	11	0.1	10.4	1.6	0.0	0.0	1.4
2006	12	0.1	12.1	1.9	0.0	0.0	1.6
2007	1	0.1	7.1	1.1	0.0	0.0	0.9
2007	2	0.0	4.8	0.8	0.0	0.0	0.6
2007	3	0.1	10.0	1.6	0.0	0.0	1.3
2007	4	0.1	6.0	0.9	0.0	0.0	0.8
2007	5	0.0	0.1	0.0	0.0	0.0	0.0
2007	6	0.0	0.0	0.0	0.0	0.0	0.0
2007	7	0.0	0.0	0.0	0.0	0.0	0.0
2007	8	0.0	0.5	0.1	0.0	0.0	0.1
2007	9	0.0	2.5	0.4	0.0	0.0	0.3
2007	10	0.0	0.0	0.0	0.0	0.0	0.0
2007	11	0.0	3.8	0.6	0.0	0.0	0.5
2007	12	0.1	12.0	1.9	0.0	0.0	1.6

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2008	1	0.1	6.9	1.1	0.0	0.0	0.9
2008	2	0.1	6.2	1.0	0.0	0.0	0.8
2008	3	0.1	9.5	1.5	0.0	0.0	1.2
2008	4	0.1	10.1	1.6	0.0	0.0	1.3
2008	5	0.0	1.2	0.2	0.0	0.0	0.2
2008	6	0.0	0.1	0.0	0.0	0.0	0.0
2008	7	0.0	0.0	0.0	0.0	0.0	0.0
2008	8	0.0	0.6	0.1	0.0	0.0	0.1
2008	9	0.0	0.0	0.0	0.0	0.0	0.0
2008	10	0.0	3.8	0.6	0.0	0.0	0.5
2008	11	0.1	11.3	1.8	0.0	0.0	1.5
2008	12	0.1	12.1	1.9	0.0	0.0	1.6
2009	1	0.1	7.8	1.2	0.0	0.0	1.0
2009	2	0.1	8.9	1.4	0.0	0.0	1.2
2009	3	0.1	9.8	1.5	0.0	0.0	1.3
2009	4	0.0	5.7	0.9	0.0	0.0	0.7
2009	5	0.0	1.3	0.2	0.0	0.0	0.2
2009	6	0.0	0.3	0.0	0.0	0.0	0.0
2009	7	0.0	0.0	0.0	0.0	0.0	0.0
2009	8	0.0	0.0	0.0	0.0	0.0	0.0
2009	9	0.0	0.0	0.0	0.0	0.0	0.0
2009	10	0.1	7.0	1.1	0.0	0.0	0.9
2009	11	0.1	8.0	1.3	0.0	0.0	1.1
2009	12	0.1	12.3	1.9	0.0	0.0	1.6
2010	1	0.1	7.8	1.2	0.0	0.0	1.0
2010	2	0.1	8.4	1.3	0.0	0.0	1.1
2010	3	0.1	9.7	1.5	0.0	0.0	1.3
2010	4	0.1	9.1	1.4	0.0	0.0	1.2
2010	5	0.0	1.4	0.2	0.0	0.0	0.2
2010	6	0.0	0.0	0.0	0.0	0.0	0.0
2010	7	0.0	0.0	0.0	0.0	0.0	0.0
2010	8	0.0	5.6	0.9	0.0	0.0	0.7
2010	9	0.0	2.5	0.4	0.0	0.0	0.3
2010	10	0.0	5.6	0.9	0.0	0.0	0.7
2010	11	0.1	10.8	1.7	0.0	0.0	1.4
2010	12	0.1	8.1	1.3	0.0	0.0	1.1
2011	1	0.1	7.5	1.2	0.0	0.0	1.0
2011	2	0.1	8.0	1.3	0.0	0.0	1.1
2011	3	0.1	10.4	1.6	0.0	0.0	1.4
2011	4	0.0	5.1	0.8	0.0	0.0	0.7
2011	5	0.0	0.8	0.1	0.0	0.0	0.1
2011	6	0.0	0.0	0.0	0.0	0.0	0.0
2011	7	0.0	0.0	0.0	0.0	0.0	0.0
2011	8	0.0	0.1	0.0	0.0	0.0	0.0
2011	9	0.0	0.0	0.0	0.0	0.0	0.0
2011	10	0.0	3.9	0.6	0.0	0.0	0.5
2011	11	0.1	10.8	1.7	0.0	0.0	1.4
2011	12	0.1	11.6	1.8	0.0	0.0	1.5
2012	1	0.1	7.2	1.1	0.0	0.0	0.9
2012	2	0.1	7.7	1.2	0.0	0.0	1.0
2012	3	0.1	6.6	1.0	0.0	0.0	0.9
2012	4	0.0	4.2	0.7	0.0	0.0	0.6
2012	5	0.0	0.4	0.1	0.0	0.0	0.1
2012	6	0.0	0.0	0.0	0.0	0.0	0.0
2012	7	0.0	0.0	0.0	0.0	0.0	0.0
2012	8	0.0	0.2	0.0	0.0	0.0	0.0
2012	9	0.0	5.0	0.8	0.0	0.0	0.7
2012	10	0.1	7.1	1.1	0.0	0.0	0.9
2012	11	0.1	10.4	1.6	0.0	0.0	1.4
2012	12	0.1	12.2	1.9	0.0	0.0	1.6
2013	1	0.1	7.4	1.2	0.0	0.0	1.0
2013	2	0.1	7.8	1.2	0.0	0.0	1.0
2013	3	0.1	9.8	1.5	0.0	0.0	1.3
2013	4	0.1	7.4	1.2	0.0	0.0	1.0
2013	5	0.0	0.0	0.0	0.0	0.0	0.0
2013	6	0.0	0.0	0.0	0.0	0.0	0.0
2013	7	0.0	0.0	0.0	0.0	0.0	0.0
2013	8	0.1	7.8	1.2	0.0	0.0	1.0
2013	9	0.0	1.2	0.2	0.0	0.0	0.2
2013	10	0.0	0.0	0.0	0.0	0.0	0.0
2013	11	0.1	10.6	1.7	0.0	0.0	1.4
2013	12	0.1	11.6	1.8	0.0	0.0	1.5

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 24 ： Forecasted Gross Water Requirements (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (2014 - 2019) (5/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2014	1	0.1	7.1	1.1	0.0	0.0	0.9
2014	2	0.1	6.2	1.0	0.0	0.0	0.8
2014	3	0.1	10.0	1.6	0.0	0.0	1.3
2014	4	0.1	9.5	1.5	0.0	0.0	1.3
2014	5	0.0	1.7	0.3	0.0	0.0	0.2
2014	6	0.0	0.9	0.1	0.0	0.0	0.1
2014	7	0.0	0.0	0.0	0.0	0.0	0.0
2014	8	0.0	0.0	0.0	0.0	0.0	0.0
2014	9	0.0	3.8	0.6	0.0	0.0	0.5
2014	10	0.1	11.3	1.8	0.0	0.0	1.5
2014	11	0.1	10.5	1.6	0.0	0.0	1.4
2014	12	0.1	11.6	1.8	0.0	0.0	1.5
2015	1	0.1	6.8	1.1	0.0	0.0	0.9
2015	2	0.1	7.1	1.1	0.0	0.0	0.9
2015	3	0.1	9.8	1.5	0.0	0.0	1.3
2015	4	0.1	6.4	1.0	0.0	0.0	0.8
2015	5	0.0	2.1	0.3	0.0	0.0	0.3
2015	6	0.0	0.0	0.0	0.0	0.0	0.0
2015	7	0.0	0.0	0.0	0.0	0.0	0.0
2015	8	0.1	7.1	1.1	0.0	0.0	0.9
2015	9	0.0	0.0	0.0	0.0	0.0	0.0
2015	10	0.0	4.3	0.7	0.0	0.0	0.6
2015	11	0.1	8.4	1.3	0.0	0.0	1.1
2015	12	0.1	10.3	1.6	0.0	0.0	1.4
2016	1	0.1	6.5	1.0	0.0	0.0	0.9
2016	2	0.1	7.0	1.1	0.0	0.0	0.9
2016	3	0.1	8.4	1.3	0.0	0.0	1.1
2016	4	0.1	8.3	1.3	0.0	0.0	1.1
2016	5	0.0	0.9	0.1	0.0	0.0	0.1
2016	6	0.0	1.3	0.2	0.0	0.0	0.2
2016	7	0.0	0.0	0.0	0.0	0.0	0.0
2016	8	0.0	0.1	0.0	0.0	0.0	0.0
2016	9	0.0	0.4	0.1	0.0	0.0	0.1
2016	10	0.0	4.8	0.8	0.0	0.0	0.6
2016	11	0.1	8.6	1.3	0.0	0.0	1.1
2016	12	0.1	12.0	1.9	0.0	0.0	1.6
2017	1	0.1	7.9	1.2	0.0	0.0	1.0
2017	2	0.1	7.8	1.2	0.0	0.0	1.0
2017	3	0.0	5.3	0.8	0.0	0.0	0.7
2017	4	0.0	2.2	0.3	0.0	0.0	0.3
2017	5	0.0	1.7	0.3	0.0	0.0	0.2
2017	6	0.0	0.0	0.0	0.0	0.0	0.0
2017	7	0.0	0.0	0.0	0.0	0.0	0.0
2017	8	0.0	0.1	0.0	0.0	0.0	0.0
2017	9	0.0	0.0	0.0	0.0	0.0	0.0
2017	10	0.0	4.5	0.7	0.0	0.0	0.6
2017	11	0.1	10.5	1.6	0.0	0.0	1.4
2017	12	0.1	9.8	1.5	0.0	0.0	1.3
2018	1	0.1	6.0	0.9	0.0	0.0	0.8
2018	2	0.1	7.3	1.1	0.0	0.0	1.0
2018	3	0.1	9.6	1.5	0.0	0.0	1.3
2018	4	0.1	7.8	1.2	0.0	0.0	1.0
2018	5	0.0	1.2	0.2	0.0	0.0	0.2
2018	6	0.0	0.0	0.0	0.0	0.0	0.0
2018	7	0.0	0.0	0.0	0.0	0.0	0.0
2018	8	0.1	6.7	1.1	0.0	0.0	0.9
2018	9	0.0	3.7	0.6	0.0	0.0	0.5
2018	10	0.0	3.1	0.5	0.0	0.0	0.4
2018	11	0.1	10.3	1.6	0.0	0.0	1.4
2018	12	0.1	11.6	1.8	0.0	0.0	1.5
2019	1	0.1	7.4	1.2	0.0	0.0	1.0
2019	2	0.1	7.0	1.1	0.0	0.0	0.9
2019	3	0.1	7.3	1.2	0.0	0.0	1.0
2019	4	0.1	9.5	1.5	0.0	0.0	1.2
2019	5	0.0	2.2	0.3	0.0	0.0	0.3
2019	6	0.0	0.8	0.1	0.0	0.0	0.1
2019	7	0.0	0.0	0.0	0.0	0.0	0.0
2019	8	0.0	0.8	0.1	0.0	0.0	0.1
2019	9	0.0	2.3	0.4	0.0	0.0	0.3
2019	10	0.1	7.0	1.1	0.0	0.0	0.9
2019	11	0.1	7.0	1.1	0.0	0.0	0.9
2019	12	0.1	12.4	1.9	0.0	0.0	1.6

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 25：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1966 - 1971) (1/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1966	1	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1966	2	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.8	0.4
1966	3	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1966	4	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1966	5	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1966	6	0.0	0.0	0.0	0.0	5.0	9.6	7.6	8.3	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
1966	7	0.0	0.0	0.0	0.0	4.8	9.2	7.3	8.0	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.7	0.0	0.7	1.8	0.9
1966	8	0.0	0.0	0.0	0.0	5.8	11.2	8.9	9.7	0.6	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.3	1.0	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.4	7.5	3.3	0.0	0.9	2.2	1.1
1966	9	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1966	10	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1966	11	0.0	0.0	0.0	0.0	3.1	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1966	12	0.0	0.0	0.0	0.0	3.2	6.3	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
1967	1	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1967	2	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.8	0.4
1967	3	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.5	1.1	0.5
1967	4	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1967	5	0.0	0.0	0.0	0.0	1.4	2.6	2.1	2.3	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.2
1967	6	0.0	0.0	0.0	0.0	1.4	2.6	2.1	2.3	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.2
1967	7	0.0	0.0	0.0	0.0	4.3	8.2	6.5	7.1	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
1967	8	0.0	0.0	0.0	0.0	4.9	9.4	7.4	8.1	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
1967	9	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
1967	10	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1967	11	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1967	12	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1968	1	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1968	2	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1968	3	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1968	4	0.0	0.0	0.0	0.0	3.0	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1968	5	0.0	0.0	0.0	0.0	3.6	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1968	6	0.0	0.0	0.0	0.0	4.8	9.4	7.4	8.1	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.9	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.8	0.0	0.7	1.8	0.9
1968	7	0.0	0.0	0.0	0.0	9.7	18.9	14.9	16.3	1.0	2.0	0.0	0.1	1.1	1.0	0.0	0.1	0.0	0.0	1.3	2.8	3.9	1.8	1.8	3.7	9.8	1.3	1.7	1.7	0.9	0.1	0.0	7.1	5.6	12.6	5.6	0.0	1.5	3.7	1.8
1968	8	0.0	0.0	0.0	0.0	6.0	11.6	9.1	10.0	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	6.0	0.8	1.0	1.0	0.6	0.1	0.0	4.4	3.5	7.7	3.4	0.0	0.9	2.3	1.1
1968	9	0.0	0.0	0.0	0.0	3.6	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1968	10	0.0	0.0	0.0	0.0	2.6	5.1	4.1	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1968	11	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1968	12	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1969	1	0.0	0.0	0.0	0.0	1.9	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1969	2	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1969	3	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1969	4	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1969	5	0.0	0.0	0.0	0.0	6.1	11.8	9.3	10.2	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.5	7.9	3.5	0.0	0.9	2.3	1.1
1969	6	0.0	0.0	0.0	0.0	1.2	2.4	1.9	2.0	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.5	0.2	0.2	0.5	1.2	0.2	0.2	0.2	0.1	0.0	0.0	0.9	0.7	1.6	0.7	0.0	0.2	0.5	0.2
1969	7	0.0	0.0	0.0	0.0	3.0	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
1969	8	0.0	0.0	0.0	0.0	8.0	15.6	12.3	13.5	0.9	1.6	0.0	0.0	0.9	0.8	0.0	0.1	0.0	0.0	1.1	2.3	3.2	1.5	1.5	3.0	8.1	1.1	1.4	1.4	0.8	0.1	0.0	5.9	4.7	10.4	4.6	0.0	1.2	3.1	1.5
1969	9	0.0	0.0	0.0	0.0	3.1	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	4.0	1.7	0.0	0.5	1.2	0.6
1969	10	0.0	0.0	0.0	0.0	3.5	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1969	11	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1969	12	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1970	1	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1970	2	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1970	3	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1970	4	0.0	0.0	0.0	0.0	3.0	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1970	5	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1970	6	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1970	7	0.0	0.0	0.0	0.0	11.8	22.9	18.1	19.8	1.3	2.4	0.0	0.1	1.3	1.2	0.0	0.1	0.0	0.0	1.6	3.4	4.8	2.1	2.2	4.5	11.9	1.6	2.0	2.1	1.2	0.1	0.0	8.7	6.9	15.3	6.8	0.0	1.8	4.5	2.1
1970	8	0.0	0.0	0.0	0.0	5.0	9.7	7.7	8.4	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	1.9	0.9
1970	9	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1970	10	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1970	11	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1970	12	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1971	1	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1971	2	0.0	0.0	0.0	0.0	2.1	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1971	3	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1971	4	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1971	5	0.0	0.0	0.0	0.0	1.7	3.2	2.6	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.3	0.6	0.3
1971	6	0.0	0.0	0.0	0.0	6.4	12.4	9.8	10.7	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.6	1.2	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.3	3.7	0.0	1.0	2.5	1.2
1971	7	0.0	0.0	0.0	0.0	4.0	7.7	6.1	6.7	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.5	0.7
1971	8	0.0	0.0	0.0	0.0	5.0	9.6	7.6	8.3	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
1971	9	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
1971	10	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1971	11	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1971	12	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 25：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1972 - 1977) (2/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1972	1	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1972	2	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
1972	3	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1972	4	0.0	0.0	0.0	0.0	3.0	5.7	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1972	5	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1972	6	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1972	7	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
1972	8	0.0	0.0	0.0	0.0	4.5	8.7	6.9	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
1972	9	0.0	0.0	0.0	0.0	3.3	6.4	5.0	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1972	10	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.1	0.0	0.5	1.4	0.7
1972	11	0.0	0.0	0.0	0.0	3.3	6.4	5.0	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1972	12	0.0	0.0	0.0	0.0	3.7	7.3	5.7	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1973	1	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1973	2	0.0	0.0	0.0	0.0	2.2	4.4	3.4	3.8	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1973	3	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
1973	4	0.0	0.0	0.0	0.0	2.8	5.5	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1973	5	0.0	0.0	0.0	0.0	3.5	6.8	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1973	6	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1973	7	0.0	0.0	0.0	0.0	5.7	11.0	8.7	9.5	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.7	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.3	3.2	0.0	0.8	2.2	1.0
1973	8	0.0	0.0	0.0	0.0	4.5	8.7	6.9	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
1973	9	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
1973	10	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
1973	11	0.0	0.0	0.0	0.0	2.3	4.5	3.5	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1973	12	0.0	0.0	0.0	0.0	3.6	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1974	1	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1974	2	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1974	3	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1974	4	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1974	5	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1974	6	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1974	7	0.0	0.0	0.0	0.0	4.5	8.8	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.7	0.8
1974	8	0.0	0.0	0.0	0.0	5.6	10.8	8.5	9.3	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.1	1.0
1974	9	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1974	10	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1974	11	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
1974	12	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1975	1	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1975	2	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1975	3	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1975	4	0.0	0.0	0.0	0.0	3.2	6.3	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
1975	5	0.0	0.0	0.0	0.0	1.6	3.1	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1975	6	0.0	0.0	0.0	0.0	4.7	9.1	7.2	7.9	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.9	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.1	2.7	0.0	0.7	1.8	0.9
1975	7	0.0	0.0	0.0	0.0	6.0	11.7	9.2	10.1	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.0	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.4	0.0	0.9	2.3	1.1
1975	8	0.0	0.0	0.0	0.0	4.7	9.2	7.2	7.9	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.5	2.7	6.1	2.7	0.0	0.7	1.8	0.9
1975	9	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
1975	10	0.0	0.0	0.0	0.0	3.8	7.4	5.8	6.4	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1975	11	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1975	12	0.0	0.0	0.0	0.0	3.6	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1976	1	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1976	2	0.0	0.0	0.0	0.0	2.1	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1976	3	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1976	4	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1976	5	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.6	1.1	0.0	0.3	0.8	0.4
1976	6	0.0	0.0	0.0	0.0	8.1	15.7	12.4	13.5	0.9	1.6	0.0	0.0	0.9	0.8	0.0	0.1	0.0	0.0	1.1	2.3	3.3	1.5	1.5	3.0	8.1	1.1	1.4	1.4	0.8	0.1	0.0	5.9	4.7	10.5	4.6	0.0	1.2	3.1	1.5
1976	7	0.0	0.0	0.0	0.0	7.2	14.1	11.1	12.1	0.8	1.5	0.0	0.0	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.1	2.9	1.3	1.3	2.7	7.3	1.0	1.2	1.3	0.7	0.1	0.0	5.3	4.2	9.4	4.2	0.0	1.1	2.8	1.3
1976	8	0.0	0.0	0.0	0.0	5.5	10.6	8.4	9.1	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.5	0.7	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.1	3.1	0.0	0.8	2.1	1.0
1976	9	0.0	0.0	0.0	0.0	3.8	7.5	5.9	6.4	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1976	10	0.0	0.0	0.0	0.0	3.5	6.9	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.3	0.6
1976	11	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
1976	12	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1977	1	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1977	2	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1977	3	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1977	4	0.0	0.0	0.0	0.0	4.0	7.8	6.2	6.7	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.0	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.3	5.2	2.3	0.0	0.6	1.5	0.7
1977	5	0.0	0.0	0.0	0.0	2.3	4.5	3.6	3.9	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1977	6	0.0	0.0	0.0	0.0	4.6	9.0	7.1	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
1977	7	0.0	0.0	0.0	0.0	4.8	9.3	7.4	8.1	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.8	0.0	0.7	1.8	0.9
1977	8	0.0	0.0	0.0	0.0	6.3	12.2	9.6	10.5	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.6	8.1	3.6	0.0	0.9	2.4	1.1
1977	9	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
1977	10	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1977	11	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1977	12	0.0	0.0	0.0	0.0	3.6	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 25：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1978 - 1983) (3/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1978	1	0.0	0.0	0.0	0.0	2.0	3.9	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1978	2	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1978	3	0.0	0.0	0.0	0.0	3.1	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
1978	4	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1978	5	0.0	0.0	0.0	0.0	3.8	7.4	5.9	6.4	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1978	6	0.0	0.0	0.0	0.0	6.6	12.8	10.1	11.0	0.7	1.3	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.6	0.9	1.1	1.2	0.6	0.1	0.0	4.8	3.8	8.5	3.8	0.0	1.0	2.5	1.2
1978	7	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1978	8	0.0	0.0	0.0	0.0	6.4	12.5	9.9	10.8	0.7	1.3	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.8	2.6	1.2	1.2	2.4	6.5	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.3	3.7	0.0	1.0	2.5	1.2
1978	9	0.0	0.0	0.0	0.0	4.3	8.3	6.5	7.1	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
1978	10	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.3	0.6
1978	11	0.0	0.0	0.0	0.0	3.3	6.3	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1978	12	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1979	1	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1979	2	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1979	3	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1979	4	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
1979	5	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1979	6	0.0	0.0	0.0	0.0	4.8	9.3	7.4	8.0	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.8	0.0	0.7	1.8	0.9
1979	7	0.0	0.0	0.0	0.0	6.6	12.8	10.1	11.1	0.7	1.3	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.6	0.9	1.1	1.2	0.6	0.1	0.0	4.9	3.8	8.6	3.8	0.0	1.0	2.5	1.2
1979	8	0.0	0.0	0.0	0.0	5.6	10.9	8.6	9.4	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.6	0.8	1.0	1.0	0.5	0.1	0.0	4.1	3.3	7.3	3.2	0.0	0.8	2.1	1.0
1979	9	0.0	0.0	0.0	0.0	3.6	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1979	10	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1979	11	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1979	12	0.0	0.0	0.0	0.0	3.4	6.5	5.2	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1980	1	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1980	2	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
1980	3	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1980	4	0.0	0.0	0.0	0.0	3.0	5.9	4.6	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
1980	5	0.0	0.0	0.0	0.0	5.9	11.4	9.0	9.9	0.6	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.2	1.1
1980	6	0.0	0.0	0.0	0.0	4.0	7.8	6.2	6.7	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.0	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.3	5.2	2.3	0.0	0.6	1.5	0.7
1980	7	0.0	0.0	0.0	0.0	9.2	17.9	14.1	15.4	1.0	1.9	0.0	0.1	1.0	0.9	0.0	0.1	0.0	0.0	1.3	2.6	3.7	1.7	1.7	3.5	9.3	1.3	1.6	1.6	0.9	0.1	0.0	6.8	5.4	11.9	5.3	0.0	1.4	3.5	1.7
1980	8	0.0	0.0	0.0	0.0	6.2	12.1	9.6	10.4	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.6	8.1	3.6	0.0	0.9	2.4	1.1
1980	9	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
1980	10	0.0	0.0	0.0	0.0	3.3	6.4	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1980	11	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.3	0.3	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1980	12	0.0	0.0	0.0	0.0	3.6	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1981	1	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1981	2	0.0	0.0	0.0	0.0	2.1	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1981	3	0.0	0.0	0.0	0.0	3.8	7.5	5.9	6.4	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1981	4	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.5
1981	5	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1981	6	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1981	7	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1981	8	0.0	0.0	0.0	0.0	6.8	13.2	10.4	11.4	0.7	1.4	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.3	2.6	6.8	0.9	1.2	1.2	0.7	0.1	0.0	5.0	3.9	8.8	3.9	0.0	1.0	2.6	1.2
1981	9	0.0	0.0	0.0	0.0	4.1	8.0	6.3	6.9	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1981	10	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1981	11	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1981	12	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1982	1	0.0	0.0	0.0	0.0	2.0	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1982	2	0.0	0.0	0.0	0.0	2.0	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1982	3	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1982	4	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1982	5	0.0	0.0	0.0	0.0	1.5	3.0	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1982	6	0.0	0.0	0.0	0.0	2.9	5.5	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1982	7	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1982	8	0.0	0.0	0.0	0.0	4.8	9.4	7.4	8.1	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.8	0.0	0.7	1.8	0.9
1982	9	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.1	1.8	0.0	0.5	1.2	0.6
1982	10	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.1	0.0	0.5	1.4	0.7
1982	11	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1982	12	0.0	0.0	0.0	0.0	3.6	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1983	1	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1983	2	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1983	3	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1983	4	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
1983	5	0.0	0.0	0.0	0.0	4.1	7.9	6.3	6.8	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1983	6	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1983	7	0.0	0.0	0.0	0.0	4.7	9.1	7.1	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
1983	8	0.0	0.0	0.0	0.0	7.0	13.5	10.7	11.7	0.7	1.4	0.0	0.0	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.6	7.0	1.0	1.2	1.2	0.7	0.1	0.0	5.1	4.0	9.0	4.0	0.0	1.0	2.7	1.3
1983	9	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1983	10	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1983	11	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.5
1983	12	0.0	0.0	0.0	0.0	3.6	6.9	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 25：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1984 - 1989) (4/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1984	1	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1984	2	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1984	3	0.0	0.0	0.0	0.0	3.0	5.9	4.6	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.5
1984	4	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1984	5	0.0	0.0	0.0	0.0	5.8	11.3	8.9	9.8	0.6	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.3	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.3	0.0	0.9	2.2	1.1
1984	6	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1984	7	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1984	8	0.0	0.0	0.0	0.0	4.5	8.7	6.9	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
1984	9	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1984	10	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1984	11	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1984	12	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1985	1	0.0	0.0	0.0	0.0	2.0	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1985	2	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1985	3	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.5	1.1	0.5
1985	4	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
1985	5	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.6	1.1	0.0	0.3	0.8	0.4
1985	6	0.0	0.0	0.0	0.0	3.8	7.4	5.9	6.4	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1985	7	0.0	0.0	0.0	0.0	4.7	9.2	7.2	7.9	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.6	0.8	0.8	0.5	0.0	0.0	3.5	2.7	6.1	2.7	0.0	0.7	1.8	0.9
1985	8	0.0	0.0	0.0	0.0	4.1	8.0	6.3	6.9	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.4	0.0	0.6	1.6	0.7
1985	9	0.0	0.0	0.0	0.0	3.3	6.4	5.0	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1985	10	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1985	11	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1985	12	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.1	0.0	0.5	1.4	0.7
1986	1	0.0	0.0	0.0	0.0	2.0	3.9	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1986	2	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1986	3	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1986	4	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1986	5	0.0	0.0	0.0	0.0	1.4	2.7	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.3
1986	6	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1986	7	0.0	0.0	0.0	0.0	7.2	14.0	11.1	12.1	0.8	1.5	0.0	0.0	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.1	2.9	1.3	1.3	2.7	7.3	1.0	1.2	1.3	0.7	0.1	0.0	5.3	4.2	9.4	4.1	0.0	1.1	2.8	1.3
1986	8	0.0	0.0	0.0	0.0	6.4	12.4	9.8	10.7	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.6	1.2	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.3	3.7	0.0	1.0	2.4	1.2
1986	9	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1986	10	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
1986	11	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1986	12	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1987	1	0.0	0.0	0.0	0.0	1.8	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1987	2	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1987	3	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1987	4	0.0	0.0	0.0	0.0	3.9	7.6	6.0	6.6	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.2	0.0	0.6	1.5	0.7
1987	5	0.0	0.0	0.0	0.0	1.5	2.8	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.5	1.5	0.2	0.2	0.3	0.1	0.0	0.0	1.1	0.8	1.9	0.8	0.0	0.2	0.6	0.3
1987	6	0.0	0.0	0.0	0.0	3.6	6.9	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1987	7	0.0	0.0	0.0	0.0	5.8	11.3	8.9	9.8	0.6	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.3	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.5	3.3	0.0	0.9	2.2	1.1
1987	8	0.0	0.0	0.0	0.0	8.0	15.5	12.3	13.4	0.9	1.6	0.0	0.0	0.9	0.8	0.0	0.1	0.0	0.0	1.1	2.3	3.2	1.5	1.5	3.0	8.1	1.1	1.4	1.4	0.8	0.1	0.0	5.9	4.7	10.4	4.6	0.0	1.2	3.1	1.5
1987	9	0.0	0.0	0.0	0.0	4.9	9.5	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
1987	10	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1987	11	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1987	12	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1988	1	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1988	2	0.0	0.0	0.0	0.0	2.1	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1988	3	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1988	4	0.0	0.0	0.0	0.0	2.5	4.9	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.5	3.3	1.4	0.0	0.4	1.0	0.5
1988	5	0.0	0.0	0.0	0.0	3.4	6.5	5.2	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1988	6	0.0	0.0	0.0	0.0	7.0	13.6	10.8	11.8	0.8	1.4	0.0	0.0	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.7	7.1	1.0	1.2	1.2	0.7	0.1	0.0	5.2	4.1	9.1	4.0	0.0	1.1	2.7	1.3
1988	7	0.0	0.0	0.0	0.0	6.3	12.2	9.6	10.5	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.6	8.1	3.6	0.0	0.9	2.4	1.1
1988	8	0.0	0.0	0.0	0.0	5.8	11.3	8.9	9.7	0.6	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.3	1.1	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.5	3.3	0.0	0.9	2.2	1.1
1988	9	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
1988	10	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1988	11	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
1988	12	0.0	0.0	0.0	0.0	3.5	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1989	1	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1989	2	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1989	3	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1989	4	0.0	0.0	0.0	0.0	3.6	6.9	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1989	5	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.8	0.4
1989	6	0.0	0.0	0.0	0.0	2.2	4.2	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
1989	7	0.0	0.0	0.0	0.0	7.6	14.7	11.6	12.7	0.8	1.5	0.0	0.0	0.8	0.8	0.0	0.1	0.0	0.0	1.0	2.2	3.1	1.4	1.4	2.9	7.6	1.0	1.3	1.3	0.7	0.1	0.0	5.6	4.4	9.8	4.3	0.0	1.1	2.9	1.4
1989	8	0.0	0.0	0.0	0.0	5.7	11.0	8.7	9.5	0.6	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.1	5.7	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
1989	9	0.0	0.0	0.0	0.0	3.8	7.4	5.9	6.4	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1989	10	0.0	0.0	0.0	0.0	5.2	10.1	8.0	8.7	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
1989	11	0.0	0.0	0.0	0.0	2.8	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1989	12	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 25：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1990 - 1995) (5/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1990	1	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1990	2	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.8	0.4
1990	3	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1990	4	0.0	0.0	0.0	0.0	3.3	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1990	5	0.0	0.0	0.0	0.0	3.5	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1990	6	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.1	0.0	0.5	1.4	0.7
1990	7	0.0	0.0	0.0	0.0	6.1	11.8	9.3	10.2	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.5	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.5	7.9	3.5	0.0	0.9	2.3	1.1
1990	8	0.0	0.0	0.0	0.0	5.6	10.9	8.6	9.4	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.7	0.8	1.0	1.0	0.5	0.1	0.0	4.1	3.3	7.3	3.2	0.0	0.8	2.2	1.0
1990	9	0.0	0.0	0.0	0.0	2.4	4.6	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1990	10	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1990	11	0.0	0.0	0.0	0.0	2.4	4.6	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1990	12	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.3	0.6
1991	1	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.3	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
1991	2	0.0	0.0	0.0	0.0	2.1	4.1	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1991	3	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.5	1.1	0.5
1991	4	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1991	5	0.0	0.0	0.0	0.0	5.4	10.4	8.2	9.0	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.1	0.0	0.8	2.0	1.0
1991	6	0.0	0.0	0.0	0.0	5.7	11.1	8.8	9.6	0.6	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.2	5.7	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
1991	7	0.0	0.0	0.0	0.0	4.4	8.5	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.7	2.5	0.0	0.7	1.7	0.8
1991	8	0.0	0.0	0.0	0.0	5.7	11.1	8.8	9.6	0.6	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
1991	9	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1991	10	0.0	0.0	0.0	0.0	3.0	5.9	4.6	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.5
1991	11	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1991	12	0.0	0.0	0.0	0.0	3.5	6.9	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1992	1	0.0	0.0	0.0	0.0	1.8	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.3	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
1992	2	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
1992	3	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
1992	4	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1992	5	0.0	0.0	0.0	0.0	1.8	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1992	6	0.0	0.0	0.0	0.0	4.1	7.9	6.2	6.8	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1992	7	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1992	8	0.0	0.0	0.0	0.0	5.0	9.6	7.6	8.3	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
1992	9	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1992	10	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1992	11	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
1992	12	0.0	0.0	0.0	0.0	3.4	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1993	1	0.0	0.0	0.0	0.0	1.9	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1993	2	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1993	3	0.0	0.0	0.0	0.0	3.2	6.1	4.9	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1993	4	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1993	5	0.0	0.0	0.0	0.0	4.4	8.5	6.7	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
1993	6	0.0	0.0	0.0	0.0	7.3	14.1	11.1	12.1	0.8	1.5	0.0	0.0	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.1	2.9	1.3	1.3	2.7	7.3	1.0	1.2	1.3	0.7	0.1	0.0	5.3	4.2	9.4	4.2	0.0	1.1	2.8	1.3
1993	7	0.0	0.0	0.0	0.0	8.9	17.3	13.7	14.9	1.0	1.8	0.0	0.1	1.0	0.9	0.0	0.1	0.0	0.0	1.2	2.6	3.6	1.6	1.6	3.4	9.0	1.2	1.5	1.6	0.9	0.1	0.0	6.5	5.2	11.5	5.1	0.0	1.3	3.4	1.6
1993	8	0.0	0.0	0.0	0.0	6.8	13.2	10.4	11.4	0.7	1.4	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.7	1.2	1.3	2.6	6.8	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.8	3.9	0.0	1.0	2.6	1.2
1993	9	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
1993	10	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1993	11	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1993	12	0.0	0.0	0.0	0.0	3.6	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1994	1	0.0	0.0	0.0	0.0	2.0	3.9	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1994	2	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
1994	3	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1994	4	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1994	5	0.0	0.0	0.0	0.0	1.6	3.0	2.4	2.6	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1994	6	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1994	7	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1994	8	0.0	0.0	0.0	0.0	4.5	8.7	6.9	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
1994	9	0.0	0.0	0.0	0.0	3.5	6.8	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1994	10	0.0	0.0	0.0	0.0	3.0	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
1994	11	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
1994	12	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1995	1	0.0	0.0	0.0	0.0	2.0	3.9	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1995	2	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
1995	3	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
1995	4	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1995	5	0.0	0.0	0.0	0.0	4.9	9.5	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
1995	6	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1995	7	0.0	0.0	0.0	0.0	5.6	10.9	8.6	9.4	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.6	0.8	1.0	1.0	0.5	0.1	0.0	4.1	3.3	7.3	3.2	0.0	0.8	2.1	1.0
1995	8	0.0	0.0	0.0	0.0	4.5	8.7	6.9	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
1995	9	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1995	10	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.0	0.5
1995	11	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1995	12	0.0	0.0	0.0	0.0	3.6	7.0	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 25：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1996 - 2001) (6/9)

		Karunafuli River Basin																	
	District	Chattogram																	
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga
1996	1	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1996	2	0.0	0.0	0.0	0.0	2.3	4.5	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
1996	3	0.0	0.0	0.0	0.0	4.1	7.9	6.2	6.8	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
1996	4	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1996	5	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0
1996	6	0.0	0.0	0.0	0.0	4.3	8.3	6.6	7.2	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0
1996	7	0.0	0.0	0.0	0.0	4.4	8.6	6.8	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0
1996	8	0.0	0.0	0.0	0.0	4.2	8.2	6.5	7.1	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0
1996	9	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
1996	10	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
1996	11	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1996	12	0.0	0.0	0.0	0.0	3.6	7.0	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
1997	1	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1997	2	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1997	3	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
1997	4	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1997	5	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
1997	6	0.0	0.0	0.0	0.0	4.7	9.1	7.2	7.9	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0
1997	7	0.0	0.0	0.0	0.0	6.1	11.8	9.3	10.2	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0
1997	8	0.0	0.0	0.0	0.0	4.5	8.7	6.9	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0
1997	9	0.0	0.0	0.0	0.0	4.1	8.0	6.3	6.9	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0
1997	10	0.0	0.0	0.0	0.0	3.3	6.3	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0
1997	11	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1997	12	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
1998	1	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1998	2	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1998	3	0.0	0.0	0.0	0.0	3.0	5.8	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1998	4	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1998	5	0.0	0.0	0.0	0.0	6.4	12.4	9.8	10.7	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0
1998	6	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1998	7	0.0	0.0	0.0	0.0	9.9	19.1	15.1	16.5	1.1	2.0	0.0	0.1	1.1	1.0	0.0	0.1	0.0	0.0
1998	8	0.0	0.0	0.0	0.0	4.6	8.9	7.1	7.7	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0
1998	9	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1998	10	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
1998	11	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1998	12	0.0	0.0	0.0	0.0	3.8	7.4	5.8	6.4	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
1999	1	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
1999	2	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1999	3	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0
1999	4	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0
1999	5	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
1999	6	0.0	0.0	0.0	0.0	10.3	20.1	15.8	17.3	1.1	2.1	0.0	0.1	1.1	1.0	0.0	0.1	0.0	0.0
1999	7	0.0	0.0	0.0	0.0	5.5	10.6	8.4	9.1	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0
1999	8	0.0	0.0	0.0	0.0	4.5	8.6	6.8	7.5	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0
1999	9	0.0	0.0	0.0	0.0	2.6	5.1	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1999	10	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
1999	11	0.0	0.0	0.0	0.0	3.4	6.5	5.2	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0
1999	12	0.0	0.0	0.0	0.0	3.3	6.3	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0
2000	1	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2000	2	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2000	3	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2000	4	0.0	0.0	0.0	0.0	3.0	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2000	5	0.0	0.0	0.0	0.0	6.7	12.9	10.2	11.2	0.7	1.3	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0
2000	6	0.0	0.0	0.0	0.0	5.2	10.1	8.0	8.8	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0
2000	7	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2000	8	0.0	0.0	0.0	0.0	5.0	9.7	7.6	8.3	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0
2000	9	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2000	10	0.0	0.0	0.0	0.0	4.1	8.0	6.3	6.9	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0
2000	11	0.0	0.0	0.0	0.0	2.8	5.5	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2000	12	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
2001	1	0.0	0.0	0.0	0.0	2.1	4.1	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0
2001	2	0.0	0.0	0.0	0.0	2.3	4.5	3.5	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0
2001	3	0.0	0.0	0.0	0.0	3.2	6.3	5.0	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0
2001	4	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2001	5	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2001	6	0.0	0.0	0.0	0.0	5.3	10.2	8.1	8.8	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0
2001	7	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0
2001	8	0.0	0.0	0.0	0.0	4.3	8.4	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0
2001	9	0.0	0.0	0.0	0.0	2.8	5.5	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2001	10	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2001	11	0.0	0.0	0.0	0.0	2.5	4.9	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0
2001	12	0.0	0.0	0.0	0.0	3.8	7.3	5.8	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0

		Karunafuli River Basin																				
	District	Rangamati										Bandarban			Khagrachari							
	Upazila	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1996	1	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1996	2	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1996	3	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1996	4	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.5	3.5	1.5	0.0	0.4	1.0	0.5
1996	5	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1996	6	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.1	2.5	5.5	2.5	0.0	0.6	1.6	0.8
1996	7	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.7	2.5	0.0	0.7	1.7	0.8
1996	8	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
1996	9	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1996	10	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1996	11	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1996	12	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1997	1	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1997	2	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1997	3	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1997	4	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1997	5	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1997	6	0.6	1.3	1.9	0.9	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.1	2.7	0.0	0.7	1.8	0.9
1997	7	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.5	7.9	3.5	0.0	0.9	2.3	1.1
1997	8	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
1997	9	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1997	10	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
1997	11	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1997	12	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.3	0.6
1998	1	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1998	2	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1998	3	0.4	0.9	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1998	4	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1998	5	0.9	1.8	2.6	1.2	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.3	3.7	0.0	1.0	2.4	1.2
1998	6	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1998	7	1.4	2.8	4.0	1.8	1.8	3.7	9.9	1.3	1.7	1.7	1.0	0.1	0.0	7.2	5.7	12.8	5.6	0.0	1.5	3.8	1.8
1998	8	0.6	1.3	1.9	0.8	0.9	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	6.0	2.6	0.0	0.7	1.8	0.8
1998	9	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
1998	10	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1998	11	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1998	12	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1999	1	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.8	0.4
1999	2	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.5	3.2	1.4	0.0	0.4	1.0	0.5
1999	3	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1999	4	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
1999	5	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1999	6	1.4	3.0	4.2	1.9	1.9	3.9	10.4	1.4	1.8	1.8	1.0	0.1	0.0	7.6	6.0	13.4	5.9	0.0	1.5	4.0	1.9
1999	7	0.8	1.6	2.2	1.0	1.0	2.1	5.5	0.7	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.1	3.1	0.0	0.8	2.1	1.0
1999	8	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
1999	9	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1999	10	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1999	11	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1999	12	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
2000	1	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2000	2	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2000	3	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2000	4	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2000	5	0.9	1.9	2.7	1.2	1.2	2.5	6.7	0.9	1.1	1.2	0.6	0.1	0.0	4.9	3.9	8.6	3.8	0.0	1.0	2.5	1.2
2000	6	0.7	1.5	2.1	0.9	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.8	3.0	0.0	0.8	2.0	0.9
2000	7	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2000	8	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.7	2.9	6.4	2.9	0.0	0.7	1.9	0.9
2000	9	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2000	10	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2000	11	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
2000	12	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
2001	1	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
2001	2	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
2001	3	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
2001	4	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2001	5	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
2001	6	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.1	6.8	3.0	0.0	0.8	2.0	1.0
2001	7	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.9	4.1	1.8	0.0	0.5	1.2	0.6
2001	8	0.6	1.2	1.7	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
2001	9	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
2001	10	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
2001	11	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.5	3.2	1.4	0.0	0.4	1.0	0.5
2001	12	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.4	0.7

Source: JICA Study Team

Attachment 25：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2002 - 2007) (7/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2002	1	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2002	2	0.0	0.0	0.0	0.0	2.4	4.6	3.6	3.9	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
2002	3	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
2002	4	0.0	0.0	0.0	0.0	2.8	5.4	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2002	5	0.0	0.0	0.0	0.0	5.1	9.8	7.8	8.5	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.6	2.9	0.0	0.8	1.9	0.9
2002	6	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
2002	7	0.0	0.0	0.0	0.0	7.9	15.3	12.1	13.2	0.8	1.6	0.0	0.0	0.9	0.8	0.0	0.1	0.0	0.0	1.1	2.3	3.2	1.4	1.5	3.0	7.9	1.1	1.3	1.4	0.8	0.1	0.0	5.8	4.6	10.2	4.5	0.0	1.2	3.0	1.4
2002	8	0.0	0.0	0.0	0.0	5.7	11.0	8.7	9.5	0.6	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.1	5.7	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
2002	9	0.0	0.0	0.0	0.0	3.3	6.3	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
2002	10	0.0	0.0	0.0	0.0	3.4	6.5	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2002	11	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2002	12	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2003	1	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
2003	2	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
2003	3	0.0	0.0	0.0	0.0	3.0	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
2003	4	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2003	5	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2003	6	0.0	0.0	0.0	0.0	10.1	19.5	15.4	16.8	1.1	2.0	0.0	0.1	1.1	1.0	0.0	0.1	0.0	0.0	1.4	2.9	4.0	1.8	1.9	3.8	10.1	1.4	1.7	1.8	1.0	0.1	0.0	7.4	5.8	13.0	5.8	0.0	1.5	3.8	1.8
2003	7	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2003	8	0.0	0.0	0.0	0.0	5.2	10.1	8.0	8.7	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
2003	9	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
2003	10	0.0	0.0	0.0	0.0	3.3	6.3	5.0	5.5	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
2003	11	0.0	0.0	0.0	0.0	3.4	6.6	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
2003	12	0.0	0.0	0.0	0.0	3.5	6.8	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2004	1	0.0	0.0	0.0	0.0	1.9	3.8	3.0	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
2004	2	0.0	0.0	0.0	0.0	2.3	4.5	3.6	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
2004	3	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2004	4	0.0	0.0	0.0	0.0	2.4	4.6	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2004	5	0.0	0.0	0.0	0.0	1.7	3.2	2.5	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.1	0.9	0.0	0.2	0.6	0.3
2004	6	0.0	0.0	0.0	0.0	7.9	15.4	12.1	13.3	0.8	1.6	0.0	0.0	0.9	0.8	0.0	0.1	0.0	0.0	1.1	2.3	3.2	1.4	1.5	3.0	8.0	1.1	1.3	1.4	0.8	0.1	0.0	5.8	4.6	10.3	4.5	0.0	1.2	3.0	1.4
2004	7	0.0	0.0	0.0	0.0	10.0	19.3	15.3	16.7	1.1	2.0	0.0	0.1	1.1	1.0	0.0	0.1	0.0	0.0	1.4	2.9	4.0	1.8	1.8	3.8	10.0	1.4	1.7	1.7	1.0	0.1	0.0	7.3	5.8	12.9	5.7	0.0	1.5	3.8	1.8
2004	8	0.0	0.0	0.0	0.0	5.2	10.1	7.9	8.7	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
2004	9	0.0	0.0	0.0	0.0	4.5	8.8	7.0	7.6	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.7	0.8
2004	10	0.0	0.0	0.0	0.0	3.6	7.0	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2004	11	0.0	0.0	0.0	0.0	3.3	6.4	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2004	12	0.0	0.0	0.0	0.0	3.8	7.3	5.8	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.4	0.7
2005	1	0.0	0.0	0.0	0.0	2.1	4.1	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2005	2	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2005	3	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2005	4	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2005	5	0.0	0.0	0.0	0.0	2.4	4.6	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2005	6	0.0	0.0	0.0	0.0	1.9	3.6	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2005	7	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2005	8	0.0	0.0	0.0	0.0	6.0	11.6	9.1	10.0	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	6.0	0.8	1.0	1.0	0.6	0.1	0.0	4.4	3.5	7.7	3.4	0.0	0.9	2.3	1.1
2005	9	0.0	0.0	0.0	0.0	3.5	6.8	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2005	10	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2005	11	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.0	0.5
2005	12	0.0	0.0	0.0	0.0	3.8	7.3	5.8	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.4	0.7
2006	1	0.0	0.0	0.0	0.0	2.0	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
2006	2	0.0	0.0	0.0	0.0	2.2	4.2	3.3	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
2006	3	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2006	4	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
2006	5	0.0	0.0	0.0	0.0	6.5	12.6	9.9	10.9	0.7	1.3	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.6	1.2	1.2	2.4	6.5	0.9	1.1	1.1	0.6	0.1	0.0	4.8	3.8	8.4	3.7	0.0	1.0	2.5	1.2
2006	6	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
2006	7	0.0	0.0	0.0	0.0	4.4	8.5	6.7	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
2006	8	0.0	0.0	0.0	0.0	5.4	10.4	8.2	9.0	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.1	0.0	0.8	2.0	1.0
2006	9	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
2006	10	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2006	11	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
2006	12	0.0	0.0	0.0	0.0	3.6	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2007	1	0.0	0.0	0.0	0.0	1.9	3.6	2.9	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2007	2	0.0	0.0	0.0	0.0	1.8	3.4	2.7	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2007	3	0.0	0.0	0.0	0.0	3.0	5.8	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2007	4	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2007	5	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
2007	6	0.0	0.0	0.0	0.0	5.5	10.6	8.4	9.2	0.6	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.5	0.7	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.1	3.1	0.0	0.8	2.1	1.0
2007	7	0.0	0.0	0.0	0.0	6.6	12.8	10.1	11.0	0.7	1.3	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.6	0.9	1.1	1.2	0.6	0.1	0.0	4.8	3.8	8.5	3.8	0.0	1.0	2.5	1.2
2007	8	0.0	0.0	0.0	0.0	5.0	9.8	7.7	8.4	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	1.9	0.9
2007	9	0.0	0.0	0.0	0.0	6.0	11.7	9.2	10.1	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.5	0.0	0.9	2.3	1.1
2007	10	0.0	0.0	0.0	0.0	3.2	6.3	5.0	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.2	0.6
2007	11	0.0	0.0	0.0	0.0	2.5	4.8	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
2007	12	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7

Source: JICA Study Team

Attachment 25：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2008 - 2013) (8/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2008	1	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2008	2	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
2008	3	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
2008	4	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2008	5	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
2008	6	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2008	7	0.0	0.0	0.0	0.0	4.2	8.1	6.4	7.0	0.4	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2008	8	0.0	0.0	0.0	0.0	6.6	12.7	10.1	11.0	0.7	1.3	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.6	1.2	1.2	2.5	6.6	0.9	1.1	1.2	0.6	0.1	0.0	4.8	3.8	8.5	3.8	0.0	1.0	2.5	1.2
2008	9	0.0	0.0	0.0	0.0	3.5	6.8	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2008	10	0.0	0.0	0.0	0.0	2.5	4.9	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2008	11	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
2008	12	0.0	0.0	0.0	0.0	3.6	7.0	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2009	1	0.0	0.0	0.0	0.0	2.1	4.1	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
2009	2	0.0	0.0	0.0	0.0	2.3	4.5	3.6	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
2009	3	0.0	0.0	0.0	0.0	3.1	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2009	4	0.0	0.0	0.0	0.0	3.0	5.9	4.6	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
2009	5	0.0	0.0	0.0	0.0	2.8	5.4	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2009	6	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
2009	7	0.0	0.0	0.0	0.0	5.9	11.5	9.1	9.9	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.7	3.4	0.0	0.9	2.3	1.1
2009	8	0.0	0.0	0.0	0.0	6.4	12.3	9.7	10.6	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.6	1.2	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.2	3.6	0.0	1.0	2.4	1.2
2009	9	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2009	10	0.0	0.0	0.0	0.0	4.4	8.6	6.8	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.7	2.5	0.0	0.7	1.7	0.8
2009	11	0.0	0.0	0.0	0.0	2.8	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2009	12	0.0	0.0	0.0	0.0	3.7	7.2	5.7	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
2010	1	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
2010	2	0.0	0.0	0.0	0.0	2.1	4.2	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
2010	3	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
2010	4	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2010	5	0.0	0.0	0.0	0.0	4.1	7.9	6.2	6.8	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
2010	6	0.0	0.0	0.0	0.0	6.0	11.7	9.3	10.1	0.6	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.5	0.0	0.9	2.3	1.1
2010	7	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2010	8	0.0	0.0	0.0	0.0	4.8	9.2	7.3	8.0	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.7	0.0	0.7	1.8	0.9
2010	9	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
2010	10	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2010	11	0.0	0.0	0.0	0.0	2.8	5.5	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
2010	12	0.0	0.0	0.0	0.0	3.5	6.9	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
2011	1	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
2011	2	0.0	0.0	0.0	0.0	2.3	4.4	3.5	3.8	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
2011	3	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
2011	4	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2011	5	0.0	0.0	0.0	0.0	1.9	3.7	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.3
2011	6	0.0	0.0	0.0	0.0	4.8	9.3	7.3	8.0	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.7	0.0	0.7	1.8	0.9
2011	7	0.0	0.0	0.0	0.0	4.3	8.3	6.6	7.2	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.1	2.5	5.5	2.5	0.0	0.6	1.6	0.8
2011	8	0.0	0.0	0.0	0.0	5.3	10.3	8.1	8.9	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.1	6.8	3.0	0.0	0.8	2.0	1.0
2011	9	0.0	0.0	0.0	0.0	3.9	7.5	6.0	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.3	5.0	2.2	0.0	0.6	1.5	0.7
2011	10	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.3	0.3	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.9	4.1	1.8	0.0	0.5	1.2	0.6
2011	11	0.0	0.0	0.0	0.0	3.3	6.4	5.0	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
2011	12	0.0	0.0	0.0	0.0	3.6	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2012	1	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
2012	2	0.0	0.0	0.0	0.0	2.4	4.6	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2012	3	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2012	4	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
2012	5	0.0	0.0	0.0	0.0	2.0	3.9	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
2012	6	0.0	0.0	0.0	0.0	7.7	15.0	11.8	12.9	0.8	1.6	0.0	0.0	0.9	0.8	0.0	0.1	0.0	0.0	1.1	2.2	3.1	1.4	1.4	2.9	7.8	1.1	1.3	1.4	0.8	0.1	0.0	5.7	4.5	10.0	4.4	0.0	1.2	2.9	1.4
2012	7	0.0	0.0	0.0	0.0	4.5	8.8	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.7	0.8
2012	8	0.0	0.0	0.0	0.0	4.7	9.1	7.2	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.1	2.7	0.0	0.7	1.8	0.8
2012	9	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2012	10	0.0	0.0	0.0	0.0	5.3	10.3	8.1	8.9	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.1	6.9	3.0	0.0	0.8	2.0	1.0
2012	11	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2012	12	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2013	1	0.0	0.0	0.0	0.0	1.9	3.7	3.0	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
2013	2	0.0	0.0	0.0	0.0	2.2	4.2	3.4	3.7	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
2013	3	0.0	0.0	0.0	0.0	3.1	6.0	4.7	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2013	4	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
2013	5	0.0	0.0	0.0	0.0	4.0	7.8	6.2	6.7	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.0	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.3	5.2	2.3	0.0	0.6	1.5	0.7
2013	6	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
2013	7	0.0	0.0	0.0	0.0	2.6	5.0	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2013	8	0.0	0.0	0.0	0.0	5.0	9.6	7.6	8.3	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
2013	9	0.0	0.0	0.0	0.0	4.4	8.5	6.7	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
2013	10	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
2013	11	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2013	12	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 25：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2014 - 2019) (9/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2014	1	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
2014	2	0.0	0.0	0.0	0.0	2.0	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2014	3	0.0	0.0	0.0	0.0	3.1	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2014	4	0.0	0.0	0.0	0.0	3.0	5.8	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.1	0.5
2014	5	0.0	0.0	0.0	0.0	3.2	6.2	4.9	5.4	0.3	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
2014	6	0.0	0.0	0.0	0.0	5.7	11.1	8.8	9.6	0.6	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
2014	7	0.0	0.0	0.0	0.0	1.7	3.4	2.7	2.9	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2014	8	0.0	0.0	0.0	0.0	4.8	9.2	7.3	8.0	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.7	0.0	0.7	1.8	0.9
2014	9	0.0	0.0	0.0	0.0	3.6	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2014	10	0.0	0.0	0.0	0.0	3.3	6.4	5.0	5.5	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2014	11	0.0	0.0	0.0	0.0	3.1	6.0	4.8	5.2	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2014	12	0.0	0.0	0.0	0.0	3.6	7.0	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2015	1	0.0	0.0	0.0	0.0	2.2	4.3	3.4	3.7	0.2	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
2015	2	0.0	0.0	0.0	0.0	2.3	4.5	3.5	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
2015	3	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2015	4	0.0	0.0	0.0	0.0	2.4	4.7	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
2015	5	0.0	0.0	0.0	0.0	1.7	3.2	2.5	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.2	1.0	0.0	0.2	0.6	0.3
2015	6	0.0	0.0	0.0	0.0	5.2	10.1	8.0	8.7	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
2015	7	0.0	0.0	0.0	0.0	9.6	18.6	14.7	16.0	1.0	1.9	0.0	0.1	1.1	1.0	0.0	0.1	0.0	0.0	1.3	2.7	3.9	1.7	1.8	3.6	9.6	1.3	1.6	1.7	0.9	0.1	0.0	7.0	5.6	12.4	5.5	0.0	1.4	3.7	1.7
2015	8	0.0	0.0	0.0	0.0	7.7	15.0	11.8	12.9	0.8	1.6	0.0	0.0	0.9	0.8	0.0	0.1	0.0	0.0	1.1	2.2	3.1	1.4	1.4	2.9	7.8	1.1	1.3	1.4	0.8	0.1	0.0	5.7	4.5	10.0	4.4	0.0	1.2	2.9	1.4
2015	9	0.0	0.0	0.0	0.0	4.0	7.8	6.2	6.8	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.3	5.2	2.3	0.0	0.6	1.5	0.7
2015	10	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
2015	11	0.0	0.0	0.0	0.0	3.1	5.9	4.7	5.1	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
2015	12	0.0	0.0	0.0	0.0	3.5	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2016	1	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.1	2.4	1.0	0.0	0.3	0.7	0.3
2016	2	0.0	0.0	0.0	0.0	1.9	3.7	3.0	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.3	0.4	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
2016	3	0.0	0.0	0.0	0.0	3.0	5.7	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2016	4	0.0	0.0	0.0	0.0	2.9	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2016	5	0.0	0.0	0.0	0.0	2.7	5.3	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
2016	6	0.0	0.0	0.0	0.0	4.7	9.2	7.3	7.9	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.6	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.1	2.7	0.0	0.7	1.8	0.9
2016	7	0.0	0.0	0.0	0.0	3.8	7.3	5.8	6.3	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.4	0.7
2016	8	0.0	0.0	0.0	0.0	5.1	10.0	7.9	8.6	0.5	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	0.9	1.9	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.6	2.9	0.0	0.8	2.0	0.9
2016	9	0.0	0.0	0.0	0.0	3.0	5.9	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.5
2016	10	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
2016	11	0.0	0.0	0.0	0.0	2.6	5.0	4.0	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2016	12	0.0	0.0	0.0	0.0	3.7	7.1	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
2017	1	0.0	0.0	0.0	0.0	2.1	4.0	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2017	2	0.0	0.0	0.0	0.0	2.1	4.0	3.2	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2017	3	0.0	0.0	0.0	0.0	2.8	5.4	4.3	4.7	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2017	4	0.0	0.0	0.0	0.0	4.4	8.6	6.8	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
2017	5	0.0	0.0	0.0	0.0	2.1	4.1	3.2	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2017	6	0.0	0.0	0.0	0.0	11.0	21.4	16.9	18.4	1.2	2.2	0.0	0.1	1.2	1.1	0.0	0.1	0.0	0.0	1.5	3.2	4.4	2.0	2.0	4.1	11.1	1.5	1.9	1.9	1.1	0.1	0.0	8.1	6.4	14.2	6.3	0.0	1.6	4.2	2.0
2017	7	0.0	0.0	0.0	0.0	6.3	12.3	9.7	10.6	0.7	1.3	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.7	8.2	3.6	0.0	0.9	2.4	1.1
2017	8	0.0	0.0	0.0	0.0	5.9	11.4	9.0	9.8	0.6	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.2	1.1
2017	9	0.0	0.0	0.0	0.0	4.0	7.7	6.1	6.6	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
2017	10	0.0	0.0	0.0	0.0	2.8	5.4	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2017	11	0.0	0.0	0.0	0.0	3.0	5.7	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2017	12	0.0	0.0	0.0	0.0	3.4	6.5	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2018	1	0.0	0.0	0.0	0.0	1.8	3.5	2.8	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
2018	2	0.0	0.0	0.0	0.0	2.0	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.1	2.6	1.1	0.0	0.3	0.8	0.4
2018	3	0.0	0.0	0.0	0.0	3.0	5.7	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2018	4	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
2018	5	0.0	0.0	0.0	0.0	2.7	5.2	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
2018	6	0.0	0.0	0.0	0.0	9.6	18.6	14.7	16.1	1.0	1.9	0.0	0.1	1.1	1.0	0.0	0.1	0.0	0.0	1.3	2.8	3.9	1.7	1.8	3.6	9.6	1.3	1.6	1.7	0.9	0.1	0.0	7.0	5.6	12.4	5.5	0.0	1.4	3.7	1.7
2018	7	0.0	0.0	0.0	0.0	4.7	9.1	7.1	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
2018	8	0.0	0.0	0.0	0.0	4.9	9.6	7.5	8.2	0.5	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
2018	9	0.0	0.0	0.0	0.0	3.2	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2018	10	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
2018	11	0.0	0.0	0.0	0.0	3.1	6.1	4.8	5.3	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2018	12	0.0	0.0	0.0	0.0	3.5	6.7	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2019	1	0.0	0.0	0.0	0.0	2.0	3.9	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
2019	2	0.0	0.0	0.0	0.0	1.9	3.8	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.7	0.4
2019	3	0.0	0.0	0.0	0.0	2.9	5.6	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
2019	4	0.0	0.0	0.0	0.0	2.7	5.3	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.0	0.5
2019	5	0.0	0.0	0.0	0.0	2.3	4.5	3.6	3.9	0.2	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
2019	6	0.0	0.0	0.0	0.0	2.5	4.9	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.5	3.2	1.4	0.0	0.4	1.0	0.5
2019	7	0.0	0.0	0.0	0.0	10.5	20.4	16.1	17.6	1.1	2.1	0.0	0.1	1.2	1.1	0.0	0.1	0.0	0.0	1.5	3.0	4.2	1.9	1.9	4.0	10.6	1.4	1.8	1.8	1.0	0.1	0.0	7.7	6.1	13.6	6.0	0.0	1.6	4.0	1.9
2019	8	0.0	0.0	0.0	0.0	3.9	7.6	6.0	6.6	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
2019	9	0.0	0.0	0.0	0.0	2.5	4.9	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.5	3.2	1.4	0.0	0.4	1.0	0.5
2019	10	0.0	0.0	0.0	0.0	2.5	4.9	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.5	3.2	1.4	0.0	0.4	1.0	0.5
2019	11	0.0	0.0	0.0	0.0	2.8	5.4	4.2	4.6	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2019	12	0.0	0.0	0.0	0.0	3.6	7.1	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 26：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Sangu River Basin (m^3/s) (1966 - 1971) (1/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1966	1	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1966	2	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1966	3	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1966	4	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1966	5	0.0	0.4	1.4	1.2	1.2	2.8	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0
1966	6	0.0	1.1	3.9	3.3	3.5	7.8	0.2	2.6	0.0	0.0	1.9	1.0	0.4	0.8	0.7	0.0
1966	7	0.0	0.6	2.3	1.9	2.0	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1966	8	0.0	1.8	6.6	5.6	6.0	13.3	0.4	4.5	0.0	0.0	3.2	1.7	0.7	1.4	1.3	0.0
1966	9	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1966	10	0.0	0.8	3.0	2.6	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
1966	11	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1966	12	0.0	0.6	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1967	1	0.0	0.4	1.4	1.2	1.2	2.7	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0
1967	2	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1967	3	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1967	4	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1967	5	0.0	0.3	1.1	0.9	0.9	2.1	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
1967	6	0.0	0.4	1.4	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.2	0.3	0.3	0.0
1967	7	0.0	0.9	3.5	2.9	3.1	7.0	0.2	2.3	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1967	8	0.0	0.9	3.3	2.8	3.0	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1967	9	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1967	10	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1967	11	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1967	12	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1968	1	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1968	2	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1968	3	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1968	4	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1968	5	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1968	6	0.0	1.3	4.8	4.1	4.3	9.7	0.3	3.3	0.0	0.0	2.3	1.2	0.5	1.0	0.9	0.0
1968	7	0.0	1.6	5.9	5.0	5.3	11.8	0.3	4.0	0.0	0.0	2.8	1.5	0.7	1.2	1.1	0.0
1968	8	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
1968	9	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1968	10	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1968	11	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.4	0.4	0.0
1968	12	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
1969	1	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1969	2	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1969	3	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1969	4	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1969	5	0.0	0.3	1.0	0.8	0.9	1.9	0.1	0.6	0.0	0.0	0.5	0.2	0.1	0.2	0.2	0.0
1969	6	0.0	1.2	4.4	3.7	3.9	8.8	0.2	3.0	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
1969	7	0.0	1.1	4.1	3.4	3.6	8.2	0.2	2.7	0.0	0.0	1.9	1.0	0.5	0.8	0.8	0.0
1969	8	0.0	1.2	4.4	3.7	4.0	8.8	0.2	3.0	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
1969	9	0.0	0.6	2.2	1.8	1.9	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1969	10	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1969	11	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1969	12	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1970	1	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1970	2	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1970	3	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1970	4	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1970	5	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1970	6	0.0	0.5	1.7	1.5	1.5	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1970	7	0.0	1.7	6.2	5.2	5.5	12.4	0.3	4.2	0.0	0.0	2.9	1.6	0.7	1.3	1.2	0.0
1970	8	0.0	1.0	3.7	3.2	3.3	7.5	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1970	9	0.0	0.6	2.4	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1970	10	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1970	11	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1970	12	0.0	0.7	2.5	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1971	1	0.0	0.4	1.4	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.2	0.3	0.3	0.0
1971	2	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1971	3	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1971	4	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1971	5	0.0	0.2	0.9	0.7	0.8	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1971	6	0.0	1.5	5.4	4.6	4.8	10.8	0.3	3.6	0.0	0.0	2.6	1.4	0.6	1.1	1.0	0.0
1971	7	0.0	1.4	5.2	4.4	4.7	10.5	0.3	3.5	0.0	0.0	2.5	1.3	0.6	1.1	1.0	0.0
1971	8	0.0	1.4	5.1	4.3	4.5	10.2	0.3	3.4	0.0	0.0	2.4	1.3	0.6	1.0	1.0	0.0
1971	9	0.0	0.5	1.8	1.6	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1971	10	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1971	11	0.0	0.5	1.8	1.6	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1971	12	0.0	0.7	2.5	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 26：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Sangu River Basin (m^3/s) (1972 - 1977) (2/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1972	1	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1972	2	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1972	3	0.0	0.6	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1972	4	0.0	0.5	1.8	1.6	1.6	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1972	5	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1972	6	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1972	7	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1972	8	0.0	1.0	3.6	3.0	3.2	7.1	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1972	9	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1972	10	0.0	0.6	2.2	1.8	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1972	11	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1972	12	0.0	0.7	2.5	2.1	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1973	1	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1973	2	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1973	3	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1973	4	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1973	5	0.0	0.8	2.8	2.4	2.6	5.7	0.2	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.5	0.0
1973	6	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1973	7	0.0	0.8	2.9	2.4	2.6	5.8	0.2	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1973	8	0.0	0.9	3.4	2.8	3.0	6.7	0.2	2.3	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1973	9	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1973	10	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1973	11	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1973	12	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1974	1	0.0	0.4	1.4	1.2	1.3	2.8	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1974	2	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1974	3	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1974	4	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1974	5	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1974	6	0.0	2.5	9.0	7.6	8.1	18.0	0.5	6.1	0.0	0.0	4.3	2.3	1.0	1.8	1.7	0.0
1974	7	0.0	1.7	6.1	5.2	5.5	12.2	0.3	4.1	0.0	0.0	2.9	1.5	0.7	1.2	1.2	0.0
1974	8	0.0	1.3	4.8	4.0	4.3	9.5	0.3	3.2	0.0	0.0	2.3	1.2	0.5	1.0	0.9	0.0
1974	9	0.0	0.8	2.8	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1974	10	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1974	11	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1974	12	0.0	0.7	2.6	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1975	1	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1975	2	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1975	3	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1975	4	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1975	5	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1975	6	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1975	7	0.0	1.8	6.7	5.7	6.0	13.4	0.4	4.5	0.0	0.0	3.2	1.7	0.7	1.4	1.3	0.0
1975	8	0.0	0.9	3.3	2.8	3.0	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1975	9	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1975	10	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1975	11	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1975	12	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1976	1	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1976	2	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1976	3	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1976	4	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1976	5	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
1976	6	0.0	2.4	9.0	7.6	8.0	18.0	0.5	6.0	0.0	0.0	4.3	2.3	1.0	1.8	1.7	0.0
1976	7	0.0	2.4	8.9	7.5	7.9	17.8	0.5	6.0	0.0	0.0	4.2	2.2	1.0	1.8	1.7	0.0
1976	8	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1976	9	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1976	10	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1976	11	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1976	12	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1977	1	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1977	2	0.0	0.4	1.4	1.2	1.3	2.8	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1977	3	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1977	4	0.0	1.1	4.0	3.4	3.6	8.1	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
1977	5	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1977	6	0.0	1.0	3.8	3.2	3.4	7.6	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
1977	7	0.0	1.2	4.5	3.8	4.1	9.1	0.2	3.1	0.0	0.0	2.2	1.1	0.5	0.9	0.9	0.0
1977	8	0.0	0.8	2.8	2.4	2.5	5.7	0.1	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.5	0.0
1977	9	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1977	10	0.0	0.6	2.1	1.7	1.9	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1977	11	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1977	12	0.0	0.7	2.6	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 26：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Sangu River Basin (m^3/s) (1978 - 1983) (3/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1978	1	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1978	2	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1978	3	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1978	4	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1978	5	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1978	6	0.0	1.0	3.8	3.2	3.4	7.6	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
1978	7	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1978	8	0.0	1.1	4.0	3.4	3.6	8.0	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
1978	9	0.0	1.1	3.9	3.3	3.5	7.8	0.2	2.6	0.0	0.0	1.9	1.0	0.4	0.8	0.7	0.0
1978	10	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1978	11	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1978	12	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
1979	1	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1979	2	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1979	3	0.0	0.6	2.3	1.9	2.1	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1979	4	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1979	5	0.0	0.3	1.2	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1979	6	0.0	1.2	4.3	3.6	3.8	8.6	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1979	7	0.0	0.8	3.1	2.6	2.7	6.1	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1979	8	0.0	1.7	6.1	5.2	5.5	12.2	0.3	4.1	0.0	0.0	2.9	1.5	0.7	1.2	1.2	0.0
1979	9	0.0	0.7	2.6	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1979	10	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1979	11	0.0	0.6	2.4	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1979	12	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1980	1	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1980	2	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1980	3	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1980	4	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.0	0.6	0.2	0.4	0.4	0.0
1980	5	0.0	1.0	3.6	3.1	3.2	7.2	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1980	6	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1980	7	0.0	0.8	2.8	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1980	8	0.0	1.3	4.9	4.1	4.4	9.8	0.3	3.3	0.0	0.0	2.3	1.2	0.5	1.0	0.9	0.0
1980	9	0.0	0.5	1.9	1.6	1.7	3.7	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1980	10	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1980	11	0.0	0.6	2.4	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1980	12	0.0	0.7	2.5	2.1	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1981	1	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1981	2	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1981	3	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1981	4	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1981	5	0.0	0.5	1.8	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1981	6	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1981	7	0.0	1.0	3.8	3.2	3.4	7.7	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
1981	8	0.0	1.2	4.3	3.6	3.8	8.6	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1981	9	0.0	0.9	3.2	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.4	0.6	0.6	0.0
1981	10	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1981	11	0.0	0.6	2.4	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1981	12	0.0	0.7	2.5	2.1	2.3	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1982	1	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1982	2	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1982	3	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1982	4	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
1982	5	0.0	0.3	0.9	0.8	0.8	1.9	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1982	6	0.0	1.1	3.9	3.3	3.5	7.9	0.2	2.6	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
1982	7	0.0	1.1	4.0	3.4	3.5	7.9	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
1982	8	0.0	1.5	5.4	4.6	4.9	10.9	0.3	3.7	0.0	0.0	2.6	1.4	0.6	1.1	1.0	0.0
1982	9	0.0	0.8	3.1	2.6	2.8	6.2	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1982	10	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1982	11	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1982	12	0.0	0.7	2.6	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1983	1	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1983	2	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1983	3	0.0	0.6	2.1	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1983	4	0.0	0.6	2.1	1.8	1.9	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1983	5	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1983	6	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.1	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
1983	7	0.0	1.3	4.8	4.1	4.3	9.6	0.3	3.2	0.0	0.0	2.3	1.2	0.5	1.0	0.9	0.0
1983	8	0.0	1.8	6.6	5.6	5.9	13.2	0.3	4.5	0.0	0.0	3.2	1.7	0.7	1.4	1.3	0.0
1983	9	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1983	10	0.0	0.9	3.2	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.4	0.6	0.6	0.0
1983	11	0.0	0.5	1.7	1.5	1.5	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1983	12	0.0	0.7	2.5	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 26：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Sangu River Basin (m^3/s) (1984 - 1989) (4/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1984	1	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1984	2	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1984	3	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1984	4	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1984	5	0.0	0.8	3.1	2.6	2.8	6.2	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1984	6	0.0	1.2	4.3	3.7	3.9	8.7	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
1984	7	0.0	2.0	7.2	6.1	6.4	14.4	0.4	4.8	0.0	0.0	3.4	1.8	0.8	1.5	1.4	0.0
1984	8	0.0	1.1	3.9	3.3	3.5	7.8	0.2	2.6	0.0	0.0	1.9	1.0	0.4	0.8	0.7	0.0
1984	9	0.0	0.6	2.3	1.9	2.1	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1984	10	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1984	11	0.0	0.6	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1984	12	0.0	0.7	2.6	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1985	1	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1985	2	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1985	3	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1985	4	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1985	5	0.0	0.8	3.0	2.6	2.7	6.1	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
1985	6	0.0	1.1	4.2	3.6	3.8	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1985	7	0.0	1.6	5.9	5.0	5.3	11.8	0.3	4.0	0.0	0.0	2.8	1.5	0.7	1.2	1.1	0.0
1985	8	0.0	0.9	3.5	2.9	3.1	7.0	0.2	2.3	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1985	9	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1985	10	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1985	11	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1985	12	0.0	0.7	2.5	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1986	1	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1986	2	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1986	3	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1986	4	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1986	5	0.0	0.4	1.3	1.1	1.2	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1986	6	0.0	1.2	4.4	3.8	4.0	8.9	0.2	3.0	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
1986	7	0.0	1.3	4.8	4.0	4.3	9.5	0.3	3.2	0.0	0.0	2.3	1.2	0.5	1.0	0.9	0.0
1986	8	0.0	1.0	3.7	3.1	3.3	7.3	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1986	9	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1986	10	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1986	11	0.0	0.5	1.7	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1986	12	0.0	0.7	2.5	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1987	1	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1987	2	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1987	3	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1987	4	0.0	0.6	2.1	1.8	1.9	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1987	5	0.0	0.2	0.9	0.8	0.8	1.8	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1987	6	0.0	0.8	2.9	2.5	2.6	5.8	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
1987	7	0.0	2.2	8.0	6.8	7.2	16.0	0.4	5.4	0.0	0.0	3.8	2.0	0.9	1.6	1.5	0.0
1987	8	0.0	1.5	5.6	4.8	5.0	11.2	0.3	3.8	0.0	0.0	2.7	1.4	0.6	1.1	1.1	0.0
1987	9	0.0	1.1	3.9	3.3	3.5	7.9	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
1987	10	0.0	0.6	2.4	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1987	11	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1987	12	0.0	0.7	2.5	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1988	1	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1988	2	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1988	3	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1988	4	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1988	5	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1988	6	0.0	0.9	3.5	2.9	3.1	6.9	0.2	2.3	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1988	7	0.0	1.3	4.9	4.2	4.4	9.9	0.3	3.3	0.0	0.0	2.4	1.2	0.5	1.0	0.9	0.0
1988	8	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1988	9	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1988	10	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1988	11	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1988	12	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1989	1	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1989	2	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1989	3	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1989	4	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1989	5	0.0	0.3	1.2	1.0	1.1	2.5	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.3	0.2	0.0
1989	6	0.0	0.5	1.8	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1989	7	0.0	1.7	6.3	5.4	5.7	12.7	0.3	4.3	0.0	0.0	3.0	1.6	0.7	1.3	1.2	0.0
1989	8	0.0	1.2	4.3	3.7	3.9	8.7	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
1989	9	0.0	0.8	2.9	2.4	2.6	5.8	0.2	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.5	0.0
1989	10	0.0	1.0	3.5	3.0	3.1	7.0	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1989	11	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1989	12	0.0	0.7	2.5	2.1	2.3	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 26：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Sangu River Basin (m^3/s) (1990 - 1995) (5/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1990	1	0.0	0.4	1.4	1.2	1.3	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1990	2	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1990	3	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1990	4	0.0	0.5	1.8	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1990	5	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1990	6	0.0	1.0	3.7	3.1	3.3	7.4	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
1990	7	0.0	1.8	6.6	5.6	5.9	13.2	0.3	4.5	0.0	0.0	3.2	1.7	0.7	1.4	1.3	0.0
1990	8	0.0	1.0	3.6	3.1	3.2	7.2	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1990	9	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1990	10	0.0	0.9	3.4	2.9	3.1	6.9	0.2	2.3	0.0	0.0	1.6	0.9	0.4	0.7	0.7	0.0
1990	11	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
1990	12	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1991	1	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1991	2	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1991	3	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1991	4	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1991	5	0.0	1.1	4.2	3.5	3.7	8.3	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.9	0.8	0.0
1991	6	0.0	1.3	4.7	4.0	4.2	9.4	0.2	3.2	0.0	0.0	2.2	1.2	0.5	1.0	0.9	0.0
1991	7	0.0	1.4	5.2	4.4	4.7	10.4	0.3	3.5	0.0	0.0	2.5	1.3	0.6	1.1	1.0	0.0
1991	8	0.0	1.2	4.4	3.7	3.9	8.7	0.2	2.9	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
1991	9	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1991	10	0.0	0.6	2.3	1.9	2.0	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1991	11	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1991	12	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1992	1	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1992	2	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
1992	3	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1992	4	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1992	5	0.0	0.4	1.6	1.4	1.5	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1992	6	0.0	1.2	4.5	3.9	4.1	9.1	0.2	3.1	0.0	0.0	2.2	1.1	0.5	0.9	0.9	0.0
1992	7	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
1992	8	0.0	0.9	3.2	2.8	2.9	6.5	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1992	9	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1992	10	0.0	0.9	3.2	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.4	0.6	0.6	0.0
1992	11	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1992	12	0.0	0.7	2.4	2.1	2.2	4.8	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1993	1	0.0	0.4	1.4	1.2	1.3	2.8	0.1	0.9	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1993	2	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1993	3	0.0	0.9	3.3	2.8	2.9	6.5	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
1993	4	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1993	5	0.0	1.1	4.2	3.6	3.8	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
1993	6	0.0	1.6	5.8	5.0	5.2	11.7	0.3	3.9	0.0	0.0	2.8	1.5	0.6	1.2	1.1	0.0
1993	7	0.0	1.1	4.0	3.4	3.6	8.1	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
1993	8	0.0	1.6	5.9	5.0	5.3	11.8	0.3	4.0	0.0	0.0	2.8	1.5	0.7	1.2	1.1	0.0
1993	9	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1993	10	0.0	0.7	2.7	2.3	2.4	5.5	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1993	11	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1993	12	0.0	0.7	2.5	2.1	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1994	1	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1994	2	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1994	3	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
1994	4	0.0	0.7	2.5	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1994	5	0.0	0.4	1.3	1.1	1.2	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.3	0.3	0.0
1994	6	0.0	1.1	4.0	3.4	3.6	7.9	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
1994	7	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1994	8	0.0	0.9	3.2	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.4	0.6	0.6	0.0
1994	9	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1994	10	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.4	0.4	0.0
1994	11	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1994	12	0.0	0.7	2.5	2.1	2.3	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1995	1	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1995	2	0.0	0.4	1.4	1.2	1.3	2.8	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1995	3	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1995	4	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1995	5	0.0	0.8	2.8	2.4	2.5	5.6	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1995	6	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1995	7	0.0	1.5	5.6	4.8	5.1	11.3	0.3	3.8	0.0	0.0	2.7	1.4	0.6	1.2	1.1	0.0
1995	8	0.0	1.0	3.8	3.2	3.4	7.6	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
1995	9	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1995	10	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1995	11	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1995	12	0.0	0.7	2.5	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 26：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Sangu River Basin (m^3/s) (1996 - 2001) (6/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1996	1	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1996	2	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1996	3	0.0	0.6	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1996	4	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
1996	5	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1996	6	0.0	0.8	2.8	2.4	2.5	5.7	0.1	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.5	0.0
1996	7	0.0	0.9	3.1	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1996	8	0.0	1.1	4.0	3.4	3.6	8.0	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
1996	9	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1996	10	0.0	0.7	2.7	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
1996	11	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1996	12	0.0	0.7	2.5	2.1	2.3	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1997	1	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1997	2	0.0	0.4	1.4	1.2	1.2	2.8	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0
1997	3	0.0	0.7	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1997	4	0.0	0.5	1.7	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
1997	5	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
1997	6	0.0	0.7	2.5	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1997	7	0.0	2.3	8.6	7.3	7.7	17.2	0.5	5.8	0.0	0.0	4.1	2.2	1.0	1.8	1.6	0.0
1997	8	0.0	1.0	3.5	3.0	3.1	7.0	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1997	9	0.0	1.3	4.9	4.2	4.4	9.9	0.3	3.3	0.0	0.0	2.4	1.2	0.5	1.0	0.9	0.0
1997	10	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1997	11	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1997	12	0.0	0.6	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
1998	1	0.0	0.4	1.4	1.2	1.3	2.8	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1998	2	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1998	3	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1998	4	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1998	5	0.0	1.0	3.5	3.0	3.1	7.0	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
1998	6	0.0	0.2	0.8	0.7	0.7	1.7	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
1998	7	0.0	1.8	6.6	5.6	5.9	13.2	0.3	4.5	0.0	0.0	3.2	1.7	0.7	1.4	1.3	0.0
1998	8	0.0	2.1	7.6	6.4	6.8	15.2	0.4	5.1	0.0	0.0	3.6	1.9	0.8	1.5	1.4	0.0
1998	9	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1998	10	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
1998	11	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1998	12	0.0	0.7	2.6	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
1999	1	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
1999	2	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
1999	3	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
1999	4	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
1999	5	0.0	0.8	3.0	2.6	2.7	6.1	0.2	2.0	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
1999	6	0.0	2.0	7.2	6.1	6.4	14.4	0.4	4.8	0.0	0.0	3.4	1.8	0.8	1.5	1.4	0.0
1999	7	0.0	1.2	4.5	3.8	4.0	9.0	0.2	3.0	0.0	0.0	2.1	1.1	0.5	0.9	0.9	0.0
1999	8	0.0	1.7	6.2	5.3	5.6	12.5	0.3	4.2	0.0	0.0	3.0	1.6	0.7	1.3	1.2	0.0
1999	9	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1999	10	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
1999	11	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
1999	12	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2000	1	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2000	2	0.0	0.4	1.6	1.4	1.5	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2000	3	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2000	4	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2000	5	0.0	1.2	4.6	3.9	4.1	9.2	0.2	3.1	0.0	0.0	2.2	1.1	0.5	0.9	0.9	0.0
2000	6	0.0	1.0	3.8	3.2	3.4	7.5	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
2000	7	0.0	1.1	4.2	3.6	3.8	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
2000	8	0.0	1.0	3.8	3.2	3.4	7.6	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
2000	9	0.0	0.5	1.7	1.5	1.5	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2000	10	0.0	0.9	3.1	2.6	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2000	11	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
2000	12	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2001	1	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2001	2	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2001	3	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2001	4	0.0	0.9	3.4	2.9	3.0	6.7	0.2	2.3	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2001	5	0.0	0.9	3.3	2.8	3.0	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2001	6	0.0	1.0	3.8	3.2	3.4	7.7	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
2001	7	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2001	8	0.0	1.0	3.7	3.1	3.3	7.3	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2001	9	0.0	0.7	2.5	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2001	10	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2001	11	0.0	0.5	1.7	1.5	1.5	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2001	12	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 26：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Sangu River Basin (m^3/s) (2002 - 2007) (7/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2002	1	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2002	2	0.0	0.5	1.8	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2002	3	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2002	4	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2002	5	0.0	0.8	2.8	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2002	6	0.0	0.7	2.5	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2002	7	0.0	1.7	6.1	5.2	5.5	12.3	0.3	4.1	0.0	0.0	2.9	1.5	0.7	1.3	1.2	0.0
2002	8	0.0	0.9	3.3	2.8	3.0	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2002	9	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.6	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2002	10	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2002	11	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2002	12	0.0	0.7	2.6	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2003	1	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2003	2	0.0	0.5	1.7	1.5	1.5	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2003	3	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2003	4	0.0	0.6	2.1	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2003	5	0.0	0.2	0.8	0.7	0.7	1.6	0.0	0.6	0.0	0.0	0.4	0.2	0.1	0.2	0.2	0.0
2003	6	0.0	2.1	7.6	6.5	6.8	15.3	0.4	5.1	0.0	0.0	3.6	1.9	0.8	1.6	1.5	0.0
2003	7	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2003	8	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
2003	9	0.0	0.6	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2003	10	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2003	11	0.0	0.6	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2003	12	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
2004	1	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2004	2	0.0	0.5	1.8	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2004	3	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2004	4	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2004	5	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2004	6	0.0	1.0	3.6	3.1	3.3	7.3	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2004	7	0.0	1.4	5.3	4.5	4.8	10.6	0.3	3.6	0.0	0.0	2.5	1.3	0.6	1.1	1.0	0.0
2004	8	0.0	1.0	3.7	3.1	3.3	7.3	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2004	9	0.0	1.3	4.8	4.1	4.3	9.6	0.3	3.2	0.0	0.0	2.3	1.2	0.5	1.0	0.9	0.0
2004	10	0.0	0.7	2.7	2.3	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2004	11	0.0	0.6	2.4	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2004	12	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2005	1	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2005	2	0.0	0.5	1.7	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2005	3	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2005	4	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2005	5	0.0	0.3	1.2	1.0	1.1	2.4	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
2005	6	0.0	0.4	1.4	1.2	1.2	2.7	0.1	0.9	0.0	0.0	0.7	0.3	0.2	0.3	0.3	0.0
2005	7	0.0	1.2	4.2	3.6	3.8	8.5	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
2005	8	0.0	1.2	4.2	3.6	3.8	8.5	0.2	2.9	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
2005	9	0.0	0.9	3.1	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.4	0.6	0.6	0.0
2005	10	0.0	0.7	2.7	2.3	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2005	11	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2005	12	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2006	1	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2006	2	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2006	3	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2006	4	0.0	0.6	2.1	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2006	5	0.0	1.3	4.9	4.2	4.4	9.9	0.3	3.3	0.0	0.0	2.4	1.2	0.5	1.0	0.9	0.0
2006	6	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2006	7	0.0	1.0	3.5	3.0	3.1	7.0	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2006	8	0.0	0.9	3.5	3.0	3.1	7.0	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2006	9	0.0	0.9	3.1	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2006	10	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2006	11	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2006	12	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2007	1	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2007	2	0.0	0.4	1.4	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2007	3	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2007	4	0.0	0.5	1.8	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2007	5	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2007	6	0.0	2.0	7.3	6.2	6.6	14.7	0.4	4.9	0.0	0.0	3.5	1.8	0.8	1.5	1.4	0.0
2007	7	0.0	1.6	5.9	5.0	5.3	11.8	0.3	4.0	0.0	0.0	2.8	1.5	0.7	1.2	1.1	0.0
2007	8	0.0	1.1	4.0	3.4	3.6	8.1	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
2007	9	0.0	1.1	4.0	3.4	3.6	8.1	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
2007	10	0.0	1.0	3.7	3.2	3.3	7.5	0.2	2.5	0.0	0.0	1.8	0.9	0.4	0.8	0.7	0.0
2007	11	0.0	0.4	1.6	1.4	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2007	12	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 26：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Sangu River Basin (m^3/s) (2008 - 2013) (8/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2008	1	0.0	0.4	1.5	1.3	1.3	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2008	2	0.0	0.4	1.6	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2008	3	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2008	4	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2008	5	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2008	6	0.0	1.3	4.8	4.0	4.3	9.5	0.3	3.2	0.0	0.0	2.3	1.2	0.5	1.0	0.9	0.0
2008	7	0.0	1.7	6.1	5.1	5.4	12.2	0.3	4.1	0.0	0.0	2.9	1.5	0.7	1.2	1.2	0.0
2008	8	0.0	1.6	5.9	5.0	5.3	11.9	0.3	4.0	0.0	0.0	2.8	1.5	0.7	1.2	1.1	0.0
2008	9	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2008	10	0.0	0.5	2.0	1.7	1.8	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2008	11	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2008	12	0.0	0.7	2.6	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2009	1	0.0	0.5	1.8	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2009	2	0.0	0.5	1.8	1.6	1.7	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2009	3	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2009	4	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2009	5	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2009	6	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2009	7	0.0	1.7	6.3	5.4	5.7	12.7	0.3	4.3	0.0	0.0	3.0	1.6	0.7	1.3	1.2	0.0
2009	8	0.0	1.3	4.8	4.0	4.3	9.6	0.3	3.2	0.0	0.0	2.3	1.2	0.5	1.0	0.9	0.0
2009	9	0.0	0.5	1.8	1.6	1.7	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2009	10	0.0	0.7	2.7	2.3	2.4	5.5	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2009	11	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
2009	12	0.0	0.7	2.7	2.3	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2010	1	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2010	2	0.0	0.5	1.9	1.6	1.7	3.7	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2010	3	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
2010	4	0.0	0.6	2.1	1.8	1.9	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2010	5	0.0	0.5	1.9	1.7	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2010	6	0.0	1.7	6.2	5.2	5.6	12.4	0.3	4.2	0.0	0.0	3.0	1.6	0.7	1.3	1.2	0.0
2010	7	0.0	0.5	1.9	1.7	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2010	8	0.0	0.9	3.4	2.9	3.1	6.9	0.2	2.3	0.0	0.0	1.6	0.9	0.4	0.7	0.7	0.0
2010	9	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2010	10	0.0	0.9	3.1	2.7	2.8	6.3	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2010	11	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2010	12	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.7	0.3	0.5	0.5	0.0
2011	1	0.0	0.5	1.7	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2011	2	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
2011	3	0.0	0.6	2.3	2.0	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2011	4	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2011	5	0.0	0.6	2.3	1.9	2.0	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2011	6	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2011	7	0.0	0.9	3.3	2.8	3.0	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2011	8	0.0	1.1	4.2	3.6	3.8	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
2011	9	0.0	1.2	4.5	3.8	4.0	9.0	0.2	3.0	0.0	0.0	2.1	1.1	0.5	0.9	0.9	0.0
2011	10	0.0	0.8	2.8	2.3	2.5	5.5	0.1	1.9	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2011	11	0.0	0.7	2.5	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2011	12	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2012	1	0.0	0.5	1.8	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2012	2	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2012	3	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2012	4	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2012	5	0.0	0.3	1.1	0.9	1.0	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2012	6	0.0	2.2	8.1	6.9	7.3	16.2	0.4	5.5	0.0	0.0	3.9	2.0	0.9	1.7	1.5	0.0
2012	7	0.0	1.0	3.8	3.2	3.4	7.6	0.2	2.6	0.0	0.0	1.8	1.0	0.4	0.8	0.7	0.0
2012	8	0.0	0.8	3.1	2.6	2.8	6.2	0.2	2.1	0.0	0.0	1.5	0.8	0.3	0.6	0.6	0.0
2012	9	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2012	10	0.0	1.1	4.2	3.5	3.7	8.3	0.2	2.8	0.0	0.0	2.0	1.0	0.5	0.9	0.8	0.0
2012	11	0.0	0.6	2.4	2.0	2.1	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2012	12	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2013	1	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2013	2	0.0	0.5	1.8	1.6	1.7	3.7	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2013	3	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2013	4	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2013	5	0.0	0.9	3.3	2.8	2.9	6.6	0.2	2.2	0.0	0.0	1.6	0.8	0.4	0.7	0.6	0.0
2013	6	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
2013	7	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2013	8	0.0	1.1	3.9	3.3	3.5	7.8	0.2	2.6	0.0	0.0	1.9	1.0	0.4	0.8	0.7	0.0
2013	9	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2013	10	0.0	0.7	2.4	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2013	11	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2013	12	0.0	0.7	2.5	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 26：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Sangu River Basin (m^3/s) (2014 - 2019) (9/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2014	1	0.0	0.4	1.5	1.3	1.4	3.0	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2014	2	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2014	3	0.0	0.6	2.3	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2014	4	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2014	5	0.0	0.8	2.8	2.4	2.5	5.7	0.1	1.9	0.0	0.0	1.4	0.7	0.3	0.6	0.5	0.0
2014	6	0.0	2.4	9.0	7.6	8.0	18.0	0.5	6.0	0.0	0.0	4.3	2.3	1.0	1.8	1.7	0.0
2014	7	0.0	0.6	2.3	2.0	2.1	4.7	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2014	8	0.0	1.0	3.5	3.0	3.2	7.1	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2014	9	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2014	10	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2014	11	0.0	0.7	2.6	2.2	2.3	5.2	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2014	12	0.0	0.7	2.7	2.3	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2015	1	0.0	0.5	1.7	1.4	1.5	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2015	2	0.0	0.5	1.7	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2015	3	0.0	0.7	2.6	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2015	4	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2015	5	0.0	0.3	1.1	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.2	0.2	0.0
2015	6	0.0	1.3	4.7	4.0	4.3	9.5	0.3	3.2	0.0	0.0	2.3	1.2	0.5	1.0	0.9	0.0
2015	7	0.0	2.7	9.8	8.3	8.8	19.6	0.5	6.6	0.0	0.1	4.7	2.5	1.1	2.0	1.9	0.0
2015	8	0.0	1.5	5.4	4.6	4.9	10.9	0.3	3.7	0.0	0.0	2.6	1.4	0.6	1.1	1.0	0.0
2015	9	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2015	10	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2015	11	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2015	12	0.0	0.7	2.6	2.2	2.3	5.1	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2016	1	0.0	0.4	1.5	1.3	1.4	3.1	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2016	2	0.0	0.5	1.7	1.4	1.5	3.4	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2016	3	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
2016	4	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2016	5	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.4	0.2	0.4	0.3	0.0
2016	6	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2016	7	0.0	1.0	3.5	3.0	3.1	7.0	0.2	2.4	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2016	8	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
2016	9	0.0	0.6	2.3	1.9	2.1	4.6	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2016	10	0.0	0.7	2.4	2.0	2.2	4.8	0.1	1.6	0.0	0.0	1.1	0.6	0.3	0.5	0.5	0.0
2016	11	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2016	12	0.0	0.7	2.7	2.3	2.4	5.4	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.6	0.5	0.0
2017	1	0.0	0.5	1.9	1.6	1.7	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2017	2	0.0	0.5	1.9	1.6	1.7	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.4	0.4	0.0
2017	3	0.0	0.6	2.2	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2017	4	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2017	5	0.0	0.6	2.2	1.9	2.0	4.4	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
2017	6	0.0	1.2	4.4	3.7	3.9	8.8	0.2	3.0	0.0	0.0	2.1	1.1	0.5	0.9	0.8	0.0
2017	7	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
2017	8	0.0	0.8	3.0	2.5	2.7	6.0	0.2	2.0	0.0	0.0	1.4	0.8	0.3	0.6	0.6	0.0
2017	9	0.0	1.1	4.0	3.4	3.6	8.1	0.2	2.7	0.0	0.0	1.9	1.0	0.4	0.8	0.8	0.0
2017	10	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2017	11	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2017	12	0.0	0.7	2.5	2.1	2.2	5.0	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2018	1	0.0	0.4	1.6	1.3	1.4	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2018	2	0.0	0.4	1.6	1.3	1.4	3.2	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.3	0.3	0.0
2018	3	0.0	0.6	2.1	1.8	1.9	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2018	4	0.0	0.6	2.1	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2018	5	0.0	0.5	2.0	1.7	1.8	4.0	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2018	6	0.0	1.3	4.6	3.9	4.1	9.2	0.2	3.1	0.0	0.0	2.2	1.2	0.5	0.9	0.9	0.0
2018	7	0.0	1.1	4.2	3.5	3.7	8.4	0.2	2.8	0.0	0.0	2.0	1.1	0.5	0.9	0.8	0.0
2018	8	0.0	0.8	3.0	2.5	2.7	5.9	0.2	2.0	0.0	0.0	1.4	0.7	0.3	0.6	0.6	0.0
2018	9	0.0	0.6	2.0	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2018	10	0.0	1.0	3.6	3.1	3.3	7.3	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.7	0.7	0.0
2018	11	0.0	0.7	2.5	2.1	2.2	4.9	0.1	1.7	0.0	0.0	1.2	0.6	0.3	0.5	0.5	0.0
2018	12	0.0	0.7	2.7	2.3	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0
2019	1	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
2019	2	0.0	0.5	1.7	1.5	1.6	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.4	0.3	0.0
2019	3	0.0	0.6	2.3	1.9	2.0	4.6	0.1	1.5	0.0	0.0	1.1	0.6	0.3	0.5	0.4	0.0
2019	4	0.0	0.6	2.1	1.7	1.8	4.1	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2019	5	0.0	0.4	1.5	1.2	1.3	2.9	0.1	1.0	0.0	0.0	0.7	0.4	0.2	0.3	0.3	0.0
2019	6	0.0	0.3	1.2	1.0	1.0	2.3	0.1	0.8	0.0	0.0	0.6	0.3	0.1	0.2	0.2	0.0
2019	7	0.0	1.6	5.9	5.0	5.3	11.8	0.3	4.0	0.0	0.0	2.8	1.5	0.7	1.2	1.1	0.0
2019	8	0.0	0.9	3.2	2.7	2.9	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.4	0.7	0.6	0.0
2019	9	0.0	0.6	2.2	1.9	2.0	4.5	0.1	1.5	0.0	0.0	1.1	0.6	0.2	0.5	0.4	0.0
2019	10	0.0	0.6	2.1	1.8	1.9	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.4	0.4	0.0
2019	11	0.0	0.5	1.8	1.5	1.6	3.6	0.1	1.2	0.0	0.0	0.9	0.5	0.2	0.4	0.3	0.0
2019	12	0.0	0.7	2.6	2.2	2.4	5.3	0.1	1.8	0.0	0.0	1.3	0.7	0.3	0.5	0.5	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 27：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1966 - 1971) (1/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1966	1	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1966	2	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1966	3	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1966	4	0.0	0.3	5.2	2.8	0.0	0.0	0.0	1.4	0.7	0.1
1966	5	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1966	6	0.0	0.6	9.9	5.4	0.0	0.0	0.0	2.6	1.4	0.2
1966	7	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1966	8	0.0	0.9	16.8	9.2	0.0	0.0	0.1	4.4	2.4	0.3
1966	9	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1966	10	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
1966	11	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1966	12	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1967	1	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1967	2	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1967	3	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1967	4	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1967	5	0.0	0.1	2.7	1.5	0.0	0.0	0.0	0.7	0.4	0.1
1967	6	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1967	7	0.0	0.5	8.8	4.8	0.0	0.0	0.0	2.3	1.2	0.2
1967	8	0.0	0.5	8.4	4.6	0.0	0.0	0.0	2.2	1.2	0.2
1967	9	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
1967	10	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1967	11	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1967	12	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1968	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1968	2	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1968	3	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1968	4	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1968	5	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1968	6	0.0	0.7	12.2	6.7	0.0	0.0	0.0	3.2	1.7	0.2
1968	7	0.0	0.8	14.9	8.2	0.0	0.0	0.1	3.9	2.1	0.3
1968	8	0.0	0.4	8.1	4.4	0.0	0.0	0.0	2.1	1.1	0.2
1968	9	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1968	10	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1968	11	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1968	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1969	1	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1969	2	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1969	3	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1969	4	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
1969	5	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1969	6	0.0	0.6	11.1	6.1	0.0	0.0	0.0	2.9	1.6	0.2
1969	7	0.0	0.6	10.3	5.7	0.0	0.0	0.0	2.7	1.4	0.2
1969	8	0.0	0.6	11.1	6.1	0.0	0.0	0.0	2.9	1.6	0.2
1969	9	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1969	10	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1969	11	0.0	0.2	4.3	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1969	12	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1970	1	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1970	2	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1970	3	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1970	4	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1970	5	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1970	6	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1970	7	0.0	0.9	15.6	8.6	0.0	0.0	0.1	4.1	2.2	0.3
1970	8	0.0	0.5	9.4	5.2	0.0	0.0	0.0	2.5	1.3	0.2
1970	9	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1970	10	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1970	11	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1970	12	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1971	1	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1971	2	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1971	3	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.8	0.1
1971	4	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1971	5	0.0	0.1	2.2	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1971	6	0.0	0.8	13.6	7.5	0.0	0.0	0.1	3.6	1.9	0.3
1971	7	0.0	0.7	13.2	7.3	0.0	0.0	0.1	3.5	1.9	0.2
1971	8	0.0	0.7	12.8	7.1	0.0	0.0	0.1	3.4	1.8	0.2
1971	9	0.0	0.3	4.6	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1971	10	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1971	11	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.7	0.1
1971	12	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 27：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1972 - 1977) (2/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1972	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1972	2	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1972	3	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1972	4	0.0	0.3	4.6	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1972	5	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1972	6	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1972	7	0.0	0.4	7.0	3.9	0.0	0.0	0.0	1.8	1.0	0.1
1972	8	0.0	0.5	9.0	5.0	0.0	0.0	0.0	2.4	1.3	0.2
1972	9	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1
1972	10	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1972	11	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1972	12	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1973	1	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1973	2	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1973	3	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1973	4	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1973	5	0.0	0.4	7.2	4.0	0.0	0.0	0.0	1.9	1.0	0.1
1973	6	0.0	0.4	7.1	3.9	0.0	0.0	0.0	1.8	1.0	0.1
1973	7	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
1973	8	0.0	0.5	8.5	4.7	0.0	0.0	0.0	2.2	1.2	0.2
1973	9	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1973	10	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
1973	11	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1973	12	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1974	1	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
1974	2	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1974	3	0.0	0.3	5.0	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1974	4	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1974	5	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1974	6	0.0	1.3	22.7	12.5	0.0	0.0	0.1	6.0	3.2	0.4
1974	7	0.0	0.9	15.4	8.5	0.0	0.0	0.1	4.0	2.2	0.3
1974	8	0.0	0.7	12.0	6.6	0.0	0.0	0.0	3.2	1.7	0.2
1974	9	0.0	0.4	7.0	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1974	10	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1974	11	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1974	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1975	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1975	2	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1975	3	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1975	4	0.0	0.3	5.0	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1975	5	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
1975	6	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1975	7	0.0	0.9	16.9	9.3	0.0	0.0	0.1	4.4	2.4	0.3
1975	8	0.0	0.5	8.4	4.6	0.0	0.0	0.0	2.2	1.2	0.2
1975	9	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1975	10	0.0	0.4	6.8	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1975	11	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1975	12	0.0	0.3	6.3	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1976	1	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1976	2	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1976	3	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1976	4	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1976	5	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1976	6	0.0	1.3	22.7	12.5	0.0	0.0	0.1	5.9	3.2	0.4
1976	7	0.0	1.3	22.4	12.3	0.0	0.0	0.1	5.9	3.2	0.4
1976	8	0.0	0.4	7.5	4.1	0.0	0.0	0.0	2.0	1.1	0.1
1976	9	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1976	10	0.0	0.3	6.3	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1976	11	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1976	12	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.6	0.9	0.1
1977	1	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1977	2	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
1977	3	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1977	4	0.0	0.6	10.2	5.6	0.0	0.0	0.0	2.7	1.4	0.2
1977	5	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1977	6	0.0	0.5	9.6	5.3	0.0	0.0	0.0	2.5	1.3	0.2
1977	7	0.0	0.6	11.5	6.3	0.0	0.0	0.0	3.0	1.6	0.2
1977	8	0.0	0.4	7.2	3.9	0.0	0.0	0.0	1.9	1.0	0.1
1977	9	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1977	10	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1977	11	0.0	0.3	5.0	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1977	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1

Source: JICA Study Team

Attachment 27：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1978 - 1983) (3/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1978	1	0.0	0.2	4.1	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1978	2	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1978	3	0.0	0.3	5.7	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1978	4	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
1978	5	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.8	0.1
1978	6	0.0	0.5	9.6	5.3	0.0	0.0	0.0	2.5	1.4	0.2
1978	7	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.8	0.1
1978	8	0.0	0.6	10.1	5.6	0.0	0.0	0.0	2.7	1.4	0.2
1978	9	0.0	0.6	9.9	5.4	0.0	0.0	0.0	2.6	1.4	0.2
1978	10	0.0	0.3	5.9	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1978	11	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1978	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1979	1	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1979	2	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1979	3	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1979	4	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1979	5	0.0	0.2	3.0	1.6	0.0	0.0	0.0	0.8	0.4	0.1
1979	6	0.0	0.6	10.8	5.9	0.0	0.0	0.0	2.8	1.5	0.2
1979	7	0.0	0.4	7.7	4.3	0.0	0.0	0.0	2.0	1.1	0.1
1979	8	0.0	0.9	15.4	8.5	0.0	0.0	0.1	4.0	2.2	0.3
1979	9	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1979	10	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1979	11	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1979	12	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1980	1	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1980	2	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1980	3	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1980	4	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1980	5	0.0	0.5	9.1	5.0	0.0	0.0	0.0	2.4	1.3	0.2
1980	6	0.0	0.4	7.0	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1980	7	0.0	0.4	7.0	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1980	8	0.0	0.7	12.3	6.8	0.0	0.0	0.0	3.2	1.7	0.2
1980	9	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
1980	10	0.0	0.3	5.9	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1980	11	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1980	12	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1981	1	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1981	2	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1981	3	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1981	4	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1981	5	0.0	0.2	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1981	6	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1981	7	0.0	0.5	9.7	5.3	0.0	0.0	0.0	2.5	1.4	0.2
1981	8	0.0	0.6	10.8	6.0	0.0	0.0	0.0	2.8	1.5	0.2
1981	9	0.0	0.4	8.0	4.4	0.0	0.0	0.0	2.1	1.1	0.1
1981	10	0.0	0.4	7.0	3.9	0.0	0.0	0.0	1.8	1.0	0.1
1981	11	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1981	12	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1982	1	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1982	2	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1982	3	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1982	4	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1982	5	0.0	0.1	2.4	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1982	6	0.0	0.6	9.9	5.5	0.0	0.0	0.0	2.6	1.4	0.2
1982	7	0.0	0.6	10.0	5.5	0.0	0.0	0.0	2.6	1.4	0.2
1982	8	0.0	0.8	13.7	7.5	0.0	0.0	0.1	3.6	1.9	0.3
1982	9	0.0	0.4	7.8	4.3	0.0	0.0	0.0	2.1	1.1	0.1
1982	10	0.0	0.4	6.8	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1982	11	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1982	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1983	1	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
1983	2	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1983	3	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1983	4	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1983	5	0.0	0.2	4.1	2.2	0.0	0.0	0.0	1.1	0.6	0.1
1983	6	0.0	0.4	8.0	4.4	0.0	0.0	0.0	2.1	1.1	0.2
1983	7	0.0	0.7	12.2	6.7	0.0	0.0	0.0	3.2	1.7	0.2
1983	8	0.0	0.9	16.7	9.2	0.0	0.0	0.1	4.4	2.4	0.3
1983	9	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1983	10	0.0	0.4	8.0	4.4	0.0	0.0	0.0	2.1	1.1	0.1
1983	11	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1983	12	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 27：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1984 - 1989) (4/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1984	1	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1984	2	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1984	3	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1984	4	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1984	5	0.0	0.4	7.8	4.3	0.0	0.0	0.0	2.0	1.1	0.1
1984	6	0.0	0.6	11.0	6.0	0.0	0.0	0.0	2.9	1.5	0.2
1984	7	0.0	1.0	18.1	10.0	0.0	0.0	0.1	4.8	2.6	0.3
1984	8	0.0	0.6	9.9	5.4	0.0	0.0	0.0	2.6	1.4	0.2
1984	9	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1984	10	0.0	0.3	5.0	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1984	11	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1984	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1985	1	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1985	2	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1985	3	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1985	4	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1985	5	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
1985	6	0.0	0.6	10.6	5.8	0.0	0.0	0.0	2.8	1.5	0.2
1985	7	0.0	0.8	14.9	8.2	0.0	0.0	0.1	3.9	2.1	0.3
1985	8	0.0	0.5	8.8	4.8	0.0	0.0	0.0	2.3	1.2	0.2
1985	9	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1985	10	0.0	0.4	7.0	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1985	11	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1985	12	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1986	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1986	2	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1986	3	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1986	4	0.0	0.4	6.8	3.7	0.0	0.0	0.0	1.8	1.0	0.1
1986	5	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1986	6	0.0	0.6	11.2	6.2	0.0	0.0	0.0	2.9	1.6	0.2
1986	7	0.0	0.7	12.0	6.6	0.0	0.0	0.0	3.2	1.7	0.2
1986	8	0.0	0.5	9.2	5.1	0.0	0.0	0.0	2.4	1.3	0.2
1986	9	0.0	0.3	5.2	2.8	0.0	0.0	0.0	1.4	0.7	0.1
1986	10	0.0	0.4	6.8	3.7	0.0	0.0	0.0	1.8	1.0	0.1
1986	11	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1986	12	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1987	1	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1987	2	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1987	3	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1987	4	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1987	5	0.0	0.1	2.3	1.3	0.0	0.0	0.0	0.6	0.3	0.0
1987	6	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
1987	7	0.0	1.1	20.2	11.1	0.0	0.0	0.1	5.3	2.8	0.4
1987	8	0.0	0.8	14.2	7.8	0.0	0.0	0.1	3.7	2.0	0.3
1987	9	0.0	0.6	9.9	5.5	0.0	0.0	0.0	2.6	1.4	0.2
1987	10	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1987	11	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1987	12	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1988	1	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1988	2	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1988	3	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1988	4	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
1988	5	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1988	6	0.0	0.5	8.7	4.8	0.0	0.0	0.0	2.3	1.2	0.2
1988	7	0.0	0.7	12.5	6.9	0.0	0.0	0.0	3.3	1.8	0.2
1988	8	0.0	0.4	7.1	3.9	0.0	0.0	0.0	1.9	1.0	0.1
1988	9	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1988	10	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1988	11	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1988	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1989	1	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1989	2	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1989	3	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1989	4	0.0	0.4	6.8	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1989	5	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1989	6	0.0	0.2	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1989	7	0.0	0.9	16.0	8.8	0.0	0.0	0.1	4.2	2.3	0.3
1989	8	0.0	0.6	11.0	6.0	0.0	0.0	0.0	2.9	1.5	0.2
1989	9	0.0	0.4	7.3	4.0	0.0	0.0	0.0	1.9	1.0	0.1
1989	10	0.0	0.5	8.9	4.9	0.0	0.0	0.0	2.3	1.3	0.2
1989	11	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1989	12	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 27：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1990 - 1995) (5/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1990	1	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
1990	2	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
1990	3	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1990	4	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
1990	5	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1990	6	0.0	0.5	9.3	5.1	0.0	0.0	0.0	2.4	1.3	0.2
1990	7	0.0	0.9	16.7	9.2	0.0	0.0	0.1	4.4	2.4	0.3
1990	8	0.0	0.5	9.1	5.0	0.0	0.0	0.0	2.4	1.3	0.2
1990	9	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
1990	10	0.0	0.5	8.7	4.8	0.0	0.0	0.0	2.3	1.2	0.2
1990	11	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1990	12	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1
1991	1	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1991	2	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
1991	3	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1991	4	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1991	5	0.0	0.6	10.5	5.8	0.0	0.0	0.0	2.8	1.5	0.2
1991	6	0.0	0.7	11.9	6.5	0.0	0.0	0.0	3.1	1.7	0.2
1991	7	0.0	0.7	13.1	7.2	0.0	0.0	0.1	3.4	1.8	0.2
1991	8	0.0	0.6	11.0	6.1	0.0	0.0	0.0	2.9	1.6	0.2
1991	9	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1991	10	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1991	11	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1991	12	0.0	0.3	6.1	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1992	1	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1992	2	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
1992	3	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1992	4	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1992	5	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1992	6	0.0	0.6	11.5	6.3	0.0	0.0	0.0	3.0	1.6	0.2
1992	7	0.0	0.4	6.8	3.7	0.0	0.0	0.0	1.8	1.0	0.1
1992	8	0.0	0.5	8.2	4.5	0.0	0.0	0.0	2.2	1.2	0.2
1992	9	0.0	0.2	4.3	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1992	10	0.0	0.4	8.0	4.4	0.0	0.0	0.0	2.1	1.1	0.1
1992	11	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1992	12	0.0	0.3	6.1	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1993	1	0.0	0.2	3.5	2.0	0.0	0.0	0.0	0.9	0.5	0.1
1993	2	0.0	0.2	3.7	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1993	3	0.0	0.5	8.2	4.5	0.0	0.0	0.0	2.2	1.2	0.2
1993	4	0.0	0.3	5.0	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1993	5	0.0	0.6	10.6	5.8	0.0	0.0	0.0	2.8	1.5	0.2
1993	6	0.0	0.8	14.8	8.1	0.0	0.0	0.1	3.9	2.1	0.3
1993	7	0.0	0.6	10.2	5.6	0.0	0.0	0.0	2.7	1.4	0.2
1993	8	0.0	0.8	14.8	8.2	0.0	0.0	0.1	3.9	2.1	0.3
1993	9	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1993	10	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1993	11	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1993	12	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1994	1	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1994	2	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1994	3	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
1994	4	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1994	5	0.0	0.2	3.3	1.8	0.0	0.0	0.0	0.9	0.5	0.1
1994	6	0.0	0.6	10.0	5.5	0.0	0.0	0.0	2.6	1.4	0.2
1994	7	0.0	0.4	7.0	3.9	0.0	0.0	0.0	1.8	1.0	0.1
1994	8	0.0	0.4	8.0	4.4	0.0	0.0	0.0	2.1	1.1	0.1
1994	9	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1994	10	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1994	11	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1994	12	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1995	1	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
1995	2	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
1995	3	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1995	4	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1995	5	0.0	0.4	7.0	3.9	0.0	0.0	0.0	1.8	1.0	0.1
1995	6	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1995	7	0.0	0.8	14.3	7.9	0.0	0.0	0.1	3.7	2.0	0.3
1995	8	0.0	0.5	9.6	5.3	0.0	0.0	0.0	2.5	1.4	0.2
1995	9	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
1995	10	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1995	11	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1995	12	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1

Source: JICA Study Team

Attachment 27：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1996 - 2001) (6/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1996	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1996	2	0.0	0.2	3.9	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1996	3	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1996	4	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
1996	5	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1996	6	0.0	0.4	7.1	3.9	0.0	0.0	0.0	1.9	1.0	0.1
1996	7	0.0	0.4	7.9	4.4	0.0	0.0	0.0	2.1	1.1	0.1
1996	8	0.0	0.6	10.1	5.6	0.0	0.0	0.0	2.7	1.4	0.2
1996	9	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1996	10	0.0	0.4	7.0	3.8	0.0	0.0	0.0	1.8	1.0	0.1
1996	11	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1996	12	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1997	1	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
1997	2	0.0	0.2	3.5	1.9	0.0	0.0	0.0	0.9	0.5	0.1
1997	3	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.9	0.1
1997	4	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
1997	5	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1997	6	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
1997	7	0.0	1.2	21.7	12.0	0.0	0.0	0.1	5.7	3.1	0.4
1997	8	0.0	0.5	8.9	4.9	0.0	0.0	0.0	2.3	1.2	0.2
1997	9	0.0	0.7	12.5	6.9	0.0	0.0	0.0	3.3	1.8	0.2
1997	10	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1
1997	11	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1997	12	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
1998	1	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
1998	2	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
1998	3	0.0	0.3	5.2	2.8	0.0	0.0	0.0	1.4	0.7	0.1
1998	4	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
1998	5	0.0	0.5	8.9	4.9	0.0	0.0	0.0	2.3	1.2	0.2
1998	6	0.0	0.1	2.1	1.2	0.0	0.0	0.0	0.6	0.3	0.0
1998	7	0.0	0.9	16.7	9.2	0.0	0.0	0.1	4.4	2.4	0.3
1998	8	0.0	1.1	19.1	10.5	0.0	0.0	0.1	5.0	2.7	0.4
1998	9	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
1998	10	0.0	0.4	7.5	4.2	0.0	0.0	0.0	2.0	1.1	0.1
1998	11	0.0	0.3	5.2	2.8	0.0	0.0	0.0	1.4	0.7	0.1
1998	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
1999	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
1999	2	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
1999	3	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1999	4	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
1999	5	0.0	0.4	7.7	4.2	0.0	0.0	0.0	2.0	1.1	0.1
1999	6	0.0	1.0	18.2	10.0	0.0	0.0	0.1	4.8	2.6	0.3
1999	7	0.0	0.6	11.3	6.2	0.0	0.0	0.0	3.0	1.6	0.2
1999	8	0.0	0.9	15.8	8.7	0.0	0.0	0.1	4.1	2.2	0.3
1999	9	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
1999	10	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
1999	11	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
1999	12	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2000	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2000	2	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2000	3	0.0	0.3	5.2	2.8	0.0	0.0	0.0	1.4	0.7	0.1
2000	4	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2000	5	0.0	0.6	11.6	6.4	0.0	0.0	0.0	3.0	1.6	0.2
2000	6	0.0	0.5	9.5	5.2	0.0	0.0	0.0	2.5	1.3	0.2
2000	7	0.0	0.6	10.6	5.9	0.0	0.0	0.0	2.8	1.5	0.2
2000	8	0.0	0.5	9.6	5.3	0.0	0.0	0.0	2.5	1.4	0.2
2000	9	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2000	10	0.0	0.4	7.9	4.3	0.0	0.0	0.0	2.1	1.1	0.1
2000	11	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2000	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2001	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2001	2	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2001	3	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2001	4	0.0	0.5	8.5	4.7	0.0	0.0	0.0	2.2	1.2	0.2
2001	5	0.0	0.5	8.3	4.6	0.0	0.0	0.0	2.2	1.2	0.2
2001	6	0.0	0.5	9.7	5.3	0.0	0.0	0.0	2.5	1.4	0.2
2001	7	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
2001	8	0.0	0.5	9.3	5.1	0.0	0.0	0.0	2.4	1.3	0.2
2001	9	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2001	10	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
2001	11	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2001	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 27：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2002 - 2007) (7/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2002	1	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.1	0.6	0.1
2002	2	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
2002	3	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2002	4	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.2	0.7	0.1
2002	5	0.0	0.4	7.0	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2002	6	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2002	7	0.0	0.9	15.5	8.5	0.0	0.0	0.1	4.1	2.2	0.3
2002	8	0.0	0.5	8.3	4.6	0.0	0.0	0.0	2.2	1.2	0.2
2002	9	0.0	0.3	6.1	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2002	10	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2002	11	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2002	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2003	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2003	2	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2003	3	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2003	4	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2003	5	0.0	0.1	2.1	1.1	0.0	0.0	0.0	0.5	0.3	0.0
2003	6	0.0	1.1	19.3	10.6	0.0	0.0	0.1	5.1	2.7	0.4
2003	7	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2003	8	0.0	0.5	8.1	4.5	0.0	0.0	0.0	2.1	1.1	0.2
2003	9	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
2003	10	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2003	11	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
2003	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2004	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2004	2	0.0	0.2	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2004	3	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2004	4	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.2	0.7	0.1
2004	5	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2004	6	0.0	0.5	9.2	5.1	0.0	0.0	0.0	2.4	1.3	0.2
2004	7	0.0	0.7	13.4	7.4	0.0	0.0	0.1	3.5	1.9	0.3
2004	8	0.0	0.5	9.3	5.1	0.0	0.0	0.0	2.4	1.3	0.2
2004	9	0.0	0.7	12.1	6.7	0.0	0.0	0.0	3.2	1.7	0.2
2004	10	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	1.0	0.1
2004	11	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
2004	12	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
2005	1	0.0	0.2	4.1	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2005	2	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2005	3	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2005	4	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
2005	5	0.0	0.2	3.1	1.7	0.0	0.0	0.0	0.8	0.4	0.1
2005	6	0.0	0.2	3.4	1.9	0.0	0.0	0.0	0.9	0.5	0.1
2005	7	0.0	0.6	10.7	5.9	0.0	0.0	0.0	2.8	1.5	0.2
2005	8	0.0	0.6	10.7	5.9	0.0	0.0	0.0	2.8	1.5	0.2
2005	9	0.0	0.4	8.0	4.4	0.0	0.0	0.0	2.1	1.1	0.1
2005	10	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
2005	11	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2005	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2006	1	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2006	2	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2006	3	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2006	4	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2006	5	0.0	0.7	12.5	6.9	0.0	0.0	0.0	3.3	1.8	0.2
2006	6	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.4	0.7	0.1
2006	7	0.0	0.5	8.9	4.9	0.0	0.0	0.0	2.3	1.2	0.2
2006	8	0.0	0.5	8.8	4.8	0.0	0.0	0.0	2.3	1.2	0.2
2006	9	0.0	0.4	7.9	4.4	0.0	0.0	0.0	2.1	1.1	0.1
2006	10	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2006	11	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2006	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2007	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2007	2	0.0	0.2	3.6	2.0	0.0	0.0	0.0	0.9	0.5	0.1
2007	3	0.0	0.3	5.9	3.3	0.0	0.0	0.0	1.6	0.8	0.1
2007	4	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
2007	5	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2007	6	0.0	1.0	18.5	10.2	0.0	0.0	0.1	4.9	2.6	0.3
2007	7	0.0	0.8	14.9	8.2	0.0	0.0	0.1	3.9	2.1	0.3
2007	8	0.0	0.6	10.2	5.6	0.0	0.0	0.0	2.7	1.4	0.2
2007	9	0.0	0.6	10.2	5.6	0.0	0.0	0.0	2.7	1.4	0.2
2007	10	0.0	0.5	9.4	5.2	0.0	0.0	0.0	2.5	1.3	0.2
2007	11	0.0	0.2	4.1	2.2	0.0	0.0	0.0	1.1	0.6	0.1
2007	12	0.0	0.4	6.6	3.6	0.0	0.0	0.0	1.7	0.9	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 27：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2008 - 2013) (8/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2008	1	0.0	0.2	3.7	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2008	2	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2008	3	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2008	4	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2008	5	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2008	6	0.0	0.7	12.1	6.6	0.0	0.0	0.0	3.2	1.7	0.2
2008	7	0.0	0.9	15.4	8.4	0.0	0.0	0.1	4.0	2.2	0.3
2008	8	0.0	0.8	15.0	8.2	0.0	0.0	0.1	3.9	2.1	0.3
2008	9	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2008	10	0.0	0.3	5.0	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2008	11	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.8	0.1
2008	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2009	1	0.0	0.2	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2009	2	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
2009	3	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2009	4	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2009	5	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2009	6	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2009	7	0.0	0.9	16.0	8.8	0.0	0.0	0.1	4.2	2.3	0.3
2009	8	0.0	0.7	12.1	6.6	0.0	0.0	0.0	3.2	1.7	0.2
2009	9	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
2009	10	0.0	0.4	6.9	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2009	11	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2009	12	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
2010	1	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2010	2	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
2010	3	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2010	4	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2010	5	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2010	6	0.0	0.9	15.7	8.6	0.0	0.0	0.1	4.1	2.2	0.3
2010	7	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2010	8	0.0	0.5	8.7	4.8	0.0	0.0	0.0	2.3	1.2	0.2
2010	9	0.0	0.4	6.6	3.7	0.0	0.0	0.0	1.7	0.9	0.1
2010	10	0.0	0.4	8.0	4.4	0.0	0.0	0.0	2.1	1.1	0.1
2010	11	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2010	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2011	1	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
2011	2	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2011	3	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2011	4	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
2011	5	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2011	6	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.8	0.1
2011	7	0.0	0.5	8.4	4.6	0.0	0.0	0.0	2.2	1.2	0.2
2011	8	0.0	0.6	10.6	5.8	0.0	0.0	0.0	2.8	1.5	0.2
2011	9	0.0	0.6	11.3	6.2	0.0	0.0	0.0	3.0	1.6	0.2
2011	10	0.0	0.4	7.0	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2011	11	0.0	0.4	6.4	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2011	12	0.0	0.4	6.8	3.7	0.0	0.0	0.0	1.8	1.0	0.1
2012	1	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
2012	2	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
2012	3	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2012	4	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.6	0.9	0.1
2012	5	0.0	0.2	2.8	1.5	0.0	0.0	0.0	0.7	0.4	0.1
2012	6	0.0	1.1	20.4	11.2	0.0	0.0	0.1	5.4	2.9	0.4
2012	7	0.0	0.5	9.6	5.3	0.0	0.0	0.0	2.5	1.4	0.2
2012	8	0.0	0.4	7.8	4.3	0.0	0.0	0.0	2.1	1.1	0.1
2012	9	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2012	10	0.0	0.6	10.5	5.8	0.0	0.0	0.0	2.8	1.5	0.2
2012	11	0.0	0.3	6.0	3.3	0.0	0.0	0.0	1.6	0.8	0.1
2012	12	0.0	0.4	6.8	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2013	1	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2013	2	0.0	0.3	4.7	2.6	0.0	0.0	0.0	1.2	0.7	0.1
2013	3	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2013	4	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
2013	5	0.0	0.5	8.3	4.6	0.0	0.0	0.0	2.2	1.2	0.2
2013	6	0.0	0.5	8.1	4.5	0.0	0.0	0.0	2.1	1.1	0.2
2013	7	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.6	0.9	0.1
2013	8	0.0	0.5	9.8	5.4	0.0	0.0	0.0	2.6	1.4	0.2
2013	9	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2013	10	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2013	11	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2013	12	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 27：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2014 - 2019) (9/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2014	1	0.0	0.2	3.8	2.1	0.0	0.0	0.0	1.0	0.5	0.1
2014	2	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2014	3	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2014	4	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2014	5	0.0	0.4	7.2	3.9	0.0	0.0	0.0	1.9	1.0	0.1
2014	6	0.0	1.3	22.7	12.5	0.0	0.0	0.1	5.9	3.2	0.4
2014	7	0.0	0.3	5.9	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2014	8	0.0	0.5	9.0	4.9	0.0	0.0	0.0	2.4	1.3	0.2
2014	9	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.7	0.9	0.1
2014	10	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2014	11	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2014	12	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
2015	1	0.0	0.2	4.2	2.3	0.0	0.0	0.0	1.1	0.6	0.1
2015	2	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2015	3	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2015	4	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2015	5	0.0	0.2	2.8	1.6	0.0	0.0	0.0	0.7	0.4	0.1
2015	6	0.0	0.7	12.0	6.6	0.0	0.0	0.0	3.2	1.7	0.2
2015	7	0.0	1.4	24.7	13.6	0.0	0.0	0.1	6.5	3.5	0.5
2015	8	0.0	0.8	13.7	7.6	0.0	0.0	0.1	3.6	1.9	0.3
2015	9	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
2015	10	0.0	0.4	6.8	3.7	0.0	0.0	0.0	1.8	1.0	0.1
2015	11	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1
2015	12	0.0	0.4	6.5	3.6	0.0	0.0	0.0	1.7	0.9	0.1
2016	1	0.0	0.2	3.9	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2016	2	0.0	0.2	4.3	2.4	0.0	0.0	0.0	1.1	0.6	0.1
2016	3	0.0	0.3	5.7	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2016	4	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2016	5	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2016	6	0.0	0.3	4.8	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2016	7	0.0	0.5	8.9	4.9	0.0	0.0	0.0	2.3	1.2	0.2
2016	8	0.0	0.5	8.1	4.5	0.0	0.0	0.0	2.1	1.1	0.2
2016	9	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2016	10	0.0	0.3	6.1	3.3	0.0	0.0	0.0	1.6	0.9	0.1
2016	11	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
2016	12	0.0	0.4	6.8	3.8	0.0	0.0	0.0	1.8	1.0	0.1
2017	1	0.0	0.3	4.9	2.7	0.0	0.0	0.0	1.3	0.7	0.1
2017	2	0.0	0.3	4.8	2.6	0.0	0.0	0.0	1.3	0.7	0.1
2017	3	0.0	0.3	5.5	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2017	4	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2017	5	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2017	6	0.0	0.6	11.1	6.1	0.0	0.0	0.0	2.9	1.6	0.2
2017	7	0.0	0.5	8.1	4.4	0.0	0.0	0.0	2.1	1.1	0.2
2017	8	0.0	0.4	7.6	4.2	0.0	0.0	0.0	2.0	1.1	0.1
2017	9	0.0	0.6	10.2	5.6	0.0	0.0	0.0	2.7	1.4	0.2
2017	10	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2017	11	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2017	12	0.0	0.4	6.3	3.5	0.0	0.0	0.0	1.7	0.9	0.1
2018	1	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2018	2	0.0	0.2	4.0	2.2	0.0	0.0	0.0	1.0	0.6	0.1
2018	3	0.0	0.3	5.3	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2018	4	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2018	5	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2018	6	0.0	0.7	11.7	6.4	0.0	0.0	0.0	3.1	1.6	0.2
2018	7	0.0	0.6	10.6	5.8	0.0	0.0	0.0	2.8	1.5	0.2
2018	8	0.0	0.4	7.5	4.1	0.0	0.0	0.0	2.0	1.1	0.1
2018	9	0.0	0.3	5.1	2.8	0.0	0.0	0.0	1.3	0.7	0.1
2018	10	0.0	0.5	9.2	5.1	0.0	0.0	0.0	2.4	1.3	0.2
2018	11	0.0	0.3	6.2	3.4	0.0	0.0	0.0	1.6	0.9	0.1
2018	12	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1
2019	1	0.0	0.3	4.5	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2019	2	0.0	0.2	4.4	2.4	0.0	0.0	0.0	1.2	0.6	0.1
2019	3	0.0	0.3	5.8	3.2	0.0	0.0	0.0	1.5	0.8	0.1
2019	4	0.0	0.3	5.2	2.9	0.0	0.0	0.0	1.4	0.7	0.1
2019	5	0.0	0.2	3.7	2.0	0.0	0.0	0.0	1.0	0.5	0.1
2019	6	0.0	0.2	3.0	1.6	0.0	0.0	0.0	0.8	0.4	0.1
2019	7	0.0	0.8	14.9	8.2	0.0	0.0	0.1	3.9	2.1	0.3
2019	8	0.0	0.5	8.1	4.5	0.0	0.0	0.0	2.1	1.1	0.2
2019	9	0.0	0.3	5.6	3.1	0.0	0.0	0.0	1.5	0.8	0.1
2019	10	0.0	0.3	5.4	3.0	0.0	0.0	0.0	1.4	0.8	0.1
2019	11	0.0	0.3	4.6	2.5	0.0	0.0	0.0	1.2	0.6	0.1
2019	12	0.0	0.4	6.7	3.7	0.0	0.0	0.0	1.8	0.9	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 28：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (1966 - 1977) (1/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1966	1	0.0	3.7	0.5	0.0	0.0	0.5
1966	2	0.0	3.8	0.6	0.0	0.0	0.5
1966	3	0.0	4.8	0.7	0.0	0.0	0.7
1966	4	0.0	4.6	0.7	0.0	0.0	0.6
1966	5	0.0	2.0	0.3	0.0	0.0	0.3
1966	6	0.2	21.5	3.1	0.0	0.0	3.0
1966	7	0.1	9.8	1.4	0.0	0.0	1.3
1966	8	0.1	15.1	2.2	0.0	0.0	2.1
1966	9	0.0	5.4	0.8	0.0	0.0	0.7
1966	10	0.0	5.7	0.8	0.0	0.0	0.8
1966	11	0.0	5.0	0.7	0.0	0.0	0.7
1966	12	0.1	5.8	0.9	0.0	0.0	0.8
1967	1	0.0	3.3	0.5	0.0	0.0	0.5
1967	2	0.0	3.8	0.6	0.0	0.0	0.5
1967	3	0.0	4.9	0.7	0.0	0.0	0.7
1967	4	0.0	4.7	0.7	0.0	0.0	0.6
1967	5	0.0	2.4	0.4	0.0	0.0	0.3
1967	6	0.1	9.8	1.4	0.0	0.0	1.3
1967	7	0.1	16.4	2.4	0.0	0.0	2.3
1967	8	0.1	14.0	2.1	0.0	0.0	1.9
1967	9	0.1	13.5	2.0	0.0	0.0	1.9
1967	10	0.0	4.6	0.7	0.0	0.0	0.6
1967	11	0.1	5.8	0.8	0.0	0.0	0.8
1967	12	0.1	6.1	0.9	0.0	0.0	0.8
1968	1	0.0	3.7	0.5	0.0	0.0	0.5
1968	2	0.0	3.6	0.5	0.0	0.0	0.5
1968	3	0.0	5.0	0.7	0.0	0.0	0.7
1968	4	0.0	4.7	0.7	0.0	0.0	0.6
1968	5	0.0	4.8	0.7	0.0	0.0	0.7
1968	6	0.1	15.3	2.2	0.0	0.0	2.1
1968	7	0.1	13.3	1.9	0.0	0.0	1.8
1968	8	0.1	12.4	1.8	0.0	0.0	1.7
1968	9	0.0	4.3	0.6	0.0	0.0	0.6
1968	10	0.0	4.1	0.6	0.0	0.0	0.6
1968	11	0.0	5.4	0.8	0.0	0.0	0.7
1968	12	0.1	6.2	0.9	0.0	0.0	0.9
1969	1	0.0	3.8	0.6	0.0	0.0	0.5
1969	2	0.0	3.8	0.6	0.0	0.0	0.5
1969	3	0.0	4.7	0.7	0.0	0.0	0.6
1969	4	0.0	4.3	0.6	0.0	0.0	0.6
1969	5	0.0	2.5	0.4	0.0	0.0	0.3
1969	6	0.1	13.3	1.9	0.0	0.0	1.8
1969	7	0.1	16.7	2.4	0.0	0.0	2.3
1969	8	0.2	17.7	2.6	0.0	0.0	2.4
1969	9	0.1	8.0	1.2	0.0	0.0	1.1
1969	10	0.0	5.2	0.8	0.0	0.0	0.7
1969	11	0.0	5.6	0.8	0.0	0.0	0.8
1969	12	0.1	5.8	0.8	0.0	0.0	0.8
1970	1	0.0	3.6	0.5	0.0	0.0	0.5
1970	2	0.0	3.5	0.5	0.0	0.0	0.5
1970	3	0.0	5.0	0.7	0.0	0.0	0.7
1970	4	0.0	4.6	0.7	0.0	0.0	0.6
1970	5	0.0	4.8	0.7	0.0	0.0	0.7
1970	6	0.1	8.1	1.2	0.0	0.0	1.1
1970	7	0.2	20.0	2.9	0.0	0.0	2.7
1970	8	0.1	8.5	1.2	0.0	0.0	1.2
1970	9	0.0	4.7	0.7	0.0	0.0	0.6
1970	10	0.1	6.4	0.9	0.0	0.0	0.9
1970	11	0.0	4.5	0.7	0.0	0.0	0.6
1970	12	0.1	6.0	0.9	0.0	0.0	0.8
1971	1	0.0	3.7	0.5	0.0	0.0	0.5
1971	2	0.0	3.7	0.5	0.0	0.0	0.5
1971	3	0.0	5.0	0.7	0.0	0.0	0.7
1971	4	0.0	4.9	0.7	0.0	0.0	0.7
1971	5	0.0	2.9	0.4	0.0	0.0	0.4
1971	6	0.1	16.5	2.4	0.0	0.0	2.3
1971	7	0.2	21.3	3.1	0.0	0.0	2.9
1971	8	0.1	9.5	1.4	0.0	0.0	1.3
1971	9	0.0	4.9	0.7	0.0	0.0	0.7
1971	10	0.0	4.5	0.7	0.0	0.0	0.6
1971	11	0.0	4.3	0.6	0.0	0.0	0.6
1971	12	0.1	6.0	0.9	0.0	0.0	0.8

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1972	1	0.0	3.6	0.5	0.0	0.0	0.5
1972	2	0.0	4.0	0.6	0.0	0.0	0.6
1972	3	0.0	5.0	0.7	0.0	0.0	0.7
1972	4	0.0	4.7	0.7	0.0	0.0	0.7
1972	5	0.0	2.6	0.4	0.0	0.0	0.4
1972	6	0.0	4.5	0.7	0.0	0.0	0.6
1972	7	0.0	4.5	0.7	0.0	0.0	0.6
1972	8	0.1	11.8	1.7	0.0	0.0	1.6
1972	9	0.1	6.2	0.9	0.0	0.0	0.8
1972	10	0.1	9.8	1.4	0.0	0.0	1.3
1972	11	0.0	5.6	0.8	0.0	0.0	0.8
1972	12	0.1	6.2	0.9	0.0	0.0	0.8
1973	1	0.0	4.0	0.6	0.0	0.0	0.5
1973	2	0.0	3.9	0.6	0.0	0.0	0.5
1973	3	0.0	5.3	0.8	0.0	0.0	0.7
1973	4	0.0	5.0	0.7	0.0	0.0	0.7
1973	5	0.1	7.0	1.0	0.0	0.0	1.0
1973	6	0.1	11.1	1.6	0.0	0.0	1.5
1973	7	0.1	12.3	1.8	0.0	0.0	1.7
1973	8	0.1	7.1	1.0	0.0	0.0	1.0
1973	9	0.0	5.5	0.8	0.0	0.0	0.8
1973	10	0.0	5.4	0.8	0.0	0.0	0.7
1973	11	0.0	3.6	0.5	0.0	0.0	0.5
1973	12	0.0	5.7	0.8	0.0	0.0	0.8
1974	1	0.0	3.7	0.5	0.0	0.0	0.5
1974	2	0.0	3.8	0.6	0.0	0.0	0.5
1974	3	0.0	4.6	0.7	0.0	0.0	0.6
1974	4	0.0	4.5	0.7	0.0	0.0	0.6
1974	5	0.1	7.0	1.0	0.0	0.0	1.0
1974	6	0.1	11.7	1.7	0.0	0.0	1.6
1974	7	0.2	18.1	2.6	0.0	0.0	2.5
1974	8	0.1	14.8	2.2	0.0	0.0	2.0
1974	9	0.0	4.7	0.7	0.0	0.0	0.6
1974	10	0.0	5.4	0.8	0.0	0.0	0.7
1974	11	0.0	4.0	0.6	0.0	0.0	0.6
1974	12	0.1	5.9	0.9	0.0	0.0	0.8
1975	1	0.0	3.5	0.5	0.0	0.0	0.5
1975	2	0.0	3.5	0.5	0.0	0.0	0.5
1975	3	0.0	5.1	0.7	0.0	0.0	0.7
1975	4	0.0	4.8	0.7	0.0	0.0	0.7
1975	5	0.0	3.7	0.5	0.0	0.0	0.5
1975	6	0.1	6.8	1.0	0.0	0.0	0.9
1975	7	0.2	18.1	2.6	0.0	0.0	2.5
1975	8	0.1	7.8	1.1	0.0	0.0	1.1
1975	9	0.0	4.4	0.6	0.0	0.0	0.6
1975	10	0.1	10.0	1.5	0.0	0.0	1.4
1975	11	0.1	6.3	0.9	0.0	0.0	0.9
1975	12	0.0	5.5	0.8	0.0	0.0	0.8
1976	1	0.0	3.5	0.5	0.0	0.0	0.5
1976	2	0.0	3.7	0.5	0.0	0.0	0.5
1976	3	0.0	5.0	0.7	0.0	0.0	0.7
1976	4	0.0	4.6	0.7	0.0	0.0	0.6
1976	5	0.0	3.8	0.6	0.0	0.0	0.5
1976	6	0.1	12.5	1.8	0.0	0.0	1.7
1976	7	0.2	19.5	2.8	0.0	0.0	2.7
1976	8	0.1	9.5	1.4	0.0	0.0	1.3
1976	9	0.1	6.3	0.9	0.0	0.0	0.9
1976	10	0.1	6.7	1.0	0.0	0.0	0.9
1976	11	0.1	6.7	1.0	0.0	0.0	0.9
1976	12	0.1	5.9	0.9	0.0	0.0	0.8
1977	1	0.0	3.7	0.5	0.0	0.0	0.5
1977	2	0.0	3.5	0.5	0.0	0.0	0.5
1977	3	0.0	4.9	0.7	0.0	0.0	0.7
1977	4	0.1	9.1	1.3	0.0	0.0	1.3
1977	5	0.0	5.0	0.7	0.0	0.0	0.7
1977	6	0.1	13.2	1.9	0.0	0.0	1.8
1977	7	0.1	15.1	2.2	0.0	0.0	2.1
1977	8	0.1	9.1	1.3	0.0	0.0	1.3
1977	9	0.0	4.1	0.6	0.0	0.0	0.6
1977	10	0.1	6.0	0.9	0.0	0.0	0.8
1977	11	0.0	4.7	0.7	0.0	0.0	0.6
1977	12	0.1	5.8	0.8	0.0	0.0	0.8

Source: JICA Study Team

Attachment 28：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (1978 - 1989) (2/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1978	1	0.0	3.6	0.5	0.0	0.0	0.5
1978	2	0.0	3.7	0.5	0.0	0.0	0.5
1978	3	0.0	4.9	0.7	0.0	0.0	0.7
1978	4	0.1	5.9	0.9	0.0	0.0	0.8
1978	5	0.1	7.3	1.1	0.0	0.0	1.0
1978	6	0.1	8.7	1.3	0.0	0.0	1.2
1978	7	0.1	7.8	1.1	0.0	0.0	1.1
1978	8	0.1	8.1	1.2	0.0	0.0	1.1
1978	9	0.1	6.7	1.0	0.0	0.0	0.9
1978	10	0.0	4.3	0.6	0.0	0.0	0.6
1978	11	0.0	5.6	0.8	0.0	0.0	0.8
1978	12	0.1	6.1	0.9	0.0	0.0	0.8
1979	1	0.0	3.7	0.5	0.0	0.0	0.5
1979	2	0.0	3.8	0.6	0.0	0.0	0.5
1979	3	0.0	5.1	0.7	0.0	0.0	0.7
1979	4	0.0	4.8	0.7	0.0	0.0	0.7
1979	5	0.0	1.7	0.2	0.0	0.0	0.2
1979	6	0.0	2.5	0.4	0.0	0.0	0.3
1979	7	0.0	2.9	0.4	0.0	0.0	0.4
1979	8	0.1	8.2	1.2	0.0	0.0	1.1
1979	9	0.0	4.4	0.6	0.0	0.0	0.6
1979	10	0.1	6.9	1.0	0.0	0.0	0.9
1979	11	0.0	5.7	0.8	0.0	0.0	0.8
1979	12	0.1	6.0	0.9	0.0	0.0	0.8
1980	1	0.0	3.9	0.6	0.0	0.0	0.5
1980	2	0.0	4.0	0.6	0.0	0.0	0.5
1980	3	0.0	5.0	0.7	0.0	0.0	0.7
1980	4	0.0	4.7	0.7	0.0	0.0	0.6
1980	5	0.0	2.5	0.4	0.0	0.0	0.3
1980	6	0.0	3.7	0.5	0.0	0.0	0.5
1980	7	0.0	2.8	0.4	0.0	0.0	0.4
1980	8	0.1	6.9	1.0	0.0	0.0	1.0
1980	9	0.0	4.8	0.7	0.0	0.0	0.7
1980	10	0.0	5.0	0.7	0.0	0.0	0.7
1980	11	0.0	5.6	0.8	0.0	0.0	0.8
1980	12	0.1	5.9	0.9	0.0	0.0	0.8
1981	1	0.0	3.5	0.5	0.0	0.0	0.5
1981	2	0.0	3.7	0.5	0.0	0.0	0.5
1981	3	0.0	4.8	0.7	0.0	0.0	0.7
1981	4	0.0	4.8	0.7	0.0	0.0	0.7
1981	5	0.0	4.0	0.6	0.0	0.0	0.6
1981	6	0.1	9.9	1.4	0.0	0.0	1.4
1981	7	0.1	11.8	1.7	0.0	0.0	1.6
1981	8	0.1	7.5	1.1	0.0	0.0	1.0
1981	9	0.1	8.8	1.3	0.0	0.0	1.2
1981	10	0.1	5.8	0.8	0.0	0.0	0.8
1981	11	0.0	5.1	0.7	0.0	0.0	0.7
1981	12	0.0	5.4	0.8	0.0	0.0	0.7
1982	1	0.0	3.8	0.5	0.0	0.0	0.5
1982	2	0.0	3.5	0.5	0.0	0.0	0.5
1982	3	0.0	5.2	0.8	0.0	0.0	0.7
1982	4	0.0	4.3	0.6	0.0	0.0	0.6
1982	5	0.0	1.9	0.3	0.0	0.0	0.3
1982	6	0.1	16.8	2.5	0.0	0.0	2.3
1982	7	0.1	12.2	1.8	0.0	0.0	1.7
1982	8	0.1	11.9	1.7	0.0	0.0	1.6
1982	9	0.1	6.8	1.0	0.0	0.0	0.9
1982	10	0.1	6.3	0.9	0.0	0.0	0.9
1982	11	0.0	4.4	0.6	0.0	0.0	0.6
1982	12	0.1	5.9	0.9	0.0	0.0	0.8
1983	1	0.0	3.4	0.5	0.0	0.0	0.5
1983	2	0.0	3.3	0.5	0.0	0.0	0.5
1983	3	0.0	4.6	0.7	0.0	0.0	0.6
1983	4	0.0	4.2	0.6	0.0	0.0	0.6
1983	5	0.0	3.8	0.6	0.0	0.0	0.5
1983	6	0.1	10.1	1.5	0.0	0.0	1.4
1983	7	0.1	14.4	2.1	0.0	0.0	2.0
1983	8	0.1	12.4	1.8	0.0	0.0	1.7
1983	9	0.0	4.9	0.7	0.0	0.0	0.7
1983	10	0.1	6.2	0.9	0.0	0.0	0.9
1983	11	0.1	6.4	0.9	0.0	0.0	0.9
1983	12	0.0	5.7	0.8	0.0	0.0	0.8

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1984	1	0.0	3.6	0.5	0.0	0.0	0.5
1984	2	0.0	3.7	0.5	0.0	0.0	0.5
1984	3	0.0	4.5	0.7	0.0	0.0	0.6
1984	4	0.0	4.0	0.6	0.0	0.0	0.6
1984	5	0.0	5.0	0.7	0.0	0.0	0.7
1984	6	0.2	17.9	2.6	0.0	0.0	2.5
1984	7	0.1	10.2	1.5	0.0	0.0	1.4
1984	8	0.1	11.5	1.7	0.0	0.0	1.6
1984	9	0.1	7.5	1.1	0.0	0.0	1.0
1984	10	0.0	4.9	0.7	0.0	0.0	0.7
1984	11	0.0	5.6	0.8	0.0	0.0	0.8
1984	12	0.1	5.9	0.9	0.0	0.0	0.8
1985	1	0.0	3.6	0.5	0.0	0.0	0.5
1985	2	0.0	3.6	0.5	0.0	0.0	0.5
1985	3	0.0	4.6	0.7	0.0	0.0	0.6
1985	4	0.0	4.3	0.6	0.0	0.0	0.6
1985	5	0.1	6.6	1.0	0.0	0.0	0.9
1985	6	0.1	14.4	2.1	0.0	0.0	2.0
1985	7	0.1	15.5	2.3	0.0	0.0	2.1
1985	8	0.1	11.7	1.7	0.0	0.0	1.6
1985	9	0.0	4.6	0.7	0.0	0.0	0.6
1985	10	0.1	5.9	0.9	0.0	0.0	0.8
1985	11	0.1	7.8	1.1	0.0	0.0	1.1
1985	12	0.1	6.0	0.9	0.0	0.0	0.8
1986	1	0.0	3.7	0.5	0.0	0.0	0.5
1986	2	0.0	3.9	0.6	0.0	0.0	0.5
1986	3	0.0	4.9	0.7	0.0	0.0	0.7
1986	4	0.0	4.7	0.7	0.0	0.0	0.6
1986	5	0.0	2.7	0.4	0.0	0.0	0.4
1986	6	0.1	13.2	1.9	0.0	0.0	1.8
1986	7	0.1	11.2	1.6	0.0	0.0	1.5
1986	8	0.1	7.7	1.1	0.0	0.0	1.1
1986	9	0.0	4.5	0.7	0.0	0.0	0.6
1986	10	0.1	6.6	1.0	0.0	0.0	0.9
1986	11	0.0	4.2	0.6	0.0	0.0	0.6
1986	12	0.1	6.1	0.9	0.0	0.0	0.8
1987	1	0.0	3.7	0.5	0.0	0.0	0.5
1987	2	0.0	3.5	0.5	0.0	0.0	0.5
1987	3	0.0	4.9	0.7	0.0	0.0	0.7
1987	4	0.0	4.2	0.6	0.0	0.0	0.6
1987	5	0.0	2.1	0.3	0.0	0.0	0.3
1987	6	0.1	12.0	1.8	0.0	0.0	1.6
1987	7	0.2	26.4	3.9	0.0	0.0	3.6
1987	8	0.2	18.8	2.7	0.0	0.0	2.6
1987	9	0.1	6.8	1.0	0.0	0.0	0.9
1987	10	0.0	5.7	0.8	0.0	0.0	0.8
1987	11	0.0	4.2	0.6	0.0	0.0	0.6
1987	12	0.0	5.7	0.8	0.0	0.0	0.8
1988	1	0.0	3.8	0.6	0.0	0.0	0.5
1988	2	0.0	3.8	0.6	0.0	0.0	0.5
1988	3	0.0	5.0	0.7	0.0	0.0	0.7
1988	4	0.0	4.6	0.7	0.0	0.0	0.6
1988	5	0.0	5.1	0.7	0.0	0.0	0.7
1988	6	0.2	18.3	2.7	0.0	0.0	2.5
1988	7	0.1	10.9	1.6	0.0	0.0	1.5
1988	8	0.1	12.9	1.9	0.0	0.0	1.8
1988	9	0.1	8.2	1.2	0.0	0.0	1.1
1988	10	0.0	5.0	0.7	0.0	0.0	0.7
1988	11	0.0	4.2	0.6	0.0	0.0	0.6
1988	12	0.0	4.9	0.7	0.0	0.0	0.7
1989	1	0.0	3.7	0.5	0.0	0.0	0.5
1989	2	0.0	3.5	0.5	0.0	0.0	0.5
1989	3	0.0	5.1	0.7	0.0	0.0	0.7
1989	4	0.0	4.7	0.7	0.0	0.0	0.6
1989	5	0.0	2.3	0.3	0.0	0.0	0.3
1989	6	0.1	10.7	1.6	0.0	0.0	1.5
1989	7	0.1	12.1	1.8	0.0	0.0	1.7
1989	8	0.1	8.2	1.2	0.0	0.0	1.1
1989	9	0.1	6.4	0.9	0.0	0.0	0.9
1989	10	0.1	7.2	1.1	0.0	0.0	1.0
1989	11	0.0	5.2	0.8	0.0	0.0	0.7
1989	12	0.1	6.0	0.9	0.0	0.0	0.8

Source: JICA Study Team

Attachment 28：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (1990 - 2001) (3/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1990	1	0.0	3.5	0.5	0.0	0.0	0.5
1990	2	0.0	3.4	0.5	0.0	0.0	0.5
1990	3	0.0	5.0	0.7	0.0	0.0	0.7
1990	4	0.0	4.1	0.6	0.0	0.0	0.6
1990	5	0.0	3.9	0.6	0.0	0.0	0.5
1990	6	0.1	16.8	2.5	0.0	0.0	2.3
1990	7	0.1	17.0	2.5	0.0	0.0	2.3
1990	8	0.1	8.2	1.2	0.0	0.0	1.1
1990	9	0.0	5.6	0.8	0.0	0.0	0.8
1990	10	0.1	7.5	1.1	0.0	0.0	1.0
1990	11	0.1	6.4	0.9	0.0	0.0	0.9
1990	12	0.1	5.9	0.9	0.0	0.0	0.8
1991	1	0.0	3.7	0.5	0.0	0.0	0.5
1991	2	0.0	3.8	0.6	0.0	0.0	0.5
1991	3	0.0	4.7	0.7	0.0	0.0	0.7
1991	4	0.0	4.6	0.7	0.0	0.0	0.6
1991	5	0.0	3.2	0.5	0.0	0.0	0.4
1991	6	0.2	18.2	2.7	0.0	0.0	2.5
1991	7	0.1	12.3	1.8	0.0	0.0	1.7
1991	8	0.1	11.0	1.6	0.0	0.0	1.5
1991	9	0.1	7.0	1.0	0.0	0.0	1.0
1991	10	0.0	4.4	0.6	0.0	0.0	0.6
1991	11	0.0	4.1	0.6	0.0	0.0	0.6
1991	12	0.0	5.8	0.8	0.0	0.0	0.8
1992	1	0.0	3.3	0.5	0.0	0.0	0.5
1992	2	0.0	3.1	0.5	0.0	0.0	0.4
1992	3	0.0	4.5	0.7	0.0	0.0	0.6
1992	4	0.0	4.5	0.7	0.0	0.0	0.6
1992	5	0.0	2.8	0.4	0.0	0.0	0.4
1992	6	0.1	11.0	1.6	0.0	0.0	1.5
1992	7	0.1	11.5	1.7	0.0	0.0	1.6
1992	8	0.1	8.6	1.3	0.0	0.0	1.2
1992	9	0.0	5.0	0.7	0.0	0.0	0.7
1992	10	0.0	3.6	0.5	0.0	0.0	0.5
1992	11	0.0	3.9	0.6	0.0	0.0	0.5
1992	12	0.1	6.0	0.9	0.0	0.0	0.8
1993	1	0.0	3.4	0.5	0.0	0.0	0.5
1993	2	0.0	3.5	0.5	0.0	0.0	0.5
1993	3	0.0	4.7	0.7	0.0	0.0	0.6
1993	4	0.0	4.4	0.6	0.0	0.0	0.6
1993	5	0.1	7.1	1.0	0.0	0.0	1.0
1993	6	0.1	11.7	1.7	0.0	0.0	1.6
1993	7	0.1	9.5	1.4	0.0	0.0	1.3
1993	8	0.1	10.3	1.5	0.0	0.0	1.4
1993	9	0.0	4.7	0.7	0.0	0.0	0.7
1993	10	0.0	4.4	0.6	0.0	0.0	0.6
1993	11	0.0	4.9	0.7	0.0	0.0	0.7
1993	12	0.1	6.0	0.9	0.0	0.0	0.8
1994	1	0.0	3.7	0.5	0.0	0.0	0.5
1994	2	0.0	3.9	0.6	0.0	0.0	0.5
1994	3	0.0	5.6	0.8	0.0	0.0	0.8
1994	4	0.0	4.8	0.7	0.0	0.0	0.7
1994	5	0.0	4.8	0.7	0.0	0.0	0.7
1994	6	0.1	14.3	2.1	0.0	0.0	2.0
1994	7	0.1	10.8	1.6	0.0	0.0	1.5
1994	8	0.1	7.4	1.1	0.0	0.0	1.0
1994	9	0.0	4.7	0.7	0.0	0.0	0.6
1994	10	0.0	5.2	0.8	0.0	0.0	0.7
1994	11	0.0	4.9	0.7	0.0	0.0	0.7
1994	12	0.1	6.0	0.9	0.0	0.0	0.8
1995	1	0.0	3.8	0.6	0.0	0.0	0.5
1995	2	0.0	3.5	0.5	0.0	0.0	0.5
1995	3	0.0	5.4	0.8	0.0	0.0	0.7
1995	4	0.0	4.7	0.7	0.0	0.0	0.7
1995	5	0.1	6.1	0.9	0.0	0.0	0.8
1995	6	0.1	7.9	1.2	0.0	0.0	1.1
1995	7	0.1	13.7	2.0	0.0	0.0	1.9
1995	8	0.1	7.8	1.1	0.0	0.0	1.1
1995	9	0.1	6.6	1.0	0.0	0.0	0.9
1995	10	0.1	5.9	0.9	0.0	0.0	0.8
1995	11	0.0	5.7	0.8	0.0	0.0	0.8
1995	12	0.1	6.0	0.9	0.0	0.0	0.8

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1996	1	0.0	3.8	0.6	0.0	0.0	0.5
1996	2	0.0	3.8	0.6	0.0	0.0	0.5
1996	3	0.0	4.8	0.7	0.0	0.0	0.7
1996	4	0.0	4.3	0.6	0.0	0.0	0.6
1996	5	0.0	4.1	0.6	0.0	0.0	0.6
1996	6	0.1	9.9	1.4	0.0	0.0	1.4
1996	7	0.1	13.3	1.9	0.0	0.0	1.8
1996	8	0.1	9.8	1.4	0.0	0.0	1.4
1996	9	0.1	8.4	1.2	0.0	0.0	1.2
1996	10	0.1	6.3	0.9	0.0	0.0	0.9
1996	11	0.0	5.3	0.8	0.0	0.0	0.7
1996	12	0.1	6.0	0.9	0.0	0.0	0.8
1997	1	0.0	3.9	0.6	0.0	0.0	0.5
1997	2	0.0	3.6	0.5	0.0	0.0	0.5
1997	3	0.0	4.7	0.7	0.0	0.0	0.6
1997	4	0.0	4.6	0.7	0.0	0.0	0.6
1997	5	0.0	4.8	0.7	0.0	0.0	0.7
1997	6	0.0	5.5	0.8	0.0	0.0	0.8
1997	7	0.2	17.9	2.6	0.0	0.0	2.5
1997	8	0.1	9.3	1.4	0.0	0.0	1.3
1997	9	0.1	9.0	1.3	0.0	0.0	1.2
1997	10	0.1	5.9	0.9	0.0	0.0	0.8
1997	11	0.0	5.2	0.8	0.0	0.0	0.7
1997	12	0.0	5.6	0.8	0.0	0.0	0.8
1998	1	0.0	3.4	0.5	0.0	0.0	0.5
1998	2	0.0	3.6	0.5	0.0	0.0	0.5
1998	3	0.0	5.2	0.8	0.0	0.0	0.7
1998	4	0.0	4.4	0.6	0.0	0.0	0.6
1998	5	0.1	6.2	0.9	0.0	0.0	0.8
1998	6	0.0	5.3	0.8	0.0	0.0	0.7
1998	7	0.2	17.6	2.6	0.0	0.0	2.4
1998	8	0.1	16.2	2.4	0.0	0.0	2.2
1998	9	0.1	7.6	1.1	0.0	0.0	1.0
1998	10	0.0	5.4	0.8	0.0	0.0	0.7
1998	11	0.0	4.8	0.7	0.0	0.0	0.7
1998	12	0.1	6.2	0.9	0.0	0.0	0.9
1999	1	0.0	3.9	0.6	0.0	0.0	0.5
1999	2	0.0	4.2	0.6	0.0	0.0	0.6
1999	3	0.0	5.1	0.8	0.0	0.0	0.7
1999	4	0.0	4.9	0.7	0.0	0.0	0.7
1999	5	0.1	8.3	1.2	0.0	0.0	1.1
1999	6	0.1	12.0	1.7	0.0	0.0	1.6
1999	7	0.1	12.9	1.9	0.0	0.0	1.8
1999	8	0.1	15.9	2.3	0.0	0.0	2.2
1999	9	0.0	5.5	0.8	0.0	0.0	0.8
1999	10	0.0	4.4	0.6	0.0	0.0	0.6
1999	11	0.1	5.9	0.9	0.0	0.0	0.8
1999	12	0.0	4.8	0.7	0.0	0.0	0.7
2000	1	0.0	3.9	0.6	0.0	0.0	0.5
2000	2	0.0	4.1	0.6	0.0	0.0	0.6
2000	3	0.0	5.0	0.7	0.0	0.0	0.7
2000	4	0.0	4.8	0.7	0.0	0.0	0.7
2000	5	0.1	8.3	1.2	0.0	0.0	1.1
2000	6	0.1	11.8	1.7	0.0	0.0	1.6
2000	7	0.2	18.2	2.7	0.0	0.0	2.5
2000	8	0.1	12.2	1.8	0.0	0.0	1.7
2000	9	0.1	8.5	1.2	0.0	0.0	1.2
2000	10	0.1	5.9	0.9	0.0	0.0	0.8
2000	11	0.0	5.6	0.8	0.0	0.0	0.8
2000	12	0.1	6.2	0.9	0.0	0.0	0.9
2001	1	0.0	4.0	0.6	0.0	0.0	0.5
2001	2	0.0	3.8	0.6	0.0	0.0	0.5
2001	3	0.0	5.5	0.8	0.0	0.0	0.8
2001	4	0.0	4.9	0.7	0.0	0.0	0.7
2001	5	0.0	5.7	0.8	0.0	0.0	0.8
2001	6	0.2	19.2	2.8	0.0	0.0	2.6
2001	7	0.1	12.7	1.8	0.0	0.0	1.7
2001	8	0.1	7.5	1.1	0.0	0.0	1.0
2001	9	0.1	7.4	1.1	0.0	0.0	1.0
2001	10	0.0	4.1	0.6	0.0	0.0	0.6
2001	11	0.0	4.6	0.7	0.0	0.0	0.6
2001	12	0.1	6.1	0.9	0.0	0.0	0.8

Source: JICA Study Team

Attachment 28：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (2002 - 2013) (4/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2002	1	0.0	3.5	0.5	0.0	0.0	0.5
2002	2	0.0	4.1	0.6	0.0	0.0	0.6
2002	3	0.0	5.1	0.8	0.0	0.0	0.7
2002	4	0.0	4.5	0.7	0.0	0.0	0.6
2002	5	0.1	6.9	1.0	0.0	0.0	1.0
2002	6	0.1	7.1	1.0	0.0	0.0	1.0
2002	7	0.1	17.3	2.5	0.0	0.0	2.4
2002	8	0.1	9.2	1.3	0.0	0.0	1.3
2002	9	0.0	4.5	0.7	0.0	0.0	0.6
2002	10	0.0	5.0	0.7	0.0	0.0	0.7
2002	11	0.0	4.6	0.7	0.0	0.0	0.6
2002	12	0.1	6.0	0.9	0.0	0.0	0.8
2003	1	0.0	3.5	0.5	0.0	0.0	0.5
2003	2	0.0	3.9	0.6	0.0	0.0	0.5
2003	3	0.0	4.9	0.7	0.0	0.0	0.7
2003	4	0.0	4.9	0.7	0.0	0.0	0.7
2003	5	0.1	8.1	1.2	0.0	0.0	1.1
2003	6	0.2	18.9	2.8	0.0	0.0	2.6
2003	7	0.1	12.6	1.8	0.0	0.0	1.7
2003	8	0.1	9.2	1.3	0.0	0.0	1.3
2003	9	0.1	7.2	1.1	0.0	0.0	1.0
2003	10	0.1	6.2	0.9	0.0	0.0	0.9
2003	11	0.0	5.7	0.8	0.0	0.0	0.8
2003	12	0.1	6.2	0.9	0.0	0.0	0.9
2004	1	0.0	3.6	0.5	0.0	0.0	0.5
2004	2	0.0	4.1	0.6	0.0	0.0	0.6
2004	3	0.0	5.1	0.7	0.0	0.0	0.7
2004	4	0.0	4.1	0.6	0.0	0.0	0.6
2004	5	0.0	4.3	0.6	0.0	0.0	0.6
2004	6	0.1	10.1	1.5	0.0	0.0	1.4
2004	7	0.1	10.5	1.5	0.0	0.0	1.4
2004	8	0.1	9.7	1.4	0.0	0.0	1.3
2004	9	0.1	8.8	1.3	0.0	0.0	1.2
2004	10	0.1	5.8	0.8	0.0	0.0	0.8
2004	11	0.0	5.8	0.8	0.0	0.0	0.8
2004	12	0.1	6.2	0.9	0.0	0.0	0.9
2005	1	0.0	3.7	0.5	0.0	0.0	0.5
2005	2	0.0	3.9	0.6	0.0	0.0	0.5
2005	3	0.0	4.9	0.7	0.0	0.0	0.7
2005	4	0.0	4.6	0.7	0.0	0.0	0.6
2005	5	0.0	3.2	0.5	0.0	0.0	0.4
2005	6	0.1	11.9	1.7	0.0	0.0	1.6
2005	7	0.1	8.5	1.2	0.0	0.0	1.2
2005	8	0.1	13.4	2.0	0.0	0.0	1.8
2005	9	0.0	4.8	0.7	0.0	0.0	0.7
2005	10	0.0	5.1	0.8	0.0	0.0	0.7
2005	11	0.0	5.2	0.8	0.0	0.0	0.7
2005	12	0.1	5.8	0.9	0.0	0.0	0.8
2006	1	0.0	3.7	0.5	0.0	0.0	0.5
2006	2	0.0	3.7	0.5	0.0	0.0	0.5
2006	3	0.0	5.2	0.8	0.0	0.0	0.7
2006	4	0.0	4.6	0.7	0.0	0.0	0.6
2006	5	0.1	11.2	1.6	0.0	0.0	1.5
2006	6	0.1	9.7	1.4	0.0	0.0	1.3
2006	7	0.1	11.2	1.6	0.0	0.0	1.5
2006	8	0.1	8.5	1.2	0.0	0.0	1.2
2006	9	0.1	9.6	1.4	0.0	0.0	1.3
2006	10	0.0	5.5	0.8	0.0	0.0	0.8
2006	11	0.0	5.4	0.8	0.0	0.0	0.7
2006	12	0.1	6.1	0.9	0.0	0.0	0.8
2007	1	0.0	3.6	0.5	0.0	0.0	0.5
2007	2	0.0	3.3	0.5	0.0	0.0	0.5
2007	3	0.0	5.0	0.7	0.0	0.0	0.7
2007	4	0.0	4.4	0.6	0.0	0.0	0.6
2007	5	0.0	5.3	0.8	0.0	0.0	0.7
2007	6	0.1	9.0	1.3	0.0	0.0	1.2
2007	7	0.2	17.9	2.6	0.0	0.0	2.5
2007	8	0.1	7.6	1.1	0.0	0.0	1.0
2007	9	0.1	7.0	1.0	0.0	0.0	1.0
2007	10	0.1	6.9	1.0	0.0	0.0	0.9
2007	11	0.0	3.7	0.5	0.0	0.0	0.5
2007	12	0.1	6.0	0.9	0.0	0.0	0.8

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2008	1	0.0	3.7	0.5	0.0	0.0	0.5
2008	2	0.0	3.8	0.6	0.0	0.0	0.5
2008	3	0.0	4.8	0.7	0.0	0.0	0.7
2008	4	0.0	5.0	0.7	0.0	0.0	0.7
2008	5	0.0	4.0	0.6	0.0	0.0	0.6
2008	6	0.2	18.5	2.7	0.0	0.0	2.5
2008	7	0.2	17.9	2.6	0.0	0.0	2.5
2008	8	0.1	9.6	1.4	0.0	0.0	1.3
2008	9	0.0	5.4	0.8	0.0	0.0	0.7
2008	10	0.0	4.5	0.7	0.0	0.0	0.6
2008	11	0.0	5.7	0.8	0.0	0.0	0.8
2008	12	0.1	6.1	0.9	0.0	0.0	0.8
2009	1	0.0	3.9	0.6	0.0	0.0	0.5
2009	2	0.0	4.4	0.6	0.0	0.0	0.6
2009	3	0.0	4.9	0.7	0.0	0.0	0.7
2009	4	0.0	4.7	0.7	0.0	0.0	0.6
2009	5	0.0	4.0	0.6	0.0	0.0	0.6
2009	6	0.0	4.7	0.7	0.0	0.0	0.6
2009	7	0.1	13.6	2.0	0.0	0.0	1.9
2009	8	0.1	13.2	1.9	0.0	0.0	1.8
2009	9	0.1	6.8	1.0	0.0	0.0	0.9
2009	10	0.0	5.3	0.8	0.0	0.0	0.7
2009	11	0.0	4.8	0.7	0.0	0.0	0.7
2009	12	0.1	6.2	0.9	0.0	0.0	0.8
2010	1	0.0	3.9	0.6	0.0	0.0	0.5
2010	2	0.0	4.2	0.6	0.0	0.0	0.6
2010	3	0.0	5.1	0.7	0.0	0.0	0.7
2010	4	0.0	4.7	0.7	0.0	0.0	0.7
2010	5	0.1	10.7	1.6	0.0	0.0	1.5
2010	6	0.1	13.8	2.0	0.0	0.0	1.9
2010	7	0.1	7.0	1.0	0.0	0.0	1.0
2010	8	0.1	9.8	1.4	0.0	0.0	1.4
2010	9	0.0	4.9	0.7	0.0	0.0	0.7
2010	10	0.1	8.1	1.2	0.0	0.0	1.1
2010	11	0.0	5.6	0.8	0.0	0.0	0.8
2010	12	0.0	5.0	0.7	0.0	0.0	0.7
2011	1	0.0	3.9	0.6	0.0	0.0	0.5
2011	2	0.0	4.0	0.6	0.0	0.0	0.6
2011	3	0.0	5.3	0.8	0.0	0.0	0.7
2011	4	0.0	4.3	0.6	0.0	0.0	0.6
2011	5	0.0	4.6	0.7	0.0	0.0	0.6
2011	6	0.1	13.0	1.9	0.0	0.0	1.8
2011	7	0.1	12.3	1.8	0.0	0.0	1.7
2011	8	0.1	17.3	2.5	0.0	0.0	2.4
2011	9	0.1	9.7	1.4	0.0	0.0	1.3
2011	10	0.1	5.9	0.9	0.0	0.0	0.8
2011	11	0.0	5.4	0.8	0.0	0.0	0.7
2011	12	0.1	5.9	0.9	0.0	0.0	0.8
2012	1	0.0	3.6	0.5	0.0	0.0	0.5
2012	2	0.0	3.8	0.6	0.0	0.0	0.5
2012	3	0.0	4.8	0.7	0.0	0.0	0.7
2012	4	0.0	4.2	0.6	0.0	0.0	0.6
2012	5	0.0	3.8	0.6	0.0	0.0	0.5
2012	6	0.1	15.4	2.3	0.0	0.0	2.1
2012	7	0.1	15.8	2.3	0.0	0.0	2.2
2012	8	0.1	11.3	1.7	0.0	0.0	1.6
2012	9	0.1	6.7	1.0	0.0	0.0	0.9
2012	10	0.1	7.3	1.1	0.0	0.0	1.0
2012	11	0.0	5.4	0.8	0.0	0.0	0.7
2012	12	0.1	6.1	0.9	0.0	0.0	0.8
2013	1	0.0	3.7	0.5	0.0	0.0	0.5
2013	2	0.0	3.9	0.6	0.0	0.0	0.5
2013	3	0.0	4.9	0.7	0.0	0.0	0.7
2013	4	0.0	4.4	0.6	0.0	0.0	0.6
2013	5	0.1	9.8	1.4	0.0	0.0	1.3
2013	6	0.1	12.3	1.8	0.0	0.0	1.7
2013	7	0.1	10.8	1.6	0.0	0.0	1.5
2013	8	0.2	17.9	2.6	0.0	0.0	2.5
2013	9	0.0	3.9	0.6	0.0	0.0	0.5
2013	10	0.1	5.9	0.9	0.0	0.0	0.8
2013	11	0.0	5.3	0.8	0.0	0.0	0.7
2013	12	0.1	5.8	0.9	0.0	0.0	0.8

Source: JICA Study Team

Attachment 28：Forecasted Reduced Water Amount (2026) of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (2014 - 2019) (5/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2014	1	0.0	3.6	0.5	0.0	0.0	0.5
2014	2	0.0	3.5	0.5	0.0	0.0	0.5
2014	3	0.0	5.0	0.7	0.0	0.0	0.7
2014	4	0.0	4.8	0.7	0.0	0.0	0.7
2014	5	0.0	2.8	0.4	0.0	0.0	0.4
2014	6	0.1	9.9	1.5	0.0	0.0	1.4
2014	7	0.1	10.0	1.5	0.0	0.0	1.4
2014	8	0.1	8.6	1.3	0.0	0.0	1.2
2014	9	0.0	5.6	0.8	0.0	0.0	0.8
2014	10	0.1	6.2	0.9	0.0	0.0	0.9
2014	11	0.0	5.3	0.8	0.0	0.0	0.7
2014	12	0.1	5.8	0.8	0.0	0.0	0.8
2015	1	0.0	3.5	0.5	0.0	0.0	0.5
2015	2	0.0	3.5	0.5	0.0	0.0	0.5
2015	3	0.0	5.1	0.8	0.0	0.0	0.7
2015	4	0.0	4.2	0.6	0.0	0.0	0.6
2015	5	0.0	2.4	0.3	0.0	0.0	0.3
2015	6	0.2	22.0	3.2	0.0	0.0	3.0
2015	7	0.2	19.6	2.9	0.0	0.0	2.7
2015	8	0.1	12.8	1.9	0.0	0.0	1.8
2015	9	0.1	8.7	1.3	0.0	0.0	1.2
2015	10	0.0	5.1	0.7	0.0	0.0	0.7
2015	11	0.0	4.8	0.7	0.0	0.0	0.7
2015	12	0.0	5.6	0.8	0.0	0.0	0.8
2016	1	0.0	3.3	0.5	0.0	0.0	0.5
2016	2	0.0	3.5	0.5	0.0	0.0	0.5
2016	3	0.0	4.6	0.7	0.0	0.0	0.6
2016	4	0.0	4.4	0.6	0.0	0.0	0.6
2016	5	0.0	5.5	0.8	0.0	0.0	0.8
2016	6	0.1	8.2	1.2	0.0	0.0	1.1
2016	7	0.1	15.6	2.3	0.0	0.0	2.1
2016	8	0.1	6.7	1.0	0.0	0.0	0.9
2016	9	0.0	4.5	0.7	0.0	0.0	0.6
2016	10	0.1	8.3	1.2	0.0	0.0	1.1
2016	11	0.0	4.9	0.7	0.0	0.0	0.7
2016	12	0.1	6.0	0.9	0.0	0.0	0.8
2017	1	0.0	4.0	0.6	0.0	0.0	0.5
2017	2	0.0	3.9	0.6	0.0	0.0	0.5
2017	3	0.0	5.7	0.8	0.0	0.0	0.8
2017	4	0.1	6.2	0.9	0.0	0.0	0.8
2017	5	0.0	2.8	0.4	0.0	0.0	0.4
2017	6	0.1	7.6	1.1	0.0	0.0	1.0
2017	7	0.2	20.1	2.9	0.0	0.0	2.8
2017	8	0.1	7.5	1.1	0.0	0.0	1.0
2017	9	0.1	7.3	1.1	0.0	0.0	1.0
2017	10	0.0	4.4	0.6	0.0	0.0	0.6
2017	11	0.0	5.4	0.8	0.0	0.0	0.7
2017	12	0.0	5.4	0.8	0.0	0.0	0.7
2018	1	0.0	3.4	0.5	0.0	0.0	0.5
2018	2	0.0	3.6	0.5	0.0	0.0	0.5
2018	3	0.0	4.8	0.7	0.0	0.0	0.7
2018	4	0.0	4.7	0.7	0.0	0.0	0.6
2018	5	0.0	3.0	0.4	0.0	0.0	0.4
2018	6	0.1	13.8	2.0	0.0	0.0	1.9
2018	7	0.2	17.5	2.6	0.0	0.0	2.4
2018	8	0.1	8.9	1.3	0.0	0.0	1.2
2018	9	0.1	6.6	1.0	0.0	0.0	0.9
2018	10	0.1	7.1	1.0	0.0	0.0	1.0
2018	11	0.0	5.3	0.8	0.0	0.0	0.7
2018	12	0.1	5.9	0.9	0.0	0.0	0.8
2019	1	0.0	3.7	0.5	0.0	0.0	0.5
2019	2	0.0	3.7	0.5	0.0	0.0	0.5
2019	3	0.0	4.8	0.7	0.0	0.0	0.7
2019	4	0.0	5.0	0.7	0.0	0.0	0.7
2019	5	0.0	2.5	0.4	0.0	0.0	0.3
2019	6	0.0	3.5	0.5	0.0	0.0	0.5
2019	7	0.1	13.3	1.9	0.0	0.0	1.8
2019	8	0.1	6.2	0.9	0.0	0.0	0.8
2019	9	0.1	9.9	1.5	0.0	0.0	1.4
2019	10	0.1	7.1	1.0	0.0	0.0	1.0
2019	11	0.0	4.6	0.7	0.0	0.0	0.6
2019	12	0.1	6.2	0.9	0.0	0.0	0.9

Source: JICA Study Team

Attachment 29：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1966 - 1971) (1/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1966	1	0.0	0.0	0.0	0.0	2.4	4.8	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1966	2	0.0	0.0	0.0	0.0	2.6	5.2	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.5
1966	3	0.0	0.0	0.0	0.0	3.7	7.2	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1966	4	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.4	0.6
1966	5	0.0	0.0	0.0	0.0	2.4	4.7	3.6	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1966	6	0.0	0.0	0.0	0.0	5.9	11.6	8.8	9.7	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.2	1.0
1966	7	0.0	0.0	0.0	0.0	5.6	11.1	8.5	9.3	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.1	0.0	0.8	2.1	1.0
1966	8	0.0	0.0	0.0	0.0	6.9	13.6	10.3	11.3	0.8	1.3	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.6	1.2	1.2	2.5	6.6	0.9	1.1	1.1	0.6	0.1	0.0	4.8	3.8	8.4	3.7	0.0	1.0	2.5	1.2
1966	9	0.0	0.0	0.0	0.0	3.0	6.0	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
1966	10	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.3	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1966	11	0.0	0.0	0.0	0.0	3.6	7.2	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1966	12	0.0	0.0	0.0	0.0	3.8	7.6	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1967	1	0.0	0.0	0.0	0.0	2.4	4.7	3.6	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1967	2	0.0	0.0	0.0	0.0	2.6	5.2	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.5
1967	3	0.0	0.0	0.0	0.0	3.6	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1967	4	0.0	0.0	0.0	0.0	3.4	6.8	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1967	5	0.0	0.0	0.0	0.0	1.6	3.2	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1967	6	0.0	0.0	0.0	0.0	1.6	3.2	2.4	2.7	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.3	0.3	0.6	1.5	0.2	0.3	0.3	0.1	0.0	0.0	1.1	0.9	2.0	0.9	0.0	0.2	0.6	0.3
1967	7	0.0	0.0	0.0	0.0	5.0	10.0	7.6	8.3	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.7	0.0	0.7	1.9	0.9
1967	8	0.0	0.0	0.0	0.0	5.7	11.4	8.6	9.5	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.5	0.7	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.1	3.1	0.0	0.8	2.1	1.0
1967	9	0.0	0.0	0.0	0.0	3.2	6.3	4.8	5.3	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.5
1967	10	0.0	0.0	0.0	0.0	4.1	8.1	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1967	11	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1967	12	0.0	0.0	0.0	0.0	4.4	8.6	6.5	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1968	1	0.0	0.0	0.0	0.0	2.5	4.9	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1968	2	0.0	0.0	0.0	0.0	2.7	5.3	4.0	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1968	3	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1968	4	0.0	0.0	0.0	0.0	3.5	6.9	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1968	5	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.1	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1968	6	0.0	0.0	0.0	0.0	5.7	11.3	8.6	9.5	0.7	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.0	5.5	0.7	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.0	3.1	0.0	0.8	2.1	1.0
1968	7	0.0	0.0	0.0	0.0	11.5	22.8	17.3	19.1	1.3	2.2	0.0	0.1	1.2	1.1	0.0	0.1	0.0	0.0	1.5	3.1	4.4	2.0	2.0	4.1	11.0	1.5	1.9	1.9	1.1	0.1	0.0	8.0	6.4	14.2	6.3	0.0	1.7	4.2	2.0
1968	8	0.0	0.0	0.0	0.0	7.1	14.0	10.6	11.7	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.7	0.9	1.1	1.2	0.7	0.1	0.0	4.9	3.9	8.7	3.8	0.0	1.0	2.6	1.2
1968	9	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.1	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1968	10	0.0	0.0	0.0	0.0	3.1	6.2	4.7	5.2	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.4	1.2	0.5
1968	11	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1968	12	0.0	0.0	0.0	0.0	4.4	8.6	6.6	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1969	1	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.8	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
1969	2	0.0	0.0	0.0	0.0	2.6	5.1	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1969	3	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1969	4	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1969	5	0.0	0.0	0.0	0.0	7.2	14.3	10.8	11.9	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.8	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.9	3.9	0.0	1.0	2.7	1.2
1969	6	0.0	0.0	0.0	0.0	1.4	2.8	2.2	2.4	0.2	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.4	0.5	0.2	0.3	0.5	1.4	0.2	0.2	0.2	0.1	0.0	0.0	1.0	0.8	1.8	0.8	0.0	0.2	0.5	0.2
1969	7	0.0	0.0	0.0	0.0	3.6	7.1	5.4	6.0	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1969	8	0.0	0.0	0.0	0.0	9.5	18.9	14.3	15.8	1.1	1.8	0.0	0.1	1.0	0.9	0.0	0.1	0.0	0.0	1.3	2.6	3.6	1.6	1.7	3.4	9.1	1.2	1.5	1.6	0.9	0.1	0.0	6.6	5.3	11.7	5.2	0.0	1.4	3.5	1.6
1969	9	0.0	0.0	0.0	0.0	3.6	7.2	5.4	6.0	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1969	10	0.0	0.0	0.0	0.0	4.1	8.1	6.2	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.2	0.0	0.6	1.5	0.7
1969	11	0.0	0.0	0.0	0.0	3.3	6.6	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1969	12	0.0	0.0	0.0	0.0	4.3	8.6	6.5	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.6	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.4	0.0	0.6	1.6	0.7
1970	1	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1970	2	0.0	0.0	0.0	0.0	2.4	4.8	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1970	3	0.0	0.0	0.0	0.0	3.7	7.3	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.4	0.6
1970	4	0.0	0.0	0.0	0.0	3.5	6.9	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1970	5	0.0	0.0	0.0	0.0	1.9	3.7	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1970	6	0.0	0.0	0.0	0.0	3.0	5.9	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1970	7	0.0	0.0	0.0	0.0	14.0	27.7	21.0	23.2	1.6	2.7	0.0	0.1	1.5	1.3	0.0	0.1	0.0	0.0	1.8	3.8	5.3	2.4	2.5	5.0	13.4	1.8	2.3	2.3	1.3	0.1	0.0	9.7	7.7	17.2	7.6	0.0	2.0	5.2	2.4
1970	8	0.0	0.0	0.0	0.0	5.9	11.7	8.9	9.8	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.7	0.8	1.0	1.0	0.5	0.1	0.0	4.1	3.3	7.3	3.2	0.0	0.9	2.2	1.0
1970	9	0.0	0.0	0.0	0.0	3.0	6.0	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
1970	10	0.0	0.0	0.0	0.0	3.1	6.1	4.6	5.1	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1970	11	0.0	0.0	0.0	0.0	3.0	6.0	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1970	12	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.3	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1971	1	0.0	0.0	0.0	0.0	2.5	4.9	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1971	2	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1971	3	0.0	0.0	0.0	0.0	3.7	7.3	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.4	0.6
1971	4	0.0	0.0	0.0	0.0	3.3	6.4	4.9	5.4	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1971	5	0.0	0.0	0.0	0.0	2.0	3.9	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
1971	6	0.0	0.0	0.0	0.0	7.6	15.0	11.4	12.6	0.9	1.5	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.1	2.9	1.3	1.3	2.7	7.3	1.0	1.2	1.3	0.7	0.1	0.0	5.3	4.2	9.3	4.1	0.0	1.1	2.8	1.3
1971	7	0.0	0.0	0.0	0.0	4.7	9.4	7.1	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
1971	8	0.0	0.0	0.0	0.0	5.9	11.6	8.8	9.7	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.2	1.0
1971	9	0.0	0.0	0.0	0.0	3.2	6.3	4.8	5.2	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.5	1.2	0.5
1971	10	0.0	0.0	0.0	0.0	4.1	8.0	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1971	11	0.0	0.0	0.0	0.0	3.3	6.6	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1971	12	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.3	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8

Source: JICA Study Team

Attachment 29：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1972 - 1977) (2/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1972	1	0.0	0.0	0.0	0.0	2.5	4.9	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1972	2	0.0	0.0	0.0	0.0	2.6	5.1	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.4
1972	3	0.0	0.0	0.0	0.0	3.7	7.3	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.4	0.6
1972	4	0.0	0.0	0.0	0.0	3.5	6.9	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1972	5	0.0	0.0	0.0	0.0	1.9	3.7	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1972	6	0.0	0.0	0.0	0.0	4.9	9.8	7.4	8.2	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.9	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.1	2.7	0.0	0.7	1.8	0.9
1972	7	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1972	8	0.0	0.0	0.0	0.0	5.3	10.5	8.0	8.8	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	2.0	0.9
1972	9	0.0	0.0	0.0	0.0	3.9	7.7	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1972	10	0.0	0.0	0.0	0.0	4.3	8.4	6.4	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.3	5.2	2.3	0.0	0.6	1.6	0.7
1972	11	0.0	0.0	0.0	0.0	3.9	7.7	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
1972	12	0.0	0.0	0.0	0.0	4.4	8.8	6.7	7.3	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.5	2.4	0.0	0.6	1.6	0.8
1973	1	0.0	0.0	0.0	0.0	2.5	4.9	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1973	2	0.0	0.0	0.0	0.0	2.7	5.3	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	1.0	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.4	0.0	0.4	1.0	0.5
1973	3	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1973	4	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.9	4.1	1.8	0.0	0.5	1.2	0.6
1973	5	0.0	0.0	0.0	0.0	4.1	8.2	6.2	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1973	6	0.0	0.0	0.0	0.0	5.0	9.8	7.5	8.2	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.5	2.7	6.1	2.7	0.0	0.7	1.8	0.9
1973	7	0.0	0.0	0.0	0.0	6.7	13.3	10.1	11.1	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.6	1.2	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.3	3.7	0.0	1.0	2.5	1.2
1973	8	0.0	0.0	0.0	0.0	5.3	10.5	8.0	8.8	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	2.0	0.9
1973	9	0.0	0.0	0.0	0.0	3.4	6.8	5.1	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1973	10	0.0	0.0	0.0	0.0	3.3	6.6	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1973	11	0.0	0.0	0.0	0.0	2.7	5.4	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1973	12	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.1	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.4	0.0	0.6	1.6	0.7
1974	1	0.0	0.0	0.0	0.0	2.4	4.7	3.6	4.0	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1974	2	0.0	0.0	0.0	0.0	2.5	4.9	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1974	3	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
1974	4	0.0	0.0	0.0	0.0	3.3	6.5	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1974	5	0.0	0.0	0.0	0.0	2.6	5.1	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	0.9	0.4
1974	6	0.0	0.0	0.0	0.0	5.0	9.8	7.4	8.2	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.5	2.7	6.1	2.7	0.0	0.7	1.8	0.9
1974	7	0.0	0.0	0.0	0.0	5.4	10.6	8.1	8.9	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	3.0	6.6	2.9	0.0	0.8	2.0	0.9
1974	8	0.0	0.0	0.0	0.0	6.6	13.0	9.9	10.9	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.6	8.1	3.6	0.0	0.9	2.4	1.1
1974	9	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.3	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1974	10	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.3	0.6
1974	11	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1974	12	0.0	0.0	0.0	0.0	4.3	8.4	6.4	7.1	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.2	2.3	0.0	0.6	1.6	0.7
1975	1	0.0	0.0	0.0	0.0	2.4	4.7	3.6	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1975	2	0.0	0.0	0.0	0.0	2.5	4.9	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1975	3	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
1975	4	0.0	0.0	0.0	0.0	3.8	7.6	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1975	5	0.0	0.0	0.0	0.0	1.9	3.7	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1975	6	0.0	0.0	0.0	0.0	5.6	11.0	8.4	9.2	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.1	6.9	3.0	0.0	0.8	2.1	1.0
1975	7	0.0	0.0	0.0	0.0	7.1	14.1	10.7	11.8	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.8	0.9	1.1	1.2	0.7	0.1	0.0	5.0	3.9	8.8	3.9	0.0	1.0	2.6	1.2
1975	8	0.0	0.0	0.0	0.0	5.6	11.1	8.4	9.3	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.0	0.0	0.8	2.1	1.0
1975	9	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1975	10	0.0	0.0	0.0	0.0	4.5	8.9	6.8	7.5	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.1	2.5	5.5	2.5	0.0	0.6	1.7	0.8
1975	11	0.0	0.0	0.0	0.0	3.1	6.1	4.6	5.1	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1975	12	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.1	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.4	0.0	0.6	1.6	0.7
1976	1	0.0	0.0	0.0	0.0	2.4	4.7	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1976	2	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1976	3	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1976	4	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1976	5	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.9	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1976	6	0.0	0.0	0.0	0.0	9.6	19.0	14.4	15.9	1.1	1.8	0.0	0.1	1.0	0.9	0.0	0.1	0.0	0.0	1.3	2.6	3.7	1.7	1.7	3.4	9.2	1.2	1.5	1.6	0.9	0.1	0.0	6.7	5.3	11.8	5.2	0.0	1.4	3.5	1.7
1976	7	0.0	0.0	0.0	0.0	8.6	17.0	12.9	14.2	1.0	1.7	0.0	0.1	0.9	0.8	0.0	0.1	0.0	0.0	1.1	2.3	3.3	1.5	1.5	3.1	8.2	1.1	1.4	1.4	0.8	0.1	0.0	6.0	4.7	10.6	4.7	0.0	1.2	3.2	1.5
1976	8	0.0	0.0	0.0	0.0	6.5	12.8	9.7	10.7	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.8	2.5	1.1	1.1	2.3	6.2	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.6	7.9	3.5	0.0	0.9	2.4	1.1
1976	9	0.0	0.0	0.0	0.0	4.6	9.0	6.8	7.5	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
1976	10	0.0	0.0	0.0	0.0	4.2	8.3	6.3	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1976	11	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1976	12	0.0	0.0	0.0	0.0	4.3	8.6	6.5	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.6	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.4	0.0	0.6	1.6	0.7
1977	1	0.0	0.0	0.0	0.0	2.2	4.4	3.4	3.7	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1977	2	0.0	0.0	0.0	0.0	2.4	4.7	3.5	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1977	3	0.0	0.0	0.0	0.0	3.6	7.2	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1977	4	0.0	0.0	0.0	0.0	4.8	9.4	7.2	7.9	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.8	0.8
1977	5	0.0	0.0	0.0	0.0	2.8	5.5	4.2	4.6	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
1977	6	0.0	0.0	0.0	0.0	5.5	10.9	8.3	9.1	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.8	3.0	0.0	0.8	2.0	0.9
1977	7	0.0	0.0	0.0	0.0	5.7	11.3	8.6	9.4	0.7	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.6	2.2	1.0	1.0	2.0	5.5	0.7	0.9	1.0	0.5	0.1	0.0	4.0	3.1	7.0	3.1	0.0	0.8	2.1	1.0
1977	8	0.0	0.0	0.0	0.0	7.4	14.7	11.2	12.3	0.9	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.7	7.1	1.0	1.2	1.2	0.7	0.1	0.0	5.2	4.1	9.1	4.0	0.0	1.1	2.7	1.3
1977	9	0.0	0.0	0.0	0.0	3.2	6.3	4.8	5.3	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
1977	10	0.0	0.0	0.0	0.0	4.1	8.2	6.2	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1977	11	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1977	12	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.1	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.4	0.0	0.6	1.6	0.7

Source: JICA Study Team

Attachment 29：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1978 - 1983) (3/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1978	1	0.0	0.0	0.0	0.0	2.4	4.7	3.5	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1978	2	0.0	0.0	0.0	0.0	2.6	5.1	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1978	3	0.0	0.0	0.0	0.0	3.6	7.1	5.4	6.0	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1978	4	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1978	5	0.0	0.0	0.0	0.0	4.5	9.0	6.8	7.5	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
1978	6	0.0	0.0	0.0	0.0	7.8	15.5	11.7	12.9	0.9	1.5	0.0	0.1	0.8	0.8	0.0	0.0	0.0	0.0	1.0	2.1	3.0	1.3	1.4	2.8	7.5	1.0	1.3	1.3	0.7	0.1	0.0	5.4	4.3	9.6	4.3	0.0	1.1	2.9	1.3
1978	7	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1978	8	0.0	0.0	0.0	0.0	7.6	15.1	11.5	12.6	0.9	1.5	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.1	2.9	1.3	1.3	2.7	7.3	1.0	1.2	1.3	0.7	0.1	0.0	5.3	4.2	9.4	4.2	0.0	1.1	2.8	1.3
1978	9	0.0	0.0	0.0	0.0	5.1	10.0	7.6	8.4	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.8	0.0	0.7	1.9	0.9
1978	10	0.0	0.0	0.0	0.0	4.2	8.3	6.3	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1978	11	0.0	0.0	0.0	0.0	3.9	7.7	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1978	12	0.0	0.0	0.0	0.0	4.4	8.6	6.6	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1979	1	0.0	0.0	0.0	0.0	2.4	4.7	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1979	2	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1979	3	0.0	0.0	0.0	0.0	3.7	7.3	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.4	0.6
1979	4	0.0	0.0	0.0	0.0	3.4	6.8	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1979	5	0.0	0.0	0.0	0.0	2.3	4.5	3.4	3.7	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1979	6	0.0	0.0	0.0	0.0	5.7	11.3	8.5	9.4	0.7	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.6	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	4.0	3.1	7.0	3.1	0.0	0.8	2.1	1.0
1979	7	0.0	0.0	0.0	0.0	7.8	15.5	11.8	13.0	0.9	1.5	0.0	0.1	0.8	0.8	0.0	0.0	0.0	0.0	1.0	2.1	3.0	1.4	1.4	2.8	7.5	1.0	1.3	1.3	0.7	0.1	0.0	5.5	4.3	9.6	4.3	0.0	1.1	2.9	1.4
1979	8	0.0	0.0	0.0	0.0	6.6	13.1	10.0	11.0	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.3	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.7	8.2	3.6	0.0	1.0	2.4	1.1
1979	9	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.1	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.4	0.0	0.6	1.6	0.7
1979	10	0.0	0.0	0.0	0.0	4.0	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1979	11	0.0	0.0	0.0	0.0	3.1	6.1	4.6	5.1	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1979	12	0.0	0.0	0.0	0.0	4.0	7.9	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1980	1	0.0	0.0	0.0	0.0	2.3	4.5	3.4	3.8	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
1980	2	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.8	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1980	3	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1980	4	0.0	0.0	0.0	0.0	3.6	7.1	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1980	5	0.0	0.0	0.0	0.0	7.0	13.8	10.5	11.5	0.8	1.3	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.7	0.9	1.1	1.2	0.6	0.1	0.0	4.9	3.8	8.6	3.8	0.0	1.0	2.6	1.2
1980	6	0.0	0.0	0.0	0.0	4.8	9.4	7.2	7.9	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.8	0.8
1980	7	0.0	0.0	0.0	0.0	10.9	21.6	16.4	18.1	1.3	2.1	0.0	0.1	1.1	1.1	0.0	0.1	0.0	0.0	1.4	3.0	4.2	1.9	1.9	3.9	10.5	1.4	1.8	1.8	1.0	0.1	0.0	7.6	6.0	13.4	6.0	0.0	1.6	4.0	1.9
1980	8	0.0	0.0	0.0	0.0	7.4	14.6	11.1	12.2	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.6	7.1	1.0	1.2	1.2	0.7	0.1	0.0	5.2	4.1	9.1	4.0	0.0	1.1	2.7	1.3
1980	9	0.0	0.0	0.0	0.0	3.2	6.3	4.8	5.3	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
1980	10	0.0	0.0	0.0	0.0	3.9	7.7	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1980	11	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.1	0.0	0.5	1.4	0.7
1980	12	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.1	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1981	1	0.0	0.0	0.0	0.0	2.4	4.7	3.5	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1981	2	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1981	3	0.0	0.0	0.0	0.0	4.6	9.0	6.8	7.5	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.7	1.7	0.8
1981	4	0.0	0.0	0.0	0.0	3.0	5.8	4.4	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1981	5	0.0	0.0	0.0	0.0	4.1	8.1	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1981	6	0.0	0.0	0.0	0.0	3.7	7.3	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
1981	7	0.0	0.0	0.0	0.0	3.1	6.1	4.6	5.1	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1981	8	0.0	0.0	0.0	0.0	8.0	15.9	12.1	13.3	0.9	1.5	0.0	0.1	0.8	0.8	0.0	0.1	0.0	0.0	1.1	2.2	3.1	1.4	1.4	2.9	7.7	1.0	1.3	1.3	0.7	0.1	0.0	5.6	4.4	9.9	4.4	0.0	1.2	3.0	1.4
1981	9	0.0	0.0	0.0	0.0	4.9	9.6	7.3	8.0	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	6.0	2.6	0.0	0.7	1.8	0.8
1981	10	0.0	0.0	0.0	0.0	4.3	8.5	6.4	7.1	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1981	11	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
1981	12	0.0	0.0	0.0	0.0	4.3	8.6	6.5	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.4	0.0	0.6	1.6	0.7
1982	1	0.0	0.0	0.0	0.0	2.4	4.8	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1982	2	0.0	0.0	0.0	0.0	2.4	4.8	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1982	3	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
1982	4	0.0	0.0	0.0	0.0	3.5	6.8	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1982	5	0.0	0.0	0.0	0.0	1.8	3.6	2.7	3.0	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.7	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.2	1.0	0.0	0.3	0.7	0.3
1982	6	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.2	0.6
1982	7	0.0	0.0	0.0	0.0	2.7	5.4	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1982	8	0.0	0.0	0.0	0.0	5.7	11.3	8.6	9.5	0.7	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.6	2.2	1.0	1.0	2.0	5.5	0.7	0.9	1.0	0.5	0.1	0.0	4.0	3.1	7.0	3.1	0.0	0.8	2.1	1.0
1982	9	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1982	10	0.0	0.0	0.0	0.0	4.3	8.4	6.4	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.3	5.2	2.3	0.0	0.6	1.6	0.7
1982	11	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
1982	12	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.4	0.0	0.6	1.6	0.7
1983	1	0.0	0.0	0.0	0.0	2.4	4.7	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1983	2	0.0	0.0	0.0	0.0	2.5	4.9	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1983	3	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1983	4	0.0	0.0	0.0	0.0	3.2	6.4	4.9	5.4	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1983	5	0.0	0.0	0.0	0.0	4.8	9.6	7.3	8.0	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	5.9	2.6	0.0	0.7	1.8	0.8
1983	6	0.0	0.0	0.0	0.0	3.1	6.1	4.6	5.1	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1983	7	0.0	0.0	0.0	0.0	5.5	10.9	8.3	9.2	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.0	6.8	3.0	0.0	0.8	2.0	1.0
1983	8	0.0	0.0	0.0	0.0	8.3	16.3	12.4	13.7	0.9	1.6	0.0	0.1	0.9	0.8	0.0	0.1	0.0	0.0	1.1	2.3	3.2	1.4	1.5	3.0	7.9	1.1	1.3	1.4	0.8	0.1	0.0	5.8	4.6	10.2	4.5	0.0	1.2	3.0	1.4
1983	9	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1983	10	0.0	0.0	0.0	0.0	3.0	6.0	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1983	11	0.0	0.0	0.0	0.0	3.0	5.8	4.4	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1983	12	0.0	0.0	0.0	0.0	4.2	8.3	6.3	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.6	0.7

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 29：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1984 - 1989) (4/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1984	1	0.0	0.0	0.0	0.0	2.2	4.4	3.4	3.7	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1984	2	0.0	0.0	0.0	0.0	2.6	5.0	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1984	3	0.0	0.0	0.0	0.0	3.6	7.1	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1984	4	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1984	5	0.0	0.0	0.0	0.0	6.9	13.7	10.4	11.4	0.8	1.3	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.6	1.2	1.2	2.5	6.6	0.9	1.1	1.2	0.6	0.1	0.0	4.8	3.8	8.5	3.8	0.0	1.0	2.5	1.2
1984	6	0.0	0.0	0.0	0.0	4.9	9.8	7.4	8.2	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.1	2.7	0.0	0.7	1.8	0.9
1984	7	0.0	0.0	0.0	0.0	4.0	7.8	5.9	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1984	8	0.0	0.0	0.0	0.0	5.3	10.5	8.0	8.8	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.6	2.9	0.0	0.8	2.0	0.9
1984	9	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.3	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1984	10	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1984	11	0.0	0.0	0.0	0.0	3.7	7.3	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.4	0.6
1984	12	0.0	0.0	0.0	0.0	4.4	8.6	6.5	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1985	1	0.0	0.0	0.0	0.0	2.4	4.8	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1985	2	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1985	3	0.0	0.0	0.0	0.0	3.6	7.1	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1985	4	0.0	0.0	0.0	0.0	3.4	6.8	5.1	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1985	5	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.9	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1985	6	0.0	0.0	0.0	0.0	4.5	9.0	6.8	7.5	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.6	1.7	0.8
1985	7	0.0	0.0	0.0	0.0	5.6	11.1	8.4	9.3	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.1	0.0	0.8	2.1	1.0
1985	8	0.0	0.0	0.0	0.0	4.9	9.6	7.3	8.1	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.7	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
1985	9	0.0	0.0	0.0	0.0	3.9	7.7	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1985	10	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.3	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1985	11	0.0	0.0	0.0	0.0	2.9	5.8	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1985	12	0.0	0.0	0.0	0.0	4.2	8.4	6.4	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.3	5.2	2.3	0.0	0.6	1.6	0.7
1986	1	0.0	0.0	0.0	0.0	2.4	4.7	3.5	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1986	2	0.0	0.0	0.0	0.0	2.5	4.9	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1986	3	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1986	4	0.0	0.0	0.0	0.0	4.0	8.0	6.0	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1986	5	0.0	0.0	0.0	0.0	1.7	3.3	2.5	2.8	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	0.9	2.1	0.9	0.0	0.2	0.6	0.3
1986	6	0.0	0.0	0.0	0.0	4.0	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1986	7	0.0	0.0	0.0	0.0	8.6	17.0	12.9	14.2	1.0	1.6	0.0	0.1	0.9	0.8	0.0	0.1	0.0	0.0	1.1	2.3	3.3	1.5	1.5	3.1	8.2	1.1	1.4	1.4	0.8	0.1	0.0	6.0	4.7	10.5	4.7	0.0	1.2	3.2	1.5
1986	8	0.0	0.0	0.0	0.0	7.5	14.9	11.3	12.5	0.9	1.5	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.1	2.9	1.3	1.3	2.7	7.2	1.0	1.2	1.3	0.7	0.1	0.0	5.3	4.2	9.3	4.1	0.0	1.1	2.8	1.3
1986	9	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1986	10	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1986	11	0.0	0.0	0.0	0.0	3.3	6.6	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1986	12	0.0	0.0	0.0	0.0	4.3	8.5	6.4	7.1	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1987	1	0.0	0.0	0.0	0.0	2.1	4.1	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.6	1.1	0.0	0.3	0.8	0.4
1987	2	0.0	0.0	0.0	0.0	2.2	4.4	3.3	3.7	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1987	3	0.0	0.0	0.0	0.0	3.3	6.5	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1987	4	0.0	0.0	0.0	0.0	4.7	9.2	7.0	7.7	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.4	0.6	0.8	0.8	0.4	0.0	0.0	3.2	2.6	5.7	2.5	0.0	0.7	1.7	0.8
1987	5	0.0	0.0	0.0	0.0	1.7	3.4	2.6	2.9	0.2	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.6	1.6	0.2	0.3	0.3	0.2	0.0	0.0	1.2	1.0	2.1	0.9	0.0	0.2	0.6	0.3
1987	6	0.0	0.0	0.0	0.0	4.2	8.4	6.4	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.3	5.2	2.3	0.0	0.6	1.6	0.7
1987	7	0.0	0.0	0.0	0.0	6.9	13.7	10.4	11.4	0.8	1.3	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.6	1.2	1.2	2.5	6.6	0.9	1.1	1.2	0.6	0.1	0.0	4.8	3.8	8.5	3.8	0.0	1.0	2.5	1.2
1987	8	0.0	0.0	0.0	0.0	9.5	18.8	14.3	15.7	1.1	1.8	0.0	0.1	1.0	0.9	0.0	0.1	0.0	0.0	1.2	2.6	3.6	1.6	1.7	3.4	9.1	1.2	1.5	1.6	0.9	0.1	0.0	6.6	5.2	11.7	5.2	0.0	1.4	3.5	1.6
1987	9	0.0	0.0	0.0	0.0	5.8	11.5	8.7	9.6	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.1	1.0
1987	10	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.3	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1987	11	0.0	0.0	0.0	0.0	2.6	5.1	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.4
1987	12	0.0	0.0	0.0	0.0	4.1	8.1	6.1	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.3	5.0	2.2	0.0	0.6	1.5	0.7
1988	1	0.0	0.0	0.0	0.0	2.4	4.7	3.5	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1988	2	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1988	3	0.0	0.0	0.0	0.0	3.3	6.6	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1988	4	0.0	0.0	0.0	0.0	3.0	5.9	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
1988	5	0.0	0.0	0.0	0.0	4.0	7.9	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1988	6	0.0	0.0	0.0	0.0	8.3	16.5	12.5	13.8	1.0	1.6	0.0	0.1	0.9	0.8	0.0	0.1	0.0	0.0	1.1	2.3	3.2	1.4	1.5	3.0	8.0	1.1	1.3	1.4	0.8	0.1	0.0	5.8	4.6	10.3	4.5	0.0	1.2	3.1	1.4
1988	7	0.0	0.0	0.0	0.0	7.4	14.7	11.2	12.3	0.9	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.8	1.3	1.3	2.7	7.1	1.0	1.2	1.2	0.7	0.1	0.0	5.2	4.1	9.2	4.1	0.0	1.1	2.7	1.3
1988	8	0.0	0.0	0.0	0.0	6.9	13.6	10.3	11.4	0.8	1.3	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.6	1.2	1.2	2.5	6.6	0.9	1.1	1.1	0.6	0.1	0.0	4.8	3.8	8.5	3.7	0.0	1.0	2.5	1.2
1988	9	0.0	0.0	0.0	0.0	3.2	6.3	4.8	5.3	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.5
1988	10	0.0	0.0	0.0	0.0	4.1	8.1	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1988	11	0.0	0.0	0.0	0.0	3.4	6.6	5.0	5.6	0.4	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.9	4.1	1.8	0.0	0.5	1.2	0.6
1988	12	0.0	0.0	0.0	0.0	4.1	8.1	6.2	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.2	0.0	0.6	1.5	0.7
1989	1	0.0	0.0	0.0	0.0	2.2	4.5	3.4	3.7	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1989	2	0.0	0.0	0.0	0.0	2.4	4.8	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.4	0.9	0.4
1989	3	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1989	4	0.0	0.0	0.0	0.0	4.2	8.4	6.3	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.6	0.7
1989	5	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.9	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1989	6	0.0	0.0	0.0	0.0	2.6	5.1	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.4
1989	7	0.0	0.0	0.0	0.0	9.0	17.8	13.5	14.9	1.0	1.7	0.0	0.1	0.9	0.9	0.0	0.1	0.0	0.0	1.2	2.4	3.4	1.5	1.6	3.2	8.6	1.2	1.5	1.5	0.8	0.1	0.0	6.3	5.0	11.1	4.9	0.0	1.3	3.3	1.6
1989	8	0.0	0.0	0.0	0.0	6.7	13.3	10.1	11.1	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.6	1.2	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.3	3.7	0.0	1.0	2.5	1.2
1989	9	0.0	0.0	0.0	0.0	4.5	9.0	6.8	7.5	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.6	2.5	0.0	0.6	1.7	0.8
1989	10	0.0	0.0	0.0	0.0	6.2	12.2	9.3	10.2	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.3	1.1
1989	11	0.0	0.0	0.0	0.0	3.3	6.5	4.9	5.4	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1989	12	0.0	0.0	0.0	0.0	4.3	8.5	6.4	7.1	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7

Source: JICA Study Team

Attachment 29：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1990 - 1995) (5/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1990	1	0.0	0.0	0.0	0.0	2.2	4.4	3.4	3.7	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1990	2	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.9	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1990	3	0.0	0.0	0.0	0.0	3.1	6.2	4.7	5.2	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.5	1.2	0.5
1990	4	0.0	0.0	0.0	0.0	3.9	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.5	0.7
1990	5	0.0	0.0	0.0	0.0	4.1	8.1	6.2	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.2	0.0	0.6	1.5	0.7
1990	6	0.0	0.0	0.0	0.0	4.3	8.4	6.4	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.3	5.2	2.3	0.0	0.6	1.6	0.7
1990	7	0.0	0.0	0.0	0.0	7.2	14.3	10.9	12.0	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.8	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.9	3.9	0.0	1.0	2.7	1.2
1990	8	0.0	0.0	0.0	0.0	6.7	13.2	10.0	11.0	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.7	8.2	3.6	0.0	1.0	2.5	1.2
1990	9	0.0	0.0	0.0	0.0	2.8	5.6	4.2	4.7	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
1990	10	0.0	0.0	0.0	0.0	3.7	7.2	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
1990	11	0.0	0.0	0.0	0.0	2.8	5.6	4.3	4.7	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
1990	12	0.0	0.0	0.0	0.0	4.2	8.2	6.3	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1991	1	0.0	0.0	0.0	0.0	2.2	4.3	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1991	2	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1991	3	0.0	0.0	0.0	0.0	3.6	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1991	4	0.0	0.0	0.0	0.0	3.1	6.1	4.6	5.1	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1991	5	0.0	0.0	0.0	0.0	6.3	12.5	9.5	10.5	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.5	0.0	0.9	2.3	1.1
1991	6	0.0	0.0	0.0	0.0	6.8	13.4	10.2	11.2	0.8	1.3	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.8	2.6	1.2	1.2	2.4	6.5	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.3	3.7	0.0	1.0	2.5	1.2
1991	7	0.0	0.0	0.0	0.0	5.2	10.3	7.8	8.6	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
1991	8	0.0	0.0	0.0	0.0	6.8	13.4	10.2	11.2	0.8	1.3	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.8	2.6	1.2	1.2	2.4	6.5	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.3	3.7	0.0	1.0	2.5	1.2
1991	9	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
1991	10	0.0	0.0	0.0	0.0	3.6	7.1	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1991	11	0.0	0.0	0.0	0.0	2.6	5.2	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.5	3.3	1.4	0.0	0.4	1.0	0.5
1991	12	0.0	0.0	0.0	0.0	4.2	8.3	6.3	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.2	2.3	0.0	0.6	1.5	0.7
1992	1	0.0	0.0	0.0	0.0	2.2	4.3	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1992	2	0.0	0.0	0.0	0.0	2.2	4.4	3.4	3.7	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
1992	3	0.0	0.0	0.0	0.0	3.6	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1992	4	0.0	0.0	0.0	0.0	3.4	6.8	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1992	5	0.0	0.0	0.0	0.0	2.1	4.1	3.1	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
1992	6	0.0	0.0	0.0	0.0	4.8	9.6	7.3	8.0	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	5.9	2.6	0.0	0.7	1.8	0.8
1992	7	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1992	8	0.0	0.0	0.0	0.0	5.9	11.6	8.8	9.7	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.2	1.0
1992	9	0.0	0.0	0.0	0.0	3.0	6.0	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1992	10	0.0	0.0	0.0	0.0	3.0	6.0	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
1992	11	0.0	0.0	0.0	0.0	3.4	6.8	5.1	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1992	12	0.0	0.0	0.0	0.0	4.1	8.1	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
1993	1	0.0	0.0	0.0	0.0	2.2	4.4	3.3	3.6	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1993	2	0.0	0.0	0.0	0.0	2.9	5.7	4.3	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1993	3	0.0	0.0	0.0	0.0	3.8	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1993	4	0.0	0.0	0.0	0.0	3.1	6.1	4.6	5.1	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1993	5	0.0	0.0	0.0	0.0	5.2	10.3	7.8	8.6	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
1993	6	0.0	0.0	0.0	0.0	8.6	17.0	12.9	14.2	1.0	1.7	0.0	0.1	0.9	0.8	0.0	0.1	0.0	0.0	1.1	2.3	3.3	1.5	1.5	3.1	8.2	1.1	1.4	1.4	0.8	0.1	0.0	6.0	4.7	10.6	4.7	0.0	1.2	3.2	1.5
1993	7	0.0	0.0	0.0	0.0	10.6	20.9	15.9	17.5	1.2	2.0	0.0	0.1	1.1	1.0	0.0	0.1	0.0	0.0	1.4	2.9	4.0	1.8	1.9	3.8	10.1	1.4	1.7	1.8	1.0	0.1	0.0	7.4	5.8	13.0	5.7	0.0	1.5	3.9	1.8
1993	8	0.0	0.0	0.0	0.0	8.1	16.0	12.1	13.4	0.9	1.6	0.0	0.1	0.8	0.8	0.0	0.1	0.0	0.0	1.1	2.2	3.1	1.4	1.4	2.9	7.7	1.0	1.3	1.3	0.7	0.1	0.0	5.6	4.4	9.9	4.4	0.0	1.2	3.0	1.4
1993	9	0.0	0.0	0.0	0.0	3.6	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
1993	10	0.0	0.0	0.0	0.0	3.8	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1993	11	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
1993	12	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.1	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1994	1	0.0	0.0	0.0	0.0	2.4	4.7	3.5	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1994	2	0.0	0.0	0.0	0.0	2.6	5.1	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.4
1994	3	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1994	4	0.0	0.0	0.0	0.0	2.9	5.7	4.3	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.1	0.5
1994	5	0.0	0.0	0.0	0.0	1.8	3.7	2.8	3.1	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.5	0.7	0.3	0.3	0.7	1.8	0.2	0.3	0.3	0.2	0.0	0.0	1.3	1.0	2.3	1.0	0.0	0.3	0.7	0.3
1994	6	0.0	0.0	0.0	0.0	2.9	5.7	4.3	4.7	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.1	0.5
1994	7	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1994	8	0.0	0.0	0.0	0.0	5.3	10.6	8.0	8.8	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.6	2.9	0.0	0.8	2.0	0.9
1994	9	0.0	0.0	0.0	0.0	4.1	8.2	6.2	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.2	0.0	0.6	1.5	0.7
1994	10	0.0	0.0	0.0	0.0	3.6	7.1	5.4	6.0	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
1994	11	0.0	0.0	0.0	0.0	3.4	6.8	5.1	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
1994	12	0.0	0.0	0.0	0.0	4.3	8.5	6.4	7.1	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1995	1	0.0	0.0	0.0	0.0	2.4	4.7	3.5	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1995	2	0.0	0.0	0.0	0.0	2.4	4.8	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1995	3	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1995	4	0.0	0.0	0.0	0.0	3.7	7.2	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
1995	5	0.0	0.0	0.0	0.0	5.8	11.4	8.7	9.6	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.5	0.8	0.9	1.0	0.5	0.1	0.0	4.0	3.2	7.1	3.1	0.0	0.8	2.1	1.0
1995	6	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.6	2.0	0.0	0.5	1.4	0.6
1995	7	0.0	0.0	0.0	0.0	6.7	13.2	10.0	11.0	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.6	3.7	8.2	3.6	0.0	1.0	2.5	1.1
1995	8	0.0	0.0	0.0	0.0	5.3	10.5	8.0	8.8	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.6	2.9	0.0	0.8	2.0	0.9
1995	9	0.0	0.0	0.0	0.0	3.3	6.6	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
1995	10	0.0	0.0	0.0	0.0	3.3	6.4	4.9	5.4	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1995	11	0.0	0.0	0.0	0.0	2.4	4.8	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.4	0.9	0.4
1995	12	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.1	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7

Source: JICA Study Team

Attachment 29：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (1996 - 2001) (6/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
1996	1	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
1996	2	0.0	0.0	0.0	0.0	2.7	5.4	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1996	3	0.0	0.0	0.0	0.0	4.8	9.5	7.2	8.0	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	5.9	2.6	0.0	0.7	1.8	0.8
1996	4	0.0	0.0	0.0	0.0	3.2	6.3	4.8	5.2	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.5	1.2	0.5
1996	5	0.0	0.0	0.0	0.0	5.0	9.8	7.5	8.2	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.6	0.8	0.8	0.5	0.0	0.0	3.5	2.7	6.1	2.7	0.0	0.7	1.8	0.9
1996	6	0.0	0.0	0.0	0.0	5.1	10.0	7.6	8.4	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.9	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.8	0.0	0.7	1.9	0.9
1996	7	0.0	0.0	0.0	0.0	5.3	10.4	7.9	8.7	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	1.9	0.9
1996	8	0.0	0.0	0.0	0.0	5.0	9.9	7.5	8.3	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.8	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.7	0.0	0.7	1.8	0.9
1996	9	0.0	0.0	0.0	0.0	4.2	8.2	6.2	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1996	10	0.0	0.0	0.0	0.0	4.1	8.2	6.2	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1996	11	0.0	0.0	0.0	0.0	3.0	6.0	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
1996	12	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.1	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
1997	1	0.0	0.0	0.0	0.0	2.4	4.8	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
1997	2	0.0	0.0	0.0	0.0	2.5	4.9	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
1997	3	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1997	4	0.0	0.0	0.0	0.0	3.1	6.1	4.7	5.1	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1997	5	0.0	0.0	0.0	0.0	2.7	5.3	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
1997	6	0.0	0.0	0.0	0.0	5.6	11.0	8.4	9.2	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.1	6.9	3.0	0.0	0.8	2.1	1.0
1997	7	0.0	0.0	0.0	0.0	7.2	14.3	10.8	11.9	0.8	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.8	1.2	1.3	2.6	6.9	0.9	1.2	1.2	0.7	0.1	0.0	5.0	4.0	8.9	3.9	0.0	1.0	2.7	1.2
1997	8	0.0	0.0	0.0	0.0	5.3	10.5	8.0	8.8	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.0	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.6	2.9	0.0	0.8	2.0	0.9
1997	9	0.0	0.0	0.0	0.0	4.9	9.6	7.3	8.0	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	6.0	2.6	0.0	0.7	1.8	0.8
1997	10	0.0	0.0	0.0	0.0	3.9	7.7	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
1997	11	0.0	0.0	0.0	0.0	3.7	7.3	5.6	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
1997	12	0.0	0.0	0.0	0.0	4.2	8.2	6.3	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
1998	1	0.0	0.0	0.0	0.0	2.2	4.4	3.3	3.7	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
1998	2	0.0	0.0	0.0	0.0	2.5	4.9	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
1998	3	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
1998	4	0.0	0.0	0.0	0.0	3.3	6.5	4.9	5.4	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
1998	5	0.0	0.0	0.0	0.0	7.6	15.0	11.4	12.6	0.9	1.5	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.1	2.9	1.3	1.3	2.7	7.3	1.0	1.2	1.3	0.7	0.1	0.0	5.3	4.2	9.3	4.1	0.0	1.1	2.8	1.3
1998	6	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.3	0.6
1998	7	0.0	0.0	0.0	0.0	11.7	23.1	17.5	19.3	1.3	2.2	0.0	0.1	1.2	1.1	0.0	0.1	0.0	0.0	1.5	3.2	4.5	2.0	2.1	4.2	11.2	1.5	1.9	1.9	1.1	0.1	0.0	8.1	6.4	14.4	6.4	0.0	1.7	4.3	2.0
1998	8	0.0	0.0	0.0	0.0	5.5	10.8	8.2	9.0	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	1.0	2.0	5.2	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.7	3.0	0.0	0.8	2.0	0.9
1998	9	0.0	0.0	0.0	0.0	3.2	6.3	4.8	5.3	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
1998	10	0.0	0.0	0.0	0.0	4.3	8.4	6.4	7.1	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.2	2.3	0.0	0.6	1.6	0.7
1998	11	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
1998	12	0.0	0.0	0.0	0.0	4.5	8.9	6.8	7.5	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.8	0.4	0.0	0.0	3.1	2.5	5.6	2.5	0.0	0.6	1.7	0.8
1999	1	0.0	0.0	0.0	0.0	2.6	5.2	3.9	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.5	3.2	1.4	0.0	0.4	1.0	0.5
1999	2	0.0	0.0	0.0	0.0	3.0	5.9	4.4	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
1999	3	0.0	0.0	0.0	0.0	4.0	7.9	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1999	4	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
1999	5	0.0	0.0	0.0	0.0	4.4	8.6	6.5	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
1999	6	0.0	0.0	0.0	0.0	12.2	24.2	18.4	20.3	1.4	2.4	0.0	0.1	1.3	1.2	0.0	0.1	0.0	0.0	1.6	3.3	4.7	2.1	2.2	4.4	11.7	1.6	2.0	2.0	1.1	0.1	0.0	8.5	6.8	15.1	6.7	0.0	1.8	4.5	2.1
1999	7	0.0	0.0	0.0	0.0	6.5	12.8	9.7	10.7	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.8	2.5	1.1	1.1	2.3	6.2	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.6	8.0	3.5	0.0	0.9	2.4	1.1
1999	8	0.0	0.0	0.0	0.0	5.3	10.4	7.9	8.7	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.9	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	1.9	0.9
1999	9	0.0	0.0	0.0	0.0	3.1	6.2	4.7	5.1	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.8	1.7	0.0	0.4	1.1	0.5
1999	10	0.0	0.0	0.0	0.0	3.0	6.0	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
1999	11	0.0	0.0	0.0	0.0	4.0	7.9	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
1999	12	0.0	0.0	0.0	0.0	3.9	7.7	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
2000	1	0.0	0.0	0.0	0.0	2.4	4.8	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
2000	2	0.0	0.0	0.0	0.0	2.4	4.8	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
2000	3	0.0	0.0	0.0	0.0	3.4	6.8	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
2000	4	0.0	0.0	0.0	0.0	3.5	6.9	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2000	5	0.0	0.0	0.0	0.0	7.9	15.6	11.9	13.1	0.9	1.5	0.0	0.1	0.8	0.8	0.0	0.0	0.0	0.0	1.0	2.2	3.0	1.4	1.4	2.8	7.5	1.0	1.3	1.3	0.7	0.1	0.0	5.5	4.4	9.7	4.3	0.0	1.1	2.9	1.4
2000	6	0.0	0.0	0.0	0.0	6.2	12.3	9.3	10.3	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.3	1.1
2000	7	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2000	8	0.0	0.0	0.0	0.0	5.9	11.7	8.9	9.8	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.6	0.8	1.0	1.0	0.5	0.1	0.0	4.1	3.3	7.3	3.2	0.0	0.8	2.2	1.0
2000	9	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
2000	10	0.0	0.0	0.0	0.0	4.9	9.7	7.4	8.1	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.8	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.0	2.7	0.0	0.7	1.8	0.8
2000	11	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.1	1.8	0.0	0.5	1.2	0.6
2000	12	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.3	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2001	1	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2001	2	0.0	0.0	0.0	0.0	2.7	5.4	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2001	3	0.0	0.0	0.0	0.0	3.8	7.6	5.8	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2001	4	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
2001	5	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2001	6	0.0	0.0	0.0	0.0	6.2	12.3	9.4	10.3	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	6.0	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.7	3.4	0.0	0.9	2.3	1.1
2001	7	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2001	8	0.0	0.0	0.0	0.0	5.1	10.2	7.7	8.5	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.8	4.9	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.8	6.3	2.8	0.0	0.7	1.9	0.9
2001	9	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.9	4.1	1.8	0.0	0.5	1.2	0.6
2001	10	0.0	0.0	0.0	0.0	3.2	6.3	4.8	5.3	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.5
2001	11	0.0	0.0	0.0	0.0	3.0	5.9	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
2001	12	0.0	0.0	0.0	0.0	4.5	8.9	6.7	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.7	0.8

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 29：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2002 - 2007) (7/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2002	1	0.0	0.0	0.0	0.0	2.5	4.9	3.7	4.1	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.4	3.0	1.3	0.0	0.4	0.9	0.4
2002	2	0.0	0.0	0.0	0.0	2.8	5.5	4.2	4.6	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2002	3	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2002	4	0.0	0.0	0.0	0.0	3.3	6.5	4.9	5.4	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2002	5	0.0	0.0	0.0	0.0	6.0	11.9	9.0	9.9	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.1	2.2	5.7	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.4	3.3	0.0	0.9	2.2	1.0
2002	6	0.0	0.0	0.0	0.0	2.9	5.7	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2002	7	0.0	0.0	0.0	0.0	9.3	18.5	14.0	15.5	1.1	1.8	0.0	0.1	1.0	0.9	0.0	0.1	0.0	0.0	1.2	2.5	3.6	1.6	1.6	3.3	8.9	1.2	1.5	1.6	0.9	0.1	0.0	6.5	5.2	11.5	5.1	0.0	1.3	3.4	1.6
2002	8	0.0	0.0	0.0	0.0	6.7	13.3	10.1	11.1	0.8	1.3	0.0	0.1	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.6	1.2	1.2	2.4	6.4	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.3	3.7	0.0	1.0	2.5	1.2
2002	9	0.0	0.0	0.0	0.0	3.9	7.7	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
2002	10	0.0	0.0	0.0	0.0	4.0	7.9	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
2002	11	0.0	0.0	0.0	0.0	2.8	5.5	4.2	4.6	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2002	12	0.0	0.0	0.0	0.0	4.3	8.6	6.5	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.6	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.4	0.0	0.6	1.6	0.7
2003	1	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.8	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.9	0.4
2003	2	0.0	0.0	0.0	0.0	2.7	5.3	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2003	3	0.0	0.0	0.0	0.0	3.6	7.1	5.4	6.0	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
2003	4	0.0	0.0	0.0	0.0	3.6	7.2	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2003	5	0.0	0.0	0.0	0.0	3.0	6.0	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
2003	6	0.0	0.0	0.0	0.0	11.9	23.6	17.9	19.7	1.4	2.3	0.0	0.1	1.2	1.1	0.0	0.1	0.0	0.0	1.6	3.2	4.6	2.1	2.1	4.3	11.4	1.5	1.9	2.0	1.1	0.1	0.0	8.3	6.6	14.6	6.5	0.0	1.7	4.4	2.1
2003	7	0.0	0.0	0.0	0.0	2.8	5.6	4.2	4.7	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
2003	8	0.0	0.0	0.0	0.0	6.2	12.2	9.3	10.2	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.3	1.1
2003	9	0.0	0.0	0.0	0.0	4.1	8.0	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
2003	10	0.0	0.0	0.0	0.0	3.9	7.7	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
2003	11	0.0	0.0	0.0	0.0	4.0	8.0	6.1	6.7	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.2	5.0	2.2	0.0	0.6	1.5	0.7
2003	12	0.0	0.0	0.0	0.0	4.1	8.2	6.2	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.2	0.0	0.6	1.5	0.7
2004	1	0.0	0.0	0.0	0.0	2.3	4.5	3.5	3.8	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
2004	2	0.0	0.0	0.0	0.0	2.8	5.4	4.1	4.6	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2004	3	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
2004	4	0.0	0.0	0.0	0.0	2.8	5.6	4.3	4.7	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
2004	5	0.0	0.0	0.0	0.0	2.0	3.9	2.9	3.2	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2004	6	0.0	0.0	0.0	0.0	9.4	18.6	14.1	15.5	1.1	1.8	0.0	0.1	1.0	0.9	0.0	0.1	0.0	0.0	1.2	2.6	3.6	1.6	1.6	3.4	9.0	1.2	1.5	1.6	0.9	0.1	0.0	6.5	5.2	11.5	5.1	0.0	1.3	3.5	1.6
2004	7	0.0	0.0	0.0	0.0	11.8	23.3	17.7	19.5	1.4	2.3	0.0	0.1	1.2	1.1	0.0	0.1	0.0	0.0	1.5	3.2	4.5	2.0	2.1	4.2	11.3	1.5	1.9	2.0	1.1	0.1	0.0	8.2	6.5	14.5	6.4	0.0	1.7	4.4	2.0
2004	8	0.0	0.0	0.0	0.0	6.1	12.1	9.2	10.2	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.3	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.3	0.0	0.9	2.3	1.1
2004	9	0.0	0.0	0.0	0.0	5.4	10.7	8.1	8.9	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.8	3.0	6.6	2.9	0.0	0.8	2.0	0.9
2004	10	0.0	0.0	0.0	0.0	4.3	8.5	6.4	7.1	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
2004	11	0.0	0.0	0.0	0.0	3.9	7.8	5.9	6.5	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.5	0.7
2004	12	0.0	0.0	0.0	0.0	4.5	8.8	6.7	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
2005	1	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2005	2	0.0	0.0	0.0	0.0	2.9	5.6	4.3	4.7	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.6	0.0	0.4	1.1	0.5
2005	3	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2005	4	0.0	0.0	0.0	0.0	3.7	7.2	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2005	5	0.0	0.0	0.0	0.0	2.8	5.6	4.3	4.7	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.5	1.5	0.0	0.4	1.0	0.5
2005	6	0.0	0.0	0.0	0.0	2.2	4.4	3.3	3.6	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2005	7	0.0	0.0	0.0	0.0	3.0	6.0	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
2005	8	0.0	0.0	0.0	0.0	7.1	14.0	10.6	11.7	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.8	0.9	1.1	1.2	0.7	0.1	0.0	4.9	3.9	8.7	3.8	0.0	1.0	2.6	1.2
2005	9	0.0	0.0	0.0	0.0	4.1	8.2	6.2	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
2005	10	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2005	11	0.0	0.0	0.0	0.0	3.2	6.4	4.9	5.4	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2005	12	0.0	0.0	0.0	0.0	4.4	8.8	6.7	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
2006	1	0.0	0.0	0.0	0.0	2.4	4.8	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
2006	2	0.0	0.0	0.0	0.0	2.6	5.1	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.4
2006	3	0.0	0.0	0.0	0.0	3.8	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
2006	4	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2006	5	0.0	0.0	0.0	0.0	7.7	15.2	11.5	12.7	0.9	1.5	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.1	2.9	1.3	1.4	2.8	7.3	1.0	1.2	1.3	0.7	0.1	0.0	5.4	4.2	9.5	4.2	0.0	1.1	2.8	1.3
2006	6	0.0	0.0	0.0	0.0	3.4	6.8	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
2006	7	0.0	0.0	0.0	0.0	5.2	10.3	7.8	8.6	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
2006	8	0.0	0.0	0.0	0.0	6.3	12.5	9.5	10.5	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.3	6.1	0.8	1.0	1.1	0.6	0.1	0.0	4.4	3.5	7.8	3.5	0.0	0.9	2.3	1.1
2006	9	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.3	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2006	10	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
2006	11	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
2006	12	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.1	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
2007	1	0.0	0.0	0.0	0.0	2.2	4.4	3.3	3.7	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2007	2	0.0	0.0	0.0	0.0	2.1	4.2	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.1	0.0	0.3	0.8	0.4
2007	3	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2007	4	0.0	0.0	0.0	0.0	3.0	6.0	4.6	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.7	0.0	0.4	1.1	0.5
2007	5	0.0	0.0	0.0	0.0	3.2	6.4	4.8	5.3	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2007	6	0.0	0.0	0.0	0.0	6.5	12.8	9.7	10.7	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.9	1.8	2.5	1.1	1.1	2.3	6.2	0.8	1.0	1.1	0.6	0.1	0.0	4.5	3.6	8.0	3.5	0.0	0.9	2.4	1.1
2007	7	0.0	0.0	0.0	0.0	7.8	15.4	11.7	12.9	0.9	1.5	0.0	0.1	0.8	0.8	0.0	0.0	0.0	0.0	1.0	2.1	3.0	1.3	1.4	2.8	7.5	1.0	1.3	1.3	0.7	0.1	0.0	5.4	4.3	9.6	4.3	0.0	1.1	2.9	1.3
2007	8	0.0	0.0	0.0	0.0	6.0	11.8	9.0	9.9	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.7	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.3	7.3	3.3	0.0	0.9	2.2	1.0
2007	9	0.0	0.0	0.0	0.0	7.1	14.1	10.7	11.8	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.3	2.6	6.8	0.9	1.2	1.2	0.7	0.1	0.0	5.0	3.9	8.8	3.9	0.0	1.0	2.6	1.2
2007	10	0.0	0.0	0.0	0.0	3.8	7.6	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.6	1.4	0.7
2007	11	0.0	0.0	0.0	0.0	2.9	5.8	4.4	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2007	12	0.0	0.0	0.0	0.0	4.3	8.5	6.4	7.1	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 29：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2008 - 2013) (8/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanaish	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2008	1	0.0	0.0	0.0	0.0	2.2	4.4	3.4	3.7	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.1	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2008	2	0.0	0.0	0.0	0.0	2.6	5.2	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.4
2008	3	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2008	4	0.0	0.0	0.0	0.0	3.7	7.2	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2008	5	0.0	0.0	0.0	0.0	2.6	5.2	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.4
2008	6	0.0	0.0	0.0	0.0	3.0	6.0	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
2008	7	0.0	0.0	0.0	0.0	4.9	9.8	7.4	8.2	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.9	0.9	0.9	1.8	4.7	0.6	0.8	0.8	0.5	0.0	0.0	3.4	2.7	6.1	2.7	0.0	0.7	1.8	0.9
2008	8	0.0	0.0	0.0	0.0	7.8	15.4	11.7	12.9	0.9	1.5	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.1	3.0	1.3	1.4	2.8	7.4	1.0	1.3	1.3	0.7	0.1	0.0	5.4	4.3	9.6	4.2	0.0	1.1	2.9	1.3
2008	9	0.0	0.0	0.0	0.0	4.1	8.2	6.2	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.2	0.0	0.6	1.5	0.7
2008	10	0.0	0.0	0.0	0.0	3.0	6.0	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
2008	11	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2008	12	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.1	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
2009	1	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2009	2	0.0	0.0	0.0	0.0	2.8	5.5	4.1	4.6	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2009	3	0.0	0.0	0.0	0.0	3.6	7.2	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2009	4	0.0	0.0	0.0	0.0	3.6	7.1	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
2009	5	0.0	0.0	0.0	0.0	3.3	6.5	4.9	5.4	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2009	6	0.0	0.0	0.0	0.0	3.5	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2009	7	0.0	0.0	0.0	0.0	7.0	13.9	10.5	11.6	0.8	1.3	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.7	0.9	1.1	1.2	0.6	0.1	0.0	4.9	3.9	8.6	3.8	0.0	1.0	2.6	1.2
2009	8	0.0	0.0	0.0	0.0	7.5	14.9	11.3	12.5	0.9	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.9	1.3	1.3	2.7	7.2	1.0	1.2	1.3	0.7	0.1	0.0	5.2	4.1	9.3	4.1	0.0	1.1	2.8	1.3
2009	9	0.0	0.0	0.0	0.0	3.5	6.8	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2009	10	0.0	0.0	0.0	0.0	5.3	10.4	7.9	8.7	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.7	2.9	6.5	2.9	0.0	0.8	1.9	0.9
2009	11	0.0	0.0	0.0	0.0	3.3	6.5	4.9	5.4	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2009	12	0.0	0.0	0.0	0.0	4.4	8.7	6.6	7.3	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2010	1	0.0	0.0	0.0	0.0	2.4	4.8	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
2010	2	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2010	3	0.0	0.0	0.0	0.0	3.6	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2010	4	0.0	0.0	0.0	0.0	3.3	6.6	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2010	5	0.0	0.0	0.0	0.0	4.8	9.5	7.2	8.0	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.4	2.7	5.9	2.6	0.0	0.7	1.8	0.8
2010	6	0.0	0.0	0.0	0.0	7.2	14.2	10.8	11.9	0.8	1.4	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	2.0	2.7	1.2	1.3	2.6	6.8	0.9	1.2	1.2	0.7	0.1	0.0	5.0	3.9	8.8	3.9	0.0	1.0	2.6	1.2
2010	7	0.0	0.0	0.0	0.0	3.3	6.6	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2010	8	0.0	0.0	0.0	0.0	5.6	11.2	8.5	9.3	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.1	0.0	0.8	2.1	1.0
2010	9	0.0	0.0	0.0	0.0	3.4	6.7	5.0	5.6	0.4	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.9	4.1	1.8	0.0	0.5	1.2	0.6
2010	10	0.0	0.0	0.0	0.0	3.5	6.9	5.2	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2010	11	0.0	0.0	0.0	0.0	3.4	6.6	5.0	5.6	0.4	0.6	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2010	12	0.0	0.0	0.0	0.0	4.2	8.3	6.3	6.9	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	4.0	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.1	2.3	0.0	0.6	1.5	0.7
2011	1	0.0	0.0	0.0	0.0	2.4	4.8	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
2011	2	0.0	0.0	0.0	0.0	2.7	5.3	4.0	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.4	0.2	0.0	0.0	1.9	1.5	3.3	1.5	0.0	0.4	1.0	0.5
2011	3	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.6	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2011	4	0.0	0.0	0.0	0.0	3.3	6.5	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2011	5	0.0	0.0	0.0	0.0	2.3	4.5	3.4	3.8	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.2	2.8	1.2	0.0	0.3	0.8	0.4
2011	6	0.0	0.0	0.0	0.0	5.7	11.2	8.5	9.4	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	7.0	3.1	0.0	0.8	2.1	1.0
2011	7	0.0	0.0	0.0	0.0	5.1	10.0	7.6	8.4	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	1.9	0.9	0.9	1.8	4.9	0.7	0.8	0.8	0.5	0.0	0.0	3.5	2.8	6.2	2.8	0.0	0.7	1.9	0.9
2011	8	0.0	0.0	0.0	0.0	6.3	12.4	9.4	10.4	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	6.0	0.8	1.0	1.0	0.6	0.1	0.0	4.4	3.5	7.7	3.4	0.0	0.9	2.3	1.1
2011	9	0.0	0.0	0.0	0.0	4.6	9.1	6.9	7.6	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.6	4.4	0.6	0.7	0.8	0.4	0.0	0.0	3.2	2.5	5.7	2.5	0.0	0.7	1.7	0.8
2011	10	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.1	0.0	0.5	1.4	0.7
2011	11	0.0	0.0	0.0	0.0	3.9	7.7	5.8	6.4	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.8	2.1	0.0	0.6	1.4	0.7
2011	12	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.4	0.0	0.6	1.6	0.7
2012	1	0.0	0.0	0.0	0.0	2.4	4.7	3.6	4.0	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
2012	2	0.0	0.0	0.0	0.0	2.8	5.6	4.2	4.6	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.7	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.5	3.5	1.5	0.0	0.4	1.0	0.5
2012	3	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
2012	4	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2012	5	0.0	0.0	0.0	0.0	2.4	4.7	3.5	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
2012	6	0.0	0.0	0.0	0.0	9.1	18.1	13.7	15.1	1.0	1.8	0.0	0.1	1.0	0.9	0.0	0.1	0.0	0.0	1.2	2.5	3.5	1.6	1.6	3.3	8.7	1.2	1.5	1.5	0.8	0.1	0.0	6.4	5.0	11.2	5.0	0.0	1.3	3.4	1.6
2012	7	0.0	0.0	0.0	0.0	5.4	10.6	8.1	8.9	0.6	1.0	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	0.9	0.9	1.9	5.1	0.7	0.9	0.9	0.5	0.0	0.0	3.7	3.0	6.6	2.9	0.0	0.8	2.0	0.9
2012	8	0.0	0.0	0.0	0.0	5.5	11.0	8.3	9.2	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.1	6.8	3.0	0.0	0.8	2.0	1.0
2012	9	0.0	0.0	0.0	0.0	3.3	6.6	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2012	10	0.0	0.0	0.0	0.0	6.3	12.4	9.4	10.4	0.7	1.2	0.0	0.0	0.7	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	6.0	0.8	1.0	1.0	0.6	0.1	0.0	4.4	3.5	7.7	3.4	0.0	0.9	2.3	1.1
2012	11	0.0	0.0	0.0	0.0	3.5	6.8	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
2012	12	0.0	0.0	0.0	0.0	4.3	8.6	6.5	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.7	0.8	1.6	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.4	0.0	0.6	1.6	0.7
2013	1	0.0	0.0	0.0	0.0	2.3	4.5	3.4	3.8	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
2013	2	0.0	0.0	0.0	0.0	2.6	5.1	3.9	4.3	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.2	1.4	0.0	0.4	1.0	0.4
2013	3	0.0	0.0	0.0	0.0	3.7	7.2	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2013	4	0.0	0.0	0.0	0.0	3.4	6.8	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
2013	5	0.0	0.0	0.0	0.0	4.8	9.4	7.2	7.9	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.8	0.8
2013	6	0.0	0.0	0.0	0.0	3.2	6.3	4.8	5.3	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
2013	7	0.0	0.0	0.0	0.0	3.0	6.0	4.5	5.0	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.7	1.6	0.0	0.4	1.1	0.5
2013	8	0.0	0.0	0.0	0.0	5.9	11.7	8.8	9.8	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.3	1.0	1.0	2.1	5.6	0.8	1.0	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.2	1.0
2013	9	0.0	0.0	0.0	0.0	5.2	10.3	7.8	8.6	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
2013	10	0.0	0.0	0.0	0.0	3.2	6.3	4.8	5.2	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.0	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.7	3.9	1.7	0.0	0.5	1.2	0.5
2013	11	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
2013	12	0.0	0.0	0.0	0.0	4.3	8.4	6.4	7.0	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.3	5.2	2.3	0.0	0.6	1.6	0.7

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 29：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Karunafuli River Basin (m^3/s) (2014 - 2019) (9/9)

		Karunafuli River Basin																																						
	District	Chattogram																		Rangamati										Bandarban			Khagrachari							
	Upazila	Mirsharai	Sitakunda	D.muring	Panshlaish	Hathazari	FatikChari	Raujan	Rangunia	Boalkhali	Patiya	Chandanais	Bakalia	Bayejid Bostami	Chandgaon	Chittagong Port	Khulshi	Kotwali	Patenga	Sadar	Naniarchar	Kawakhali	Barkal	Juraichari	Longadu	Banghai-chari	Kaptai	Rajesthali	Bilaichari	Sadar	Roangchari	Ruma	Sadar	Panchari	Dighinala	Mohalchari	Matiranga	Ramgarh	Manikchari	Lakshrni-chari
2014	1	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.8	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
2014	2	0.0	0.0	0.0	0.0	2.4	4.8	3.6	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
2014	3	0.0	0.0	0.0	0.0	3.6	7.2	5.5	6.0	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.5	2.0	0.0	0.5	1.3	0.6
2014	4	0.0	0.0	0.0	0.0	3.6	7.0	5.3	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2014	5	0.0	0.0	0.0	0.0	3.8	7.5	5.7	6.3	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.5	0.7	0.7	1.4	3.6	0.5	0.6	0.6	0.4	0.0	0.0	2.7	2.1	4.7	2.1	0.0	0.5	1.4	0.7
2014	6	0.0	0.0	0.0	0.0	6.8	13.4	10.2	11.2	0.8	1.3	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.6	1.2	1.2	2.4	6.5	0.9	1.1	1.1	0.6	0.1	0.0	4.7	3.7	8.4	3.7	0.0	1.0	2.5	1.2
2014	7	0.0	0.0	0.0	0.0	2.1	4.1	3.1	3.4	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.7	2.0	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.5	1.1	0.0	0.3	0.8	0.4
2014	8	0.0	0.0	0.0	0.0	5.6	11.2	8.5	9.3	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.1	0.0	0.8	2.1	1.0
2014	9	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.1	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7
2014	10	0.0	0.0	0.0	0.0	3.9	7.7	5.9	6.5	0.4	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.7	0.5	0.6	0.7	0.4	0.0	0.0	2.7	2.2	4.8	2.1	0.0	0.6	1.4	0.7
2014	11	0.0	0.0	0.0	0.0	3.7	7.3	5.5	6.1	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.0	4.5	2.0	0.0	0.5	1.4	0.6
2014	12	0.0	0.0	0.0	0.0	4.3	8.4	6.4	7.1	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.7	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.2	2.3	0.0	0.6	1.6	0.7
2015	1	0.0	0.0	0.0	0.0	2.6	5.2	4.0	4.4	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.5	0.5	0.9	2.5	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.5	3.3	1.4	0.0	0.4	1.0	0.5
2015	2	0.0	0.0	0.0	0.0	2.7	5.4	4.1	4.5	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.7	1.0	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2015	3	0.0	0.0	0.0	0.0	3.5	6.8	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
2015	4	0.0	0.0	0.0	0.0	2.9	5.7	4.3	4.8	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.0	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2015	5	0.0	0.0	0.0	0.0	2.0	3.9	3.0	3.3	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.3	0.3	0.7	1.9	0.3	0.3	0.3	0.2	0.0	0.0	1.4	1.1	2.4	1.1	0.0	0.3	0.7	0.3
2015	6	0.0	0.0	0.0	0.0	6.2	12.2	9.3	10.2	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.4	1.1	1.1	2.2	5.9	0.8	1.0	1.0	0.6	0.1	0.0	4.3	3.4	7.6	3.4	0.0	0.9	2.3	1.1
2015	7	0.0	0.0	0.0	0.0	11.3	22.5	17.0	18.8	1.3	2.2	0.0	0.1	1.2	1.1	0.0	0.1	0.0	0.0	1.5	3.1	4.3	2.0	2.0	4.1	10.8	1.5	1.8	1.9	1.1	0.1	0.0	7.9	6.3	14.0	6.2	0.0	1.6	4.2	2.0
2015	8	0.0	0.0	0.0	0.0	9.1	18.1	13.7	15.1	1.0	1.8	0.0	0.1	1.0	0.9	0.0	0.1	0.0	0.0	1.2	2.5	3.5	1.6	1.6	3.3	8.7	1.2	1.5	1.5	0.8	0.1	0.0	6.4	5.0	11.2	5.0	0.0	1.3	3.4	1.6
2015	9	0.0	0.0	0.0	0.0	4.8	9.5	7.2	7.9	0.6	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.6	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.9	2.6	0.0	0.7	1.8	0.8
2015	10	0.0	0.0	0.0	0.0	4.4	8.6	6.6	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2015	11	0.0	0.0	0.0	0.0	3.6	7.1	5.4	6.0	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.5	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	2.0	0.0	0.5	1.3	0.6
2015	12	0.0	0.0	0.0	0.0	4.1	8.1	6.2	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.9	2.3	5.0	2.2	0.0	0.6	1.5	0.7
2016	1	0.0	0.0	0.0	0.0	2.2	4.3	3.3	3.6	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.1	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.7	1.2	0.0	0.3	0.8	0.4
2016	2	0.0	0.0	0.0	0.0	2.3	4.5	3.4	3.8	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.2	0.0	0.3	0.8	0.4
2016	3	0.0	0.0	0.0	0.0	3.5	6.9	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2016	4	0.0	0.0	0.0	0.0	3.5	6.8	5.2	5.7	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	0.9	1.3	0.6	0.6	1.2	3.3	0.4	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2016	5	0.0	0.0	0.0	0.0	3.2	6.4	4.8	5.3	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
2016	6	0.0	0.0	0.0	0.0	5.6	11.1	8.4	9.3	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.2	1.0	1.0	2.0	5.4	0.7	0.9	0.9	0.5	0.1	0.0	3.9	3.1	6.9	3.1	0.0	0.8	2.1	1.0
2016	7	0.0	0.0	0.0	0.0	4.5	8.8	6.7	7.4	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.3	0.6	0.7	0.7	0.4	0.0	0.0	3.1	2.5	5.5	2.4	0.0	0.6	1.6	0.8
2016	8	0.0	0.0	0.0	0.0	6.1	12.0	9.1	10.1	0.7	1.2	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.7	2.3	1.0	1.1	2.2	5.8	0.8	1.0	1.0	0.6	0.1	0.0	4.2	3.4	7.5	3.3	0.0	0.9	2.2	1.0
2016	9	0.0	0.0	0.0	0.0	3.6	7.1	5.4	5.9	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.5	2.0	4.4	1.9	0.0	0.5	1.3	0.6
2016	10	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.3	0.6
2016	11	0.0	0.0	0.0	0.0	3.1	6.1	4.6	5.1	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.2	0.5	0.5	1.1	2.9	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.7	3.8	1.7	0.0	0.4	1.1	0.5
2016	12	0.0	0.0	0.0	0.0	4.4	8.6	6.6	7.2	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.7	0.8	0.8	1.6	4.2	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.4	2.4	0.0	0.6	1.6	0.8
2017	1	0.0	0.0	0.0	0.0	2.4	4.8	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
2017	2	0.0	0.0	0.0	0.0	2.4	4.8	3.7	4.0	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	0.9	0.4	0.4	0.9	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	3.0	1.3	0.0	0.3	0.9	0.4
2017	3	0.0	0.0	0.0	0.0	3.3	6.5	5.0	5.5	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.3	1.8	4.1	1.8	0.0	0.5	1.2	0.6
2017	4	0.0	0.0	0.0	0.0	5.2	10.3	7.9	8.7	0.6	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.7	1.4	2.0	0.9	0.9	1.9	5.0	0.7	0.8	0.9	0.5	0.0	0.0	3.6	2.9	6.4	2.8	0.0	0.7	1.9	0.9
2017	5	0.0	0.0	0.0	0.0	2.5	5.0	3.8	4.2	0.3	0.5	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.3	0.7	1.0	0.4	0.4	0.9	2.4	0.3	0.4	0.4	0.2	0.0	0.0	1.8	1.4	3.1	1.4	0.0	0.4	0.9	0.4
2017	6	0.0	0.0	0.0	0.0	13.0	25.8	19.6	21.6	1.5	2.5	0.0	0.1	1.4	1.3	0.0	0.1	0.0	0.0	1.7	3.6	5.0	2.2	2.3	4.7	12.5	1.7	2.1	2.2	1.2	0.1	0.0	9.1	7.2	16.0	7.1	0.0	1.9	4.8	2.2
2017	7	0.0	0.0	0.0	0.0	7.5	14.8	11.3	12.4	0.9	1.4	0.0	0.1	0.8	0.7	0.0	0.0	0.0	0.0	1.0	2.0	2.9	1.3	1.3	2.7	7.2	1.0	1.2	1.3	0.7	0.1	0.0	5.2	4.1	9.2	4.1	0.0	1.1	2.8	1.3
2017	8	0.0	0.0	0.0	0.0	7.0	13.8	10.5	11.5	0.8	1.3	0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.9	1.9	2.7	1.2	1.2	2.5	6.7	0.9	1.1	1.2	0.6	0.1	0.0	4.9	3.8	8.6	3.8	0.0	1.0	2.6	1.2
2017	9	0.0	0.0	0.0	0.0	4.7	9.3	7.0	7.8	0.5	0.9	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.8	2.6	0.0	0.7	1.7	0.8
2017	10	0.0	0.0	0.0	0.0	3.3	6.5	4.9	5.4	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2017	11	0.0	0.0	0.0	0.0	3.5	6.9	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.3	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2017	12	0.0	0.0	0.0	0.0	4.0	7.9	6.0	6.6	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.5	0.7	0.7	1.4	3.8	0.5	0.6	0.7	0.4	0.0	0.0	2.8	2.2	4.9	2.2	0.0	0.6	1.5	0.7
2018	1	0.0	0.0	0.0	0.0	2.1	4.2	3.2	3.5	0.2	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.8	0.4	0.4	0.8	2.0	0.3	0.3	0.4	0.2	0.0	0.0	1.5	1.2	2.6	1.2	0.0	0.3	0.8	0.4
2018	2	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.9	1.3	0.0	0.3	0.9	0.4
2018	3	0.0	0.0	0.0	0.0	3.5	6.9	5.3	5.8	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.5	1.0	1.3	0.6	0.6	1.3	3.4	0.5	0.6	0.6	0.3	0.0	0.0	2.4	1.9	4.3	1.9	0.0	0.5	1.3	0.6
2018	4	0.0	0.0	0.0	0.0	3.2	6.4	4.8	5.3	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2018	5	0.0	0.0	0.0	0.0	3.2	6.3	4.8	5.3	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.5	0.6	1.1	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.2	1.8	3.9	1.7	0.0	0.5	1.2	0.6
2018	6	0.0	0.0	0.0	0.0	11.4	22.5	17.1	18.8	1.3	2.2	0.0	0.1	1.2	1.1	0.0	0.1	0.0	0.0	1.5	3.1	4.3	2.0	2.0	4.1	10.9	1.5	1.8	1.9	1.1	0.1	0.0	7.9	6.3	14.0	6.2	0.0	1.6	4.2	2.0
2018	7	0.0	0.0	0.0	0.0	5.5	10.9	8.3	9.1	0.6	1.1	0.0	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.7	1.5	2.1	1.0	1.0	2.0	5.3	0.7	0.9	0.9	0.5	0.0	0.0	3.9	3.0	6.8	3.0	0.0	0.8	2.0	1.0
2018	8	0.0	0.0	0.0	0.0	5.8	11.5	8.8	9.7	0.7	1.1	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.8	1.6	2.2	1.0	1.0	2.1	5.6	0.8	0.9	1.0	0.5	0.1	0.0	4.1	3.2	7.2	3.2	0.0	0.8	2.2	1.0
2018	9	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
2018	10	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.8	0.0	0.5	1.3	0.6
2018	11	0.0	0.0	0.0	0.0	3.7	7.4	5.6	6.2	0.4	0.7	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.0	1.4	0.6	0.7	1.3	3.6	0.5	0.6	0.6	0.3	0.0	0.0	2.6	2.1	4.6	2.0	0.0	0.5	1.4	0.6
2018	12	0.0	0.0	0.0	0.0	4.1	8.1	6.1	6.8	0.5	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.5	1.1	1.6	0.7	0.7	1.5	3.9	0.5	0.7	0.7	0.4	0.0	0.0	2.8	2.3	5.0	2.2	0.0	0.6	1.5	0.7
2019	1	0.0	0.0	0.0	0.0	2.4	4.7	3.6	3.9	0.3	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.3	0.3	0.4	0.4	0.2	0.0	0.0	1.7	1.3	2.9	1.3	0.0	0.3	0.9	0.4
2019	2	0.0	0.0	0.0	0.0	2.3	4.6	3.5	3.8	0.3	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.3	0.6	0.9	0.4	0.4	0.8	2.2	0.3	0.4	0.4	0.2	0.0	0.0	1.6	1.3	2.8	1.3	0.0	0.3	0.8	0.4
2019	3	0.0	0.0	0.0	0.0	3.4	6.7	5.1	5.6	0.4	0.7	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.2	0.4	0.5	0.6	0.3	0.0	0.0	2.4	1.9	4.2	1.9	0.0	0.5	1.3	0.6
2019	4	0.0	0.0	0.0	0.0	3.2	6.4	4.9	5.4	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.2	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2019	5	0.0	0.0	0.0	0.0	2.8	5.5	4.2	4.6	0.3	0.5	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.0	2.6	0.4	0.4	0.5	0.3	0.0	0.0	1.9	1.5	3.4	1.5	0.0	0.4	1.0	0.5
2019	6	0.0	0.0	0.0	0.0	3.0	5.9	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
2019	7	0.0	0.0	0.0	0.0	12.5	24.7	18.7	20.6	1.4	2.4	0.0	0.1	1.3	1.2	0.0	0.1	0.0	0.0	1.6	3.4	4.8	2.1	2.2	4.5	11.9	1.6	2.0	2.1	1.2	0.1	0.0	8.7	6.9	15.3	6.8	0.0	1.8	4.6	2.2
2019	8	0.0	0.0	0.0	0.0	4.7	9.2	7.0	7.7	0.5	0.9	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.3	1.8	0.8	0.8	1.7	4.5	0.6	0.8	0.8	0.4	0.0	0.0	3.3	2.6	5.7	2.5	0.0	0.7	1.7	0.8
2019	9	0.0	0.0	0.0	0.0	3.0	5.9	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.7	1.6	0.0	0.4	1.1	0.5
2019	10	0.0	0.0	0.0	0.0	3.0	5.9	4.5	4.9	0.3	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.8	1.1	0.5	0.5	1.1	2.8	0.4	0.5	0.5	0.3	0.0	0.0	2.1	1.6	3.6	1.6	0.0	0.4	1.1	0.5
2019	11	0.0	0.0	0.0	0.0	3.3	6.5	4.9	5.4	0.4	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.4	0.9	1.3	0.6	0.6	1.2	3.1	0.4	0.5	0.5	0.3	0.0	0.0	2.3	1.8	4.0	1.8	0.0	0.5	1.2	0.6
2019	12	0.0	0.0	0.0	0.0	4.3	8.5	6.5	7.1	0.5	0.8	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.6	1.2	1.6	0.7	0.8	1.5	4.1	0.6	0.7	0.7	0.4	0.0	0.0	3.0	2.4	5.3	2.3	0.0	0.6	1.6	0.7

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 30：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (1966 - 1971) (1/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1966	1	0.0	0.5	1.6	1.4	1.5	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1966	2	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1966	3	0.0	0.7	2.5	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1966	4	0.0	0.7	2.5	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1966	5	0.0	0.5	1.7	1.4	1.6	3.3	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1966	6	0.0	1.4	4.8	4.1	4.6	9.3	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
1966	7	0.0	0.8	2.8	2.4	2.7	5.4	0.2	1.9	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1966	8	0.0	2.3	8.2	6.9	7.8	15.8	0.5	5.4	0.0	0.0	3.6	1.9	0.8	0.1	1.5	0.0
1966	9	0.0	0.7	2.6	2.2	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1966	10	0.0	1.0	3.7	3.1	3.5	7.2	0.2	2.5	0.0	0.0	1.6	0.9	0.4	0.1	0.7	0.0
1966	11	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1966	12	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1967	1	0.0	0.5	1.7	1.4	1.6	3.2	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1967	2	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1967	3	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1967	4	0.0	0.7	2.4	2.0	2.2	4.6	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1967	5	0.0	0.4	1.3	1.1	1.2	2.5	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.0	0.2	0.0
1967	6	0.0	0.5	1.7	1.4	1.6	3.2	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1967	7	0.0	1.2	4.3	3.6	4.1	8.3	0.3	2.8	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1967	8	0.0	1.1	4.1	3.4	3.9	7.9	0.3	2.7	0.0	0.0	1.8	0.9	0.4	0.1	0.7	0.0
1967	9	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1967	10	0.0	0.8	3.0	2.5	2.9	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1967	11	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1967	12	0.0	0.9	3.1	2.6	2.9	6.0	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1968	1	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1968	2	0.0	0.5	1.8	1.6	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1968	3	0.0	0.7	2.6	2.2	2.4	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1968	4	0.0	0.7	2.4	2.0	2.3	4.6	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1968	5	0.0	0.8	2.9	2.4	2.7	5.5	0.2	1.9	0.0	0.0	1.2	0.7	0.3	0.0	0.5	0.0
1968	6	0.0	1.7	6.0	5.0	5.6	11.5	0.4	3.9	0.0	0.0	2.6	1.4	0.6	0.1	1.1	0.0
1968	7	0.0	2.0	7.3	6.1	6.9	14.0	0.5	4.8	0.0	0.0	3.2	1.7	0.7	0.1	1.3	0.0
1968	8	0.0	1.1	3.9	3.3	3.7	7.6	0.3	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1968	9	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1968	10	0.0	0.8	2.9	2.4	2.7	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1968	11	0.0	0.8	2.7	2.3	2.6	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1968	12	0.0	0.9	3.2	2.7	3.0	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1969	1	0.0	0.5	1.8	1.5	1.7	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1969	2	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1969	3	0.0	0.7	2.4	2.0	2.2	4.5	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1969	4	0.0	1.0	3.6	3.0	3.4	6.9	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
1969	5	0.0	0.3	1.2	1.0	1.1	2.3	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.0	0.2	0.0
1969	6	0.0	1.5	5.4	4.6	5.1	10.4	0.3	3.6	0.0	0.0	2.4	1.2	0.5	0.1	1.0	0.0
1969	7	0.0	1.4	5.0	4.2	4.8	9.7	0.3	3.3	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
1969	8	0.0	1.5	5.5	4.6	5.2	10.5	0.3	3.6	0.0	0.0	2.4	1.2	0.6	0.1	1.0	0.0
1969	9	0.0	0.8	2.7	2.3	2.5	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1969	10	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1969	11	0.0	0.6	2.1	1.8	2.0	4.0	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1969	12	0.0	0.8	3.0	2.5	2.9	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1970	1	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1970	2	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1970	3	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1970	4	0.0	0.8	2.9	2.4	2.7	5.5	0.2	1.9	0.0	0.0	1.2	0.7	0.3	0.0	0.5	0.0
1970	5	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1970	6	0.0	0.6	2.1	1.8	2.0	4.1	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1970	7	0.0	2.1	7.6	6.4	7.2	14.7	0.5	5.0	0.0	0.0	3.3	1.7	0.8	0.1	1.4	0.0
1970	8	0.0	1.3	4.6	3.9	4.4	8.9	0.3	3.1	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
1970	9	0.0	0.8	2.9	2.5	2.8	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1970	10	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1970	11	0.0	0.7	2.6	2.2	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1970	12	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1971	1	0.0	0.5	1.7	1.4	1.6	3.2	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1971	2	0.0	0.5	1.8	1.5	1.7	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1971	3	0.0	0.7	2.6	2.2	2.5	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1971	4	0.0	0.7	2.6	2.2	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1971	5	0.0	0.3	1.1	0.9	1.0	2.0	0.1	0.7	0.0	0.0	0.5	0.2	0.1	0.0	0.2	0.0
1971	6	0.0	1.9	6.7	5.6	6.3	12.8	0.4	4.4	0.0	0.0	2.9	1.5	0.7	0.1	1.2	0.0
1971	7	0.0	1.8	6.5	5.4	6.1	12.4	0.4	4.3	0.0	0.0	2.8	1.5	0.7	0.1	1.1	0.0
1971	8	0.0	1.8	6.3	5.3	5.9	12.1	0.4	4.1	0.0	0.0	2.7	1.4	0.6	0.1	1.1	0.0
1971	9	0.0	0.6	2.3	1.9	2.1	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1971	10	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1971	11	0.0	0.6	2.3	1.9	2.1	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1971	12	0.0	0.9	3.1	2.6	3.0	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0

Source: JICA Study Team

Attachment 30：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (1972 - 1977) (2/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1972	1	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1972	2	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1972	3	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1972	4	0.0	0.6	2.3	1.9	2.2	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1972	5	0.0	0.5	1.6	1.4	1.5	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1972	6	0.0	0.9	3.4	2.8	3.2	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1972	7	0.0	1.0	3.4	2.9	3.3	6.6	0.2	2.3	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1972	8	0.0	1.2	4.4	3.7	4.2	8.5	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1972	9	0.0	0.8	3.0	2.5	2.8	5.7	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1972	10	0.0	0.8	2.7	2.3	2.5	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1972	11	0.0	0.7	2.6	2.2	2.4	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1972	12	0.0	0.9	3.1	2.6	3.0	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1973	1	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1973	2	0.0	0.6	2.0	1.7	1.9	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.3	0.0
1973	3	0.0	0.8	2.7	2.3	2.6	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1973	4	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1973	5	0.0	1.0	3.5	3.0	3.3	6.8	0.2	2.3	0.0	0.0	1.5	0.8	0.4	0.1	0.6	0.0
1973	6	0.0	1.0	3.5	2.9	3.3	6.6	0.2	2.3	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1973	7	0.0	1.0	3.6	3.0	3.4	6.9	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
1973	8	0.0	1.2	4.2	3.5	3.9	8.0	0.3	2.7	0.0	0.0	1.8	0.9	0.4	0.1	0.7	0.0
1973	9	0.0	0.8	2.8	2.3	2.6	5.4	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1973	10	0.0	0.9	3.3	2.8	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
1973	11	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.7	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1973	12	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1974	1	0.0	0.5	1.7	1.5	1.7	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1974	2	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1974	3	0.0	0.7	2.4	2.1	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
1974	4	0.0	0.7	2.4	2.0	2.3	4.6	0.2	1.6	0.0	0.0	1.0	0.6	0.2	0.0	0.4	0.0
1974	5	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1974	6	0.0	3.1	11.1	9.4	10.5	21.4	0.7	7.4	0.0	0.1	4.8	2.5	1.1	0.2	2.0	0.0
1974	7	0.0	2.1	7.5	6.3	7.1	14.5	0.5	5.0	0.0	0.0	3.3	1.7	0.8	0.1	1.3	0.0
1974	8	0.0	1.7	5.9	5.0	5.6	11.3	0.4	3.9	0.0	0.0	2.6	1.3	0.6	0.1	1.0	0.0
1974	9	0.0	1.0	3.4	2.9	3.2	6.6	0.2	2.3	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1974	10	0.0	0.7	2.5	2.1	2.3	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1974	11	0.0	0.6	2.3	1.9	2.1	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1974	12	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1975	1	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1975	2	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1975	3	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1975	4	0.0	0.7	2.4	2.0	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
1975	5	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1975	6	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1975	7	0.0	2.3	8.3	6.9	7.8	15.9	0.5	5.5	0.0	0.0	3.6	1.9	0.8	0.1	1.5	0.0
1975	8	0.0	1.2	4.1	3.5	3.9	7.9	0.3	2.7	0.0	0.0	1.8	0.9	0.4	0.1	0.7	0.0
1975	9	0.0	0.8	3.0	2.5	2.9	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1975	10	0.0	0.9	3.3	2.8	3.2	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1975	11	0.0	0.7	2.6	2.2	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1975	12	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1976	1	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1976	2	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1976	3	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1976	4	0.0	0.7	2.6	2.2	2.5	5.1	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1976	5	0.0	0.6	2.2	1.9	2.1	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1976	6	0.0	3.1	11.1	9.3	10.5	21.3	0.7	7.3	0.0	0.1	4.8	2.5	1.1	0.2	2.0	0.0
1976	7	0.0	3.1	11.0	9.2	10.4	21.1	0.7	7.2	0.0	0.1	4.8	2.5	1.1	0.2	1.9	0.0
1976	8	0.0	1.0	3.7	3.1	3.5	7.1	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.7	0.0
1976	9	0.0	0.8	2.7	2.3	2.5	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1976	10	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1976	11	0.0	0.6	2.2	1.9	2.1	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1976	12	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1977	1	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1977	2	0.0	0.5	1.8	1.5	1.7	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1977	3	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1977	4	0.0	1.4	5.0	4.2	4.7	9.6	0.3	3.3	0.0	0.0	2.2	1.1	0.5	0.1	0.9	0.0
1977	5	0.0	0.7	2.5	2.1	2.3	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1977	6	0.0	1.3	4.7	3.9	4.4	9.0	0.3	3.1	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
1977	7	0.0	1.6	5.6	4.7	5.3	10.8	0.4	3.7	0.0	0.0	2.4	1.3	0.6	0.1	1.0	0.0
1977	8	0.0	1.0	3.5	2.9	3.3	6.7	0.2	2.3	0.0	0.0	1.5	0.8	0.4	0.1	0.6	0.0
1977	9	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1977	10	0.0	0.7	2.6	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1977	11	0.0	0.7	2.4	2.1	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
1977	12	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 30：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (1978 - 1983) (3/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1978	1	0.0	0.6	2.0	1.7	1.9	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1978	2	0.0	0.6	2.0	1.7	1.9	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1978	3	0.0	0.8	2.8	2.4	2.7	5.4	0.2	1.9	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1978	4	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1978	5	0.0	0.7	2.6	2.2	2.5	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1978	6	0.0	1.3	4.7	4.0	4.5	9.1	0.3	3.1	0.0	0.0	2.1	1.1	0.5	0.1	0.8	0.0
1978	7	0.0	0.7	2.6	2.2	2.5	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1978	8	0.0	1.4	5.0	4.2	4.7	9.5	0.3	3.3	0.0	0.0	2.2	1.1	0.5	0.1	0.9	0.0
1978	9	0.0	1.4	4.8	4.1	4.6	9.3	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
1978	10	0.0	0.8	2.9	2.4	2.7	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1978	11	0.0	0.8	2.8	2.3	2.6	5.4	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1978	12	0.0	0.9	3.2	2.7	3.0	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1979	1	0.0	0.6	2.0	1.7	1.9	3.9	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1979	2	0.0	0.6	2.1	1.8	2.0	4.1	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1979	3	0.0	0.8	2.8	2.4	2.7	5.4	0.2	1.9	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1979	4	0.0	0.7	2.4	2.0	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
1979	5	0.0	0.4	1.4	1.2	1.4	2.8	0.1	1.0	0.0	0.0	0.6	0.3	0.1	0.0	0.3	0.0
1979	6	0.0	1.5	5.3	4.4	5.0	10.2	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1979	7	0.0	1.1	3.8	3.2	3.6	7.3	0.2	2.5	0.0	0.0	1.6	0.9	0.4	0.1	0.7	0.0
1979	8	0.0	2.1	7.5	6.3	7.1	14.5	0.5	5.0	0.0	0.0	3.3	1.7	0.8	0.1	1.3	0.0
1979	9	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1979	10	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1979	11	0.0	0.8	2.9	2.5	2.8	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1979	12	0.0	0.8	3.0	2.5	2.9	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1980	1	0.0	0.6	2.0	1.7	1.9	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1980	2	0.0	0.6	2.0	1.7	1.9	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1980	3	0.0	0.7	2.6	2.2	2.5	5.1	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1980	4	0.0	0.8	2.7	2.3	2.6	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1980	5	0.0	1.3	4.5	3.8	4.2	8.6	0.3	3.0	0.0	0.0	1.9	1.0	0.5	0.1	0.8	0.0
1980	6	0.0	1.0	3.4	2.9	3.2	6.6	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1980	7	0.0	1.0	3.4	2.9	3.2	6.6	0.2	2.3	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1980	8	0.0	1.7	6.0	5.1	5.7	11.6	0.4	4.0	0.0	0.0	2.6	1.4	0.6	0.1	1.1	0.0
1980	9	0.0	0.6	2.3	1.9	2.2	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1980	10	0.0	0.8	2.9	2.4	2.7	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1980	11	0.0	0.8	2.9	2.5	2.8	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1980	12	0.0	0.9	3.1	2.6	3.0	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1981	1	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1981	2	0.0	0.6	2.1	1.8	2.0	4.0	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1981	3	0.0	0.7	2.5	2.1	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
1981	4	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1981	5	0.0	0.6	2.2	1.8	2.1	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1981	6	0.0	0.7	2.6	2.2	2.4	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1981	7	0.0	1.3	4.7	4.0	4.5	9.1	0.3	3.1	0.0	0.0	2.1	1.1	0.5	0.1	0.8	0.0
1981	8	0.0	1.5	5.3	4.5	5.0	10.2	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1981	9	0.0	1.1	3.9	3.3	3.7	7.5	0.3	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1981	10	0.0	1.0	3.4	2.9	3.2	6.6	0.2	2.3	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1981	11	0.0	0.8	2.9	2.5	2.8	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1981	12	0.0	0.9	3.1	2.6	2.9	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1982	1	0.0	0.6	2.0	1.7	1.9	3.8	0.1	1.3	0.0	0.0	0.9	0.4	0.2	0.0	0.3	0.0
1982	2	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1982	3	0.0	0.8	2.7	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1982	4	0.0	0.6	2.2	1.9	2.1	4.2	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1982	5	0.0	0.3	1.2	1.0	1.1	2.2	0.1	0.8	0.0	0.0	0.5	0.3	0.1	0.0	0.2	0.0
1982	6	0.0	1.4	4.9	4.1	4.6	9.4	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
1982	7	0.0	1.4	4.9	4.1	4.6	9.4	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
1982	8	0.0	1.9	6.7	5.6	6.3	12.9	0.4	4.4	0.0	0.0	2.9	1.5	0.7	0.1	1.2	0.0
1982	9	0.0	1.1	3.8	3.2	3.6	7.4	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1982	10	0.0	0.9	3.3	2.8	3.2	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1982	11	0.0	0.7	2.5	2.1	2.3	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1982	12	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1983	1	0.0	0.5	1.8	1.5	1.7	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1983	2	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1983	3	0.0	0.7	2.5	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1983	4	0.0	0.7	2.6	2.2	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1983	5	0.0	0.6	2.0	1.7	1.9	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1983	6	0.0	1.1	3.9	3.3	3.7	7.6	0.3	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1983	7	0.0	1.7	6.0	5.0	5.6	11.4	0.4	3.9	0.0	0.0	2.6	1.4	0.6	0.1	1.1	0.0
1983	8	0.0	2.3	8.2	6.9	7.7	15.7	0.5	5.4	0.0	0.0	3.6	1.9	0.8	0.1	1.4	0.0
1983	9	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1983	10	0.0	1.1	3.9	3.3	3.7	7.5	0.3	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1983	11	0.0	0.6	2.1	1.8	2.0	4.1	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1983	12	0.0	0.9	3.0	2.6	2.9	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 30：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (1984 - 1989) (4/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1984	1	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1984	2	0.0	0.6	2.0	1.7	1.9	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1984	3	0.0	0.7	2.6	2.2	2.4	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1984	4	0.0	0.7	2.4	2.0	2.2	4.5	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1984	5	0.0	1.1	3.8	3.2	3.6	7.3	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1984	6	0.0	1.5	5.4	4.5	5.1	10.3	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1984	7	0.0	2.5	8.9	7.5	8.4	17.1	0.6	5.9	0.0	0.0	3.9	2.0	0.9	0.1	1.6	0.0
1984	8	0.0	1.4	4.8	4.1	4.6	9.3	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
1984	9	0.0	0.8	2.8	2.4	2.7	5.5	0.2	1.9	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1984	10	0.0	0.7	2.4	2.1	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
1984	11	0.0	0.8	2.9	2.5	2.8	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1984	12	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1985	1	0.0	0.6	2.0	1.7	1.9	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1985	2	0.0	0.6	2.0	1.7	1.9	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1985	3	0.0	0.7	2.5	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1985	4	0.0	0.7	2.4	2.0	2.2	4.6	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1985	5	0.0	1.0	3.7	3.1	3.5	7.2	0.2	2.5	0.0	0.0	1.6	0.9	0.4	0.1	0.7	0.0
1985	6	0.0	1.5	5.2	4.4	4.9	10.0	0.3	3.4	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1985	7	0.0	2.0	7.3	6.1	6.9	14.0	0.5	4.8	0.0	0.0	3.2	1.7	0.7	0.1	1.3	0.0
1985	8	0.0	1.2	4.3	3.6	4.1	8.3	0.3	2.8	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1985	9	0.0	0.7	2.4	2.0	2.3	4.6	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1985	10	0.0	1.0	3.4	2.9	3.2	6.6	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1985	11	0.0	0.8	2.8	2.3	2.6	5.4	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1985	12	0.0	0.9	3.1	2.6	3.0	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1986	1	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1986	2	0.0	0.6	2.0	1.7	1.9	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1986	3	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1986	4	0.0	0.9	3.3	2.8	3.1	6.4	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
1986	5	0.0	0.5	1.6	1.4	1.5	3.1	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1986	6	0.0	1.5	5.5	4.6	5.2	10.6	0.4	3.6	0.0	0.0	2.4	1.3	0.6	0.1	1.0	0.0
1986	7	0.0	1.7	5.9	5.0	5.6	11.3	0.4	3.9	0.0	0.0	2.6	1.3	0.6	0.1	1.0	0.0
1986	8	0.0	1.3	4.5	3.8	4.3	8.7	0.3	3.0	0.0	0.0	2.0	1.0	0.5	0.1	0.8	0.0
1986	9	0.0	0.7	2.5	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1986	10	0.0	0.9	3.3	2.8	3.1	6.4	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
1986	11	0.0	0.6	2.1	1.8	2.0	4.1	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1986	12	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1987	1	0.0	0.5	1.8	1.5	1.7	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1987	2	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1987	3	0.0	0.7	2.6	2.2	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1987	4	0.0	0.7	2.6	2.2	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1987	5	0.0	0.3	1.1	0.9	1.1	2.2	0.1	0.7	0.0	0.0	0.5	0.3	0.1	0.0	0.2	0.0
1987	6	0.0	1.0	3.6	3.0	3.4	6.9	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
1987	7	0.0	2.8	9.9	8.3	9.4	19.0	0.6	6.5	0.0	0.0	4.3	2.3	1.0	0.2	1.8	0.0
1987	8	0.0	1.9	6.9	5.8	6.6	13.3	0.4	4.6	0.0	0.0	3.0	1.6	0.7	0.1	1.2	0.0
1987	9	0.0	1.4	4.9	4.1	4.6	9.4	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
1987	10	0.0	0.8	2.9	2.5	2.8	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1987	11	0.0	0.7	2.4	2.0	2.2	4.6	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1987	12	0.0	0.9	3.1	2.6	3.0	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1988	1	0.0	0.5	2.0	1.6	1.8	3.8	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1988	2	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1988	3	0.0	0.8	2.7	2.3	2.5	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1988	4	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1988	5	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1988	6	0.0	1.2	4.3	3.6	4.0	8.2	0.3	2.8	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1988	7	0.0	1.7	6.1	5.1	5.8	11.8	0.4	4.0	0.0	0.0	2.7	1.4	0.6	0.1	1.1	0.0
1988	8	0.0	1.0	3.5	2.9	3.3	6.7	0.2	2.3	0.0	0.0	1.5	0.8	0.4	0.1	0.6	0.0
1988	9	0.0	0.7	2.6	2.2	2.5	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1988	10	0.0	0.8	2.9	2.4	2.7	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1988	11	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1988	12	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1989	1	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1989	2	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1989	3	0.0	0.8	2.7	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1989	4	0.0	0.9	3.3	2.8	3.2	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1989	5	0.0	0.4	1.5	1.3	1.4	2.9	0.1	1.0	0.0	0.0	0.7	0.3	0.2	0.0	0.3	0.0
1989	6	0.0	0.6	2.2	1.8	2.1	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1989	7	0.0	2.2	7.8	6.6	7.4	15.1	0.5	5.2	0.0	0.0	3.4	1.8	0.8	0.1	1.4	0.0
1989	8	0.0	1.5	5.4	4.5	5.1	10.3	0.3	3.6	0.0	0.0	2.3	1.2	0.5	0.1	1.0	0.0
1989	9	0.0	1.0	3.6	3.0	3.4	6.8	0.2	2.3	0.0	0.0	1.5	0.8	0.4	0.1	0.6	0.0
1989	10	0.0	1.2	4.3	3.7	4.1	8.4	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1989	11	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1989	12	0.0	0.9	3.1	2.6	2.9	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 30：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (1990 - 1995) (5/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1990	1	0.0	0.5	1.7	1.5	1.6	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1990	2	0.0	0.5	1.8	1.5	1.7	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1990	3	0.0	0.7	2.4	2.0	2.3	4.6	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1990	4	0.0	0.6	2.2	1.8	2.1	4.2	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1990	5	0.0	0.6	2.2	1.9	2.1	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1990	6	0.0	1.3	4.6	3.8	4.3	8.8	0.3	3.0	0.0	0.0	2.0	1.0	0.5	0.1	0.8	0.0
1990	7	0.0	2.3	8.2	6.9	7.7	15.7	0.5	5.4	0.0	0.0	3.6	1.9	0.8	0.1	1.4	0.0
1990	8	0.0	1.3	4.5	3.8	4.2	8.6	0.3	3.0	0.0	0.0	1.9	1.0	0.5	0.1	0.8	0.0
1990	9	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1990	10	0.0	1.2	4.3	3.6	4.0	8.2	0.3	2.8	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1990	11	0.0	0.6	2.2	1.9	2.1	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1990	12	0.0	0.8	3.0	2.5	2.8	5.7	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1991	1	0.0	0.5	1.6	1.4	1.6	3.2	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1991	2	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1991	3	0.0	0.7	2.6	2.2	2.5	5.1	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1991	4	0.0	0.8	2.8	2.4	2.6	5.4	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1991	5	0.0	1.4	5.2	4.3	4.9	9.9	0.3	3.4	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
1991	6	0.0	1.6	5.8	4.9	5.5	11.2	0.4	3.8	0.0	0.0	2.5	1.3	0.6	0.1	1.0	0.0
1991	7	0.0	1.8	6.4	5.4	6.1	12.4	0.4	4.2	0.0	0.0	2.8	1.5	0.6	0.1	1.1	0.0
1991	8	0.0	1.5	5.4	4.5	5.1	10.4	0.3	3.6	0.0	0.0	2.3	1.2	0.5	0.1	1.0	0.0
1991	9	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1991	10	0.0	0.8	2.8	2.4	2.7	5.4	0.2	1.9	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1991	11	0.0	0.6	2.1	1.7	2.0	4.0	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1991	12	0.0	0.8	3.0	2.5	2.8	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1992	1	0.0	0.5	1.6	1.4	1.6	3.2	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1992	2	0.0	0.4	1.5	1.3	1.4	2.9	0.1	1.0	0.0	0.0	0.7	0.3	0.2	0.0	0.3	0.0
1992	3	0.0	0.7	2.4	2.0	2.3	4.6	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1992	4	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1992	5	0.0	0.6	2.0	1.7	1.9	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1992	6	0.0	1.6	5.6	4.7	5.3	10.8	0.4	3.7	0.0	0.0	2.4	1.3	0.6	0.1	1.0	0.0
1992	7	0.0	0.9	3.3	2.8	3.1	6.4	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
1992	8	0.0	1.1	4.0	3.4	3.8	7.7	0.3	2.7	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1992	9	0.0	0.6	2.1	1.8	2.0	4.0	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1992	10	0.0	1.1	3.9	3.3	3.7	7.5	0.2	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1992	11	0.0	0.7	2.6	2.2	2.4	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1992	12	0.0	0.8	3.0	2.5	2.8	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1993	1	0.0	0.5	1.7	1.5	1.6	3.3	0.1	1.1	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1993	2	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1993	3	0.0	1.1	4.0	3.4	3.8	7.8	0.3	2.7	0.0	0.0	1.8	0.9	0.4	0.1	0.7	0.0
1993	4	0.0	0.7	2.5	2.1	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
1993	5	0.0	1.5	5.2	4.4	4.9	10.0	0.3	3.4	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
1993	6	0.0	2.0	7.2	6.1	6.8	13.9	0.5	4.8	0.0	0.0	3.1	1.7	0.7	0.1	1.3	0.0
1993	7	0.0	1.4	5.0	4.2	4.7	9.6	0.3	3.3	0.0	0.0	2.2	1.1	0.5	0.1	0.9	0.0
1993	8	0.0	2.0	7.3	6.1	6.9	14.0	0.5	4.8	0.0	0.0	3.2	1.7	0.7	0.1	1.3	0.0
1993	9	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1993	10	0.0	0.9	3.4	2.8	3.2	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1993	11	0.0	0.8	2.7	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1993	12	0.0	0.9	3.1	2.6	3.0	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1994	1	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1994	2	0.0	0.6	2.0	1.7	1.9	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1994	3	0.0	1.0	3.7	3.1	3.5	7.1	0.2	2.5	0.0	0.0	1.6	0.8	0.4	0.1	0.7	0.0
1994	4	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1994	5	0.0	0.5	1.6	1.4	1.5	3.2	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1994	6	0.0	1.4	4.9	4.1	4.6	9.4	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.9	0.0
1994	7	0.0	1.0	3.4	2.9	3.3	6.6	0.2	2.3	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1994	8	0.0	1.1	3.9	3.3	3.7	7.5	0.2	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1994	9	0.0	0.7	2.6	2.2	2.5	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1994	10	0.0	0.8	2.7	2.3	2.6	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1994	11	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1994	12	0.0	0.9	3.1	2.6	2.9	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1995	1	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1995	2	0.0	0.5	1.8	1.5	1.7	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1995	3	0.0	0.8	2.7	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1995	4	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1995	5	0.0	1.0	3.4	2.9	3.3	6.6	0.2	2.3	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1995	6	0.0	1.0	3.4	2.9	3.2	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1995	7	0.0	2.0	7.0	5.9	6.6	13.4	0.4	4.6	0.0	0.0	3.0	1.6	0.7	0.1	1.2	0.0
1995	8	0.0	1.3	4.7	4.0	4.4	9.0	0.3	3.1	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
1995	9	0.0	0.7	2.6	2.2	2.4	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1995	10	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1995	11	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1995	12	0.0	0.9	3.1	2.6	3.0	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 30：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (1996 - 2001) (6/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
1996	1	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1996	2	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1996	3	0.0	0.8	2.9	2.5	2.8	5.7	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1996	4	0.0	0.6	2.1	1.7	2.0	4.0	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1996	5	0.0	0.9	3.0	2.6	2.9	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1996	6	0.0	1.0	3.5	2.9	3.3	6.7	0.2	2.3	0.0	0.0	1.5	0.8	0.4	0.1	0.6	0.0
1996	7	0.0	1.1	3.9	3.3	3.7	7.4	0.2	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
1996	8	0.0	1.4	5.0	4.2	4.7	9.6	0.3	3.3	0.0	0.0	2.2	1.1	0.5	0.1	0.9	0.0
1996	9	0.0	0.7	2.4	2.0	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
1996	10	0.0	1.0	3.4	2.9	3.2	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
1996	11	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1996	12	0.0	0.9	3.1	2.6	2.9	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1997	1	0.0	0.5	1.8	1.5	1.7	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1997	2	0.0	0.5	1.7	1.4	1.6	3.3	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
1997	3	0.0	0.8	3.0	2.5	2.8	5.7	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1997	4	0.0	0.6	2.1	1.8	2.0	4.1	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
1997	5	0.0	0.6	2.2	1.9	2.1	4.2	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1997	6	0.0	0.9	3.0	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1997	7	0.0	3.0	10.6	8.9	10.1	20.5	0.7	7.0	0.0	0.1	4.6	2.4	1.1	0.2	1.9	0.0
1997	8	0.0	1.2	4.3	3.7	4.1	8.4	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1997	9	0.0	1.7	6.1	5.1	5.8	11.8	0.4	4.0	0.0	0.0	2.7	1.4	0.6	0.1	1.1	0.0
1997	10	0.0	0.9	3.1	2.6	2.9	6.0	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
1997	11	0.0	0.7	2.6	2.2	2.5	5.1	0.2	1.7	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1997	12	0.0	0.8	3.0	2.5	2.8	5.7	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1998	1	0.0	0.5	1.8	1.5	1.7	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1998	2	0.0	0.7	2.4	2.0	2.2	4.5	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1998	3	0.0	0.7	2.5	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1998	4	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1998	5	0.0	1.2	4.3	3.6	4.1	8.3	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
1998	6	0.0	0.3	1.0	0.9	1.0	2.0	0.1	0.7	0.0	0.0	0.4	0.2	0.1	0.0	0.2	0.0
1998	7	0.0	2.3	8.2	6.9	7.7	15.7	0.5	5.4	0.0	0.0	3.6	1.9	0.8	0.1	1.4	0.0
1998	8	0.0	2.6	9.4	7.9	8.9	18.0	0.6	6.2	0.0	0.0	4.1	2.1	0.9	0.2	1.7	0.0
1998	9	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1998	10	0.0	1.0	3.7	3.1	3.5	7.1	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.7	0.0
1998	11	0.0	0.7	2.5	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
1998	12	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
1999	1	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
1999	2	0.0	0.6	2.2	1.9	2.1	4.2	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
1999	3	0.0	0.8	2.7	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1999	4	0.0	0.7	2.6	2.2	2.5	5.1	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
1999	5	0.0	1.1	3.8	3.2	3.6	7.2	0.2	2.5	0.0	0.0	1.6	0.9	0.4	0.1	0.7	0.0
1999	6	0.0	2.5	8.9	7.5	8.4	17.1	0.6	5.9	0.0	0.0	3.9	2.0	0.9	0.1	1.6	0.0
1999	7	0.0	1.6	5.6	4.7	5.3	10.7	0.4	3.7	0.0	0.0	2.4	1.3	0.6	0.1	1.0	0.0
1999	8	0.0	2.2	7.7	6.5	7.3	14.9	0.5	5.1	0.0	0.0	3.4	1.8	0.8	0.1	1.4	0.0
1999	9	0.0	0.8	2.9	2.4	2.7	5.5	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
1999	10	0.0	0.7	2.4	2.0	2.3	4.6	0.2	1.6	0.0	0.0	1.0	0.6	0.2	0.0	0.4	0.0
1999	11	0.0	0.8	2.8	2.3	2.6	5.4	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
1999	12	0.0	0.7	2.6	2.2	2.4	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2000	1	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2000	2	0.0	0.6	2.0	1.7	1.9	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2000	3	0.0	0.7	2.5	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
2000	4	0.0	0.7	2.4	2.0	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
2000	5	0.0	1.6	5.7	4.8	5.3	10.9	0.4	3.7	0.0	0.0	2.5	1.3	0.6	0.1	1.0	0.0
2000	6	0.0	1.3	4.7	3.9	4.4	8.9	0.3	3.1	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
2000	7	0.0	1.5	5.2	4.4	4.9	10.0	0.3	3.4	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2000	8	0.0	1.3	4.7	3.9	4.4	9.0	0.3	3.1	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
2000	9	0.0	0.6	2.1	1.8	2.0	4.1	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2000	10	0.0	1.1	3.9	3.2	3.7	7.4	0.2	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2000	11	0.0	0.8	2.7	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2000	12	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2001	1	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2001	2	0.0	0.5	2.0	1.6	1.8	3.8	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2001	3	0.0	0.8	2.8	2.3	2.6	5.4	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2001	4	0.0	1.2	4.2	3.5	3.9	8.0	0.3	2.8	0.0	0.0	1.8	1.0	0.4	0.1	0.7	0.0
2001	5	0.0	1.1	4.1	3.4	3.9	7.9	0.3	2.7	0.0	0.0	1.8	0.9	0.4	0.1	0.7	0.0
2001	6	0.0	1.3	4.7	4.0	4.5	9.1	0.3	3.1	0.0	0.0	2.1	1.1	0.5	0.1	0.8	0.0
2001	7	0.0	0.9	3.3	2.8	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
2001	8	0.0	1.3	4.5	3.8	4.3	8.7	0.3	3.0	0.0	0.0	2.0	1.0	0.5	0.1	0.8	0.0
2001	9	0.0	0.9	3.0	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
2001	10	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2001	11	0.0	0.6	2.1	1.8	2.0	4.1	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2001	12	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0

Source: JICA Study Team

Attachment 30：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (2002 - 2007) (7/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2002	1	0.0	0.6	2.0	1.7	1.9	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.3	0.0
2002	2	0.0	0.6	2.2	1.8	2.1	4.2	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2002	3	0.0	0.7	2.6	2.2	2.5	5.1	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2002	4	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2002	5	0.0	1.0	3.4	2.9	3.2	6.6	0.2	2.3	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
2002	6	0.0	0.9	3.0	2.6	2.9	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
2002	7	0.0	2.1	7.6	6.4	7.2	14.6	0.5	5.0	0.0	0.0	3.3	1.7	0.8	0.1	1.3	0.0
2002	8	0.0	1.1	4.1	3.4	3.9	7.8	0.3	2.7	0.0	0.0	1.8	0.9	0.4	0.1	0.7	0.0
2002	9	0.0	0.8	3.0	2.5	2.8	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
2002	10	0.0	0.7	2.4	2.0	2.2	4.5	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2002	11	0.0	0.6	2.1	1.8	2.0	4.1	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2002	12	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2003	1	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2003	2	0.0	0.6	2.1	1.8	2.0	4.1	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2003	3	0.0	0.7	2.6	2.2	2.5	5.1	0.2	1.7	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2003	4	0.0	0.7	2.5	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2003	5	0.0	0.3	1.0	0.9	1.0	2.0	0.1	0.7	0.0	0.0	0.4	0.2	0.1	0.0	0.2	0.0
2003	6	0.0	2.6	9.4	7.9	8.9	18.2	0.6	6.2	0.0	0.0	4.1	2.2	1.0	0.2	1.7	0.0
2003	7	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
2003	8	0.0	1.1	4.0	3.3	3.8	7.6	0.3	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2003	9	0.0	0.8	2.9	2.5	2.8	5.7	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
2003	10	0.0	0.7	2.6	2.2	2.5	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2003	11	0.0	0.8	3.0	2.5	2.8	5.7	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
2003	12	0.0	0.9	3.2	2.7	3.0	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2004	1	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2004	2	0.0	0.6	2.2	1.8	2.1	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2004	3	0.0	0.8	2.7	2.3	2.5	5.2	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2004	4	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2004	5	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2004	6	0.0	1.3	4.5	3.8	4.3	8.7	0.3	3.0	0.0	0.0	2.0	1.0	0.5	0.1	0.8	0.0
2004	7	0.0	1.8	6.6	5.5	6.2	12.6	0.4	4.3	0.0	0.0	2.9	1.5	0.7	0.1	1.2	0.0
2004	8	0.0	1.3	4.5	3.8	4.3	8.7	0.3	3.0	0.0	0.0	2.0	1.0	0.5	0.1	0.8	0.0
2004	9	0.0	1.7	5.9	5.0	5.6	11.4	0.4	3.9	0.0	0.0	2.6	1.4	0.6	0.1	1.0	0.0
2004	10	0.0	0.9	3.3	2.8	3.1	6.4	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
2004	11	0.0	0.8	2.9	2.5	2.8	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
2004	12	0.0	0.9	3.3	2.7	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2005	1	0.0	0.6	2.0	1.7	1.9	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2005	2	0.0	0.6	2.1	1.8	2.0	4.1	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2005	3	0.0	0.7	2.6	2.2	2.4	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2005	4	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2005	5	0.0	0.4	1.5	1.3	1.4	2.9	0.1	1.0	0.0	0.0	0.7	0.3	0.2	0.0	0.3	0.0
2005	6	0.0	0.5	1.7	1.4	1.6	3.2	0.1	1.1	0.0	0.0	0.7	0.4	0.2	0.0	0.3	0.0
2005	7	0.0	1.5	5.3	4.4	5.0	10.1	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2005	8	0.0	1.5	5.2	4.4	5.0	10.1	0.3	3.5	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2005	9	0.0	1.1	3.9	3.3	3.7	7.5	0.2	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2005	10	0.0	0.9	3.3	2.8	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
2005	11	0.0	0.7	2.6	2.2	2.5	5.1	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2005	12	0.0	0.9	3.2	2.7	3.0	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2006	1	0.0	0.5	2.0	1.6	1.9	3.8	0.1	1.3	0.0	0.0	0.9	0.4	0.2	0.0	0.3	0.0
2006	2	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2006	3	0.0	0.8	2.8	2.3	2.6	5.4	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2006	4	0.0	0.7	2.5	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2006	5	0.0	1.7	6.1	5.1	5.8	11.7	0.4	4.0	0.0	0.0	2.6	1.4	0.6	0.1	1.1	0.0
2006	6	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
2006	7	0.0	1.2	4.3	3.6	4.1	8.3	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
2006	8	0.0	1.2	4.3	3.6	4.1	8.3	0.3	2.8	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
2006	9	0.0	1.1	3.9	3.3	3.7	7.5	0.2	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2006	10	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2006	11	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2006	12	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2007	1	0.0	0.5	1.8	1.6	1.7	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2007	2	0.0	0.5	1.8	1.5	1.7	3.4	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2007	3	0.0	0.8	2.9	2.4	2.7	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
2007	4	0.0	0.6	2.2	1.8	2.1	4.2	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2007	5	0.0	0.6	2.1	1.7	2.0	4.0	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2007	6	0.0	2.5	9.1	7.6	8.6	17.4	0.6	6.0	0.0	0.0	3.9	2.1	0.9	0.1	1.6	0.0
2007	7	0.0	2.0	7.3	6.1	6.9	14.0	0.5	4.8	0.0	0.0	3.2	1.7	0.7	0.1	1.3	0.0
2007	8	0.0	1.4	5.0	4.2	4.7	9.6	0.3	3.3	0.0	0.0	2.2	1.1	0.5	0.1	0.9	0.0
2007	9	0.0	1.4	5.0	4.2	4.7	9.6	0.3	3.3	0.0	0.0	2.2	1.1	0.5	0.1	0.9	0.0
2007	10	0.0	1.3	4.6	3.9	4.4	8.9	0.3	3.0	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
2007	11	0.0	0.6	2.0	1.7	1.9	3.8	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2007	12	0.0	0.9	3.2	2.7	3.0	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 30：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (2008 - 2013) (8/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2008	1	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2008	2	0.0	0.6	2.0	1.7	1.9	3.9	0.1	1.3	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2008	3	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
2008	4	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2008	5	0.0	0.6	2.1	1.7	1.9	4.0	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2008	6	0.0	1.7	5.9	5.0	5.6	11.3	0.4	3.9	0.0	0.0	2.6	1.3	0.6	0.1	1.0	0.0
2008	7	0.0	2.1	7.5	6.3	7.1	14.5	0.5	5.0	0.0	0.0	3.3	1.7	0.8	0.1	1.3	0.0
2008	8	0.0	2.1	7.3	6.2	6.9	14.1	0.5	4.8	0.0	0.0	3.2	1.7	0.7	0.1	1.3	0.0
2008	9	0.0	0.7	2.5	2.1	2.3	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
2008	10	0.0	0.7	2.4	2.0	2.3	4.7	0.2	1.6	0.0	0.0	1.1	0.6	0.2	0.0	0.4	0.0
2008	11	0.0	0.7	2.6	2.2	2.5	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2008	12	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2009	1	0.0	0.6	2.2	1.8	2.1	4.2	0.1	1.4	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2009	2	0.0	0.6	2.3	1.9	2.2	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2009	3	0.0	0.7	2.6	2.2	2.5	5.1	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2009	4	0.0	0.7	2.4	2.0	2.2	4.5	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2009	5	0.0	0.8	2.8	2.4	2.6	5.4	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2009	6	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2009	7	0.0	2.2	7.8	6.6	7.4	15.0	0.5	5.2	0.0	0.0	3.4	1.8	0.8	0.1	1.4	0.0
2009	8	0.0	1.7	5.9	5.0	5.6	11.4	0.4	3.9	0.0	0.0	2.6	1.4	0.6	0.1	1.0	0.0
2009	9	0.0	0.6	2.3	1.9	2.2	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2009	10	0.0	0.9	3.4	2.8	3.2	6.5	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
2009	11	0.0	0.8	2.7	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2009	12	0.0	0.9	3.3	2.8	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
2010	1	0.0	0.6	2.1	1.8	2.0	4.0	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2010	2	0.0	0.6	2.3	1.9	2.2	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2010	3	0.0	0.8	2.7	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2010	4	0.0	0.7	2.6	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2010	5	0.0	0.7	2.4	2.0	2.3	4.6	0.2	1.6	0.0	0.0	1.0	0.6	0.2	0.0	0.4	0.0
2010	6	0.0	2.1	7.7	6.4	7.2	14.7	0.5	5.1	0.0	0.0	3.3	1.8	0.8	0.1	1.4	0.0
2010	7	0.0	0.7	2.4	2.0	2.3	4.6	0.2	1.6	0.0	0.0	1.0	0.6	0.2	0.0	0.4	0.0
2010	8	0.0	1.2	4.3	3.6	4.0	8.2	0.3	2.8	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
2010	9	0.0	0.9	3.3	2.7	3.1	6.3	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2010	10	0.0	1.1	3.9	3.3	3.7	7.5	0.2	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2010	11	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2010	12	0.0	0.9	3.2	2.7	3.0	6.2	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2011	1	0.0	0.6	2.2	1.8	2.0	4.1	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2011	2	0.0	0.6	2.2	1.9	2.1	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2011	3	0.0	0.8	2.9	2.4	2.7	5.5	0.2	1.9	0.0	0.0	1.2	0.7	0.3	0.0	0.5	0.0
2011	4	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2011	5	0.0	0.8	2.8	2.4	2.7	5.4	0.2	1.9	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2011	6	0.0	0.7	2.6	2.2	2.5	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2011	7	0.0	1.1	4.1	3.4	3.9	7.9	0.3	2.7	0.0	0.0	1.8	0.9	0.4	0.1	0.7	0.0
2011	8	0.0	1.5	5.2	4.4	4.9	10.0	0.3	3.4	0.0	0.0	2.3	1.2	0.5	0.1	0.9	0.0
2011	9	0.0	1.6	5.5	4.7	5.2	10.7	0.4	3.7	0.0	0.0	2.4	1.3	0.6	0.1	1.0	0.0
2011	10	0.0	1.0	3.4	2.9	3.2	6.6	0.2	2.3	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
2011	11	0.0	0.9	3.1	2.6	3.0	6.0	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2011	12	0.0	0.9	3.3	2.8	3.1	6.4	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
2012	1	0.0	0.6	2.2	1.8	2.1	4.2	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2012	2	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2012	3	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2012	4	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
2012	5	0.0	0.4	1.4	1.1	1.3	2.6	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.0	0.2	0.0
2012	6	0.0	2.8	10.0	8.4	9.5	19.3	0.6	6.6	0.0	0.0	4.4	2.3	1.0	0.2	1.8	0.0
2012	7	0.0	1.3	4.7	4.0	4.5	9.1	0.3	3.1	0.0	0.0	2.0	1.1	0.5	0.1	0.8	0.0
2012	8	0.0	1.1	3.8	3.2	3.6	7.4	0.2	2.5	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2012	9	0.0	0.6	2.1	1.7	1.9	4.0	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2012	10	0.0	1.4	5.2	4.3	4.9	9.9	0.3	3.4	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
2012	11	0.0	0.8	3.0	2.5	2.8	5.7	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
2012	12	0.0	0.9	3.3	2.8	3.2	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
2013	1	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2013	2	0.0	0.6	2.3	1.9	2.2	4.4	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2013	3	0.0	0.7	2.6	2.2	2.5	5.1	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2013	4	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2013	5	0.0	1.1	4.1	3.4	3.8	7.8	0.3	2.7	0.0	0.0	1.8	0.9	0.4	0.1	0.7	0.0
2013	6	0.0	1.1	4.0	3.3	3.8	7.6	0.3	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2013	7	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
2013	8	0.0	1.3	4.8	4.0	4.5	9.2	0.3	3.2	0.0	0.0	2.1	1.1	0.5	0.1	0.8	0.0
2013	9	0.0	0.6	2.1	1.8	2.0	4.0	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2013	10	0.0	0.8	3.0	2.5	2.9	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
2013	11	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2013	12	0.0	0.9	3.0	2.6	2.9	5.8	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 30：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Sangu River Basin (m^3/s) (2014 - 2019) (9/9)

		Sang River Basin															
	District	Chattogram								Cox's Baza	Rangamati	Bandarban					
	Upazila	Rangunia	Boalkhali	Patiya	Chandanais	Lohagora	Satkania	BashKhali	Anowara	Chakaria	Belai Chhari	Sadar	Roangchar	Ruma	Thanchi	Lama	Alikadam
2014	1	0.0	0.5	1.9	1.6	1.8	3.6	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2014	2	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2014	3	0.0	0.8	2.8	2.3	2.6	5.4	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2014	4	0.0	0.7	2.5	2.1	2.3	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
2014	5	0.0	1.0	3.5	2.9	3.3	6.7	0.2	2.3	0.0	0.0	1.5	0.8	0.4	0.1	0.6	0.0
2014	6	0.0	3.1	11.1	9.3	10.5	21.3	0.7	7.3	0.0	0.1	4.8	2.5	1.1	0.2	2.0	0.0
2014	7	0.0	0.8	2.9	2.4	2.7	5.6	0.2	1.9	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
2014	8	0.0	1.2	4.4	3.7	4.2	8.5	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
2014	9	0.0	0.9	3.3	2.7	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2014	10	0.0	0.7	2.6	2.2	2.5	5.1	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2014	11	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2014	12	0.0	0.9	3.3	2.8	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
2015	1	0.0	0.6	2.1	1.7	2.0	4.0	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2015	2	0.0	0.6	2.1	1.8	2.0	4.1	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2015	3	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2015	4	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
2015	5	0.0	0.4	1.4	1.2	1.3	2.7	0.1	0.9	0.0	0.0	0.6	0.3	0.1	0.0	0.2	0.0
2015	6	0.0	1.6	5.9	4.9	5.6	11.3	0.4	3.9	0.0	0.0	2.6	1.3	0.6	0.1	1.0	0.0
2015	7	0.0	3.4	12.1	10.2	11.5	23.3	0.8	8.0	0.0	0.1	5.3	2.8	1.2	0.2	2.1	0.0
2015	8	0.0	1.9	6.7	5.7	6.4	12.9	0.4	4.4	0.0	0.0	2.9	1.5	0.7	0.1	1.2	0.0
2015	9	0.0	0.9	3.3	2.8	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2015	10	0.0	0.9	3.3	2.8	3.2	6.4	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
2015	11	0.0	0.8	3.0	2.5	2.8	5.7	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
2015	12	0.0	0.9	3.2	2.7	3.0	6.1	0.2	2.1	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0
2016	1	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2016	2	0.0	0.6	2.1	1.8	2.0	4.0	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2016	3	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2016	4	0.0	0.7	2.6	2.2	2.5	5.1	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2016	5	0.0	0.6	2.2	1.9	2.1	4.2	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2016	6	0.0	0.7	2.4	2.0	2.2	4.5	0.2	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2016	7	0.0	1.2	4.3	3.7	4.1	8.4	0.3	2.9	0.0	0.0	1.9	1.0	0.4	0.1	0.8	0.0
2016	8	0.0	1.1	4.0	3.3	3.8	7.6	0.3	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2016	9	0.0	0.8	2.8	2.4	2.7	5.5	0.2	1.9	0.0	0.0	1.2	0.7	0.3	0.0	0.5	0.0
2016	10	0.0	0.8	3.0	2.5	2.8	5.7	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.0	0.5	0.0
2016	11	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.6	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2016	12	0.0	0.9	3.3	2.8	3.2	6.4	0.2	2.2	0.0	0.0	1.5	0.8	0.3	0.1	0.6	0.0
2017	1	0.0	0.7	2.4	2.0	2.3	4.6	0.2	1.6	0.0	0.0	1.0	0.6	0.2	0.0	0.4	0.0
2017	2	0.0	0.7	2.3	2.0	2.2	4.5	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2017	3	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2017	4	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
2017	5	0.0	0.8	2.7	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2017	6	0.0	1.5	5.4	4.6	5.1	10.4	0.3	3.6	0.0	0.0	2.4	1.2	0.5	0.1	1.0	0.0
2017	7	0.0	1.1	4.0	3.3	3.7	7.6	0.3	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2017	8	0.0	1.0	3.7	3.1	3.5	7.1	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.7	0.0
2017	9	0.0	1.4	5.0	4.2	4.7	9.6	0.3	3.3	0.0	0.0	2.2	1.1	0.5	0.1	0.9	0.0
2017	10	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
2017	11	0.0	0.9	3.1	2.6	2.9	6.0	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
2017	12	0.0	0.9	3.1	2.6	2.9	6.0	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
2018	1	0.0	0.5	1.9	1.6	1.8	3.7	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2018	2	0.0	0.5	2.0	1.6	1.8	3.8	0.1	1.3	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2018	3	0.0	0.7	2.6	2.2	2.5	5.0	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.5	0.0
2018	4	0.0	0.7	2.5	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
2018	5	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.6	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
2018	6	0.0	1.6	5.7	4.8	5.4	11.0	0.4	3.8	0.0	0.0	2.5	1.3	0.6	0.1	1.0	0.0
2018	7	0.0	1.4	5.2	4.3	4.9	9.9	0.3	3.4	0.0	0.0	2.2	1.2	0.5	0.1	0.9	0.0
2018	8	0.0	1.0	3.7	3.1	3.5	7.0	0.2	2.4	0.0	0.0	1.6	0.8	0.4	0.1	0.6	0.0
2018	9	0.0	0.7	2.5	2.1	2.4	4.8	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
2018	10	0.0	1.3	4.5	3.8	4.3	8.7	0.3	3.0	0.0	0.0	2.0	1.0	0.5	0.1	0.8	0.0
2018	11	0.0	0.9	3.1	2.6	2.9	5.9	0.2	2.0	0.0	0.0	1.3	0.7	0.3	0.1	0.5	0.0
2018	12	0.0	0.9	3.3	2.8	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.8	0.3	0.1	0.6	0.0
2019	1	0.0	0.6	2.2	1.9	2.1	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2019	2	0.0	0.6	2.2	1.8	2.0	4.2	0.1	1.4	0.0	0.0	0.9	0.5	0.2	0.0	0.4	0.0
2019	3	0.0	0.8	2.8	2.4	2.7	5.4	0.2	1.9	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2019	4	0.0	0.7	2.5	2.1	2.4	4.9	0.2	1.7	0.0	0.0	1.1	0.6	0.3	0.0	0.4	0.0
2019	5	0.0	0.5	1.8	1.5	1.7	3.5	0.1	1.2	0.0	0.0	0.8	0.4	0.2	0.0	0.3	0.0
2019	6	0.0	0.4	1.4	1.2	1.4	2.8	0.1	1.0	0.0	0.0	0.6	0.3	0.1	0.0	0.3	0.0
2019	7	0.0	2.0	7.3	6.1	6.9	14.0	0.5	4.8	0.0	0.0	3.2	1.7	0.7	0.1	1.3	0.0
2019	8	0.0	1.1	4.0	3.3	3.8	7.6	0.3	2.6	0.0	0.0	1.7	0.9	0.4	0.1	0.7	0.0
2019	9	0.0	0.8	2.8	2.3	2.6	5.3	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2019	10	0.0	0.7	2.7	2.2	2.5	5.1	0.2	1.8	0.0	0.0	1.2	0.6	0.3	0.0	0.5	0.0
2019	11	0.0	0.6	2.2	1.9	2.1	4.3	0.1	1.5	0.0	0.0	1.0	0.5	0.2	0.0	0.4	0.0
2019	12	0.0	0.9	3.3	2.7	3.1	6.3	0.2	2.2	0.0	0.0	1.4	0.7	0.3	0.1	0.6	0.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 31：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1966 - 1971) (1/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1966	1	0.0	0.2	3.9	2.1	0.0	0.0	0.1	1.0	0.5	0.1
1966	2	0.0	0.3	4.6	2.5	0.0	0.0	0.1	1.2	0.6	0.1
1966	3	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.6	0.8	0.1
1966	4	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.6	0.8	0.1
1966	5	0.0	0.3	4.1	2.2	0.0	0.0	0.1	1.1	0.6	0.1
1966	6	0.0	0.7	11.5	6.2	0.0	0.0	0.4	3.0	1.6	0.2
1966	7	0.0	0.4	6.7	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1966	8	0.0	1.2	19.5	10.5	0.0	0.0	0.6	5.1	2.7	0.4
1966	9	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1966	10	0.0	0.5	8.9	4.8	0.0	0.0	0.3	2.3	1.2	0.2
1966	11	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1966	12	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1967	1	0.0	0.2	4.0	2.1	0.0	0.0	0.1	1.0	0.5	0.1
1967	2	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1967	3	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1967	4	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.5	0.8	0.1
1967	5	0.0	0.2	3.1	1.7	0.0	0.0	0.1	0.8	0.4	0.1
1967	6	0.0	0.2	4.0	2.1	0.0	0.0	0.1	1.0	0.5	0.1
1967	7	0.0	0.6	10.2	5.5	0.0	0.0	0.3	2.6	1.4	0.2
1967	8	0.0	0.6	9.7	5.2	0.0	0.0	0.3	2.5	1.3	0.2
1967	9	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
1967	10	0.0	0.4	7.2	3.8	0.0	0.0	0.2	1.9	1.0	0.1
1967	11	0.0	0.4	6.6	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1967	12	0.0	0.5	7.4	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1968	1	0.0	0.3	4.4	2.4	0.0	0.0	0.1	1.1	0.6	0.1
1968	2	0.0	0.3	4.4	2.4	0.0	0.0	0.1	1.1	0.6	0.1
1968	3	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1968	4	0.0	0.4	5.7	3.0	0.0	0.0	0.2	1.5	0.8	0.1
1968	5	0.0	0.4	6.8	3.7	0.0	0.0	0.2	1.8	0.9	0.1
1968	6	0.0	0.9	14.2	7.6	0.0	0.0	0.5	3.7	1.9	0.3
1968	7	0.0	1.1	17.3	9.3	0.0	0.0	0.6	4.5	2.4	0.3
1968	8	0.0	0.6	9.4	5.0	0.0	0.0	0.3	2.4	1.3	0.2
1968	9	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1968	10	0.0	0.4	6.9	3.7	0.0	0.0	0.2	1.8	0.9	0.1
1968	11	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1968	12	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
1969	1	0.0	0.3	4.2	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1969	2	0.0	0.3	4.5	2.4	0.0	0.0	0.1	1.2	0.6	0.1
1969	3	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.5	0.8	0.1
1969	4	0.0	0.5	8.5	4.6	0.0	0.0	0.3	2.2	1.2	0.2
1969	5	0.0	0.2	2.8	1.5	0.0	0.0	0.1	0.7	0.4	0.1
1969	6	0.0	0.8	12.9	6.9	0.0	0.0	0.4	3.3	1.8	0.2
1969	7	0.0	0.7	12.0	6.4	0.0	0.0	0.4	3.1	1.6	0.2
1969	8	0.0	0.8	13.0	7.0	0.0	0.0	0.4	3.4	1.8	0.2
1969	9	0.0	0.4	6.4	3.4	0.0	0.0	0.2	1.7	0.9	0.1
1969	10	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
1969	11	0.0	0.3	5.0	2.7	0.0	0.0	0.2	1.3	0.7	0.1
1969	12	0.0	0.4	7.2	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1970	1	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1970	2	0.0	0.3	4.4	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1970	3	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1970	4	0.0	0.4	6.8	3.7	0.0	0.0	0.2	1.8	0.9	0.1
1970	5	0.0	0.4	6.6	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1970	6	0.0	0.3	5.1	2.7	0.0	0.0	0.2	1.3	0.7	0.1
1970	7	0.0	1.1	18.1	9.7	0.0	0.0	0.6	4.7	2.5	0.3
1970	8	0.0	0.7	11.0	5.9	0.0	0.0	0.4	2.8	1.5	0.2
1970	9	0.0	0.4	6.9	3.7	0.0	0.0	0.2	1.8	0.9	0.1
1970	10	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1970	11	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1970	12	0.0	0.4	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1971	1	0.0	0.2	4.0	2.1	0.0	0.0	0.1	1.0	0.5	0.1
1971	2	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1971	3	0.0	0.4	6.2	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1971	4	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1971	5	0.0	0.2	2.5	1.4	0.0	0.0	0.1	0.7	0.3	0.0
1971	6	0.0	1.0	15.8	8.5	0.0	0.0	0.5	4.1	2.2	0.3
1971	7	0.0	0.9	15.3	8.2	0.0	0.0	0.5	4.0	2.1	0.3
1971	8	0.0	0.9	14.9	8.0	0.0	0.0	0.5	3.9	2.0	0.3
1971	9	0.0	0.3	5.4	2.9	0.0	0.0	0.2	1.4	0.7	0.1
1971	10	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1971	11	0.0	0.3	5.4	2.9	0.0	0.0	0.2	1.4	0.7	0.1
1971	12	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1

Source: JICA Study Team

Attachment 31：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1972 - 1977) (2/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1972	1	0.0	0.3	4.5	2.4	0.0	0.0	0.1	1.2	0.6	0.1
1972	2	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1972	3	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1972	4	0.0	0.3	5.4	2.9	0.0	0.0	0.2	1.4	0.7	0.1
1972	5	0.0	0.2	3.8	2.1	0.0	0.0	0.1	1.0	0.5	0.1
1972	6	0.0	0.5	8.0	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1972	7	0.0	0.5	8.2	4.4	0.0	0.0	0.3	2.1	1.1	0.2
1972	8	0.0	0.6	10.5	5.6	0.0	0.0	0.3	2.7	1.4	0.2
1972	9	0.0	0.4	7.1	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1972	10	0.0	0.4	6.4	3.4	0.0	0.0	0.2	1.7	0.9	0.1
1972	11	0.0	0.4	6.2	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1972	12	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1973	1	0.0	0.3	4.5	2.4	0.0	0.0	0.1	1.2	0.6	0.1
1973	2	0.0	0.3	4.7	2.5	0.0	0.0	0.2	1.2	0.6	0.1
1973	3	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1973	4	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1973	5	0.0	0.5	8.4	4.5	0.0	0.0	0.3	2.2	1.1	0.2
1973	6	0.0	0.5	8.2	4.4	0.0	0.0	0.3	2.1	1.1	0.2
1973	7	0.0	0.5	8.5	4.5	0.0	0.0	0.3	2.2	1.2	0.2
1973	8	0.0	0.6	9.9	5.3	0.0	0.0	0.3	2.6	1.3	0.2
1973	9	0.0	0.4	6.6	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1973	10	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
1973	11	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1973	12	0.0	0.4	6.6	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1974	1	0.0	0.3	4.2	2.2	0.0	0.0	0.1	1.1	0.6	0.1
1974	2	0.0	0.3	4.6	2.5	0.0	0.0	0.1	1.2	0.6	0.1
1974	3	0.0	0.4	5.8	3.1	0.0	0.0	0.2	1.5	0.8	0.1
1974	4	0.0	0.4	5.7	3.1	0.0	0.0	0.2	1.5	0.8	0.1
1974	5	0.0	0.3	4.4	2.4	0.0	0.0	0.1	1.1	0.6	0.1
1974	6	0.0	1.6	26.4	14.2	0.0	0.0	0.9	6.8	3.6	0.5
1974	7	0.0	1.1	17.9	9.6	0.0	0.0	0.6	4.6	2.4	0.3
1974	8	0.0	0.9	14.0	7.5	0.0	0.0	0.5	3.6	1.9	0.3
1974	9	0.0	0.5	8.1	4.4	0.0	0.0	0.3	2.1	1.1	0.1
1974	10	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1974	11	0.0	0.3	5.4	2.9	0.0	0.0	0.2	1.4	0.7	0.1
1974	12	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1975	1	0.0	0.3	4.4	2.4	0.0	0.0	0.1	1.1	0.6	0.1
1975	2	0.0	0.3	4.6	2.4	0.0	0.0	0.1	1.2	0.6	0.1
1975	3	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1975	4	0.0	0.4	5.8	3.1	0.0	0.0	0.2	1.5	0.8	0.1
1975	5	0.0	0.3	5.5	3.0	0.0	0.0	0.2	1.4	0.8	0.1
1975	6	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
1975	7	0.0	1.2	19.6	10.5	0.0	0.0	0.6	5.1	2.7	0.4
1975	8	0.0	0.6	9.8	5.2	0.0	0.0	0.3	2.5	1.3	0.2
1975	9	0.0	0.4	7.2	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1975	10	0.0	0.5	7.9	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1975	11	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1975	12	0.0	0.4	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1976	1	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1976	2	0.0	0.3	4.6	2.5	0.0	0.0	0.1	1.2	0.6	0.1
1976	3	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1976	4	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1976	5	0.0	0.3	5.2	2.8	0.0	0.0	0.2	1.4	0.7	0.1
1976	6	0.0	1.6	26.3	14.1	0.0	0.0	0.9	6.8	3.6	0.5
1976	7	0.0	1.6	26.1	14.0	0.0	0.0	0.8	6.7	3.6	0.5
1976	8	0.0	0.5	8.7	4.7	0.0	0.0	0.3	2.3	1.2	0.2
1976	9	0.0	0.4	6.4	3.4	0.0	0.0	0.2	1.7	0.9	0.1
1976	10	0.0	0.5	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1976	11	0.0	0.3	5.3	2.9	0.0	0.0	0.2	1.4	0.7	0.1
1976	12	0.0	0.5	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1977	1	0.0	0.3	4.5	2.4	0.0	0.0	0.1	1.2	0.6	0.1
1977	2	0.0	0.3	4.2	2.2	0.0	0.0	0.1	1.1	0.6	0.1
1977	3	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1977	4	0.0	0.7	11.9	6.4	0.0	0.0	0.4	3.1	1.6	0.2
1977	5	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1977	6	0.0	0.7	11.1	6.0	0.0	0.0	0.4	2.9	1.5	0.2
1977	7	0.0	0.8	13.3	7.1	0.0	0.0	0.4	3.4	1.8	0.2
1977	8	0.0	0.5	8.3	4.5	0.0	0.0	0.3	2.2	1.1	0.2
1977	9	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1977	10	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1977	11	0.0	0.4	5.8	3.1	0.0	0.0	0.2	1.5	0.8	0.1
1977	12	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1

Source: JICA Study Team

Attachment 31：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1978 - 1983) (3/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1978	1	0.0	0.3	4.7	2.5	0.0	0.0	0.2	1.2	0.6	0.1
1978	2	0.0	0.3	4.8	2.6	0.0	0.0	0.2	1.2	0.7	0.1
1978	3	0.0	0.4	6.7	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1978	4	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
1978	5	0.0	0.4	6.2	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1978	6	0.0	0.7	11.2	6.0	0.0	0.0	0.4	2.9	1.5	0.2
1978	7	0.0	0.4	6.2	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1978	8	0.0	0.7	11.8	6.3	0.0	0.0	0.4	3.0	1.6	0.2
1978	9	0.0	0.7	11.5	6.2	0.0	0.0	0.4	3.0	1.6	0.2
1978	10	0.0	0.4	6.9	3.7	0.0	0.0	0.2	1.8	0.9	0.1
1978	11	0.0	0.4	6.6	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1978	12	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
1979	1	0.0	0.3	4.9	2.6	0.0	0.0	0.2	1.3	0.7	0.1
1979	2	0.0	0.3	5.0	2.7	0.0	0.0	0.2	1.3	0.7	0.1
1979	3	0.0	0.4	6.7	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1979	4	0.0	0.4	5.8	3.1	0.0	0.0	0.2	1.5	0.8	0.1
1979	5	0.0	0.2	3.4	1.8	0.0	0.0	0.1	0.9	0.5	0.1
1979	6	0.0	0.8	12.6	6.7	0.0	0.0	0.4	3.3	1.7	0.2
1979	7	0.0	0.6	9.0	4.8	0.0	0.0	0.3	2.3	1.2	0.2
1979	8	0.0	1.1	17.9	9.6	0.0	0.0	0.6	4.6	2.4	0.3
1979	9	0.0	0.5	7.5	4.1	0.0	0.0	0.2	2.0	1.0	0.1
1979	10	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
1979	11	0.0	0.4	6.9	3.7	0.0	0.0	0.2	1.8	0.9	0.1
1979	12	0.0	0.4	7.2	3.8	0.0	0.0	0.2	1.9	1.0	0.1
1980	1	0.0	0.3	4.8	2.6	0.0	0.0	0.2	1.2	0.7	0.1
1980	2	0.0	0.3	4.8	2.6	0.0	0.0	0.2	1.2	0.7	0.1
1980	3	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1980	4	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1980	5	0.0	0.7	10.6	5.7	0.0	0.0	0.3	2.7	1.5	0.2
1980	6	0.0	0.5	8.1	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1980	7	0.0	0.5	8.1	4.4	0.0	0.0	0.3	2.1	1.1	0.1
1980	8	0.0	0.9	14.3	7.7	0.0	0.0	0.5	3.7	2.0	0.3
1980	9	0.0	0.3	5.5	2.9	0.0	0.0	0.2	1.4	0.7	0.1
1980	10	0.0	0.4	6.9	3.7	0.0	0.0	0.2	1.8	0.9	0.1
1980	11	0.0	0.4	7.0	3.7	0.0	0.0	0.2	1.8	1.0	0.1
1980	12	0.0	0.5	7.4	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1981	1	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1981	2	0.0	0.3	5.0	2.7	0.0	0.0	0.2	1.3	0.7	0.1
1981	3	0.0	0.4	5.8	3.1	0.0	0.0	0.2	1.5	0.8	0.1
1981	4	0.0	0.4	6.4	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1981	5	0.0	0.3	5.2	2.8	0.0	0.0	0.2	1.3	0.7	0.1
1981	6	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1981	7	0.0	0.7	11.2	6.0	0.0	0.0	0.4	2.9	1.5	0.2
1981	8	0.0	0.8	12.6	6.8	0.0	0.0	0.4	3.3	1.7	0.2
1981	9	0.0	0.6	9.3	5.0	0.0	0.0	0.3	2.4	1.3	0.2
1981	10	0.0	0.5	8.2	4.4	0.0	0.0	0.3	2.1	1.1	0.2
1981	11	0.0	0.4	7.0	3.7	0.0	0.0	0.2	1.8	1.0	0.1
1981	12	0.0	0.5	7.4	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1982	1	0.0	0.3	4.7	2.5	0.0	0.0	0.2	1.2	0.6	0.1
1982	2	0.0	0.3	4.5	2.4	0.0	0.0	0.1	1.2	0.6	0.1
1982	3	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1982	4	0.0	0.3	5.2	2.8	0.0	0.0	0.2	1.4	0.7	0.1
1982	5	0.0	0.2	2.7	1.5	0.0	0.0	0.1	0.7	0.4	0.1
1982	6	0.0	0.7	11.5	6.2	0.0	0.0	0.4	3.0	1.6	0.2
1982	7	0.0	0.7	11.6	6.2	0.0	0.0	0.4	3.0	1.6	0.2
1982	8	0.0	1.0	15.9	8.6	0.0	0.0	0.5	4.1	2.2	0.3
1982	9	0.0	0.6	9.1	4.9	0.0	0.0	0.3	2.4	1.2	0.2
1982	10	0.0	0.5	7.9	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1982	11	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1982	12	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1983	1	0.0	0.3	4.2	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1983	2	0.0	0.3	4.5	2.4	0.0	0.0	0.1	1.2	0.6	0.1
1983	3	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.6	0.8	0.1
1983	4	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1983	5	0.0	0.3	4.7	2.5	0.0	0.0	0.2	1.2	0.6	0.1
1983	6	0.0	0.6	9.4	5.0	0.0	0.0	0.3	2.4	1.3	0.2
1983	7	0.0	0.9	14.1	7.6	0.0	0.0	0.5	3.7	1.9	0.3
1983	8	0.0	1.2	19.4	10.4	0.0	0.0	0.6	5.0	2.7	0.4
1983	9	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1983	10	0.0	0.6	9.3	5.0	0.0	0.0	0.3	2.4	1.3	0.2
1983	11	0.0	0.3	5.1	2.7	0.0	0.0	0.2	1.3	0.7	0.1
1983	12	0.0	0.4	7.2	3.9	0.0	0.0	0.2	1.9	1.0	0.1

Source: JICA Study Team

Attachment 31：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1984 - 1989) (4/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1984	1	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1984	2	0.0	0.3	4.9	2.6	0.0	0.0	0.2	1.3	0.7	0.1
1984	3	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1984	4	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.5	0.8	0.1
1984	5	0.0	0.6	9.0	4.9	0.0	0.0	0.3	2.3	1.2	0.2
1984	6	0.0	0.8	12.7	6.8	0.0	0.0	0.4	3.3	1.7	0.2
1984	7	0.0	1.3	21.1	11.3	0.0	0.0	0.7	5.5	2.9	0.4
1984	8	0.0	0.7	11.5	6.2	0.0	0.0	0.4	3.0	1.6	0.2
1984	9	0.0	0.4	6.7	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1984	10	0.0	0.4	5.8	3.1	0.0	0.0	0.2	1.5	0.8	0.1
1984	11	0.0	0.4	7.0	3.7	0.0	0.0	0.2	1.8	1.0	0.1
1984	12	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1985	1	0.0	0.3	4.8	2.6	0.0	0.0	0.2	1.2	0.7	0.1
1985	2	0.0	0.3	4.8	2.6	0.0	0.0	0.2	1.2	0.7	0.1
1985	3	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.6	0.8	0.1
1985	4	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.5	0.8	0.1
1985	5	0.0	0.5	8.9	4.8	0.0	0.0	0.3	2.3	1.2	0.2
1985	6	0.0	0.8	12.4	6.6	0.0	0.0	0.4	3.2	1.7	0.2
1985	7	0.0	1.1	17.3	9.3	0.0	0.0	0.6	4.5	2.4	0.3
1985	8	0.0	0.6	10.2	5.5	0.0	0.0	0.3	2.6	1.4	0.2
1985	9	0.0	0.4	5.7	3.0	0.0	0.0	0.2	1.5	0.8	0.1
1985	10	0.0	0.5	8.1	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1985	11	0.0	0.4	6.6	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1985	12	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1986	1	0.0	0.3	4.4	2.4	0.0	0.0	0.1	1.1	0.6	0.1
1986	2	0.0	0.3	4.8	2.6	0.0	0.0	0.2	1.3	0.7	0.1
1986	3	0.0	0.4	6.6	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1986	4	0.0	0.5	7.9	4.2	0.0	0.0	0.3	2.0	1.1	0.1
1986	5	0.0	0.2	3.9	2.1	0.0	0.0	0.1	1.0	0.5	0.1
1986	6	0.0	0.8	13.1	7.0	0.0	0.0	0.4	3.4	1.8	0.2
1986	7	0.0	0.9	14.0	7.5	0.0	0.0	0.5	3.6	1.9	0.3
1986	8	0.0	0.7	10.7	5.8	0.0	0.0	0.3	2.8	1.5	0.2
1986	9	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.6	0.8	0.1
1986	10	0.0	0.5	7.9	4.2	0.0	0.0	0.3	2.0	1.1	0.1
1986	11	0.0	0.3	5.1	2.7	0.0	0.0	0.2	1.3	0.7	0.1
1986	12	0.0	0.4	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1987	1	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1987	2	0.0	0.3	4.6	2.5	0.0	0.0	0.1	1.2	0.6	0.1
1987	3	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1987	4	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1987	5	0.0	0.2	2.7	1.4	0.0	0.0	0.1	0.7	0.4	0.0
1987	6	0.0	0.5	8.5	4.6	0.0	0.0	0.3	2.2	1.2	0.2
1987	7	0.0	1.5	23.5	12.6	0.0	0.0	0.8	6.1	3.2	0.4
1987	8	0.0	1.0	16.5	8.8	0.0	0.0	0.5	4.3	2.3	0.3
1987	9	0.0	0.7	11.6	6.2	0.0	0.0	0.4	3.0	1.6	0.2
1987	10	0.0	0.4	6.9	3.7	0.0	0.0	0.2	1.8	0.9	0.1
1987	11	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.5	0.8	0.1
1987	12	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1988	1	0.0	0.3	4.6	2.5	0.0	0.0	0.2	1.2	0.6	0.1
1988	2	0.0	0.3	4.6	2.5	0.0	0.0	0.1	1.2	0.6	0.1
1988	3	0.0	0.4	6.4	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1988	4	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
1988	5	0.0	0.5	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1988	6	0.0	0.6	10.2	5.5	0.0	0.0	0.3	2.6	1.4	0.2
1988	7	0.0	0.9	14.5	7.8	0.0	0.0	0.5	3.8	2.0	0.3
1988	8	0.0	0.5	8.2	4.4	0.0	0.0	0.3	2.1	1.1	0.2
1988	9	0.0	0.4	6.2	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1988	10	0.0	0.4	6.9	3.7	0.0	0.0	0.2	1.8	0.9	0.1
1988	11	0.0	0.4	6.6	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1988	12	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
1989	1	0.0	0.3	4.6	2.5	0.0	0.0	0.1	1.2	0.6	0.1
1989	2	0.0	0.3	4.5	2.4	0.0	0.0	0.1	1.2	0.6	0.1
1989	3	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1989	4	0.0	0.5	7.9	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1989	5	0.0	0.2	3.6	1.9	0.0	0.0	0.1	0.9	0.5	0.1
1989	6	0.0	0.3	5.2	2.8	0.0	0.0	0.2	1.3	0.7	0.1
1989	7	0.0	1.1	18.6	10.0	0.0	0.0	0.6	4.8	2.5	0.3
1989	8	0.0	0.8	12.8	6.9	0.0	0.0	0.4	3.3	1.7	0.2
1989	9	0.0	0.5	8.4	4.5	0.0	0.0	0.3	2.2	1.2	0.2
1989	10	0.0	0.6	10.3	5.5	0.0	0.0	0.3	2.7	1.4	0.2
1989	11	0.0	0.4	6.6	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1989	12	0.0	0.5	7.4	4.0	0.0	0.0	0.2	1.9	1.0	0.1

Source: JICA Study Team

Attachment 31：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1990 - 1995) (5/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1990	1	0.0	0.3	4.1	2.2	0.0	0.0	0.1	1.1	0.6	0.1
1990	2	0.0	0.3	4.2	2.2	0.0	0.0	0.1	1.1	0.6	0.1
1990	3	0.0	0.4	5.7	3.0	0.0	0.0	0.2	1.5	0.8	0.1
1990	4	0.0	0.3	5.2	2.8	0.0	0.0	0.2	1.3	0.7	0.1
1990	5	0.0	0.3	5.3	2.9	0.0	0.0	0.2	1.4	0.7	0.1
1990	6	0.0	0.7	10.8	5.8	0.0	0.0	0.4	2.8	1.5	0.2
1990	7	0.0	1.2	19.4	10.4	0.0	0.0	0.6	5.0	2.7	0.4
1990	8	0.0	0.7	10.6	5.7	0.0	0.0	0.3	2.7	1.5	0.2
1990	9	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
1990	10	0.0	0.6	10.1	5.4	0.0	0.0	0.3	2.6	1.4	0.2
1990	11	0.0	0.3	5.3	2.9	0.0	0.0	0.2	1.4	0.7	0.1
1990	12	0.0	0.4	7.1	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1991	1	0.0	0.2	3.9	2.1	0.0	0.0	0.1	1.0	0.5	0.1
1991	2	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1991	3	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1991	4	0.0	0.4	6.6	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1991	5	0.0	0.8	12.2	6.6	0.0	0.0	0.4	3.2	1.7	0.2
1991	6	0.0	0.9	13.8	7.4	0.0	0.0	0.4	3.6	1.9	0.3
1991	7	0.0	0.9	15.3	8.2	0.0	0.0	0.5	3.9	2.1	0.3
1991	8	0.0	0.8	12.8	6.9	0.0	0.0	0.4	3.3	1.8	0.2
1991	9	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
1991	10	0.0	0.4	6.7	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1991	11	0.0	0.3	4.9	2.6	0.0	0.0	0.2	1.3	0.7	0.1
1991	12	0.0	0.4	7.1	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1992	1	0.0	0.2	3.9	2.1	0.0	0.0	0.1	1.0	0.5	0.1
1992	2	0.0	0.2	3.6	1.9	0.0	0.0	0.1	0.9	0.5	0.1
1992	3	0.0	0.4	5.7	3.1	0.0	0.0	0.2	1.5	0.8	0.1
1992	4	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1992	5	0.0	0.3	4.8	2.6	0.0	0.0	0.2	1.2	0.7	0.1
1992	6	0.0	0.8	13.4	7.2	0.0	0.0	0.4	3.5	1.8	0.2
1992	7	0.0	0.5	7.9	4.2	0.0	0.0	0.3	2.0	1.1	0.1
1992	8	0.0	0.6	9.5	5.1	0.0	0.0	0.3	2.5	1.3	0.2
1992	9	0.0	0.3	5.0	2.7	0.0	0.0	0.2	1.3	0.7	0.1
1992	10	0.0	0.6	9.3	5.0	0.0	0.0	0.3	2.4	1.3	0.2
1992	11	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1992	12	0.0	0.4	7.1	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1993	1	0.0	0.3	4.1	2.2	0.0	0.0	0.1	1.1	0.6	0.1
1993	2	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1993	3	0.0	0.6	9.6	5.1	0.0	0.0	0.3	2.5	1.3	0.2
1993	4	0.0	0.4	5.8	3.1	0.0	0.0	0.2	1.5	0.8	0.1
1993	5	0.0	0.8	12.4	6.6	0.0	0.0	0.4	3.2	1.7	0.2
1993	6	0.0	1.1	17.2	9.2	0.0	0.0	0.6	4.4	2.3	0.3
1993	7	0.0	0.7	11.8	6.4	0.0	0.0	0.4	3.1	1.6	0.2
1993	8	0.0	1.1	17.2	9.3	0.0	0.0	0.6	4.5	2.4	0.3
1993	9	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1993	10	0.0	0.5	8.0	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1993	11	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1993	12	0.0	0.5	7.4	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1994	1	0.0	0.3	4.5	2.4	0.0	0.0	0.1	1.2	0.6	0.1
1994	2	0.0	0.3	4.8	2.6	0.0	0.0	0.2	1.2	0.7	0.1
1994	3	0.0	0.5	8.8	4.7	0.0	0.0	0.3	2.3	1.2	0.2
1994	4	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1994	5	0.0	0.2	3.9	2.1	0.0	0.0	0.1	1.0	0.5	0.1
1994	6	0.0	0.7	11.6	6.3	0.0	0.0	0.4	3.0	1.6	0.2
1994	7	0.0	0.5	8.2	4.4	0.0	0.0	0.3	2.1	1.1	0.2
1994	8	0.0	0.6	9.3	5.0	0.0	0.0	0.3	2.4	1.3	0.2
1994	9	0.0	0.4	6.2	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1994	10	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1994	11	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1994	12	0.0	0.5	7.4	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1995	1	0.0	0.3	4.6	2.5	0.0	0.0	0.1	1.2	0.6	0.1
1995	2	0.0	0.3	4.2	2.2	0.0	0.0	0.1	1.1	0.6	0.1
1995	3	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1995	4	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1995	5	0.0	0.5	8.2	4.4	0.0	0.0	0.3	2.1	1.1	0.2
1995	6	0.0	0.5	8.1	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1995	7	0.0	1.0	16.6	8.9	0.0	0.0	0.5	4.3	2.3	0.3
1995	8	0.0	0.7	11.2	6.0	0.0	0.0	0.4	2.9	1.5	0.2
1995	9	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
1995	10	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1995	11	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
1995	12	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1

Source: JICA Study Team

Attachment 31：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (1996 - 2001) (6/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
1996	1	0.0	0.3	4.4	2.3	0.0	0.0	0.1	1.1	0.6	0.1
1996	2	0.0	0.3	4.5	2.4	0.0	0.0	0.1	1.2	0.6	0.1
1996	3	0.0	0.4	7.0	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1996	4	0.0	0.3	4.9	2.7	0.0	0.0	0.2	1.3	0.7	0.1
1996	5	0.0	0.4	7.2	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1996	6	0.0	0.5	8.3	4.5	0.0	0.0	0.3	2.2	1.1	0.2
1996	7	0.0	0.6	9.2	4.9	0.0	0.0	0.3	2.4	1.3	0.2
1996	8	0.0	0.7	11.8	6.3	0.0	0.0	0.4	3.1	1.6	0.2
1996	9	0.0	0.4	5.7	3.1	0.0	0.0	0.2	1.5	0.8	0.1
1996	10	0.0	0.5	8.1	4.3	0.0	0.0	0.3	2.1	1.1	0.1
1996	11	0.0	0.4	6.6	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1996	12	0.0	0.5	7.4	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1997	1	0.0	0.3	4.2	2.2	0.0	0.0	0.1	1.1	0.6	0.1
1997	2	0.0	0.3	4.1	2.2	0.0	0.0	0.1	1.1	0.6	0.1
1997	3	0.0	0.4	7.0	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1997	4	0.0	0.3	5.1	2.7	0.0	0.0	0.2	1.3	0.7	0.1
1997	5	0.0	0.3	5.2	2.8	0.0	0.0	0.2	1.4	0.7	0.1
1997	6	0.0	0.4	7.2	3.9	0.0	0.0	0.2	1.9	1.0	0.1
1997	7	0.0	1.6	25.3	13.6	0.0	0.0	0.8	6.5	3.5	0.5
1997	8	0.0	0.6	10.3	5.5	0.0	0.0	0.3	2.7	1.4	0.2
1997	9	0.0	0.9	14.5	7.8	0.0	0.0	0.5	3.8	2.0	0.3
1997	10	0.0	0.5	7.4	4.0	0.0	0.0	0.2	1.9	1.0	0.1
1997	11	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1997	12	0.0	0.4	7.0	3.8	0.0	0.0	0.2	1.8	1.0	0.1
1998	1	0.0	0.3	4.2	2.2	0.0	0.0	0.1	1.1	0.6	0.1
1998	2	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
1998	3	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.6	0.8	0.1
1998	4	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
1998	5	0.0	0.6	10.3	5.5	0.0	0.0	0.3	2.7	1.4	0.2
1998	6	0.0	0.2	2.4	1.3	0.0	0.0	0.1	0.6	0.3	0.0
1998	7	0.0	1.2	19.4	10.4	0.0	0.0	0.6	5.0	2.7	0.4
1998	8	0.0	1.4	22.2	11.9	0.0	0.0	0.7	5.8	3.0	0.4
1998	9	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
1998	10	0.0	0.5	8.8	4.7	0.0	0.0	0.3	2.3	1.2	0.2
1998	11	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.6	0.8	0.1
1998	12	0.0	0.5	7.5	4.0	0.0	0.0	0.2	2.0	1.0	0.1
1999	1	0.0	0.3	4.5	2.4	0.0	0.0	0.1	1.2	0.6	0.1
1999	2	0.0	0.3	5.2	2.8	0.0	0.0	0.2	1.4	0.7	0.1
1999	3	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
1999	4	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
1999	5	0.0	0.6	8.9	4.8	0.0	0.0	0.3	2.3	1.2	0.2
1999	6	0.0	1.3	21.1	11.3	0.0	0.0	0.7	5.5	2.9	0.4
1999	7	0.0	0.8	13.2	7.1	0.0	0.0	0.4	3.4	1.8	0.2
1999	8	0.0	1.1	18.4	9.9	0.0	0.0	0.6	4.8	2.5	0.3
1999	9	0.0	0.4	6.8	3.7	0.0	0.0	0.2	1.8	0.9	0.1
1999	10	0.0	0.4	5.7	3.1	0.0	0.0	0.2	1.5	0.8	0.1
1999	11	0.0	0.4	6.6	3.6	0.0	0.0	0.2	1.7	0.9	0.1
1999	12	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
2000	1	0.0	0.3	4.4	2.3	0.0	0.0	0.1	1.1	0.6	0.1
2000	2	0.0	0.3	4.8	2.6	0.0	0.0	0.2	1.2	0.7	0.1
2000	3	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.6	0.8	0.1
2000	4	0.0	0.4	5.8	3.1	0.0	0.0	0.2	1.5	0.8	0.1
2000	5	0.0	0.8	13.4	7.2	0.0	0.0	0.4	3.5	1.8	0.2
2000	6	0.0	0.7	11.0	5.9	0.0	0.0	0.4	2.9	1.5	0.2
2000	7	0.0	0.8	12.4	6.6	0.0	0.0	0.4	3.2	1.7	0.2
2000	8	0.0	0.7	11.1	6.0	0.0	0.0	0.4	2.9	1.5	0.2
2000	9	0.0	0.3	5.1	2.7	0.0	0.0	0.2	1.3	0.7	0.1
2000	10	0.0	0.6	9.2	4.9	0.0	0.0	0.3	2.4	1.3	0.2
2000	11	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
2000	12	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
2001	1	0.0	0.3	4.4	2.4	0.0	0.0	0.1	1.1	0.6	0.1
2001	2	0.0	0.3	4.6	2.5	0.0	0.0	0.2	1.2	0.6	0.1
2001	3	0.0	0.4	6.6	3.6	0.0	0.0	0.2	1.7	0.9	0.1
2001	4	0.0	0.6	9.9	5.3	0.0	0.0	0.3	2.6	1.4	0.2
2001	5	0.0	0.6	9.7	5.2	0.0	0.0	0.3	2.5	1.3	0.2
2001	6	0.0	0.7	11.2	6.0	0.0	0.0	0.4	2.9	1.5	0.2
2001	7	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2001	8	0.0	0.7	10.8	5.8	0.0	0.0	0.3	2.8	1.5	0.2
2001	9	0.0	0.4	7.2	3.9	0.0	0.0	0.2	1.9	1.0	0.1
2001	10	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
2001	11	0.0	0.3	5.0	2.7	0.0	0.0	0.2	1.3	0.7	0.1
2001	12	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1

Source: JICA Study Team

Attachment 31：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2002 - 2007) (7/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2002	1	0.0	0.3	4.7	2.5	0.0	0.0	0.2	1.2	0.6	0.1
2002	2	0.0	0.3	5.2	2.8	0.0	0.0	0.2	1.3	0.7	0.1
2002	3	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2002	4	0.0	0.3	5.5	3.0	0.0	0.0	0.2	1.4	0.8	0.1
2002	5	0.0	0.5	8.1	4.3	0.0	0.0	0.3	2.1	1.1	0.1
2002	6	0.0	0.4	7.2	3.9	0.0	0.0	0.2	1.9	1.0	0.1
2002	7	0.0	1.1	18.0	9.7	0.0	0.0	0.6	4.7	2.5	0.3
2002	8	0.0	0.6	9.7	5.2	0.0	0.0	0.3	2.5	1.3	0.2
2002	9	0.0	0.4	7.1	3.8	0.0	0.0	0.2	1.8	1.0	0.1
2002	10	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.5	0.8	0.1
2002	11	0.0	0.3	5.0	2.7	0.0	0.0	0.2	1.3	0.7	0.1
2002	12	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
2003	1	0.0	0.3	4.5	2.4	0.0	0.0	0.1	1.2	0.6	0.1
2003	2	0.0	0.3	5.1	2.7	0.0	0.0	0.2	1.3	0.7	0.1
2003	3	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2003	4	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.6	0.8	0.1
2003	5	0.0	0.1	2.4	1.3	0.0	0.0	0.1	0.6	0.3	0.0
2003	6	0.0	1.4	22.4	12.0	0.0	0.0	0.7	5.8	3.1	0.4
2003	7	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.5	0.8	0.1
2003	8	0.0	0.6	9.4	5.1	0.0	0.0	0.3	2.4	1.3	0.2
2003	9	0.0	0.4	7.0	3.8	0.0	0.0	0.2	1.8	1.0	0.1
2003	10	0.0	0.4	6.2	3.3	0.0	0.0	0.2	1.6	0.8	0.1
2003	11	0.0	0.4	7.0	3.8	0.0	0.0	0.2	1.8	1.0	0.1
2003	12	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
2004	1	0.0	0.3	4.4	2.4	0.0	0.0	0.1	1.1	0.6	0.1
2004	2	0.0	0.3	5.2	2.8	0.0	0.0	0.2	1.3	0.7	0.1
2004	3	0.0	0.4	6.4	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2004	4	0.0	0.3	5.5	3.0	0.0	0.0	0.2	1.4	0.8	0.1
2004	5	0.0	0.3	4.6	2.5	0.0	0.0	0.1	1.2	0.6	0.1
2004	6	0.0	0.7	10.7	5.8	0.0	0.0	0.3	2.8	1.5	0.2
2004	7	0.0	1.0	15.6	8.4	0.0	0.0	0.5	4.0	2.1	0.3
2004	8	0.0	0.7	10.8	5.8	0.0	0.0	0.3	2.8	1.5	0.2
2004	9	0.0	0.9	14.1	7.5	0.0	0.0	0.5	3.6	1.9	0.3
2004	10	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2004	11	0.0	0.4	7.0	3.7	0.0	0.0	0.2	1.8	1.0	0.1
2004	12	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2005	1	0.0	0.3	4.8	2.6	0.0	0.0	0.2	1.2	0.7	0.1
2005	2	0.0	0.3	5.1	2.7	0.0	0.0	0.2	1.3	0.7	0.1
2005	3	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
2005	4	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
2005	5	0.0	0.2	3.6	1.9	0.0	0.0	0.1	0.9	0.5	0.1
2005	6	0.0	0.2	4.0	2.1	0.0	0.0	0.1	1.0	0.5	0.1
2005	7	0.0	0.8	12.5	6.7	0.0	0.0	0.4	3.2	1.7	0.2
2005	8	0.0	0.8	12.5	6.7	0.0	0.0	0.4	3.2	1.7	0.2
2005	9	0.0	0.6	9.3	5.0	0.0	0.0	0.3	2.4	1.3	0.2
2005	10	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2005	11	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2005	12	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
2006	1	0.0	0.3	4.7	2.5	0.0	0.0	0.2	1.2	0.6	0.1
2006	2	0.0	0.3	4.5	2.4	0.0	0.0	0.1	1.2	0.6	0.1
2006	3	0.0	0.4	6.6	3.5	0.0	0.0	0.2	1.7	0.9	0.1
2006	4	0.0	0.4	6.1	3.2	0.0	0.0	0.2	1.6	0.8	0.1
2006	5	0.0	0.9	14.5	7.8	0.0	0.0	0.5	3.7	2.0	0.3
2006	6	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.5	0.8	0.1
2006	7	0.0	0.6	10.3	5.5	0.0	0.0	0.3	2.7	1.4	0.2
2006	8	0.0	0.6	10.2	5.5	0.0	0.0	0.3	2.7	1.4	0.2
2006	9	0.0	0.6	9.2	5.0	0.0	0.0	0.3	2.4	1.3	0.2
2006	10	0.0	0.4	6.4	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2006	11	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2006	12	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
2007	1	0.0	0.3	4.4	2.4	0.0	0.0	0.1	1.1	0.6	0.1
2007	2	0.0	0.3	4.2	2.2	0.0	0.0	0.1	1.1	0.6	0.1
2007	3	0.0	0.4	6.9	3.7	0.0	0.0	0.2	1.8	0.9	0.1
2007	4	0.0	0.3	5.2	2.8	0.0	0.0	0.2	1.3	0.7	0.1
2007	5	0.0	0.3	4.9	2.6	0.0	0.0	0.2	1.3	0.7	0.1
2007	6	0.0	1.3	21.5	11.5	0.0	0.0	0.7	5.6	2.9	0.4
2007	7	0.0	1.1	17.3	9.3	0.0	0.0	0.6	4.5	2.4	0.3
2007	8	0.0	0.7	11.9	6.4	0.0	0.0	0.4	3.1	1.6	0.2
2007	9	0.0	0.7	11.8	6.4	0.0	0.0	0.4	3.1	1.6	0.2
2007	10	0.0	0.7	11.0	5.9	0.0	0.0	0.4	2.8	1.5	0.2
2007	11	0.0	0.3	4.7	2.5	0.0	0.0	0.2	1.2	0.6	0.1
2007	12	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1

Source: JICA Study Team

Attachment 31：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2008 - 2013) (8/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2008	1	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
2008	2	0.0	0.3	4.9	2.6	0.0	0.0	0.2	1.3	0.7	0.1
2008	3	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.5	0.8	0.1
2008	4	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2008	5	0.0	0.3	4.9	2.6	0.0	0.0	0.2	1.3	0.7	0.1
2008	6	0.0	0.9	14.0	7.5	0.0	0.0	0.5	3.6	1.9	0.3
2008	7	0.0	1.1	17.8	9.6	0.0	0.0	0.6	4.6	2.4	0.3
2008	8	0.0	1.1	17.4	9.3	0.0	0.0	0.6	4.5	2.4	0.3
2008	9	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
2008	10	0.0	0.4	5.8	3.1	0.0	0.0	0.2	1.5	0.8	0.1
2008	11	0.0	0.4	6.2	3.3	0.0	0.0	0.2	1.6	0.8	0.1
2008	12	0.0	0.5	7.5	4.0	0.0	0.0	0.2	2.0	1.0	0.1
2009	1	0.0	0.3	5.2	2.8	0.0	0.0	0.2	1.3	0.7	0.1
2009	2	0.0	0.3	5.4	2.9	0.0	0.0	0.2	1.4	0.7	0.1
2009	3	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2009	4	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.5	0.8	0.1
2009	5	0.0	0.4	6.6	3.6	0.0	0.0	0.2	1.7	0.9	0.1
2009	6	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2009	7	0.0	1.1	18.6	10.0	0.0	0.0	0.6	4.8	2.5	0.3
2009	8	0.0	0.9	14.0	7.5	0.0	0.0	0.5	3.6	1.9	0.3
2009	9	0.0	0.3	5.4	2.9	0.0	0.0	0.2	1.4	0.7	0.1
2009	10	0.0	0.5	8.0	4.3	0.0	0.0	0.3	2.1	1.1	0.1
2009	11	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
2009	12	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2010	1	0.0	0.3	5.0	2.7	0.0	0.0	0.2	1.3	0.7	0.1
2010	2	0.0	0.3	5.5	2.9	0.0	0.0	0.2	1.4	0.7	0.1
2010	3	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
2010	4	0.0	0.4	6.1	3.3	0.0	0.0	0.2	1.6	0.8	0.1
2010	5	0.0	0.4	5.7	3.1	0.0	0.0	0.2	1.5	0.8	0.1
2010	6	0.0	1.1	18.2	9.8	0.0	0.0	0.6	4.7	2.5	0.3
2010	7	0.0	0.4	5.7	3.1	0.0	0.0	0.2	1.5	0.8	0.1
2010	8	0.0	0.6	10.1	5.4	0.0	0.0	0.3	2.6	1.4	0.2
2010	9	0.0	0.5	7.7	4.1	0.0	0.0	0.2	2.0	1.1	0.1
2010	10	0.0	0.6	9.2	5.0	0.0	0.0	0.3	2.4	1.3	0.2
2010	11	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
2010	12	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
2011	1	0.0	0.3	5.1	2.7	0.0	0.0	0.2	1.3	0.7	0.1
2011	2	0.0	0.3	5.3	2.8	0.0	0.0	0.2	1.4	0.7	0.1
2011	3	0.0	0.4	6.8	3.6	0.0	0.0	0.2	1.8	0.9	0.1
2011	4	0.0	0.3	5.5	3.0	0.0	0.0	0.2	1.4	0.8	0.1
2011	5	0.0	0.4	6.7	3.6	0.0	0.0	0.2	1.7	0.9	0.1
2011	6	0.0	0.4	6.2	3.3	0.0	0.0	0.2	1.6	0.8	0.1
2011	7	0.0	0.6	9.7	5.2	0.0	0.0	0.3	2.5	1.3	0.2
2011	8	0.0	0.8	12.4	6.6	0.0	0.0	0.4	3.2	1.7	0.2
2011	9	0.0	0.8	13.2	7.1	0.0	0.0	0.4	3.4	1.8	0.2
2011	10	0.0	0.5	8.1	4.4	0.0	0.0	0.3	2.1	1.1	0.1
2011	11	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
2011	12	0.0	0.5	7.9	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2012	1	0.0	0.3	5.2	2.8	0.0	0.0	0.2	1.3	0.7	0.1
2012	2	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
2012	3	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2012	4	0.0	0.5	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
2012	5	0.0	0.2	3.2	1.7	0.0	0.0	0.1	0.8	0.4	0.1
2012	6	0.0	1.5	23.8	12.8	0.0	0.0	0.8	6.2	3.3	0.4
2012	7	0.0	0.7	11.2	6.0	0.0	0.0	0.4	2.9	1.5	0.2
2012	8	0.0	0.6	9.1	4.9	0.0	0.0	0.3	2.4	1.2	0.2
2012	9	0.0	0.3	4.9	2.6	0.0	0.0	0.2	1.3	0.7	0.1
2012	10	0.0	0.8	12.2	6.6	0.0	0.0	0.4	3.2	1.7	0.2
2012	11	0.0	0.4	7.0	3.8	0.0	0.0	0.2	1.8	1.0	0.1
2012	12	0.0	0.5	7.9	4.3	0.0	0.0	0.3	2.1	1.1	0.1
2013	1	0.0	0.3	4.6	2.5	0.0	0.0	0.1	1.2	0.6	0.1
2013	2	0.0	0.3	5.4	2.9	0.0	0.0	0.2	1.4	0.7	0.1
2013	3	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2013	4	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
2013	5	0.0	0.6	9.6	5.2	0.0	0.0	0.3	2.5	1.3	0.2
2013	6	0.0	0.6	9.4	5.1	0.0	0.0	0.3	2.4	1.3	0.2
2013	7	0.0	0.5	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
2013	8	0.0	0.7	11.4	6.1	0.0	0.0	0.4	2.9	1.6	0.2
2013	9	0.0	0.3	5.0	2.7	0.0	0.0	0.2	1.3	0.7	0.1
2013	10	0.0	0.4	7.2	3.9	0.0	0.0	0.2	1.9	1.0	0.1
2013	11	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2013	12	0.0	0.4	7.2	3.9	0.0	0.0	0.2	1.9	1.0	0.1

Source: JICA Study Team

Attachment 31：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Matamhuri River Basin (m^3/s) (2014 - 2019) (9/9)

		Matamhuri River Basin									
	District	Chattogram	Cox's Bazar				Bandarban				
	Upazila	Lohagora	Cox's Bazar Sadar	Chakaria	Paykua	Moheshkhali	Sadar	Ruma	Lama	Alikadam	Naikha-ngchari
2014	1	0.0	0.3	4.5	2.4	0.0	0.0	0.1	1.2	0.6	0.1
2014	2	0.0	0.3	4.6	2.5	0.0	0.0	0.1	1.2	0.6	0.1
2014	3	0.0	0.4	6.6	3.6	0.0	0.0	0.2	1.7	0.9	0.1
2014	4	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
2014	5	0.0	0.5	8.3	4.5	0.0	0.0	0.3	2.2	1.1	0.2
2014	6	0.0	1.6	26.3	14.1	0.0	0.0	0.9	6.8	3.6	0.5
2014	7	0.0	0.4	6.9	3.7	0.0	0.0	0.2	1.8	0.9	0.1
2014	8	0.0	0.6	10.4	5.6	0.0	0.0	0.3	2.7	1.4	0.2
2014	9	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2014	10	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2014	11	0.0	0.5	7.6	4.1	0.0	0.0	0.2	2.0	1.0	0.1
2014	12	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2015	1	0.0	0.3	4.9	2.6	0.0	0.0	0.2	1.3	0.7	0.1
2015	2	0.0	0.3	5.1	2.7	0.0	0.0	0.2	1.3	0.7	0.1
2015	3	0.0	0.5	7.5	4.0	0.0	0.0	0.2	1.9	1.0	0.1
2015	4	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
2015	5	0.0	0.2	3.3	1.8	0.0	0.0	0.1	0.9	0.5	0.1
2015	6	0.0	0.9	14.0	7.5	0.0	0.0	0.5	3.6	1.9	0.3
2015	7	0.0	1.8	28.8	15.4	0.0	0.0	0.9	7.4	3.9	0.5
2015	8	0.0	1.0	16.0	8.6	0.0	0.0	0.5	4.1	2.2	0.3
2015	9	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2015	10	0.0	0.5	7.9	4.3	0.0	0.0	0.3	2.1	1.1	0.1
2015	11	0.0	0.4	7.1	3.8	0.0	0.0	0.2	1.8	1.0	0.1
2015	12	0.0	0.5	7.5	4.0	0.0	0.0	0.2	2.0	1.0	0.1
2016	1	0.0	0.3	4.6	2.4	0.0	0.0	0.1	1.2	0.6	0.1
2016	2	0.0	0.3	5.0	2.7	0.0	0.0	0.2	1.3	0.7	0.1
2016	3	0.0	0.4	6.6	3.5	0.0	0.0	0.2	1.7	0.9	0.1
2016	4	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2016	5	0.0	0.3	5.2	2.8	0.0	0.0	0.2	1.4	0.7	0.1
2016	6	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
2016	7	0.0	0.6	10.3	5.5	0.0	0.0	0.3	2.7	1.4	0.2
2016	8	0.0	0.6	9.4	5.1	0.0	0.0	0.3	2.4	1.3	0.2
2016	9	0.0	0.4	6.8	3.6	0.0	0.0	0.2	1.7	0.9	0.1
2016	10	0.0	0.4	7.1	3.8	0.0	0.0	0.2	1.8	1.0	0.1
2016	11	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
2016	12	0.0	0.5	7.9	4.3	0.0	0.0	0.3	2.1	1.1	0.1
2017	1	0.0	0.4	5.7	3.1	0.0	0.0	0.2	1.5	0.8	0.1
2017	2	0.0	0.3	5.6	3.0	0.0	0.0	0.2	1.4	0.8	0.1
2017	3	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2017	4	0.0	0.4	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
2017	5	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
2017	6	0.0	0.8	12.9	6.9	0.0	0.0	0.4	3.3	1.8	0.2
2017	7	0.0	0.6	9.4	5.0	0.0	0.0	0.3	2.4	1.3	0.2
2017	8	0.0	0.5	8.8	4.7	0.0	0.0	0.3	2.3	1.2	0.2
2017	9	0.0	0.7	11.9	6.4	0.0	0.0	0.4	3.1	1.6	0.2
2017	10	0.0	0.5	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
2017	11	0.0	0.5	7.4	3.9	0.0	0.0	0.2	1.9	1.0	0.1
2017	12	0.0	0.5	7.4	4.0	0.0	0.0	0.2	1.9	1.0	0.1
2018	1	0.0	0.3	4.6	2.5	0.0	0.0	0.1	1.2	0.6	0.1
2018	2	0.0	0.3	4.6	2.5	0.0	0.0	0.2	1.2	0.6	0.1
2018	3	0.0	0.4	6.2	3.3	0.0	0.0	0.2	1.6	0.8	0.1
2018	4	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.6	0.8	0.1
2018	5	0.0	0.4	5.9	3.2	0.0	0.0	0.2	1.5	0.8	0.1
2018	6	0.0	0.8	13.6	7.3	0.0	0.0	0.4	3.5	1.9	0.2
2018	7	0.0	0.8	12.3	6.6	0.0	0.0	0.4	3.2	1.7	0.2
2018	8	0.0	0.5	8.7	4.7	0.0	0.0	0.3	2.3	1.2	0.2
2018	9	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.5	0.8	0.1
2018	10	0.0	0.7	10.7	5.7	0.0	0.0	0.3	2.8	1.5	0.2
2018	11	0.0	0.4	7.3	3.9	0.0	0.0	0.2	1.9	1.0	0.1
2018	12	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1
2019	1	0.0	0.3	5.3	2.8	0.0	0.0	0.2	1.4	0.7	0.1
2019	2	0.0	0.3	5.1	2.8	0.0	0.0	0.2	1.3	0.7	0.1
2019	3	0.0	0.4	6.7	3.6	0.0	0.0	0.2	1.7	0.9	0.1
2019	4	0.0	0.4	6.0	3.2	0.0	0.0	0.2	1.6	0.8	0.1
2019	5	0.0	0.3	4.3	2.3	0.0	0.0	0.1	1.1	0.6	0.1
2019	6	0.0	0.2	3.4	1.8	0.0	0.0	0.1	0.9	0.5	0.1
2019	7	0.0	1.1	17.3	9.3	0.0	0.0	0.6	4.5	2.4	0.3
2019	8	0.0	0.6	9.4	5.1	0.0	0.0	0.3	2.4	1.3	0.2
2019	9	0.0	0.4	6.5	3.5	0.0	0.0	0.2	1.7	0.9	0.1
2019	10	0.0	0.4	6.3	3.4	0.0	0.0	0.2	1.6	0.9	0.1
2019	11	0.0	0.3	5.3	2.9	0.0	0.0	0.2	1.4	0.7	0.1
2019	12	0.0	0.5	7.8	4.2	0.0	0.0	0.3	2.0	1.1	0.1

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 32：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (1966 - 1977) (1/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1966	1	0.0	4.5	0.7	0.0	0.0	0.6
1966	2	0.0	4.5	0.7	0.0	0.0	0.6
1966	3	0.0	5.7	0.9	0.0	0.0	0.8
1966	4	0.0	5.6	0.9	0.0	0.0	0.7
1966	5	0.0	2.4	0.4	0.0	0.0	0.3
1966	6	0.2	25.7	4.0	0.0	0.0	3.4
1966	7	0.1	11.7	1.8	0.0	0.0	1.5
1966	8	0.2	18.0	2.8	0.0	0.0	2.4
1966	9	0.1	6.5	1.0	0.0	0.0	0.9
1966	10	0.1	6.9	1.1	0.0	0.0	0.9
1966	11	0.1	6.0	0.9	0.0	0.0	0.8
1966	12	0.1	7.0	1.1	0.0	0.0	0.9
1967	1	0.0	4.0	0.6	0.0	0.0	0.5
1967	2	0.0	4.5	0.7	0.0	0.0	0.6
1967	3	0.0	5.9	0.9	0.0	0.0	0.8
1967	4	0.0	5.6	0.9	0.0	0.0	0.7
1967	5	0.0	2.9	0.5	0.0	0.0	0.4
1967	6	0.1	11.7	1.8	0.0	0.0	1.5
1967	7	0.2	19.7	3.1	0.0	0.0	2.6
1967	8	0.1	16.8	2.6	0.0	0.0	2.2
1967	9	0.1	16.2	2.5	0.0	0.0	2.1
1967	10	0.0	5.5	0.9	0.0	0.0	0.7
1967	11	0.1	6.9	1.1	0.0	0.0	0.9
1967	12	0.1	7.3	1.1	0.0	0.0	1.0
1968	1	0.0	4.4	0.7	0.0	0.0	0.6
1968	2	0.0	4.4	0.7	0.0	0.0	0.6
1968	3	0.1	6.0	0.9	0.0	0.0	0.8
1968	4	0.0	5.6	0.9	0.0	0.0	0.7
1968	5	0.0	5.8	0.9	0.0	0.0	0.8
1968	6	0.2	18.3	2.9	0.0	0.0	2.4
1968	7	0.1	16.0	2.5	0.0	0.0	2.1
1968	8	0.1	14.9	2.3	0.0	0.0	2.0
1968	9	0.0	5.1	0.8	0.0	0.0	0.7
1968	10	0.0	4.9	0.8	0.0	0.0	0.6
1968	11	0.1	6.5	1.0	0.0	0.0	0.9
1968	12	0.1	7.5	1.2	0.0	0.0	1.0
1969	1	0.0	4.5	0.7	0.0	0.0	0.6
1969	2	0.0	4.5	0.7	0.0	0.0	0.6
1969	3	0.0	5.6	0.9	0.0	0.0	0.7
1969	4	0.0	5.2	0.8	0.0	0.0	0.7
1969	5	0.0	3.0	0.5	0.0	0.0	0.4
1969	6	0.1	16.0	2.5	0.0	0.0	2.1
1969	7	0.2	20.0	3.1	0.0	0.0	2.6
1969	8	0.2	21.2	3.3	0.0	0.0	2.8
1969	9	0.1	9.6	1.5	0.0	0.0	1.3
1969	10	0.1	6.2	1.0	0.0	0.0	0.8
1969	11	0.1	6.7	1.1	0.0	0.0	0.9
1969	12	0.1	6.9	1.1	0.0	0.0	0.9
1970	1	0.0	4.3	0.7	0.0	0.0	0.6
1970	2	0.0	4.2	0.7	0.0	0.0	0.5
1970	3	0.1	6.0	0.9	0.0	0.0	0.8
1970	4	0.0	5.5	0.9	0.0	0.0	0.7
1970	5	0.0	5.8	0.9	0.0	0.0	0.8
1970	6	0.1	9.7	1.5	0.0	0.0	1.3
1970	7	0.2	23.9	3.8	0.0	0.0	3.1
1970	8	0.1	10.1	1.6	0.0	0.0	1.3
1970	9	0.0	5.6	0.9	0.0	0.0	0.7
1970	10	0.1	7.7	1.2	0.0	0.0	1.0
1970	11	0.0	5.4	0.9	0.0	0.0	0.7
1970	12	0.1	7.1	1.1	0.0	0.0	0.9
1971	1	0.0	4.4	0.7	0.0	0.0	0.6
1971	2	0.0	4.4	0.7	0.0	0.0	0.6
1971	3	0.1	6.0	0.9	0.0	0.0	0.8
1971	4	0.0	5.8	0.9	0.0	0.0	0.8
1971	5	0.0	3.5	0.5	0.0	0.0	0.5
1971	6	0.2	19.8	3.1	0.0	0.0	2.6
1971	7	0.2	25.5	4.0	0.0	0.0	3.3
1971	8	0.1	11.4	1.8	0.0	0.0	1.5
1971	9	0.0	5.8	0.9	0.0	0.0	0.8
1971	10	0.0	5.3	0.8	0.0	0.0	0.7
1971	11	0.0	5.1	0.8	0.0	0.0	0.7
1971	12	0.1	7.2	1.1	0.0	0.0	0.9

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1972	1	0.0	4.4	0.7	0.0	0.0	0.6
1972	2	0.0	4.8	0.8	0.0	0.0	0.6
1972	3	0.1	6.0	0.9	0.0	0.0	0.8
1972	4	0.0	5.7	0.9	0.0	0.0	0.7
1972	5	0.0	3.2	0.5	0.0	0.0	0.4
1972	6	0.0	5.4	0.9	0.0	0.0	0.7
1972	7	0.0	5.4	0.9	0.0	0.0	0.7
1972	8	0.1	14.1	2.2	0.0	0.0	1.8
1972	9	0.1	7.4	1.2	0.0	0.0	1.0
1972	10	0.1	11.7	1.8	0.0	0.0	1.5
1972	11	0.1	6.7	1.0	0.0	0.0	0.9
1972	12	0.1	7.4	1.2	0.0	0.0	1.0
1973	1	0.0	4.8	0.7	0.0	0.0	0.6
1973	2	0.0	4.7	0.7	0.0	0.0	0.6
1973	3	0.1	6.3	1.0	0.0	0.0	0.8
1973	4	0.1	6.0	0.9	0.0	0.0	0.8
1973	5	0.1	8.3	1.3	0.0	0.0	1.1
1973	6	0.1	13.3	2.1	0.0	0.0	1.7
1973	7	0.1	14.7	2.3	0.0	0.0	1.9
1973	8	0.1	8.5	1.3	0.0	0.0	1.1
1973	9	0.1	6.6	1.0	0.0	0.0	0.9
1973	10	0.1	6.4	1.0	0.0	0.0	0.8
1973	11	0.0	4.3	0.7	0.0	0.0	0.6
1973	12	0.1	6.8	1.1	0.0	0.0	0.9
1974	1	0.0	4.4	0.7	0.0	0.0	0.6
1974	2	0.0	4.6	0.7	0.0	0.0	0.6
1974	3	0.0	5.5	0.9	0.0	0.0	0.7
1974	4	0.0	5.4	0.8	0.0	0.0	0.7
1974	5	0.1	8.4	1.3	0.0	0.0	1.1
1974	6	0.1	14.1	2.2	0.0	0.0	1.8
1974	7	0.2	21.7	3.4	0.0	0.0	2.8
1974	8	0.1	17.8	2.8	0.0	0.0	2.3
1974	9	0.0	5.6	0.9	0.0	0.0	0.7
1974	10	0.1	6.4	1.0	0.0	0.0	0.8
1974	11	0.0	4.8	0.8	0.0	0.0	0.6
1974	12	0.1	7.1	1.1	0.0	0.0	0.9
1975	1	0.0	4.2	0.7	0.0	0.0	0.6
1975	2	0.0	4.2	0.7	0.0	0.0	0.6
1975	3	0.1	6.1	1.0	0.0	0.0	0.8
1975	4	0.0	5.7	0.9	0.0	0.0	0.7
1975	5	0.0	4.5	0.7	0.0	0.0	0.6
1975	6	0.1	8.1	1.3	0.0	0.0	1.1
1975	7	0.2	21.7	3.4	0.0	0.0	2.8
1975	8	0.1	9.4	1.5	0.0	0.0	1.2
1975	9	0.0	5.3	0.8	0.0	0.0	0.7
1975	10	0.1	12.0	1.9	0.0	0.0	1.6
1975	11	0.1	7.6	1.2	0.0	0.0	1.0
1975	12	0.1	6.6	1.0	0.0	0.0	0.9
1976	1	0.0	4.2	0.7	0.0	0.0	0.6
1976	2	0.0	4.4	0.7	0.0	0.0	0.6
1976	3	0.1	6.0	0.9	0.0	0.0	0.8
1976	4	0.0	5.4	0.9	0.0	0.0	0.7
1976	5	0.0	4.5	0.7	0.0	0.0	0.6
1976	6	0.1	14.9	2.3	0.0	0.0	2.0
1976	7	0.2	23.3	3.7	0.0	0.0	3.1
1976	8	0.1	11.3	1.8	0.0	0.0	1.5
1976	9	0.1	7.6	1.2	0.0	0.0	1.0
1976	10	0.1	8.0	1.3	0.0	0.0	1.1
1976	11	0.1	8.0	1.3	0.0	0.0	1.1
1976	12	0.1	7.0	1.1	0.0	0.0	0.9
1977	1	0.0	4.4	0.7	0.0	0.0	0.6
1977	2	0.0	4.2	0.7	0.0	0.0	0.6
1977	3	0.0	5.9	0.9	0.0	0.0	0.8
1977	4	0.1	10.9	1.7	0.0	0.0	1.4
1977	5	0.0	5.9	0.9	0.0	0.0	0.8
1977	6	0.1	15.8	2.5	0.0	0.0	2.1
1977	7	0.2	18.1	2.8	0.0	0.0	2.4
1977	8	0.1	10.9	1.7	0.0	0.0	1.4
1977	9	0.0	4.9	0.8	0.0	0.0	0.6
1977	10	0.1	7.2	1.1	0.0	0.0	0.9
1977	11	0.0	5.6	0.9	0.0	0.0	0.7
1977	12	0.1	6.9	1.1	0.0	0.0	0.9

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 32：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (1978 - 1989) (2/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1978	1	0.0	4.3	0.7	0.0	0.0	0.6
1978	2	0.0	4.5	0.7	0.0	0.0	0.6
1978	3	0.0	5.9	0.9	0.0	0.0	0.8
1978	4	0.1	7.0	1.1	0.0	0.0	0.9
1978	5	0.1	8.8	1.4	0.0	0.0	1.1
1978	6	0.1	10.4	1.6	0.0	0.0	1.4
1978	7	0.1	9.4	1.5	0.0	0.0	1.2
1978	8	0.1	9.7	1.5	0.0	0.0	1.3
1978	9	0.1	8.0	1.3	0.0	0.0	1.1
1978	10	0.0	5.2	0.8	0.0	0.0	0.7
1978	11	0.1	6.7	1.1	0.0	0.0	0.9
1978	12	0.1	7.3	1.1	0.0	0.0	1.0
1979	1	0.0	4.4	0.7	0.0	0.0	0.6
1979	2	0.0	4.5	0.7	0.0	0.0	0.6
1979	3	0.1	6.1	1.0	0.0	0.0	0.8
1979	4	0.0	5.7	0.9	0.0	0.0	0.8
1979	5	0.0	2.0	0.3	0.0	0.0	0.3
1979	6	0.0	3.0	0.5	0.0	0.0	0.4
1979	7	0.0	3.5	0.6	0.0	0.0	0.5
1979	8	0.1	9.8	1.5	0.0	0.0	1.3
1979	9	0.0	5.2	0.8	0.0	0.0	0.7
1979	10	0.1	8.2	1.3	0.0	0.0	1.1
1979	11	0.1	6.8	1.1	0.0	0.0	0.9
1979	12	0.1	7.1	1.1	0.0	0.0	0.9
1980	1	0.0	4.6	0.7	0.0	0.0	0.6
1980	2	0.0	4.7	0.7	0.0	0.0	0.6
1980	3	0.0	5.9	0.9	0.0	0.0	0.8
1980	4	0.0	5.6	0.9	0.0	0.0	0.7
1980	5	0.0	3.0	0.5	0.0	0.0	0.4
1980	6	0.0	4.4	0.7	0.0	0.0	0.6
1980	7	0.0	3.3	0.5	0.0	0.0	0.4
1980	8	0.1	8.3	1.3	0.0	0.0	1.1
1980	9	0.0	5.7	0.9	0.0	0.0	0.8
1980	10	0.1	6.0	0.9	0.0	0.0	0.8
1980	11	0.1	6.7	1.1	0.0	0.0	0.9
1980	12	0.1	7.0	1.1	0.0	0.0	0.9
1981	1	0.0	4.2	0.7	0.0	0.0	0.6
1981	2	0.0	4.4	0.7	0.0	0.0	0.6
1981	3	0.0	5.8	0.9	0.0	0.0	0.8
1981	4	0.0	5.7	0.9	0.0	0.0	0.8
1981	5	0.0	4.8	0.8	0.0	0.0	0.6
1981	6	0.1	11.8	1.9	0.0	0.0	1.6
1981	7	0.1	14.1	2.2	0.0	0.0	1.8
1981	8	0.1	9.0	1.4	0.0	0.0	1.2
1981	9	0.1	10.5	1.6	0.0	0.0	1.4
1981	10	0.1	6.9	1.1	0.0	0.0	0.9
1981	11	0.1	6.1	1.0	0.0	0.0	0.8
1981	12	0.1	6.4	1.0	0.0	0.0	0.8
1982	1	0.0	4.5	0.7	0.0	0.0	0.6
1982	2	0.0	4.2	0.7	0.0	0.0	0.6
1982	3	0.1	6.2	1.0	0.0	0.0	0.8
1982	4	0.0	5.1	0.8	0.0	0.0	0.7
1982	5	0.0	2.2	0.3	0.0	0.0	0.3
1982	6	0.2	20.1	3.2	0.0	0.0	2.6
1982	7	0.1	14.6	2.3	0.0	0.0	1.9
1982	8	0.1	14.3	2.2	0.0	0.0	1.9
1982	9	0.1	8.1	1.3	0.0	0.0	1.1
1982	10	0.1	7.6	1.2	0.0	0.0	1.0
1982	11	0.0	5.2	0.8	0.0	0.0	0.7
1982	12	0.1	7.0	1.1	0.0	0.0	0.9
1983	1	0.0	4.1	0.6	0.0	0.0	0.5
1983	2	0.0	4.0	0.6	0.0	0.0	0.5
1983	3	0.0	5.5	0.9	0.0	0.0	0.7
1983	4	0.0	5.0	0.8	0.0	0.0	0.7
1983	5	0.0	4.6	0.7	0.0	0.0	0.6
1983	6	0.1	12.1	1.9	0.0	0.0	1.6
1983	7	0.1	17.2	2.7	0.0	0.0	2.3
1983	8	0.1	14.9	2.3	0.0	0.0	2.0
1983	9	0.0	5.8	0.9	0.0	0.0	0.8
1983	10	0.1	7.4	1.2	0.0	0.0	1.0
1983	11	0.1	7.7	1.2	0.0	0.0	1.0
1983	12	0.1	6.8	1.1	0.0	0.0	0.9

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1984	1	0.0	4.3	0.7	0.0	0.0	0.6
1984	2	0.0	4.5	0.7	0.0	0.0	0.6
1984	3	0.0	5.4	0.9	0.0	0.0	0.7
1984	4	0.0	4.8	0.8	0.0	0.0	0.6
1984	5	0.1	6.0	0.9	0.0	0.0	0.8
1984	6	0.2	21.4	3.4	0.0	0.0	2.8
1984	7	0.1	12.3	1.9	0.0	0.0	1.6
1984	8	0.1	13.7	2.2	0.0	0.0	1.8
1984	9	0.1	9.0	1.4	0.0	0.0	1.2
1984	10	0.0	5.9	0.9	0.0	0.0	0.8
1984	11	0.1	6.7	1.0	0.0	0.0	0.9
1984	12	0.1	7.1	1.1	0.0	0.0	0.9
1985	1	0.0	4.3	0.7	0.0	0.0	0.6
1985	2	0.0	4.3	0.7	0.0	0.0	0.6
1985	3	0.0	5.5	0.9	0.0	0.0	0.7
1985	4	0.0	5.1	0.8	0.0	0.0	0.7
1985	5	0.1	8.0	1.2	0.0	0.0	1.0
1985	6	0.1	17.2	2.7	0.0	0.0	2.3
1985	7	0.2	18.6	2.9	0.0	0.0	2.4
1985	8	0.1	14.0	2.2	0.0	0.0	1.8
1985	9	0.0	5.5	0.9	0.0	0.0	0.7
1985	10	0.1	7.1	1.1	0.0	0.0	0.9
1985	11	0.1	9.3	1.5	0.0	0.0	1.2
1985	12	0.1	7.2	1.1	0.0	0.0	1.0
1986	1	0.0	4.4	0.7	0.0	0.0	0.6
1986	2	0.0	4.7	0.7	0.0	0.0	0.6
1986	3	0.0	5.9	0.9	0.0	0.0	0.8
1986	4	0.0	5.6	0.9	0.0	0.0	0.7
1986	5	0.0	3.3	0.5	0.0	0.0	0.4
1986	6	0.1	15.8	2.5	0.0	0.0	2.1
1986	7	0.1	13.4	2.1	0.0	0.0	1.8
1986	8	0.1	9.2	1.4	0.0	0.0	1.2
1986	9	0.0	5.4	0.8	0.0	0.0	0.7
1986	10	0.1	8.0	1.2	0.0	0.0	1.0
1986	11	0.0	5.1	0.8	0.0	0.0	0.7
1986	12	0.1	7.3	1.1	0.0	0.0	1.0
1987	1	0.0	4.5	0.7	0.0	0.0	0.6
1987	2	0.0	4.1	0.7	0.0	0.0	0.5
1987	3	0.0	5.8	0.9	0.0	0.0	0.8
1987	4	0.0	5.0	0.8	0.0	0.0	0.7
1987	5	0.0	2.5	0.4	0.0	0.0	0.3
1987	6	0.1	14.4	2.3	0.0	0.0	1.9
1987	7	0.3	31.6	5.0	0.0	0.0	4.2
1987	8	0.2	22.5	3.5	0.0	0.0	3.0
1987	9	0.1	8.2	1.3	0.0	0.0	1.1
1987	10	0.1	6.9	1.1	0.0	0.0	0.9
1987	11	0.0	5.0	0.8	0.0	0.0	0.7
1987	12	0.1	6.8	1.1	0.0	0.0	0.9
1988	1	0.0	4.6	0.7	0.0	0.0	0.6
1988	2	0.0	4.6	0.7	0.0	0.0	0.6
1988	3	0.1	6.0	0.9	0.0	0.0	0.8
1988	4	0.0	5.5	0.9	0.0	0.0	0.7
1988	5	0.1	6.1	1.0	0.0	0.0	0.8
1988	6	0.2	21.9	3.4	0.0	0.0	2.9
1988	7	0.1	13.0	2.0	0.0	0.0	1.7
1988	8	0.1	15.4	2.4	0.0	0.0	2.0
1988	9	0.1	9.8	1.5	0.0	0.0	1.3
1988	10	0.1	6.0	0.9	0.0	0.0	0.8
1988	11	0.0	5.1	0.8	0.0	0.0	0.7
1988	12	0.0	5.9	0.9	0.0	0.0	0.8
1989	1	0.0	4.5	0.7	0.0	0.0	0.6
1989	2	0.0	4.2	0.7	0.0	0.0	0.5
1989	3	0.1	6.1	1.0	0.0	0.0	0.8
1989	4	0.0	5.6	0.9	0.0	0.0	0.7
1989	5	0.0	2.8	0.4	0.0	0.0	0.4
1989	6	0.1	12.9	2.0	0.0	0.0	1.7
1989	7	0.1	14.5	2.3	0.0	0.0	1.9
1989	8	0.1	9.8	1.5	0.0	0.0	1.3
1989	9	0.1	7.7	1.2	0.0	0.0	1.0
1989	10	0.1	8.7	1.4	0.0	0.0	1.1
1989	11	0.1	6.3	1.0	0.0	0.0	0.8
1989	12	0.1	7.2	1.1	0.0	0.0	0.9

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 32：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (1990 - 2001) (3/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1990	1	0.0	4.2	0.7	0.0	0.0	0.5
1990	2	0.0	4.1	0.6	0.0	0.0	0.5
1990	3	0.1	6.0	0.9	0.0	0.0	0.8
1990	4	0.0	4.9	0.8	0.0	0.0	0.6
1990	5	0.0	4.7	0.7	0.0	0.0	0.6
1990	6	0.2	20.2	3.2	0.0	0.0	2.6
1990	7	0.2	20.3	3.2	0.0	0.0	2.7
1990	8	0.1	9.8	1.5	0.0	0.0	1.3
1990	9	0.1	6.7	1.0	0.0	0.0	0.9
1990	10	0.1	9.0	1.4	0.0	0.0	1.2
1990	11	0.1	7.6	1.2	0.0	0.0	1.0
1990	12	0.1	7.0	1.1	0.0	0.0	0.9
1991	1	0.0	4.4	0.7	0.0	0.0	0.6
1991	2	0.0	4.5	0.7	0.0	0.0	0.6
1991	3	0.0	5.7	0.9	0.0	0.0	0.7
1991	4	0.0	5.6	0.9	0.0	0.0	0.7
1991	5	0.0	3.9	0.6	0.0	0.0	0.5
1991	6	0.2	21.8	3.4	0.0	0.0	2.9
1991	7	0.1	14.7	2.3	0.0	0.0	1.9
1991	8	0.1	13.2	2.1	0.0	0.0	1.7
1991	9	0.1	8.3	1.3	0.0	0.0	1.1
1991	10	0.0	5.3	0.8	0.0	0.0	0.7
1991	11	0.0	4.9	0.8	0.0	0.0	0.6
1991	12	0.1	6.9	1.1	0.0	0.0	0.9
1992	1	0.0	4.0	0.6	0.0	0.0	0.5
1992	2	0.0	3.7	0.6	0.0	0.0	0.5
1992	3	0.0	5.4	0.8	0.0	0.0	0.7
1992	4	0.0	5.4	0.9	0.0	0.0	0.7
1992	5	0.0	3.4	0.5	0.0	0.0	0.4
1992	6	0.1	13.2	2.1	0.0	0.0	1.7
1992	7	0.1	13.8	2.2	0.0	0.0	1.8
1992	8	0.1	10.3	1.6	0.0	0.0	1.4
1992	9	0.1	6.0	0.9	0.0	0.0	0.8
1992	10	0.0	4.4	0.7	0.0	0.0	0.6
1992	11	0.0	4.7	0.7	0.0	0.0	0.6
1992	12	0.1	7.1	1.1	0.0	0.0	0.9
1993	1	0.0	4.1	0.6	0.0	0.0	0.5
1993	2	0.0	4.2	0.7	0.0	0.0	0.5
1993	3	0.0	5.6	0.9	0.0	0.0	0.7
1993	4	0.0	5.3	0.8	0.0	0.0	0.7
1993	5	0.1	8.5	1.3	0.0	0.0	1.1
1993	6	0.1	14.0	2.2	0.0	0.0	1.8
1993	7	0.1	11.4	1.8	0.0	0.0	1.5
1993	8	0.1	12.4	1.9	0.0	0.0	1.6
1993	9	0.0	5.7	0.9	0.0	0.0	0.7
1993	10	0.0	5.2	0.8	0.0	0.0	0.7
1993	11	0.0	5.9	0.9	0.0	0.0	0.8
1993	12	0.1	7.2	1.1	0.0	0.0	0.9
1994	1	0.0	4.5	0.7	0.0	0.0	0.6
1994	2	0.0	4.6	0.7	0.0	0.0	0.6
1994	3	0.1	6.7	1.1	0.0	0.0	0.9
1994	4	0.0	5.8	0.9	0.0	0.0	0.8
1994	5	0.0	5.8	0.9	0.0	0.0	0.8
1994	6	0.1	17.2	2.7	0.0	0.0	2.3
1994	7	0.1	12.9	2.0	0.0	0.0	1.7
1994	8	0.1	8.8	1.4	0.0	0.0	1.2
1994	9	0.0	5.6	0.9	0.0	0.0	0.7
1994	10	0.1	6.2	1.0	0.0	0.0	0.8
1994	11	0.0	5.8	0.9	0.0	0.0	0.8
1994	12	0.1	7.2	1.1	0.0	0.0	0.9
1995	1	0.0	4.5	0.7	0.0	0.0	0.6
1995	2	0.0	4.1	0.7	0.0	0.0	0.5
1995	3	0.1	6.5	1.0	0.0	0.0	0.8
1995	4	0.0	5.7	0.9	0.0	0.0	0.7
1995	5	0.1	7.3	1.1	0.0	0.0	1.0
1995	6	0.1	9.5	1.5	0.0	0.0	1.2
1995	7	0.1	16.4	2.6	0.0	0.0	2.2
1995	8	0.1	9.4	1.5	0.0	0.0	1.2
1995	9	0.1	7.9	1.2	0.0	0.0	1.0
1995	10	0.1	7.1	1.1	0.0	0.0	0.9
1995	11	0.1	6.9	1.1	0.0	0.0	0.9
1995	12	0.1	7.1	1.1	0.0	0.0	0.9

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
1996	1	0.0	4.5	0.7	0.0	0.0	0.6
1996	2	0.0	4.6	0.7	0.0	0.0	0.6
1996	3	0.0	5.8	0.9	0.0	0.0	0.8
1996	4	0.0	5.1	0.8	0.0	0.0	0.7
1996	5	0.0	4.9	0.8	0.0	0.0	0.6
1996	6	0.1	11.8	1.9	0.0	0.0	1.6
1996	7	0.1	15.9	2.5	0.0	0.0	2.1
1996	8	0.1	11.8	1.9	0.0	0.0	1.5
1996	9	0.1	10.1	1.6	0.0	0.0	1.3
1996	10	0.1	7.5	1.2	0.0	0.0	1.0
1996	11	0.1	6.4	1.0	0.0	0.0	0.8
1996	12	0.1	7.2	1.1	0.0	0.0	0.9
1997	1	0.0	4.6	0.7	0.0	0.0	0.6
1997	2	0.0	4.3	0.7	0.0	0.0	0.6
1997	3	0.0	5.7	0.9	0.0	0.0	0.7
1997	4	0.0	5.5	0.9	0.0	0.0	0.7
1997	5	0.0	5.8	0.9	0.0	0.0	0.8
1997	6	0.1	6.5	1.0	0.0	0.0	0.9
1997	7	0.2	21.4	3.4	0.0	0.0	2.8
1997	8	0.1	11.2	1.8	0.0	0.0	1.5
1997	9	0.1	10.7	1.7	0.0	0.0	1.4
1997	10	0.1	7.0	1.1	0.0	0.0	0.9
1997	11	0.1	6.3	1.0	0.0	0.0	0.8
1997	12	0.1	6.7	1.1	0.0	0.0	0.9
1998	1	0.0	4.1	0.6	0.0	0.0	0.5
1998	2	0.0	4.3	0.7	0.0	0.0	0.6
1998	3	0.1	6.3	1.0	0.0	0.0	0.8
1998	4	0.0	5.3	0.8	0.0	0.0	0.7
1998	5	0.1	7.4	1.2	0.0	0.0	1.0
1998	6	0.1	6.4	1.0	0.0	0.0	0.8
1998	7	0.2	21.1	3.3	0.0	0.0	2.8
1998	8	0.2	19.4	3.0	0.0	0.0	2.5
1998	9	0.1	9.1	1.4	0.0	0.0	1.2
1998	10	0.1	6.5	1.0	0.0	0.0	0.9
1998	11	0.0	5.7	0.9	0.0	0.0	0.8
1998	12	0.1	7.4	1.2	0.0	0.0	1.0
1999	1	0.0	4.6	0.7	0.0	0.0	0.6
1999	2	0.0	5.1	0.8	0.0	0.0	0.7
1999	3	0.1	6.2	1.0	0.0	0.0	0.8
1999	4	0.0	5.8	0.9	0.0	0.0	0.8
1999	5	0.1	9.9	1.6	0.0	0.0	1.3
1999	6	0.1	14.3	2.2	0.0	0.0	1.9
1999	7	0.1	15.4	2.4	0.0	0.0	2.0
1999	8	0.2	19.0	3.0	0.0	0.0	2.5
1999	9	0.1	6.6	1.0	0.0	0.0	0.9
1999	10	0.0	5.3	0.8	0.0	0.0	0.7
1999	11	0.1	7.0	1.1	0.0	0.0	0.9
1999	12	0.0	5.8	0.9	0.0	0.0	0.8
2000	1	0.0	4.6	0.7	0.0	0.0	0.6
2000	2	0.0	4.9	0.8	0.0	0.0	0.6
2000	3	0.1	6.0	0.9	0.0	0.0	0.8
2000	4	0.0	5.7	0.9	0.0	0.0	0.8
2000	5	0.1	9.9	1.6	0.0	0.0	1.3
2000	6	0.1	14.1	2.2	0.0	0.0	1.9
2000	7	0.2	21.8	3.4	0.0	0.0	2.9
2000	8	0.1	14.6	2.3	0.0	0.0	1.9
2000	9	0.1	10.2	1.6	0.0	0.0	1.3
2000	10	0.1	7.1	1.1	0.0	0.0	0.9
2000	11	0.1	6.7	1.1	0.0	0.0	0.9
2000	12	0.1	7.4	1.2	0.0	0.0	1.0
2001	1	0.0	4.8	0.7	0.0	0.0	0.6
2001	2	0.0	4.6	0.7	0.0	0.0	0.6
2001	3	0.1	6.5	1.0	0.0	0.0	0.9
2001	4	0.0	5.9	0.9	0.0	0.0	0.8
2001	5	0.1	6.8	1.1	0.0	0.0	0.9
2001	6	0.2	23.0	3.6	0.0	0.0	3.0
2001	7	0.1	15.2	2.4	0.0	0.0	2.0
2001	8	0.1	9.0	1.4	0.0	0.0	1.2
2001	9	0.1	8.9	1.4	0.0	0.0	1.2
2001	10	0.0	4.9	0.8	0.0	0.0	0.6
2001	11	0.0	5.6	0.9	0.0	0.0	0.7
2001	12	0.1	7.4	1.2	0.0	0.0	1.0

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

Attachment 32：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (2002 - 2013) (4/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2002	1	0.0	4.2	0.7	0.0	0.0	0.6
2002	2	0.0	5.0	0.8	0.0	0.0	0.7
2002	3	0.1	6.1	1.0	0.0	0.0	0.8
2002	4	0.0	5.4	0.8	0.0	0.0	0.7
2002	5	0.1	8.3	1.3	0.0	0.0	1.1
2002	6	0.1	8.4	1.3	0.0	0.0	1.1
2002	7	0.2	20.7	3.3	0.0	0.0	2.7
2002	8	0.1	11.0	1.7	0.0	0.0	1.5
2002	9	0.0	5.4	0.9	0.0	0.0	0.7
2002	10	0.1	6.0	0.9	0.0	0.0	0.8
2002	11	0.0	5.6	0.9	0.0	0.0	0.7
2002	12	0.1	7.2	1.1	0.0	0.0	0.9
2003	1	0.0	4.2	0.7	0.0	0.0	0.6
2003	2	0.0	4.7	0.7	0.0	0.0	0.6
2003	3	0.0	5.9	0.9	0.0	0.0	0.8
2003	4	0.0	5.9	0.9	0.0	0.0	0.8
2003	5	0.1	9.7	1.5	0.0	0.0	1.3
2003	6	0.2	22.6	3.6	0.0	0.0	3.0
2003	7	0.1	15.0	2.4	0.0	0.0	2.0
2003	8	0.1	11.0	1.7	0.0	0.0	1.4
2003	9	0.1	8.7	1.4	0.0	0.0	1.1
2003	10	0.1	7.4	1.2	0.0	0.0	1.0
2003	11	0.1	6.8	1.1	0.0	0.0	0.9
2003	12	0.1	7.4	1.2	0.0	0.0	1.0
2004	1	0.0	4.3	0.7	0.0	0.0	0.6
2004	2	0.0	4.9	0.8	0.0	0.0	0.6
2004	3	0.1	6.1	1.0	0.0	0.0	0.8
2004	4	0.0	4.9	0.8	0.0	0.0	0.6
2004	5	0.0	5.1	0.8	0.0	0.0	0.7
2004	6	0.1	12.1	1.9	0.0	0.0	1.6
2004	7	0.1	12.6	2.0	0.0	0.0	1.7
2004	8	0.1	11.6	1.8	0.0	0.0	1.5
2004	9	0.1	10.5	1.6	0.0	0.0	1.4
2004	10	0.1	6.9	1.1	0.0	0.0	0.9
2004	11	0.1	6.9	1.1	0.0	0.0	0.9
2004	12	0.1	7.5	1.2	0.0	0.0	1.0
2005	1	0.0	4.5	0.7	0.0	0.0	0.6
2005	2	0.0	4.7	0.7	0.0	0.0	0.6
2005	3	0.0	5.9	0.9	0.0	0.0	0.8
2005	4	0.0	5.5	0.9	0.0	0.0	0.7
2005	5	0.0	3.8	0.6	0.0	0.0	0.5
2005	6	0.1	14.2	2.2	0.0	0.0	1.9
2005	7	0.1	10.2	1.6	0.0	0.0	1.3
2005	8	0.1	16.1	2.5	0.0	0.0	2.1
2005	9	0.0	5.7	0.9	0.0	0.0	0.8
2005	10	0.1	6.2	1.0	0.0	0.0	0.8
2005	11	0.1	6.3	1.0	0.0	0.0	0.8
2005	12	0.1	7.0	1.1	0.0	0.0	0.9
2006	1	0.0	4.4	0.7	0.0	0.0	0.6
2006	2	0.0	4.4	0.7	0.0	0.0	0.6
2006	3	0.1	6.2	1.0	0.0	0.0	0.8
2006	4	0.0	5.5	0.9	0.0	0.0	0.7
2006	5	0.1	13.4	2.1	0.0	0.0	1.8
2006	6	0.1	11.6	1.8	0.0	0.0	1.5
2006	7	0.1	13.5	2.1	0.0	0.0	1.8
2006	8	0.1	10.2	1.6	0.0	0.0	1.3
2006	9	0.1	11.5	1.8	0.0	0.0	1.5
2006	10	0.1	6.6	1.0	0.0	0.0	0.9
2006	11	0.1	6.4	1.0	0.0	0.0	0.8
2006	12	0.1	7.3	1.1	0.0	0.0	1.0
2007	1	0.0	4.3	0.7	0.0	0.0	0.6
2007	2	0.0	4.0	0.6	0.0	0.0	0.5
2007	3	0.1	6.0	0.9	0.0	0.0	0.8
2007	4	0.0	5.3	0.8	0.0	0.0	0.7
2007	5	0.1	6.3	1.0	0.0	0.0	0.8
2007	6	0.1	10.7	1.7	0.0	0.0	1.4
2007	7	0.2	21.4	3.4	0.0	0.0	2.8
2007	8	0.1	9.1	1.4	0.0	0.0	1.2
2007	9	0.1	8.4	1.3	0.0	0.0	1.1
2007	10	0.1	8.3	1.3	0.0	0.0	1.1
2007	11	0.0	4.4	0.7	0.0	0.0	0.6
2007	12	0.1	7.2	1.1	0.0	0.0	0.9

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2008	1	0.0	4.4	0.7	0.0	0.0	0.6
2008	2	0.0	4.6	0.7	0.0	0.0	0.6
2008	3	0.0	5.7	0.9	0.0	0.0	0.8
2008	4	0.1	6.0	0.9	0.0	0.0	0.8
2008	5	0.0	4.8	0.8	0.0	0.0	0.6
2008	6	0.2	22.2	3.5	0.0	0.0	2.9
2008	7	0.2	21.4	3.4	0.0	0.0	2.8
2008	8	0.1	11.5	1.8	0.0	0.0	1.5
2008	9	0.1	6.5	1.0	0.0	0.0	0.9
2008	10	0.0	5.4	0.8	0.0	0.0	0.7
2008	11	0.1	6.8	1.1	0.0	0.0	0.9
2008	12	0.1	7.3	1.1	0.0	0.0	1.0
2009	1	0.0	4.7	0.7	0.0	0.0	0.6
2009	2	0.0	5.3	0.8	0.0	0.0	0.7
2009	3	0.0	5.9	0.9	0.0	0.0	0.8
2009	4	0.0	5.6	0.9	0.0	0.0	0.7
2009	5	0.0	4.8	0.8	0.0	0.0	0.6
2009	6	0.0	5.6	0.9	0.0	0.0	0.7
2009	7	0.1	16.3	2.6	0.0	0.0	2.1
2009	8	0.1	15.8	2.5	0.0	0.0	2.1
2009	9	0.1	8.1	1.3	0.0	0.0	1.1
2009	10	0.1	6.4	1.0	0.0	0.0	0.8
2009	11	0.0	5.8	0.9	0.0	0.0	0.8
2009	12	0.1	7.4	1.2	0.0	0.0	1.0
2010	1	0.0	4.7	0.7	0.0	0.0	0.6
2010	2	0.0	5.1	0.8	0.0	0.0	0.7
2010	3	0.1	6.0	0.9	0.0	0.0	0.8
2010	4	0.0	5.7	0.9	0.0	0.0	0.7
2010	5	0.1	12.9	2.0	0.0	0.0	1.7
2010	6	0.1	16.5	2.6	0.0	0.0	2.2
2010	7	0.1	8.3	1.3	0.0	0.0	1.1
2010	8	0.1	11.8	1.9	0.0	0.0	1.5
2010	9	0.0	5.8	0.9	0.0	0.0	0.8
2010	10	0.1	9.7	1.5	0.0	0.0	1.3
2010	11	0.1	6.7	1.1	0.0	0.0	0.9
2010	12	0.1	6.0	0.9	0.0	0.0	0.8
2011	1	0.0	4.7	0.7	0.0	0.0	0.6
2011	2	0.0	4.8	0.8	0.0	0.0	0.6
2011	3	0.1	6.3	1.0	0.0	0.0	0.8
2011	4	0.0	5.1	0.8	0.0	0.0	0.7
2011	5	0.0	5.5	0.9	0.0	0.0	0.7
2011	6	0.1	15.5	2.4	0.0	0.0	2.0
2011	7	0.1	14.7	2.3	0.0	0.0	1.9
2011	8	0.2	20.7	3.2	0.0	0.0	2.7
2011	9	0.1	11.6	1.8	0.0	0.0	1.5
2011	10	0.1	7.0	1.1	0.0	0.0	0.9
2011	11	0.1	6.5	1.0	0.0	0.0	0.9
2011	12	0.1	7.0	1.1	0.0	0.0	0.9
2012	1	0.0	4.3	0.7	0.0	0.0	0.6
2012	2	0.0	4.6	0.7	0.0	0.0	0.6
2012	3	0.0	5.8	0.9	0.0	0.0	0.8
2012	4	0.0	5.0	0.8	0.0	0.0	0.7
2012	5	0.0	4.5	0.7	0.0	0.0	0.6
2012	6	0.2	18.5	2.9	0.0	0.0	2.4
2012	7	0.2	19.0	3.0	0.0	0.0	2.5
2012	8	0.1	13.6	2.1	0.0	0.0	1.8
2012	9	0.1	8.1	1.3	0.0	0.0	1.1
2012	10	0.1	8.7	1.4	0.0	0.0	1.1
2012	11	0.1	6.5	1.0	0.0	0.0	0.8
2012	12	0.1	7.3	1.1	0.0	0.0	1.0
2013	1	0.0	4.4	0.7	0.0	0.0	0.6
2013	2	0.0	4.7	0.7	0.0	0.0	0.6
2013	3	0.0	5.9	0.9	0.0	0.0	0.8
2013	4	0.0	5.3	0.8	0.0	0.0	0.7
2013	5	0.1	11.7	1.8	0.0	0.0	1.5
2013	6	0.1	14.7	2.3	0.0	0.0	1.9
2013	7	0.1	13.0	2.0	0.0	0.0	1.7
2013	8	0.2	21.5	3.4	0.0	0.0	2.8
2013	9	0.0	4.7	0.7	0.0	0.0	0.6
2013	10	0.1	7.0	1.1	0.0	0.0	0.9
2013	11	0.1	6.4	1.0	0.0	0.0	0.8
2013	12	0.1	7.0	1.1	0.0	0.0	0.9

Source: JICA Study Team

Annex 3.2-2 Agricultural water demand

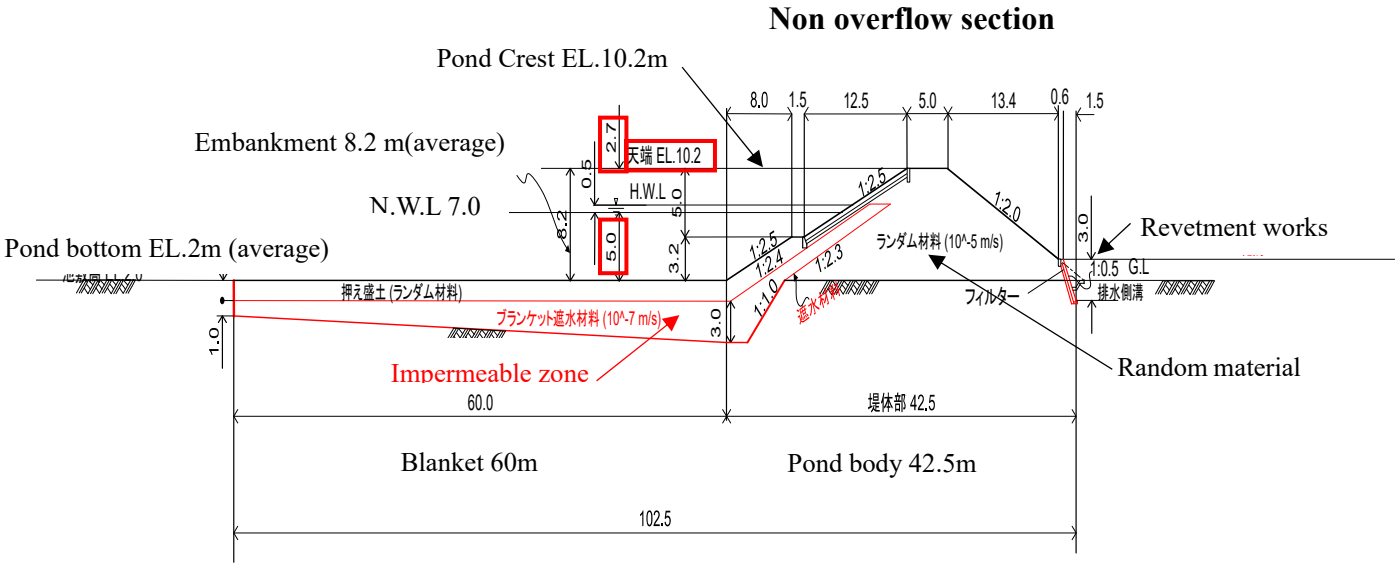
Attachment 32：Forecasted Reduced Water Amount (2041) Adjusted by Increasing Rate with Consideration of Surface Irrigated Area of each Upazila and for each Month in Bakkhali River Basin (m^3/s) (2014 - 2019) (5/5)

		Boalkhali River Basin					
	District	Cox's Bazar			Bandarban		
	Upazila	Chakaria	Ramu	Sadar	Lama	Alikadam	Naikhan-gchari
2014	1	0.0	4.3	0.7	0.0	0.0	0.6
2014	2	0.0	4.2	0.7	0.0	0.0	0.6
2014	3	0.1	6.0	0.9	0.0	0.0	0.8
2014	4	0.0	5.8	0.9	0.0	0.0	0.8
2014	5	0.0	3.3	0.5	0.0	0.0	0.4
2014	6	0.1	11.9	1.9	0.0	0.0	1.6
2014	7	0.1	12.0	1.9	0.0	0.0	1.6
2014	8	0.1	10.3	1.6	0.0	0.0	1.3
2014	9	0.1	6.7	1.1	0.0	0.0	0.9
2014	10	0.1	7.5	1.2	0.0	0.0	1.0
2014	11	0.1	6.3	1.0	0.0	0.0	0.8
2014	12	0.1	6.9	1.1	0.0	0.0	0.9
2015	1	0.0	4.2	0.7	0.0	0.0	0.6
2015	2	0.0	4.2	0.7	0.0	0.0	0.6
2015	3	0.1	6.2	1.0	0.0	0.0	0.8
2015	4	0.0	5.1	0.8	0.0	0.0	0.7
2015	5	0.0	2.9	0.4	0.0	0.0	0.4
2015	6	0.2	26.4	4.1	0.0	0.0	3.5
2015	7	0.2	23.5	3.7	0.0	0.0	3.1
2015	8	0.1	15.3	2.4	0.0	0.0	2.0
2015	9	0.1	10.4	1.6	0.0	0.0	1.4
2015	10	0.1	6.1	1.0	0.0	0.0	0.8
2015	11	0.0	5.7	0.9	0.0	0.0	0.7
2015	12	0.1	6.7	1.0	0.0	0.0	0.9
2016	1	0.0	3.9	0.6	0.0	0.0	0.5
2016	2	0.0	4.2	0.7	0.0	0.0	0.6
2016	3	0.0	5.5	0.9	0.0	0.0	0.7
2016	4	0.0	5.3	0.8	0.0	0.0	0.7
2016	5	0.1	6.6	1.0	0.0	0.0	0.9
2016	6	0.1	9.8	1.5	0.0	0.0	1.3
2016	7	0.2	18.7	2.9	0.0	0.0	2.5
2016	8	0.1	8.0	1.3	0.0	0.0	1.1
2016	9	0.0	5.4	0.9	0.0	0.0	0.7
2016	10	0.1	9.9	1.6	0.0	0.0	1.3
2016	11	0.0	5.8	0.9	0.0	0.0	0.8
2016	12	0.1	7.2	1.1	0.0	0.0	0.9
2017	1	0.0	4.7	0.7	0.0	0.0	0.6
2017	2	0.0	4.7	0.7	0.0	0.0	0.6
2017	3	0.1	6.8	1.1	0.0	0.0	0.9
2017	4	0.1	7.4	1.2	0.0	0.0	1.0
2017	5	0.0	3.4	0.5	0.0	0.0	0.4
2017	6	0.1	9.1	1.4	0.0	0.0	1.2
2017	7	0.2	24.1	3.8	0.0	0.0	3.2
2017	8	0.1	9.0	1.4	0.0	0.0	1.2
2017	9	0.1	8.8	1.4	0.0	0.0	1.2
2017	10	0.0	5.2	0.8	0.0	0.0	0.7
2017	11	0.1	6.5	1.0	0.0	0.0	0.9
2017	12	0.1	6.5	1.0	0.0	0.0	0.9
2018	1	0.0	4.0	0.6	0.0	0.0	0.5
2018	2	0.0	4.4	0.7	0.0	0.0	0.6
2018	3	0.0	5.7	0.9	0.0	0.0	0.8
2018	4	0.0	5.6	0.9	0.0	0.0	0.7
2018	5	0.0	3.6	0.6	0.0	0.0	0.5
2018	6	0.1	16.5	2.6	0.0	0.0	2.2
2018	7	0.2	20.9	3.3	0.0	0.0	2.7
2018	8	0.1	10.7	1.7	0.0	0.0	1.4
2018	9	0.1	7.9	1.2	0.0	0.0	1.0
2018	10	0.1	8.5	1.3	0.0	0.0	1.1
2018	11	0.1	6.3	1.0	0.0	0.0	0.8
2018	12	0.1	7.1	1.1	0.0	0.0	0.9
2019	1	0.0	4.5	0.7	0.0	0.0	0.6
2019	2	0.0	4.4	0.7	0.0	0.0	0.6
2019	3	0.0	5.8	0.9	0.0	0.0	0.8
2019	4	0.1	5.9	0.9	0.0	0.0	0.8
2019	5	0.0	3.0	0.5	0.0	0.0	0.4
2019	6	0.0	4.2	0.7	0.0	0.0	0.6
2019	7	0.1	16.0	2.5	0.0	0.0	2.1
2019	8	0.1	7.4	1.2	0.0	0.0	1.0
2019	9	0.1	11.9	1.9	0.0	0.0	1.6
2019	10	0.1	8.5	1.3	0.0	0.0	1.1
2019	11	0.0	5.5	0.9	0.0	0.0	0.7
2019	12	0.1	7.4	1.2	0.0	0.0	1.0

Source: JICA Study Team

Consideration of basic specifications for the pond

- The ground elevation of Palakata area is about EL.2.0m (EL.2~3).
- The crest of the pond EL.10 or above is required to reduce storm surge damage. (Evacuation facilities during high tide are scattered around the Palakata area, and the altitude of the Matarbari coal- power plant is set to EL.10 or above to reduce damage caused by storm surge.)
- The free board, the waves rising due to wind and earthquake, 3m is required between the normal water surface and the crest of the pond.
- The pond area is assumed to be soft ground, therefore it is desirable that the pond height is as low as possible. However, it is also desirable to let the effective water depth as deep as possible so that the reducing of the land area.
- Considering the above, the pond crest EL.10m and the bottom EL.2m, the free bord 3m, effective water depth 5m, then normal water level set to EL.7m.
- The river side of the pond is protected by the revetment work to avoid damages due to flood flow around the pond.
- The pond body is recommended to adopt the inclined impermeable zone type which could resist to damage. (Ministry of Agriculture, Forestry and Fisheries Land Improvement Project Design Guideline “Reservoir Maintenance Guideline” in JAPAN)
- Typical Section (reference) is shown below.



Soft Ground Countermeasures

The "Slow Loading Construction Method" is generally used as the countermeasures against sliding failure, subsidence, and deformation of surrounding ground.

Table 1 shows the soft ground countermeasures assumed for the short-term alternative 16 MCM pond plan. The table consists of the "slow loading method" or the "geotextile method" for the entire pond area, and the soft ground countermeasures for the concrete structures. It is necessary to survey the geology and soil properties of the pond area in the future and select soft ground countermeasures based on the survey results.

Table 1 Problems and countermeasures in embankment construction of the short-term alternative 16MCM pond plan

Soft Ground Countermeasures \ Problems		Residual subsidence after service	Sliding	Deformation of surrounding ground: When there are important structures	Construction Cost (approx. billion JPY)	Construction Period (approx. month)
Applied to entire pond	Slow loading construction method		○		5.0	23
	Gia-textile method		○		+4.0	±0
Applied to spillway, outlet works	Vertical drain method	○			+0.2	+4
	Compaction pile method	○	○		+0.3	+4
	Surface mixing method	○	○	○	+0.4	+5
	High-pressure injection stirring method	○	○	○	+1.5	+6

Notes; 1) "○" indicates a construction method that is effective against the problem.

2) The cost of slow loading construction method (JPN 5 billion) is included in the cost of pond (JPY 16 billion) in Table 4.1.9, and "+" indicates an additional cost to the said cost (5 billion JPY) and an additional construction period.

Source; 1) Road Earthwork Guidelines (2012 Edition) Soft Ground Countermeasures

2) Civil Engineering Work Estimation Standard Manual 2020, (Ministry of Land, Infrastructure, Transport and Tourism, Japan)

The outline of the soft ground countermeasure construction method is shown in Table 2

Table 2 Outline of Soft Ground Countermeasure Methods

Slow loading construction method	A construction method that takes time to embank without foundation ground treatment.

	Sand mat + Stabilization sheet on the entire foundation ground. (12 days required for 30 cm embankment height, in general)
Gio-textile method	A construction method that reinforces the embankment by using reinforcing materials (Gio-textile) instead of the stabilizing sheet used in the slow loading method the above.
Vertical drain method	A construction method in which drainage holes are provided in the foundation ground of the slow loading method to shorten the consolidation time and shorten the construction period.
Compaction pile method	A construction method that combines the compaction effect of vibration and the sand press-in effect to create sand piles in the foundation ground.
Surface mixing method	A construction method of compacting the shallow part of the foundation ground using a cement-based solidification material.
High-pressure injection stirring method	A construction method of improving the ground by injecting a cement-based solidification material into the foundation ground.

Plan of Palakata Regulation Pond in Short Term (1/5)

Calculation Sheet of Water Balance

Short Term: Palakata Regulation Pond

No.	Item	Unit	Calculating Formula	Remark
(1)	River discharge per 100 km^2	m^3/s	N/A	
(2)	Basin yield 1, BY_1	m^3/s	= (1)×RB_1 / 100 km^2	
(3)	Maintenance discharge at Lama control point	m^3/s	= Unit discharge of maintenance ○ $m^3/s/100km^2$ × PC_1 km^2	
(4)	Domestic intake water 1, D_1	m^3/s	N/A	
(5)	Actual Domestic intake water 1	m^3/s	=Min (Max((2)-(3),0), (4))	
(6)	Industrial intake water 1, I_1	m^3/s	N/A	
(7)	Actual Industrial intake water 1	m^3/s	=Min (Max((2)-(3)-(5),0), (6))	
(8)	Agricultural Intake water 1, AI_1	m^3/s	Totalized agricultural intake water of each Upazila	
(9)	Actual Agricultural Intake water 1	m^3/s	=Min (Max((2)-(3)-(5)-(7),0), (8))	
(10)	Agricultural Return water 1, AR_1	m^3/s	Totalized agricultural return water of each Upazila	
(11)	Actual Agricultural Return water 1	m^3/s	= (10)-((8)-(9))×Return water rate 60%	
(12)	Shortage discharge of maintenance discharge at Lama control point	m^3/s	= Max ((3)-(2),0)	
(13)	Shortage discharge of domestic intake water 1 at Lama control point	m^3/s	= (4)-(5)	
(14)	Shortage discharge of industrial intake water 1 at Lama control point	m^3/s	= (6)-(7)	
(15)	Shortage discharge of Agricultural Intake water 1 at Lama control point	m^3/s	= (8)-(9)	
(16)	Surplus discharge of at Lama control point	m^3/s	= Max ((2)-(3)-(4)-(6)-(8), 0),	
(17)	Passing discharge at Lama control point	m^3/s	= Max(0, (2)-(5)-(7)-(9))+(11)	
(18)	Basin yield 2, BY_2	m^3/s	= (1)×RB_2 / 100 km^2	
(19)	Maintenance discharge at Chakaria Intake Pump Station	m^3/s	= Unit discharge of maintenance ○ $m^3/s/100km^2$ × PC_2 km^2	
(20)	Domestic intake water 2, D_2	m^3/s	N/A	
(21)	Actual Domestic intake water 2	m^3/s	=Min (Max((17)+(18)-(19),0), (20))	
(22)	Industrial intake water 2, I_2	m^3/s	N/A	
(23)	Actual Industrial intake water 2	m^3/s	=Min (Max((17)+(18)-(19)-(21),0), (22))	
(24)	Domestic intake water 3, D_3	m^3/s	N/A	
(25)	Actual Domestic intake water 3	m^3/s	=Min (Max((17)+(18)-(19)-(21)-(23),0), (24))	
(26)	Industrial intake water 3, I_2	m^3/s	N/A	
(27)	Actual Industrial intake	m^3/s	=Min (Max((17)+(18)-(19)-(21)-(23)-	

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Short Term (2/5)

	water 3		(25),0), (26))	
(28)	Agricultural Intake water 2, AI_2	m^3/s	Totalized agricultural intake water of each Upazila	
(29)	Actual Agricultural Intake water 2	m^3/s	=Min (Max((17)+(18)-(19)-(21)-(23)-(25)-(27),0), (28))	
(30)	Agricultural Return water 2, AR_2	m^3/s	Totalized agricultural return water of each Upazila	
(31)	Actual Agricultural Return water 2	m^3/s	= (30)-((28)-(29))×Return water rate 60%	
(32)	Shortage discharge of maintenance discharge at Chakaria Intake Pump Station	m^3/s	= Max ((19)-(17)-(18),0)	
(33)	Shortage discharge of domestic intake water 2 at Chakaria Intake Pump Station	m^3/s	= (20)-(21)	
(34)	Shortage discharge of industrial intake water 2 at Chakaria Intake Pump Station	m^3/s	= (22)-(23)	
(35)	Shortage discharge of domestic intake water 3 at Chakaria Intake Pump Station	m^3/s	= (24)-(25)	
(36)	Shortage discharge of industrial intake water 3 at Chakaria Intake Pump Station	m^3/s	= (26)-(27)	
(37)	Shortage discharge of Agricultural Intake water 2 at Chakaria Intake Pump Station	m^3/s	= (28)-(29)	
(38)	Surplus discharge of at Chakaria Intake Pump Station	m^3/s	= Max ((17)+(18)-(19)-(20)-(22)-(24)-(26)-(28), 0),	
(39)	Passing discharge at Chakaria Intake Pump Station	m^3/s	= Max(0, (17)+(18)-(21)-(23)-(25)-(27)-(29))+(31)	
(40)	Basin yield 3, BY_3	m^3/s	= (1)×RB_3 / 100 km^2	
(41)	Maintenance discharge at Palakata Regulation Pond	m^3/s	= Unit discharge of maintenance ○ $m^3/s/100km^2$ /2 × PC_3 km^2	
(42)	Domestic intake water 4, D_4	m^3/s	N/A	
(43)	Actual Domestic intake water 4	m^3/s	=Min (Max((39)+(40)-(41),0), (42))	
(44)	Industrial intake water 4, I_3	m^3/s	N/A	
(45)	Actual Industrial intake water 4	m^3/s	=Min (Max((39)+(40)-(41)-(43),0), (44))	
(46)	Agricultural Intake water 3, AI_3	m^3/s	Totalized agricultural intake water of each Upazila	
(47)	Actual Agricultural Intake water 3	m^3/s	=Min (Max((39)+(40)-(41)-(43)-(45),0), (46))	
(48)	Agricultural Return water 3, AR_3	m^3/s	Totalized agricultural return water of each Upazila	
(49)	Actual Agricultural Return water 3	m^3/s	= (48)-((46)-(47))×Return water rate 60%	
(50)	Shortage discharge of maintenance discharge at Palakata Regulation	m^3/s	= Max ((41)-(39)-(40),0)	

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Short Term (3/5)

	Pond			
(51)	Shortage discharge of domestic intake water 4 at Palakata Regulation Pond	m^3/s	= (42)-(43)	
(52)	Shortage discharge of industrial intake water 4 at Palakata Regulation Pond	m^3/s	= (44)-(45)	
(53)	Shortage discharge of Agricultural Intake water 3 at Palakata Regulation Pond	m^3/s	= (46)-(47)	
(54)	Surplus discharge of at Palakata Regulation Pond	m^3/s	= Max ((39)+(40)-(41)-(42)-(44)-(46), 0),	
(55)	Passing discharge at Palakata Regulation Pond	m^3/s	= Max(0, (39)+(40)-(43)-(45)-(47))+(49)	
(56)	Basin yield 4, BY_4	m^3/s	= (1)×RB_4 / 100 km^2	
(57)	Maintenance discharge at River Mouth	m^3/s	= Unit discharge of maintenance ○ $m^3/s/100km^2$ /2 × PC_4 km^2	
(58)	Domestic intake water 5, D_5	m^3/s	N/A	
(59)	Actual Domestic intake water 5	m^3/s	=Min (Max((55)+(56)-(57),0), (58))	
(60)	Industrial intake water 5, I_5	m^3/s	N/A	
(61)	Actual Industrial intake water 5	m^3/s	=Min (Max((55)+(56)-(57)-(59),0), (60))	
(62)	Agricultural Intake water 4, AI_4	m^3/s	Totalized agricultural intake water of each Upazila	
(63)	Actual Agricultural Intake water 4	m^3/s	=Min (Max((55)+(56)-(57)-(59)-(61),0), (62))	
(64)	Agricultural Return water 4, AR_4	m^3/s	Totalized agricultural return water of each Upazila	
(65)	Actual Agricultural Return water 4	m^3/s	= (64)-((62)-(63))×Return water rate 60%	
(66)	Shortage discharge of maintenance discharge at River Mouth	m^3/s	= Max ((57)-(55)-(56),0)	
(67)	Shortage discharge of domestic intake water 5 at River Mouth	m^3/s	= (58)-(59)	
(68)	Shortage discharge of industrial intake water 5 at River Mouth	m^3/s	= (60)-(61)	
(69)	Shortage discharge of Agricultural Intake water 4 at River Mouth	m^3/s	= (62)-(63)	
(70)	Surplus discharge of at River Mouth	m^3/s	= Max ((55)+(56)-(58)-(60)-(62), 0),	
(71)	Passing discharge at River Mouth	m^3/s	= Max(0, (55)+(56)-(59)-(61)-(63))+(65)	
(72)	Pump capacity of Chakaria Intake Pump Station	m^3/s	P_1 m^3/s	
(73)	Intake water at Chakaria Intake Pump Station in Case 1	m^3/s	=Min((72), (38),(54),(70))	
(74)	Supply water from Palakata Regulation	m^3/s	=Max((50),(66))	

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Short Term (4/5)

	Pond to Matamuhuri River in Case 1			
(75)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 1	m^3/s	N/A	
(76)	Monthly inflow volume of Palakata regulation pond in Case 1	m^3	=(73)×86,400×Days of month	
(77)	Monthly supply volume of Palakata regulation pond in Case 1	m^3	=(74)×86,400×Days of month	
(78)	Accumulated volume of Palakata regulation pond in Case 1	m^3	=Max(Previous step (78)+(77)-(76), 0)	
(79)	Intake water at Chakaria Intake Pump Station in Case 2-1	m^3/s	=Min((72), (38),(54),(70))	
(80)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 2-1	m^3/s	=Max((50),(66))	
(81)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 2-1	m^3/s	=(35)+(51)+(67)	
(82)	Monthly inflow volume of Palakata regulation pond in Case 2-1	m^3	=(79)×86,400×Days of month	
(83)	Monthly supply volume of Palakata regulation pond in Case 2-1	m^3	=((80)+(81))×86,400×Days of month	
(84)	Accumulated volume of Palakata regulation pond in Case 2-1	m^3	=Max(Previous step (84)+(83)-(82), 0)	
(85)	Intake water at Chakaria Intake Pump Station in Case 2-2	m^3/s	=Min((72), (38),(54),(70))	
(86)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 2-2	m^3/s	N/A	
(87)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 2-2	m^3/s	=(35)+(51)+(67)	
(88)	Monthly inflow volume of Palakata regulation pond in Case 2-2	m^3	=(85)×86,400×Days of month	
(89)	Monthly supply volume of Palakata regulation pond in Case 2-2	m^3	=(87)×86,400×Days of month	
(90)	Accumulated volume of Palakata regulation pond in Case 2-2	m^3	=Max(Previous step (90)+(89)-(88), 0)	
(91)	Intake water at Chakaria Intake Pump Station in Case 3-1	m^3/s	=Min((72), (38),(54),(70))	
(92)	Supply water from	m^3/s	=Max((50),(66))	

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Short Term (5/5)

	Palakata Regulation Pond to Matamuhuri River in Case 3-1			
(93)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 3-1	m^3/s	=(35)+(36)+(51)+(52)+(67)+(68)	
(94)	Monthly inflow volume of Palakata regulation pond in Case 3-1	m^3	=(91)×86,400×Days of month	
(95)	Monthly supply volume of Palakata regulation pond in Case 3-1	m^3	=((92)+(93))×86,400×Days of month	
(96)	Accumulated volume of Palakata regulation pond in Case 3-1	m^3	=Max(Previous step (96)+(95)-(94), 0)	
(97)	Intake water at Chakaria Intake Pump Station in Case 3-2	m^3/s	=Min((72), (38),(54),(70))	
(98)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 3-2	m^3/s	N/A	
(99)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 3-2	m^3/s	=(35)+(36)+(51)+(52)+(67)+(68)	
(100)	Monthly inflow volume of Palakata regulation pond in Case 3-2	m^3	=(97)×86,400×Days of month	
(101)	Monthly supply volume of Palakata regulation pond in Case 3-2	m^3	=(99)×86,400×Days of month	
(102)	Accumulated volume of Palakata regulation pond in Case 3-2	m^3	=Max(Previous step (102)+(101)-(100), 0)	
(103)	Intake water at Chakaria Intake Pump Station in Case 4	m^3/s	=Min((72), (38),(54),(70))	
(104)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 4	m^3/s	=Max((50),(66))+(69)	
(105)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 4	m^3/s	=(35)+(36)+(51)+(52)+(67)+(68)	
(106)	Monthly inflow volume of Palakata regulation pond in Case 4	m^3	=(103)×86,400×Days of month	
(107)	Monthly supply volume of Palakata regulation pond in Case 4	m^3	=((104)+(105))×86,400×Days of month	
(108)	Accumulated volume of Palakata regulation pond in Case 4	m^3	=Max(Previous step (108)+(107)-(106), 0)	

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Short Term:

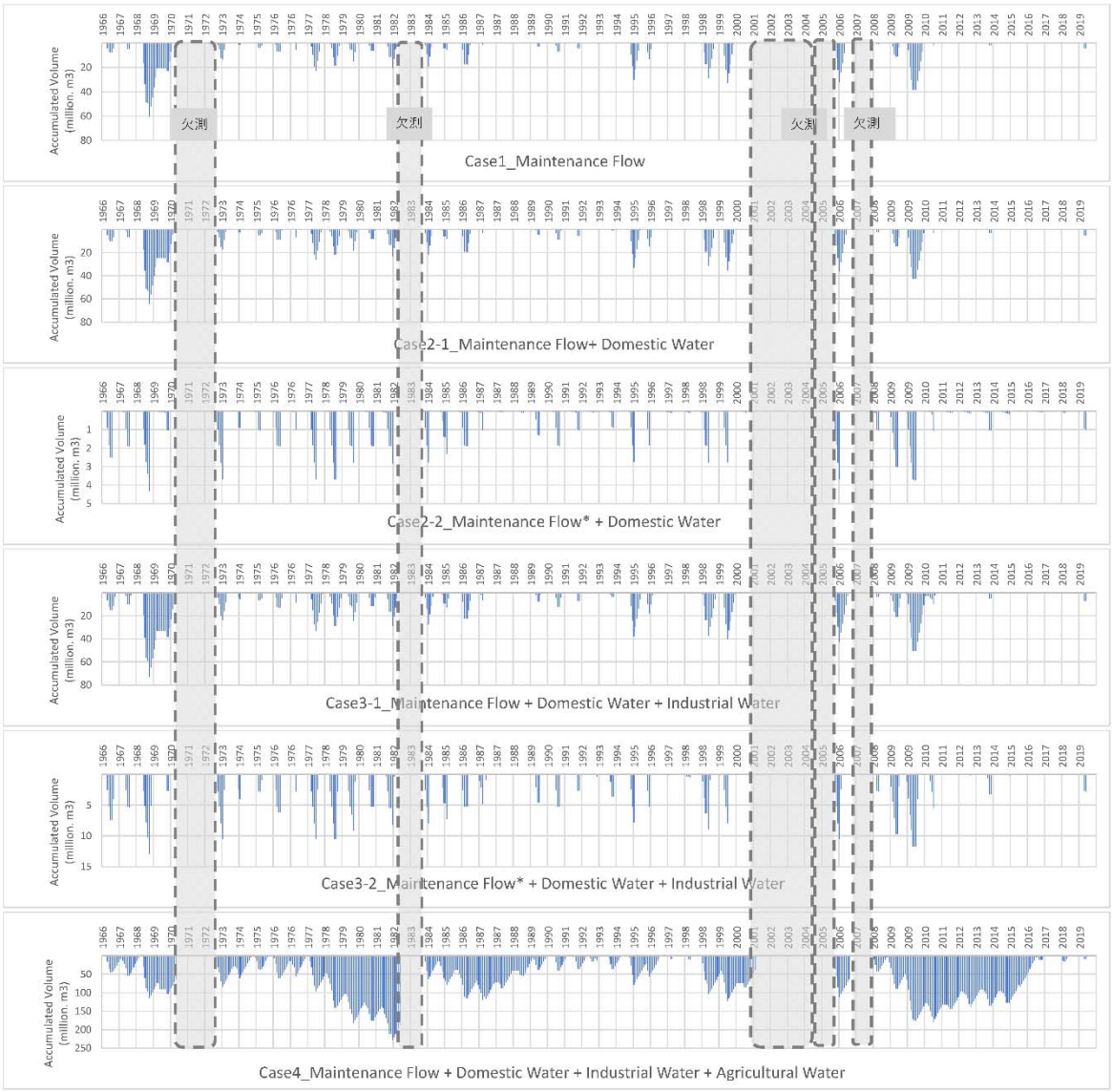
Case A, Chakaria Intake Pump = 3.0 m^3/s

Year	Rank	Case1 Maintenance Flow	Rank	Case2 1 Maintenance Flow + Domestic Water	Rank	Case2 2 Maintenance Flow* + Domestic Water	Rank	Case3 1 Maintenance Flow Domestic Water – Industrial Water	Rank	Case3 2 Maintenance Flow* Domestic Water – Industrial Water	Rank	Case4 Maintenance Flow Domestic Water – Industrial Water – Agricultural Water
1966 ~ 1967	18	7,390,119	17	9,901,371	14	2,511,251	17	14,862,946	14	7,472,827	33	44,873,851
1967 ~ 1968	24	4,755,872	24	6,661,344	16	1,905,473	24	10,081,344	18	5,325,473	31	54,254,751
1968 ~ 1969	1	60,078,682	1	64,398,325	1	4,319,643	1	72,970,356	1	12,891,675	14	114,450,948
1969 ~ 1970	7	22,945,456	7	28,283,588	27	1,018,489	5	38,565,619	33	2,728,489	18	103,601,388
1970 ~ 1971	-	-	-	-	-	-	-	-	-	-	-	-
1971 ~ 1972	-	-	-	-	-	-	-	-	-	-	-	-
1972 ~ 1973	15	13,405,660	15	17,111,571	4	3,705,911	14	23,951,571	4	10,545,911	22	83,907,432
1973 ~ 1974	32	1,312,975	32	2,218,477	33	905,502	31	5,339,984	25	4,027,008	28	60,231,863
1974 ~ 1975	27	3,849,796	27	4,869,700	26	1,019,904	29	6,636,700	30	2,786,904	38	38,269,978
1975 ~ 1976	20	6,713,765	19	8,619,238	17	1,905,473	18	12,930,797	16	6,217,032	27	61,489,202
1976 ~ 1977	22	5,690,675	23	6,684,961	31	994,286	25	8,505,804	29	2,815,129	30	55,307,737
1977 ~ 1978	8	22,634,072	8	26,314,366	5	3,680,293	8	33,154,366	5	10,520,293	19	95,675,925
1978 ~ 1979	12	18,179,419	11	21,886,184	3	3,706,765	10	28,726,184	3	10,546,765	7	142,208,689
1979 ~ 1980	14	15,281,620	14	18,074,930	9	2,793,310	13	24,447,137	8	9,165,517	2	182,263,844
1980 ~ 1981	21	6,411,983	21	8,313,479	18	1,901,496	21	11,676,479	19	5,264,496	5	174,680,337
1981 ~ 1982	9	20,641,684	9	23,486,230	8	2,844,546	9	28,843,201	10	8,201,517	1	227,097,317
1982 ~ 1983	-	-	-	-	-	-	-	-	-	-	-	-
1983 ~ 1984	10	19,182,234	10	21,949,072	11	2,766,838	11	27,079,072	11	7,896,838	26	63,108,252
1984 ~ 1985	23	5,446,612	22	7,763,283	15	2,316,670	19	12,735,706	15	7,289,094	24	78,738,819
1985 ~ 1986	13	17,384,066	13	19,285,562	18	1,901,496	15	22,648,562	19	5,264,496	15	114,272,178
1986 ~ 1987	31	1,599,217	31	2,619,974	25	1,020,758	30	6,484,744	23	4,885,528	13	118,958,538
1987 ~ 1988	34	0	45	51,236	45	51,236	45	51,236	45	51,236	20	88,179,088
1988 ~ 1989	34	0	38	102,472	38	102,472	39	102,472	39	102,472	32	54,098,855
1989 ~ 1990	28	3,084,550	28	4,395,934	22	1,311,384	26	7,643,796	24	4,559,246	37	38,274,185
1990 ~ 1991	19	6,887,717	18	8,762,741	20	1,875,024	20	12,125,741	22	5,238,024	36	39,922,367
1991 ~ 1992	25	4,445,181	25	5,462,816	28	1,017,635	27	7,172,816	34	2,727,635	39	36,372,479
1992 ~ 1993	34	0	41	76,854	41	76,854	35	360,501	35	360,501	42	14,669,537
1993 ~ 1994	34	0	34	893,896	34	893,896	34	3,648,194	27	3,648,194	40	35,659,608
1994 ~ 1995	5	30,125,241	5	32,861,631	13	2,736,389	6	37,934,631	13	7,809,389	23	79,156,668
1995 ~ 1996	16	12,875,264	16	14,702,175	21	1,826,911	16	18,122,175	21	5,246,911	29	56,009,479
1996 ~ 1997	34	0	38	102,472	38	102,472	39	102,472	39	102,472	45	9,220,935
1997 ~ 1998	17	7,602,002	20	8,597,995	30	995,994	22	11,437,484	26	3,835,483	35	41,769,700
1998 ~ 1999	6	28,667,777	6	31,456,256	10	2,788,479	7	37,601,745	9	8,933,968	17	104,510,400
1999 ~ 2000	3	32,789,178	4	35,556,016	11	2,766,838	4	40,686,016	11	7,896,838	11	122,601,996
2000 ~ 2001	34	0	42	76,000	42	76,000	42	76,000	42	76,000	21	85,652,854
2001 ~ 2002	-	-	-	-	-	-	-	-	-	-	-	-
2002 ~ 2003	-	-	-	-	-	-	-	-	-	-	-	-
2003 ~ 2004	-	-	-	-	-	-	-	-	-	-	-	-
2004 ~ 2005	-	-	-	-	-	-	-	-	-	-	-	-
2005 ~ 2006	4	32,250,511	3	35,930,804	5	3,680,293	3	42,770,804	5	10,520,293	16	111,584,400
2006 ~ 2007	-	-	-	-	-	-	-	-	-	-	-	-
2007 ~ 2008	33	910,203	33	1,927,838	28	1,017,635	33	3,662,274	31	2,752,071	34	43,124,612
2008 ~ 2009	11	19,169,485	12	21,082,911	7	3,029,564	12	25,740,583	7	9,754,425	12	121,098,980
2009 ~ 2010	2	38,691,836	2	42,427,342	2	3,735,506	2	50,448,013	2	11,756,177	4	175,942,799
2010 ~ 2011	30	1,714,166	30	2,796,165	23	1,081,999	23	10,179,978	17	5,451,398	3	179,127,286
2011 ~ 2012	34	0	37	103,326	37	103,326	38	103,326	38	103,326	6	143,817,965
2012 ~ 2013	34	0	36	128,944	36	128,944	36	208,667	36	208,667	8	139,123,741
2013 ~ 2014	29	1,859,704	29	2,902,957	24	1,043,253	32	5,118,086	28	3,258,382	9	135,394,290
2014 ~ 2015	34	0	35	155,416	35	155,416	37	155,416	37	155,416	10	126,876,327
2015 ~ 2016	34	0	43	52,090	43	52,090	43	52,090	43	52,090	25	68,273,960
2016 ~ 2017	34	0	43	52,090	43	52,090	43	52,090	43	52,090	43	11,039,409
2017 ~ 2018	34	0	38	102,472	38	102,472	39	102,472	39	102,472	41	15,605,004
2018 ~ 2019	26	4,290,914	26	5,260,436	32	969,522	28	7,027,436	32	2,736,522	44	9,358,770

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Short Term:

Case A, Chakaria Intake Pump = 3.0 m^3/s



Source: JICA Survey Team

Plan of Palakata Regulation Pond in Short Term:

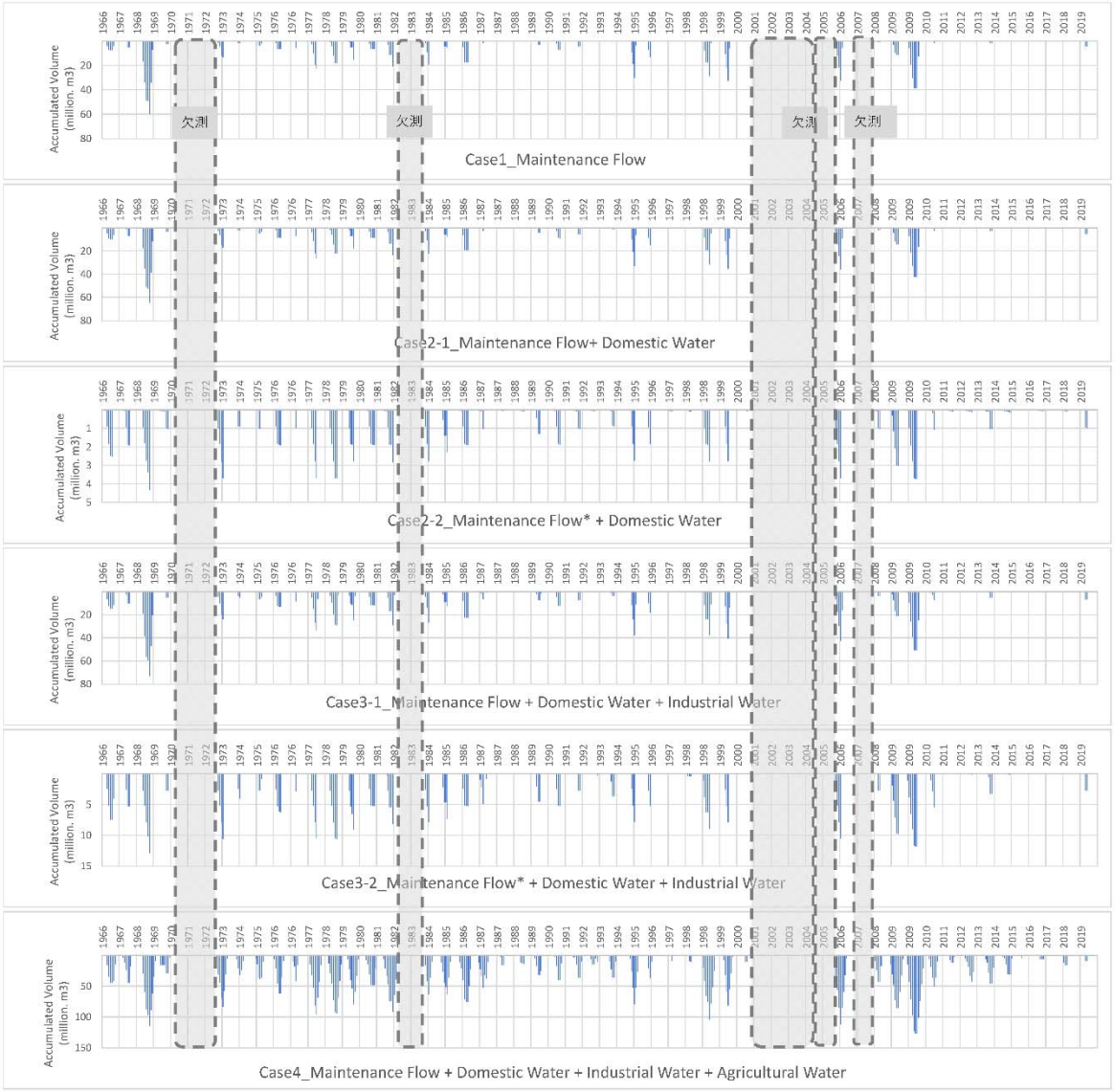
Case A, Chakaria Intake Pump = 10.0 m^3/s

Year	Rank	Case1 Maintenance Flow	Rank	Case2-1 Maintenance Flow + Domestic Water	Rank	Case2-2 Maintenance Flow* – Domestic Water	Rank	Case3-1 Maintenance Flow + Domestic Water + Industrial Water	Rank	Case3-2 Maintenance Flow* – Domestic Water + Industrial Water	Rank	Case4 Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water
1966 ～ 1967	17	7,390,119	16	9,901,371	14	2,511,251	16	14,862,946	14	7,472,827	21	44,873,851
1967 ～ 1968	23	4,755,872	23	6,661,344	16	1,905,473	22	10,081,344	18	5,325,473	22	44,710,467
1968 ～ 1969	1	60,078,682	1	64,398,325	1	4,319,643	1	72,970,356	1	12,891,675	2	114,450,948
1969 ～ 1970	28	2,524,374	28	3,542,863	27	1,018,489	31	5,252,863	33	2,728,489	35	28,808,039
1970 ～ 1971	-	-	-	-	-	-	-	-	-	-	-	-
1971 ～ 1972	-	-	-	-	-	-	-	-	-	-	-	-
1972 ～ 1973	14	13,405,660	14	17,111,571	4	3,705,911	13	23,951,571	4	10,545,911	9	83,907,432
1973 ～ 1974	32	1,312,975	32	2,218,477	33	905,502	30	5,339,984	25	4,027,008	32	31,793,231
1974 ～ 1975	26	3,849,796	26	4,869,700	26	1,019,904	28	6,636,700	30	2,786,904	28	38,269,978
1975 ～ 1976	19	6,713,765	18	8,619,238	17	1,905,473	17	12,930,797	16	6,217,032	16	61,489,202
1976 ～ 1977	21	5,690,675	22	6,684,961	31	994,286	23	8,505,804	29	2,815,129	26	41,252,136
1977 ～ 1978	7	22,634,072	7	26,314,366	5	3,680,293	7	33,154,366	5	10,520,293	5	95,675,925
1978 ～ 1979	11	18,179,419	10	21,886,184	3	3,706,765	9	28,726,184	3	10,546,765	6	94,225,564
1979 ～ 1980	13	15,281,620	13	18,074,930	9	2,793,310	12	24,447,137	8	9,165,517	11	79,712,755
1980 ～ 1981	20	6,411,983	20	8,313,479	18	1,901,496	20	11,676,479	19	5,264,496	19	47,885,293
1981 ～ 1982	8	20,641,684	8	23,486,230	8	2,844,546	8	28,843,201	10	8,201,517	7	90,954,099
1982 ～ 1983	-	-	-	-	-	-	-	-	-	-	-	-
1983 ～ 1984	9	19,182,234	9	21,949,072	11	2,766,838	10	27,079,072	11	7,896,838	15	63,108,252
1984 ～ 1985	22	5,446,612	21	7,763,283	15	2,316,670	18	12,735,706	15	7,289,094	14	63,323,367
1985 ～ 1986	12	17,384,066	12	19,285,562	18	1,901,496	14	22,648,562	19	5,264,496	13	75,789,132
1986 ～ 1987	31	1,599,217	31	2,619,974	25	1,020,758	29	6,484,744	23	4,885,528	17	52,119,960
1987 ～ 1988	34	0	45	51,236	45	51,236	45	51,236	45	51,236	37	15,466,085
1988 ～ 1989	34	0	38	102,472	38	102,472	39	102,472	39	102,472	39	13,624,086
1989 ～ 1990	27	3,084,550	27	4,395,934	22	1,311,384	24	7,643,796	24	4,559,246	33	31,608,930
1990 ～ 1991	18	6,887,717	17	8,762,741	20	1,875,024	19	12,125,741	22	5,238,024	27	39,922,367
1991 ～ 1992	24	4,445,181	24	5,462,816	28	1,017,635	25	7,172,816	34	2,727,635	30	36,372,479
1992 ～ 1993	34	0	41	76,854	41	76,854	35	360,501	35	360,501	38	14,669,537
1993 ～ 1994	34	0	34	893,896	34	893,896	34	3,648,194	27	3,648,194	31	35,659,608
1994 ～ 1995	5	30,125,241	5	32,861,631	13	2,736,389	5	37,934,631	13	7,809,389	12	79,156,668
1995 ～ 1996	15	12,875,264	15	14,702,175	21	1,826,911	15	18,122,175	21	5,246,911	29	36,656,197
1996 ～ 1997	34	0	38	102,472	38	102,472	39	102,472	39	102,472	43	9,220,935
1997 ～ 1998	16	7,602,002	19	8,597,995	30	995,994	21	11,437,484	26	3,835,483	25	41,769,700
1998 ～ 1999	6	28,667,777	6	31,456,256	10	2,788,479	6	37,601,745	9	8,933,968	4	104,510,400
1999 ～ 2000	3	32,789,178	4	35,556,016	11	2,766,838	4	40,686,016	11	7,896,838	10	81,595,596
2000 ～ 2001	34	0	42	76,000	42	76,000	42	76,000	42	76,000	41	10,743,658
2001 ～ 2002	-	-	-	-	-	-	-	-	-	-	-	-
2002 ～ 2003	-	-	-	-	-	-	-	-	-	-	-	-
2003 ～ 2004	-	-	-	-	-	-	-	-	-	-	-	-
2004 ～ 2005	-	-	-	-	-	-	-	-	-	-	-	-
2005 ～ 2006	4	32,250,511	3	35,930,804	5	3,680,293	3	42,770,804	5	10,520,293	3	111,584,400
2006 ～ 2007	-	-	-	-	-	-	-	-	-	-	-	-
2007 ～ 2008	33	910,203	33	1,927,838	28	1,017,635	33	3,662,274	31	2,752,071	23	43,124,612
2008 ～ 2009	10	19,169,485	11	21,082,911	7	3,029,564	11	25,740,583	7	9,754,425	8	85,347,297
2009 ～ 2010	2	38,691,836	2	42,427,342	2	3,735,506	2	50,448,013	2	11,756,177	1	126,786,090
2010 ～ 2011	30	1,714,166	30	2,796,165	23	1,081,999	26	7,165,565	17	5,451,398	18	50,618,087
2011 ～ 2012	34	0	37	103,326	37	103,326	38	103,326	38	103,326	40	12,383,479
2012 ～ 2013	34	0	36	128,944	36	128,944	36	208,667	36	208,667	24	42,998,576
2013 ～ 2014	29	1,859,704	29	2,902,957	24	1,043,253	32	5,118,086	28	3,258,382	20	45,178,158
2014 ～ 2015	34	0	35	155,416	35	155,416	37	155,416	37	155,416	34	31,139,637
2015 ～ 2016	34	0	43	52,090	43	52,090	43	52,090	43	52,090	44	6,269,449
2016 ～ 2017	34	0	43	52,090	43	52,090	43	52,090	43	52,090	44	6,269,449
2017 ～ 2018	34	0	38	102,472	38	102,472	39	102,472	39	102,472	36	15,605,004
2018 ～ 2019	25	4,290,914	25	5,260,436	32	969,522	27	7,027,436	32	2,736,522	42	9,358,770

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Short Term:

Case A, Chakaria Intake Pump = 10.0 m^3/s



Source: JICA Survey Team

Annex 4.1-3 Calculation Results of Water Balance Study (Short Term Plan)

Plan of Palakata Regulation Pond in Short Term:

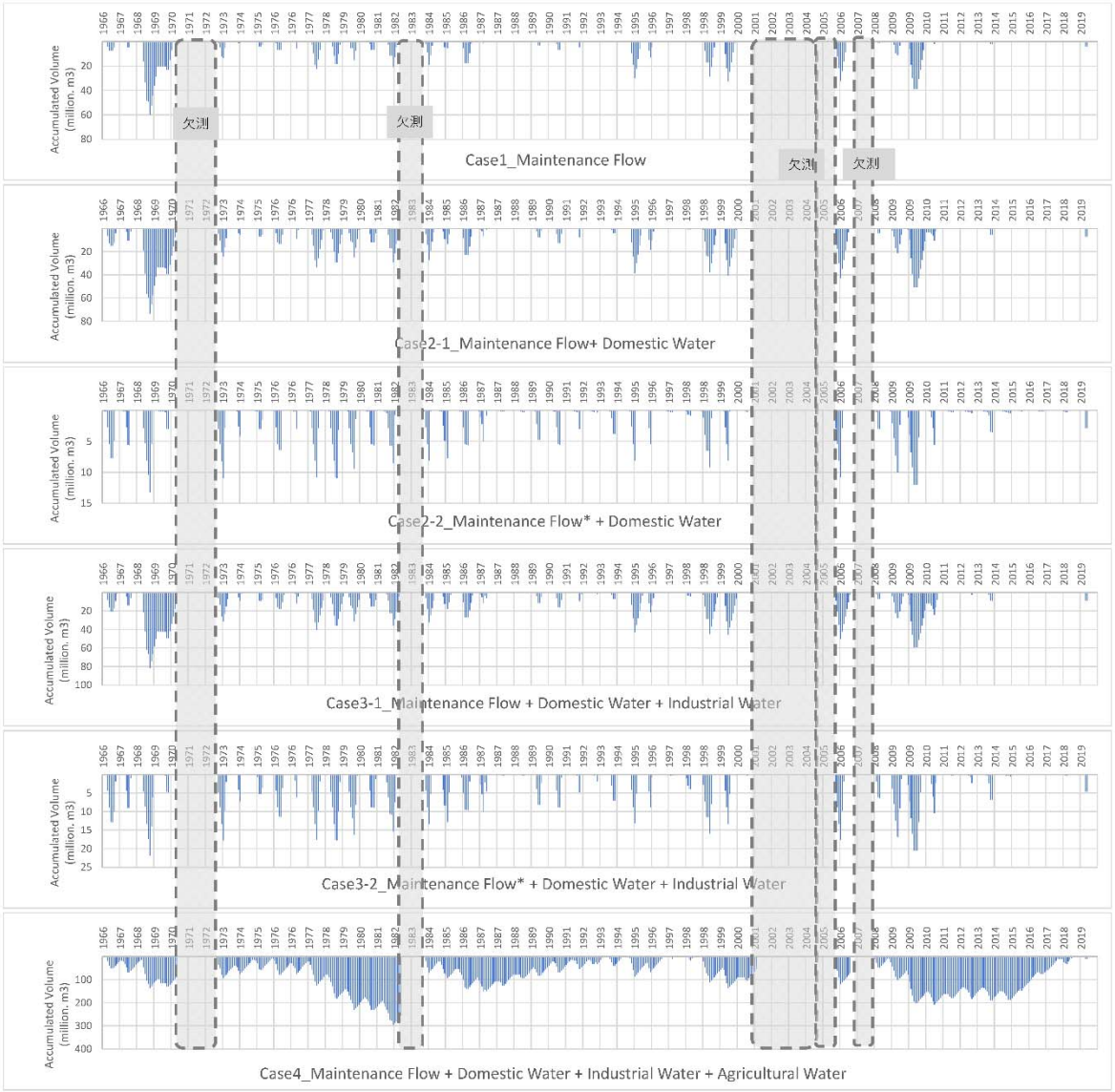
Case B, Chakaria Intake Pump = 3.0 m^3/s

Year	Rank	Case1 Maintenance Flow	Rank	Case2-1 Maintenance Flow + Domestic Water	Rank	Case2-2 Maintenance Flow* + Domestic Water	Rank	Case3-1 Maintenance Flow – Domestic Water – Industrial Water	Rank	Case3-2 Maintenance Flow* + Domestic Water + Industrial Water	Rank	Case4 Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water
1966 ~ 1967	18	7,433,764	17	15,191,594	14	7,757,830	18	20,264,594	14	12,830,830	38	51,880,119
1967 ~ 1968	24	4,755,872	24	10,370,365	17	5,614,494	24	13,790,365	20	9,034,494	33	68,865,939
1968 ~ 1969	1	60,078,682	1	73,319,686	1	13,241,005	1	81,926,686	1	21,848,005	15	136,804,418
1969 ~ 1970	7	22,945,456	5	39,185,183	30	2,998,723	4	49,502,183	33	4,708,723	17	129,506,165
1970 ~ 1971	-	-	-	-	-	-	-	-	-	-	-	-
1971 ~ 1972	-	-	-	-	-	-	-	-	-	-	-	-
1972 ~ 1973	15	13,405,660	14	24,328,783	4	10,923,123	13	31,168,783	4	17,763,123	25	94,426,138
1973 ~ 1974	32	1,312,975	31	5,425,204	25	4,112,229	32	8,673,066	25	7,360,091	30	75,732,468
1974 ~ 1975	27	3,849,796	29	6,853,733	29	3,003,937	29	9,106,928	31	5,257,132	36	57,877,686
1975 ~ 1976	20	6,713,765	18	13,141,637	16	6,427,872	20	18,160,213	16	11,446,448	28	77,228,490
1976 ~ 1977	22	5,690,675	25	8,620,011	33	2,929,336	25	11,859,889	30	6,169,214	29	75,972,185
1977 ~ 1978	8	22,634,072	8	33,482,595	5	10,848,522	8	40,322,595	5	17,688,522	19	124,918,613
1978 ~ 1979	12	18,179,419	10	29,105,029	3	10,925,610	10	35,945,029	3	17,765,610	9	182,029,397
1979 ~ 1980	14	15,281,620	13	24,675,791	8	9,394,171	12	31,457,653	8	16,176,033	2	230,883,169
1980 ~ 1981	21	6,411,983	21	12,013,803	18	5,601,819	22	15,376,803	21	8,964,819	3	230,359,161
1981 ~ 1982	9	20,641,684	9	29,169,821	10	8,528,137	9	35,951,683	10	15,309,999	1	295,264,324
1982 ~ 1983	-	-	-	-	-	-	-	-	-	-	-	-
1983 ~ 1984	10	19,182,234	11	27,337,898	11	8,155,664	11	32,467,898	11	13,285,664	32	70,285,179
1984 ~ 1985	23	5,446,612	19	13,117,435	15	7,670,823	19	18,190,435	15	12,743,823	24	94,556,693
1985 ~ 1986	13	17,384,066	15	22,985,885	18	5,601,819	15	26,985,294	19	9,601,228	13	139,217,559
1986 ~ 1987	31	1,599,217	30	6,549,653	23	4,950,437	26	11,460,519	18	9,861,302	11	150,450,768
1987 ~ 1988	34	0	45	149,202	45	149,202	43	214,536	43	214,536	18	125,171,512
1988 ~ 1989	34	0	39	298,404	39	298,404	40	298,404	40	298,404	23	94,600,225
1989 ~ 1990	28	3,084,550	26	7,849,675	24	4,765,125	27	11,212,675	24	8,128,125	27	84,132,535
1990 ~ 1991	19	6,887,717	20	12,412,449	20	5,524,732	21	15,775,449	22	8,887,732	34	68,602,270
1991 ~ 1992	25	4,445,181	27	7,441,417	31	2,996,236	28	9,274,502	32	4,829,322	37	54,843,725
1992 ~ 1993	34	0	37	331,302	37	331,302	36	1,929,878	36	1,929,878	42	32,640,597
1993 ~ 1994	34	0	34	3,784,031	27	3,784,031	34	7,031,892	27	7,031,892	41	40,731,886
1994 ~ 1995	5	30,125,241	6	38,191,143	13	8,065,902	7	43,264,143	13	13,138,902	26	86,274,281
1995 ~ 1996	16	12,875,264	16	18,260,981	22	5,385,717	17	21,680,981	23	8,805,717	35	67,240,513
1996 ~ 1997	34	0	39	298,404	39	298,404	37	948,132	37	948,132	44	12,552,320
1997 ~ 1998	17	7,602,002	22	11,528,012	26	3,926,011	23	14,946,874	26	7,344,872	40	45,279,090
1998 ~ 1999	6	28,667,777	7	37,877,069	9	9,209,292	6	44,601,930	9	15,934,153	21	113,081,660
1999 ~ 2000	3	32,789,178	4	40,944,842	11	8,155,664	5	46,074,842	11	13,285,664	14	138,133,156
2000 ~ 2001	34	0	42	221,316	42	221,316	42	221,316	42	221,316	22	102,900,405
2001 ~ 2002	-	-	-	-	-	-	-	-	-	-	-	-
2002 ~ 2003	-	-	-	-	-	-	-	-	-	-	-	-
2003 ~ 2004	-	-	-	-	-	-	-	-	-	-	-	-
2004 ~ 2005	-	-	-	-	-	-	-	-	-	-	-	-
2005 ~ 2006	4	32,250,511	3	43,099,033	5	10,848,522	3	49,939,033	5	17,688,522	20	120,323,704
2006 ~ 2007	-	-	-	-	-	-	-	-	-	-	-	-
2007 ~ 2008	33	910,203	33	3,906,439	31	2,996,236	33	7,211,949	29	6,301,746	39	48,144,002
2008 ~ 2009	11	19,169,485	12	25,854,818	7	10,046,891	14	30,987,394	7	16,886,891	12	140,068,721
2009 ~ 2010	2	38,691,836	2	50,747,725	2	12,055,889	2	59,243,300	2	20,551,465	5	200,191,437
2010 ~ 2011	30	1,714,166	23	10,495,781	21	5,467,490	16	23,922,729	17	10,398,862	4	210,111,488
2011 ~ 2012	34	0	38	300,891	38	300,891	39	300,891	39	300,891	10	179,701,357
2012 ~ 2013	34	0	36	377,034	36	377,034	35	2,370,423	35	2,370,423	8	183,340,387
2013 ~ 2014	29	1,859,704	32	5,354,882	28	3,495,178	31	8,716,744	28	6,857,040	6	188,881,182
2014 ~ 2015	34	0	35	452,579	35	452,579	38	452,579	38	452,579	7	187,226,693
2015 ~ 2016	34	0	43	151,689	43	151,689	44	151,689	44	151,689	16	130,463,043
2016 ~ 2017	34	0	43	151,689	43	151,689	44	151,689	44	151,689	31	75,116,192
2017 ~ 2018	34	0	39	298,404	39	298,404	40	298,404	40	298,404	43	30,973,822
2018 ~ 2019	26	4,290,914	28	7,148,136	34	2,857,222	30	8,915,136	34	4,624,222	45	11,246,470

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Short Term:

Case B, Chakaria Intake Pump = 3.0 m^3/s



Source: JICA Survey Team

Plan of Palakata Regulation Pond in Short Term:

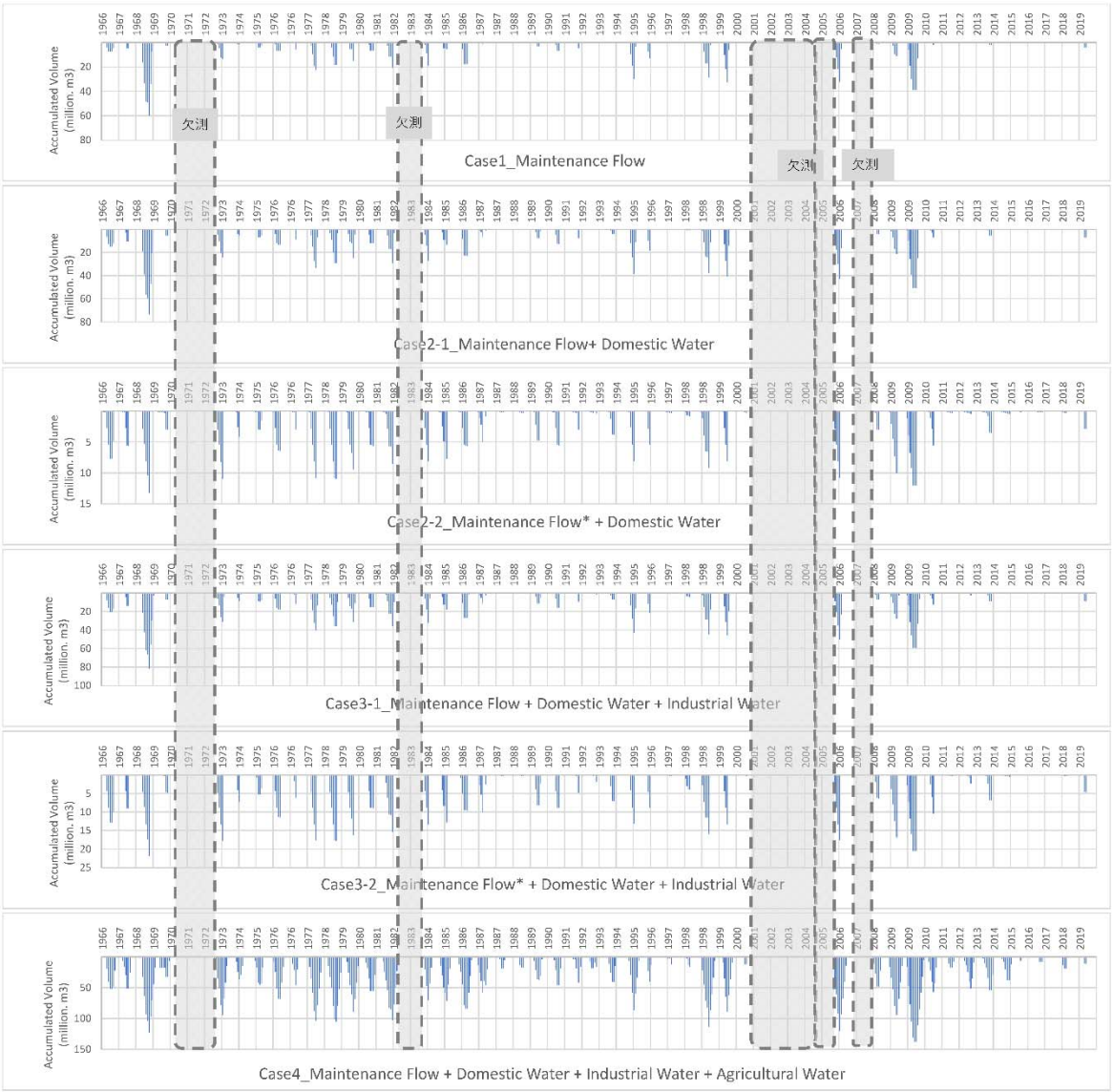
Case B, Chakaria Intake Pump = 10.0 m^3/s

Year	Rank	Case1 Maintenance Flow	Rank	Case2-1 Maintenance Flow + Domestic Water	Rank	Case2-2 Maintenance Flow* – Domestic Water	Rank	Case3-1 Maintenance Flow + Domestic Water + Industrial Water	Rank	Case3-2 Maintenance Flow* – Domestic Water – Industrial Water	Rank	Case4 Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water
1966 ~ 1967	17	7,433,764	16	15,191,594	14	7,757,830	16	20,264,594	14	12,830,830	21	51,880,119
1967 ~ 1968	23	4,755,872	22	10,370,365	17	5,614,494	22	13,790,365	20	9,034,494	22	51,778,664
1968 ~ 1969	1	60,078,682	1	73,319,686	1	13,241,005	1	81,926,686	1	21,848,005	2	123,407,278
1969 ~ 1970	28	2,524,374	30	5,523,097	30	2,998,723	32	7,233,097	33	4,708,723	35	32,359,347
1970 ~ 1971	-	-	-	-	-	-	-	-	-	-	-	-
1971 ~ 1972	-	-	-	-	-	-	-	-	-	-	-	-
1972 ~ 1973	14	13,405,660	13	24,328,783	4	10,923,123	12	31,168,783	4	17,763,123	8	94,426,138
1973 ~ 1974	32	1,312,975	31	5,425,204	25	4,112,229	31	8,673,066	25	7,360,091	34	36,775,130
1974 ~ 1975	26	3,849,796	28	6,853,733	29	3,003,937	28	9,106,928	31	5,257,132	28	45,191,567
1975 ~ 1976	19	6,713,765	17	13,141,637	16	6,427,872	18	18,160,213	16	11,446,448	16	68,320,790
1976 ~ 1977	21	5,690,675	23	8,620,011	33	2,929,336	24	11,859,889	30	6,169,214	25	46,177,295
1977 ~ 1978	7	22,634,072	7	33,482,595	5	10,848,522	7	40,322,595	5	17,688,522	6	104,415,228
1978 ~ 1979	11	18,179,419	9	29,105,029	3	10,925,610	9	35,945,029	3	17,765,610	5	104,803,584
1979 ~ 1980	13	15,281,620	12	24,675,791	8	9,394,171	11	31,457,653	8	16,176,033	11	88,511,372
1980 ~ 1981	20	6,411,983	20	12,013,803	18	5,601,819	20	15,376,803	21	8,964,819	19	54,944,792
1981 ~ 1982	8	20,641,684	8	29,169,821	10	8,528,137	8	35,951,683	10	15,309,999	7	102,887,669
1982 ~ 1983	-	-	-	-	-	-	-	-	-	-	-	-
1983 ~ 1984	9	19,182,234	10	27,337,898	11	8,155,664	10	32,467,898	11	13,285,664	15	70,285,179
1984 ~ 1985	22	5,446,612	18	13,117,435	15	7,670,823	17	18,190,435	15	12,743,823	14	71,964,315
1985 ~ 1986	12	17,384,066	14	22,985,885	18	5,601,819	14	26,985,294	19	9,601,228	13	84,362,024
1986 ~ 1987	31	1,599,217	29	6,549,653	23	4,950,437	25	11,460,519	18	9,861,302	17	58,666,810
1987 ~ 1988	34	0	45	149,202	45	149,202	43	214,536	43	214,536	37	18,807,865
1988 ~ 1989	34	0	39	298,404	39	298,404	40	298,404	40	298,404	40	17,121,512
1989 ~ 1990	27	3,084,550	24	7,849,675	24	4,765,125	26	11,212,675	24	8,128,125	33	36,965,910
1990 ~ 1991	18	6,887,717	19	12,412,449	20	5,524,732	19	15,775,449	22	8,887,732	26	45,796,001
1991 ~ 1992	24	4,445,181	25	7,441,417	31	2,996,236	27	9,274,502	32	4,829,322	29	41,710,255
1992 ~ 1993	34	0	37	331,302	37	331,302	36	1,929,878	36	1,929,878	38	18,175,662
1993 ~ 1994	34	0	34	3,784,031	27	3,784,031	34	7,031,892	27	7,031,892	30	40,731,886
1994 ~ 1995	5	30,125,241	5	38,191,143	13	8,065,902	6	43,264,143	13	13,138,902	12	86,274,281
1995 ~ 1996	15	12,875,264	15	18,260,981	22	5,385,717	15	21,680,981	23	8,805,717	31	40,215,003
1996 ~ 1997	34	0	39	298,404	39	298,404	37	948,132	37	948,132	41	12,552,320
1997 ~ 1998	16	7,602,002	21	11,528,012	26	3,926,011	21	14,946,874	26	7,344,872	27	45,279,090
1998 ~ 1999	6	28,667,777	6	37,877,069	9	9,209,292	5	44,601,930	9	15,934,153	4	113,081,660
1999 ~ 2000	3	32,789,178	4	40,944,842	11	8,155,664	4	46,074,842	11	13,285,664	10	88,555,497
2000 ~ 2001	34	0	42	221,316	42	221,316	42	221,316	42	221,316	42	12,460,048
2001 ~ 2002	-	-	-	-	-	-	-	-	-	-	-	-
2002 ~ 2003	-	-	-	-	-	-	-	-	-	-	-	-
2003 ~ 2004	-	-	-	-	-	-	-	-	-	-	-	-
2004 ~ 2005	-	-	-	-	-	-	-	-	-	-	-	-
2005 ~ 2006	4	32,250,511	3	43,099,033	5	10,848,522	3	49,939,033	5	17,688,522	3	120,323,704
2006 ~ 2007	-	-	-	-	-	-	-	-	-	-	-	-
2007 ~ 2008	33	910,203	33	3,906,439	31	2,996,236	33	7,211,949	29	6,301,746	24	48,144,002
2008 ~ 2009	10	19,169,485	11	25,854,818	7	10,046,891	13	30,987,394	7	16,886,891	9	94,050,837
2009 ~ 2010	2	38,691,836	2	50,747,725	2	12,055,889	2	59,243,300	2	20,551,465	1	137,311,797
2010 ~ 2011	30	1,714,166	26	7,181,657	21	5,467,490	23	12,113,029	17	10,398,862	18	57,353,652
2011 ~ 2012	34	0	38	300,891	38	300,891	39	300,891	39	300,891	39	17,282,669
2012 ~ 2013	34	0	36	377,034	36	377,034	35	2,370,423	35	2,370,423	23	51,331,830
2013 ~ 2014	29	1,859,704	32	5,354,882	28	3,495,178	30	8,716,744	28	6,857,040	20	53,911,680
2014 ~ 2015	34	0	35	452,579	35	452,579	38	452,579	38	452,579	32	38,003,111
2015 ~ 2016	34	0	43	151,689	43	151,689	44	151,689	44	151,689	44	8,157,148
2016 ~ 2017	34	0	43	151,689	43	151,689	44	151,689	44	151,689	44	8,157,148
2017 ~ 2018	34	0	39	298,404	39	298,404	40	298,404	40	298,404	36	19,102,430
2018 ~ 2019	25	4,290,914	27	7,148,136	34	2,857,222	29	8,915,136	34	4,624,222	43	11,246,470

Source: JICA Survey Team

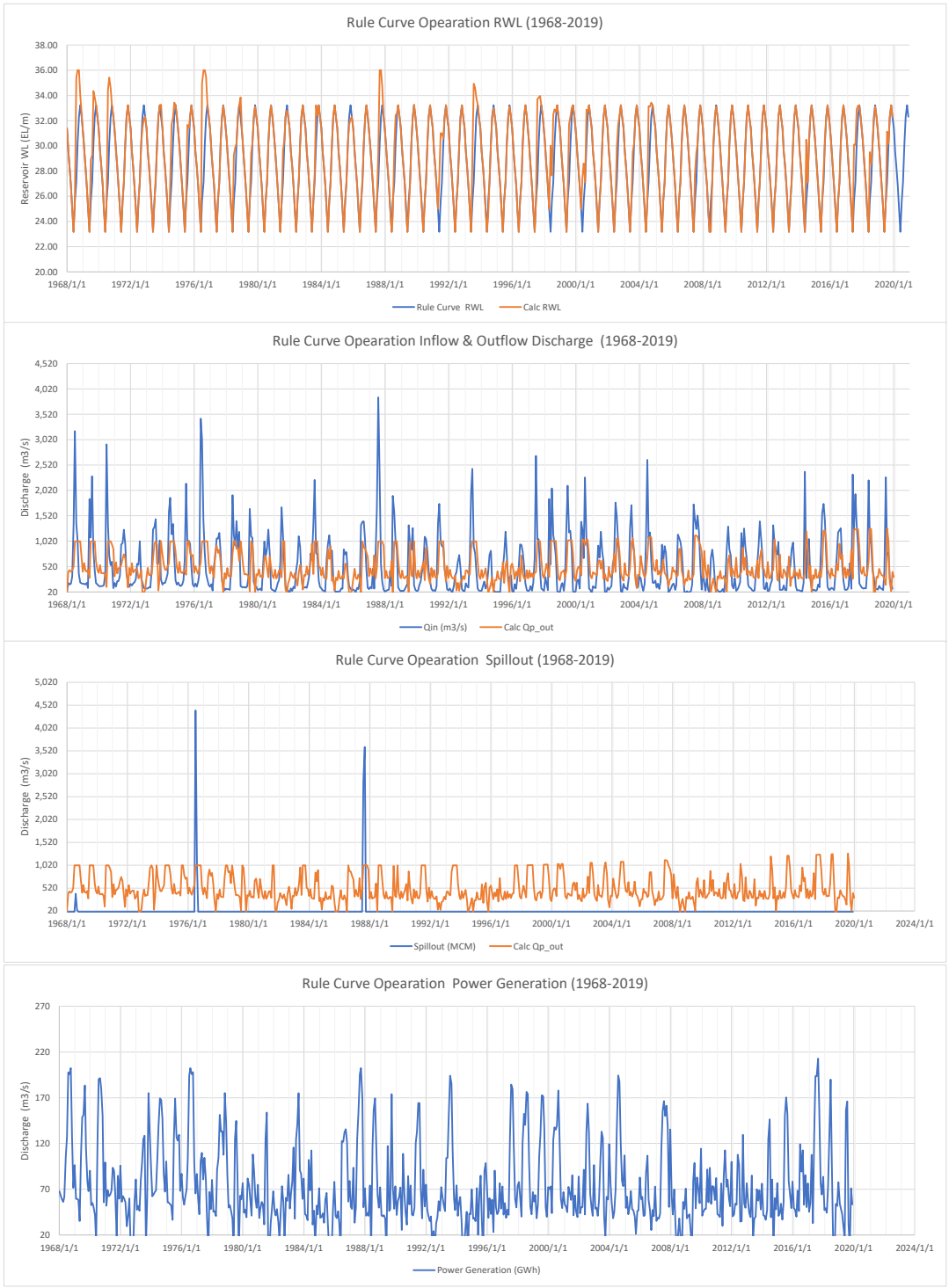
Plan of Palakata Regulation Pond in Short Term:

Case B, Chakaria Intake Pump = 10.0 m^3/s



Source: JICA Survey Team

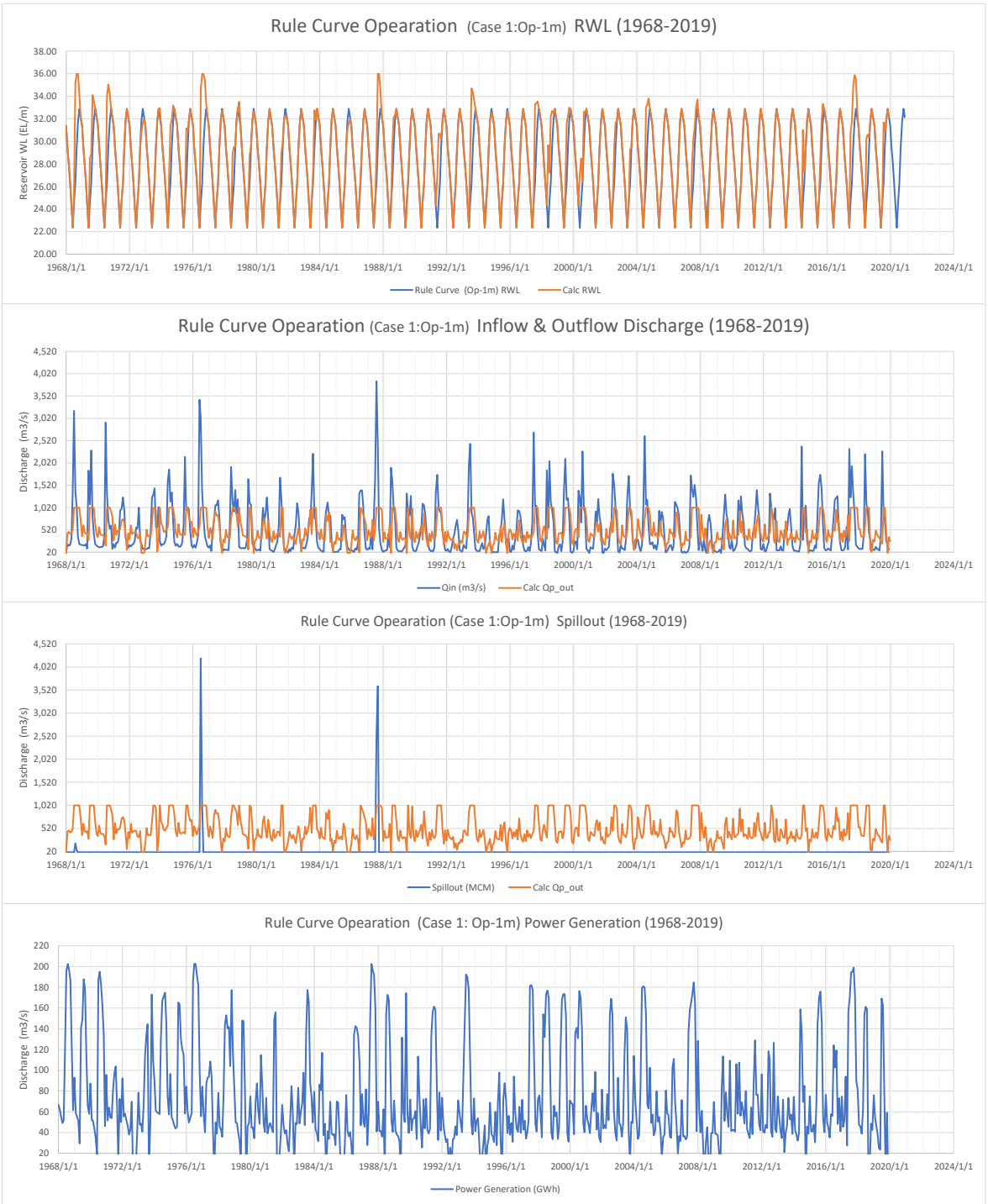
ANNEX 4.2-1



Source: JICA Survey Team

Figure 1 Result of Reservoir Operation Simulation (Case 0: under Present Rule Curve)

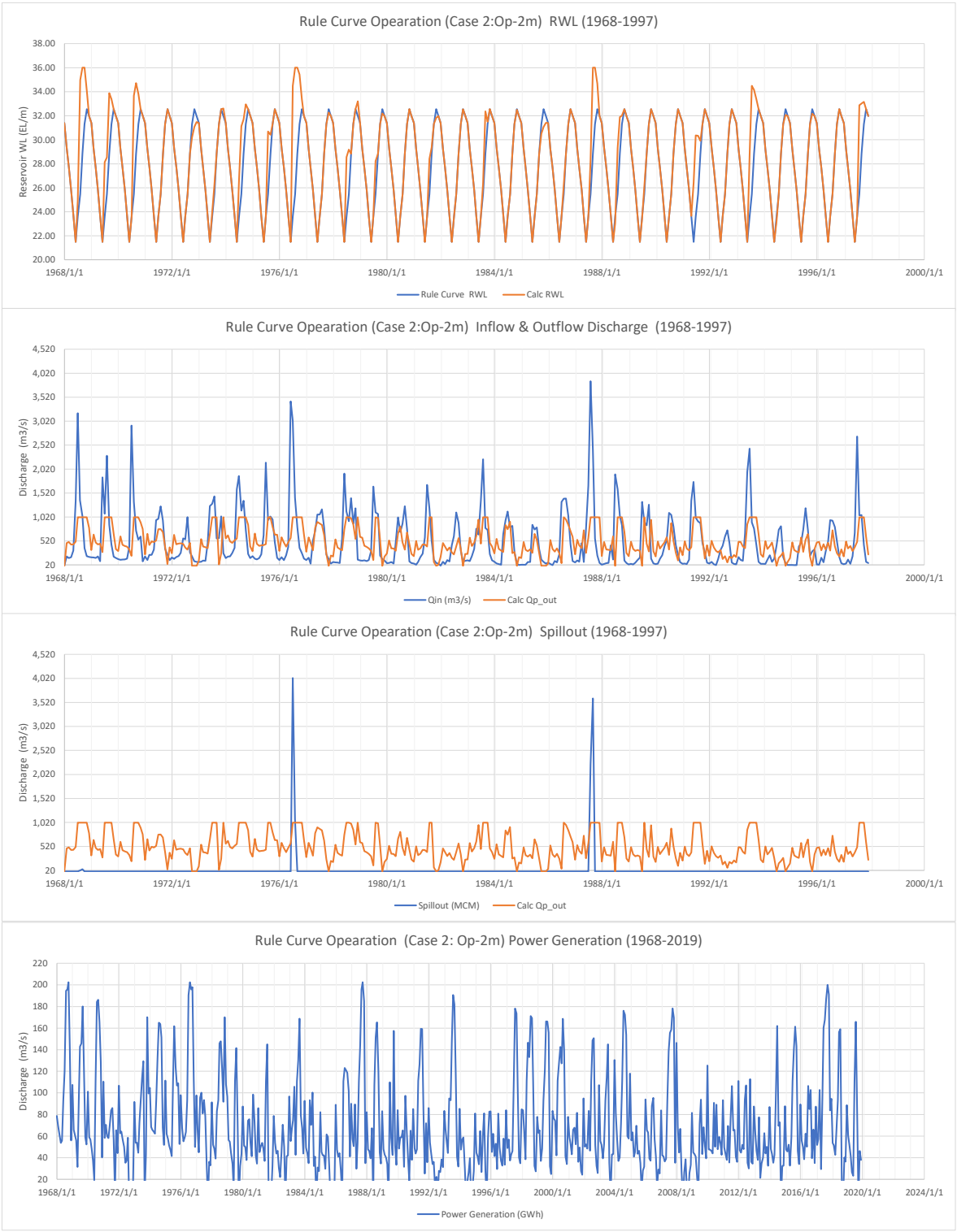
Annex 4.2-1: Result of Reservoir Operation Simulation



Source: JICA Survey Team

Figure 2 Result of Reservoir Operation Simulation (Case 1: -1m of Lowest water Level)

Annex 4.2-1: Result of Reservoir Operation Simulation



Source: JICA Survey Team

Figure 3 Result of Reservoir Operation Simulation (Case 2: -2m of Lowest Water Level)

1. Inter-Basin Headrace

The headrace route is expected the following two routes which would construct a dam on Sangu River basin for the long term development plan.

① Pressure Type Headrace (Dohazari-route)

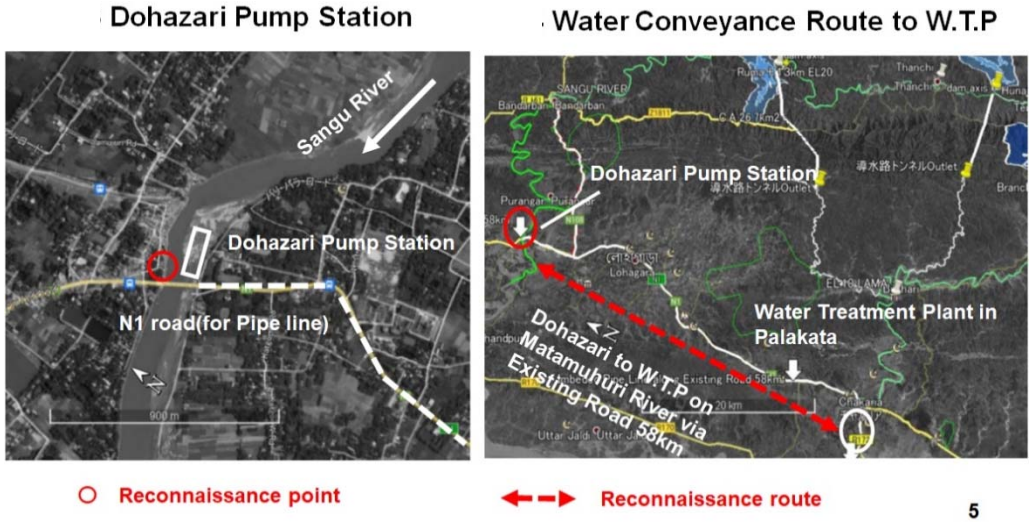
- Dohazari intake pump station at the crossing point of the existing N-1Road.
- Conveyance (3.3m^3/s low water) 95km from Dohazari to W.T.P at the upstream of right bank Matamuhuri River.

② Non Pressure Type Headrace (Tunnel-route)

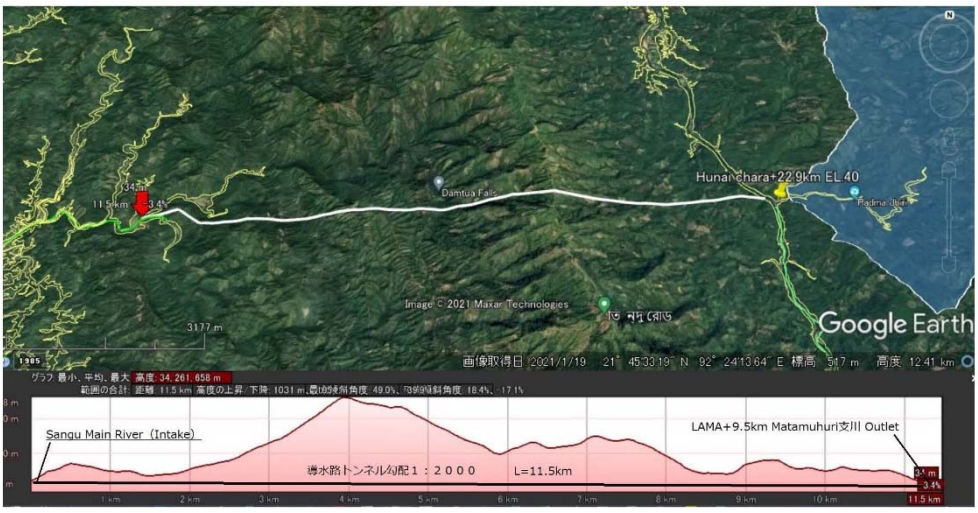
- Connecting with Sangu River and Tributary Matamuhuri River by non pressure tunnel.
- Conveyance (3.3m3/s low water) 13km from Matamuhuri intake pump station to Palakata W.T.P.

Table Annex 4.1-1-1 Headrace Comparison between Dohazari-route and Tunnel route

items	① Dohazari-route	② Tunnel-route
Facilities	Number of Pump station ; One place station every 20km3, 3 no. Pump; Volute pump 1.0D x 2 units/st. Motor; 2500kW x 2 units/st. Pipe line; 1.5Dx95km(Embedded in N1)	Ghakangya dam (Ruma+13km) to Lama+1.8km tributary L=17.1km, Concrete lining Tunnel inner dia 2.0W x 3.0H, 1/2000
		Chama Khal dam (Ruma+56.8km) to Lama+9.5km tributary L=11.5km Concrete lining Tunnel inner dia 2.0W x 3.0W, 1/2500
Estimated Cost	Pump Station; 3.3bil/no. x 3nos.=9.9billion JPY Pipeline; 2.55million/m x95x1,000=242billion JPY Estimated Cost=252 billion JPY Annual electricity rate 0.7billion/year	-do- 1.0million/m JPY x 17,100m=17.1billion JPY
		-do- 1.0million/m JPY x11,500m=11.5billionJPY
Consideration	✓ In economical view point, [Tunnel – route] is recommended as the headrace route. ✓ Excavation method is expected T.B.M (Tunnel Boring Machine) or NATM (Blasting and Spray Concrete Tunnel Method) ✓ Investigations of the tunnel construction is required in the next step.	

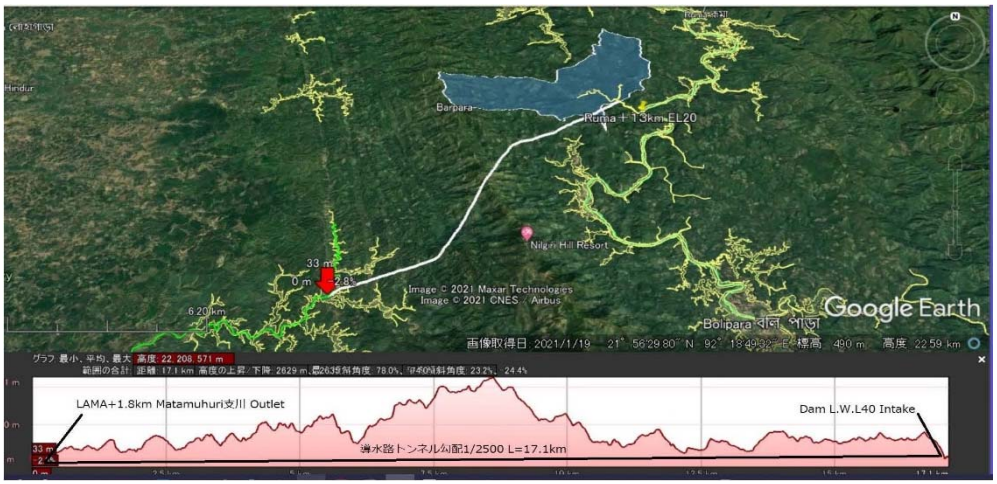


Source: JICA Survey Team **Annex Figure 4.1-1 Dohazari Pump Station, and Headrace Route**



Source: JICA Survey Team

Annex Figure 4.1-2 Chama Khal dam (Ruma+56.8km) to Lama+9.5km tributary L=11.5km Headrace Tunnel Route



Source: JICA Survey Team

Annex Figure 4.1-3 Ghakangya dam (Ruma+13km) to Lama+1.8km tributary L=17.1km.

Plan of Palakata Regulation Pond in Long Term (1/6)

Calculation Sheet of Water Balance

Model 1 in Long Term: Palakata Regulation Pond

No.	Item	Unit	Calculating Formula	Remark
(1)	River discharge per 100 km^2	m^3/s	N/A	
(2)	Basin yield 1, BY_1	m^3/s	= (1)×RB_1 / 100 km^2	
(3)	Maintenance discharge at Lama control point	m^3/s	= Unit discharge of maintenance UDM $m^3/s/100km^2$ × PC_1 km^2	
(4)	Domestic intake water 1, D_1	m^3/s	N/A	
(5)	Actual Domestic intake water 1	m^3/s	=Min (Max((2)-(3),0), (4))	
(6)	Industrial intake water 1, I_1	m^3/s	N/A	
(7)	Actual Industrial intake water 1	m^3/s	=Min (Max((2)-(3)-(5),0), (6))	
(8)	Agricultural Intake water 1, AI_1	m^3/s	Totalized agricultural intake water of each Upazila	
(9)	Actual Agricultural Intake water 1	m^3/s	=Min (Max((2)-(3)-(5)-(7),0), (8))	
(10)	Agricultural Return water 1, AR_1	m^3/s	Totalized agricultural return water of each Upazila	
(11)	Actual Agricultural Return water 1	m^3/s	= (10)-((8)-(9))×Return water rate 60%	
(12)	Shortage discharge of maintenance discharge at Lama control point	m^3/s	= Max ((3)-(2),0)	
(13)	Shortage discharge of domestic intake water 1 at Lama control point	m^3/s	= (4)-(5)	
(14)	Shortage discharge of industrial intake water 1 at Lama control point	m^3/s	= (6)-(7)	
(15)	Shortage discharge of Agricultural Intake water 1 at Lama control point	m^3/s	= (8)-(9)	
(16)	Surplus discharge of at Lama control point	m^3/s	= Max ((2)-(3)-(4)-(6)-(8), 0),	
(17)	Passing discharge at Lama control point	m^3/s	= Max(0, (2)-(5)-(7)-(9))+(11)	
(18)	Basin yield 2, BY_2	m^3/s	= (1)×RB_2 / 100 km^2	
(19)	Maintenance discharge at Chakaria Intake Pump Station	m^3/s	= Unit discharge of maintenance UDM $m^3/s/100km^2$ × PC_2 km^2	
(20)	Domestic intake water 2, D_2	m^3/s	N/A	
(21)	Actual Domestic intake water 2	m^3/s	=Min (Max((17)+(18)-(19),0), (20))	
(22)	Industrial intake water 2, I_2	m^3/s	N/A	
(23)	Actual Industrial intake water 2	m^3/s	=Min (Max((17)+(18)-(19)-(21),0), (22))	
(24)	Domestic intake water 3, D_3	m^3/s	N/A	
(25)	Actual Domestic intake water 3	m^3/s	=Min (Max((17)+(18)-(19)-(21)-(23),0), (24))	
(26)	Industrial intake water	m^3/s	N/A	

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term (2/6)

	3, I_2			
(27)	Actual Industrial intake water 3	m^3/s	=Min (Max((17)+(18)-(19)-(21)-(23)-(25),0), (26))	
(28)	Agricultural Intake water 2, AI_2	m^3/s	Totalized agricultural intake water of each Upazila	
(29)	Actual Agricultural Intake water 2	m^3/s	=Min (Max((17)+(18)-(19)-(21)-(23)-(25)-(27),0), (28))	
(30)	Agricultural Return water 2, AR_2	m^3/s	Totalized agricultural return water of each Upazila	
(31)	Actual Agricultural Return water 2	m^3/s	= (30)-((28)-(29))×Return water rate 60%	
(32)	Shortage discharge of maintenance discharge at Chakaria Intake Pump Station	m^3/s	= Max ((19)-(17)-(18),0)	
(33)	Shortage discharge of domestic intake water 2 at Chakaria Intake Pump Station	m^3/s	= (20)-(21)	
(34)	Shortage discharge of industrial intake water 2 at Chakaria Intake Pump Station	m^3/s	= (22)-(23)	
(35)	Shortage discharge of domestic intake water 3 at Chakaria Intake Pump Station	m^3/s	= (24)-(25)	
(36)	Shortage discharge of industrial intake water 3 at Chakaria Intake Pump Station	m^3/s	= (26)-(27)	
(37)	Shortage discharge of Agricultural Intake water 2 at Chakaria Intake Pump Station	m^3/s	= (28)-(29)	
(38)	Surplus discharge of at Chakaria Intake Pump Station	m^3/s	= Max ((17)+(18)-(19)-(20)-(22)-(24)-(26)-(28), 0),	
(39)	Passing discharge at Chakaria Intake Pump Station	m^3/s	= Max(0, (17)+(18)-(21)-(23)-(25)-(27)-(29))+(31)	
(40)	Basin yield 3, BY_3	m^3/s	= (1)×RB_3 / 100 km^2	
(41)	Maintenance discharge at Palakata Regulation Pond	m^3/s	= Unit discharge of maintenance UDM $m^3/s/100km^2$ /2 × PC_3 km^2	
(42)	Domestic intake water 4, D_4	m^3/s	N/A	
(43)	Actual Domestic intake water 4	m^3/s	=Min (Max((39)+(40)-(41),0), (42))	
(44)	Industrial intake water 4, I_3	m^3/s	N/A	
(45)	Actual Industrial intake water 4	m^3/s	=Min (Max((39)+(40)-(41)-(43),0), (44))	
(46)	Agricultural Intake water 3, AI_3	m^3/s	Totalized agricultural intake water of each Upazila	
(47)	Actual Agricultural Intake water 3	m^3/s	=Min (Max((39)+(40)-(41)-(43)-(45),0), (46))	
(48)	Agricultural Return water 3, AR_3	m^3/s	Totalized agricultural return water of each Upazila	
(49)	Actual Agricultural Return water 3	m^3/s	= (48)-((46)-(47))×Return water rate 60%	
(50)	Shortage discharge of	m^3/s	= Max ((41)-(39)-(40),0)	

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term (3/6)

	maintenance discharge at Palakata Regulation Pond			
(51)	Shortage discharge of domestic intake water 4 at Palakata Regulation Pond	m^3/s	= (42)-(43)	
(52)	Shortage discharge of industrial intake water 4 at Palakata Regulation Pond	m^3/s	= (44)-(45)	
(53)	Shortage discharge of Agricultural Intake water 3 at Palakata Regulation Pond	m^3/s	= (46)-(47)	
(54)	Surplus discharge of at Palakata Regulation Pond	m^3/s	= Max ((39)+(40)-(41)-(42)-(44)-(46), 0),	
(55)	Passing discharge at Palakata Regulation Pond	m^3/s	= Max(0, (39)+(40)-(43)-(45)-(47))+(49)	
(56)	Basin yield 4, BY_4	m^3/s	= (1)×RB_4 / 100 km^2	
(57)	Maintenance discharge at River Mouth	m^3/s	= Unit discharge of maintenance UDM $m^3/s/100km^2$ /2 × PC_4 km^2	
(58)	Domestic intake water 5, D_5	m^3/s	N/A	
(59)	Actual Domestic intake water 5	m^3/s	=Min (Max((55)+(56)-(57),0), (58))	
(60)	Industrial intake water 5, I_5	m^3/s	N/A	
(61)	Actual Industrial intake water 5	m^3/s	=Min (Max((55)+(56)-(57)-(59),0), (60))	
(62)	Agricultural Intake water 4, AI_4	m^3/s	Totalized agricultural intake water of each Upazila	
(63)	Actual Agricultural Intake water 4	m^3/s	=Min (Max((55)+(56)-(57)-(59)-(61),0), (62))	
(64)	Agricultural Return water 4, AR_4	m^3/s	Totalized agricultural return water of each Upazila	
(65)	Actual Agricultural Return water 4	m^3/s	= (64)-((62)-(63))×Return water rate 60%	
(66)	Shortage discharge of maintenance discharge at River Mouth	m^3/s	= Max ((57)-(55)-(56),0)	
(67)	Shortage discharge of domestic intake water 5 at River Mouth	m^3/s	= (58)-(59)	
(68)	Shortage discharge of industrial intake water 5 at River Mouth	m^3/s	= (60)-(61)	
(69)	Shortage discharge of Agricultural Intake water 4 at River Mouth	m^3/s	= (62)-(63)	
(70)	Surplus discharge of at River Mouth	m^3/s	= Max ((55)+(56)-(58)-(60)-(62), 0),	
(71)	Passing discharge at River Mouth	m^3/s	= Max(0, (55)+(56)-(59)-(61)-(63))+(65)	
(72)	Pump capacity of Chakaria Intake Pump Station	m^3/s	P_1 m^3/s	
(73)	Intake water at Chakaria Intake Pump Station in Case 1	m^3/s	=Min((72), (38),(54),(70))	

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term (4/6)

(74)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 1	m^3/s	=Max((50),(66))	
(75)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 1	m^3/s	N/A	
(76)	Monthly inflow volume of Palakata regulation pond in Case 1	m^3	=(73)×86,400×Days of month	
(77)	Monthly supply volume of Palakata regulation pond in Case 1	m^3	=(74)×86,400×Days of month	
(78)	Accumulated volume of Palakata regulation pond in Case 1	m^3	=Max(Previous step (78)+(77)-(76), 0)	
(79)	Intake water at Chakaria Intake Pump Station in Case 2-1	m^3/s	=Min((72), (38),(54),(70))	
(80)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 2-1	m^3/s	=Max((50),(66))	
(81)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 2-1	m^3/s	=(35)+(51)+(67)	
(82)	Monthly inflow volume of Palakata regulation pond in Case 2-1	m^3	=(79)×86,400×Days of month	
(83)	Monthly supply volume of Palakata regulation pond in Case 2-1	m^3	=((80)+(81))×86,400×Days of month	
(84)	Accumulated volume of Palakata regulation pond in Case 2-1	m^3	=Max(Previous step (84)+(83)-(82), 0)	
(85)	Intake water at Chakaria Intake Pump Station in Case 2-2	m^3/s	=Min((72), (38),(54),(70))	
(86)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 2-2	m^3/s	N/A	
(87)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 2-2	m^3/s	=(35)+(51)+(67)	
(88)	Monthly inflow volume of Palakata regulation pond in Case 2-2	m^3	=(85)×86,400×Days of month	
(89)	Monthly supply volume of Palakata regulation pond in Case 2-2	m^3	=(87)×86,400×Days of month	
(90)	Accumulated volume of Palakata regulation pond in Case 2-2	m^3	=Max(Previous step (90)+(89)-(88), 0)	
(91)	Intake water at Chakaria Intake Pump Station in	m^3/s	=Min((72), (38),(54),(70))	

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term (5/6)

	Case 3-1			
(92)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 3-1	m^3/s	=Max((50),(66))	
(93)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 3-1	m^3/s	=(35)+(36)+(51)+(52)+(67)+(68)	
(94)	Monthly inflow volume of Palakata regulation pond in Case 3-1	m^3	=(91)×86,400×Days of month	
(95)	Monthly supply volume of Palakata regulation pond in Case 3-1	m^3	=((92)+(93))×86,400×Days of month	
(96)	Accumulated volume of Palakata regulation pond in Case 3-1	m^3	=Max(Previous step (96)+(95)-(94), 0)	
(97)	Intake water at Chakaria Intake Pump Station in Case 3-2	m^3/s	=Min((72), (38),(54),(70))	
(98)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 3-2	m^3/s	N/A	
(99)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 3-2	m^3/s	=(35)+(36)+(51)+(52)+(67)+(68)	
(100)	Monthly inflow volume of Palakata regulation pond in Case 3-2	m^3	=(97)×86,400×Days of month	
(101)	Monthly supply volume of Palakata regulation pond in Case 3-2	m^3	=(99)×86,400×Days of month	
(102)	Accumulated volume of Palakata regulation pond in Case 3-2	m^3	=Max(Previous step (102)+(101)-(100), 0)	
(103)	Intake water at Chakaria Intake Pump Station in Case 4-1	m^3/s	=Min((72), (38),(54),(70))	
(104)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 4-1	m^3/s	=Max((50),(66))+(69)	
(105)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 4-1	m^3/s	=(35)+(36)+(51)+(52)+(67)+(68)	
(106)	Monthly inflow volume of Palakata regulation pond in Case 4-1	m^3	=(103)×86,400×Days of month	
(107)	Monthly supply volume of Palakata regulation pond in Case 4-1	m^3	=((104)+(105))×86,400×Days of month	
(108)	Accumulated volume of Palakata regulation pond in Case 4-1	m^3	=Max(Previous step (108)+(107)-(106), 0)	
(109)	Intake water at Chakaria	m^3/s	=Min((72), (38),(54),(70))	

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term (6/6)

	Intake Pump Station in Case 4-2			
(110)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 4-2	m^3/s	=(69)	
(111)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 4-2	m^3/s	=(35)+(36)+(51)+(52)+(67)+(68)	
(112)	Monthly inflow volume of Palakata regulation pond in Case 4-2	m^3	=(109)×86,400×Days of month	
(113)	Monthly supply volume of Palakata regulation pond in Case 4-2	m^3	=((110)+(111))×86,400×Days of month	
(114)	Accumulated volume of Palakata regulation pond in Case 4-2	m^3	=Max(Previous step (114)+(113)-(112), 0)	

Source: JICA Study Team
Note: Target supplying demand in each case
Case 1 : Maintenance Flow
Case 2-1 : Maintenance Flow + Domestic Water
Case 2-2 : Domestic Water
Case 3-1 : Maintenance Flow + Domestic Water + Industrial Water
Case 3-2 : Domestic Water + Industrial Water
Case 4-1 : Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water
Case 4-2 : Domestic Water + Industrial Water + Agricultural Water

Source: JICA Survey Team

Plan of Matamuhuri Main River Dam in Long Term (1/11)

Calculation Sheet of Water Balance

Long Term of Model 2: Palakata Regulation Pond + Mamamuhuri Main River Dam

No.	Item	Unit	Calculating Formula	Remark
(1)	River discharge per 100 km^2	m^3/s	N/A	
(2)	Basin yield 1-1, BY_{1-1}	m^3/s	= (1)×RB_{1-1} / 100 km^2	
(3)	Maintenance discharge at Main River Dam-1	m^3/s	= Unit discharge of maintenance UDM $m^3/s/100km^2$ × PC_{1-1} km^2	
(4)	Domestic intake water 1-1, D_{1-1}	m^3/s	N/A	
(5)	Actual Domestic intake water 1-1	m^3/s	=Min (Max((2)-(3),0), (4))	
(6)	Industrial intake water 1-1, I_{1-1}	m^3/s	N/A	
(7)	Actual Industrial intake water 1-1	m^3/s	=Min (Max((2)-(3)-(5),0), (6))	
(8)	Agricultural Intake water 1-1, AI_{1-1}	m^3/s	Totalized agricultural intake water of each Upazila	
(9)	Actual Agricultural Intake water 1-1	m^3/s	=Min (Max((2)-(3)-(5)-(7),0), (8))	
(10)	Agricultural Return water 1-1, AR_{1-1}	m^3/s	Totalized agricultural return water of each Upazila	
(11)	Actual Agricultural Return water 1-1	m^3/s	= (10)-((8)-(9))×Return water rate 60%	
(12)	Shortage discharge of maintenance discharge at Main River Dam-1	m^3/s	= Max ((3)-(2),0)	
(13)	Shortage discharge of domestic intake water 1-1 at Main River Dam-1	m^3/s	= (4)-(5)	
(14)	Shortage discharge of industrial intake water 1-1 at Main River Dam-1	m^3/s	= (6)-(7)	
(15)	Shortage discharge of Agricultural Intake water 1-1 at Main River Dam-1	m^3/s	= (8)-(9)	
(16)	Surplus discharge of at Main River Dam-1	m^3/s	= Max ((2)-(3)-(4)-(6)-(8), 0)	
(17)	Passing discharge at Main River Dam-1	m^3/s	= Max(0, (2)-(5)-(7)-(9))+(11)	
(18)	Basin yield 1-2, BY_{1-2}	m^3/s	= (1)×RB_{1-2} / 100 km^2	
(19)	Maintenance discharge at Lama control point	m^3/s	= Unit discharge of maintenance UDM $m^3/s/100km^2$ × PC_{1-2} km^2	
(20)	Domestic intake water 1-2, D_{1-2}	m^3/s	N/A	
(21)	Actual Domestic intake water 1-2	m^3/s	=Min (Max((17)+(18)-(19),0), (20))	
(22)	Industrial intake water 1-2, I_{1-2}	m^3/s	N/A	
(23)	Actual Industrial intake water 1-2	m^3/s	=Min (Max((17)+(18)-(19)-(21),0), (22))	
(24)	Agricultural Intake water 1-2, AI_{1-2}	m^3/s	Totalized agricultural intake water of each Upazila	
(25)	Actual Agricultural Intake water 1-2	m^3/s	=Min (Max((17)+(18)-(19)-(21)-(23),0), (24))	
(26)	Agricultural Return water 1-2, AR_{1-2}	m^3/s	Totalized agricultural return water of each Upazila	

Source: JICA Survey Team

Plan of Matamuhuri Main River Dam in Long Term (2/11)

(27)	Actual Agricultural Return water 1-2	m^3/s	= (26)-((24)-(25))×Return water rate 60%	
(28)	Shortage discharge of maintenance discharge at Lama control point	m^3/s	= Max ((19)-(17)-(18),0)	
(29)	Shortage discharge of domestic intake water 1-2 at Lama control point	m^3/s	= (20)-(21)	
(30)	Shortage discharge of industrial intake water 1-2 at Lama control point	m^3/s	= (22)-(23)	
(31)	Shortage discharge of Agricultural Intake water 1-2 at Lama control point	m^3/s	= (24)-(25)	
(32)	Surplus discharge of at Lama control point	m^3/s	= Max ((17)+(18)-(19)-(20)-(22)-(24), 0)	
(33)	Passing discharge at Lama control point	m^3/s	= Max(0, (17)+(18)-(21)-(23)-(25))+(27)	
(34)	Basin yield 2, BY_2	m^3/s	= (1)×RB_2 / 100 km^2	
(35)	Maintenance discharge at Chakaria Intake Pump Station	m^3/s	= Unit discharge of maintenance UDM $m^3/s/100km^2$ × PC_2 km^2	
(36)	Domestic intake water 2, D_2	m^3/s	N/A	
(37)	Actual Domestic intake water 2	m^3/s	=Min (Max((33)+(34)-(35),0), (36))	
(38)	Industrial intake water 2, I_2	m^3/s	N/A	
(39)	Actual Industrial intake water 2	m^3/s	=Min (Max((33)+(34)-(35)-(37),0), (38))	
(40)	Domestic intake water 3, D_3	m^3/s	N/A	
(41)	Actual Domestic intake water 3	m^3/s	=Min (Max((33)+(34)-(35)-(37)-(39),0), (40))	
(42)	Industrial intake water 3, I_3	m^3/s	N/A	
(43)	Actual Industrial intake water 3	m^3/s	=Min (Max((33)+(34)-(35)-(37)-(39)-(41),0), (42))	
(44)	Agricultural Intake water 2, AI_2	m^3/s	Totalized agricultural intake water of each Upazila	
(45)	Actual Agricultural Intake water 2	m^3/s	=Min (Max((33)+(34)-(35)-(37)-(39)-(41)-(43),0), (44))	
(46)	Agricultural Return water 2, AR_2	m^3/s	Totalized agricultural return water of each Upazila	
(47)	Actual Agricultural Return water 2	m^3/s	= (46)-((44)-(45))×Return water rate 60%	
(48)	Shortage discharge of maintenance discharge at Chakaria Intake Pump Station	m^3/s	= Max ((35)-(33)-(34),0)	
(49)	Shortage discharge of domestic intake water 2 at Chakaria Intake Pump Station	m^3/s	= (36)-(37)	
(50)	Shortage discharge of industrial intake water 2 at Chakaria Intake Pump Station	m^3/s	= (38)-(39)	
(51)	Shortage discharge of	m^3/s	= (40)-(41)	

Source: JICA Survey Team

Plan of Matamuhuri Main River Dam in Long Term (3/11)

	domestic intake water 3 at Chakaria Intake Pump Station			
(52)	Shortage discharge of industrial intake water 3 at Chakaria Intake Pump Station	m^3/s	= (42)-(43)	
(53)	Shortage discharge of Agricultural Intake water 2 at Chakaria Intake Pump Station	m^3/s	= (44)-(45)	
(54)	Surplus discharge of at Chakaria Intake Pump Station	m^3/s	= Max ((33)+(34)-(35)-(36)-(38)-(40)-(42)-(44), 0),	
(55)	Passing discharge at Chakaria Intake Pump Station	m^3/s	= Max(0, (33)+(34)-(37)-(39)-(41)-(43)-(45))+(47)	
(56)	Basin yield 3, BY_3	m^3/s	= (1)×RB_3 / 100 km^2	
(57)	Maintenance discharge at Palakata Regulation Pond	m^3/s	= Unit discharge of maintenance UDM $m^3/s/100km^2$ /2× PC_3 km^2	
(58)	Domestic intake water 4, D_4	m^3/s	N/A	
(59)	Actual Domestic intake water 4	m^3/s	=Min (Max((55)+(56)-(57),0), (58))	
(60)	Industrial intake water 4, I_4	m^3/s	N/A	
(61)	Actual Industrial intake water 4	m^3/s	=Min (Max((55)+(56)-(57)-(59),0), (60))	
(62)	Agricultural Intake water 3, AI_3	m^3/s	Totalized agricultural intake water of each Upazila	
(63)	Actual Agricultural Intake water 3	m^3/s	=Min (Max((55)+(56)-(57)-(59)-(61),0), (62))	
(64)	Agricultural Return water 3, AR_3	m^3/s	Totalized agricultural return water of each Upazila	
(65)	Actual Agricultural Return water 3	m^3/s	= (64)-((62)-(63))×Return water rate 60%	
(66)	Shortage discharge of maintenance discharge at Palakata Regulation Pond	m^3/s	= Max ((57)-(55)-(56),0)	
(67)	Shortage discharge of domestic intake water 4 at Palakata Regulation Pond	m^3/s	= (58)-(59)	
(68)	Shortage discharge of industrial intake water 4 at Palakata Regulation Pond	m^3/s	= (60)-(61)	
(69)	Shortage discharge of Agricultural Intake water 3 at Palakata Regulation Pond	m^3/s	= (62)-(63)	
(70)	Surplus discharge of at Palakata Regulation Pond	m^3/s	= Max ((55)+(56)-(57)-(58)-(60)-(62), 0),	
(71)	Passing discharge at Palakata Regulation Pond	m^3/s	= Max(0, (55)+(56)-(59)-(61)-(63))+(65)	
(72)	Basin yield 4, BY_4	m^3/s	= (1)×RB_4 / 100 km^2	

Source: JICA Survey Team

Plan of Matamuhuri Main River Dam in Long Term (4/11)

(73)	Maintenance discharge at River Mouth	m^3/s	= Unit discharge of maintenance UDM $m^3/s/100km^2$ /2× PC_4 km^2	
(74)	Domestic intake water 5, D_5	m^3/s	N/A	
(75)	Actual Domestic intake water 5	m^3/s	=Min (Max((71)+(72)-(73),0), (74))	
(76)	Industrial intake water 5, I_5	m^3/s	N/A	
(77)	Actual Industrial intake water 5	m^3/s	=Min (Max((71)+(72)-(73)-(75),0), (76))	
(78)	Agricultural Intake water 4, AI_4	m^3/s	Totalized agricultural intake water of each Upazila	
(79)	Actual Agricultural Intake water 4	m^3/s	=Min (Max((71)+(72)-(73)-(75)-(77),0), (78))	
(80)	Agricultural Return water 4, AR_4	m^3/s	Totalized agricultural return water of each Upazila	
(81)	Actual Agricultural Return water 4	m^3/s	= (80)-((78)-(79))×Return water rate 60%	
(82)	Shortage discharge of maintenance discharge at River Mouth	m^3/s	= Max ((73)-(71)-(72),0)	
(83)	Shortage discharge of domestic intake water 5 at River Mouth	m^3/s	= (74)-(75)	
(84)	Shortage discharge of industrial intake water 5 at River Mouth	m^3/s	= (76)-(77)	
(85)	Shortage discharge of Agricultural Intake water 4 at River Mouth	m^3/s	= (78)-(79)	
(86)	Surplus discharge of at River Mouth	m^3/s	= Max ((71)+(72)-(74)-(76)-(78), 0),	
(87)	Passing discharge at River Mouth	m^3/s	= Max(0, (71)+(72)-(75)-(77)-(79))+(81)	
(88)	Pump capacity of Chakaria Intake Pump Station	m^3/s	P_1 m^3/s	
(89)	Storage capacity of Palakata Regulation Pond	m^3	RP m^3: Calculated storage capacity of Palakata Regulation Pond based on study of short term model	
(90)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 1	m^3/s	0.0 m^3/s	
(91)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 1	m^3/s	0.0 m^3/s	
(92)	Total supply water from Palakata Regulation Pond in Case 1	m^3/s	=(90)+(91)	
(93)	Available supply water with remaining storage of Palakata Regulation Pond in Case 1	m^3/s	=Max(0,(89)-Previous step (100)) /86,400/Days of month	
(94)	Shortage of Supply water from Palakata Regulation Pond to Matamuhuri River in	m^3/s	=Min((92)-(93),0)×(90)/(92)	

Source: JICA Survey Team

Plan of Matamuhuri Main River Dam in Long Term (5/11)

	Case 1			
(95)	Shortage of Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 1	m^3/s	=Min((92)-(93),0)×(91)/(92)	
(96)	Supply water of maintenance discharge from Main River Dam-1 to downstream of Matamuhuri River in Case 1	m^3/s	=Max((66),(82))	
(97)	Intake water at Chakaria Intake Pump Station in Case 1	m^3/s	=Min((88),Min((16),(32),(54),(70),(86)),Previous step (100)/86,400/Days of month)	
(98)	Monthly inflow volume of Palakata regulation pond in Case 1	m^3	=(97)×86,400×Days of month	
(99)	Monthly supply volume of Palakata regulation pond in Case 1	m^3	=((92)-(94)-(95))×86,400×Days of month	
(100)	Accumulated volume of Palakata regulation pond in Case 1	m^3	=Max(Previous step (100)+(99)-(98), 0))	
(101)	Available recovering water of Main River Dam-1 in Case 1	m^3/s	=Max(Min((16),(32),(54),(70),(86),Previous step (104)/ 86,400/Days of month)-(97),0)	
(102)	Monthly recovering volume of Main River Dam-1 in Case 1	m^3	=(101)×86,400×Days of month	
(103)	Monthly supply volume of Main River Dam-1 in Case 1	m^3	=((94)+(96))×86,400×Days of month	
(104)	Accumulated volume of Main River Dam-1 in Case 1	m^3	=Max(Previous step (104)+(103)-(102), 0)	
(105)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 2-1	m^3/s	0.0 m^3/s	
(106)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 2-1	m^3/s	=(51)+(67)+(83)	
(107)	Total supply water from Palakata Regulation Pond in Case 2-1	m^3/s	=(105)+(106)	
(108)	Available supply water with remaining storage of Palakata Regulation Pond in Case 2-1	m^3/s	= Max(0,(89)-Previous step (116)) /86,400/Days of month	
(109)	Shortage of Supply water from Palakata Regulation Pond to Matamuhuri River in Case 2-1	m^3/s	=Min((107)-(108),0)×(105)/(107) (※: =Zero, if (107)=0)	
(110)	Shortage of Supply water from Palakata Regulation Pond to	m^3/s	=Min((107)-(108),0)×(106)/(107) (※: =Zero, if (107)=0)	

Source: JICA Survey Team

Plan of Matamuhuri Main River Dam in Long Term (6/11)

	Palakata Water Treatment Plant in Case 2-1			
(111)	Supply water of maintenance discharge from Main River Dam-1 to downstream of Matamuhuri River in Case 2-1	m^3/s	=Max((66),(82))	
(112)	Supply water of domestic water from Main River Dam-1 to downstream of Matamuhuri River in Case 2-1	m^3/s	0.0 m^3/s	
(113)	Intake water at Chakaria Intake Pump Station in Case 2-1	m^3/s	=Min((88),Min((16),(32),(54),(70),(86)) , Previous step (116)/86,400/Days of month)	
(114)	Monthly inflow volume of Palakata regulation pond in Case 2-1	m^3	=(113)×86,400×Days of month	
(115)	Monthly supply volume of Palakata regulation pond in Case 2-1	m^3	=((107)-(109)-(110))×86,400×Days of month	
(116)	Accumulated volume of Palakata regulation pond in Case 2-1	m^3	=Max(Previous step (116)+(115)-(114), 0))	
(117)	Available recovering water of Main River Dam-1 in Case 2-1	m^3/s	=Max(Min((16),(32),(54),(70),(86),Previous step (120)/ 86,400/Days of month)-(113),0)	
(118)	Monthly recovering volume of Main River Dam-1 in Case 2-1	m^3	=(117)×86,400×Days of month	
(119)	Monthly supply volume of Main River Dam-1 in Case 2-1	m^3	=((109)+(110)+(111)+(112))×86,400×Days of month	
(120)	Accumulated volume of Main River Dam-1 in Case 2-1	m^3	=Max(Previous step (120)+(119)-(118), 0)	
(121)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 2-2	m^3/s	0.0 m^3/s	
(122)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 2-2	m^3/s	=(51)+(67)+(83)	
(123)	Total supply water from Palakata Regulation Pond in Case 2-2	m^3/s	=(121)+(122)	
(124)	Available supply water with remaining storage of Palakata Regulation Pond in Case 2-2	m^3/s	= Max(0,(89)-Previous step (132)) /86,400/Days of month	
(125)	Shortage of Supply water from Palakata Regulation Pond to Matamuhuri River in Case 2-2	m^3/s	0.0 m^3/s	
(126)	Shortage of Supply	m^3/s	=Min((123)-(124),0)	

Source: JICA Survey Team

Plan of Matamuhuri Main River Dam in Long Term (7/11)

	water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 2-2			
(127)	Supply water of maintenance discharge from Main River Dam-1 to downstream of Matamuhuri River in Case 2-2	m^3/s	0.0 m^3/s	
(128)	Supply water of domestic water from Main River Dam-1 to downstream of Matamuhuri River in Case 2-2	m^3/s	0.0 m^3/s	
(129)	Intake water at Chakaria Intake Pump Station in Case 2-2	m^3/s	=Min((88),Min((16),(32),(54),(70),(86)) , Previous step (132)/86,400/Days of month)	
(130)	Monthly inflow volume of Palakata regulation pond in Case 2-2	m^3	=(129)×86,400×Days of month	
(131)	Monthly supply volume of Palakata regulation pond in Case 2-2	m^3	=((123)-(126))×86,400×Days of month	
(132)	Accumulated volume of Palakata regulation pond in Case 2-2	m^3	=Max(Previous step (132)+(131)-(130), 0))	
(133)	Available recovering water of Main River Dam-1 in Case 2-2	m^3/s	=Max(Min((16),(32),(54),(70),(86),Previous step (136)/ 86,400/Days of month)-(129),0)	
(134)	Monthly recovering volume of Main River Dam-1 in Case 2-2	m^3	=(133)×86,400×Days of month	
(135)	Monthly supply volume of Main River Dam-1 in Case 2-2	m^3	=((126)+(128))×86,400×Days of month	
(136)	Accumulated volume of Main River Dam-1 in Case 2-2	m^3	=Max(Previous step (136)+(135)-(134), 0)	
(137)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 3-1	m^3/s	0.0 m^3/s	
(138)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 3-1	m^3/s	=(51)+(52)+(67)+(68)+(83)+(84)	
(139)	Total supply water from Palakata Regulation Pond in Case 3-1	m^3/s	=(137)+(138)	
(140)	Available supply water with remaining storage of Palakata Regulation Pond in Case 3-1	m^3/s	= Max(0,(89)-Previous step (148)) /86,400/Days of month	
(141)	Shortage of Supply water from Palakata Regulation Pond to Matamuhuri River in	m^3/s	=Min((139)-(140),0)×(137)/(139) (※: =Zero, if (139)=0)	

Source: JICA Survey Team

Plan of Matamuhuri Main River Dam in Long Term (8/11)

	Case 3-1			
(142)	Shortage of Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 3-1	m^3/s	=Min((139)-(140),0)×(138)/(139) (※: =Zero, if (139)=0)	
(143)	Supply water of maintenance discharge from Main River Dam-1 to downstream of Matamuhuri River in Case 3-1	m^3/s	=Max((66),(82))	
(144)	Supply water of domestic and industrial water from Main River Dam-1 to downstream of Matamuhuri River in Case 3-1	m^3/s	0.0 m^3/s	
(145)	Intake water at Chakaria Intake Pump Station in Case 3-1	m^3/s	=Min((88),Min((16),(32),(54),(70),(86)) , Previous step (148)/86,400/Days of month)	
(146)	Monthly inflow volume of Palakata regulation pond in Case 3-1	m^3	=(145)×86,400×Days of month	
(147)	Monthly supply volume of Palakata regulation pond in Case 3-1	m^3	=((139)-(141)-(142))×86,400×Days of month	
(148)	Accumulated volume of Palakata regulation pond in Case 3-1	m^3	=Max(Previous step (148)+(147)-(146), 0))	
(149)	Available recovering water of Main River Dam-1 in Case 3-1	m^3/s	=Max(Min((16),(32),(54),(70),(86),Previous step (152)/ 86,400/Days of month)-(145),0)	
(150)	Monthly recovering volume of Main River Dam-1 in Case 3-1	m^3	=(149)×86,400×Days of month	
(151)	Monthly supply volume of Main River Dam-1 in Case 3-1	m^3	=((141)+(142)+(143)+(144))×86,400×Days of month	
(152)	Accumulated volume of Main River Dam-1 in Case 3-1	m^3	=Max(Previous step (152)+(151)-(150), 0)	
(153)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 3-2	m^3/s	0.0 m^3/s	
(154)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 3-2	m^3/s	=(51)+(52)+(67)+(68)+(83)+(84)	
(155)	Total supply water from Palakata Regulation Pond in Case 3-2	m^3/s	=(153)+(154)	
(156)	Available supply water with remaining storage of Palakata Regulation Pond in Case 3-2	m^3/s	= Max(0,(89)-Previous step (164)) /86,400/Days of month	
(157)	Shortage of Supply water from Palakata	m^3/s	0.0 m^3/s	

Source: JICA Survey Team

Plan of Matamuhuri Main River Dam in Long Term (9/11)

	Regulation Pond to Matamuhuri River in Case 3-2			
(158)	Shortage of Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 3-2	m^3/s	=Min((155)-(156),0)	
(159)	Supply water of maintenance discharge from Main River Dam-1 to downstream of Matamuhuri River in Case 3-2	m^3/s	0.0 m^3/s	
(160)	Supply water of domestic and industrial water from Main River Dam-1 to downstream of Matamuhuri River in Case 3-2	m^3/s	0.0 m^3/s	
(161)	Intake water at Chakaria Intake Pump Station in Case 3-2	m^3/s	=Min((88),Min((16),(32),(54),(70),(86)) , Previous step (164)/86,400/Days of month)	
(162)	Monthly inflow volume of Palakata regulation pond in Case 3-2	m^3	=(161)×86,400×Days of month	
(163)	Monthly supply volume of Palakata regulation pond in Case 3-2	m^3	=((155)-(158))×86,400×Days of month	
(164)	Accumulated volume of Palakata regulation pond in Case 3-2	m^3	=Max(Previous step (164)+(163)-(162), 0))	
(165)	Available recovering water of Main River Dam-1 in Case 3-2	m^3/s	=Max(Min((16),(32),(54),(70),(86),Previous step (168)/ 86,400/Days of month)-(161),0)	
(166)	Monthly recovering volume of Main River Dam-1 in Case 3-2	m^3	=(165)×86,400×Days of month	
(167)	Monthly supply volume of Main River Dam-1 in Case 3-2	m^3	=((158)+(160))×86,400×Days of month	
(168)	Accumulated volume of Main River Dam-1 in Case 3-2	m^3	=Max(Previous step (168)+(167)-(166), 0)	
(169)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 4-1	m^3/s	0.0 m^3/s	
(170)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 4-1	m^3/s	=(51)+(52)+(67)+(68)+(83)+(84)	
(171)	Total supply water from Palakata Regulation Pond in Case 4-1	m^3/s	=(169)+(170)	
(172)	Available supply water with remaining storage of Palakata Regulation Pond in Case 4-1	m^3/s	= Max(0,(89)-Previous step (180)) /86,400/Days of month	

Source: JICA Survey Team

Plan of Matamuhuri Main River Dam in Long Term (10/11)

(173)	Shortage of Supply water from Palakata Regulation Pond to Matamuhuri River in Case 4-1	m^3/s	=Min((171)-(172),0)×(169)/(171) (※: =Zero, if (171)=0)	
(174)	Shortage of Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 4-1	m^3/s	=Min((171)-(172),0)×(170)/(171) (※: =Zero, if (171)=0)	
(175)	Supply water of maintenance discharge from Main River Dam-1 to downstream of Matamuhuri River in Case 4-1	m^3/s	=Max((66),(82))	
(176)	Supply water of domestic, industrial and agricultural water from Main River Dam-1 to downstream of Matamuhuri River in Case 4-1	m^3/s	=(85)	
(177)	Intake water at Chakaria Intake Pump Station in Case 4-1	m^3/s	=Min((88),Min((16),(32),(54),(70),(86)) , Previous step (180)/86,400/Days of month)	
(178)	Monthly inflow volume of Palakata regulation pond in Case 4-1	m^3	=(177)×86,400×Days of month	
(179)	Monthly supply volume of Palakata regulation pond in Case 4-1	m^3	=((171)-(173)-(174))×86,400×Days of month	
(180)	Accumulated volume of Palakata regulation pond in Case 4-1	m^3	=Max(Previous step (180)+(179)-(178), 0))	
(181)	Available recovering water of Main River Dam-1 in Case 4-1	m^3/s	=Max(Min((16),(32),(54),(70),(86),Previous step (184)/ 86,400/Days of month)-(177),0)	
(182)	Monthly recovering volume of Main River Dam-1 in Case 4-1	m^3	=(181)×86,400×Days of month	
(183)	Monthly supply volume of Main River Dam-1 in Case 4-1	m^3	=((173)+(174)+(175)+(176))×86,400×Days of month	
(184)	Accumulated volume of Main River Dam-1 in Case 4-1	m^3	=Max(Previous step (184)+(183)-(182), 0)	
(185)	Supply water from Palakata Regulation Pond to Matamuhuri River in Case 4-2	m^3/s	0.0 m^3/s	
(186)	Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 4-2	m^3/s	=(51)+(52)+(67)+(68)+(83)+(84)	
(187)	Total supply water from Palakata Regulation Pond in Case 4-2	m^3/s	=(185)+(186)	
(188)	Available supply water	m^3/s	= Max(0,(89)-Previous step (196))	

Source: JICA Survey Team

Plan of Matamuhuri Main River Dam in Long Term (11/11)

	with remaining storage of Palakata Regulation Pond in Case 4-2		/86,400/Days of month	
(189)	Shortage of Supply water from Palakata Regulation Pond to Matamuhuri River in Case 4-2	m^3/s	=Min((187)-(188),0)×(185)/(187) (※: =Zero, if (187)=0)	
(190)	Shortage of Supply water from Palakata Regulation Pond to Palakata Water Treatment Plant in Case 4-2	m^3/s	=Min((187)-(188),0)×(186)/(187) (※: =Zero, if (187)=0)	
(191)	Supply water of maintenance discharge from Main River Dam-1 to downstream of Matamuhuri River in Case 4-2	m^3/s	0.0 m^3/s	
(192)	Supply water of domestic, industrial and agricultural water from Main River Dam-1 to downstream of Matamuhuri River in Case 4-2	m^3/s	=(85)	
(193)	Intake water at Chakaria Intake Pump Station in Case 4-2	m^3/s	=Min((88),Min((16),(32),(54),(70),(86)) , Previous step (196)/86,400/Days of month)	
(194)	Monthly inflow volume of Palakata regulation pond in Case 4-2	m^3	=(193)×86,400×Days of month	
(195)	Monthly supply volume of Palakata regulation pond in Case 4-2	m^3	=((187)-(190))×86,400×Days of month	
(196)	Accumulated volume of Palakata regulation pond in Case 4-2	m^3	=Max(Previous step (196)+(195)-(194), 0))	
(197)	Available recovering water of Main River Dam-1 in Case 4-2	m^3/s	=Max(Min((16),(32),(54),(70),(86),Previous step (200)/ 86,400/Days of month)-(193),0)	
(198)	Monthly recovering volume of Main River Dam-1 in Case 4-2	m^3	=(197)×86,400×Days of month	
(199)	Monthly supply volume of Main River Dam-1 in Case 4-2	m^3	=((190)+(192))×86,400×Days of month	
(200)	Accumulated volume of Main River Dam-1 in Case 4-2	m^3	=Max(Previous step (200)+(199)-(198), 0)	

Source: JICA Study Team
Note: Target supplying demand in each case
Case 1 : Maintenance Flow
Case 2-1 : Maintenance Flow + Domestic Water
Case 2-2 : Maintenance Flow* + Domestic Water
Case 3-1 : Maintenance Flow + Domestic Water + Industrial Water
Case 3-2 : Maintenance Flow* +Domestic Water + Industrial Water
Case 4-1 : Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water
Case 4-2 : Maintenance Flow* + Domestic Water + Industrial Water + Agricultural Water
*: In case of no supply for maintenance flow by Matamuhuri Main River Dam

Source: JICA Survey Team

Plan of Sangu River Dam in Long Term (1/6)

Calculation Sheet of Water Balance

Long Term of Model 3: Palakata Regulation Pond + Sangu River Dam

No.	Item	Unit	Calculating Formula	Remark
(1)	River discharge per 100 km^2	m^3/s	N/A	
(2)	Basin yield s2, BY_{s2}	m^3/s	= (1)×RB_{s2} / 100 km^2	
(3)	Maintenance discharge at Sangu River Dam	m^3/s	= Unit discharge of maintenance UDM $m^3/s/100km^2$ × PC_{s2} km^2	
(4)	Domestic intake water s2, D_{s2}	m^3/s	N/A	
(5)	Actual Domestic intake water s2	m^3/s	=Min (Max((2)-(3),0), (4))	
(6)	Industrial intake water s2, I_{s2}	m^3/s	N/A	
(7)	Actual Industrial intake water s2	m^3/s	=Min (Max((2)-(3)-(5),0), (6))	
(8)	Agricultural Intake water s2, AI_{s2}	m^3/s	Totalized agricultural intake water of each Upazila	
(9)	Actual Agricultural Intake water s2	m^3/s	=Min (Max((2)-(3)-(5)-(7),0), (8))	
(10)	Agricultural Return water s2, AR_{s2}	m^3/s	Totalized agricultural return water of each Upazila	
(11)	Actual Agricultural Return water s2	m^3/s	= (10)-((8)-(9))×Return water rate 60%	
(12)	Shortage discharge of maintenance discharge at Sangu River Dam	m^3/s	= Max ((3)-(2),0)	
(13)	Shortage discharge of domestic intake water s2 at Sangu River Dam	m^3/s	= (4)-(5)	
(14)	Shortage discharge of industrial intake water s2 at Sangu River Dam	m^3/s	= (6)-(7)	
(15)	Shortage discharge of Agricultural Intake water s2 at Sangu River Dam	m^3/s	= (8)-(9)	
(16)	Surplus discharge of at Sangu River Dam	m^3/s	= Max ((2)-(3)-(4)-(6)-(8), 0)	
(17)	Passing discharge at Sangu River Dam	m^3/s	= Max(0, (2)-(5)-(7)-(9))+(11)	
(18)	Basin yield s1, BY_{s1}	m^3/s	= (1)×RB_{s1} / 100 km^2	
(19)	Maintenance discharge at Diversion Point	m^3/s	= Unit discharge of maintenance UDM $m^3/s/100km^2$ × PC_{s1} km^2	
(20)	Domestic intake water s1, D_{s1}	m^3/s	N/A	
(21)	Actual Domestic intake water s1	m^3/s	=Min (Max((17)+(18)-(19),0), (20))	
(22)	Industrial intake water s1, I_{s1}	m^3/s	N/A	
(23)	Actual Industrial intake water s1	m^3/s	=Min (Max((17)+(18)-(19)-(21),0), (22))	
(24)	Agricultural Intake water s1, AI_{s1}	m^3/s	Totalized agricultural intake water of each Upazila	
(25)	Actual Agricultural Intake water s1	m^3/s	=Min (Max((17)+(18)-(19)-(21)-(23),0), (24))	
(26)	Agricultural Return water s1, AR_{s1}	m^3/s	Totalized agricultural return water of each Upazila	
(27)	Actual Agricultural	m^3/s	= (26)-((24)-(25))×Return water rate 60%	

Source: JICA Survey Team

Plan of Sangu River Dam in Long Term (2/6)

	Return water s1			
(28)	Shortage discharge of maintenance discharge at Diversion Point	m^3/s	= Max ((19)-(17)-(18),0)	
(29)	Shortage discharge of domestic intake water s1 at Diversion Point	m^3/s	= (20)-(21)	
(30)	Shortage discharge of industrial intake water s1 at Diversion Point	m^3/s	= (22)-(23)	
(31)	Shortage discharge of Agricultural Intake water s1 at Diversion Point	m^3/s	= (24)-(25)	
(32)	Surplus discharge of at Diversion Point	m^3/s	= Max ((17)+(18)-(19)-(20)-(22)-(24), 0)	
(33)	Passing discharge at Diversion Point	m^3/s	= Max(0, (17)+(18)-(21)-(23)-(25))+(27)	
(34)	Basin yield s3, BY_{s3}	m^3/s	= (1)×RB_{s3} / 100 km^2	
(35)	Maintenance discharge at Bandarban Control Point	m^3/s	= Unit discharge of maintenance UDM $m^3/s/100km^2$ × PC_{s3} km^2	
(36)	Domestic intake water s3, D_{s3}	m^3/s	N/A	
(37)	Actual Domestic intake water s3	m^3/s	=Min (Max((33)+(34)-(35),0), (36))	
(38)	Industrial intake water s3, I_{s3}	m^3/s	N/A	
(39)	Actual Industrial intake water s3	m^3/s	=Min (Max((33)+(34)-(35)-(37),0), (38))	
(40)	Agricultural Intake water s3, AI_{s3}	m^3/s	Totalized agricultural intake water of each Upazila	
(41)	Actual Agricultural Intake water s3	m^3/s	=Min (Max((33)+(34)-(35)-(37)-(39),0), (40))	
(42)	Agricultural Return water s3, AR_{s3}	m^3/s	Totalized agricultural return water of each Upazila	
(43)	Actual Agricultural Return water s3	m^3/s	= (42)-((40)-(41))×Return water rate 60%	
(44)	Shortage discharge of maintenance discharge at Bandarban Control Point	m^3/s	= Max ((35)-(33)-(34),0)	
(45)	Shortage discharge of domestic intake water s3 at Bandarban Control Point	m^3/s	= (36)-(37)	
(46)	Shortage discharge of industrial intake water s3 at Bandarban Control Point	m^3/s	= (38)-(39)	
(47)	Shortage discharge of Agricultural Intake water s3 at Bandarban Control Point	m^3/s	= (40)-(41)	
(48)	Surplus discharge of at Bandarban Control Point	m^3/s	= Max ((33)+(34)-(35)-(36)-(38)-(40), 0)	
(49)	Passing discharge at Bandarban Control Point	m^3/s	= Max(0, (33)+(34)-(37)-(39)-(41))+(43)	

Source: JICA Survey Team

Plan of Sangu River Dam in Long Term (3/6)

(50)	Basin yield s4, BY_{s4}	m^3/s	= (1)×RB_{s4} / 100 km^2	
(51)	Maintenance discharge at Downstream Point	m^3/s	= Unit discharge of maintenance UDM $m^3/s/100km^2$ × PC_{s4} km^2	
(52)	Domestic intake water s4, D_{s4}	m^3/s	N/A	
(53)	Actual Domestic intake water s4	m^3/s	=Min (Max((49)+(50)-(51),0), (52))	
(54)	Industrial intake water s4, I_{s4}	m^3/s	N/A	
(55)	Actual Industrial intake water s4	m^3/s	=Min (Max((49)+(50)-(51)-(53),0), (54))	
(56)	Agricultural Intake water s4, AI_{s4}	m^3/s	Totalized agricultural intake water of each Upazila	
(57)	Actual Agricultural Intake water s4	m^3/s	=Min (Max((49)+(50)-(51)-(53)-(55),0), (56))	
(58)	Agricultural Return water s4, AR_{s4}	m^3/s	Totalized agricultural return water of each Upazila	
(59)	Actual Agricultural Return water s4	m^3/s	= (58)-((56)-(57))×Return water rate 60%	
(60)	Shortage discharge of maintenance discharge at Downstream Point	m^3/s	= Max ((51)-(49)-(50),0)	
(61)	Shortage discharge of domestic intake water s4 at Downstream Point	m^3/s	= (52)-(53)	
(62)	Shortage discharge of industrial intake water s4 at Downstream Point	m^3/s	= (54)-(55)	
(63)	Shortage discharge of Agricultural Intake water s4 at Downstream Point	m^3/s	= (56)-(57)	
(64)	Surplus discharge of at Downstream Point	m^3/s	= Max ((49)+(50)-(51)-(52)-(54)-(56), 0)	
(65)	Passing discharge at Downstream Point	m^3/s	= Max(0, (49)+(50)-(53)-(55)-(57))+(59)	
(66)	Supply water of maintenance discharge from Sangu River Dam to downstream of Sangu River in Case 1	m^3/s	=Max((12),(28),(44),(60))	
(67)	Available recovering water of Sangu River Dam in Case 1	m^3/s	=Min((16),(32),(48),(64),Previous step (70)/ 86,400/Days of month)	
(68)	Monthly recovering volume of sangu River Dam in Case 1	m^3	=(67)×86,400×Days of month	
(69)	Monthly supply volume of Sangu River Dam in Case 1	m^3	=(66)×86,400×Days of month	
(70)	Accumulated volume of sangu River Dam in Case 1	m^3	=Max(Previous step (70)+(69)-(68), 0)	
(71)	Supply water of maintenance discharge from Sangu River Dam to downstream of Sangu River in Case 2-1	m^3/s	=Max((12),(28),(44),(60))	
(72)	Supply water of domestic water from	m^3/s	=(45)+(61)	

Source: JICA Survey Team

Plan of Sangu River Dam in Long Term (4/6)

	sangu River Dam to downstream of Sangu River in Case 2-1			
(73)	Available recovering water of Sangu River Dam in Case 2-1	m^3/s	=Min((16),(32),(48),(64),Previous step (76)/ 86,400/Days of month)	
(74)	Monthly recovering volume of Sangu River Dam in Case 2-1	m^3	=(73)×86,400×Days of month	
(75)	Monthly supply volume of Sangu River Dam in Case 2-1	m^3	=((71)+(72))×86,400×Days of month	
(76)	Accumulated volume of Sangu River Dam in Case 2-1	m^3	=Max(Previous step (76)+(75)-(74), 0)	
(77)	Supply water of maintenance discharge from Sangu River Dam to downstream of Sangu River in Case 2-2	m^3/s	0.0 m^3/s	
(78)	Supply water of domestic water from sangu River Dam to downstream of Sangu River in Case 2-2	m^3/s	=(45)+(61)	
(79)	Available recovering water of Sangu River Dam in Case 2-2	m^3/s	=Min((16),(32),(48),(64),Previous step (82)/ 86,400/Days of month)	
(80)	Monthly recovering volume of Sangu River Dam in Case 2-2	m^3	=(79)×86,400×Days of month	
(81)	Monthly supply volume of Sangu River Dam in Case 2-2	m^3	=((77)+(78))×86,400×Days of month	
(82)	Accumulated volume of Sangu River Dam in Case 2-2	m^3	=Max(Previous step (82)+(81)-(80), 0)	
(83)	Supply water of maintenance discharge from Sangu River Dam to downstream of Sangu River in Case 3-1	m^3/s	=Max((12),(28),(44),(60))	
(84)	Supply water of domestic and industrial water from Sangu River Dam to downstream of Sangu River in Case 3-1	m^3/s	=(45)+(46)+(61)+(62)	
(85)	Available recovering water of Sangu River Dam in Case 3-1	m^3/s	=Min((16),(32),(48),(64),Previous step (88)/ 86,400/Days of month)	
(86)	Monthly recovering volume of Sangu River Dam in Case 3-1	m^3	=(85)×86,400×Days of month	
(87)	Monthly supply volume of Sangu River Dam in Case 3-1	m^3	=((83)+(84))×86,400×Days of month	
(88)	Accumulated volume of Sangu River Dam in Case 3-1	m^3	=Max(Previous step (88)+(87)-(86), 0)	

Source: JICA Survey Team

Plan of Sangu River Dam in Long Term (5/6)

(89)	Supply water of maintenance discharge from Sangu River Dam to downstream of Sangu River in Case 3-2	m^3/s	0.0 m^3/s	
(90)	Supply water of domestic and industrial water from Sangu River Dam to downstream of Sangu River in Case 3-2	m^3/s	=(45)+(46)+(61)+(62)	
(91)	Available recovering water of Sangu River Dam in Case 3-2	m^3/s	=Min((16),(32),(48),(64),Previous step (94)/ 86,400/Days of month)	
(92)	Monthly recovering volume of Sangu River Dam in Case 3-2	m^3	=(91)×86,400×Days of month	
(93)	Monthly supply volume of Sangu River Dam in Case 3-2	m^3	=((89)+(90))×86,400×Days of month	
(94)	Accumulated volume of Sangu River Dam in Case 3-2	m^3	=Max(Previous step (94)+(93)-(92), 0)	
(95)	Supply water of maintenance discharge from Sangu River Dam to downstream of Sangu River in Case 4-1	m^3/s	=Max((12),(28),(44),(60))	
(96)	Supply water of domestic, industrial and agricultural water from Sangu River Dam to downstream of Sangu River in Case 4-1	m^3/s	=(45)+(46)+(47)+(61)+(62)+(63)	
(97)	Available recovering water of Sangu River Dam in Case 4-1	m^3/s	=Min((16),(32),(48),(64),Previous step (100)/ 86,400/Days of month)	
(98)	Monthly recovering volume of Sangu River Dam in Case 4-1	m^3	=(97)×86,400×Days of month	
(99)	Monthly supply volume of Sangu River Dam in Case 4-1	m^3	=((95)+(96))×86,400×Days of month	
(100)	Accumulated volume of Sangu River Dam in Case 4-1	m^3	=Max(Previous step (100)+(99)-(98), 0)	
(101)	Supply water of maintenance discharge from Sangu River Dam to downstream of Sangu River in Case 4-2	m^3/s	0.0 m^3/s	
(102)	Supply water of domestic, industrial and agricultural water from Sangu River Dam to downstream of Sangu River in Case 4-2	m^3/s	=(45)+(46)+(47)+(61)+(62)+(63)	
(103)	Available recovering water of Sangu River Dam in Case 4-2	m^3/s	=Min((16),(32),(48),(64),Previous step (106)/ 86,400/Days of month)	
(104)	Monthly recovering	m^3	=(103)×86,400×Days of month	

Source: JICA Survey Team

Plan of Sangu River Dam in Long Term (6/6)

	volume of Sangu River Dam in Case 4-2			
(105)	Monthly supply volume of Sangu River Dam in Case 4-2	m^3	=((101)+(102))×86,400×Days of month	
(106)	Accumulated volume of Sangu River Dam in Case 4-2	m^3	=Max(Previous step (106)+(105)-(104), 0)	

Source: JICA Study Team
Note: Target supplying demand in each case
Case 1 : Maintenance Flow
Case 2-1 : Maintenance Flow + Domestic Water
Case 2-2 : Maintenance Flow* + Domestic Water
Case 3-1 : Maintenance Flow + Domestic Water + Industrial Water
Case 3-2 : Maintenance Flow* +Domestic Water + Industrial Water
Case 4-1 : Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water
Case 4-2 : Maintenance Flow* + Domestic Water + Industrial Water + Agricultural Water
*: In case of no supply for maintenance flow by Sangu River Dam

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term:

Chakaria Intake Pump = 3.0 m^3/s

Year	Rank	Case1 Mainterance Flow	Rank	Case2-1 Mairtenance Flow + Domestic Water	Rank	Case2-2 Mairtenance Flow* + Domestic Water	Rank	Case3-1 Maintenance Flow - Domestic Water + Incustrial Water	Rank	Case3-2 Maintenance Flow* Domestic Water - Incustrial Water	Rank	Case4-1 Maintenance Flow Domestic Water - Industrial Water - Agricultural Water	Rank	Case4-2 Maintenance Flow - Domestic Water + Industrial Water + Agricultural Water
1966 ~ 1967	17	7,502,406	18	19,724,527	15	12,222,121	31	55,790,513	27	48,288,107	45	131,203,693	43	123,701,287
1967 ~ 1968	24	4,555,296	23	14,094,707	21	9,539,412	26	65,803,788	20	53,746,087	44	217,827,820	40	205,770,118
1968 ~ 1969	1	60,079,286	1	78,167,022	2	18,027,736	7	142,832,814	10	72,418,540	43	351,342,385	36	279,205,398
1969 ~ 1970	7	22,945,588	4	46,859,927	30	5,886,603	9	131,901,272	17	58,963,096	42	392,105,150	33	317,444,261
1970 ~ 1971	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1971 ~ 1972	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1972 ~ 1973	14	12,905,702	12	30,200,390	4	17,294,688	22	81,788,430	11	68,882,728	41	526,864,016	42	161,510,763
1973 ~ 1974	31	1,478,221	33	7,612,832	28	6,134,611	27	63,245,797	25	48,861,874	40	544,916,448	41	178,084,975
1974 ~ 1975	25	4,105,692	28	9,951,458	32	5,845,766	37	40,011,176	31	35,904,487	39	588,948,949	38	218,011,784
1975 ~ 1976	19	7,149,389	20	18,819,553	16	11,670,164	29	58,669,324	22	51,519,935	38	670,157,171	35	292,070,617
1976 ~ 1977	20	5,939,002	24	11,904,551	29	5,965,549	32	54,196,540	28	41,108,149	37	717,581,970	32	333,556,414
1977 ~ 1978	8	22,750,424	8	39,609,957	6	16,859,534	19	90,564,437	14	67,814,014	36	833,399,893	27	426,623,914
1978 ~ 1979	11	18,127,009	10	35,436,205	3	17,309,194	8	135,761,774	6	94,884,341	35	967,590,833	19	542,687,844
1979 ~ 1980	13	15,188,900	13	29,849,393	10	14,660,494	3	171,794,034	2	115,727,702	34	1,094,617,001	8	654,525,112
1980 ~ 1981	22	5,785,111	22	15,637,434	19	9,852,323	4	164,400,201	5	102,548,757	33	1,146,823,373	5	700,946,373
1981 ~ 1982	9	20,163,776	9	35,867,141	9	15,703,366	1	221,297,189	1	139,281,970	32	1,298,611,816	1	832,571,041
1982 ~ 1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983 ~ 1984	10	18,760,082	11	31,517,147	12	12,757,065	25	67,598,374	26	48,838,292	31	1,379,712,297	45	109,773,999
1984 ~ 1985	21	5,846,190	19	18,961,909	11	13,115,719	20	83,633,760	16	59,027,488	30	1,484,617,439	39	208,832,952
1985 ~ 1986	12	17,898,016	15	28,188,486	17	10,290,470	12	118,195,514	9	75,691,226	29	1,598,161,515	34	304,479,012
1986 ~ 1987	30	1,492,850	26	11,299,739	20	9,806,889	11	123,704,686	8	79,707,549	28	1,672,592,692	30	377,417,339
1987 ~ 1988	34	0	42	1,319,969	42	1,319,969	16	95,644,805	21	51,647,668	27	1,690,556,492	29	395,381,139
1988 ~ 1989	34	0	38	1,740,619	38	1,740,619	30	58,256,813	43	14,259,676	26	1,702,632,353	28	407,457,000
1989 ~ 1990	27	3,010,448	25	11,497,246	23	8,486,798	35	43,572,495	37	29,738,834	25	1,734,252,721	25	436,066,920
1990 ~ 1991	18	7,278,888	21	16,681,550	22	9,402,663	34	43,683,744	30	36,404,856	24	1,778,944,409	22	473,479,720
1991 ~ 1992	23	4,672,074	27	10,544,172	31	5,872,098	38	39,277,007	33	34,604,933	23	1,826,611,645	21	516,474,883
1992 ~ 1993	34	0	43	1,305,464	43	1,305,464	44	14,888,331	42	14,888,331	22	1,840,549,676	20	530,412,913
1993 ~ 1994	33	157,104	32	7,695,393	26	7,538,289	39	31,976,088	34	31,818,984	21	1,879,775,016	16	569,481,150
1994 ~ 1995	6	29,924,149	7	42,544,465	14	12,620,316	23	80,615,610	23	50,691,462	18	1,980,227,850	9	640,009,835
1995 ~ 1996	15	12,575,757	17	20,780,694	24	8,204,937	28	60,274,838	36	29,817,177	17	1,982,283,936	10	629,490,164
1996 ~ 1997	34	0	38	1,740,619	38	1,740,619	42	15,984,031	38	15,984,031	20	1,967,112,371	13	614,318,600
1997 ~ 1998	34	0	36	1,999,329	36	1,999,329	40	31,339,421	35	31,339,421	19	1,970,436,431	11	617,642,659
1998 ~ 1999	5	30,000,435	5	45,882,663	8	15,882,228	18	93,809,100	15	63,808,666	16	2,120,401,276	4	737,607,070
1999 ~ 2000	4	32,888,143	6	45,645,209	12	12,757,065	13	117,795,936	19	54,907,359	15	2,196,477,258	3	780,794,908
2000 ~ 2001	34	0	41	1,726,114	41	1,726,114	24	78,062,035	40	15,173,457	14	2,205,766,859	2	790,084,509
2001 ~ 2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2002 ~ 2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2003 ~ 2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2004 ~ 2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2005 ~ 2006	3	33,972,195	3	57,489,391	6	16,859,534	2	195,457,943	7	88,547,572	13	2,347,236,097	26	432,976,504
2006 ~ 2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2007 ~ 2008	32	1,277,299	30	8,590,337	27	7,313,039	36	41,383,884	29	40,106,585	12	2,407,462,083	44	114,417,488
2008 ~ 2009	16	11,887,262	14	28,877,502	5	16,990,240	21	82,030,720	12	68,866,160	11	2,537,792,941	37	232,861,084
2009 ~ 2010	2	41,677,371	2	60,767,338	1	19,089,966	6	161,894,781	3	107,052,849	10	2,718,461,951	31	371,852,723
2010 ~ 2011	29	1,595,445	16	24,979,965	18	10,140,768	5	163,485,990	4	107,048,614	9	2,789,443,583	24	441,238,910
2011 ~ 2012	34	0	37	1,974,289	37	1,974,289	10	125,103,461	13	68,666,084	8	2,817,802,950	23	469,598,277
2012 ~ 2013	34	0	34	2,851,970	34	2,851,970	14	114,503,031	18	58,065,655	7	2,892,809,185	18	544,604,512
2013 ~ 2014	28	1,919,081	29	9,814,535	25	7,895,455	15	108,029,915	24	49,673,458	3	2,964,705,313	12	614,581,559
2014 ~ 2015	34	0	35	2,639,939	35	2,639,939	17	93,909,219	32	35,552,762	1	3,037,386,410	6	687,262,657
2015 ~ 2016	34	0	45	449,660	45	449,660	33	46,925,278	45	449,660	2	3,012,398,617	7	662,274,864
2016 ~ 2017	34	0	44	884,815	44	884,815	45	884,815	44	884,815	4	2,962,884,971	14	612,761,217
2017 ~ 2018	34	0	38	1,740,619	38	1,740,619	43	15,129,665	41	15,129,665	5	2,951,522,685	15	601,398,931
2018 ~ 2019	26	3,607,184	31	8,281,556	33	4,674,372	41	19,447,880	39	15,840,696	6	2,916,286,771	17	562,555,833
	53	8												

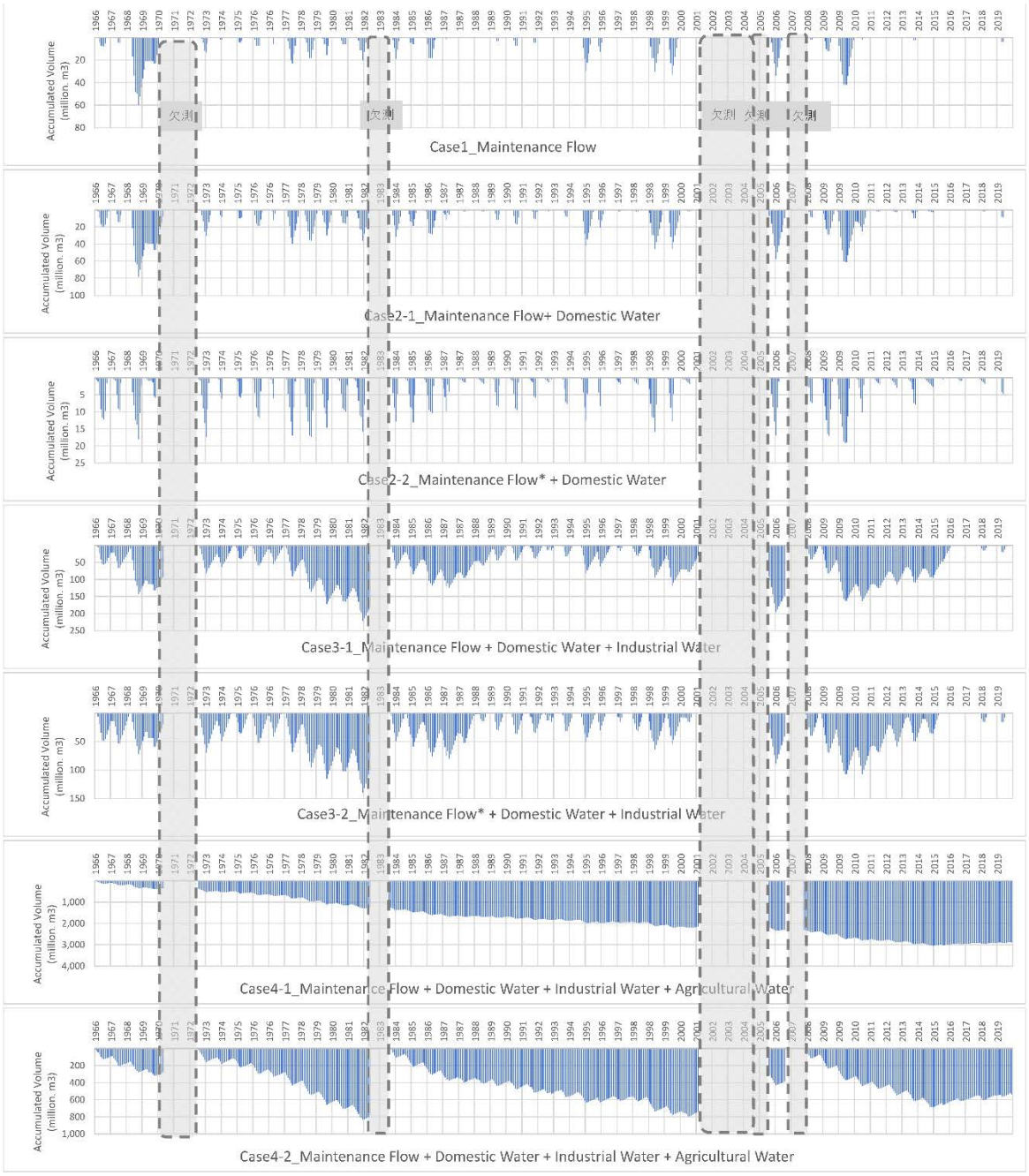
計算対象 45 年
5年渇水 9
10年渇水 4

Case1		Case2-1		Case2-2		Case3-1		Case3-2		Case4-1		Case4-2	
5 yr	20,163,776	5 yr	35,867,141	5 yr	15,703,366	5 yr	131,901,272	5 yr	75,691,226	5 yr	2,789,443,583	5 yr	640,009,835
10 yr	32,888,143	10 yr	46,859,927	10 yr	17,294,688	10 yr	164,400,201	10 yr	107,048,614	10 yr	2,962,884,971	10 yr	737,607,070

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term:

Chakaria Intake Pump = 3.0 m^3/s



Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term:

Chakaria Intake Pump = 5.0 m^3/s

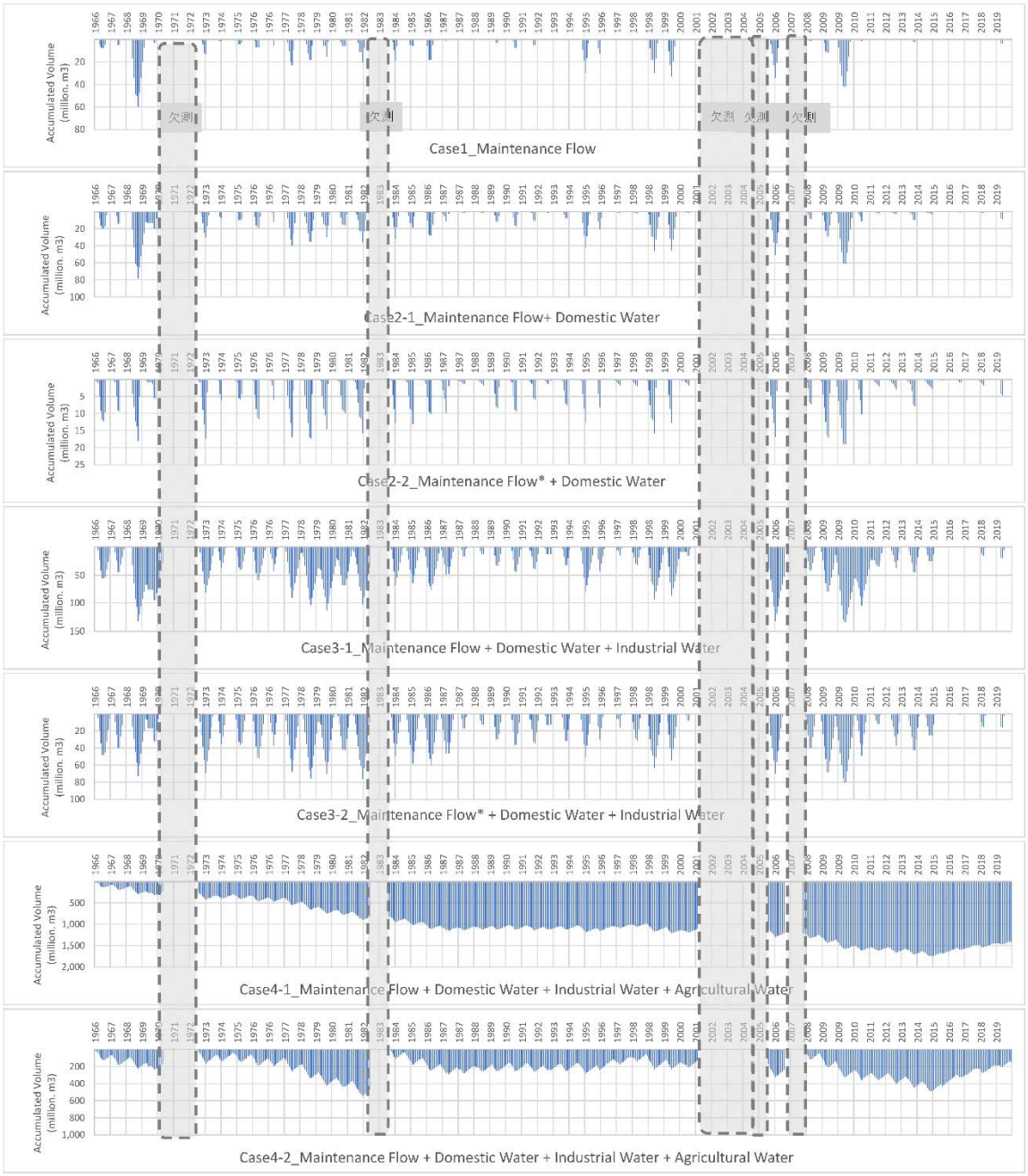
Year	Rank	Case1 Maintenance Flow	Rank	Case2-1 Maintenance Flow + Domestic Water	Rank	Case2-2 Maintenance Flow* + Domestic Water	Rank	Case3-1 Maintenance Flow + Domestic Water + Industrial Water	Rank	Case3-2 Maintenance Flow* + Domestic Water + Industrial Water	Rank	Case4-1 Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water	Rank	Case4-2 Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water
1966 ~ 1967	16	7,502,406	17	19,724,527	15	12,222,121	20	55,790,513	18	48,288,107	45	131,203,693	43	123,701,287
1967 ~ 1968	23	4,555,296	22	14,094,707	21	9,539,412	23	44,549,388	23	39,896,945	44	196,573,420	36	184,515,718
1968 ~ 1969	1	60,079,286	1	78,107,022	2	18,027,736	2	132,497,826	4	72,418,540	43	293,425,439	30	221,288,452
1969 ~ 1970	27	2,523,902	16	20,421,527	30	5,886,603	8	95,127,884	30	32,524,696	42	307,749,804	27	233,088,915
1970 ~ 1971	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1971 ~ 1972	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1972 ~ 1973	13	12,905,702	11	30,200,390	4	17,294,688	12	81,788,430	7	68,882,728	39	416,070,270	39	161,510,763
1973 ~ 1974	31	1,478,221	33	7,612,832	28	6,134,611	31	36,926,167	28	35,447,946	41	397,143,502	41	141,105,775
1974 ~ 1975	24	4,105,692	28	9,951,458	32	5,845,766	28	40,010,179	27	35,904,487	40	402,849,111	40	142,705,691
1975 ~ 1976	18	7,149,389	19	18,819,553	16	11,670,164	19	58,669,324	14	51,519,935	38	452,434,933	35	185,142,125
1976 ~ 1977	19	5,939,002	23	11,904,551	29	5,965,549	25	42,960,816	25	37,021,814	37	469,414,116	34	196,182,306
1977 ~ 1978	7	22,750,424	7	39,609,957	6	16,859,534	10	90,564,437	9	67,814,014	36	548,252,840	20	252,270,606
1978 ~ 1979	10	18,127,009	9	35,436,203	3	17,309,194	6	103,966,574	3	75,634,876	35	650,648,579	10	336,539,336
1979 ~ 1980	12	15,188,900	12	29,849,393	10	14,660,494	4	113,560,434	5	70,039,837	34	751,236,347	6	421,938,204
1980 ~ 1981	21	5,785,111	21	15,637,434	19	9,852,323	16	69,187,401	21	42,289,855	33	766,463,519	4	431,380,266
1981 ~ 1982	8	20,163,776	8	35,867,141	9	15,703,366	7	102,890,320	2	76,390,813	32	895,057,893	1	539,810,864
1982 ~ 1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983 ~ 1984	9	18,760,082	10	31,517,147	12	12,757,065	17	67,598,374	17	48,838,292	31	944,535,974	45	109,773,999
1984 ~ 1985	20	5,846,190	18	18,961,909	11	13,115,719	18	63,728,187	12	57,881,997	30	1,017,645,917	37	177,037,752
1985 ~ 1986	11	17,898,016	14	28,188,486	17	10,290,470	15	77,942,916	11	60,044,900	27	1,104,751,593	24	246,345,412
1986 ~ 1987	30	1,492,850	26	11,299,739	20	9,806,889	21	48,133,684	19	46,640,835	19	1,142,376,369	15	282,377,339
1987 ~ 1988	34	0	42	1,319,969	42	1,319,969	38	16,839,440	36	16,839,440	20	1,133,901,770	16	273,902,739
1988 ~ 1989	34	0	38	1,740,619	38	1,740,619	43	12,666,568	41	12,666,568	25	1,114,182,430	19	254,183,400
1989 ~ 1990	26	3,010,448	25	11,497,246	23	8,486,798	33	32,749,282	34	29,738,834	26	1,114,180,398	22	251,170,920
1990 ~ 1991	17	7,278,888	20	16,681,550	22	9,402,663	24	43,683,744	26	36,404,856	23	1,121,892,886	21	253,604,520
1991 ~ 1992	22	4,672,074	27	10,544,172	31	5,872,098	29	39,277,007	29	34,604,933	21	1,132,580,922	18	257,620,483
1992 ~ 1993	34	0	43	1,305,464	43	1,305,464	42	13,066,688	40	13,066,688	24	1,117,923,715	25	242,963,275
1993 ~ 1994	33	157,104	32	7,695,393	26	7,538,289	34	31,976,088	31	31,818,984	22	1,125,353,855	23	250,236,312
1994 ~ 1995	6	29,924,149	6	42,544,465	14	12,620,316	13	80,615,610	15	50,691,462	15	1,188,827,489	14	283,785,797
1995 ~ 1996	14	12,575,757	15	20,780,694	24	8,204,937	26	42,392,934	33	29,817,177	18	1,153,904,375	26	236,286,926
1996 ~ 1997	34	0	38	1,740,619	38	1,740,619	39	15,984,031	37	15,984,031	28	1,091,212,811	38	173,595,362
1997 ~ 1998	34	0	36	1,999,329	36	1,999,329	35	31,339,421	32	31,339,421	29	1,057,384,870	42	139,767,421
1998 ~ 1999	5	30,000,435	4	45,882,663	8	15,882,228	9	93,809,100	10	63,808,666	17	1,175,554,516	29	227,936,632
1999 ~ 2000	4	32,888,143	5	45,645,209	12	12,757,065	11	87,490,836	13	54,602,693	14	1,209,294,497	28	228,788,470
2000 ~ 2001	34	0	41	1,726,114	41	1,726,114	40	15,961,735	43	7,958,898	16	1,186,788,898	32	206,282,871
2001 ~ 2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2002 ~ 2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2003 ~ 2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2004 ~ 2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2005 ~ 2006	3	33,972,195	3	50,831,729	6	16,859,534	3	132,246,154	6	69,786,740	13	1,296,462,936	12	322,182,758
2006 ~ 2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2007 ~ 2008	32	1,277,299	30	8,590,337	27	7,313,039	27	41,383,884	22	40,106,585	12	1,319,709,722	44	114,417,488
2008 ~ 2009	15	11,887,262	13	28,877,502	5	16,990,240	14	80,304,476	8	68,417,175	11	1,423,602,180	31	206,422,684
2009 ~ 2010	2	41,677,371	2	60,767,338	1	19,089,966	1	133,730,097	1	80,165,464	8	1,577,832,790	13	348,975,923
2010 ~ 2011	29	1,595,445	24	11,736,213	18	10,140,768	5	104,317,252	16	49,157,174	5	1,617,810,368	8	357,358,056
2011 ~ 2012	34	0	37	1,974,289	37	1,974,289	32	34,139,523	42	11,787,612	6	1,614,374,535	9	353,922,223
2012 ~ 2013	34	0	34	2,851,970	34	2,851,970	30	37,092,371	24	37,092,371	4	1,661,548,653	7	401,096,340
2013 ~ 2014	28	1,919,081	29	9,814,535	25	7,895,455	22	44,578,183	20	42,659,103	2	1,701,649,580	3	439,278,187
2014 ~ 2015	34	0	35	2,639,939	35	2,639,939	36	25,536,903	35	25,536,903	1	1,747,892,277	2	485,520,884
2015 ~ 2016	34	0	45	449,660	45	449,660	45	449,660	45	449,660	3	1,691,282,085	5	428,910,692
2016 ~ 2017	34	0	44	884,815	44	884,815	44	884,815	44	884,815	7	1,589,064,438	11	326,693,045
2017 ~ 2018	34	0	38	1,740,619	38	1,740,619	41	15,129,665	39	15,129,665	9	1,535,538,952	17	273,167,559
2018 ~ 2019	25	3,607,184	31	8,281,556	33	4,674,372	37	19,447,880	38	15,840,696	10	1,468,680,638	33	202,702,061
	53	8												
計算対象	45 年													
5年渇水	9													
10年渇水	4													

Case1		Case2-1		Case2-2		Case3-1		Case3-2		Case4-1		Case4-2	
5 yr	18,760,082	5 yr	35,436,203	5 yr	15,703,366	5 yr	93,809,100	5 yr	67,814,014	5 yr	1,535,538,952	5 yr	353,922,223
10 yr	32,888,143	10 yr	45,882,663	10 yr	17,294,688	10 yr	113,560,434	10 yr	72,418,540	10 yr	1,661,548,653	10 yr	431,380,266

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term:

Chakaria Intake Pump = 5.0 m^3/s



Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term:

Chakaria Intake Pump = 6.0 m^3/s

Year	Rank	Case1 Maintenance Flow	Rank	Case2-1 Maintenance Flow + Domestic Water	Rank	Case2-2 Maintenance Flow* - Domestic Water	Rank	Case3-1 Maintenance Flow + Domestic Water + Industrial Water	Rank	Case3-2 Maintenance Flow* - Domestic Water - Industrial Water	Rank	Case4-1 Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water	Rank	Case4-2 Maintenance Flow - Domestic Water - Industrial Water - Agricultural Water
1966 ~ 1967	16	7,502,406	16	19,724,527	15	12,222,121	19	55,790,513	17	48,288,107	45	131,203,693	33	123,701,287
1967 ~ 1968	23	4,555,296	21	14,094,707	21	9,539,412	23	44,452,240	23	39,896,945	44	185,946,220	21	173,888,518
1968 ~ 1969	1	60,079,286	1	78,107,022	2	18,027,736	1	132,497,826	4	72,418,540	43	266,900,639	16	194,763,652
1969 ~ 1970	27	2,523,902	30	8,410,505	30	5,886,603	10	81,908,684	34	26,202,156	42	268,005,804	17	193,344,915
1970 ~ 1971	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1971 ~ 1972	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1972 ~ 1973	13	12,905,702	11	30,260,390	4	17,294,688	11	81,788,430	6	68,882,728	37	363,107,070	25	161,510,763
1973 ~ 1974	31	1,478,221	33	7,612,832	28	6,134,611	31	56,926,167	28	35,447,946	40	325,690,702	34	122,616,175
1974 ~ 1975	24	4,105,692	27	9,951,458	32	5,845,766	28	40,010,179	27	35,904,487	41	314,531,369	39	107,351,150
1975 ~ 1976	18	7,149,389	18	18,819,553	16	11,670,164	18	58,669,324	14	51,519,935	39	348,305,991	29	133,976,383
1976 ~ 1977	19	5,939,002	22	11,904,551	29	5,965,549	25	42,900,816	25	37,021,814	38	352,065,974	31	131,797,364
1977 ~ 1978	7	22,750,424	7	39,609,957	6	16,859,534	7	90,564,437	8	67,814,014	36	412,415,098	22	169,396,064
1978 ~ 1979	10	18,127,009	9	35,436,203	3	17,309,194	6	93,761,886	3	75,634,876	35	498,913,238	12	237,767,195
1979 ~ 1980	12	15,188,900	12	29,849,393	10	14,660,494	8	90,136,546	10	60,500,961	33	586,281,805	7	309,946,863
1980 ~ 1981	21	5,785,111	20	15,637,434	19	9,852,323	21	48,074,966	21	42,289,855	34	583,019,377	9	300,899,324
1981 ~ 1982	8	20,163,776	8	35,867,141	9	15,703,366	4	96,554,588	2	76,390,813	29	701,072,952	1	398,789,123
1982 ~ 1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983 ~ 1984	9	18,760,082	10	31,517,147	12	12,757,065	16	67,598,374	16	48,838,292	26	734,739,833	37	109,773,999
1984 ~ 1985	20	5,846,190	17	18,961,909	11	13,115,719	17	63,728,187	12	57,881,997	19	791,952,175	26	161,140,152
1985 ~ 1986	11	17,898,016	14	28,188,486	17	10,290,470	15	77,942,916	11	60,044,900	11	865,838,651	14	217,128,612
1986 ~ 1987	30	1,492,850	25	11,299,739	20	9,806,889	20	48,133,684	19	46,640,835	9	886,944,077	13	236,741,188
1987 ~ 1988	34	0	42	1,319,969	42	1,319,969	37	16,839,440	36	16,839,440	12	865,250,278	15	215,047,389
1988 ~ 1989	34	0	38	1,740,619	38	1,740,619	41	12,666,568	41	12,666,568	14	831,931,702	20	181,728,813
1989 ~ 1990	26	3,010,448	24	11,497,246	23	8,486,798	32	32,749,282	33	29,738,834	15	816,118,470	24	162,905,133
1990 ~ 1991	17	7,278,888	19	16,681,550	22	9,402,663	24	43,683,744	26	36,404,856	17	805,341,358	28	144,849,133
1991 ~ 1992	22	4,672,074	26	10,544,172	31	5,872,098	29	39,277,007	29	34,604,933	18	797,539,794	30	132,375,496
1992 ~ 1993	34	0	43	1,305,464	43	1,305,464	40	13,066,688	40	13,066,688	22	769,663,387	40	104,499,089
1993 ~ 1994	33	157,104	32	7,695,393	26	7,538,289	33	31,976,088	30	31,818,984	24	761,195,927	41	95,874,525
1994 ~ 1995	6	29,924,149	6	42,544,465	14	12,620,316	12	80,615,610	15	50,691,462	16	806,179,961	32	125,997,485
1995 ~ 1996	14	12,575,757	15	20,780,694	24	8,204,937	26	42,392,934	32	29,817,177	25	752,767,247	42	60,009,014
1996 ~ 1997	34	0	38	1,740,619	38	1,740,619	38	15,984,031	37	15,984,031	31	666,315,682	44	56,108,435
1997 ~ 1998	34	0	36	1,999,329	36	1,999,329	34	31,339,421	31	31,339,421	32	613,911,742	43	56,447,548
1998 ~ 1999	5	30,000,435	4	45,882,663	8	15,882,228	5	93,809,100	9	63,808,666	28	716,183,787	23	167,657,211
1999 ~ 2000	4	32,888,143	5	45,645,209	12	12,757,065	9	87,490,836	13	54,602,693	27	728,755,769	27	147,341,049
2000 ~ 2001	34	0	41	1,726,114	41	1,726,114	43	7,958,898	43	7,958,898	30	690,352,570	38	108,937,850
2001 ~ 2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2002 ~ 2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2003 ~ 2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2004 ~ 2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2005 ~ 2006	3	33,972,195	3	50,831,729	6	16,859,534	3	105,807,754	5	69,786,740	21	784,129,008	11	269,219,558
2006 ~ 2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2007 ~ 2008	32	1,277,299	29	8,590,337	27	7,313,039	27	41,383,884	22	40,106,585	20	788,886,194	36	114,417,488
2008 ~ 2009	15	11,887,262	13	28,877,502	5	16,990,240	13	80,304,436	7	68,417,175	10	879,559,452	18	193,203,484
2009 ~ 2010	2	41,677,371	2	60,767,338	1	19,089,966	2	122,121,146	1	77,844,290	7	1,022,181,111	10	294,147,772
2010 ~ 2011	29	1,595,445	23	11,736,213	18	10,140,768	14	79,480,101	18	47,519,350	5	1,048,939,489	5	319,340,705
2011 ~ 2012	34	0	37	1,974,289	37	1,974,289	42	11,787,612	42	11,787,612	6	1,031,213,592	8	301,584,808
2012 ~ 2013	34	0	34	2,851,970	34	2,851,970	30	37,092,371	24	37,092,371	3	1,065,168,509	4	335,539,725
2013 ~ 2014	28	1,919,081	28	9,814,535	25	7,895,455	22	44,578,183	20	42,659,103	2	1,089,371,837	3	357,823,972
2014 ~ 2015	34	0	35	2,639,939	35	2,639,939	35	25,536,903	35	25,536,903	1	1,122,679,398	2	391,131,533
2015 ~ 2016	34	0	45	449,660	45	449,660	45	449,660	45	449,660	4	1,050,258,005	6	318,710,140
2016 ~ 2017	34	0	44	884,815	44	884,815	44	884,815	44	884,815	8	921,688,358	19	190,140,494
2017 ~ 2018	34	0	38	1,740,619	38	1,740,619	39	15,129,665	39	15,129,665	13	847,081,272	35	115,533,408
2018 ~ 2019	25	3,607,184	31	8,281,556	33	4,674,372	36	19,447,880	38	15,840,696	23	764,411,758	45	29,256,710
	33	8												

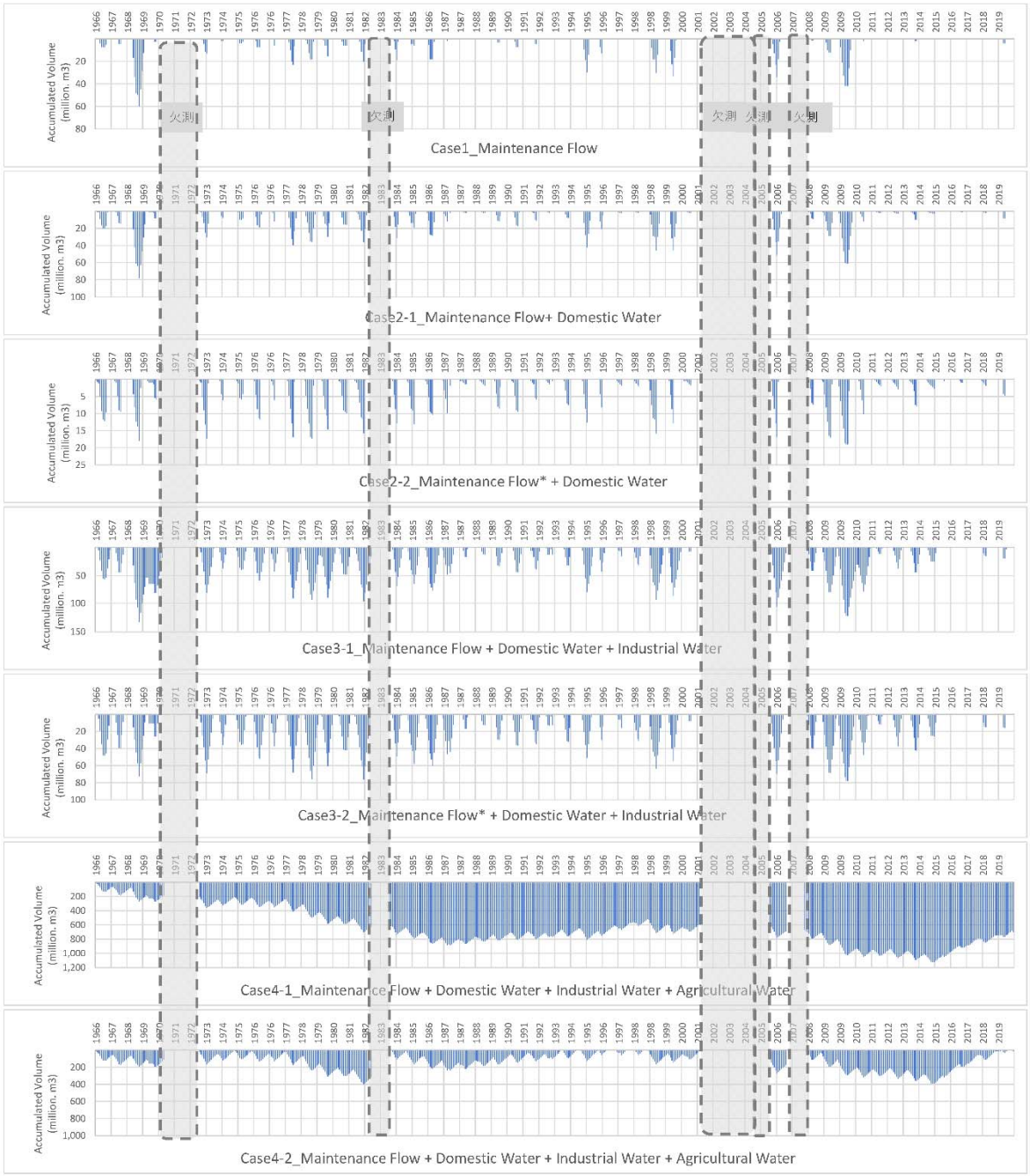
計算対象 45 年
5年渇水 9
10年渇水 4

Case1		Case2-1		Case2-2		Case3-1		Case3-2		Case4-1		Case4-2	
5 yr	18,760,082	5 yr	35,436,203	5 yr	15,703,366	5 yr	87,490,836	5 yr	63,808,666	5 yr	886,944,077	5 yr	300,899,324
10 yr	32,888,143	10 yr	45,882,663	10 yr	17,294,688	10 yr	96,554,588	10 yr	72,418,540	10 yr	1,050,258,005	10 yr	335,539,725

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term:

Chakaria Intake Pump = 6.0 m^3/s



Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term:

Chakaria Intake Pump = 10.0 m^3/s

Year	Rank	Case1 Maintenance Flow	Rank	Case2-1 Maintenance Flow − Domestic Water	Rank	Case2-2 Maintenance Flow* − Domestic Water	Rank	Case3-1 Maintenance Flow + Domestic Water + Industrial Water	Rank	Case3-2 Maintenance Flow* + Domestic Water + Industrial Water	Rank	Case4-1 Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water	Rank	Case4-2 Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water
1966 ~ 1967	16	7,502,406	16	19,724,527	15	12,222,121	17	55,790,513	17	48,288,107	23	131,203,693	16	123,701,287
1967 ~ 1968	23	4,555,296	21	14,094,707	21	9,539,412	22	44,452,240	23	39,896,945	20	143,437,420	13	134,379,718
1968 ~ 1969	1	60,079,286	1	78,107,022	2	18,027,736	1	132,497,826	4	72,418,540	11	188,983,365	14	128,904,079
1969 ~ 1970	27	2,523,902	30	8,410,505	30	5,886,603	34	30,017,363	34	26,202,156	22	138,197,210	32	77,896,463
1970 ~ 1971	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1971 ~ 1972	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1972 ~ 1973	13	12,905,702	11	30,200,390	4	17,294,688	9	81,788,430	6	68,882,728	13	180,421,675	7	161,510,763
1973 ~ 1974	31	1,478,221	33	7,612,832	28	6,134,611	30	36,926,167	28	35,447,946	35	73,521,232	34	72,043,011
1974 ~ 1975	24	4,105,692	27	9,951,458	32	5,845,766	27	40,010,179	27	35,904,487	29	107,277,301	27	103,171,609
1975 ~ 1976	18	7,149,389	18	18,819,553	16	11,670,164	16	58,669,324	14	51,519,935	24	130,126,622	17	122,977,233
1976 ~ 1977	19	5,939,002	22	11,904,551	29	5,965,549	24	42,960,816	25	37,021,814	32	94,858,399	30	88,919,397
1977 ~ 1978	7	22,750,424	7	39,609,957	6	16,859,534	7	90,564,437	8	67,814,014	15	171,286,724	11	148,536,300
1978 ~ 1979	10	18,127,009	9	35,436,203	3	17,309,194	6	93,761,886	3	75,634,876	9	194,194,463	6	164,628,479
1979 ~ 1980	12	15,188,900	12	29,849,393	10	14,660,494	13	75,689,860	10	60,500,961	4	228,686,231	3	183,931,347
1980 ~ 1981	21	5,785,111	20	15,637,434	19	9,852,323	20	48,074,966	21	42,289,855	17	159,265,842	25	108,725,847
1981 ~ 1982	8	20,163,776	8	35,867,141	9	15,703,366	4	96,554,588	2	76,390,813	3	235,156,216	4	171,282,268
1982 ~ 1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983 ~ 1984	9	18,760,082	10	31,517,147	12	12,757,065	14	67,598,374	16	48,838,292	6	205,578,297	24	109,773,999
1984 ~ 1985	20	5,846,190	17	18,961,909	11	13,115,719	15	63,728,187	12	57,881,997	7	199,200,240	12	146,751,752
1985 ~ 1986	11	17,898,016	14	28,188,486	17	10,290,470	12	77,942,916	11	60,044,900	5	220,209,916	10	149,863,412
1986 ~ 1987	30	1,492,850	25	11,299,739	20	9,806,889	19	48,133,684	19	46,640,835	12	186,192,880	22	114,353,527
1987 ~ 1988	34	0	42	1,319,969	42	1,319,969	37	16,839,440	36	16,839,440	28	109,046,749	35	62,863,121
1988 ~ 1989	34	0	38	1,740,619	38	1,740,619	41	12,666,568	41	12,666,568	37	62,130,420	36	62,130,420
1989 ~ 1990	26	3,010,448	24	11,497,246	23	8,486,798	31	32,749,282	33	29,738,834	34	79,053,968	33	76,043,520
1990 ~ 1991	17	7,278,888	19	16,681,550	22	9,402,663	23	43,683,744	26	36,404,856	30	106,433,262	28	99,154,374
1991 ~ 1992	22	4,672,074	26	10,544,172	31	5,872,098	28	39,277,007	29	34,604,933	31	103,136,036	29	98,463,962
1992 ~ 1993	34	0	43	1,305,464	43	1,305,464	40	13,066,688	40	13,066,688	41	54,704,560	40	54,704,560
1993 ~ 1994	33	157,104	32	7,695,393	26	7,538,289	32	31,976,088	30	31,818,984	33	87,047,010	31	86,889,906
1994 ~ 1995	6	29,924,149	6	42,544,465	14	12,620,316	10	80,615,610	15	50,691,462	18	155,921,634	15	125,997,485
1995 ~ 1996	14	12,575,757	15	20,780,694	24	8,204,937	25	42,392,934	32	29,817,177	36	64,789,793	42	52,214,036
1996 ~ 1997	34	0	38	1,740,619	38	1,740,619	38	15,984,031	37	15,984,031	40	56,108,435	39	56,108,435
1997 ~ 1998	34	0	36	1,999,329	36	1,999,329	33	31,339,421	31	31,339,421	39	56,447,548	38	56,447,548
1998 ~ 1999	5	30,000,435	4	45,882,663	8	15,882,228	5	93,809,100	9	63,808,666	8	197,657,645	5	167,657,211
1999 ~ 2000	4	32,888,143	5	45,645,209	12	12,757,065	8	87,490,836	13	54,602,693	21	139,579,981	26	106,691,838
2000 ~ 2001	34	0	41	1,726,114	41	1,726,114	43	7,958,898	43	7,958,898	38	56,982,401	37	56,982,401
2001 ~ 2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2002 ~ 2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2003 ~ 2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2004 ~ 2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2005 ~ 2006	3	33,972,195	3	50,831,729	6	16,859,534	3	103,758,935	5	69,786,740	10	189,706,703	9	155,734,508
2006 ~ 2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2007 ~ 2008	32	1,277,299	29	8,590,337	27	7,313,039	26	41,383,884	22	40,106,585	26	120,505,489	21	114,417,488
2008 ~ 2009	15	11,887,262	13	28,877,502	5	16,990,240	11	80,304,436	7	68,417,175	16	169,988,458	8	158,101,197
2009 ~ 2010	2	41,677,371	2	60,767,338	1	19,089,966	2	119,521,661	1	77,844,290	1	270,446,917	1	216,882,284
2010 ~ 2011	29	1,595,445	23	11,736,213	18	10,140,768	18	49,114,795	18	47,519,350	2	244,328,495	2	189,168,418
2011 ~ 2012	34	0	37	1,974,289	37	1,974,289	42	11,787,612	42	11,787,612	14	173,725,798	20	118,565,720
2012 ~ 2013	34	0	34	2,851,970	34	2,851,970	29	37,092,371	24	37,092,371	19	154,803,915	18	122,699,035
2013 ~ 2014	28	1,919,081	28	9,814,535	25	7,895,455	21	44,578,183	20	42,659,103	25	126,008,809	19	121,028,346
2014 ~ 2015	34	0	35	2,639,939	35	2,639,939	35	25,536,903	35	25,536,903	27	117,153,170	23	112,338,697
2015 ~ 2016	34	0	45	449,660	45	449,660	45	449,660	45	449,660	45	22,445,807	44	22,445,807
2016 ~ 2017	34	0	44	884,815	44	884,815	44	884,815	44	884,815	43	29,542,353	43	29,542,353
2017 ~ 2018	34	0	38	1,740,619	38	1,740,619	39	15,129,665	39	15,129,665	42	53,195,648	41	53,195,648
2018 ~ 2019	25	3,607,184	31	8,281,556	33	4,674,372	36	19,447,880	38	15,840,696	44	23,365,278	45	19,758,094
	53	8												

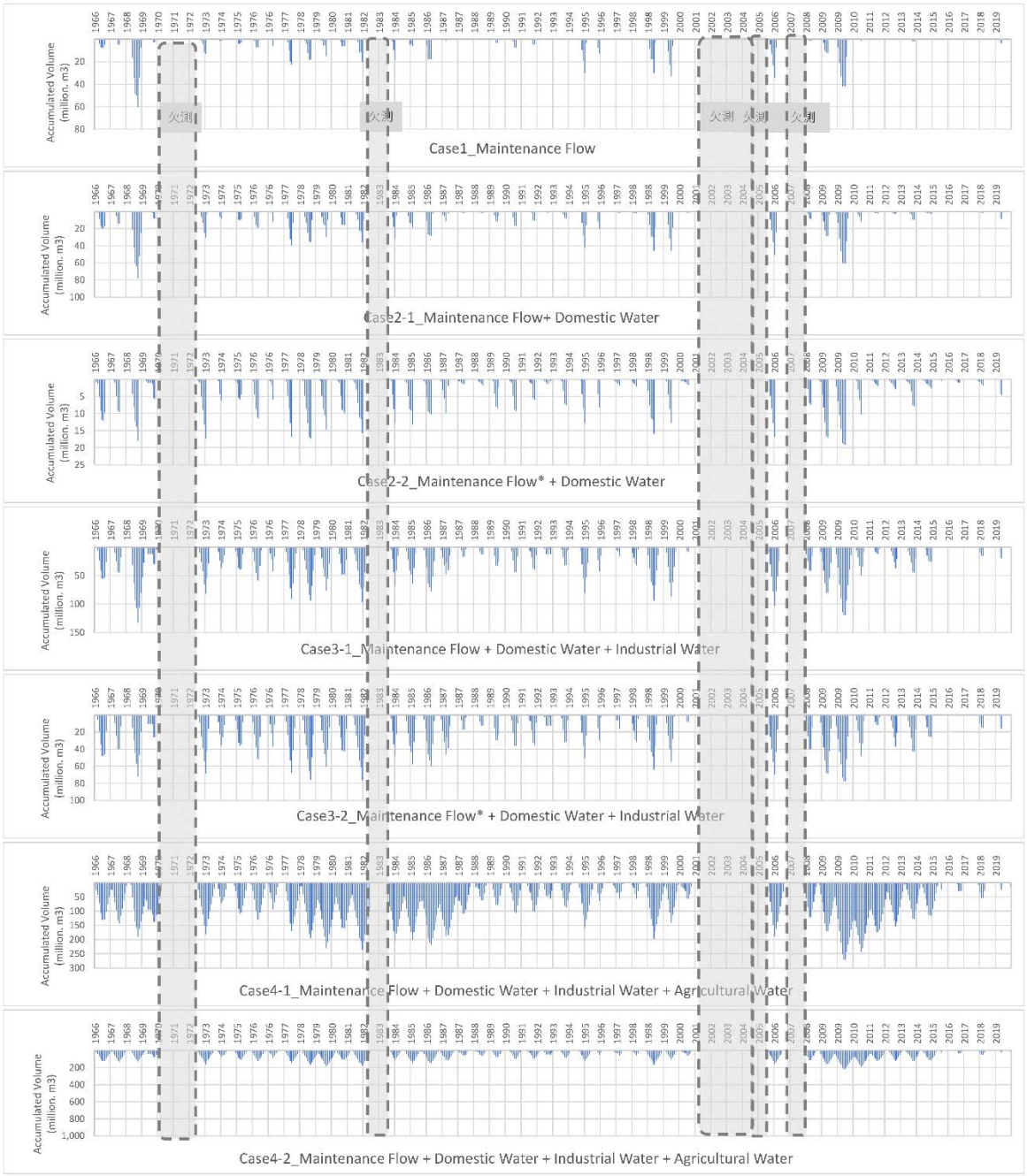
計算対象 45 ヒ
5年渇水 9
10年渇水 4

Case1		Case2-1		Case2-2		Case3-1		Case3-2		Case4-1		Case4-2	
5 yr	18,760,082	5 yr	35,436,203	5 yr	15,703,366	5 yr	81,788,430	5 yr	63,808,666	5 yr	194,194,463	5 yr	155,734,508
10 yr	32,888,143	10 yr	45,882,663	10 yr	17,294,688	10 yr	96,554,588	10 yr	72,418,540	10 yr	228,686,231	10 yr	171,282,268

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term:

Chakaria Intake Pump = 10.0 m^3/s



Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term:

Chakaria Intake Pump = 13.0 m^3/s

Year	Rank	Case1 Maintenance Flow	Rank	Case2-1 Maintenance Flow + Domestic Water	Rank	Case2-2 Maintenance Flow* − Domestic Water	Rank	Case3-1 Maintenance Flow + Domestic Water + Industrial Water	Rank	Case3-2 Maintenance Flow* Domestic Water − Industrial Water	Rank	Case4-1 Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water	Rank	Case4-2 Maintenance Flow Domestic Water − Industrial Water − Agricultural Water
1966 ~ 1967	16	7,502,406	16	19,724,527	15	12,222,121	17	55,790,513	17	48,288,107	16	131,203,693	14	123,701,287
1967 ~ 1968	23	4,555,296	21	14,094,707	21	9,539,412	22	44,452,240	23	39,896,945	21	121,063,092	19	116,507,796
1968 ~ 1969	1	60,079,286	1	78,107,022	2	18,027,736	1	132,497,826	4	72,418,540	5	188,983,365	12	128,904,079
1969 ~ 1970	27	2,523,902	30	8,410,505	30	5,886,603	34	28,726,058	34	26,202,156	27	106,574,810	32	77,896,463
1970 ~ 1971	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1971 ~ 1972	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1972 ~ 1973	13	12,905,702	11	30,200,390	4	17,294,688	9	81,788,430	6	68,882,728	9	174,416,465	5	161,510,763
1973 ~ 1974	31	1,478,221	33	7,612,832	28	6,134,611	30	36,926,167	28	35,447,946	34	73,521,232	34	72,043,011
1974 ~ 1975	24	4,105,692	27	9,951,458	32	5,845,766	27	40,010,179	27	35,904,487	26	107,277,301	25	103,171,609
1975 ~ 1976	18	7,149,389	18	18,819,553	16	11,670,164	16	58,669,324	14	51,519,935	17	130,126,622	15	122,977,233
1976 ~ 1977	19	5,939,002	22	11,904,551	29	5,965,549	24	42,960,816	25	37,021,814	30	94,858,399	29	88,919,397
1977 ~ 1978	7	22,750,424	7	39,609,957	6	16,859,534	7	90,564,437	8	67,814,014	10	171,286,724	9	148,536,300
1978 ~ 1979	10	18,127,009	9	35,436,203	3	17,309,194	6	93,761,886	3	75,634,876	6	182,755,488	4	164,628,479
1979 ~ 1980	12	15,188,900	12	29,849,393	10	14,660,494	13	75,689,860	10	60,500,961	7	177,589,656	8	151,494,868
1980 ~ 1981	21	5,785,111	20	15,637,434	19	9,852,323	20	48,074,966	21	42,289,855	25	107,675,172	26	101,890,061
1981 ~ 1982	8	20,163,776	8	35,867,141	9	15,703,366	4	96,554,588	2	76,390,813	3	191,446,043	2	171,282,268
1982 ~ 1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983 ~ 1984	9	18,760,082	10	31,517,147	12	12,757,065	14	67,598,374	16	48,838,292	18	128,534,681	23	109,773,999
1984 ~ 1985	20	5,846,190	17	18,961,909	11	13,115,719	15	63,728,187	12	57,881,997	14	152,597,942	10	146,751,752
1985 ~ 1986	11	17,808,016	14	28,188,486	17	10,290,470	12	77,942,916	11	60,044,900	12	156,925,239	11	139,027,223
1986 ~ 1987	30	1,492,850	25	11,299,739	20	9,806,889	19	48,133,684	19	46,640,835	24	111,843,115	22	110,350,265
1987 ~ 1988	34	0	42	1,319,969	42	1,319,969	37	16,839,440	36	16,839,440	36	62,863,121	35	62,863,121
1988 ~ 1989	34	0	38	1,740,619	38	1,740,619	41	12,666,568	41	12,666,568	37	62,130,420	36	62,130,420
1989 ~ 1990	26	3,010,448	24	11,497,246	23	8,486,798	31	32,749,282	33	29,738,834	32	79,053,968	33	76,043,520
1990 ~ 1991	17	7,278,888	19	16,681,550	22	9,402,663	23	43,683,744	26	36,404,856	28	106,433,262	27	99,154,374
1991 ~ 1992	22	4,672,074	26	10,544,172	31	5,872,098	28	39,277,007	29	34,604,933	29	103,136,036	28	98,463,962
1992 ~ 1993	34	0	43	1,305,464	43	1,305,464	40	13,066,688	40	13,066,688	41	54,704,560	40	54,704,560
1993 ~ 1994	33	157,104	32	7,695,393	26	7,538,289	32	31,976,088	30	31,818,984	31	87,047,010	30	86,889,906
1994 ~ 1995	6	29,924,149	6	42,544,465	14	12,620,316	10	80,615,610	15	50,691,462	13	155,921,634	13	125,997,485
1995 ~ 1996	14	12,575,757	15	20,780,694	24	8,204,937	25	42,392,934	32	29,817,177	35	64,789,793	42	52,214,036
1996 ~ 1997	34	0	38	1,740,619	38	1,740,619	38	15,984,031	37	15,984,031	40	56,108,435	39	56,108,435
1997 ~ 1998	34	0	36	1,999,329	36	1,999,329	33	31,339,421	31	31,339,421	39	56,447,548	38	56,447,548
1998 ~ 1999	5	30,000,435	4	45,882,663	8	15,882,228	5	93,809,100	9	63,808,666	2	197,657,645	3	167,657,211
1999 ~ 2000	4	32,888,143	5	45,645,209	12	12,757,065	8	87,490,836	13	54,602,693	15	139,579,981	24	106,691,838
2000 ~ 2001	34	0	41	1,726,114	41	1,726,114	43	7,958,898	43	7,958,898	38	56,982,401	37	56,982,401
2001 ~ 2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2002 ~ 2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2003 ~ 2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2004 ~ 2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2005 ~ 2006	3	33,972,195	3	50,831,729	6	16,859,534	3	103,758,935	5	69,786,740	4	189,706,703	7	155,734,508
2006 ~ 2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2007 ~ 2008	32	1,277,299	29	8,590,337	27	7,313,039	26	41,383,884	22	40,106,585	22	115,694,786	20	114,417,488
2008 ~ 2009	15	11,887,262	13	28,877,502	5	16,990,240	11	80,304,436	7	68,417,175	11	169,988,458	6	158,101,197
2009 ~ 2010	2	41,677,371	2	60,767,338	1	19,089,966	2	119,521,661	1	77,844,290	1	238,824,517	1	185,259,884
2010 ~ 2011	29	1,595,445	23	11,736,213	18	10,140,768	18	49,114,795	18	47,519,350	8	175,142,109	18	119,982,032
2011 ~ 2012	34	0	37	1,974,289	37	1,974,289	42	11,787,612	42	11,787,612	33	78,529,507	31	78,529,507
2012 ~ 2013	34	0	34	2,851,970	34	2,851,970	29	37,092,371	24	37,092,371	20	122,699,035	16	122,699,035
2013 ~ 2014	28	1,919,081	28	9,814,535	25	7,895,455	21	44,578,183	20	42,659,103	19	122,947,427	17	121,028,346
2014 ~ 2015	34	0	35	2,639,939	35	2,639,939	35	25,536,903	35	25,536,903	23	112,338,697	21	112,338,697
2015 ~ 2016	34	0	45	449,660	45	449,660	45	449,660	45	449,660	45	22,445,807	44	22,445,807
2016 ~ 2017	34	0	44	884,815	44	884,815	44	884,815	44	884,815	43	29,542,353	43	29,542,353
2017 ~ 2018	34	0	38	1,740,619	38	1,740,619	39	15,129,665	39	15,129,665	42	53,195,648	41	53,195,648
2018 ~ 2019	25	3,607,184	31	8,281,556	33	4,674,372	36	19,447,880	38	15,840,696	44	23,365,278	45	19,758,094
	33	8												

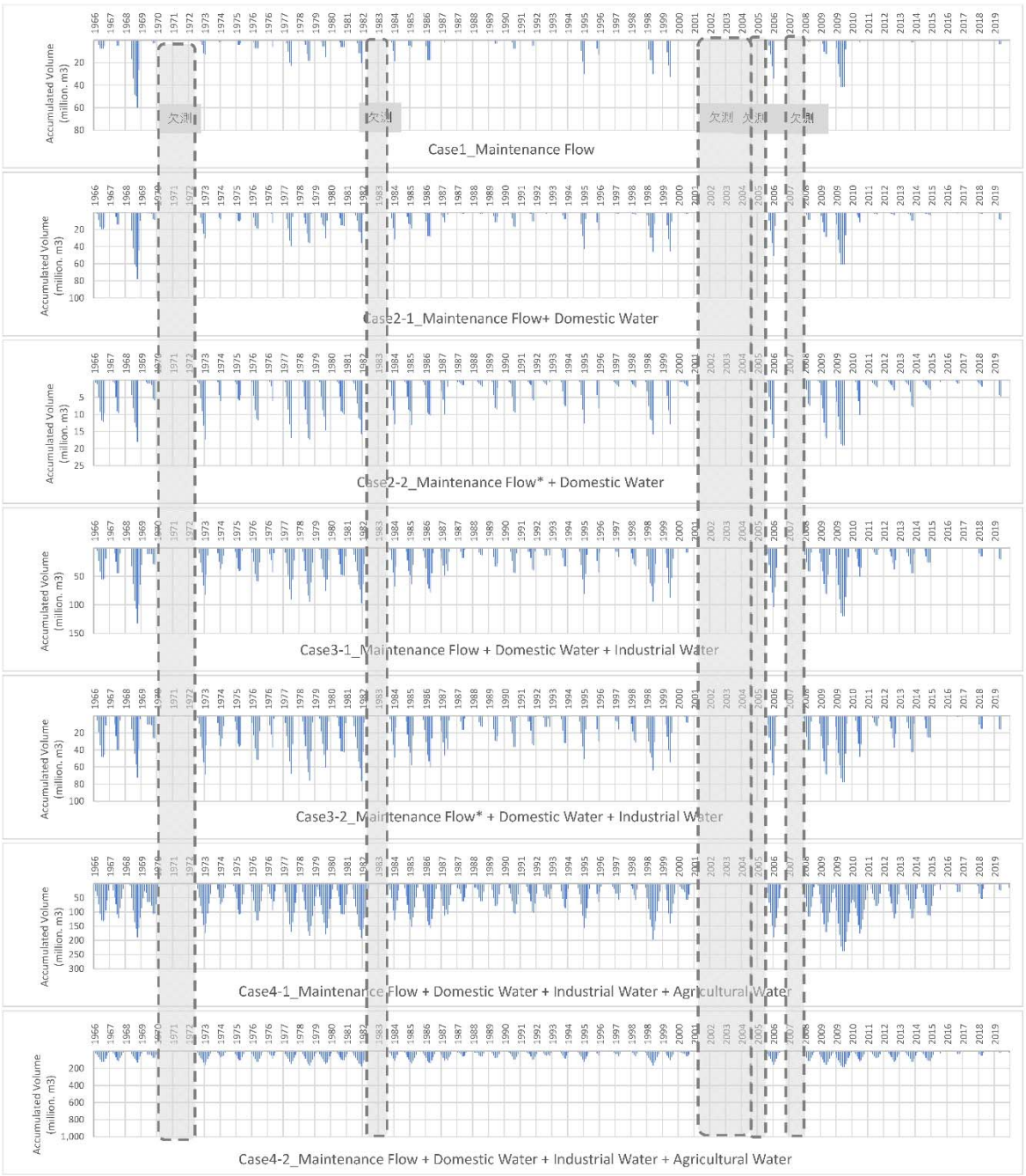
5-年対象 45 年
5年渇水 9
10年渇水 4

Case1		Case2-1		Case2-2		Case3-1		Case3-2		Case4-1		Case4-2	
5 yr	18,760,082	5 yr	35,436,203	5 yr	15,703,366	5 yr	81,788,430	5 yr	63,808,666	5 yr	174,416,465	5 yr	148,536,300
10 yr	32,888,143	10 yr	45,882,663	10 yr	17,294,688	10 yr	96,554,588	10 yr	72,418,540	10 yr	189,706,703	10 yr	164,628,479

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term:

Chakaria Intake Pump = 13.0 m^3/s



Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term:

Chakaria Intake Pump = 16.0 m^3/s

Year	Rank	Case1 Maintenance Flow	Rank	Case2-1 Maintenance Flow − Domestic Water	Rank	Case2-2 Maintenance Flow* + Domestic Water	Rank	Case3-1 Maintenance Flow + Domestic Water + Industrial Water	Rank	Case3-2 Maintenance Flow* + Domestic Water − Industrial Water	Rank	Case4-1 Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water	Rank	Case4-2 Maintenance Flow + Domestic Water − Industrial Water − Agricultural Water
1966 ~ 1967	16	7,502,406	16	19,724,527	15	12,222,121	17	55,790,513	17	48,288,107	15	131,203,693	14	123,701,287
1967 ~ 1968	23	4,555,296	21	14,094,707	21	9,539,412	22	44,452,240	23	39,896,945	21	121,063,092	19	116,507,796
1968 ~ 1969	1	60,079,286	1	78,107,022	2	18,027,736	1	132,497,826	4	72,418,540	5	188,983,365	12	128,904,079
1969 ~ 1970	27	2,523,902	30	8,416,505	30	5,886,603	34	28,726,058	34	26,202,156	31	80,420,365	32	77,896,463
1970 ~ 1971	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1971 ~ 1972	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1972 ~ 1973	13	12,905,702	11	30,200,390	4	17,294,688	9	81,788,430	6	68,882,728	7	174,416,465	5	161,510,763
1973 ~ 1974	31	1,478,221	33	7,612,832	28	6,134,611	30	36,926,167	28	35,447,946	34	73,521,232	34	72,043,011
1974 ~ 1975	24	4,105,692	27	9,951,458	32	5,845,766	27	40,010,179	27	35,904,487	26	107,277,301	25	103,171,609
1975 ~ 1976	18	7,149,389	18	18,819,553	16	11,670,164	16	58,669,324	14	51,519,935	16	130,126,622	15	122,977,233
1976 ~ 1977	19	5,939,002	22	11,904,551	29	5,965,549	24	42,960,816	25	37,021,814	29	94,858,399	29	88,919,397
1977 ~ 1978	7	22,750,424	7	39,609,957	6	16,859,534	7	90,564,437	8	67,814,014	8	171,286,724	9	148,536,300
1978 ~ 1979	10	18,127,009	9	35,436,203	3	17,309,194	6	93,761,886	3	75,634,876	6	182,755,488	4	164,628,479
1979 ~ 1980	12	15,188,906	12	29,849,393	10	14,660,494	13	75,689,860	10	60,500,961	10	166,683,768	8	151,494,868
1980 ~ 1981	21	5,785,111	20	15,637,434	19	9,852,323	20	48,074,966	21	42,289,855	25	107,675,172	26	101,890,061
1981 ~ 1982	8	20,163,776	8	35,867,141	9	15,703,366	4	96,554,588	2	76,390,813	3	191,446,043	2	171,282,268
1982 ~ 1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983 ~ 1984	9	18,760,082	10	31,517,147	12	12,757,065	14	67,598,374	16	48,838,292	17	128,534,081	23	109,773,999
1984 ~ 1985	20	5,846,190	17	18,961,909	11	13,115,719	15	63,728,187	12	57,881,997	13	152,597,942	10	146,751,752
1985 ~ 1986	11	17,898,016	14	28,188,486	17	10,290,470	12	77,942,916	11	60,044,900	11	156,925,239	11	139,027,223
1986 ~ 1987	30	1,492,850	25	11,299,739	20	9,806,889	19	48,133,684	19	46,640,835	24	111,843,115	22	110,350,265
1987 ~ 1988	34	0	42	1,319,969	42	1,319,969	37	16,839,440	36	16,839,440	36	62,863,121	35	62,863,121
1988 ~ 1989	34	0	38	1,740,619	38	1,740,619	41	12,666,568	41	12,666,568	37	62,130,420	36	62,130,420
1989 ~ 1990	26	3,010,448	24	11,497,246	23	8,486,798	31	32,749,282	33	29,738,834	32	79,053,968	33	76,043,520
1990 ~ 1991	17	7,278,888	19	16,681,550	22	9,402,663	23	43,683,744	26	36,404,856	27	106,433,262	27	99,154,374
1991 ~ 1992	22	4,672,074	26	10,544,172	31	5,872,098	28	39,277,007	29	34,604,933	28	103,136,036	28	98,463,962
1992 ~ 1993	34	0	43	1,305,464	43	1,305,464	40	13,066,688	40	13,066,688	41	54,704,560	40	54,704,560
1993 ~ 1994	33	157,104	32	7,695,393	26	7,538,289	32	31,976,688	30	31,818,984	30	87,047,610	30	86,889,906
1994 ~ 1995	6	29,924,149	6	42,544,465	14	12,620,316	10	80,615,610	15	50,691,462	12	155,921,634	13	125,997,485
1995 ~ 1996	14	12,575,757	15	20,780,694	24	8,204,937	25	42,392,934	32	29,817,177	35	64,789,793	42	52,214,036
1996 ~ 1997	34	0	38	1,740,619	38	1,740,619	38	15,984,031	37	15,984,031	40	56,108,435	39	56,108,435
1997 ~ 1998	34	0	36	1,999,329	36	1,999,329	33	31,339,421	31	31,339,421	39	56,447,548	38	56,447,548
1998 ~ 1999	5	30,000,435	4	45,882,663	8	15,882,228	5	93,809,160	9	63,808,666	2	197,657,645	3	167,657,211
1999 ~ 2000	4	32,888,143	5	45,645,209	12	12,757,065	8	87,490,836	13	54,602,693	14	139,579,981	24	106,691,838
2000 ~ 2001	34	0	41	1,726,114	41	1,726,114	43	7,958,898	43	7,958,898	38	56,982,401	37	56,982,401
2001 ~ 2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2002 ~ 2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2003 ~ 2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2004 ~ 2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2005 ~ 2006	3	33,972,195	3	50,831,729	6	16,859,534	3	103,758,935	5	69,786,740	4	189,706,703	7	155,734,508
2006 ~ 2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2007 ~ 2008	32	1,277,299	29	8,590,337	27	7,313,039	26	41,383,884	22	40,106,585	22	115,694,786	20	114,417,488
2008 ~ 2009	15	11,887,262	13	28,877,502	5	16,990,240	11	80,304,436	7	68,417,175	9	169,988,458	6	158,101,197
2009 ~ 2010	2	41,677,371	2	60,767,338	1	19,089,966	2	119,521,661	1	77,844,290	1	220,326,610	1	178,649,239
2010 ~ 2011	29	1,595,445	23	11,736,213	18	10,140,768	18	49,114,795	18	47,519,350	18	124,762,602	18	116,909,773
2011 ~ 2012	34	0	37	1,974,289	37	1,974,289	42	11,787,612	42	11,787,612	33	78,529,507	31	78,529,507
2012 ~ 2013	34	0	34	2,851,970	34	2,851,970	29	37,092,371	24	37,092,371	20	122,699,035	16	122,699,035
2013 ~ 2014	28	1,919,081	28	9,814,535	25	7,895,455	21	44,578,183	20	42,659,103	19	122,947,427	17	121,028,346
2014 ~ 2015	34	0	35	2,639,939	35	2,639,939	35	25,536,903	35	25,536,903	23	112,338,697	21	112,338,697
2015 ~ 2016	34	0	45	449,660	45	449,660	45	449,660	45	449,660	45	22,445,807	44	22,445,807
2016 ~ 2017	34	0	44	884,815	44	884,815	44	884,815	44	884,815	43	29,542,353	43	29,542,353
2017 ~ 2018	34	0	38	1,740,619	38	1,740,619	39	15,129,665	39	15,129,665	42	53,195,648	41	53,195,648
2018 ~ 2019	25	3,607,184	31	8,281,556	33	4,674,372	36	19,447,880	38	15,840,696	44	23,365,278	45	19,758,094
	53	8												

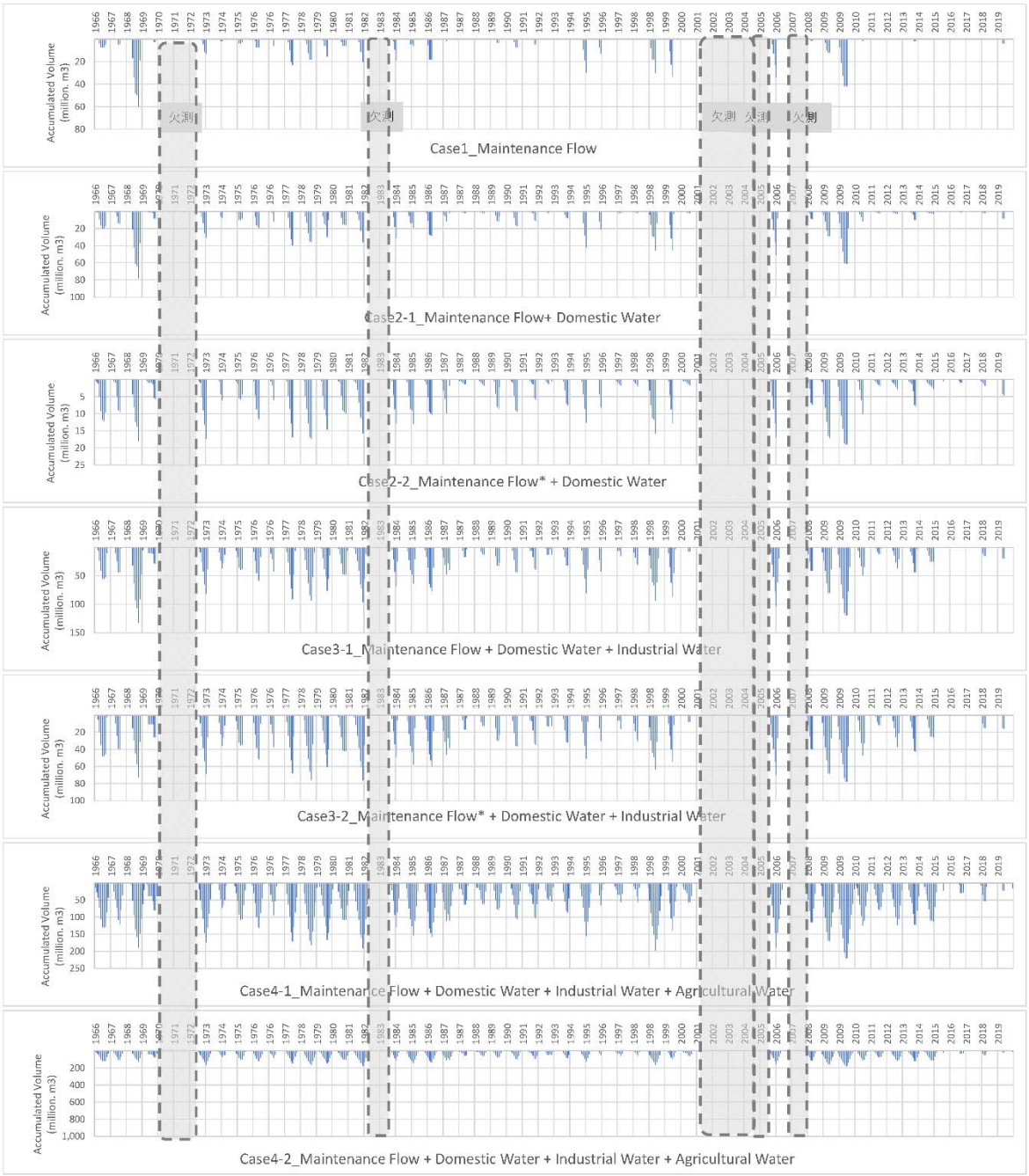
計算対象 45 個
5日流水 9
10日 渇水 4

Case1		Case2-1		Case2-2		Case3-1		Case3-2		Case4-1		Case4-2	
5 yr	18,760,082	5 yr	35,436,203	5 yr	15,703,366	5 yr	81,788,430	5 yr	63,808,666	5 yr	169,988,458	5 yr	148,536,300
10 yr	32,888,143	10 yr	45,882,663	10 yr	17,294,688	10 yr	96,554,588	10 yr	72,418,540	10 yr	189,706,703	10 yr	164,628,479

Source: JICA Survey Team

Plan of Palakata Regulation Pond in Long Term:

Chakaria Intake Pump = 16.0 m^3/s



Source: JICA Survey Team

Plan of Matamuhuri Main River Dam in Long Term

Year	Rank	Case1 Maintenance Flow	Rank	Case2-1 Maintenance Flow + Domestic Water	Rank	Case2-2 Maintenance Flow* + Domestic Water	Rank	Case3-1 Maintenance Flow + Domestic Water + Industrial Water	Rank	Case3-2 Maintenance Flow* + Domestic Water + Industrial Water	Rank	Case4-1 Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water	Rank	Case4-2 Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water
1966 ~ 1967	16	7,502,141	16	7,502,141	8	0	17	39,799,016	18	32,287,875	16	115,203,083	15	107,700,941
1967 ~ 1968	23	4,555,128	23	4,555,128	8	0	22	28,452,011	23	23,896,883	22	105,062,765	20	100,507,637
1968 ~ 1969	1	60,078,750	1	62,106,373	2	2,027,623	1	116,497,177	4	56,418,427	6	172,982,746	13	112,903,996
1969 ~ 1970	27	2,523,824	27	2,523,824	8	0	34	12,725,918	34	10,202,093	32	64,420,114	32	61,896,290
1970 ~ 1971	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1971 ~ 1972	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1972 ~ 1973	13	12,905,333	13	14,200,022	4	1,294,688	9	65,787,948	6	52,882,615	8	158,415,984	6	145,510,651
1973 ~ 1974	31	1,478,134	31	1,478,134	8	0	30	20,925,918	28	19,447,784	34	57,520,983	34	56,042,850
1974 ~ 1975	24	4,105,592	24	4,105,592	8	0	27	24,009,904	27	19,904,312	26	91,277,050	25	87,171,457
1975 ~ 1976	18	7,149,197	18	7,149,197	8	0	16	42,668,981	15	35,519,784	17	114,126,305	17	106,977,108
1976 ~ 1977	19	5,938,900	19	5,938,900	8	0	24	26,960,590	25	21,021,690	29	78,858,193	29	72,919,293
1977 ~ 1978	7	22,750,050	7	23,609,584	6	859,534	7	74,564,003	8	51,813,953	9	155,286,289	10	132,536,239
1978 ~ 1979	10	18,126,614	9	19,435,807	3	1,309,194	6	77,761,363	3	59,634,749	7	166,754,965	5	148,628,352
1979 ~ 1980	12	15,188,601	12	15,188,601	8	0	13	59,689,408	10	44,500,807	11	150,683,327	9	135,494,726
1980 ~ 1981	21	5,784,916	21	5,784,916	8	0	20	32,074,653	21	26,289,737	25	91,674,858	26	85,889,942
1981 ~ 1982	8	20,163,468	8	20,163,468	8	0	4	80,554,030	2	60,390,561	4	175,445,485	3	155,282,016
1982 ~ 1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983 ~ 1984	9	18,759,776	10	18,759,776	8	0	14	51,598,011	17	32,838,235	18	112,533,738	23	93,773,963
1984 ~ 1985	20	5,846,026	20	5,846,026	8	0	15	47,727,703	12	41,881,677	14	136,597,480	11	130,751,454
1985 ~ 1986	11	17,897,814	11	17,897,814	8	0	12	61,942,421	11	44,044,607	12	140,924,744	12	123,026,930
1986 ~ 1987	30	1,492,750	30	1,492,750	8	0	18	34,470,432	14	38,101,637	19	108,516,592	16	107,023,642
1987 ~ 1988	34	0	34	0	8	0	38	839,317	37	839,317	38	46,863,038	37	46,863,038
1988 ~ 1989	34	0	34	0	8	0	39	0	38	0	35	49,463,796	35	49,463,796
1989 ~ 1990	26	3,010,357	26	3,010,357	8	0	31	16,749,097	33	13,738,740	33	63,053,664	33	60,043,307
1990 ~ 1991	17	7,278,698	17	7,278,698	8	0	23	27,683,496	26	20,404,798	27	90,432,868	27	83,154,170
1991 ~ 1992	22	4,671,976	22	4,671,976	8	0	28	23,276,691	29	18,604,715	28	87,135,661	28	82,463,684
1992 ~ 1993	34	0	34	0	8	0	36	4,361,776	36	4,361,776	39	46,334,776	38	46,334,776
1993 ~ 1994	33	157,018	33	157,018	8	0	32	15,975,853	30	15,818,836	30	71,046,677	30	70,889,659
1994 ~ 1995	6	29,923,833	6	29,923,833	8	0	10	64,615,236	16	34,691,403	13	139,921,285	14	109,997,451
1995 ~ 1996	14	12,575,553	15	12,575,553	8	0	25	26,392,730	32	13,817,177	37	48,789,589	42	36,214,036
1996 ~ 1997	34	0	34	0	8	0	39	0	38	0	41	40,124,353	40	40,124,353
1997 ~ 1998	34	0	34	0	8	0	33	15,339,087	31	15,339,087	40	40,447,215	39	40,447,215
1998 ~ 1999	5	30,000,127	5	30,000,127	8	0	5	77,808,642	9	47,808,515	3	181,657,135	4	151,657,009
1999 ~ 2000	4	32,887,816	4	32,887,816	8	0	8	71,499,445	13	38,602,629	15	123,579,590	24	90,691,774
2000 ~ 2001	34	0	34	0	8	0	39	0	38	0	36	49,023,534	36	49,023,534
2001 ~ 2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2002 ~ 2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2003 ~ 2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2004 ~ 2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2005 ~ 2006	3	33,971,785	3	34,831,319	6	859,534	3	87,758,462	5	53,786,677	5	173,706,230	8	139,734,444
2006 ~ 2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2007 ~ 2008	32	1,277,205	32	1,277,205	8	0	26	25,383,586	22	24,106,380	23	99,694,489	21	98,417,284
2008 ~ 2009	15	11,886,996	14	12,877,121	5	990,125	11	64,303,994	7	52,416,999	10	153,988,065	7	142,101,070
2009 ~ 2010	2	41,676,946	2	44,766,885	1	3,089,939	2	103,521,083	1	61,844,137	2	218,741,219	2	165,177,277
2010 ~ 2011	29	1,595,375	29	1,595,375	8	0	19	33,114,486	19	31,519,111	1	224,489,329	1	169,330,013
2011 ~ 2012	34	0	34	0	8	0	39	0	38	0	31	66,741,920	31	66,741,920
2012 ~ 2013	34	0	34	0	8	0	29	21,092,125	24	21,092,125	21	106,698,769	18	106,698,769
2013 ~ 2014	28	1,918,985	28	1,918,985	8	0	21	28,577,904	20	26,658,919	20	106,947,098	19	105,028,113
2014 ~ 2015	34	0	34	0	8	0	35	9,536,727	35	9,536,727	24	96,338,394	22	96,338,394
2015 ~ 2016	34	0	34	0	8	0	39	0	38	0	44	21,996,096	44	21,996,096
2016 ~ 2017	34	0	34	0	8	0	39	0	38	0	43	28,657,445	43	28,657,445
2017 ~ 2018	34	0	34	0	8	0	39	0	38	0	42	38,065,926	41	38,065,926
2018 ~ 2019	25	3,607,103	25	3,607,103	8	0	37	3,607,103	38	0	46	7,524,417	46	3,917,314
2019 ~ 2020	34	0	34	0	8	0	39	0	38	0	45	15,003,257	45	15,003,257
	54	8												

計算対象 46 年
5年渇水 9
10年渇水 4

Case1		Case2-1		Case2-2		Case3-1		Case3-2		Case4-1		Case4-2	
5 yr	18,759,776	5 yr	19,435,807	5 yr	#N/A	5 yr	65,787,948	5 yr	47,808,515	5 yr	155,286,289	5 yr	135,494,726
10 yr	32,887,816	10 yr	32,887,816	10 yr	1,294,688	10 yr	80,554,030	10 yr	56,418,427	10 yr	175,445,485	10 yr	151,657,009

Source: JICA Survey Team

Plan of Matamuhuri Main River Dam in Long Term

Source: JICA Survey Team

Plan of Sangu River Dam in Long Term

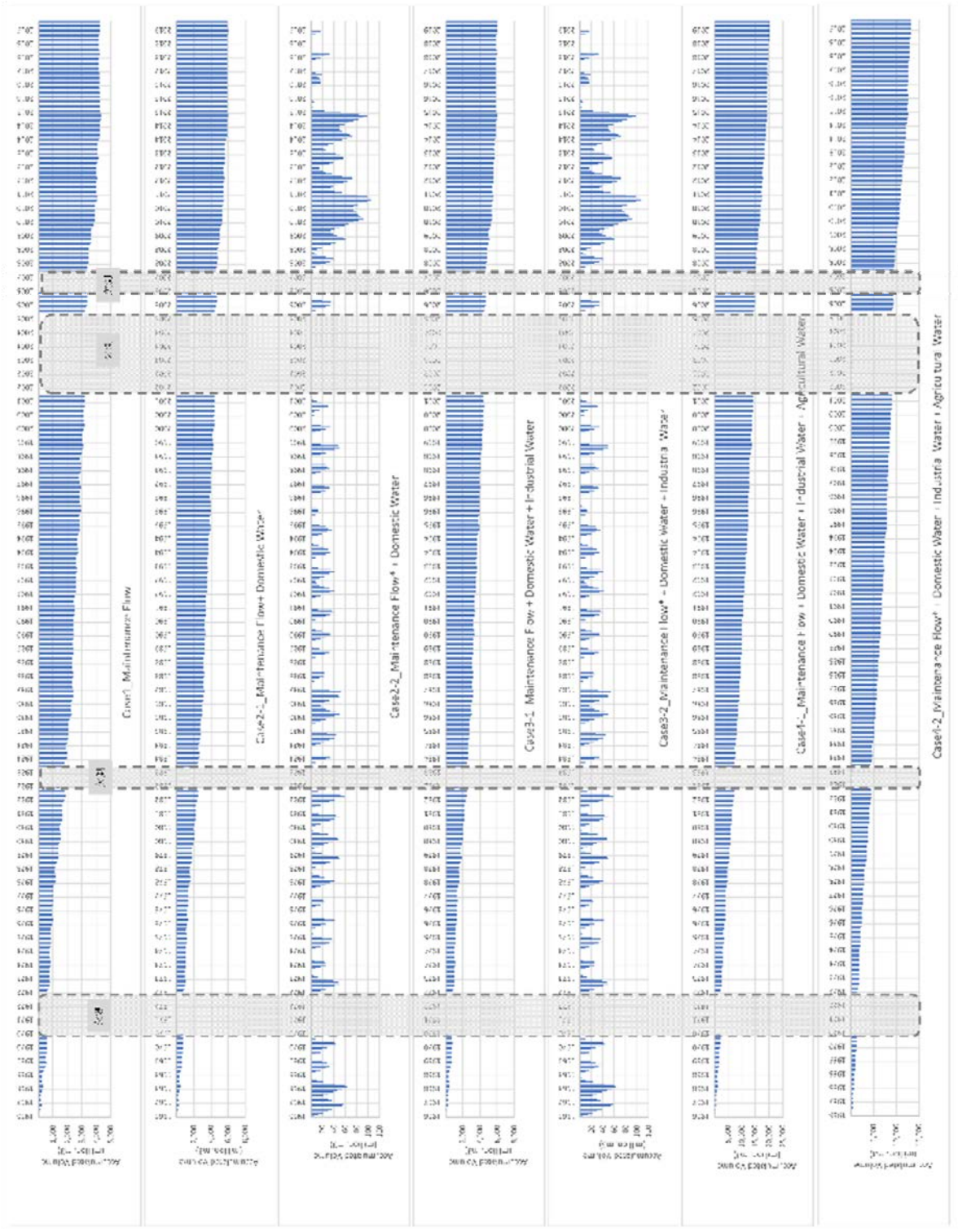
Year		Rank	Case1 Maintenance Flow	Rank	Case2-1 Maintenance Flow + Domestic Water	Rank	Case2-2 Maintenance Flow* + Domestic Water	Rank	Case3-1 Maintenance Flow + Domestic Water + Industrial Water	Rank	Case3-2 Maintenance Flow* + Domestic Water + Industrial Water	Rank	Case4-1 Maintenance Flow + Domestic Water + Incustrial Water + Agricultural Water	Rank	Case4-2 Maintenance Flow + Domestic Water + Industrial Water + Agricultural Water
1966 ~	1967	45	195,409,618	45	252,764,673	9	57,355,055	45	252,764,673	9	57,355,055	45	597,653,753	45	402,244,134
1967 ~	1968	44	300,796,245	44	399,487,723	6	62,976,754	44	399,487,723	6	62,976,754	44	1,109,573,670	44	773,062,701
1968 ~	1969	43	550,914,727	43	690,670,678	23	41,064,473	43	690,670,678	23	41,064,473	43	1,685,920,533	43	1,034,594,682
1969 ~	1970	42	609,810,864	42	792,886,491	19	43,319,676	42	792,886,491	19	43,319,676	42	2,118,935,260	42	1,352,749,527
1970 ~	1971	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1971 ~	1972	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1972 ~	1973	41	786,480,891	41	1,018,779,496	15	49,222,978	41	1,018,779,496	15	49,222,978	41	2,723,973,839	41	1,731,469,225
1973 ~	1974	40	839,099,353	40	1,095,873,471	39	24,475,514	40	1,095,873,471	39	24,475,514	40	3,007,204,325	40	1,904,472,233
1974 ~	1975	39	875,616,075	39	1,173,454,666	23	41,064,473	39	1,173,454,666	23	41,064,473	39	3,396,553,247	39	2,168,678,561
1975 ~	1976	38	993,738,209	38	1,332,913,223	20	41,336,423	38	1,332,913,223	20	41,336,423	38	3,892,598,786	38	2,494,580,092
1976 ~	1977	37	1,024,769,649	37	1,388,420,177	39	24,475,514	37	1,388,420,177	39	24,475,514	37	4,194,614,849	37	2,683,980,753
1977 ~	1978	36	1,196,212,106	36	1,600,927,107	25	41,064,473	36	1,600,927,107	25	41,064,473	36	4,781,811,769	36	3,050,184,816
1978 ~	1979	35	1,371,825,818	35	1,826,035,747	12	49,494,928	35	1,826,035,747	12	49,494,928	35	5,413,016,353	35	3,433,804,125
1979 ~	1980	34	1,528,088,567	34	2,024,672,259	18	46,475,640	34	2,024,672,259	18	46,475,640	34	6,012,652,365	34	3,831,784,337
1980 ~	1981	33	1,659,074,933	33	2,205,153,553	12	49,494,928	33	2,205,153,553	12	49,494,928	33	6,443,221,021	33	4,073,696,034
1981 ~	1982	32	1,876,792,280	32	2,480,524,332	8	57,653,432	32	2,480,524,332	8	57,653,432	32	7,135,780,225	32	4,490,799,197
1982 ~	1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983 ~	1984	31	1,984,727,435	31	2,621,365,455	30	32,905,968	31	2,621,365,455	30	32,905,968	31	7,571,514,972	31	4,756,798,627
1984 ~	1985	30	2,100,771,794	30	2,785,722,583	17	48,312,769	30	2,785,722,583	17	48,312,769	30	8,120,330,050	30	5,119,744,304
1985 ~	1986	29	2,281,742,216	29	3,016,187,933	12	49,494,928	29	3,016,187,933	12	49,494,928	29	8,747,742,974	29	5,501,976,825
1986 ~	1987	26	2,422,687,671	27	3,198,469,811	10	56,453,627	27	3,198,469,811	10	56,453,627	28	9,212,136,772	28	5,791,047,445
1987 ~	1988	28	2,397,307,469	28	3,197,023,196	41	23,933,587	28	3,197,023,196	41	23,933,587	27	9,510,507,405	27	6,030,054,982
1988 ~	1989	27	2,403,107,708	26	3,235,457,453	34	32,634,018	26	3,235,457,453	34	32,634,018	26	9,897,870,852	26	6,329,959,641
1989 ~	1990	25	2,453,969,220	25	3,319,224,933	32	32,905,968	25	3,319,224,933	32	32,905,968	25	10,219,674,487	25	6,556,651,896
1990 ~	1991	24	2,538,528,938	24	3,444,849,124	25	41,064,473	24	3,444,849,124	25	41,064,473	24	10,614,971,944	24	6,796,685,541
1991 ~	1992	23	2,592,311,933	23	3,539,968,542	20	41,336,423	23	3,539,968,542	20	41,336,423	23	11,006,522,295	23	7,029,666,604
1992 ~	1993	22	2,663,683,899	22	3,643,974,526	28	39,709,836	22	3,643,974,526	28	39,709,836	22	11,343,497,820	22	7,261,009,557
1993 ~	1994	21	2,723,643,405	21	3,736,840,001	32	32,905,968	21	3,736,840,001	32	32,905,968	21	11,712,187,700	21	7,498,990,458
1994 ~	1995	20	2,873,955,589	20	3,923,141,993	29	35,989,809	20	3,923,141,993	29	35,989,809	20	12,276,694,331	20	7,876,572,699
1995 ~	1996	19	2,905,257,029	19	3,970,760,443	44	16,317,009	19	3,970,760,443	44	16,317,009	19	12,448,804,927	19	7,948,416,289
1996 ~	1997	18	2,907,424,067	18	4,005,561,499	34	32,634,018	18	4,005,561,499	34	32,634,018	18	12,720,736,451	18	8,142,493,902
1997 ~	1998	17	2,967,383,244	17	4,098,154,694	34	32,634,018	17	4,098,154,694	34	32,634,018	17	12,974,441,720	17	8,231,385,520
1998 ~	1999	16	3,107,488,171	16	4,287,482,599	15	49,222,978	16	4,287,482,599	15	49,222,978	16	13,592,037,654	16	8,622,743,801
1999 ~	2000	15	3,204,585,797	15	4,417,486,193	30	32,905,968	15	4,417,486,193	30	32,905,968	15	13,935,252,819	15	8,758,292,553
2000 ~	2001	14	3,212,544,756	14	4,455,849,052	38	30,403,900	14	4,455,849,052	38	30,403,900	14	14,300,237,287	14	9,045,108,303
2001 ~	2002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2002 ~	2003	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2003 ~	2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2004 ~	2005	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2005 ~	2006	13	3,411,145,707	13	4,695,514,476	25	41,064,473	13	4,695,514,476	25	41,064,473	13	14,930,055,026	13	9,440,236,628
2006 ~	2007	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2007 ~	2008	12	3,478,219,317	12	4,803,924,508	20	41,336,423	12	4,803,924,508	20	41,336,423	12	15,376,340,081	12	9,738,960,433
2008 ~	2009	11	3,657,159,023	11	5,039,466,569	7	59,893,654	11	5,039,466,569	7	59,893,654	11	16,017,570,192	11	10,163,205,715
2009 ~	2010	10	3,917,828,569	10	5,357,789,547	3	91,175,467	10	5,357,789,547	3	91,175,467	10	16,761,685,500	10	10,620,279,857
2010 ~	2011	9	4,041,792,786	9	5,514,387,783	1	105,933,662	9	5,514,387,783	1	105,933,662	9	17,261,219,122	9	10,977,973,439
2011 ~	2012	8	4,043,834,961	8	5,553,976,209	4	71,930,928	8	5,553,976,209	4	71,930,928	8	17,664,610,915	8	11,307,774,073
2012 ~	2013	7	4,113,445,518	7	5,664,651,238	11	56,136,937	7	5,664,651,238	11	56,136,937	7	18,176,072,110	7	11,692,766,246
2013 ~	2014	3	4,249,196,669	6	5,849,897,317	5	71,192,360	6	5,849,897,317	5	71,192,360	6	18,733,928,391	6	12,080,431,872
2014 ~	2015	1	4,338,074,552	2	5,988,270,128	2	98,798,514	2	5,988,270,128	2	98,798,514	5	19,287,315,448	5	12,523,052,272
2015 ~	2016	4	4,249,103,625	4	5,907,729,656	45	8,780,411	4	5,907,729,656	45	8,780,411	4	19,299,460,231	4	12,525,719,425
2016 ~	2017	6	4,212,095,137	5	5,892,455,764	42	18,653,936	5	5,892,455,764	42	18,653,936	3	19,524,449,662	3	12,728,966,028
2017 ~	2018	5	4,237,521,265	3	5,953,800,728	34	32,634,018	3	5,953,800,728	34	32,634,018	2	19,870,907,621	2	12,977,446,246
2018 ~	2019	2	4,272,117,197	1	6,004,985,619	43	16,588,959	1	6,004,985,619	43	16,588,959	1	20,118,285,066	1	13,138,791,345
		53	8												

計算対象 45 年
5年渇水 9
10年渇水 4

	Case1		Case2-1		Case2-2		Case3-1		Case3-2		Case4-1		Case4-2
5 yr	4,041,792,786	5 yr	5,514,387,783	5 yr	57,355,055	5 yr	5,514,387,783	5 yr	57,355,055	5 yr	17,261,219,122	5 yr	10,977,973,439
10 yr	4,249,103,625	10 yr	5,907,729,656	10 yr	71,930,928	10 yr	5,907,729,656	10 yr	71,930,928	10 yr	19,299,460,231	10 yr	12,525,719,425

Source: JICA Survey Team

Plan of Sangu River Dam in Long Term



Source: JICA Survey Team

Table 1 Rating Criteria of Multi-Objective Analysis

Objective & Item	Weight	Descriptions	Measurement Indicator	-3	-2	-1	0 Points	1	2	3
A. Social Issues	**1**									
1 Land acquisition (-)	2	Minimized acquisition of land	Land area to be acquired (km^2)	30 <	20 <	10 <	0	-	-	-
2 Resettlement (-)	3	Resettlement of project affected persons	Projected number of affected households	High	Medium	low	0	-	-	-
3 Livelihood (-)	2	Loss of livelihood of project affected persons	None=0, Low= (1); Medium= (2); High= (3)	High	Medium	low	None	-	-	-
4 Beneft balance (+)	1	Balance of benefit to different interest groups	None=0, Low= (1); Medium= (2); High= (3)	-	-	-	None	Low	Medium	High
5 Community life (-)	1	Disruption from social network	Number of persons displaced	High	Medium	low	0	-	-	-
6 Cultural heritage (-)	1	Disruption of cultural heritage	No. of heritage affected	10 <	5 <	3 <	0	-	-	-
B. Environmental Issues	**1**									
1 Wetland eco-system/ bio-diversity (-)	3	Negative impact on flora and fauna	None=0, Low= (1); Medium= (2); High= (3)	High	Medium	low	0	-	-	-
2 Impact during construction and operation (-)	3	Air and water pollution due to construction and operation	Affected areas due to project implementation, km^2	30 <	20 <	10 <	0	-	-	-
3 Water quantity (+)	4	Controlled river maintenance flow	None=0, Low= (1); Medium= (2); High= (3)	-	-	-	0	10 <	50 <	100 <
C. Institutional Issues	**2**									
1 Sustainable enforcement (+)	4	Ensuring sustainability of institutional setting through institutional integrity	None=0, Low=1; Medium=2; High=3	-	-	-	None	Low	Medium	High
2 Administrative sustainability (+)	3	Ensuring sustainability of administrative set-up through administrative integrity	None=0, Low=1; Medium=2; High=3	-	-	-	None	Low	Medium	High
3 Legal reform, supporting laws & regulations (+)	3	Sufficiency of existing laws & regulations to support the project	None=0, Low=1; Medium=2; High=3	-	-	-	None	Low	Medium	High
D Financial Issues	**1**									
1 Financial cost (-)	6	Amount of investment (financial cost)	Amount of investment ($x10^6$ JPN)	250,000 <	150,000 <	50,000 <	0	-	-	-
2 O&M cost (-)	4	Amount of O&M costt (financial cost)	Amount of O&M/year ($x10^3$ JPN)	2,000 <	1,000 <	500 <	0			
E. Technical Consideration	**1**									
1 Physical stability (+)	3	Structural strength against natural force on structures	Low=1; Medium=2; High=3	-	-	-	-	Low	Medium	High
2 O&M (+/-)	1	Technical difficulty in O&M	Level of sophistication of required O&M	-	-	High	Medium	Low	-	-
3 Flexibility against uncertainty (+)	2	Diffensive dulability against uncertainty	None=0, Low=1; Medium=2; High=3	-	-	-	None	Low	Medium	High
4 Future expandability (+)	1	Possibility of future expansion	Low=1; Medium=2; High=3	-	-	-	-	Low	Medium	High
6 Innovation (+)	1	Use of new technology	None=0, Low=1; Medium=2; High=3	-	-	-	None	Low	Medium	High
7 Matulity (+)	2	Readyness for implementation	Study level	-	-	-	No study	Pre-study	w/MP	w/FS

Notes: (+) = positive impact, (-) = negative impact, (+/-) = positive or negative impact

Table 2 Evaluation Results of MOA Method

Alternatives of Long Term Water Resources Development		GMI	Score by Objectives					O	GD	DUB
No.	Alternative Plan		A	B	C	D	E			
M1	Palakata regulation pond (Short-term) + Expansion of Palakata regulation pond	33	-10	-8	54	-26	23	1.2	45.7	38.1
M2-1	Palakata regulation pond (Short-term) + Matamuhuri main river dam	54	-12	0	54	-14	26	5.4	40.0	7.4

Notes:
GMI: Gross magnitude of impacts
O: Coordinate of iso-magnitude of impacts
(arithmetic mean)
GD: Generalized distance of impacts
DUB: Degree of imbalance of impacts
Objective A: Social issues
Objective B: Environmental issues
Objective C: Institutional issues
Objective D: Financial issues
Objective F: Technical considerations

Existing Situation of Sanitation or Sewerage System in the MIDI Area and Preliminary Strategy

1 Introduction

In Bangladesh to understand the human excreta management system, sanitation is the best term to understand. Sanitation facilities in Bangladesh is mainly based on the toilet facilities. The status of sanitation facility in our country is described as the sanitation coverage mainly a toilet facility covers in a household. Based on the quality, types and excreta disposal facility of the toilet, two types of sanitation coverage are described, one is improved sanitation and another one is unimproved sanitation. Toilets are classified in many ways, in terms of its structure, disposal system, hygienic non-hygienic etc.

Improved sanitation coverage is classified as flush/pour flush latrine, pit latrine, Ventilated Improve Pit latrine, latrine with septic tank, composting latrine, latrine connected to sewerage system etc. Unimproved sanitation facilities manly the unhygienic latrine like hanging latrine, pit latrine without water seal/slab, open drain, latrine pit connected with nearby water bodies or any other unsafe disposal etc.

Sewerage system is mainly an infrastructure which contents a pipeline network or any other conveyance mechanism for transferring human excreta to a disposal site. Sewerage system is a centralized sanitation system which generally established in the urban areas. Sometimes it could be decentralized also. But in Bangladesh, sewerage system is mostly absent even in urban areas except some mega cities. The sanitation system for most of the areas in Bangladesh including the project target areas, mainly managed by on site sanitation which is covered by toilet facility. Final management of the faecal sludge from the onsite sanitation is not well established and a huge environmental concern still prevailing due to lack of complete chain of sanitation management. Onsite sanitation by toilet facility is a kind of containment system. After the saturation of the containment system, later management like emptying, transport, treatment and finally reused or safe disposal are mostly absent.

Existing typical toilet/latrine which covers the basic sanitation system is not the whole management of sanitation service chain targeting to Sustainable Development Goals (SDG).

2 Sanitation Situation in the Project Area

In the Southern Chattogram region, no city has any coverage with conventional sewerage system even the large city like Chattogram. CWASA has mandate to ensure sewerage system in the city but, the 2nd largest city of Bangladesh do not have sewerage coverage. Currently, CWASA is implementing a project where a sewerage network and treatment plant will be built. In later chapter, detailed of the CWASA sanitation plan is provided. In the Cox's Bazar district, there are four municipalities known as urban areas named Cox's Bazar, Moheshkhali, Chakaria and Teknaf municipality and no municipality has any sewerage coverage. In Cox's Bazar municipal area there is no sewerage network. Currently black water of the city is connected to current drainage system sometimes from septic tank and sometimes without septic tank. Faecal waste is directly disposing to nearby water bodies like canals, Bakkhali river and into the sea.

In Southern Chattogram rural areas, most common and low-cost sanitation facilities is based on pit latrine which is considered as improved sanitation if the pit is covered by slab and/or the squatting hole has a water seal or barrier between faeces and atmosphere. Such kind of pit latrine is called onsite sanitation system where liquid waste allows to infiltrate and solid to decompose into the pit. In urban areas, including all the municipal areas of Southern Chattogram region, sanitation coverage is mainly with such pit latrine, septic tank, some types of decentralized disposal facilities, etc. But safely managed sanitation is mostly absent in all the cases.

Annex 5-1 Preliminary Study at Draft Level on Sewerage Treatment in Survey Area

As per the BBS (Bangladesh Bureau of Statistics) population and housing census 2011, in southern Chattogram region, sanitation facilities covered with 68% sanitary latrine, 26% non-sanitary latrine and 6% do not have any facilities means open defecation. Here sanitary latrine and non-sanitary latrine refers similar to improved and unimproved sanitation facilities respectively as above. Table 1 below shows BBS data of census 2011. Southern Chattogram region has much less sanitation coverage than the national average of Bangladesh as in the hilly districts have very high percentage of non-sanitary latrine (Bandarban-36%, Rangamati-54%) and no facilities (Bandarban-37%, Rangamati-8%). Bangladesh has made tremendous progress after 2011, as Bangladesh was successfully met the Millennium Development Goal (MDG) targets to achieve by 2015. Later, Bangladesh is now in good progress to meet SDG targets to have access to sanitation for all by 2030.

Table 1: Status of Sanitation in Southern Chattogram Region (2011)

District/Types of Facility	Numbers	Percentage
Bandarban		
Sanitary	20,969	27
Non Sanitary	28,260	36
None	29,485	37
Total-District	78,714	
Chattogram		
Sanitary	1,165,392	77
Non-Sanitary	307,480	20
None	36,845	2
Total-District	1,509,717	
Cox's Bazar		
Sanitary	214,555	52
Non-Sanitary	150,791	36
None	48,056	12
Total-District	413,402	
Rangamati		
Sanitary	47,120	37
Non-Sanitary	68,660	54
None	10,634	8
Total-District	126,414	
Total-Region		

Sanitary	1,448,036	68
Non-Sanitary	555,191	26
None	125,020	6
Total-Region	2,128,247	

Source: Population and Housing Census 2011, BBS

Multiple Indicator Cluster Survey (MICS) 2019 published by Bangladesh Bureau of Statistics and UNICEF, shows the statistic of sanitation situation of whole country as well as division wise data. But there is no district wise data. Based on MICS statistics, in Chattogram division, sanitation coverage is 79.9% improved facilities and 20.1% is unimproved facilities. Improved facilities cover flush/pour flush to pipe sewer system 2.2%, to septic tank 28.8%, to pit latrine 13.4%, to don't know where 0.1% and Ventilated Improve Pit is 0.8%, pit latrine with slab is 34.5%, composting latrine is 0.1%. That means in Chattogram division total 48.7% (13.4+0.8+34.5) of latrines are pit latrines. See the below table 2, from MICS report.

Table 2: Improve and unimproved sanitation facilities

Table WS.3.1: Use of improved and unimproved sanitation facilities

Percent distribution of household population according to type of sanitation facility used by the household, Bangladesh, 2019

	Type of sanitation facility used by household											Open defecation (no facility, bush, field)	Total	Percentage using improved sanitation[1]	Number of household members
	Improved sanitation facility							Unimproved sanitation facility							
	Flush/Pour flush to:				Ventilated improved pit latrine	Pit latrine with slab	Compos-ting toilet	Open drain	Pit latrine without slab/ open pit	Hanging toilet/ latrine	Other				
	Piped sewer system	Septic tank	Pit latrine	Don't know where											
Total	**7.2**	**22.8**	**17.1**	**0.1**	**1.0**	**36.4**	**0.1**	**3.1**	**8.3**	**2.5**	**0.0**	**1.5**	**100.0**	**84.6**	**260,959**
Area															
Urban	29.5	32.9	10.7	0.4	0.8	16.3	0.0	4.4	3.7	0.8	0.0	0.4	100.0	90.6	56,700
Rural	1.1	19.9	18.8	0.1	1.0	41.9	0.1	2.7	9.6	2.9	0.0	1.9	100.0	82.9	204,259
Division															
Barishal	0.6	14.1	3.0	0.1	2.4	55.3	0.1	0.8	21.7	1.2	0.1	0.7	100.0	75.5	14,960
Chattogram	2.2	28.8	13.4	0.1	0.8	34.5	0.1	5.0	11.7	2.1	0.0	1.4	100.0	79.9	50,729
Dhaka	26.8	18.3	15.3	0.3	1.1	25.3	0.0	4.8	6.4	1.4	0.0	0.2	100.0	87.2	63,467
Khulna	1.0	24.6	31.7	0.0	0.4	36.9	0.0	0.7	4.6	0.2	0.0	0.1	100.0	94.6	29,859
Mymensingh	0.8	16.3	19.7	0.2	0.5	41.8	0.5	3.2	11.1	4.3	0.0	1.6	100.0	79.8	19,087
Rajshahi	0.0	25.2	18.7	0.1	1.5	39.8	0.0	1.2	7.1	4.5	0.0	1.8	100.0	85.4	33,979
Rangpur	0.1	16.9	21.3	0.0	0.7	47.9	0.0	1.3	3.9	1.1	0.1	6.7	100.0	86.9	29,298
Sylhet	1.1	36.1	8.7	0.0	0.1	33.5	0.0	3.9	7.3	8.4	0.0	0.9	100.0	79.5	19,580

Source: Multiple Indicators Cluster Survey (MICS) 2019, UNICEF & BBS

Though improved sanitation facilities have been classified as safe excreta disposal facilities in terms of sanitation services but in Bangladesh including southern Chattogram region, in many cases, there are several types of pit latrines or septic tank latrines those are called and considered onsite sanitation but do not have proper water sealed facilities, no proper Faecal Sludge Management (FSM) after filling up the pit and no safe disposal of the faecal waste. In Rohingya camps in Cox's bazar, a major portion of population mainly has pit latrine like alternative twin pit latrine, latrine with septic tank, containment type latrine, some DWATS (Decentralized Wastewater Treatment System) etc. In the camps there are some facilities for faecal sludge management including safe treatment, reuse of faecal waste and safe disposal. But other part of Bangladesh faecal sludge management is mostly absent, and sanitation services which are based on onsite sanitation, required proper faecal sludge management. In Bangladesh, the progress of sanitation coverage is successfully in increasing trend to achieve SDG goal 6, but the Faecal Sludge Management is still a challenge.

2.1 Sewerage System of Dhaka City

Sewerage System along with water supply and drainage, Dhaka WASA is responsible for operation and maintenance of the sewerage system and sewage treatment plants within the defined area of Dhaka City. At present, there are 882 kilometers of sewerage lines in Dhaka while there are 30 lift stations, one main pump station, one sewerage treatment plant and small-bore sewerage system at Mirpur. The domestic consumption of water in Dhaka is currently at 2250 MLD, out of which 80% is generated as sewage. Thus, the sewage generated by the city is 1800 MLD. Only 30% of it is from the city core area which has public sewer system and the remaining 70% of the sewage is discharged into the city's stormwater drainage system. Thus, the discharge of sewage into drains not only pose environmental and health hazard to public but it also diminishes the carrying capacity of the drainage system which has a significant impact during monsoon period. Table 3 provides a summary of sewerage system of DWASA. Over three lac households occupying 70% of the city area are currently out of WASA's sewerage network. The areas include Uttara, Baridhara, Badda, part of Mirpur, Mohammadpur, part of Gulshan and Jatrabari, Donia, Shyamoli, Kalyanpur, and a large area of the capital's northern part. Untreated waste of these residential areas is dumped into the rivers, canals and other water bodies in and around the capital causing heavy pollution to surface water.

Table 3: Existing Sewerage System of Dhaka City

SL	Structures	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2012-2013
1	Connection to Religious Place	1827 sites	1896 sites	1898 sites	1898 sites	1898 sites	1898 sites
2	Sewer Line	881.02 km	882 km	882 km	882 km	882 km	885
3	Sewer Lift Station	29 sites	29 sites	30 sites	30 sites	30 sites	26 sites

Source: Drainage Master Plan for Dhaka City, May 2016, DWASA

Dhaka WASA has developed a Sewerage Master Plan to provide public sewerage system for the entire city. The Sewerage Master Plan proposes five new waste treatment plants in Dasher Kandi, North Dhaka, South Dhaka, Gabtoli and Uttara and setting up of new pipelines by 2035 to provide sewerage service for about 32 million people. In the first phase, the capacity of Pagla Sewerage Treatment Plant would be increased to two lac cubic metre per day. Sewerage system, transmission mains and treatment plants would be constructed at Uttara, Mirpur, Rupganj, DND-Demra, Narayanganj and Rayerbazar catchments in the second phase. In the third phase, sewerage treatment plants would be constructed within greater Dhaka including Gazipur, Tongi, Savar and Keraniganj. Figure 1 shows existing sewerage network of Dhaka WASA.

Annex 5-1 Preliminary Study at Draft Level on Sewerage Treatment in Survey Area

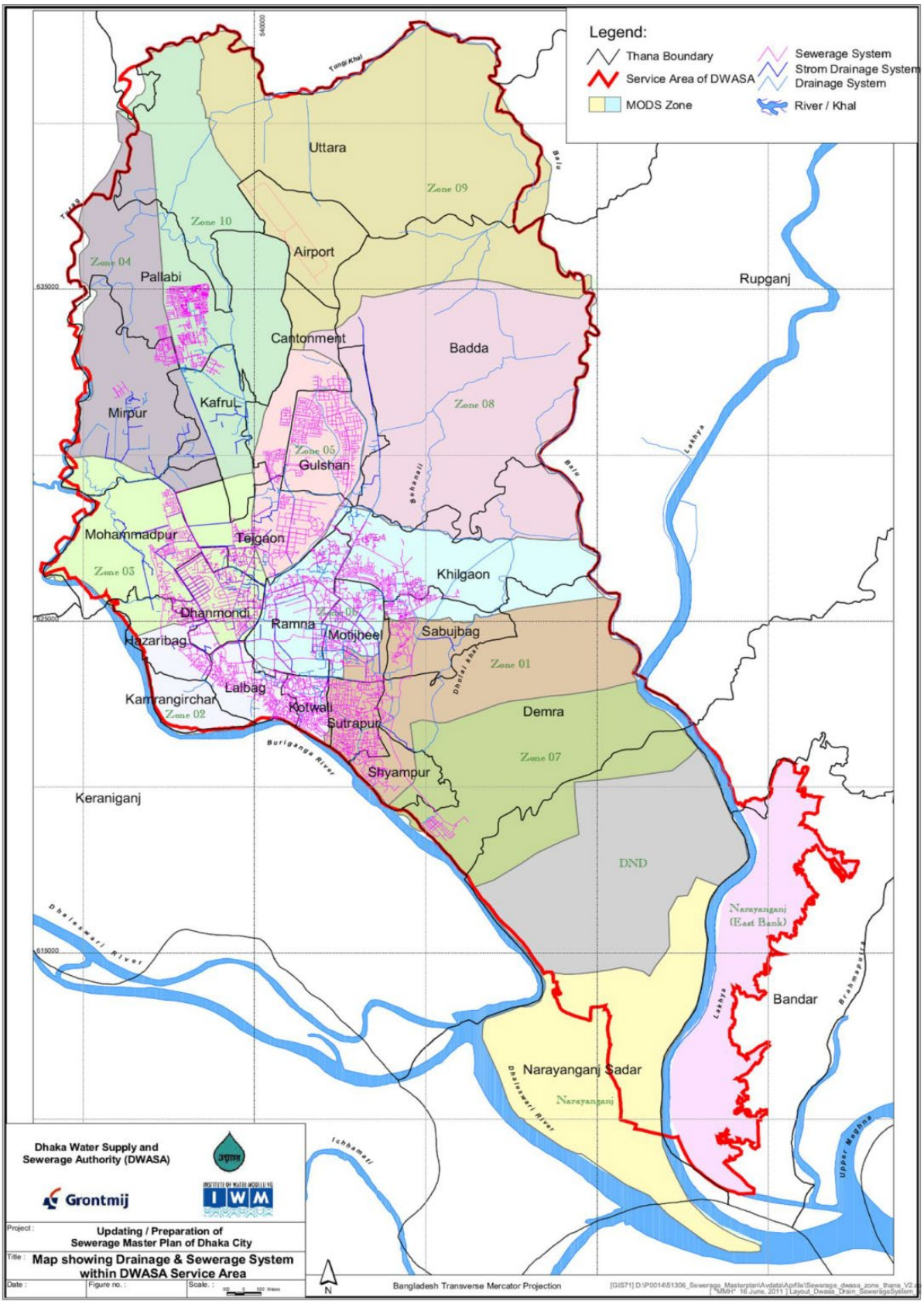


Figure 1: Exiting Sewerage Network coverage of Dhaka City (DWASA, 2013)
Source: Drainage Master Plan for Dhaka City, May 2016, DWASA

2.2 Sewerage System of Chattogram City

At present Chittagong city has no sewerage system. Some high-income houses have septic tanks; the reminders have no such facilities. Domestic and industrial wastewater is being discharged in the open drain. There is currently no piped sewerage system in central Chittagong nor the surrounding urban pourashavas. Most households in the Chattogram City Corporation (CCC) area are served by on-site sanitation solutions such as septic tanks or latrines. Wastewater from kitchens and showers (sullage) is discharged into the roadside drains or the drainage channels by dedicated outflow pipes. Septic tank's overflows are also discharged into the drainage system. When septic tanks are full, faecal sludge is sometimes collected by CCC trucks and transported to landfill sites. However, more commonly, sludge is removed by hired private cleaners and deposited into nearby drains. Although not designed for the purpose, the road drainage system acts as a combined stormwater and wastewater collection and transport system. The low gradients of the drains result in settlement of solids which contributes to blockage, further aggravated by disposal of municipal solid waste.

Other issues of concern for Chattogram city sewerage development include:

- There is limited space in streets to lay large-scale sewers.
- Lack of available land for centralized sewage treatment plants. An assessment has been made of the possible land available to CWASA for locating treatment works.
- CWASA has limited tradition for managing a large-scale sewerage project.
- A new industrial wastewater treatment plant services the Chittagong EPZ (CEPZ) and many industries utilize compact individual Effluent Treatment Plants, however a large percentage of industrial wastewater is still discharged untreated.

On-site Sanitation

The following Table 4 summarizes the sanitation situation in the Chittagong City Corporation area and nearby municipalities comparison with the national (urban) average. The CCC only operates two vacuum trucks for septic tank sludge collection, with delivery to the Halishahar dump site without treatment. There is no treatment facility for the collected faecal sludge in the CCC area. Further, the trucks are too large to service properties adjacent to small roads. The estimated demand for sludge collection is approximately 115m3/day, however only 15m3/day is collected by CCC, although private operators may provide additional capacity. The demand in each of other urban pourashavas is typically 3-4m3/day.

Table 4: Comparison of Sanitation Situation of Chattogram City and nearby Municipalities with the National Urban Average

Access to Sanitation	National Urban Average (2011)*	CCC (2011)	Patiya Municipality*	Raozan Municipality*	Hathazari Municipality**	Boalkhali Municipality**
Sanitary Toilet / Improved	81.7%	88.3%	78.82%	84.37%	79.68%	81.45%
Non-Sanitary Toilet/Other unimproved	15.9%	11.4%	20.45%	14.45%	20.32%	16.29%
No Toilet/Open Defecation	2.4%	0.3%	0.73%	1.18%	-	2.27%
Total	100%	100%	100%	100%	100%	100%

Source: BBS 2014 (Data Provided by Municipality)

In October 2014, the Government approved a new tax schedule for the municipalities; according to this new tax schedule, municipalities are authorized to charge 12% of the annual rental value of the building/land for sewerage, which includes faecal sludge management in case they provide such services.

Following key considerations have been identified for Chattogram City Corporation and surrounding municipalities (Patiya, Raozan, Hathazari, Boalkhali)

- There is a need to improve the non-sanitary toilets within the urban area. Within the CCC area, 11.4% of the toilets are non-sanitary; the equivalent figures for the other municipalities are: 20.45% in Patiya, 14.45% in Raozan, 20.32% in Hathazari and 16.29% in Boalkhali.
- It is noted that 1% of the population in the urban municipality area do not have access to any type of a toilet facility. However, this number is lower than the national urban average of 2.4%.
- Based on a conservative estimate prepared, there is a gap of almost 100 m3/day between the demand for faecal sludge collection and service provided by the CCC. It is likely that a portion of the demand is met by manual sludge cleaners, popularly known as “methors”.
- There is no treatment plant for faecal sludge in the CCC area.
- For the adjacent municipalities, there is no faecal sludge collection truck or treatment site; all the generated faecal sludge in the municipalities is collected by the manual sludge cleaners.
- There is a need to have a regional facility for treatment of faecal sludge generated in the municipalities.

A master plan has been prepared for sanitation management in the Chattogram City. Following figure 2, shows the master plan for sewerage system, STP development and Faecal Sludge Management.

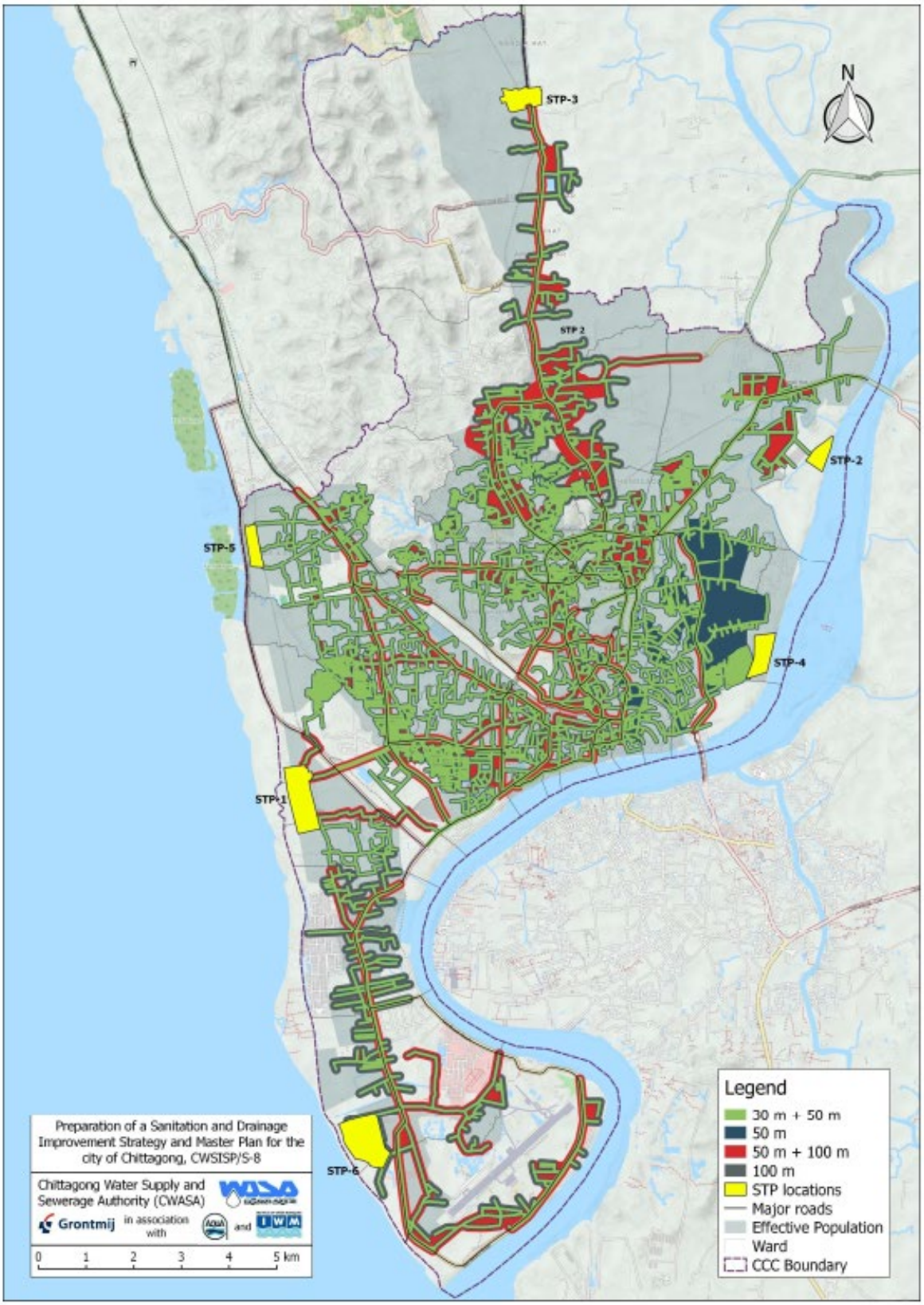


Figure 2: Propose Sewerage system with STP Masterplan of Chattogram City Sanitation
(Source: Preparation of a Sanitation Improvement Strategy and Master Plan for the City of Chittagong, June 2017, CWASA, World Bank)

3 Strategy for the Sanitation or Sewerage system in Targeted area

3.1 Introduction

Whole project area of southern Chattorgam region covers several urban areas i.e. municipalities and rest are rural areas. Urban areas or municipalities should have own plan for sanitation but rural areas generally no specific plan for development. Current sanitation system as described above is mainly covers with onsite sanitation system with different types of latrines. This traditional approach will be considered most appropriate for the rural areas. Though improvement of onsite sanitation is required specially for the faecal sludge management and new robust technological development for toilets.

On the other hand, for urban areas, sanitation planning should depend on many issues. Currently all over the world, different cities adopting different sanitation approach which is not sometimes resulting good success. As per the SDG target, no one left behind is the major approach for sanitation. Considering the urban challenges for successful sanitation approach, the planning should be for access to safely managed sanitation inclusively for all. Later the demand driven sanitation services for urban areas which will be on the basis of inclusiveness so that no one left behind for the services. A new approach is becoming popular which is called Citywide Inclusive Sanitation (CWIS). This approach is aimed at advancing safe, equitable, and sustained services across each city, with a focus on ensuring services reach to women, girls, and low-income communities.

3.2 Target area's Demography

Southern Chattogram region including MIDI new development area consists of following urban and rural areas with pollution coverage provided in the table 5.

Table 5: Urban and Rural Population in the Southern Chattogram Region with Administrative Unit

Sl No.	District	Population				Admirative Unit		
		Total	Urban	Rural	% of Urban Population	City Corporation	Paurashava	Upazila
1	Bandarban	388,335	100,423	287,912	26	0	2	7
2	Chattogram	7,616,352	3,152,629	4,463,723	41	1	10	25
3	Cox's Bazar	2,289,990	499,011	1,790,979	22	0	4	8
4	Rangamati	595,979	159,627	436,352	27	0	2	10
	Total-Region	10,890,656	3,911,690	6,978,966	36	1	18	50

Source: Statistical Yearbook, 2019 (Census 2011), BBS

MIDI area mainly the Upazila of Moheshkhali in Cox's Bazar district is under huge development. A major industrial hub including power hub, deep seaport, LMG terminals are under development. Adjacent area under Chakaria Upazila will also be developed targeting MIDI development. Part of Cox's Bazar Sadar, Moheshkhali and Chakaria is considered as the center of MIDI development. All the supporting settlement will be developed mainly in those two Upazilas. Considering the all the mega development in the MIDI area, government has developed Sector Development Plan for all the sectors. In the SDPs, future transport network development, township development, industrial zone development, port area development, power plant development etc. are already planned and are in place for future integrated planning. In the rapid urbanization era, a physical

development plan (commonly used as Master Plan) is considered as all sorts of development guidelines for any urban and rural area. Different study stipulated the estimated pollution of the MIDI area considering the all the development. As of 2011 population census, number of Population in MIDI area is 12,54,765[1]. Analyzing the growth rate, the estimated short term and long-term increased pollution is provided below table 6.

Table 6: Estimated increase Population in MIDI area

Population Projection	**Location**	**Short Term (2021 to 2026)**	**Medium & Long Term (2027 to 2041)**
Population increased by Natural Growth Rate	Chakaria Upazila	80532	316674
	Cox's bazar Sadar Upazila	62944	258832
	Moheskhali Upazila	46942	176417
Population increased due to MIDI (total 75000)	Chakaria Upazila	35100	20642
	Cox's bazar Sadar Upazila	0	0
	Moheskhali Upazila	0	19258
Total increased Population		225518	791823

Source: Township Sectoral Development Plan of MIDI/ Sector Development Plan of Local Government Division (LGD) for Moheshkhali-Matarbari Integrated Infrastructure Development Initiative (MIDI) Area of Cox's Bazar District, LGED, 2021

If MIDI development is considered total Population of the MIDI area in 2026 and 2041 will be 1,480,283 and 2,046,588 respectively.

3.3 Targeted inclusive sanitation Coverage

Domestic sanitation management

Sanitation or human excreta management for the population in the MIDI area which is considered as domestic sanitation management is completely dependent on water demand. 80% of the water demand is generally considered as sewage generation. As per the interim report the water demand in the MIDI area in 2026 and 2041 is 205,775 and 309,589 m3/day respectively[2]. This estimate is including the Pekua and Kutubdia Upazila which was not included in the township planning. Whereas the figure based on Township development plan is 177,634 and 245,591 m3/day for short term and long term respectively which is excluding Pekua and Kutubdia Upazila considering 120 lpcd water requirement. If we consider the maximum figure sewage generation will be generally 80% of water demand, that is 164,620 m3/day in 2026 and 247,671 m3/day in 2041.

Industrial wastewater management

As per the interim report, industrial water requirement for MIDI development would be 57,200 m3/day and 359,600

[1] *Township Sectoral Devlopment Plan of MIDI/ Sector Development Plan of Local Government Division (LGD) for Moheshkhali-Matarbari Integrated Infrastructure Development Initiative (MIDI) Area of Cox's Bazar District, LGED, 2021*

[2] Interim report: Data Collection Survey for Water Resources in South Chattogram Region, January 2022

m3/day in short term 2026 and long term 2041 respectively[3]. Industrial waste and sewage generation for industry would be 80% of the water demand which is calculated 45,760 and 287,680 m3/day respectively in 2026 and 2041. The industrial waste management plan should be considered accordingly.

4 Approach and Methods of Sewerage System in Target Area

4.1 Citywide Inclusive Sanitation

CWIS emerged as a sectoral response to the failure of the "conventional approach", which focuses on infrastructure investment for sewer expansion, to address the needs of the urban poor and being financially sustainable. While the more recent approach of Fecal Sludge Management (FSM) has made substantial progress in areas neglected by the sewered approach, it assumes inherent advantage of FSM over sewers for servicing the poor, without considering the need for broader planning of public service delivery systems. CWIS bridges the gap between the sewered and FSM approaches. It shifts away from the traditional focus on hardware inputs, whether for sewered or non-sewered categories, and is technology agnostic. A CWIS approach requires planning and investment in incremental hardware and service improvements across diverse contexts within cities, deploying a range of technologies best suited to the context and specific needs. CWIS focuses on how a city's service delivery system functions, which is influenced by both national/state level policy/legal/ institutional design and city level implementation of the design, and the resulting outcomes. It establishes sanitation as a public service without marginalizing the role of the private sector. CWIS recognizes inherent market failures of urban sanitation and creates market incentives for private sector participation to invest and innovate.

Whole sanitation service chain is provided under the following figure.

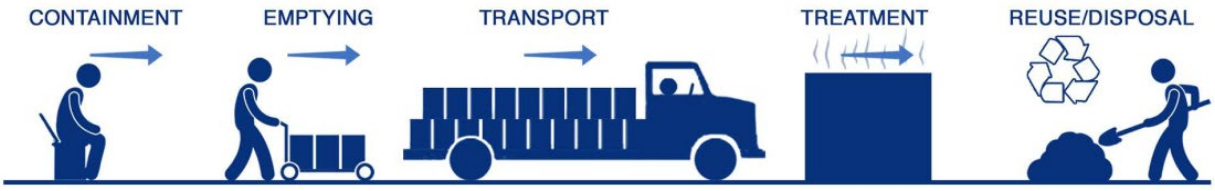


Figure 3: Component of sanitation service chain

Paradigm shift from MDG focus on meaning of sanitation i.e. containment or toilet to SDG focused safely managed sanitation which looks into whole sanitation service chain up to reuse and safe disposal.

In this approach, Shit Flow Diagram (SFD) is the baseline analysis methods of the sanitation situation in an area. Figure 4 shows the basic concept of Shit Flow Diagram which could be generated collecting baseline information of an urban area. It will cover the whole sanitation service chain which will be more focused on safely managed sanitation. Reuse and safe disposal by treatment is the ultimate goal and no one should be left behind in this approach.

[3] Interim report: Data Collection Survey for Water Resources in South Chattogram Region, January 2022

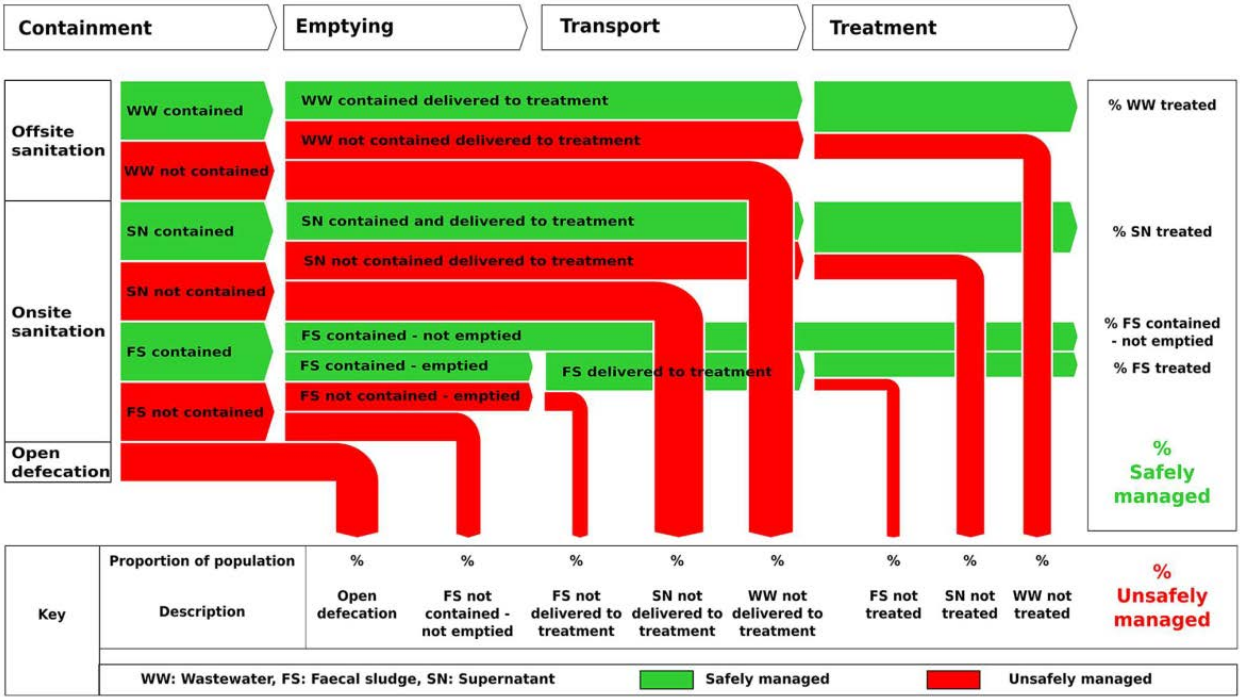


Figure 4: General Shit Flow Diagram (black: without any information)
Source: SDF Manual, Sustainable Sanitation Alliance, 2018

Example of existing Shit Flow Diagram for Dhaka City and Chattogram City is provided in the below figure 5 and 6 respectively for understanding.

Annex 5-1 Preliminary Study at Draft Level on Sewerage Treatment in Survey Area

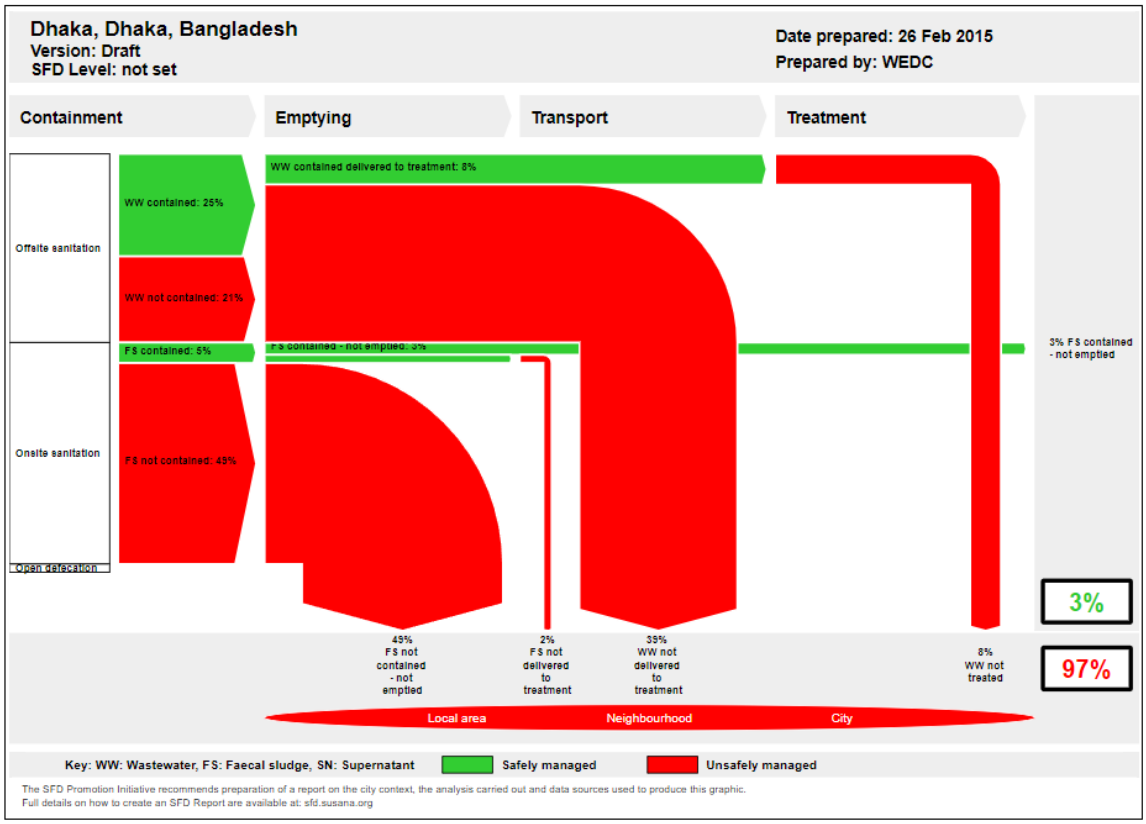


Figure 5: Existing Shit Flow Diagram for Dhaka City (Source: Sustainable Sanitation Alliance, WEDEC, 2016)

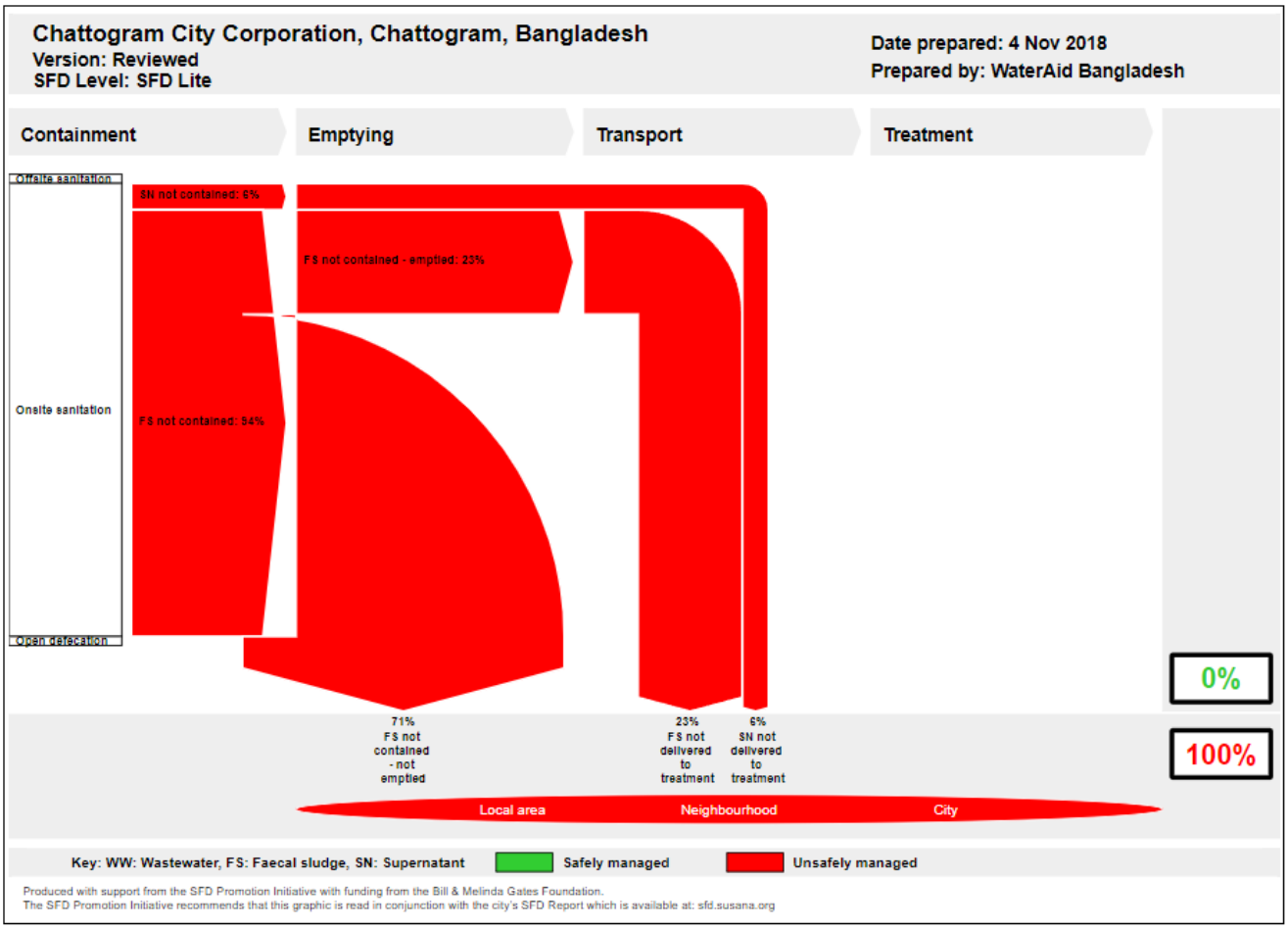


Figure 6: Shit Flow Diagram for Chattogram City (Source: Sustainable Sanitation Alliance, Water Aid, Bangladesh, 2018)

4.2 Sanitation Solution for MIDI area

A SFD could be generated in the MIDI area for making a comprehensive plan for inclusive sanitation services. A detailed study to generate baseline data specially detailed of exiting sanitation type is required to develop SFD for MIDI area. After the SFD diagram, next plan for sanitation solution in terms of technological options could be articulated. As MIDI area will have different clustered township development and massive industrial development, the technological options could be derived based on the context in each localized cluster. For Clustered township, there might be decentralized system with sewerage network and Sewerage Treatment Plant (STP). For small scale township, Decentralized Wastewater Treatment System (DWATS) could also be considered for short term basis. For the rural areas in between the cluster township, onsite sanitation with appropriate toilet technology and Faecal Sludge Management (FSM) could be the good option. There should be appropriate emptying, transport and Faecal Sludge Treatment Plant (FSTP) technology in place for proper management of onsite sanitation. DWATS will also be appropriate for onsite sanitation in rural areas.

For the industrial areas, specially there will be many Economic Zones (EZ), where same decentralized technology with sewerage system and STP could be developed. In addition, for industrial waste management there should also be Effluent Treatment Plant (ETP) according to the types of industry in each EZ. In all cases, STP, FSTP or ETP, the treatment technology should be aimed to reuse or resource recovery and final safe disposal. Currently there are many energy recovery proven technologies available from waste or faecal sludge and practiced in different part of the world. Many of them are tested as the very successful in all over the globe. In Bangladesh some of the small-scale examples of energy recovery from waste are also available. Out of them,

biogas generation, fuel briquet form thick sludge, organic fertilizer, building construction material etc. are well known technologies. Resue of waste would have a bigger economic value and has a great positive impact on environment and climate change. Safe disposal and reuse would be the most sustainable solution for sanitation in CWIS approach. This could be adopted in the MIDI area.

In the MIDI area to understand the current sanitation system and plan for future management, a holistic SDF needs to be developed. After the SFD, a proposed solution following CWIS approach could be considered. The waste generation in the MIDI area is huge for short-term and long-term consideration. Managing 164,620 m3/day in 2026 and 247,671 m3/day in 2041 for domestic waste is required huge investment and institutional set up. It is anticipated that, 5 or 6 STP might needs to be built in different cluster of the township with decentralized or cluster-wise sewerage network. For the short term, it might not be possible to develop huge sewerage network and building all the STPs. In that case, without sewer system, containment type latrine with very decentralized Septic Tanks could be built for the period of five-ten years. More decentralized FSTP in the form of DWATS might needs to be constructed, where waste could be collected and transported by Vacuum Tug or other appropriate means. Waste will be transported to FSTP which will be designed appropriately considering the energy recovery specially the biogas plant. Biogas generation would supplement energy demand of the township. In addition, treated wastewater could be further treated in tertiary level to achieve fresh water for domestic uses specially gardening, bathing/washing cloths and other cleaning purposes.

For long term solution, a sewer system should be constructed in each township and STP can be built in strategic location covering the nearby township. STP should be designed considering the energy recovery concept similar to FSTP. Biogas could be the best option in this case also. In addition, the thickened sludge for STP and FSTP could also be utilized as fuel briquet and building material. Reuse of treated water is also another option in this case.

Industrial waste consisting of sewerage and industrial effluent which is also huge in quantity i.e. 57,200 m3/day and 359,600 m3/day in 2026 and 2041 respectively. Each industrial zone should develop their waste and effluent treatment plant phase by phase in sort-term and long-term consideration. All types of treatment should be taken into consideration for reuse and energy recovery plan. Treated effluent water from the industry, could also be reused for agricultural purpose and other household purposes based on the quality of the effluent and making it with desired quality as necessary.