Table II-1 Comparative Results of ETo Estimated by Several Methods in Odemis

(Evapotranspiration Estimated by Ovserved Pan Evaporation) *for referance*

Station: Odemis

Items	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Epan (Monthly)	21.1	31.7	60.8	105.4	160.5	214.4	243.9	233.5	188	127.7	71.7	35.9	1494.6
Epan (Daily)	0.68	1.13	1.96	3.51	5.18	7.15	7.87	7.53	6.27	4.12	2.39	1.16	
RHmean	73	72	70	67	60	53	50	52	58	66	73	76	
Wind verosity*	0.81	0.85	0.78	0.81	0.78	0.85	0.67	0.56	0.55	0.56	0.72	0.68	
Kp	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	
ETo (Daily)	0.54	0.91	1.57	2.46	3.62	5.00	5.51	5.27	4.39	2.88	1.91	0.93	
ETo (Monthly)	16.9	25.4	48.6	73.8	112.4	150.1	170.7	163.5	131.6	89.4	57.4	28.7	1068.3

*: Data in Tire

Evapotranspiration Estimated by FAO's Blaney-Criddle Method

Station: Odemis

Items	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Temperature	6.90	7.90	10.60	14.80	20.70	24.60	26.10	27.60	22.50	16.70	12.10	8.70	
P	0.23	0.25	0.27	0.29	0.31	0.32	0.32	0.30	0.28	0.25	0.23	0.22	
P(0.46T+8.13)(=F)	2.60	2.94	3.51	4.33	5.47	6.22	6.44	6.25	5.17	3.95	3.15	2.67	
Manthly Total(F)	80.6	82.3	108.9	130.0	169.6	186.7	199.7	193.7	155.2	122.5	94.5	82.7	1606.5
RHmin	32	29	29	25	24	23	21	20	19	22	26	35	
n*	4.26	5.02	6.41	7.61	9.03	11.17	11.63	10.90	9.93	6.58	4.86	3.99	
N	9.80	10.82	11.90	13.22	14.24	14.80	14.54	13.62	12.46	11.24	10.12	9.50	
n/N	0.43	0.46	0.54	0.58	0.63	0.75	0.80	0.80	0.80	0.59	0.48	0.42	
Wind verosity**	0.81	0.85	0.78	0.81	0.78	0.85	0.67	0.56	0.55	0.56	0.72	0.68	
ETo (Daily)	0.73	1.09	1.69	2.55	4.37	5.27	6.43	7.08	5.42	2.15	1.31	0.80	
ETo (Manthly)	22.6	30.5	52.3	76.5	135.4	158.0	199.3	219.6	162.6	66.7	39.2	24.9	1187.5

*: Data in Tire

**: Data in Selcuk

Evapotranspiration Estimated by Turkish Blaney-Criddle Method

Station: Odemis

Items	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Temperature	6.90	7.90	10.60	14.80	20.70	24.60	26.10	27.60	22.50	16.70	12.10	8.70	
P	6.87	6.79	8.34	8.90	9.92	9.95	10.10	9.47	8.38	7.80	6.82	6.66	
P(0.46T+8.13)(=F)	77.66	79.88	108.47	132.95	175.11	193.49	203.37	197.22	154.86	123.33	93.41	80.80	1620.5
Tc	0.45	0.48	0.57	0.70	0.88	1.00	1.05	1.10	0.94	0.76	0.62	0.51	
ETo' (=Tc*F)	35.2	38.7	61.7	92.9	154.4	194.0	213.4	216.1	145.2	93.4	57.5	41.2	1343.7

Kc' experimentally obtained in Turtey which is deffient from FAO's Kc shall be applyed for the ETo'.

Evapotranspiration Estimated by Modefied PENMAN Method

Station: Odemis

Items	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
ea	9.93	10.63	12.78	16.82	24.45	30.94	33.81	36.96	27.25	19.04	14.10	11.26	
ed	7.25	7.65	8.95	11.27	14.67	16.40	16.91	19.22	15.81	12.57	10.29	8.56	
(ea-ed)	2.68	2.98	3.83	5.55	9.78	14.54	16.90	17.74	11.44	6.47	3.81	2.70	
Wind verosity*	0.81	0.85	0.78	0.81	0.78	0.85	0.67	0.56	0.55	0.56	0.72	0.68	
f(Wind verosity)	0.46	0.47	0.45	0.46	0.45	0.47	0.43	0.40	0.40	0.40	0.44	0.43	
(1-W)	0.50	0.48	0.44	0.38	0.31	0.26	0.25	0.23	0.29	0.35	0.42	0.47	
(1-W)f( )(ea-ed)	0.61	0.67	0.76	0.96	1.37	1.80	1.79	1.66	1.30	0.92	0.70	0.54	
Ra	6.90	9.00	11.80	14.50	16.40	17.20	16.70	15.30	12.80	10.00	7.50	6.10	
n**	4.26	5.02	6.41	7.61	9.03	11.17	11.63	10.90	9.93	6.58	4.86	3.99	
N	9.80	10.82	11.90	13.22	14.24	14.80	14.54	13.62	12.46	11.24	10.12	9.50	
n/N	0.43	0.46	0.54	0.58	0.63	0.75	0.80	0.80	0.80	0.59	0.48	0.42	
(1-a)(0.25+0.5n/N)	0.35	0.36	0.39	0.40	0.43	0.47	0.49	0.49	0.49	0.41	0.37	0.35	
Ra(1-a)(0.25+0.5n/N)	2.41	3.25	4.60	5.85	6.97	8.09	8.14	7.46	6.23	4.07	2.76	2.10	
f(t)	12.18	12.38	12.82	13.62	14.74	15.55	15.92	16.22	15.10	13.94	13.12	12.51	
f(ed)	0.22	0.22	0.21	0.19	0.17	0.16	0.16	0.15	0.17	0.18	0.20	0.21	
f(n/N)	0.49	0.52	0.58	0.62	0.67	0.78	0.82	0.82	0.82	0.63	0.53	0.48	
f(t)f(ed)f(n/N)	1.33	1.40	1.56	1.62	1.70	1.96	2.08	1.96	2.04	1.61	1.39	1.26	
W( )	0.55	0.96	1.70	2.63	3.64	4.51	4.55	4.22	2.99	1.59	0.80	0.45	
ETo (Daily)	1.16	1.63	2.46	3.59	5.01	6.31	6.35	5.88	4.29	2.51	1.49	0.99	
ETo (Manthly)	36.0	45.7	76.2	107.8	155.4	189.3	196.8	182.2	128.8	77.8	44.8	30.7	1271.6

*: Data in Tire

**: Data in Selcuk

Table II-2 Comparative Results of ETo Estimated by Several Methods in Tire

(Evapotranspiration Estimated by Ovserved Pan Evaporation) *for referance*

Station: Tire

Items	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Epan (Monthly)	26.9	36.3	65	109.5	167.3	216.3	249.2	237.8	192.3	137.6	75.4	40.8	1554.4
Epan (Daily)	0.87	1.30	2.10	3.65	5.40	7.21	8.04	7.67	6.41	4.44	2.51	1.32	
RHmean	68	65	65	61	57	49	47	48	53	60	66	70	
Wind verosity	0.81	0.85	0.78	0.81	0.78	0.85	0.67	0.56	0.55	0.56	0.72	0.68	
Kp	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	
ETo (Daily)	0.69	1.04	1.68	2.56	3.78	5.05	5.63	5.37	4.49	3.11	2.01	1.05	
ETo (Monthly)	21.5	29.0	52.0	76.7	117.1	151.4	174.4	166.5	134.6	96.3	60.3	32.6	1112.5

Evapotranspiration Estimated by FAO's Blaney-Criddle Method

Station: Tire

Items	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Temperature	7.40	8.40	11.00	15.10	20.00	24.90	27.30	26.60	22.70	17.40	12.00	8.80	
P	0.23	0.25	0.27	0.29	0.31	0.32	0.32	0.30	0.28	0.25	0.23	0.22	
P(0.46T+8.13)(=F)	2.65	3.00	3.56	4.37	5.37	6.27	6.62	6.11	5.20	4.03	3.14	2.68	
Manthly Total(F)	82.2	84.0	110.4	131.2	166.5	188.0	205.2	189.4	156.0	125.0	94.2	83.1	1615.2
RHmin	33	31	32	27	22	19	18	21	20	24	29	33	
n*	4.26	5.02	6.41	7.61	9.03	11.17	11.63	10.90	9.93	6.58	4.86	3.99	
N	9.80	10.82	11.90	13.22	14.24	14.80	14.54	13.62	12.46	11.24	10.12	9.50	
n/N	0.43	0.46	0.54	0.58	0.63	0.75	0.80	0.80	0.80	0.59	0.48	0.42	
Wind verosity	0.81	0.85	0.78	0.81	0.78	0.85	0.67	0.56	0.55	0.56	0.72	0.68	
ETo (Daily)	0.79	1.15	1.74	2.59	4.25	6.16	6.67	6.87	4.72	2.24	1.30	0.81	
ETo (Manthly)	24.3	32.2	53.9	77.7	131.6	184.8	206.8	213.0	141.6	69.3	38.9	25.2	1199.3

*: Data in Selcuk

Evapotranspiration Estimated by Turkish Blaney-Criddle Method

Station: Tire

Items	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Temperature	7.40	8.40	11.00	15.10	20.00	24.90	27.30	26.60	22.70	17.40	12.00	8.80	
P	6.87	6.79	8.34	8.90	9.92	9.95	10.10	9.47	8.38	7.80	6.82	6.66	
P(0.46T+8.13)(=F)	79.24	81.41	110.00	134.18	171.91	194.86	208.95	192.87	155.63	125.85	93.09	81.11	
Manthly Total(F)	0.47	0.50	0.58	0.71	0.86	1.01	1.09	1.06	0.94	0.78	0.61	0.51	
ETo' (=F*Tc)	37.2	40.8	63.9	95.0	147.8	197.2	227.0	205.3	146.9	98.1	57.0	41.6	1357.7

Kc' experimentally obtained in Turkey which is deffieot from FAO's Kc shall be applyed for the ETo'.

Evapotranspiration Estimated by Modified PENMAN Method

Station: Tire

Items	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
ea	10.28	11.02	13.10	17.12	23.40	31.51	36.33	34.86	26.74	19.88	14.00	11.34	
ed	6.99	7.16	8.52	10.44	13.34	15.44	17.08	16.73	14.17	11.93	9.24	7.94	
(ea-ed)	3.29	3.86	4.59	6.68	10.06	16.07	19.25	18.13	12.57	7.95	4.76	3.40	
Wind verosity	0.81	0.85	0.78	0.81	0.78	0.85	0.67	0.55	0.55	0.56	0.72	0.68	
f(Wind verosity)	0.46	0.47	0.45	0.46	0.45	0.47	0.43	0.40	0.40	0.40	0.44	0.43	
(1-W)	0.49	0.47	0.44	0.37	0.32	0.26	0.24	0.24	0.29	0.35	0.42	0.47	
(1-W)(Xea-ed)	0.74	0.86	0.90	1.15	1.46	1.96	1.95	1.77	1.44	1.10	0.88	0.68	
Ra	6.90	9.00	11.80	14.50	16.40	17.20	16.70	15.30	12.80	10.00	7.50	6.10	
n*	4.26	5.02	6.41	7.61	9.03	11.17	11.63	10.90	9.93	6.58	4.86	3.99	
N	9.80	10.82	11.90	13.22	14.24	14.80	14.54	13.62	12.46	11.24	10.12	9.50	
n/N	0.43	0.46	0.54	0.58	0.63	0.75	0.80	0.80	0.80	0.59	0.48	0.42	
(1-a)(0.25+0.5n/N)	0.35	0.36	0.39	0.40	0.43	0.47	0.49	0.49	0.49	0.41	0.37	0.35	
Ra(1-a)(0.25+0.5n/N)	2.41	3.25	4.60	5.85	6.97	8.09	8.14	7.46	6.23	4.07	2.76	2.10	
f(t)	12.28	12.46	12.90	13.67	14.60	15.63	16.16	16.02	15.04	14.08	13.10	12.52	
f(ed)	0.22	0.22	0.21	0.20	0.18	0.17	0.16	0.16	0.17	0.19	0.21	0.22	
f(n/N)	0.49	0.52	0.58	0.62	0.67	0.78	0.82	0.82	0.82	0.63	0.53	0.48	
f(t)f(ed)f(n/N)	1.35	1.43	1.60	1.67	1.76	2.04	2.10	2.10	2.14	1.66	1.41	1.29	
W( )	0.55	0.96	1.69	2.62	3.55	4.48	4.61	4.05	2.91	1.58	0.76	0.43	
ETo (Daily)	1.28	1.81	2.60	3.76	5.00	6.41	6.56	5.82	4.35	2.68	1.64	1.11	
ETo (Manthly)	39.8	50.8	80.5	112.8	155.1	193.2	203.3	180.5	130.4	83.0	49.2	34.5	1313.3

*: Data in Selcuk

Table H-3 Comparative Results of ETo Estimated by Several Methods in Bayindir

(Evapotranspiration Estimated by Oversrved Pan Evaporation) *for referance*

Station: Bindir

Items	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Epan (Monthly)	31.4	41.4	70.1	114.6	169.5	224.1	250.1	244.5	202.9	146.6	88.9	45.4	1630.5
Epan (Daily)	1.01	1.48	2.26	3.82	5.47	7.47	8.07	7.89	6.76	4.73	2.96	1.50	
RHmean*	73	72	70	67	60	53	50	52	58	66	73	76	
Wind verosity**	0.81	0.85	0.78	0.81	0.78	0.85	0.67	0.56	0.55	0.56	0.72	0.68	
Kp	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	
ETo (Daily)	0.81	1.18	1.81	2.67	3.83	5.23	5.65	5.52	4.73	3.31	2.37	1.20	
ETo (Monthly)	25.1	33.1	56.1	80.2	118.7	156.9	175.1	171.2	142.0	102.6	71.1	37.1	1169.2

*: Data in Odemis Station

**: Data in Tire

Evapotranspiration Estimated by FAO's Blaney-Criddle Method

Station: Bindir

Items	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Temperature	8.50	9.30	11.90	15.50	20.70	25.30	27.50	27.00	23.80	18.90	13.80	9.90	
P	0.23	0.25	0.27	0.29	0.31	0.32	0.32	0.30	0.28	0.25	0.23	0.22	
P(0.46T+8.13)(=F)	2.77	3.10	3.67	4.43	5.47	6.33	6.65	6.17	5.34	4.21	3.33	2.79	
Manthly Total(F)	85.8	86.9	113.9	132.8	169.6	189.8	206.1	191.1	160.3	130.4	99.9	86.5	1653.0
RHmin*	33	31	32	27	22	19	18	21	20	24	29	33	
n**	4.26	5.02	6.41	7.61	9.03	11.17	11.63	10.90	9.93	6.58	4.86	3.99	
N	9.80	10.82	11.90	13.22	14.24	14.80	14.54	13.62	12.46	11.24	10.12	9.50	
n/N	0.43	0.46	0.54	0.58	0.63	0.75	0.80	0.80	0.80	0.59	0.48	0.42	
Wind verosity*	0.81	0.85	0.78	0.81	0.78	0.85	0.67	0.56	0.55	0.56	0.72	0.68	
ETo (Daily)	0.91	1.26	1.86	2.65	4.37	6.24	6.71	6.96	4.91	2.42	1.50	0.93	
ETo (Manthly)	28.1	35.2	57.6	79.4	135.4	187.2	208.0	215.6	147.3	74.9	44.9	28.8	1242.5

*: Data in Tire

**: Data in Selcuk

Evapotranspiration Estimated by Turkish Blaney-Criddle Method

Station: Bindir

Items	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Temperature	8.50	9.30	11.90	15.50	20.70	25.30	27.50	27.00	23.80	18.90	13.80	9.90	
P	6.87	6.79	8.34	8.90	9.92	9.95	10.10	9.47	8.38	7.80	6.82	6.66	
P(0.46T+8.13)(=F)	82.71	84.25	113.46	135.81	175.11	196.69	209.88	194.61	159.87	131.23	98.74	84.48	
Tc	0.50	0.53	0.61	0.72	0.88	1.02	1.09	1.08	0.98	0.83	0.67	0.55	
ETo' (=F*Tc)	41.6	44.5	69.1	97.9	154.4	201.5	229.3	209.6	156.3	108.4	65.9	46.2	1424.7

Kc' experimentally obtained in Turkey which is deffient from FAO's Kc shall be applyed for the ETo'.

Evapotranspiration Estimated by Modified PENMAN Method

Station: Bindir

Items	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
ea	12.30	11.74	13.91	17.60	24.45	32.27	39.90	35.70	29.46	21.86	15.88	12.22	
ed*	8.36	7.63	9.04	10.74	13.94	15.81	18.75	17.14	15.61	13.12	10.48	8.55	
(ea-ed)	3.94	4.11	4.87	6.86	10.51	16.46	21.15	18.56	13.85	8.74	5.40	3.67	
Wind verosity*	0.81	0.85	0.78	0.81	0.78	0.85	0.67	0.56	0.55	0.56	0.72	0.68	
f(Wind verosity)	0.46	0.47	0.45	0.46	0.45	0.47	0.43	0.40	0.40	0.40	0.41	0.43	
(1-W)	0.47	0.49	0.42	0.37	0.31	0.26	0.24	0.24	0.27	0.33	0.39	0.47	
(1-W)f( )(ea-ed)	0.85	0.93	0.93	1.16	1.47	1.98	2.12	1.78	1.50	1.16	0.93	0.73	
Ra	6.90	9.00	11.80	14.50	16.40	17.20	16.70	15.30	12.80	10.00	7.50	6.10	
n**	4.26	5.02	6.41	7.61	9.03	11.17	11.63	10.90	9.93	6.58	4.86	3.99	
N	9.80	10.82	11.90	13.22	14.24	14.80	14.54	13.62	12.46	11.24	10.12	9.50	
n/N	0.43	0.46	0.54	0.58	0.63	0.75	0.80	0.80	0.80	0.59	0.48	0.42	
(1-a)(0.25+0.5n/N)	0.35	0.36	0.39	0.40	0.43	0.47	0.49	0.49	0.49	0.41	0.37	0.35	
Ra(1-a)(0.25+0.5n/N)	2.42	3.25	4.60	5.85	6.97	8.09	8.14	7.46	6.23	4.07	2.76	2.10	
f(t)	12.48	12.60	13.08	13.73	14.74	15.73	16.20	16.10	15.36	14.58	13.46	12.69	
f(ed)	0.21	0.22	0.21	0.20	0.18	0.17	0.15	0.16	0.17	0.18	0.20	0.21	
f(n/N)	0.49	0.52	0.58	0.62	0.67	0.78	0.82	0.82	0.82	0.63	0.53	0.48	
f(t)f(ed)f(n/N)	1.30	1.42	1.59	1.66	1.74	2.02	1.99	2.08	2.09	1.65	1.42	1.28	
W( )	0.59	0.94	1.74	2.65	3.61	4.51	4.71	4.69	3.01	1.62	0.81	0.41	
ETo (Daily)	1.41	1.88	2.67	3.81	5.09	6.49	6.83	5.87	4.51	2.78	1.74	1.17	
Eto (Manthly)	44.7	52.5	82.7	114.2	157.7	194.7	211.6	182.0	135.4	86.1	52.3	36.3	1350.3

*: Data in Tire

**: Data in Selcuk

Table H-4(1) Present Irrigation Water Requirement in Whole Area

Present Unit Water Requirement in Each Crop

Averaged from 1957 to 1993 (Unit:mm)

	Cereals	Cotton	Tabacco	Potatoes	Watermelon	Vegetable	PotetosII	VegetableII	Other crop	Fodders	Olive	F.Fruits	Popular
Jan.	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0
Feb.	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0
Mar.	15.4	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	17.5	0.0	0.0	0.0
Apr.	58.1	0.0	5.3	9.2	0.7	5.7	0.0	0.0	0.0	50.9	1.4	0.1	0.1
May	71.0	8.4	22.5	99.1	28.2	86.6	0.0	0.0	0.0	88.1	80.0	24.2	24.2
Jun.	4.6	104.9	1.7	76.9	45.4	113.2	0.0	0.0	52.4	38.8	173.3	123.7	123.7
Jul.	0.0	169.3	0.0	0.0	5.1	38.3	28.7	52.7	144.0	80.4	189.3	164.4	164.4
Aug.	0.0	155.7	0.0	0.0	0.0	0.0	141.1	119.9	189.3	211.5	172.8	187.9	187.9
Sep.	0.0	53.4	0.0	0.0	0.0	0.0	126.8	86.9	118.0	140.6	83.6	122.5	122.5
Oct.	3.7	1.8	0.0	0.0	0.0	0.0	75.5	47.2	6.4	58.9	22.3	33.0	33.0
Nov.	3.6	0.0	0.0	0.0	0.0	0.0	22.7	7.5	0.0	8.7	0.4	0.6	0.6
Dec.	1.0	0.0	0.0	0.0	0.0	0.0	0.8	0.2	0.0	1.2	0.0	0.2	0.2
	159.1	493.4	29.8	185.2	79.4	243.9	395.6	314.4	510.1	702.6	723.2	656.7	656.7

Present Water Requirement in Whole Area

Crops	Cereals	Cotton	Tabacco	Potatoes	Watermelon	Vegetable	PotetosII	VegetableII	Other crop	Fodders	Olive	F.Fruits	Popular	Net Total	Gross Total	Total
Areal Parcentage	18.8	18.4	5.1	4.0	6.0	4.3	1.6	1.4	2.5	2.5	8.8	10.7	2.5	(mm)	0.6	(m3/s/1,000ha)
Jan.	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.14	0.24	0.001
Feb.	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.31	0.52	0.002
Mar.	2.90	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.00	3.35	5.59	0.021
Apr.	10.93	0.00	0.27	0.37	0.04	0.25	0.00	0.00	0.00	1.27	0.13	0.02	0.00	13.27	22.12	0.085
May	13.36	1.55	1.15	3.96	1.69	3.72	0.00	0.00	0.00	2.20	7.04	2.59	0.60	37.87	63.11	0.236
Jun.	0.87	19.30	0.09	3.08	2.72	4.87	0.00	0.00	1.31	0.97	15.25	13.24	3.09	64.79	107.98	0.417
Jul.	0.00	31.15	0.00	0.00	0.31	1.65	0.46	0.74	3.60	2.01	16.66	17.59	4.11	78.27	130.45	0.487
Aug.	0.00	28.65	0.00	0.00	0.00	0.00	2.26	1.68	4.73	5.29	15.21	20.11	4.70	82.61	137.69	0.514
Sep.	0.00	9.82	0.00	0.00	0.00	0.00	2.03	1.22	2.95	3.51	7.36	13.11	3.06	43.06	71.76	0.277
Oct.	0.69	0.33	0.00	0.00	0.00	0.00	1.21	0.66	0.16	1.47	1.96	3.54	0.83	10.84	18.07	0.067
Nov.	0.68	0.00	0.00	0.00	0.00	0.00	0.36	0.10	0.00	0.22	0.03	0.07	0.02	1.48	2.47	0.010
Dec.	0.19	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.03	0.00	0.02	0.00	0.25	0.42	0.002
	29.91	90.78	1.52	7.41	4.77	10.49	6.33	4.40	12.75	17.56	63.64	70.27	16.42	336.25	560.42	

Table II-4(2) Present Irrigation Water Requirement in Whole Project Area(1/7)

Crop		Cereals	Cotton	Tobacco	Potatoes	Watermelon	Vegetable	Potatosll	Veg II	Oth crop	Fodders	Olive	F.Fruits	Popular	Net Total	Gross Total
Crop Intencity(%)		18.8	18.4	5.1	4.0	6.0	4.3	1.6	1.4	2.5	2.5	8.8	10.7	2.5	(mm)	(mm)
1961	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	10.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	11.6	19.3
	Apr.	10.6	0.0	0.6	0.7	0.0	0.5	0.0	0.0	0.0	1.1	0.0	0.0	0.0	13.5	22.5
	May	15.5	1.5	2.3	4.9	2.5	4.9	0.0	0.0	0.0	2.5	10.4	5.1	1.2	50.9	84.8
	June	0.0	11.5	0.0	1.0	0.0	2.7	0.0	0.0	0.0	0.0	10.8	8.4	2.0	36.5	60.8
	July	0.0	32.0	0.0	0.0	0.3	1.8	0.5	0.8	3.7	2.1	17.1	18.1	4.2	80.7	134.4
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	12.3	0.0	0.0	0.0	0.0	2.3	1.4	3.3	3.9	8.6	14.6	3.4	49.7	82.9
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.8	0.0	1.7	2.3	4.2	1.0	11.3	18.9
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.0	0.2	0.0	0.0	0.0	0.8	1.3
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		36.2	**86.4**	**2.9**	**6.7**	**2.9**	**9.8**	**6.9**	**4.8**	**11.9**	**18.3**	**64.6**	**70.8**	**16.5**	**338.6**	**564.4**
1962	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.6	1.0
	May	19.0	4.9	1.0	3.8	2.3	3.7	0.0	0.0	0.0	3.0	5.2	2.1	0.5	45.4	75.6
	June	0.6	21.7	0.0	3.2	3.2	5.0	0.0	0.0	1.4	1.1	15.7	14.3	3.3	69.5	115.9
	July	0.0	31.4	0.0	0.0	0.2	1.7	0.5	0.8	3.6	2.0	16.8	17.7	4.1	78.8	131.3
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	8.8	0.0	0.0	0.0	0.0	2.0	1.1	2.8	3.4	6.9	12.6	2.9	40.5	67.6
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.4	0.0	1.1	0.2	1.6	0.4	4.7	7.8
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		20.1	**95.9**	**1.0**	**7.1**	**5.7**	**10.5**	**5.7**	**4.1**	**12.7**	**16.0**	**60.1**	**68.6**	**16.0**	**323.3**	**538.8**
1963	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	1.0	1.7
	Apr.	12.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	13.6	22.6
	May	3.0	0.0	0.0	2.0	0.0	1.4	0.0	0.0	0.0	0.8	1.5	0.0	0.0	8.7	14.5
	June	2.1	14.8	0.0	3.6	1.5	5.4	0.0	0.0	1.6	1.3	16.4	10.5	2.5	59.5	99.2
	July	0.0	31.6	0.0	0.0	0.3	1.8	0.5	0.8	3.7	2.1	16.9	17.9	4.2	79.6	132.7
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	12.3	0.0	0.0	0.0	0.0	2.3	1.4	3.3	3.9	8.6	14.6	3.4	49.9	83.1
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.1	0.0	0.5	0.0	0.0	0.0	1.2	1.9
	Nov.	1.7	0.0	0.0	0.0	0.0	0.0	0.9	0.4	0.0	0.8	0.0	0.0	0.0	3.7	6.2
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		19.8	**87.8**	**0.0**	**5.5**	**1.8**	**8.5**	**6.5**	**4.4**	**13.4**	**16.2**	**58.8**	**63.4**	**14.8**	**300.9**	**501.4**
1964	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5	0.8
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.8	1.3
	Apr.	20.1	0.0	1.2	1.5	0.6	1.2	0.0	0.0	0.0	2.4	0.0	0.0	0.0	26.9	44.9
	May	13.2	3.4	1.7	4.4	3.1	4.3	0.0	0.0	0.0	2.2	10.0	5.7	1.3	49.2	82.1
	June	0.0	19.5	0.0	2.8	2.5	4.5	0.0	0.0	1.1	0.8	14.7	13.1	3.1	62.0	103.3
	July	0.0	32.0	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.1	18.1	4.2	80.8	134.7
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	2.2	0.0	0.0	0.0	0.0	1.4	0.6	1.9	2.5	3.8	8.7	2.0	23.1	38.6
	Oct.	2.3	2.2	0.0	0.0	0.0	0.0	1.7	1.1	0.6	2.2	4.2	6.6	1.5	22.4	37.4
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.1	0.0	0.0	0.0	0.6	1.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		36.2	**88.4**	**2.8**	**8.6**	**6.6**	**11.9**	**6.4**	**4.3**	**12.1**	**18.3**	**65.1**	**72.5**	**16.9**	**350.1**	**583.5**
1965	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.5	0.9
	Apr.	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	2.1
	May	3.7	0.0	0.0	0.6	0.0	0.2	0.0	0.0	0.0	0.9	0.0	0.0	0.0	5.3	8.9
	June	0.0	12.5	0.0	3.0	0.2	4.8	0.0	0.0	1.3	0.9	13.3	7.1	1.7	44.9	74.8
	July	0.0	32.0	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.1	18.1	4.2	80.8	134.7
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	12.3	0.0	0.0	0.0	0.0	2.3	1.4	3.3	3.9	8.6	14.6	3.4	49.9	83.1
	Oct.	2.6	0.0	0.0	0.0	0.0	0.0	1.5	0.9	0.3	1.9	3.1	5.2	1.2	16.7	27.9
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		7.8	**85.8**	**0.0**	**3.6**	**0.7**	**6.9**	**6.6**	**4.8**	**13.4**	**15.3**	**57.5**	**65.4**	**15.3**	**283.1**	**471.8**

Table II-4(2) Present Irrigation Water Requirement in Whole Project Area(2/7)

Crop		Cereals	Cotton	Tobacco	Potatoes	Watermelon	Vegetable	Potatos II	Veg II	Oth. crop	Fodders	Olive	F.Fruits	Popular	Net Total	Gross Total
Crop Intensity(%)		18.8	18.4	5.1	4.0	6.0	4.3	1.6	1.4	2.5	2.5	8.8	10.7	2.5	(mm)	(mm)
1966	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.3
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	10.2	16.9
	May	15.6	1.6	1.2	4.6	1.8	4.2	0.0	0.0	0.0	2.5	7.3	2.4	0.6	41.7	69.5
	June	1.7	22.7	0.2	3.5	3.5	5.3	0.0	0.0	1.6	1.2	16.2	14.9	3.5	74.1	123.5
	July	0.0	32.0	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.1	18.1	4.2	80.8	134.7
	Aug.	0.0	27.6	0.0	0.0	0.0	0.0	2.2	1.6	4.6	5.1	14.7	19.5	4.6	79.8	133.0
	Sep.	0.0	5.5	0.0	0.0	0.0	0.0	1.7	0.9	2.4	2.9	5.4	10.7	2.5	31.9	53.2
	Oct.	2.4	2.3	0.0	0.0	0.0	0.0	1.7	1.1	0.5	2.3	4.3	6.6	1.5	22.8	38.0
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		28.5	**91.6**	**1.5**	**8.1**	**5.7**	**11.3**	**6.2**	**4.4**	**12.8**	**17.6**	**64.8**	**72.1**	**16.8**	**341.6**	**569.3**
1967	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.3
	Mar.	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	7.9	13.2
	Apr.	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	11.4	19.0
	May	9.8	0.0	0.3	3.5	0.0	3.1	0.0	0.0	0.0	1.7	5.9	0.0	0.0	24.3	40.6
	June	1.1	18.0	0.0	3.3	2.8	5.1	0.0	0.0	1.5	1.1	15.9	14.1	3.3	66.2	110.4
	July	0.0	32.0	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.1	18.1	4.2	80.8	134.7
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	7.8	0.0	0.0	0.0	0.0	1.9	1.1	2.7	3.3	6.5	12.0	2.8	38.1	63.4
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.9	0.3	2.0	3.2	5.3	1.2	14.4	24.1
	Nov.	3.3	0.0	0.0	0.0	0.0	0.0	0.7	0.3	0.0	0.6	0.0	0.0	0.0	4.9	8.1
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		31.5	**86.9**	**0.3**	**6.9**	**3.2**	**10.1**	**7.0**	**4.8**	**13.0**	**18.3**	**63.9**	**69.9**	**16.3**	**332.0**	**553.3**
1968	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	17.3	0.0	0.8	1.2	0.1	0.9	0.0	0.0	0.0	2.2	0.0	0.0	0.0	22.5	37.5
	May	16.7	5.5	2.6	5.1	4.2	5.1	0.0	0.0	0.0	2.6	11.0	6.9	1.6	61.4	102.3
	June	1.1	22.1	0.1	3.3	3.3	5.2	0.0	0.0	1.5	1.1	15.9	14.6	3.4	71.5	119.1
	July	0.0	32.0	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.1	18.1	4.2	80.8	134.7
	Aug.	0.0	28.0	0.0	0.0	0.0	0.0	2.2	1.6	4.7	5.2	14.9	19.8	4.6	81.0	135.1
	Sep.	0.0	5.2	0.0	0.0	0.0	0.0	1.6	0.9	2.3	2.9	5.2	10.5	2.5	31.2	52.0
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.0	1.1	0.2	1.7	0.4	5.0	8.3
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		35.1	**92.8**	**3.4**	**9.6**	**8.1**	**13.0**	**5.6**	**3.8**	**12.2**	**17.3**	**64.3**	**71.5**	**16.7**	**353.6**	**589.3**
1969	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	5.4	9.1
	Apr.	13.9	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	15.8	26.3
	May	11.4	0.0	1.2	4.0	1.1	3.9	0.0	0.0	0.0	1.9	7.5	1.6	0.4	33.0	54.9
	June	0.0	18.5	0.0	3.1	2.9	4.9	0.0	0.0	1.3	1.0	15.4	13.9	3.3	64.2	107.1
	July	0.0	29.8	0.0	0.0	0.0	1.3	0.3	0.6	3.4	1.8	16.0	16.8	3.9	74.0	123.4
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	12.3	0.0	0.0	0.0	0.0	2.3	1.4	3.3	3.9	8.6	14.6	3.4	49.9	83.1
	Oct.	2.9	2.1	0.0	0.0	0.0	0.0	1.7	1.1	0.6	2.2	4.1	6.5	1.5	22.7	37.8
	Nov.	4.3	0.0	0.0	0.0	0.0	0.0	0.8	0.4	0.0	0.7	0.1	0.5	0.1	7.0	11.6
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		37.1	**91.7**	**1.3**	**7.4**	**4.0**	**10.1**	**7.4**	**5.2**	**13.4**	**19.2**	**67.2**	**74.3**	**17.4**	**355.7**	**592.8**
1970	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	Apr.	15.8	0.0	0.2	0.7	0.0	0.4	0.0	0.0	0.0	1.9	0.0	0.0	0.0	19.0	31.6
	May	13.9	0.6	1.9	4.5	2.8	4.5	0.0	0.0	0.0	2.3	8.7	4.1	0.9	44.2	73.6
	June	0.0	19.7	0.0	2.8	2.5	4.6	0.0	0.0	1.1	0.8	14.7	13.1	3.1	62.4	104.0
	July	0.0	31.8	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.0	18.0	4.2	80.2	133.6
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	11.8	0.0	0.0	0.0	0.0	2.2	1.4	3.2	3.8	8.4	14.3	3.3	48.5	80.8
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.2	0.0	0.7	0.0	0.1	0.0	1.9	3.2
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.6
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		29.7	**92.9**	**2.0**	**8.0**	**5.6**	**11.3**	**6.2**	**4.1**	**12.9**	**17.0**	**64.1**	**70.0**	**16.3**	**340.2**	**567.0**

Table II-4(2) Present Irrigation Water Requirement in Whole Project Area(3/7)

Crop		Cereals	Cotton	Tobacco	Potatoes	Watermelon	Vegetable	Potatos II	Veg II	Oth. crop	Fodders	Olive	F.Fruits	Popular	Net Total	Gross Total
Crop Intencity(%)		18.8	18.4	5.1	4.0	6.0	4.3	1.6	1.4	2.5	2.5	8.8	10.7	2.5	(mm)	(mm)
1971	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	12.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	14.0	23.4
	May	17.6	3.6	2.6	5.3	3.4	5.3	0.0	0.0	0.0	2.8	9.6	5.2	1.2	55.7	94.5
	June	0.0	21.0	0.0	3.1	2.9	4.9	0.0	0.0	1.3	1.0	15.3	13.9	3.2	66.6	111.1
	July	0.0	28.2	0.0	0.0	0.0	1.0	0.2	0.5	3.2	1.6	15.2	15.9	3.7	69.4	115.7
	Aug.	0.0	25.8	0.0	0.0	0.0	0.0	2.0	1.5	4.3	4.9	13.8	18.4	4.3	75.0	125.1
	Sep.	0.0	11.0	0.0	0.0	0.0	0.0	2.1	1.3	3.1	3.7	8.0	13.9	3.2	46.3	77.2
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.9	0.2	1.9	2.9	5.0	1.2	13.6	22.7
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		29.5	89.4	2.6	8.8	6.4	11.2	5.8	4.2	12.1	17.5	65.0	72.3	16.9	341.8	569.7
1972	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.4
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	8.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	9.8	16.3
	Apr.	11.1	0.0	0.3	0.5	0.0	0.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0	13.3	22.2
	May	13.0	0.0	1.6	4.3	1.4	4.3	0.0	0.0	0.0	2.2	8.8	3.1	0.7	39.3	65.5
	June	0.0	17.6	0.0	2.6	2.1	4.3	0.0	0.0	1.0	0.6	14.2	12.5	2.9	57.8	96.4
	July	0.0	31.7	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	16.9	17.9	4.2	80.0	133.3
	Aug	0.0	26.9	0.0	0.0	0.0	0.0	2.1	1.5	4.5	5.0	14.4	19.1	4.5	78.0	130.0
	Sep.	0.0	10.9	0.0	0.0	0.0	0.0	2.1	1.3	3.1	3.7	7.9	13.8	3.2	46.1	76.8
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.4	0.0	0.0	0.0	0.9	1.5
	Nov.	1.6	0.0	0.0	0.0	0.0	0.0	0.9	0.4	0.0	0.7	0.0	0.0	0.0	3.6	6.0
	Dec.	5.9	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.0	0.8	0.0	0.6	0.1	7.9	13.2
		40.1	87.1	2.0	7.4	3.9	10.6	6.5	4.2	12.3	18.1	62.2	67.0	15.7	336.9	561.6
1973	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	6.4	10.7
	Apr.	11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	12.3	20.4
	May	18.7	4.6	2.7	5.4	2.5	5.1	0.0	0.0	0.0	2.9	10.0	4.6	1.1	57.7	96.2
	June	0.0	19.9	0.0	2.9	2.6	4.6	0.0	0.0	1.2	0.8	14.8	13.3	3.1	63.3	105.5
	July	0.0	31.9	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.0	18.0	4.2	80.6	134.4
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	10.5	0.0	0.0	0.0	0.0	2.1	1.3	3.1	3.6	7.7	13.6	3.2	45.0	75.0
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.9	0.2	1.9	2.8	4.9	1.1	13.2	22.0
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		35.3	96.0	2.7	8.3	5.6	11.6	6.6	4.6	12.9	18.7	67.9	74.8	17.5	362.4	604.0
1974	Jan.	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	0.2
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	11.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	12.6	21.0
	May	12.7	0.0	0.9	4.3	1.4	3.9	0.0	0.0	0.0	2.1	6.7	1.7	0.4	34.1	56.9
	June	1.1	20.9	0.1	3.3	3.3	5.2	0.0	0.0	1.5	1.1	15.9	14.6	3.4	70.4	117.3
	July	0.0	32.0	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.1	18.1	4.2	80.8	134.7
	Aug	0.0	28.6	0.0	0.0	0.0	0.0	2.3	1.7	4.7	5.3	15.2	20.1	4.7	82.4	137.4
	Sep.	0.0	5.8	0.0	0.0	0.0	0.0	1.7	0.9	2.4	3.0	5.5	10.9	2.5	32.8	54.6
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.6	0.0	1.5	1.4	3.2	0.7	8.7	14.5
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		24.8	97.3	1.0	7.7	5.2	10.9	5.7	4.0	12.3	16.7	61.8	68.5	16.0	322.0	536.6
1975	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	1.4	2.3
	Apr.	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	8.0	13.3
	May	10.7	0.0	0.0	2.6	0.0	2.0	0.0	0.0	0.0	1.8	2.8	0.0	0.0	19.9	33.2
	June	0.0	13.3	0.0	2.1	1.1	3.9	0.0	0.0	0.7	0.4	13.2	8.7	2.0	45.5	75.8
	July	0.0	32.0	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.1	18.1	4.2	80.8	134.7
	Aug	0.0	28.3	0.0	0.0	0.0	0.0	2.2	1.7	4.7	5.2	15.0	19.9	4.6	81.6	136.0
	Sep.	0.0	11.0	0.0	0.0	0.0	0.0	2.1	1.3	3.1	3.7	8.0	13.9	3.2	46.3	77.2
	Oct.	1.2	1.1	0.0	0.0	0.0	0.0	1.6	1.0	0.4	2.1	3.7	5.9	1.4	18.4	30.7
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		20.3	85.7	0.0	4.7	1.5	7.7	6.5	4.8	12.7	16.3	59.8	66.4	15.5	301.9	503.1

Table H-4(2) Present Irrigation Water Requirement in Whole Project Area(4/7)

Crop		Cereals	Cotton	Tobacco	Potatoes	Watermelo	Vegetable	Potatos II	Veg II	Oth. crop	Fodders	Olive	F.Fruits	Popular	Net Total	Gross Total
Crop Intensity(%)		18.8	18.4	5.1	4.0	6.0	4.3	1.6	1.4	2.5	2.5	8.8	10.7	2.5	(mm)	(mm)
1976	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.4
	Mar.	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	10.8	17.9
	Apr.	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	3.0
	May	14.2	0.2	0.0	3.1	0.7	2.6	0.0	0.0	0.0	2.3	4.8	0.0	0.0	28.0	46.6
	June	0.0	17.9	0.0	2.4	1.9	4.2	0.0	0.0	0.9	0.6	13.9	11.4	2.7	55.9	93.1
	July	0.0	28.0	0.0	0.0	0.0	0.9	0.2	0.5	3.2	1.6	15.1	15.8	3.7	68.9	114.9
	Aug.	0.0	28.5	0.0	0.0	0.0	0.0	2.2	1.7	4.7	5.3	15.2	20.0	4.7	82.3	137.2
	Sep.	0.0	12.2	0.0	0.0	0.0	0.0	2.2	1.4	3.3	3.9	8.5	14.5	3.4	49.4	82.4
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.2	0.0	0.5	0.0	0.0	0.0	1.4	2.3
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		25.5	86.8	0.0	5.5	2.7	7.7	5.6	3.8	12.1	15.5	57.6	61.8	14.4	298.9	498.2
1977	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	5.2	8.6
	Apr.	10.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	12.0	20.0
	May	19.0	4.9	2.4	5.2	2.6	4.9	0.0	0.0	0.0	3.0	9.6	4.1	0.9	56.5	94.2
	June	0.0	17.1	0.0	2.3	1.7	4.0	0.0	0.0	0.8	0.5	13.5	11.7	2.7	54.3	90.4
	July	0.0	31.9	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.0	18.1	4.2	80.7	134.5
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	4.7	0.0	0.0	0.0	0.0	1.6	0.8	2.3	2.8	5.0	10.2	2.4	29.9	49.9
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.6	0.0	1.4	1.1	2.9	0.7	7.8	13.0
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.6	0.9
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		34.3	87.8	2.4	7.5	4.7	10.7	6.0	4.0	11.6	17.1	61.7	67.2	15.7	330.6	551.0
1978	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	5.1	8.5
	May	16.3	2.3	0.2	3.7	1.4	3.3	0.0	0.0	0.0	2.6	5.3	0.6	0.1	35.9	59.8
	June	0.3	21.3	0.0	3.2	3.1	5.0	0.0	0.0	1.4	1.0	15.5	14.1	3.3	68.1	113.6
	July	0.0	32.0	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.1	18.1	4.2	80.8	134.7
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	1.9	0.0	0.0	0.0	0.0	1.3	0.6	1.9	2.5	3.6	8.6	2.0	22.3	37.2
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.4	0.0	0.0	0.0	0.9	1.5
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.2	0.0	0.5	0.0	0.0	0.0	1.4	2.4
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		21.1	86.6	0.2	6.9	4.9	10.1	5.4	3.4	11.8	15.0	56.9	61.6	14.4	298.2	497.1
1979	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	3.1	5.2
	Apr.	13.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	14.8	24.7
	May	11.6	0.0	0.6	4.0	1.0	3.6	0.0	0.0	0.0	2.0	6.4	0.9	0.2	30.3	50.4
	June	0.1	18.8	0.0	3.1	3.0	4.9	0.0	0.0	1.3	1.0	15.4	14.0	3.3	65.1	108.5
	July	0.0	31.9	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.0	18.0	4.2	80.4	134.0
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	12.3	0.0	0.0	0.0	0.0	2.3	1.4	3.3	3.9	8.6	14.6	3.4	49.8	83.0
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.6	0.0	1.4	1.2	2.9	0.7	8.0	13.4
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		27.7	92.0	0.6	7.2	4.4	10.4	6.2	4.5	13.1	17.6	64.1	70.8	16.5	335.2	558.7
1980	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.4	0.7
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	9.9	16.5
	May	12.0	0.0	0.0	3.6	0.3	3.2	0.0	0.0	0.0	2.0	5.1	0.0	0.0	26.1	43.6
	June	0.0	17.4	0.0	2.7	2.4	4.5	0.0	0.0	1.1	0.8	14.6	12.7	3.0	59.2	98.7
	July	0.0	31.9	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.0	18.0	4.2	80.6	134.4
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	12.3	0.0	0.0	0.0	0.0	2.3	1.4	3.3	3.9	8.6	14.6	3.4	49.9	83.1
	Oct.	0.2	0.0	0.0	0.0	0.0	0.0	1.4	0.8	0.1	1.8	2.7	4.7	1.1	12.9	21.4
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		20.9	90.7	0.0	6.3	3.2	9.5	6.5	4.8	13.1	17.5	63.4	70.4	16.4	322.7	537.8

Table II-4(2) Present Irrigation Water Requirement in Whole Project Area(5/7)

Crop		Cereals	Cotton	Tobacco	Potatoes	Watermelon	Vegetable	Potatos II	Veg II	Oth. crop	Fodder	Olive	F.Fruits	Popular	Net Total	Gross Total
Crop Intensity(%)		18.8	18.4	5.1	4.0	6.0	4.3	1.6	1.4	2.5	2.5	8.8	10.7	2.5	(mm)	(mm)
1981	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.9	1.6
	Mar.	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	22.1	36.9
	Apr.	17.9	0.0	0.5	1.0	0.0	0.7	0.0	0.0	0.0	2.2	8.9	4.3	1.0	43.7	72.9
	May	13.1	1.1	1.6	4.4	2.9	4.3	0.0	0.0	0.0	2.2	8.9	4.3	1.0	43.7	72.9
	June	1.6	22.6	0.2	3.4	3.5	5.3	0.0	0.0	1.5	1.2	16.1	14.8	3.5	73.7	122.8
	July	0.0	32.0	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.1	18.1	4.2	80.8	134.7
	Aug.	0.0	28.8	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.3	20.2	4.7	83.1	138.4
	Sep.	0.0	11.3	0.0	0.0	0.0	0.0	2.2	1.3	3.2	3.7	8.1	14.0	3.3	47.1	78.5
	Oct.	3.8	2.0	0.0	0.0	0.0	0.0	1.7	1.1	0.6	2.2	4.1	6.5	1.5	23.4	39.0
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		37.0	**97.8**	**2.4**	**8.8**	**6.8**	**12.1**	**6.7**	**4.9**	**13.7**	**19.0**	**69.6**	**77.9**	**18.2**	**374.8**	**624.7**
1982	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	7.2	12.0
	May	13.4	0.0	0.0	3.3	0.5	2.9	0.0	0.0	0.0	2.2	4.5	0.0	0.0	26.8	44.7
	June	0.7	21.2	0.0	3.3	3.2	5.1	0.0	0.0	1.4	1.1	15.7	13.3	3.1	67.9	113.2
	July	0.0	27.8	0.0	0.0	0.0	0.9	0.2	0.5	3.1	1.6	15.1	15.6	3.7	68.3	113.9
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	12.3	0.0	0.0	0.0	0.0	2.3	1.4	3.3	3.9	8.6	14.6	3.4	49.9	83.1
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.1	0.0	0.5	0.0	0.0	0.0	1.3	2.1
	Nov.	0.5	0.0	0.0	0.0	0.0	0.0	0.8	0.3	0.0	0.6	0.0	0.0	0.0	2.1	3.5
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		21.0	**90.3**	**0.0**	**6.6**	**3.7**	**8.8**	**6.1**	**4.0**	**12.7**	**16.0**	**59.3**	**63.9**	**14.9**	**307.2**	**512.1**
1983	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	10.2	17.0
	Apr.	11.9	0.0	0.7	0.8	0.0	0.5	0.0	0.0	0.0	1.3	0.0	0.0	0.0	15.0	25.0
	May	15.9	1.9	2.4	4.9	2.7	4.9	0.0	0.0	0.0	2.5	10.7	5.4	1.3	52.5	87.6
	June	0.0	13.9	0.0	1.6	0.6	3.2	0.0	0.0	0.4	0.0	12.0	9.8	2.3	43.9	73.1
	July	0.0	30.1	0.0	0.0	0.0	1.4	0.4	0.7	3.5	1.9	16.1	17.0	4.0	74.8	124.7
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	11.6	0.0	0.0	0.0	0.0	2.2	1.4	3.2	3.8	8.3	14.2	3.3	48.1	80.1
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.9	0.2	1.9	2.9	4.9	1.2	13.4	22.3
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		36.6	**86.6**	**3.1**	**7.3**	**3.3**	**10.1**	**6.3**	**4.6**	**12.0**	**18.0**	**65.3**	**71.7**	**16.8**	**341.7**	**569.4**
1984	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	6.3	10.5
	Apr.	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	7.1	2.1	0.5	47.4	79.0
	May	18.5	4.5	1.1	4.5	2.1	4.1	0.0	0.0	0.0	1.6	1.3	16.4	15.2	3.6	76.7	127.8
	June	2.3	23.2	0.4	3.6	3.7	5.4	0.0	0.0	0.0	1.6	1.3	16.4	15.2	3.6	76.7	127.8
	July	0.0	30.2	0.0	0.0	0.0	1.4	0.4	0.7	3.5	1.9	16.2	17.1	4.0	75.3	125.6
	Aug.	0.0	29.0	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.7	83.6	139.3
	Sep.	0.0	12.3	0.0	0.0	0.0	0.0	2.3	1.4	3.3	3.9	8.6	14.6	3.4	49.9	83.1
	Oct.	3.7	2.5	0.0	0.0	0.0	0.0	1.7	1.1	0.6	2.3	4.3	6.7	1.6	24.6	40.9
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5
	Dec.	1.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.3	0.0	0.0	1.4	2.4
		31.0	**101.8**	**1.5**	**8.1**	**5.8**	**11.0**	**7.1**	**4.9**	**13.8**	**18.7**	**68.1**	**76.1**	**17.8**	**365.5**	**609.2**
1985	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	1.1	1.8
	Apr.	15.3	0.0	0.0	0.4	0.0	0.1	0.0	0.0	0.0	1.7	0.0	0.0	0.0	17.6	29.3
	May	13.6	0.0	1.6	4.5	2.3	4.4	0.0	0.0	0.0	2.2	7.9	3.1	0.7	40.3	67.2
	June	2.3	22.8	0.4	3.6	3.7	5.4	0.0	0.0	1.6	1.3	16.4	15.2	3.6	76.3	127.1
	July	0.0	31.5	0.0	0.0	0.3	1.7	0.5	0.8	3.6	2.1	16.8	17.8	4.2	79.3	132.1
	Aug.	0.0	29.0	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.4
	Sep.	0.0	12.1	0.0	0.0	0.0	0.0	2.2	1.4	3.3	3.8	8.5	14.5	3.4	49.2	81.9
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.7	0.0	1.5	1.7	3.6	0.8	9.6	16.0
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		31.9	**95.4**	**2.0**	**8.5**	**6.3**	**11.7**	**6.3**	**4.6**	**13.3**	**18.3**	**66.8**	**74.5**	**17.4**	**356.9**	**594.9**

Table II-4(2) Present Irrigation Water Requirement in Whole Project Area(6/7)

Crop		Cereals	Cotton	Tobacco	Potatoes	Watermelon	Vegetable	Potatos II	Veg II	Oth. crop	Fodders	Olive	F.Fruits	Popular	Net Total	Gross Total
Crop Intensity(%)		18.8	18.4	5.1	4.0	6.0	4.3	1.6	1.4	2.5	2.5	8.8	10.7	2.5	(mm)	(mm)
1986	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	7.8	12.9
	Apr.	13.8	0.0	0.6	0.7	0.0	0.4	0.0	0.0	0.0	1.5	0.0	0.0	0.0	17.1	28.5
	May	11.9	0.0	1.3	4.1	1.3	4.0	0.0	0.0	0.0	2.0	8.7	3.0	0.7	37.0	61.7
	June	0.0	18.8	0.0	3.1	2.9	4.9	0.0	0.0	1.3	1.0	15.3	13.8	3.2	64.2	107.0
	July	0.0	32.0	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.1	18.1	4.2	80.8	134.7
	Aug.	0.0	28.0	0.0	0.0	0.0	0.0	2.2	1.6	4.7	5.2	14.9	19.8	4.6	81.0	135.1
	Sep.	0.0	11.8	0.0	0.0	0.0	0.0	2.2	1.4	3.2	3.8	8.4	14.4	3.4	48.6	81.0
	Oct.	0.7	0.0	0.0	0.0	0.0	0.0	1.5	0.9	0.2	1.9	2.9	5.0	1.2	14.2	23.6
	Nov.	6.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.0	0.9	0.9	1.5	0.3	11.1	18.5
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		39.1	90.6	1.9	7.9	4.7	11.2	7.4	5.2	13.1	19.5	68.1	75.4	17.6	361.7	602.9
1987	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	3.3	5.5
	Apr.	10.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	12.0	19.9
	May	17.6	3.6	1.6	4.8	2.1	4.4	0.0	0.0	0.0	2.8	8.1	2.9	0.7	48.5	80.8
	June	0.6	21.6	0.0	3.2	3.1	5.0	0.0	0.0	1.4	1.1	15.7	14.3	3.3	69.4	115.7
	July	0.0	32.0	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.1	18.1	4.2	80.8	134.7
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	12.3	0.0	0.0	0.0	0.0	2.3	1.4	3.3	3.9	8.6	14.6	3.4	49.9	83.1
	Oct.	2.7	0.0	0.0	0.0	0.0	0.0	1.5	0.9	0.2	1.9	3.0	5.1	1.2	16.6	27.7
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		34.6	58.5	1.6	8.0	5.7	11.3	6.6	4.8	13.5	18.7	67.9	75.4	17.6	364.2	606.9
1988	Jan.	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	1.0	1.7
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	12.8	0.0	0.0	0.5	0.0	0.2	0.0	0.0	0.0	1.8	0.0	0.0	0.0	15.4	25.6
	May	14.9	0.9	2.1	4.7	2.8	4.7	0.0	0.0	0.0	2.4	8.8	4.2	1.0	46.6	77.7
	June	2.3	23.2	0.4	3.6	3.7	5.4	0.0	0.0	1.6	1.3	16.4	15.2	3.6	76.7	127.8
	July	0.0	32.0	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.1	18.1	4.2	80.8	134.7
	Aug.	0.0	26.9	0.0	0.0	0.0	0.0	2.1	1.5	4.5	5.0	14.4	19.1	4.5	78.0	130.0
	Sep.	0.0	12.3	0.0	0.0	0.0	0.0	2.3	1.4	3.3	3.9	8.6	14.6	3.4	49.8	83.0
	Oct.	0.6	0.0	0.0	0.0	0.0	0.0	1.5	0.9	0.3	1.9	3.0	5.2	1.2	14.5	24.2
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		31.0	95.3	2.5	8.9	7.0	12.2	6.4	4.7	13.4	19.0	68.3	76.4	17.8	362.8	604.7
1989	Jan.	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.6	1.0
	Feb.	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	7.0	11.7
	Mar.	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	4.0	6.6
	Apr.	18.3	0.0	1.8	1.1	0.0	0.8	0.0	0.0	0.0	2.1	1.2	0.0	0.0	25.3	42.2
	May	12.2	0.7	1.4	4.2	2.8	4.1	0.0	0.0	0.0	2.0	10.0	5.9	1.4	44.7	74.5
	June	1.7	22.7	0.2	3.5	3.5	5.3	0.0	0.0	1.6	1.2	16.2	14.9	3.5	74.3	123.9
	July	0.0	31.6	0.0	0.0	0.3	1.8	0.5	0.8	3.7	2.1	16.9	17.9	4.2	79.6	132.7
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	11.4	0.0	0.0	0.0	0.0	2.2	1.3	3.2	3.7	8.2	14.1	3.3	47.3	78.9
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.7	0.0	1.5	1.6	3.4	0.8	9.2	15.4
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		42.2	95.4	3.4	8.7	6.6	12.0	6.2	4.5	13.2	19.7	69.4	76.5	17.9	375.7	626.2
1990	Jan.	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	2.8	4.7
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	6.7	11.2
	Apr.	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	3.5	5.9
	May	18.9	4.8	0.9	3.8	2.2	3.7	0.0	0.0	0.0	2.9	6.4	2.0	0.5	46.1	76.9
	June	1.8	22.8	0.2	3.5	3.5	5.3	0.0	0.0	1.6	1.2	16.2	14.9	3.5	74.5	124.2
	July	0.0	32.0	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.1	18.1	4.2	80.8	134.7
	Aug.	0.0	28.0	0.0	0.0	0.0	0.0	2.2	1.6	4.6	5.2	14.9	19.7	4.6	81.0	135.0
	Sep.	0.0	6.5	0.0	0.0	0.0	0.0	1.8	1.0	2.5	3.1	5.8	11.2	2.6	34.5	57.5
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.9	0.3	1.9	3.1	5.2	1.2	14.2	23.7
	Nov.	1.8	0.0	0.0	0.0	0.0	0.0	0.6	0.2	0.0	0.4	0.0	0.0	0.0	3.0	5.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		33.9	94.1	1.2	7.3	6.2	10.8	6.6	4.5	12.7	18.6	63.5	71.3	16.6	347.2	578.7

Table II-4(2) Present Irrigation Water Requirement in Whole Project Area(7/7)

Crop		Cereals	Cotton	Tobacco	Potatoes	Watermelon	Vegetable	Potatos II	Veg II	Oth. crop	Fodders	Olive	F.Fruits	Popular	Net Total	Gross Total
Crop Intensity(%)		18.8	18.4	5.1	4.0	6.0	4.3	1.6	1.4	2.5	2.5	8.8	10.7	2.5	(mm)	(mm)
1991	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	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	0.1
	Mar.	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	5.8	9.6
	Apr.	12.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	13.7	22.8
	May	7.5	0.0	0.0	3.2	0.0	2.7	0.0	0.0	0.0	1.4	5.1	0.0	0.0	19.9	33.2
	June	0.8	15.5	0.0	3.3	2.6	5.1	0.0	0.0	1.4	1.1	15.7	13.0	3.0	61.5	102.5
	July	0.0	30.6	0.0	0.0	0.0	1.5	0.4	0.7	3.5	1.9	16.4	17.3	4.0	76.5	127.5
	Aug.	0.0	28.7	0.0	0.0	0.0	0.0	2.3	1.7	4.7	5.3	15.3	20.2	4.7	82.9	138.1
	Sep.	0.0	12.3	0.0	0.0	0.0	0.0	2.3	1.4	3.3	3.9	8.6	14.6	3.4	49.9	83.1
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.8	0.1	1.7	2.4	4.3	1.0	11.7	19.5
	Nov.	4.0	0.0	0.0	0.0	0.0	0.0	0.8	0.3	0.0	0.7	0.1	0.5	0.1	6.6	11.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		29.6	87.2	0.0	6.5	2.6	9.3	7.2	4.9	13.1	18.3	63.6	70.0	16.3	328.5	547.5
1992	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.9	1.5
	Apr.	12.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	14.3	23.8
	May	17.0	3.0	1.9	5.1	2.6	4.8	0.0	0.0	0.0	2.7	8.4	3.7	0.9	50.0	83.3
	June	2.3	23.2	0.4	3.6	3.7	5.4	0.0	0.0	1.6	1.3	16.4	15.2	3.6	76.7	127.8
	July	0.0	32.0	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.1	18.1	4.2	80.8	134.7
	Aug.	0.0	29.1	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.8	83.7	139.5
	Sep.	0.0	8.6	0.0	0.0	0.0	0.0	1.9	1.1	2.8	3.4	6.9	12.5	2.9	40.2	67.0
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.0	1.2	0.4	1.9	0.4	5.3	8.9
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.1	0.0	0.3	0.0	0.0	0.0	0.9	1.6
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		32.8	95.9	2.3	8.7	6.7	12.0	6.3	4.2	12.9	17.9	64.5	71.8	16.8	352.8	588.0
1993	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	2.3	3.9
	Apr.	15.8	0.0	0.0	0.5	0.0	0.2	0.0	0.0	0.0	1.8	0.0	0.0	0.0	18.4	30.6
	May	9.4	0.0	0.6	3.6	1.1	3.5	0.0	0.0	0.0	1.7	6.2	1.1	0.2	27.3	45.5
	June	2.3	18.8	0.4	3.6	3.7	5.4	0.0	0.0	1.6	1.3	16.4	15.2	3.6	72.2	120.4
	July	0.0	31.9	0.0	0.0	0.4	1.8	0.5	0.8	3.7	2.1	17.0	18.0	4.2	80.5	134.2
	Aug.	0.0	29.0	0.0	0.0	0.0	0.0	2.3	1.7	4.8	5.3	15.4	20.3	4.7	83.6	139.3
	Sep.	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.1	1.0	1.5	0.4	4.6	1.1	9.5	15.8
	Oct.	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
	Nov.	2.1	0.0	0.0	0.0	0.0	0.0	0.9	0.4	0.0	0.8	0.0	0.0	0.0	4.2	6.9
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		31.4	79.7	1.0	7.7	5.2	10.9	4.6	3.0	11.1	14.9	55.4	59.3	13.8	298.0	496.7

Figure H-4(3) Irrigation Water Requirement Calculation for Present Condition in Typical Year, 1961 (1/4)

Cotton;

Month	Mar.			Apr.			May			Jun.			Jul.			Aug.			Sep.			Oct.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
			0.40	0.41	0.42	0.42	0.48	0.56	0.65	0.74	0.82	0.86	0.87	0.83	0.77	0.67	0.56	0.47	0.38	0.33				
				0.40	0.41	0.42	0.42	0.48	0.56	0.65	0.74	0.82	0.86	0.87	0.83	0.77	0.67	0.56	0.47	0.38	0.33			
					0.40	0.41	0.42	0.42	0.48	0.56	0.65	0.74	0.82	0.86	0.87	0.83	0.77	0.67	0.56	0.47	0.38	0.33		
						0.40	0.41	0.42	0.42	0.48	0.56	0.65	0.74	0.82	0.86	0.87	0.83	0.77	0.67	0.56	0.47	0.38	0.33	
							0.40	0.41	0.42	0.42	0.48	0.56	0.65	0.74	0.82	0.86	0.87	0.83	0.77	0.67	0.56	0.47	0.38	0.33
Kc(10days)			0.40	0.41	0.41	0.41	0.43	0.46	0.51	0.57	0.65	0.73	0.79	0.82	0.83	0.80	0.74	0.66	0.57	0.48	0.43	0.39	0.36	0.33
Kc		0.40			0.41			0.47			0.65			0.81			0.73			0.49			0.36	
Area %(10days	0.0	0.0	0.20	0.40	0.60	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.60	0.40	0.20
Area %		0.07			0.60			1.00			1.00			1.00			1.00			0.93			0.40	
ETo		62			92.9			154.4			194.0			213.4			216.1			145.2			93.4	
Req.(1)		1.6			22.9			71.8			126.3			173.8			157.9			67.0			13.4	
Rainfall		8.5			56.0			18.6			71.0			0.0			0.0			0.3			23.5	
Effective rain		8.5			51.0			18.6			63.6			0.0			0.0			0.3			23.5	
K.A.R.		45.0			45.0			45.0			0.0			0.0			0.0			0.0			0.0	
Water requirement		0.0			0.0			8.2			62.7			173.8			157.9			66.7			0.0	
harvested area 18.4%		*0.0*			*0.0*			*1.5*			*11.5*			*32.0*			*29.1*			*12.3*			*0.0*	

Total 469.3 mm; *86.4 mm*

Vegetables;

Month	Jan.			Feb.			Mar.			Apr.			May			Jun.			Jul.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		0.49	0.50	0.57	0.65	0.77	0.78	0.78	0.76	0.81	0.87	0.92	0.93	0.86	0.71	0.50					
			0.49	0.50	0.57	0.66	0.77	0.78	0.78	0.76	0.81	0.87	0.92	0.93	0.85	0.71	0.50				
				0.49	0.50	0.57	0.66	0.77	0.78	0.78	0.76	0.81	0.87	0.92	0.93	0.86	0.71	0.50			
					0.49	0.50	0.57	0.66	0.77	0.78	0.78	0.76	0.81	0.87	0.92	0.93	0.86	0.71	0.50		
						0.49	0.50	0.57	0.66	0.77	0.78	0.78	0.76	0.81	0.87	0.92	0.93	0.86	0.71	0.50	
							0.49	0.50	0.57	0.66	0.77	0.78	0.78	0.76	0.81	0.87	0.92	0.93	0.86	0.71	0.50
Kc(10days)		0.49	0.49	0.52	0.55	0.60	0.63	0.68	0.72	0.76	0.80	0.82	0.85	0.86	0.85	0.80	0.79	0.75	0.69	0.61	0.50
Kc		0.49			0.56			0.67			0.79			0.85			0.78			0.60	
Area %(10days	0	0.2	0.3	0.5	0.7	0.8	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.83	0.67	0.50	0.33	0.17
Area %		0.17			0.67			1.00			1.00			1.00			0.83			0.33	
ETo		3.5			3.9			61.7			92.9			154.4			194.0			213.4	
Req.(1)		2.9			14.3			41.6			73.6			131.6			126.0			42.9	
Rainfall		120.6			9.4			8.5			56.0			18.6			71.0			0.0	
Effective rain		93.9			8.0			8.5			51.0			18.6			63.6			0.0	
K.A.R.		45.0			45.0			45.0			11.9			0.0			0.0			0.0	
Water requirement		0.0			0.0			0.0			10.7			113.0			62.3			42.9	
harvested area 4.3%		*0.0*			*0.0*			*0.0*			*0.5*			*4.9*			*2.7*			*1.8*	

Total 228.8 mm; *9.8 mm*

Watermelon;

Month	Jan.			Feb.			Mar.			Apr.			May			Jun.			Jul.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		0.4	0.4	0.4	0.4	0.4	0.48	0.52	0.57	0.64	0.65	0.59	0.48	0.42	0.41	0.42					
			0.4	0.4	0.4	0.4	0.4	0.48	0.52	0.57	0.64	0.65	0.59	0.48	0.42	0.41	0.42				
				0.4	0.4	0.4	0.4	0.4	0.48	0.52	0.57	0.64	0.65	0.59	0.48	0.42	0.41	0.42			
					0.4	0.4	0.4	0.4	0.4	0.48	0.52	0.57	0.64	0.65	0.59	0.48	0.42	0.41	0.42		
Kc(10days)		0.38	0.37	0.38	0.38	0.40	0.42	0.46	0.50	0.55	0.60	0.61	0.59	0.54	0.48	0.43	0.42	0.41	0.42		
Kc		0.38			0.39			0.46			0.59			0.53			0.42			0.42		
Area %(10days)		0.25	0.50	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.50	0.25	0.00	0.00
Area %		0.38			0.92			1.00			1.00			1.00			0.75			0.08		
ETo		3.5			3.9			61.7			92.9			154.4			194.0			213.4		
Req.(1)		5.0			13.7			28.4			54.6			82.6			61.3			7.4		
Rainfall		120.6			9.4			8.5			56.0			18.6			71.0			0.0		
Effective rain		93.9			8.0			8.5			51.0			18.6			63.6			0.0		
K.A.R.		45.0			45.0			45.0			25.1			21.5			0.0			2.4		
Water requirement		0.0			0.0			0.0			0.0			42.5			0.0			5.0		
harvested area 6.0%		*0.0*			*0.0*			*0.0*			*0.0*			*2.5*			*0.0*			*0.3*		

Total 47.5 mm; *2.9 mm*

Wheat(Cereals);

Month	Oct.			Nov.			Dec.			Jan.			Feb.			Mar.			Apr.			May			Jun.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		0.84	0.85	0.85	0.84	0.83	0.82	0.81	0.81	0.80	0.80	0.79	0.92	1.17	1.35	1.34	1.33	1.23	1.12	0.98	0.84	0.59	0.30			
			0.84	0.85	0.85	0.84	0.83	0.82	0.81	0.81	0.80	0.80	0.79	0.92	1.17	1.35	1.34	1.33	1.23	1.12	0.98	0.84	0.59	0.30			
				0.84	0.85	0.85	0.84	0.83	0.82	0.81	0.81	0.80	0.80	0.79	0.92	1.17	1.35	1.34	1.33	1.23	1.12	0.98	0.84	0.59	0.30		
					0.84	0.85	0.85	0.84	0.83	0.82	0.81	0.81	0.80	0.80	0.79	0.92	1.17	1.35	1.34	1.33	1.23	1.12	0.98	0.84	0.59	0.30	
Kc(10days)		0.84	0.84	0.85	0.84	0.84	0.83	0.82	0.82	0.81	0.80	0.80	0.83	0.92	1.06	1.20	1.30	1.31	1.25	1.16	1.04	0.88	0.68	0.58	0.45	0.30	0.00
Kc		0.84			0.84			0.82			0.80			0.93			1.27			1.15			0.71			0.25	
Area %(10days)		0.25	0.50	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.50	0.25	0.00
Area %		0.38			0.92			1.00			1.00			1.00			1.00			1.00			0.92			0.25	
ETo		93.4			57.5			41.2			35.2			38.7			61.7			92.9			154.4			194.0	
Req.(1)		29.5			44.4			34.0			28.3			36.2			78.3			107.2			101.0			12.0	
Rainfall		17.0			60.1			254.8			120.6			94.4			8.5			56.0			18.6			71.0	
Effective rain		17.0			54.5			104.0			93.9			80.2			8.5			51.0			18.6			63.6	
K.A.R.		16.0			3.5			13.5			16.0			16.0			16.0			0.0			0.0			0.0	
Water requirement		0.0			0.0			0.0			0.0			0.0			5.3			5.2			8.4			0.0	
harvested area 18.8%		*0.0*			*0.0*			*0.0*			*0.0*			*0.0*			*1.0*			*1.0*			*1.5*			*0.0*	

Total 19.4 mm; *3.6.2 mm*

Figure II-4(3) Irrigation Water Requirement Calculation for Present Condition in Typical Year, 1961 (2/4)

Fodders;

Month	Jul			Aug			Sep.			Oct.			Nov.			Dec			Jan.			Feb.			Mar		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		1.06	1.07	1.09	1.10	1.08	1.06	1.05	1.00	0.96	0.91	0.88	0.84	0.80	0.80	0.81	0.82	0.85	0.90	0.95	0.99	1.04	1.08	1.12	1.11	1.10	1.09
			1.06	1.07	1.09	1.10	1.08	1.06	1.05	1.00	0.96	0.91	0.88	0.84	0.80	0.80	0.81	0.82	0.85	0.90	0.95	0.99	1.04	1.08	1.12	1.11	1.10
				1.06	1.07	1.09	1.10	1.08	1.06	1.05	1.00	0.96	0.91	0.88	0.84	0.80	0.80	0.81	0.82	0.85	0.90	0.95	0.99	1.04	1.08	1.12	1.11
					1.06	1.07	1.09	1.10	1.08	1.06	1.05	1.00	0.96	0.91	0.88	0.84	0.80	0.80	0.81	0.82	0.85	0.90	0.95	0.99	1.04	1.08	1.12
Kc(10days)		1.06	1.07	1.07	1.08	1.08	1.08	1.07	1.05	1.02	0.98	0.94	0.90	0.86	0.83	0.81	0.84	0.82	0.85	0.88	0.92	0.97	1.01	1.06	1.09	1.10	1.11
Kc		1.06			1.08			1.07			0.98			0.86			0.84			0.88			1.01			1.10	
Area %(10days)		0.25	0.50	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Area %		0.38			0.92			1.00			1.00			1.00			1.00			1.00			1.00			1.00	
ETo		213.4			216.1			145.2			93.4			57.5			41.2			35.2			38.7			61.7	
Req.(1)		85.0			213.7			154.9			91.4			49.5			33.6			31.1			39.2			67.7	
Rainfall		0.0			0.0			0.0			17.0			60.1			254.8			120.6			94.4			8.5	
Effective rain		0.0			0.0			0.0			17.0			54.5			104.0			93.9			80.2			8.5	
K A R		0.0			0.0			0.0			0.0			0.0			0.0			0.0			0.0			0.0	
Water requirement		85.0			213.7			154.9			74.4			0.0			0.0			0.0			0.0			59.2	
harvested area 2.5%		*2.1*			*5.3*			*3.9*			*1.9*			*0.0*			*0.0*			*0.0*			*0.0*			*1.5*	

Month	Apr.			May			Jun.		
10days	1	2	3	1	2	3	1	2	3
	1.01	0.92	0.84	0.72	0.59	0.46			
	1.09	1.01	0.92	0.84	0.72	0.59	0.46		
	1.10	1.09	1.01	0.92	0.84	0.72	0.59	0.46	
	1.11	1.10	1.09	1.01	0.92	0.84	0.72	0.59	0.46
Kc(10days)	1.08	1.03	0.97	0.87	0.77	0.65	0.59	0.53	0.46
Kc		1.03			0.76			0.53	
Area %(10days	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.50	0.25
Area %		1.00			1.00			0.50	
ETo		92.9			154.4			194.0	
Req.(1)		95.2			118.1			51.2	
Rainfall		56.0			18.6			71.0	
Effective rain		51.0			18.6			63.6	
K A R		0.0			0.0			0.0	
Water requirement		44.2			99.5			0.0	
harvested area 2.5%		*1.1*			*2.5*			*0.0*	

Total 133.6 mm; *18.3 mm*

VegetableII;

Month	Jul.			Aug			Sep			Oct.			Nov.			Dec.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		0.53	0.55	0.56	0.59	0.65	0.73	0.81	0.87	0.88	0.86	0.81	0.74	0.68				
			0.53	0.55	0.56	0.59	0.65	0.73	0.81	0.87	0.88	0.86	0.81	0.74	0.68			
				0.53	0.55	0.56	0.59	0.65	0.73	0.81	0.87	0.88	0.86	0.81	0.74	0.68		
					0.53	0.55	0.56	0.59	0.65	0.73	0.81	0.87	0.88	0.86	0.81	0.74	0.68	
Kc(10days)		0.53	0.54	0.55	0.56	0.59	0.63	0.70	0.76	0.82	0.86	0.86	0.83	0.77	0.75	0.71	0.68	
Kc		0.5			0.6			0.7			0.8			0.8			0.7	
Area %(10days	0.00	0.25	0.50	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.50	0.25	0.00
Area %		0.50			1.00			1.00			1.00			0.75			0.13	
ETo		213.4			216.1			145.2			93.4			79.4			130.2	
Req.(1)		57.2			122.2			101.3			79.0			46.6			11.3	
Rainfall		0.0			0.0			0.3			23.5			44.7			152.1	
Effective rain		0.0			0.0			0.3			23.5			41.5			102.2	
K A R		0.0			0.0			0.0			0.0			0.0			0.0	
Water requirement		57.2			122.2			101.0			55.5			5.0			0.0	
harvested area 1.4%		*0.8*			*1.7*			*1.4*			*0.8*			*0.1*			*0.0*	

Total 340.9 mm; *4.8 mm*

Potato;

Month	Jan.			Feb.			Mar.			Apr.			May			Jun.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		0.2	0.3	0.4	0.5	0.63	0.75	0.83	0.88	0.91	0.91	0.91	0.90	0.91	0.94			
			0.2	0.3	0.4	0.5	0.63	0.75	0.83	0.88	0.91	0.91	0.91	0.90	0.91	0.94		
				0.2	0.3	0.4	0.5	0.63	0.75	0.83	0.88	0.91	0.91	0.91	0.90	0.91	0.94	
					0.2	0.3	0.4	0.5	0.63	0.75	0.83	0.88	0.91	0.91	0.91	0.90	0.91	0.94
Kc(10days)		0.24	0.27	0.31	0.36	0.46	0.57	0.68	0.77	0.84	0.88	0.90	0.91	0.91	0.91	0.92	0.92	0.94
Kc		0.26			0.38			0.68			0.88			0.91			0.92	
Area %(10days	0.00	0.25	0.50	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.50	0.25
Area %		0.25			0.92			1.00			1.00			1.00			0.50	
ETo		35			39			61.7			92.9			154.4			194.0	
Req.(1)		2.3			13.4			41.7			81.4			140.3			89.7	
Rainfall		120.6			9.4			8.5			56.0			18.6			71.0	
Effective rain		9.4			8.0			8.5			51.0			18.6			63.6	
K A R		45.0			45.0			45.0			11.8			0.0			0.0	
Water requirement		0.0			0.0			0.0			18.6			121.7			26.1	
harvested area 4.0%		*0.0*			*0.0*			*0.0*			*0.7*			*4.9*			*1.0*	

Total 173.0 mm; *6.7 mm*

Figure II-4(3) Irrigation Water Requirement Calculation for Present Condition in Typical Year, 1961 (3/4)

Poteto II;

Month	Jul.			Aug.			Sep.			Oct.			Nov.			Dec.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		0.8	0.8	0.84	0.89	0.97	1.04	1.11	1.18	1.24	1.29	1.21	0.93					
			0.8	0.8	0.84	0.89	0.97	1.04	1.11	1.18	1.24	1.29	1.21	0.93				
				0.8	0.8	0.84	0.89	0.97	1.04	1.11	1.18	1.24	1.29	1.21	0.93			
					0.8	0.8	0.84	0.89	0.97	1.04	1.11	1.18	1.24	1.29	1.21	0.93		
						0.8	0.8	0.84	0.89	0.97	1.04	1.11	1.18	1.24	1.29	1.21	0.93	
Kc(10days)		0.77	0.78	0.80	0.83	0.86	0.91	0.97	1.04	1.11	1.17	1.20	1.17	1.17	1.14	1.07	0.93	
Ke		0.8			0.8			1			1.2			1.2			1.00	
Area %(10days)	0.00	0.20	0.40	0.60	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.60	0.40	0.20	0.00
Area %		0.20			0.80			1.00			1.00			0.80			0.20	
ETo		213.4			216.1			145.2			93.4			79.4			130.2	
Req.(1)		33.1			143.3			141.2			108.4			73.6			26.0	
Rainfall		0.0			0.0			0.3			23.5			44.7			152.1	
Effective rain		0.0			0.0			0.3			23.5			41.5			102.2	
K.A.R.		0.0			0.0			0.0			0.0			0.0			0.0	
Water requirement		33.1			143.3			140.9			84.9			32.1			0.0	
harvested area 1.6%		*0.5*			*2.3*			*2.3*			*1.4*			*0.5*			*0.0*	

Total 434.3 mm; *6.9 mm*

Other crop;

Month	Jun.			Jul.			Aug.			Sep.			Oct.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	0.5	0.5	0.6	0.71	0.80	0.87	0.90	0.90	0.92	0.96	0.91	0.75			
		0.5	0.5	0.6	0.71	0.80	0.87	0.90	0.90	0.92	0.96	0.91	0.75		
			0.5	0.5	0.6	0.71	0.80	0.87	0.90	0.90	0.92	0.96	0.91	0.75	
Kc(10days)	0.49	0.50	0.53	0.60	0.70	0.79	0.86	0.89	0.91	0.93	0.93	0.88	0.83	0.75	
Ke		0.50			0.70			0.89			0.91			0.79	
Area %(10days)	0.3	0.7	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.33	0.00
Area %		0.67			1.00			1.00			1.00			0.33	
ETo		194.0			213.4			216.1			145.2			93.4	
Req.(1)		65.2			148.6			191.5			132.4			24.7	
Rainfall		71.0			0.0			0.0			0.3			23.5	
Effective rain		63.6			0.0			0.0			0.3			23.5	
K.A.R.		0.0			0.0			0.0			0.0			0.0	
Water requirement		1.5			148.6			191.5			132.1			1.2	
harvested area 2.5%		*0.0*			*3.7*			*4.8*			*3.3*			*0.0*	

Total 475.0 mm; *11.9 mm*

Fresh Fruits;

Month	Jan.			Feb.			Mar.			Apr.			May			Jun.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	0.66	0.66	0.66	0.66	0.66	0.67	0.68	0.68	0.69	0.69	0.70	0.70	0.70	0.71	0.71	0.7	0.7	0.7
Kc(10days)	0.66	0.66	0.66	0.66	0.66	0.67	0.68	0.68	0.69	0.69	0.70	0.70	0.70	0.71	0.71	0.72	0.73	0.74
Ke		0.66			0.67			0.68			0.70			0.71			0.73	
Area %(10days)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Area %		1.00			1.00			1.00			1.00			1.00			1.00	
ETo		35.2			38.7			61.7			92.9			154.4			194.0	
Req.(1)		23.2			25.7			42.1			64.8			109.3			142.3	
Rainfall		120.6			94.4			8.5			56.0			18.6			71.0	
Effective rain		93.9			80.2			8.5			51.0			18.6			63.6	
K.A.R.		90.0			90.0			90.0			56.4			42.7			0.0	
Water requirement		0.0			0.0			0.0			0.0			48.0			78.6	
harvested area 10.7%		*0.0*			*0.0*			*0.0*			*0.0*			*5.1*			*8.4*	

Month	Jul.			Aug.			Sep.			Oct.			Nov.			Dec.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.76	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.4
Kc(10days)	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.76	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.4
Ke		0.8			0.9			0.9			0.67			0.45			0.38	
Area %(10days)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Area %		1.00			1.00			1.00			1.00			1.00			1.00	
ETo		213.4			216.1			145.2			93.4			57.5			41.2	
Req.(1)		168.9			190.2			136.9			62.8			26.1			15.8	
Rainfall		0.0			0.0			0.3			23.5			44.7			152.1	
Effective rain		0.0			0.0			0.3			23.5			41.5			102.2	
K.A.R.		0.0			0.0			0.0			0.0			0.0			60.1	
Water requirement		168.9			190.2			136.6			39.3			0.0			0.0	
harvested area 10.7%		*18.1*			*20.3*			*14.6*			*4.2*			*0.0*			*0.0*	

Total 661.6 mm; *70.8 mm*

Figure II-4(3) Irrigation Water Requirement Calculation for Present Condition in Typical Year, 1961 (4/4)

Olive;

Month	Jan.			Feb.			Mar.			Apr.			May			Jun.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	0.55	0.60	0.65	0.70	0.74	0.78	0.81	0.85	0.87	0.90	0.92	0.94	0.95	0.97	0.98	1	1	1
Kc(10days)	0.55	0.60	0.65	0.70	0.74	0.78	0.81	0.85	0.87	0.90	0.92	0.94	0.95	0.97	0.98	0.97	0.96	0.95
Kc		0.60			0.74			0.84			0.92			0.97			0.96	
Area %(10days)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Area %		1.00			1.00			1.00			1.00			1.00			1.00	
ETo		35.2			38.7			61.7			92.9			154.4			194.0	
Req.(1)		21.3			28.7			52.1			85.5			149.3			186.7	
Rainfall		120.6			94.4			8.5			56.0			18.6			71.0	
Effective rain		93.9			80.2			8.5			51.0			18.6			63.6	
K.A.R.		90.0			90.0			90.0			46.4			11.9			0.0	
Water requirement		0.0			0.0			0.0			0.0			118.7			123.1	
harvested area 8.8%		*0.0*			*0.0*			*0.0*			*0.0*			*10.4*			*10.8*	

Month	Jul.			Aug.			Sep.			Oct.			Nov.			Dec.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	0.9	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.58	0.53	0.48	0.44	0.40	0.36	0.34	0.32	0.31
Kc(10days)	0.9	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.58	0.53	0.48	0.44	0.40	0.36	0.34	0.32	0.31
Kc		0.9			0.8			0.7			0.53			0.40			0.32	
Area %(10days)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Area %		1.00			1.00			1.00			1.00			1.00			1.00	
ETo		213.4			216.1			145.2			93.4			57.5			41.2	
Req.(1)		193.8			175.0			98.0			49.2			22.9			13.4	
Rainfall		0.0			0.0			0.3			23.5			44.7			152.1	
Effective rain		0.0			0.0			0.3			23.5			41.5			102.2	
K.A.R.		0.0			0.0			0.0			0.0			0.0			63.3	
Water requirement		193.8			175.0			97.7			25.7			0.0			0.0	
harvested area 8.8%		*17.1*			*15.4*			*8.6*			*2.3*			*0.0*			*0.0*	

Total 734 mm; *64.6 mm*

Popular;

Month	Jan.			Feb.			Mar.			Apr.			May			Jun.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	0.66	0.66	0.66	0.66	0.66	0.67	0.68	0.68	0.69	0.69	0.70	0.70	0.70	0.71	0.71	0.7	0.7	0.7
Kc(10days)	0.66	0.66	0.66	0.66	0.66	0.67	0.68	0.68	0.69	0.69	0.70	0.70	0.70	0.71	0.71	0.72	0.73	0.74
Kc		0.66			0.67			0.68			0.70			0.71			0.73	
Area %(10days)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Area %		1.00			1.00			1.00			1.00			1.00			1.00	
ETo		35.2			38.7			61.7			92.9			154.4			194.0	
Req.(1)		23.2			25.7			42.1			64.8			109.3			142.3	
Rainfall		120.6			94.4			8.5			56.0			18.6			71.0	
Effective rain		93.9			80.2			8.5			51.0			18.6			63.6	
K.A.R.		90.0			90.0			90.0			56.4			42.7			0.0	
Water requirement		0.0			0.0			0.0			0.0			48.0			78.6	
harvested area 2.5%		*0.0*			*0.0*			*0.0*			*0.0*			*1.2*			*2.0*	

Month	Jul.			Aug.			Sep.			Oct.			Nov.			Dec.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.76	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.4
Kc(10days)	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.76	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.4
Kc		0.8			0.9			0.9			0.67			0.45			0.38	
Area %(10days)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Area %		1.00			1.00			1.00			1.00			1.00			1.00	
ETo		213.4			216.1			145.2			93.4			57.5			41.2	
Req.(1)		168.9			190.2			136.9			62.8			26.1			15.8	
Rainfall		0.0			0.0			0.3			23.5			44.7			152.1	
Effective rain		0.0			0.0			0.3			23.5			41.5			102.2	
K.A.R.		0.0			0.0			0.0			0.0			0.0			60.1	
Water requirement		168.9			190.2			136.6			39.3			0.0			0.0	
harvested area 2.5%		*4.2*			*4.8*			*3.4*			*1.0*			*0.0*			*0.0*	

Total 661.6 mm; *16.5 mm*

Table H-5 (1) Proposed Irrigation Water Requirement in Beydag Area

Proposed Unit Water Requirement in Each Crop in Beydag Area

Averaged from 1957 to 1993 (Unit:mm)

	Cotton	Vegetable	Watermelon	Cereals	Fodders	Green Leg.	Potatoes	PotetosII	Vegeta.II	F.Fruits
Jan.	0.0	0.0	0.0	0.4	2.8	0.0	0.0	0.0	0.0	0.0
Feb.	0.0	0.0	0.0	1.2	3.3	0.0	0.0	0.0	0.0	0.0
Mar.	0.0	0.0	0.0	15.4	17.5	0.0	0.0	0.0	0.0	0.0
Apr.	0.0	5.7	0.7	58.1	50.9	0.0	9.2	0.0	0.0	0.1
May	8.4	86.6	28.2	71.0	88.1	0.0	99.1	0.0	0.0	24.2
Jun.	104.9	113.2	45.4	4.6	38.8	0.0	76.9	0.0	0.0	123.7
Jul.	169.3	38.3	5.1	0.0	80.4	52.7	0.0	28.7	39.4	164.4
Aug.	155.7	0.0	0.0	0.0	211.5	119.9	0.0	141.1	127.3	187.9
Sep.	53.4	0.0	0.0	0.0	140.6	86.9	0.0	126.8	98.3	122.5
Oct.	1.8	0.0	0.0	3.7	58.9	47.2	0.0	75.5	36.3	33.0
Nov.	0.0	0.0	0.0	3.6	8.7	7.5	0.0	22.7	0.4	0.6
Dec.	0.0	0.0	0.0	1.0	1.2	0.2	0.0	0.8	0.0	0.2
	493.4	243.9	79.4	159.1	702.6	314.4	185.2	395.6	301.6	656.7

Proposed Water Requirement in Beydag Area

Total Crop Intencity: 140%

Crops	Cotton	Vegetable	Watermelon	Cereals	Fodders	Green Leg.	Potatoes	PotetosII	Vegeta.II	F.Fruits	Net Total	Gross Total	Total
Areal Parcentage	30.0	20.0	10.0	5.0	5.0	10.0	20.0	10.0	20.0	10.0	(mm)	0.78	(m3/s/1,000ha)
Jan.	0.00	0.00	0.00	0.02	0.14	0.00	0.00	0.00	0.00	0.00	0.16	0.20	0.001
Feb.	0.00	0.00	0.00	0.06	0.16	0.00	0.00	0.00	0.00	0.00	0.22	0.29	0.001
Mar.	0.00	0.00	0.00	0.77	0.87	0.00	0.00	0.00	0.00	0.00	1.65	2.11	0.008
Apr.	0.00	1.15	0.07	2.91	2.54	0.00	1.83	0.00	0.00	0.01	8.51	10.91	0.042
May	2.53	17.32	2.82	3.55	4.40	0.00	19.82	0.00	0.00	2.42	52.87	67.78	0.253
Jun.	31.46	22.64	4.54	0.23	1.94	0.00	15.38	0.00	0.00	12.37	88.57	113.55	0.438
Jul.	50.78	7.66	0.51	0.00	4.02	5.27	0.00	2.87	7.87	16.44	95.44	122.35	0.457
Aug.	46.70	0.00	0.00	0.00	10.57	11.99	0.00	14.11	25.45	18.79	127.62	163.62	0.611
Sep.	16.01	0.00	0.00	0.00	7.03	8.69	0.00	12.68	19.66	12.25	76.31	97.84	0.377
Oct.	0.54	0.00	0.00	0.18	2.94	4.72	0.00	7.55	7.26	3.30	26.50	33.97	0.127
Nov.	0.00	0.00	0.00	0.18	0.44	0.75	0.00	2.27	0.08	0.06	3.78	4.85	0.019
Dec.	0.00	0.00	0.00	0.05	0.06	0.02	0.00	0.08	0.00	0.02	0.23	0.29	0.001
	148.02	48.77	7.94	7.96	35.13	31.44	37.04	39.56	60.33	65.67	481.86	617.77	

Table II-5(2) Proposed Irrigation Water Requirement for Baydag Dam Project (1/7)

Crop		Cotton	Vegetable	Watermelon	Cereals	Fodders	Green Leg.	Potatoes	PotetoII	Vegeta II	F.Fruits	Net Total	Gross Total
Crop Intencity(%)		30.0	20.0	10.0	5.0	5.0	10.0	20.0	10.0	20.0	10.0	(mm)	(mm)
1961	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	2.7	3.0	0.0	0.0	0.0	0.0	0.0	5.7	7.2
	Apr.	0.0	2.1	0.0	2.8	2.2	0.0	3.7	0.0	0.0	0.0	10.9	13.9
	May	2.5	22.6	4.2	4.1	5.0	0.0	24.3	0.0	0.0	4.8	67.5	86.6
	June	18.8	12.5	0.0	0.0	0.0	0.0	5.2	0.0	0.0	7.9	44.3	56.8
	July	52.1	8.6	0.5	0.0	4.2	5.7	0.0	3.3	8.8	16.9	100.2	128.4
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	20.0	0.0	0.0	0.0	7.7	10.1	0.0	14.1	22.5	13.7	88.1	112.9
	Oct.	0.0	0.0	0.0	0.0	3.4	5.6	0.0	8.5	8.6	3.9	30.0	38.5
	Nov.	0.0	0.0	0.0	0.0	0.4	0.5	0.0	3.2	0.0	0.0	4.1	5.3
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		140.8	45.8	4.8	9.6	36.6	34.1	33.3	43.4	65.8	66.2	480.3	615.7
1962	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.4	0.6
	May	8.0	17.3	3.8	5.1	5.9	0.0	19.1	0.0	0.0	1.9	61.1	78.3
	June	35.3	23.5	5.3	0.2	2.1	0.0	16.2	0.0	0.0	13.4	95.9	123.0
	July	51.1	7.9	0.4	0.0	4.1	5.4	0.0	3.0	8.1	16.6	96.5	123.7
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	14.3	0.0	0.0	0.0	6.8	8.2	0.0	12.2	18.7	11.8	71.9	92.2
	Oct.	0.0	0.0	0.0	0.0	2.2	3.1	0.0	6.1	3.8	1.5	16.8	21.6
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		156.2	48.7	9.4	5.3	32.1	28.9	35.3	35.6	56.5	64.2	472.2	605.4
1963	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.2	0.5	0.0	0.0	0.0	0.0	0.0	0.7	0.9
	Apr.	0.0	0.0	0.0	3.3	2.7	0.0	0.0	0.0	0.0	0.0	5.9	7.6
	May	0.0	6.6	0.0	0.8	1.6	0.0	9.9	0.0	0.0	0.0	18.9	24.2
	June	24.1	25.0	2.5	0.6	2.5	0.0	17.8	0.0	0.0	9.8	82.3	105.5
	July	51.5	8.2	0.5	0.0	4.1	5.5	0.0	3.1	8.4	16.7	98.1	125.8
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	20.1	0.0	0.0	0.0	7.7	10.1	0.0	14.1	22.5	13.7	88.3	113.2
	Oct.	0.0	0.0	0.0	0.0	1.0	0.7	0.0	3.6	0.0	0.0	5.3	6.8
	Nov.	0.0	0.0	0.0	0.5	1.5	2.7	0.0	5.4	0.4	0.0	10.5	13.5
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		143.1	39.8	3.1	5.3	32.3	31.3	27.6	40.6	57.2	59.2	439.5	563.5
1964	Jan.	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.9	1.2
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.6	0.7
	Apr.	0.0	5.7	1.0	5.4	4.8	0.0	7.3	0.0	0.0	0.0	24.0	30.8
	May	5.6	20.1	5.2	3.5	4.4	0.0	21.9	0.0	0.0	5.3	65.9	84.5
	June	31.8	21.2	4.1	0.0	1.6	0.0	13.9	0.0	0.0	12.2	84.7	108.7
	July	52.1	8.6	0.7	0.0	4.2	5.7	0.0	3.3	8.8	16.9	100.4	128.7
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	3.5	0.0	0.0	0.0	5.0	4.6	0.0	8.6	11.5	8.2	41.4	53.0
	Oct.	3.6	0.0	0.0	0.6	4.5	7.8	0.0	10.7	13.1	6.1	46.4	59.5
	Nov.	0.0	0.0	0.0	0.0	0.2	0.2	0.0	2.9	0.0	0.0	3.3	4.3
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		144.1	55.5	11.0	9.6	36.7	30.5	43.0	39.8	59.2	67.7	497.2	637.4
1965	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.5	0.6
	Apr.	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4
	May	0.0	1.0	0.0	1.0	1.8	0.0	2.8	0.0	0.0	0.0	6.6	8.4
	June	20.3	22.5	0.4	0.0	1.9	0.0	15.2	0.0	0.0	6.6	67.0	85.9
	July	52.1	8.6	0.7	0.0	4.2	5.7	0.0	3.3	8.8	16.9	100.4	128.7
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	20.1	0.0	0.0	0.0	7.7	10.1	0.0	14.1	22.5	13.7	88.3	113.2
	Oct.	0.0	0.0	0.0	0.7	3.9	6.5	0.0	9.4	10.5	4.9	35.8	45.9
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		140.0	32.1	1.1	2.1	30.6	34.5	18.0	41.2	67.7	61.1	428.4	549.2

Table II-5(2) Proposed Irrigation Water Requirement for Baydag Dam Project (2/7)

Crop		Cotton	Vegetable	Watermelon	Cereals	Fodders	Green Leg.	Potatoes	PotetoII	Vegeta II	F.Fruits	Net Total	Gross Total
Crop Intencity(%)		30.0	20.0	10.0	5.0	5.0	10.0	20.0	10.0	20.0	10.0	(mm)	(mm)
1966	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.4
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	0.0	0.0	0.0	2.4	2.6	0.0	0.0	0.0	0.0	0.0	4.9	6.3
	May	2.6	19.6	3.0	4.1	5.0	0.0	22.9	0.0	0.0	2.2	59.5	76.3
	June	37.0	24.6	5.8	0.4	2.4	0.0	17.3	0.0	0.0	13.9	101.4	130.1
	July	52.1	8.6	0.7	0.0	4.2	5.7	0.0	3.3	8.8	16.9	100.4	128.7
	Aug.	44.9	0.0	0.0	0.0	10.3	11.4	0.0	13.5	24.3	18.2	122.6	157.2
	Sep.	9.0	0.0	0.0	0.0	5.9	6.4	0.0	10.4	15.1	10.0	56.8	72.8
	Oct.	3.7	0.0	0.0	0.6	4.5	7.8	0.0	10.8	13.2	6.2	46.8	60.0
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	1.3
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		149.4	**52.8**	**9.6**	**7.6**	**35.2**	**31.4**	**40.3**	**39.0**	**61.3**	**67.4**	**493.9**	**633.2**
1967	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.4
	Mar.	0.0	0.0	0.0	1.9	1.9	0.0	0.0	0.0	0.0	0.0	3.8	4.9
	Apr.	0.0	0.0	0.0	2.7	2.2	0.0	0.0	0.0	0.0	0.0	4.9	6.3
	May	0.0	14.3	0.0	2.6	3.5	0.0	17.7	0.0	0.0	0.0	38.1	48.9
	June	29.4	23.9	4.6	0.3	2.2	0.0	16.7	0.0	0.0	13.2	90.3	115.8
	July	52.1	8.6	0.7	0.0	4.2	5.7	0.0	3.3	8.8	16.9	100.4	128.7
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	12.8	0.0	0.0	0.0	6.5	7.7	0.0	11.7	17.7	11.2	67.6	86.6
	Oct.	0.0	0.0	0.0	0.0	3.9	6.6	0.0	9.5	10.7	5.0	35.7	45.7
	Nov.	0.0	0.0	0.0	0.9	1.1	2.0	0.0	4.7	0.0	0.0	8.6	11.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		141.7	**46.8**	**5.4**	**8.4**	**36.6**	**34.2**	**34.3**	**43.5**	**63.0**	**65.3**	**479.2**	**614.4**
1968	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	0.0	4.2	0.2	4.6	4.4	0.0	5.8	0.0	0.0	0.0	19.2	24.6
	May	8.9	23.9	7.0	4.4	5.3	0.0	25.6	0.0	0.0	6.4	81.6	104.6
	June	36.0	24.0	5.5	0.3	2.3	0.0	16.7	0.0	0.0	13.6	98.3	126.1
	July	52.1	8.6	0.7	0.0	4.2	5.7	0.0	3.3	8.8	16.9	100.4	128.7
	Aug.	45.7	0.0	0.0	0.0	10.4	11.7	0.0	13.8	24.8	18.5	124.9	160.1
	Sep.	8.5	0.0	0.0	0.0	5.8	6.3	0.0	10.3	14.8	9.8	55.5	71.1
	Oct.	0.0	0.0	0.0	0.0	2.2	3.2	0.0	6.2	4.0	1.6	17.4	22.3
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	1.7	2.1
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		151.4	**60.6**	**13.5**	**9.3**	**34.6**	**26.9**	**48.1**	**35.2**	**52.4**	**66.8**	**498.8**	**639.5**
1969	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	1.2	1.5	0.0	0.0	0.0	0.0	0.0	2.8	3.5
	Apr.	0.0	0.0	0.0	3.7	3.1	0.0	1.5	0.0	0.0	0.0	8.3	10.6
	May	0.0	18.1	1.8	3.0	3.9	0.0	20.0	0.0	0.0	1.5	48.3	61.9
	June	30.1	22.8	4.9	0.0	2.0	0.0	15.5	0.0	0.0	13.0	88.2	113.1
	July	48.5	6.2	0.0	0.0	3.6	4.5	0.0	2.1	6.4	15.7	87.1	111.6
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	20.1	0.0	0.0	0.0	7.7	10.1	0.0	14.1	22.5	13.7	88.3	113.2
	Oct.	3.4	0.0	0.0	0.8	4.5	7.7	0.0	10.6	12.9	6.1	45.9	58.9
	Nov.	0.0	0.0	0.0	1.2	1.4	2.5	0.0	5.2	0.0	0.5	10.8	13.8
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		149.5	**47.0**	**6.7**	**9.9**	**38.4**	**37.1**	**36.9**	**46.4**	**67.7**	**69.4**	**509.1**	**652.7**
1970	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1
	Apr.	0.0	1.9	0.0	4.2	3.8	0.0	3.4	0.0	0.0	0.0	13.3	17.0
	May	1.0	20.9	4.6	3.7	4.6	0.0	22.7	0.0	0.0	3.8	61.3	78.6
	June	32.0	21.3	4.2	0.0	1.6	0.0	14.0	0.0	0.0	12.3	85.4	109.5
	July	51.8	8.4	0.6	0.0	4.2	5.6	0.0	3.2	8.6	16.8	99.2	127.1
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	19.2	0.0	0.0	0.0	7.6	9.8	0.0	13.8	22.0	13.4	85.8	110.1
	Oct.	0.0	0.0	0.0	0.0	1.5	1.7	0.0	4.7	1.0	0.1	9.0	11.6
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	2.4	3.1
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		151.5	**52.4**	**9.4**	**7.9**	**34.0**	**29.4**	**40.1**	**38.5**	**57.4**	**65.4**	**486.1**	**623.2**

Table II-5(2) Proposed Irrigation Water Requirement for Baydag Dam Project (3/7)

Crop		Cotton	Vegetable	Watermelon	Cereals	Fodders	Green Leg.	Potatoes	PotetosII	Vegeta II	F.Fruits	Net Total	Gross Total
Crop Intencity(%)		30.0	20.0	10.0	5.0	5.0	10.0	20.0	10.0	20.0	10.0	(mm)	(mm)
1971	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	0.0	0.2	0.0	3.2	3.4	0.0	1.8	0.0	0.0	0.0	8.5	10.9
	May	5.8	24.8	5.7	4.7	5.5	0.0	26.6	0.0	0.0	4.9	78.0	100.0
	June	34.2	22.7	4.9	0.0	1.9	0.0	15.5	0.0	0.0	13.0	92.2	118.2
	July	45.9	4.4	0.0	0.0	3.2	3.7	0.0	1.2	4.6	14.8	77.9	99.9
	Aug.	42.0	0.0	0.0	0.0	9.8	10.4	0.0	12.5	22.3	17.2	114.3	146.6
	Sep.	17.9	0.0	0.0	0.0	7.4	9.4	0.0	13.4	21.1	13.0	82.1	105.3
	Oct.	0.0	0.0	0.0	0.0	3.8	6.3	0.0	9.3	10.2	4.7	34.3	43.9
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		145.8	52.2	10.6	7.9	35.0	29.8	43.8	36.4	58.2	67.6	487.3	624.7
1972	Jan.	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.5
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	2.3	2.5	0.0	0.0	0.0	0.0	0.0	4.8	6.2
	Apr.	0.0	1.0	0.0	3.0	2.4	0.0	2.6	0.0	0.0	0.0	8.9	11.4
	May	0.0	19.9	2.3	3.4	4.3	0.0	21.7	0.0	0.0	2.9	54.5	69.9
	June	28.7	20.1	3.6	0.0	1.3	0.0	12.8	0.0	0.0	11.7	78.1	100.2
	July	51.7	8.3	0.6	0.0	4.2	5.6	0.0	3.2	8.5	16.8	98.8	126.7
	Aug.	43.8	0.0	0.0	0.0	10.1	11.0	0.0	13.2	23.5	17.8	119.5	153.2
	Sep.	17.7	0.0	0.0	0.0	7.4	9.3	0.0	13.3	21.0	12.9	81.6	104.6
	Oct.	0.0	0.0	0.0	0.0	0.7	0.3	0.0	3.2	0.0	0.0	4.2	5.4
	Nov.	0.0	0.0	0.0	0.4	1.5	2.7	0.0	5.4	0.3	0.0	10.2	13.1
	Dec.	0.0	0.0	0.0	1.6	1.5	0.9	0.0	2.3	0.0	0.6	6.9	8.8
		142.0	49.3	6.5	10.7	36.3	29.7	37.1	40.6	53.2	62.6	468.0	599.9
1973	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	1.5	1.7	0.0	0.0	0.0	0.0	0.0	3.2	4.1
	Apr.	0.0	0.0	0.0	2.9	2.3	0.0	0.0	0.0	0.0	0.0	5.3	6.8
	May	7.5	23.8	4.2	5.0	5.8	0.0	27.1	0.0	0.0	4.3	77.8	99.7
	June	32.5	21.6	4.3	0.0	1.7	0.0	14.3	0.0	0.0	12.4	86.8	111.3
	July	52.1	8.5	0.7	0.0	4.2	5.7	0.0	3.3	8.7	16.9	100.1	128.3
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	17.1	0.0	0.0	0.0	7.2	9.1	0.0	13.1	20.5	12.7	79.7	102.2
	Oct.	0.0	0.0	0.0	0.0	3.7	6.2	0.0	9.1	9.9	4.6	33.4	42.9
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	1.5	1.9
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		156.5	53.9	9.3	9.4	37.4	33.2	41.5	41.3	65.0	69.9	517.4	663.3
1974	Jan.	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.3
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	0.0	0.0	0.0	2.9	3.0	0.0	0.3	0.0	0.0	0.0	6.3	8.1
	May	0.0	18.4	2.4	3.4	4.2	0.0	21.3	0.0	0.0	1.6	51.2	65.7
	June	34.0	24.0	5.5	0.3	2.3	0.0	16.7	0.0	0.0	13.6	96.5	123.7
	July	52.1	8.6	0.7	0.0	4.2	5.7	0.0	3.3	8.8	16.9	100.4	128.7
	Aug.	46.6	0.0	0.0	0.0	10.6	12.0	0.0	14.1	25.4	18.8	127.3	163.2
	Sep.	9.5	0.0	0.0	0.0	6.0	6.6	0.0	10.6	15.5	10.2	58.3	74.7
	Oct.	0.0	0.0	0.0	0.0	2.9	4.6	0.0	7.6	6.8	3.0	24.8	31.9
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		142.3	50.9	8.6	6.6	33.5	28.9	38.4	35.5	56.4	64.0	465.1	596.3
1975	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.3	0.6	0.0	0.0	0.0	0.0	0.0	0.9	1.1
	Apr.	0.0	0.0	0.0	1.9	1.3	0.0	0.0	0.0	0.0	0.0	3.3	4.2
	May	0.0	9.5	0.0	2.8	3.7	0.0	12.8	0.0	0.0	0.0	28.8	36.9
	June	21.8	17.9	1.8	0.0	0.7	0.0	10.7	0.0	0.0	8.1	61.1	78.3
	July	52.1	8.6	0.7	0.0	4.2	5.7	0.0	3.3	8.8	16.9	100.4	128.7
	Aug.	46.1	0.0	0.0	0.0	10.5	11.8	0.0	13.9	25.0	18.6	125.9	161.4
	Sep.	17.9	0.0	0.0	0.0	7.4	9.4	0.0	13.4	21.1	13.0	82.1	105.3
	Oct.	1.8	0.0	0.0	0.3	4.2	7.2	0.0	10.1	11.9	5.5	41.0	52.5
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		139.7	36.0	2.6	5.4	32.6	34.1	23.5	40.7	66.8	62.1	443.4	568.4

Table H-5(2) Proposed Irrigation Water Requirement for Baydag Dam Project (4/7)

Crop		Cotton	Vegetable	Watermelon	Cereals	Fodders	Green Leg.	Potatoes	PotatosII	VegetaII	F.Fruits	Net Total	Gross Total
Crop Intencity(%)		30.0	20.0	10.0	5.0	5.0	10.0	20.0	10.0	20.0	10.0	(mm)	(mm)
1976	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.7
	Mar.	0.0	0.0	0.0	2.5	2.4	0.0	0.0	0.0	0.0	0.0	5.0	6.4
	Apr.	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.6
	May	0.4	12.2	1.2	3.8	4.6	0.0	15.3	0.0	0.0	0.0	37.5	48.0
	June	29.2	19.4	3.2	0.0	1.1	0.0	12.1	0.0	0.0	10.7	75.7	97.1
	July	45.6	4.2	0.0	0.0	3.2	3.6	0.0	1.1	4.4	14.7	76.9	98.6
	Aug.	46.5	0.0	0.0	0.0	10.5	11.9	0.0	14.1	25.3	18.7	127.1	163.0
	Sep.	19.8	0.0	0.0	0.0	7.7	10.0	0.0	14.0	22.4	13.6	87.5	112.2
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	1.3	1.6
	Nov.	0.0	0.0	0.0	0.0	0.9	1.6	0.0	4.3	0.0	0.0	6.7	8.6
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		141.5	**35.8**	**4.4**	**6.8**	**31.0**	**27.1**	**27.4**	**34.7**	**52.1**	**57.7**	**418.8**	**536.9**
1977	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	1.2	1.5	0.0	0.0	0.0	0.0	0.0	2.6	3.4
	Apr.	0.0	0.0	0.0	2.9	2.3	0.0	0.0	0.0	0.0	0.0	5.2	6.6
	May	8.0	22.7	4.3	5.1	5.9	0.0	26.0	0.0	0.0	3.8	75.8	97.2
	June	27.9	18.6	2.8	0.0	0.9	0.0	11.3	0.0	0.0	10.9	72.4	92.9
	July	52.1	8.5	0.7	0.0	4.2	5.7	0.0	3.3	8.7	16.9	100.2	128.4
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	7.7	0.0	0.0	0.0	5.7	6.0	0.0	10.0	14.3	9.6	53.3	68.3
	Oct.	0.0	0.0	0.0	0.0	2.8	4.3	0.0	7.2	6.1	2.7	23.0	29.5
	Nov.	0.0	0.0	0.0	0.0	0.2	0.1	0.0	2.8	0.0	0.0	3.1	4.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		143.2	**49.8**	**7.8**	**9.1**	**34.1**	**28.3**	**37.3**	**37.7**	**55.0**	**62.8**	**465.2**	**596.4**
1978	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	0.0	0.0	0.0	1.2	1.2	0.0	0.0	0.0	0.0	0.0	2.4	3.1
	May	3.8	15.1	2.4	4.3	5.2	0.0	18.4	0.0	0.0	0.5	49.8	63.9
	June	34.8	23.1	5.1	0.1	2.0	0.0	15.9	0.0	0.0	13.2	94.1	120.7
	July	52.1	8.6	0.7	0.0	4.2	5.7	0.0	3.3	8.8	16.9	100.4	128.7
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	3.0	0.0	0.0	0.0	4.9	4.4	0.0	8.4	11.1	8.0	39.9	51.2
	Oct.	0.0	0.0	0.0	0.0	0.7	0.2	0.0	3.2	0.0	0.0	4.1	5.2
	Nov.	0.0	0.0	0.0	0.0	1.0	1.7	0.0	4.4	0.0	0.0	7.1	9.1
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		141.1	**46.8**	**8.2**	**5.6**	**30.0**	**24.3**	**34.3**	**33.6**	**45.8**	**57.6**	**427.4**	**548.0**
1979	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.7	1.0	0.0	0.0	0.0	0.0	0.0	1.7	2.1
	Apr.	0.0	0.0	0.0	3.5	2.9	0.0	0.0	0.0	0.0	0.0	6.5	8.4
	May	0.0	16.9	1.6	3.1	3.9	0.0	20.2	0.0	0.0	0.8	46.5	59.6
	June	30.7	22.9	5.0	0.0	2.0	0.0	15.7	0.0	0.0	13.1	89.4	114.6
	July	51.9	8.4	0.7	0.0	4.2	5.7	0.0	3.2	8.6	16.8	99.6	127.7
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	20.1	0.0	0.0	0.0	7.7	10.1	0.0	14.1	22.5	13.7	88.2	113.1
	Oct.	0.0	0.0	0.0	0.0	2.8	4.4	0.0	7.3	6.3	2.7	23.5	30.1
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		150.1	**48.2**	**7.3**	**7.4**	**35.3**	**32.4**	**35.9**	**39.0**	**63.3**	**66.2**	**485.0**	**621.8**
1980	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.8	1.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	0.0	0.0	0.0	2.3	2.3	0.0	0.0	0.0	0.0	0.0	4.6	5.9
	May	0.0	14.7	0.5	3.2	4.0	0.0	18.0	0.0	0.0	0.0	40.4	51.8
	June	28.4	21.0	4.0	0.0	1.5	0.0	13.7	0.0	0.0	11.8	80.5	103.3
	July	52.1	8.5	0.7	0.0	4.2	5.7	0.0	3.3	8.7	16.9	100.1	128.3
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	20.1	0.0	0.0	0.0	7.7	10.1	0.0	14.1	22.5	13.7	88.3	113.2
	Oct.	0.0	0.0	0.0	0.1	3.6	6.0	0.0	8.9	9.5	4.4	32.5	41.7
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		148.0	**44.2**	**5.3**	**5.6**	**34.9**	**34.0**	**31.7**	**40.7**	**66.7**	**65.8**	**476.7**	**611.2**

Table II-5(2) Proposed Irrigation Water Requirement for Baydag Dam Project (5/7)

Crop		Cotton	Vegetable	Watermelon	Cereals	Fodders	Green Leg.	Potatoes	Potetoell	Vegeta.II	F.Fruits	Net Total	Gross Total
Crop Intencity(%)		30.0	20.0	10.0	5.0	5.0	10.0	20.0	10.0	20.0	10.0	(mm)	(mm)
1981	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.2	0.5	0.0	0.0	0.0	0.0	0.0	0.6	0.8
	Apr.	0.0	3.3	0.0	4.8	4.2	0.0	4.8	0.0	0.0	0.0	17.0	21.8
	May	1.8	20.0	4.8	3.5	4.3	0.0	21.8	0.0	0.0	4.0	60.2	77.2
	June	36.8	24.5	5.8	0.4	2.4	0.0	17.2	0.0	0.0	13.9	100.9	129.4
	July	52.1	8.6	0.7	0.0	4.2	5.7	0.0	3.3	8.8	16.9	100.4	128.7
	Aug.	47.0	0.0	0.0	0.0	10.6	12.1	0.0	14.2	25.6	18.9	128.4	164.6
	Sep.	18.4	0.0	0.0	0.0	7.5	9.6	0.0	13.5	21.4	13.1	83.5	107.0
	Oct.	3.3	0.0	0.0	1.0	4.4	7.7	0.0	10.6	12.8	6.0	45.8	58.8
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		159.4	56.3	11.4	9.8	38.1	35.0	43.8	41.7	68.7	72.8	537.0	688.4
1982	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	0.0	0.0	0.0	1.7	1.6	0.0	0.0	0.0	0.0	0.0	3.3	4.2
	May	0.0	13.3	0.8	3.6	4.4	0.0	16.6	0.0	0.0	0.0	38.7	49.7
	June	34.5	23.5	5.3	0.2	2.1	0.0	16.3	0.0	0.0	12.4	94.3	121.0
	July	45.3	4.0	0.0	0.0	3.1	3.4	0.0	1.0	4.2	14.6	75.7	97.1
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	20.1	0.0	0.0	0.0	7.7	10.1	0.0	14.1	22.5	13.7	88.3	113.2
	Oct.	0.0	0.0	0.0	0.0	1.1	0.9	0.0	3.9	0.0	0.0	5.8	7.5
	Nov.	0.0	0.0	0.0	0.1	1.2	2.1	0.0	4.8	0.0	0.0	8.1	10.4
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		147.3	40.8	6.1	5.6	31.9	28.8	32.9	38.1	52.6	59.8	443.9	569.1
1983	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	2.4	2.6	0.0	0.0	0.0	0.0	0.0	5.0	6.4
	Apr.	0.0	2.2	0.0	3.2	2.6	0.0	3.8	0.0	0.0	0.0	11.7	15.1
	May	3.0	23.0	4.5	4.2	5.1	0.0	24.7	0.0	0.0	5.0	69.5	89.2
	June	22.7	15.1	1.1	0.0	0.0	0.0	7.8	0.0	0.0	9.2	55.9	71.7
	July	49.0	6.5	0.0	0.0	3.7	4.7	0.0	2.3	6.7	15.8	88.7	113.7
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	19.0	0.0	0.0	0.0	7.6	9.8	0.0	13.7	21.8	13.3	85.2	109.2
	Oct.	0.0	0.0	0.0	0.0	3.7	6.2	0.0	9.2	10.0	4.6	33.8	43.3
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		141.1	46.8	5.6	9.7	36.9	32.9	36.4	39.5	64.4	67.0	479.4	614.6
1984	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	0.0	0.0	0.0	1.5	1.7	0.0	0.0	0.0	0.0	0.0	3.1	4.0
	May	7.3	19.1	3.5	4.9	5.8	0.0	22.4	0.0	0.0	2.0	65.1	83.4
	June	37.9	25.2	6.1	0.6	2.6	0.0	17.9	0.0	0.0	14.2	104.5	134.0
	July	49.3	6.7	0.0	0.0	3.8	4.8	0.0	2.4	6.9	15.9	89.7	115.0
	Aug.	47.3	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.4	165.8
	Sep.	20.1	0.0	0.0	0.0	7.7	10.1	0.0	14.1	22.5	13.7	88.3	113.2
	Oct.	4.0	0.0	0.0	1.0	4.6	7.9	0.0	10.8	13.3	6.3	48.0	61.5
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	2.6
	Dec.	0.0	0.0	0.0	0.3	0.7	0.0	0.0	0.6	0.0	0.0	1.6	2.0
		165.9	51.0	9.6	8.2	37.5	35.0	40.4	44.3	68.6	71.1	531.7	681.6
1985	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.2	0.5	0.0	0.0	0.0	0.0	0.0	0.7	0.9
	Apr.	0.0	0.6	0.0	4.1	3.5	0.0	2.1	0.0	0.0	0.0	10.2	13.1
	May	0.0	20.5	3.8	3.6	4.5	0.0	22.3	0.0	0.0	2.9	57.5	73.8
	June	37.2	25.2	6.1	0.6	2.6	0.0	17.9	0.0	0.0	14.2	103.9	133.2
	July	51.4	8.1	0.5	0.0	4.1	5.5	0.0	3.1	8.3	16.6	97.4	124.9
	Aug.	47.3	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.4	166.0
	Sep.	19.7	0.0	0.0	0.0	7.7	10.0	0.0	14.0	22.2	13.5	87.0	111.6
	Oct.	0.0	0.0	0.0	0.0	3.1	4.9	0.0	7.9	7.4	3.3	26.7	34.2
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		155.6	54.3	10.4	8.5	36.5	32.6	42.3	39.2	63.8	69.7	513.0	657.6

Table II-5(2) Proposed Irrigation Water Requirement for Baydag Dam Project (6/7)

Crop		Cotton	Vegetable	Watermelon	Cereals	Fodders	Green Leg.	Potatoes	PotetosII	VegetaII	F.Fruits	Net Total	Gross Total
Crop Intencity(%)		30.0	20.0	12.0	5.0	5.0	10.0	20.0	10.0	20.0	10.0	(mm)	(mm)
1986	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	1.8	2.1	0.0	0.0	0.0	0.0	0.0	3.8	4.9
	Apr.	0.0	2.0	0.0	3.7	3.1	0.0	3.6	0.0	0.0	0.0	12.3	15.8
	May	0.0	18.7	2.2	3.2	4.0	0.0	20.5	0.0	0.0	2.8	51.4	65.9
	June	30.6	22.6	4.8	0.0	1.9	0.0	15.3	0.0	0.0	12.9	88.2	113.0
	July	52.1	8.6	0.7	0.0	4.2	5.7	0.0	3.3	8.8	16.9	100.4	128.7
	Aug.	45.7	0.0	0.0	0.0	10.4	11.7	0.0	13.8	24.8	18.5	124.9	160.1
	Sep.	19.3	0.0	0.0	0.0	7.6	9.9	0.0	13.8	22.0	13.4	86.0	110.3
	Oct.	0.0	0.0	0.0	0.2	3.7	6.3	0.0	9.2	10.1	4.6	34.1	43.7
	Nov.	0.0	0.0	0.0	1.6	1.9	3.4	0.0	6.1	1.7	1.4	16.1	20.6
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		147.8	51.9	7.8	10.4	38.9	36.9	39.4	46.3	67.4	70.5	517.2	663.1
1987	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.7	1.0	0.0	0.0	0.0	0.0	0.0	1.8	2.3
	Apr.	0.0	0.0	0.0	2.9	2.3	0.0	0.0	0.0	0.0	0.0	5.2	6.6
	May	5.8	20.6	3.5	4.7	5.5	0.0	23.9	0.0	0.0	2.7	66.7	85.6
	June	35.2	23.4	5.2	0.2	2.1	0.0	16.2	0.0	0.0	13.3	95.7	122.7
	July	52.1	8.6	0.7	0.0	4.2	5.7	0.0	3.3	8.8	16.9	100.4	128.7
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	20.1	0.0	0.0	0.0	7.7	10.1	0.0	14.1	22.5	13.7	88.3	113.2
	Oct.	0.0	0.0	0.0	0.7	3.8	6.4	0.0	9.3	10.3	4.8	35.4	45.4
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		160.7	52.6	9.5	9.2	37.5	34.5	40.1	41.1	67.6	70.4	523.1	670.6
1988	Jan.	0.0	0.0	0.0	0.1	1.1	0.0	0.0	0.0	0.0	0.0	1.2	1.6
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Apr.	0.0	1.1	0.0	3.4	3.6	0.0	2.7	0.0	0.0	0.0	10.8	13.8
	May	1.5	22.0	4.7	4.0	4.8	0.0	23.7	0.0	0.0	3.9	64.6	82.8
	June	37.9	25.2	6.1	0.6	2.6	0.0	17.9	0.0	0.0	14.2	104.5	134.0
	July	52.1	8.6	0.7	0.0	4.2	5.7	0.0	3.3	8.8	16.9	100.4	128.7
	Aug.	43.8	0.0	0.0	0.0	10.1	11.0	0.0	13.2	23.5	17.8	119.5	153.2
	Sep.	20.0	0.0	0.0	0.0	7.7	10.1	0.0	14.1	22.5	13.7	88.1	113.0
	Oct.	0.0	0.0	0.0	0.1	3.8	6.4	0.0	9.4	10.4	4.8	35.1	44.9
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		155.4	56.8	11.6	8.3	38.0	33.3	44.3	39.9	65.2	71.4	524.2	672.1
1989	Jan.	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	1.3
	Feb.	0.0	0.0	0.0	1.6	1.8	0.0	0.0	0.0	0.0	0.0	3.4	4.4
	Mar.	0.0	0.0	0.0	1.0	0.5	0.0	0.0	0.0	0.0	0.0	1.5	1.9
	Apr.	0.0	3.7	0.0	4.9	4.3	0.0	5.3	0.0	0.0	0.0	18.2	23.3
	May	1.1	19.1	4.6	3.2	4.1	0.0	20.8	0.0	0.0	5.5	58.6	75.1
	June	37.0	24.6	5.8	0.5	2.4	0.0	17.4	0.0	0.0	13.9	101.7	130.4
	July	51.5	8.2	0.5	0.0	4.1	5.5	0.0	3.1	8.4	16.7	98.1	125.8
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	18.5	0.0	0.0	0.0	7.5	9.6	0.0	13.6	21.5	13.2	83.8	107.4
	Oct.	0.0	0.0	0.0	0.0	3.0	4.8	0.0	7.7	7.1	3.2	25.9	33.2
	Nov.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		155.6	55.6	11.0	11.2	39.3	32.1	43.5	38.8	62.9	71.5	521.7	668.8
1990	Jan.	0.0	0.0	0.0	0.6	1.5	0.0	0.0	0.0	0.0	0.0	2.0	2.6
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.0	0.0	3.2	4.0
	Apr.	0.0	0.0	0.0	0.9	0.3	0.0	0.0	0.0	0.0	0.0	1.2	1.5
	May	7.9	17.2	3.7	5.0	5.9	0.0	18.9	0.0	0.0	1.9	60.5	77.5
	June	37.1	24.7	5.9	0.5	2.4	0.0	17.4	0.0	0.0	14.0	101.9	130.7
	July	52.1	8.6	0.7	0.0	4.2	5.7	0.0	3.3	8.8	16.9	100.4	128.7
	Aug.	45.7	0.0	0.0	0.0	10.4	11.7	0.0	13.8	24.8	18.5	124.8	160.0
	Sep.	10.6	0.0	0.0	0.0	6.2	6.9	0.0	10.9	16.2	10.5	61.3	78.6
	Oct.	0.0	0.0	0.0	0.0	3.9	6.5	0.0	9.5	10.6	4.9	35.4	45.3
	Nov.	0.0	0.0	0.0	0.5	0.8	1.2	0.0	3.9	0.0	0.0	6.4	8.2
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		153.4	50.4	10.3	9.0	37.1	32.1	36.4	41.4	60.3	66.6	497.0	637.2

Table H-5(2) Proposed Irrigation Water Requirement for Baydag Dam Project (7/7)

Crop		Cotton	Vegetable	Watermelon	Cereals	Fodders	Green Leg.	Potatoes	Potatos II	Vegeta II	F.Fruits	Net Total	Gross Total
Crop Intensity(%)		30.0	20.0	10.0	5.0	5.0	10.0	20.0	10.0	20.0	10.0	(mm)	(mm)
1991	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.2
	Mar.	0.0	0.0	0.0	1.3	1.6	0.0	0.0	0.0	0.0	0.0	2.9	3.7
	Apr.	0.0	0.0	0.0	3.3	2.7	0.0	0.1	0.0	0.0	0.0	6.1	7.8
	May	0.0	12.6	0.0	2.0	2.8	0.0	15.8	0.0	0.0	0.0	33.3	42.7
	June	25.2	23.6	4.3	0.2	2.2	0.0	16.4	0.0	0.0	12.2	84.0	107.7
	July	50.0	7.1	0.0	0.0	3.9	5.0	0.0	2.6	7.3	16.2	92.0	118.0
	Aug.	46.9	0.0	0.0	0.0	10.6	12.0	0.0	14.2	25.6	18.8	128.1	164.2
	Sep.	20.1	0.0	0.0	0.0	7.7	10.1	0.0	14.1	22.5	13.7	88.3	113.2
	Oct.	0.0	0.0	0.0	0.0	3.5	5.7	0.0	8.6	8.9	4.1	30.7	39.4
	Nov.	0.0	0.0	0.0	1.1	1.4	2.5	0.0	5.2	0.0	0.5	10.6	13.6
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		142.1	**43.3**	**4.3**	**7.9**	**36.5**	**35.3**	**32.3**	**44.7**	**64.3**	**65.4**	**476.2**	**610.5**
1992	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.6	0.8
	Apr.	0.0	0.0	0.0	3.4	2.8	0.0	0.0	0.0	0.0	0.0	6.2	8.0
	May	4.9	22.2	4.3	4.5	5.4	0.0	25.5	0.0	0.0	3.5	70.2	90.0
	June	37.9	25.2	6.1	0.6	2.6	0.0	17.9	0.0	0.0	14.2	101.5	134.0
	July	52.1	8.6	0.7	0.0	4.2	5.7	0.0	3.3	8.8	16.9	100.4	128.7
	Aug.	47.4	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.5	166.1
	Sep.	14.1	0.0	0.0	0.0	6.7	8.1	0.0	12.1	18.5	11.7	71.3	91.4
	Oct.	0.0	0.0	0.0	0.0	2.3	3.4	0.0	6.3	4.3	1.8	18.1	23.2
	Nov.	0.0	0.0	0.0	0.0	0.5	0.8	0.0	3.5	0.0	0.0	4.9	6.2
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		156.4	**55.9**	**11.2**	**8.7**	**35.7**	**30.3**	**43.4**	**39.6**	**57.5**	**67.1**	**505.8**	**648.5**
1993	Jan.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Feb.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mar.	0.0	0.0	0.0	0.5	0.8	0.0	0.0	0.0	0.0	0.0	1.3	1.7
	Apr.	0.0	1.1	0.0	4.2	3.6	0.0	2.6	0.0	0.0	0.0	11.5	14.8
	May	0.0	16.1	1.8	2.5	3.4	0.0	17.9	0.0	0.0	1.0	42.6	54.6
	June	30.6	25.2	6.1	0.6	2.6	0.0	17.9	0.0	0.0	14.2	97.3	124.7
	July	52.0	8.5	0.7	0.0	4.2	5.7	0.0	3.3	8.7	16.8	99.8	128.0
	Aug.	47.3	0.0	0.0	0.0	10.7	12.2	0.0	14.3	25.9	19.0	129.4	165.8
	Sep.	0.0	0.0	0.0	0.0	3.1	0.8	0.0	4.8	3.8	4.3	16.7	21.4
	Oct.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.7
	Nov.	0.0	0.0	0.0	0.5	1.6	2.9	0.0	5.6	0.7	0.0	11.4	14.6
	Dec.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		129.9	**50.9**	**8.6**	**8.4**	**29.9**	**21.5**	**38.4**	**28.5**	**39.1**	**55.4**	**410.6**	**526.4**

Figure II- 5(3) Irrigation Water Requirement Calculation for Beydag Dam Project in Typical Year, 1961 (1/3)

Cotton:

Month	Mar.			Apr.			May			Jun.			Jul.			Aug			Sep			Oct.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
			0.40	0.41	0.42	0.42	0.43	0.56	0.65	0.74	0.82	0.86	0.87	0.83	0.77	0.67	0.56	0.47	0.38	0.33				
				0.40	0.41	0.42	0.42	0.48	0.56	0.65	0.74	0.82	0.86	0.87	0.83	0.77	0.67	0.56	0.47	0.38	0.33			
					0.40	0.41	0.42	0.42	0.48	0.56	0.65	0.74	0.82	0.86	0.87	0.83	0.77	0.67	0.56	0.47	0.38	0.33		
						0.40	0.41	0.42	0.42	0.48	0.56	0.65	0.74	0.82	0.86	0.87	0.83	0.77	0.67	0.56	0.47	0.38	0.33	
							0.40	0.41	0.42	0.42	0.48	0.56	0.65	0.74	0.82	0.86	0.87	0.83	0.77	0.67	0.56	0.47	0.38	0.33
Kc(10days)			0.40	0.41	0.41	0.41	0.43	0.46	0.51	0.57	0.65	0.73	0.79	0.82	0.83	0.80	0.74	0.65	0.57	0.48	0.43	0.39	0.36	0.33
Kc		0.40			0.41			0.47			0.65			0.81			0.73			0.49			0.36	
Area %(10days	0.0	0.0	0.20	0.40	0.60	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.60	0.40	0.20
Area %		0.07			0.60			1.00			1.00			1.00			1.00			0.93			0.40	
ETo		62			92.9			154.4			194.0			213.4			216.1			145.2			93.4	
Req.(1)		1.6			22.9			71.8			126.3			173.8			157.9			67.0			13.4	
Rainfall		8.5			56.0			18.6			7.1.0			0.0			0.0			0.3			23.5	
Effective rain		8.5			51.0			18.6			63.6			0.0			0.0			0.3			23.5	
K A R		45.0			45.0			45.0			0.0			0.0			0.0			0.0			0.0	
Wate rrequirement		0.0			0.0			8.2			62.7			173.8			157.9			66.7			0.0	
harvested area 30%		*0.0*			*0.0*			*2.5*			*18.8*			*52.1*			*47.4*			*20.0*			*0.0*	

Total 469.3 mm; *140.8 mm*

Vegetables:

Month	Jan.			Feb.			Mar.			Apr.			May			Jun.			Jul.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		0.49	0.50	0.57	0.66	0.77	0.78	0.78	0.76	0.81	0.87	0.92	0.93	0.86	0.71	0.50					
			0.49	0.50	0.57	0.66	0.77	0.78	0.78	0.76	0.81	0.87	0.92	0.93	0.86	0.71	0.50				
				0.49	0.50	0.57	0.66	0.77	0.78	0.78	0.76	0.81	0.87	0.92	0.93	0.86	0.71	0.50			
					0.49	0.50	0.57	0.66	0.77	0.78	0.78	0.76	0.81	0.87	0.92	0.93	0.86	0.71	0.50		
						0.49	0.50	0.57	0.66	0.77	0.78	0.78	0.76	0.81	0.87	0.92	0.93	0.86	0.71	0.50	
							0.49	0.50	0.57	0.66	0.77	0.78	0.78	0.76	0.81	0.87	0.92	0.93	0.86	0.71	0.50
Kc(10days)		0.49	0.49	0.52	0.55	0.60	0.63	0.68	0.72	0.76	0.80	0.82	0.85	0.85	0.85	0.80	0.79	0.75	0.69	0.61	0.50
Kc		0.49			0.56			0.67			0.79			0.85			0.78			0.60		
Area %(10days	0	0.2	0.3	0.5	0.7	0.8	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.83	0.67	0.50	0.33	0.17
Area %		0.17			0.67			1.00			1.00			1.00			0.83			0.33		
ETo		35			39			61.7			92.9			154.4			194.0			213.4		
Req.(1)		2.9			14.3			41.6			73.6			131.6			126.0			42.9		
Rainfall		120.6			94			8.5			56.0			18.6			71.0			0.0		
Effective rain		93.9			80			8.5			51.0			18.6			63.6			0.0		
K A R		45.0			45.0			45.0			11.9			0.0			0.0			0.0		
Wate rrequirement		0.0			0.0			0.0			10.7			113.0			62.3			42.9		
harvested area 20%		*0.0*			*0.0*			*0.0*			*2.1*			*22.6*			*12.5*			*8.6*		

Tatal 228.8 mm; *45.8 mm*

Watermelon:

Month	Jan.			Feb.			Mar.			Apr.			May			Jun.			Jul.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		0.4	0.4	0.4	0.4	0.4	0.43	0.52	0.57	0.64	0.65	0.59	0.48	0.42	0.41	0.42					
			0.4	0.4	0.4	0.4	0.4	0.48	0.52	0.57	0.64	0.65	0.59	0.48	0.42	0.41	0.42				
				0.4	0.4	0.4	0.4	0.4	0.48	0.52	0.57	0.64	0.65	0.59	0.48	0.42	0.41	0.42			
					0.4	0.4	0.4	0.4	0.4	0.48	0.52	0.57	0.64	0.65	0.59	0.48	0.42	0.41	0.42		
Kc(10days)		0.38	0.37	0.38	0.38	0.40	0.42	0.46	0.50	0.55	0.60	0.61	0.59	0.54	0.48	0.43	0.42	0.41	0.42		
Kc		0.38			0.39			0.45			0.59			0.53			0.42			0.42		
Area %(10days)		0.25	0.50	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.50	0.25	0.00	0.00
Area %		0.38			0.92			1.00			1.00			1.00			0.75			0.08		
ETo		35			39			61.7			92.9			154.4			194.0			213.4		
Req.(1)		5.0			13.7			28.4			54.6			82.6			61.3			7.4		
Rainfall		120.6			94			8.5			56.0			18.6			71.0			0.0		
Effective rain		93.9			80			8.5			51.0			18.6			63.6			0.0		
K A R		45.0			45.0			45.0			25.1			21.5			0.0			2.4		
Wate rrequirement		0.0			0.0			0.0			0.0			42.5			0.0			5.0		
harvested area 10%		*0.0*			*0.0*			*0.0*			*0.0*			*4.2*			*0.0*			*0.5*		

Total 47.5 mm; *4.8 mm*

Wheat(Cereals):

Month	Oct.			Nov.			Dec.			Jan.			Feb.			Mar.			Apr.			May			Jun.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		0.84	0.85	0.85	0.84	0.83	0.82	0.81	0.81	0.80	0.80	0.79	0.92	1.17	1.35	1.34	1.33	1.23	1.12	0.98	0.84	0.59	0.30			
			0.84	0.85	0.85	0.84	0.83	0.82	0.81	0.81	0.80	0.80	0.79	0.92	1.17	1.35	1.34	1.33	1.23	1.12	0.98	0.84	0.59	0.30			
				0.84	0.85	0.85	0.84	0.83	0.82	0.81	0.81	0.80	0.80	0.79	0.92	1.17	1.35	1.34	1.33	1.23	1.12	0.98	0.84	0.59	0.30		
					0.84	0.85	0.85	0.84	0.83	0.82	0.81	0.81	0.80	0.80	0.79	0.92	1.17	1.35	1.34	1.33	1.23	1.12	0.98	0.84	0.59	0.30	
Kc(10days)		0.84	0.84	0.85	0.84	0.84	0.83	0.82	0.82	0.81	0.80	0.80	0.83	0.92	1.06	1.20	1.30	1.31	1.25	1.16	1.04	0.88	0.68	0.58	0.45	0.30	0.00
Kc		0.84			0.84			0.82			0.80			0.93			1.27			1.15			0.71			0.25	
Area %(10days)		0.25	0.50	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.50	0.25	0.00
Area %		0.38			0.92			1.00			1.00			1.00			1.00			1.00			0.92			0.25	
ETo		93.4			57.5			41.2			35.2			38.7			61.7			92.9			154.4			194.0	
Req.(1)		29.5			44.4			34.0			28.3			36.2			78.3			107.2			101.0			12.0	
Rainfall		17.0			60.1			25.8			120.6			94.4			8.5			56.0			18.6			71.0	
Effective rain		17.0			54.5			10.4.0			93.9			80.2			8.5			51.0			18.6			63.6	
K A R		16.0			3.5			13.5			16.0			16.0			16.0			0.0			0.0			0.0	
Wate rrequirement		0.0			0.0			0.0			0.0			0.0			53.8			56.2			82.4			0.0	
harvested area 5%		*0.0*			*0.0*			*0.0*			*0.0*			*0.0*			*2.7*			*2.8*			*4.1*			*0.0*	

Total 192.4 mm; *9.6 mm*

Figure H- 5(3) Irrigation Water Requirement Calculation for Beydag Dam Project in Typical Year, 1961 (2/3)

Fodders:

Month	Jul.			Aug.			Sep.			Oct.			Nov.			Dec.			Jan.			Feb.			Mar.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		1.06	1.07	1.09	1.10	1.08	1.06	1.05	1.00	0.96	0.91	0.88	0.84	0.80	0.80	0.81	0.82	0.85	0.90	0.95	0.99	1.04	1.08	1.12	1.11	1.10	1.09
			1.06	1.07	1.09	1.10	1.08	1.06	1.05	1.00	0.96	0.91	0.88	0.84	0.80	0.80	0.81	0.82	0.85	0.90	0.95	0.99	1.04	1.08	1.12	1.11	1.10
				1.06	1.07	1.09	1.10	1.08	1.06	1.05	1.00	0.96	0.91	0.88	0.84	0.80	0.80	0.81	0.82	0.85	0.90	0.95	0.99	1.04	1.08	1.12	1.11
					1.06	1.07	1.09	1.10	1.08	1.06	1.05	1.00	0.96	0.91	0.88	0.84	0.80	0.80	0.81	0.82	0.85	0.90	0.95	0.99	1.04	1.08	1.12
Kc(10days)		1.06	1.07	1.07	1.08	1.08	1.08	1.07	1.05	1.02	0.98	0.94	0.90	0.86	0.83	0.81	0.81	0.82	0.85	0.88	0.92	0.97	1.01	1.06	1.09	1.10	1.11
Kc		1.06			1.08			1.07			0.98			0.86			0.81			0.88			1.01			1.10	
Area %(10days)		0.25	0.50	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Area %		0.38			0.92			1.00			1.00			1.00			1.00			1.00			1.00			1.00	
ETo		213.4			216.1			145.2			93.4			57.5			41.2			35.2			38.7			61.7	
Req.(1)		85.0			213.7			154.9			91.4			49.5			33.6			31.1			39.2			67.7	
Rainfall		0.0			0.0			0.0			17.0			60.1			254.8			120.6			94.4			8.5	
Effective rain		0.0			0.0			0.0			17.0			54.5			104.0			93.9			80.2			8.5	
K A R		0.0			0.0			0.0			0.0			0.0			0.0			0.0			0.0			0.0	
Wate rrequirement		85.0			213.7			154.9			74.4			0.0			0.0			0.0			0.0			59.2	
harvested area 5%		*4.2*			*10.7*			*7.7*			*3.7*			*0.0*			*0.0*			*0.0*			*0.0*			*3.0*	

Month	Apr.			May			Jun.		
10days	1	2	3	1	2	3	1	2	3
	1.01	0.92	0.84	0.72	0.59	0.46			
	1.09	1.01	0.92	0.84	0.72	0.59	0.46		
	1.10	1.09	1.01	0.92	0.84	0.72	0.59	0.46	
	1.11	1.10	1.09	1.01	0.92	0.84	0.72	0.59	0.46
Kc(10days)	1.08	1.03	0.97	0.87	0.77	0.65	0.59	0.53	0.46
Kc		1.03			0.76			0.53	
Area %(10days	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.50	0.25
Area %		1.00			1.00			0.50	
ETo		92.9			154.4			194.0	
Req.(1)		95.2			118.1			51.2	
Rainfall		56.0			18.6			71.0	
Effective rain		51.0			18.6			63.6	
K A R		0.0			0.0			0.0	
Wate rrequirement		44.2			99.5			0.0	
harvested area 5%		*2.2*			*5.0*			*0.0*	

Total 133.6 mm; *36.5 mm*

Green Legumes:

Month	Jul.			Aug.			Sep.			Oct.			Nov.			Dec.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		0.53	0.55	0.56	0.59	0.65	0.73	0.81	0.87	0.88	0.86	0.81	0.74	0.68				
			0.53	0.55	0.56	0.59	0.65	0.73	0.81	0.87	0.88	0.86	0.81	0.74	0.68			
				0.53	0.55	0.56	0.59	0.65	0.73	0.81	0.87	0.88	0.86	0.81	0.74	0.68		
					0.53	0.55	0.56	0.59	0.65	0.73	0.81	0.87	0.88	0.86	0.81	0.74	0.68	
Kc(10days)		0.53	0.54	0.55	0.56	0.59	0.63	0.70	0.76	0.82	0.86	0.86	0.83	0.77	0.75	0.71	0.68	
Kc		0.5			0.6			0.7			0.8			0.8			0.7	
Area %(10days	0.00	0.25	0.50	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.50	0.25	0.00
Area %		0.50			1.00			1.00			1.00			0.75			0.13	
ETo		213.4			216.1			145.2			93.4			79.4			130.2	
Req.(1)		57.2			122.2			101.3			79.0			46.6			11.3	
Rainfall		0.0			0.0			0.3			23.5			44.7			152.1	
Effective rain		0.0			0.0			0.3			23.5			41.5			102.2	
K A R		0.0			0.0			0.0			0.0			0.0			0.0	
Wate rrequirement		57.2			122.2			101.0			55.5			5.0			0.0	
harvested area 5%		*5.7*			*12.2*			*10.1*			*5.6*			*0.5*			*0.0*	

Total 340.9 mm; *34.1 mm*

Potatos:

Month	Jan.			Feb.			Mar.			Apr.			May			Jun.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		0.2	0.3	0.4	0.5	0.63	0.75	0.83	0.88	0.91	0.91	0.91	0.90	0.91	0.94			
			0.2	0.3	0.4	0.5	0.63	0.75	0.83	0.88	0.91	0.91	0.91	0.90	0.91	0.94		
				0.2	0.3	0.4	0.5	0.63	0.75	0.83	0.88	0.91	0.91	0.91	0.90	0.91	0.94	
					0.2	0.3	0.4	0.5	0.63	0.75	0.83	0.88	0.91	0.91	0.91	0.90	0.91	0.94
Kc(10days)		0.24	0.27	0.31	0.36	0.46	0.57	0.68	0.77	0.84	0.88	0.90	0.91	0.91	0.91	0.92	0.92	0.94
Kc		0.26			0.38			0.68			0.88			0.91			0.92	
Area %(10days	0.00	0.25	0.50	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.50	0.25
Area %		0.25			0.92			1.00			1.00			1.00			0.50	
ETo		35			39			61.7			92.9			154.4			194.0	
Req.(1)		23			13.4			41.7			81.4			140.3			89.7	
Rainfall		120.6			94			8.5			56.0			18.6			71.0	
Effective rain		94			80			8.5			51.0			18.6			63.6	
K A R		45.0			45.0			45.0			11.8			0.0			0.0	
Wate rrequirement		0.0			0.0			0.0			18.6			121.7			26.1	
harvested area 20%		*0.0*			*0.0*			*0.0*			*3.7*			*24.3*			*5.2*	

Total 166.3 mm; *33.3 mm*

Figure II-5 (3) Irrigation Water Requirement Calculation for Beydag Dam Project in Typical Year, 1961 (3/3)

Potetos II:

Month	Jul.			Aug.			Sep.			Oct.			Nov.			Dec.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
		0.8	0.8	0.84	0.89	0.97	1.04	1.11	1.18	1.24	1.29	1.21	0.93					
			0.8	0.8	0.84	0.89	0.97	1.04	1.11	1.18	1.24	1.29	1.21	0.93				
				0.8	0.8	0.84	0.89	0.97	1.04	1.11	1.18	1.24	1.29	1.21	0.93			
					0.8	0.8	0.84	0.89	0.97	1.04	1.11	1.18	1.24	1.29	1.21	0.93		
						0.8	0.8	0.84	0.89	0.97	1.04	1.11	1.18	1.24	1.29	1.21	0.93	
Kc(10days)		0.77	0.78	0.80	0.83	0.86	0.91	0.97	1.04	1.11	1.17	1.20	1.17	1.17	1.14	1.07	0.93	
Kc		0.8			0.8			1			1.2			1.2			1.00	
Area %(10days	0.00	0.20	0.40	0.60	0.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.60	0.40	0.20	0.00
Area %		0.20			0.80			1.00			1.00			0.80			0.20	
ETo		213.4			216.1			145.2			93.4			79.4			130.2	
Req.(1)		33.1			143.3			141.2			108.4			73.6			26.0	
Rainfall		0.0			0.0			0.3			23.5			44.7			152.1	
Effective rain		0.0			0.0			0.3			23.5			41.5			102.2	
K.A.R.		0.0			0.0			0.0			0.0			0.0			0.0	
Wate requirement		33.1			143.3			140.9			84.9			32.1			0.0	
harvested area 10%		*3.3*			*14.3*			*14.1*			*8.5*			*3.2*			*0.0*	

Total 434.3 mm; *43.4 mm*

VegetablesII:

Month	Jul.			Aug.			Sep.			Oct.			Nov.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	0.37	0.44	0.56	0.66	0.74	0.78	0.80	0.81	0.78	0.71	0.60	0.47			
		0.37	0.44	0.56	0.66	0.74	0.78	0.80	0.81	0.78	0.71	0.60	0.47		
			0.37	0.44	0.56	0.66	0.74	0.78	0.80	0.81	0.78	0.71	0.60	0.47	
				0.37	0.44	0.56	0.66	0.74	0.78	0.80	0.81	0.78	0.71	0.60	0.47
Kc(10days)	0.37	0.41	0.46	0.51	0.60	0.69	0.75	0.79	0.79	0.78	0.73	0.64	0.59	0.54	0.47
Kc		0.4			0.6			0.8			0.7			0.5	
Area %(10days	0.25	0.50	0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.50	0.25
Area %		0.50			1.00			1.00			1.00			0.50	
ETo		213.4			216.1			145.2			93.4			79.4	
Req.(1)		43.9			129.5			112.7			66.7			21.2	
Rainfall		0.0			0.0			0.3			23.5			44.7	
Effective rain		0.0			0.0			0.3			23.5			41.5	
K.A.R.		0.0			0.0			0.0			0.0			0.0	
Wate requirement		43.9			129.5			112.4			43.2			0.0	
harvested area 20%		*8.8*			*25.9*			*22.5*			*8.6*			*0.0*	

Total 329.0 mm; *65.8 mm*

Fresh Fruits:

Month	Jan.			Feb.			Mar.			Apr.			May			Jun.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	0.66	0.66	0.66	0.66	0.66	0.67	0.68	0.68	0.69	0.69	0.70	0.70	0.70	0.71	0.71	0.7	0.7	0.7
Kc(10days)	0.66	0.66	0.66	0.66	0.66	0.67	0.68	0.68	0.69	0.69	0.70	0.70	0.70	0.71	0.71	0.72	0.73	0.74
Kc		0.66			0.67			0.68			0.70			0.71			0.73	
Area %(10days	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Area %		1.00			1.00			1.00			1.00			1.00			1.00	
ETo		35.2			38.7			61.7			92.9			154.4			194.0	
Req.(1)		23.2			25.7			42.1			64.8			109.3			142.3	
Rainfall		120.6			94.4			8.5			56.0			18.6			71.0	
Effective rain		93.9			80.2			8.5			51.0			18.6			63.6	
K.A.R.		90.0			90.0			90.0			56.4			42.7			0.0	
Wate requirement		0.0			0.0			0.0			0.0			48.0			78.6	
harvested area 10%		*0.0*			*0.0*			*0.0*			*0.0*			*4.8*			*7.9*	

Month	Jul.			Aug.			Sep.			Oct.			Nov.			Dec.		
10days	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.8	0.7	0.6	0.5	0.5	0.39	0.4	0.4	0.4
Kc(10days)	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.8	0.7	0.6	0.5	0.5	0.39	0.4	0.4	0.4
Kc		0.8			0.9			0.9			0.67			0.45			0.38	
Area %(10days	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Area %		1.00			1.00			1.00			1.00			1.00			1.00	
ETo		213.4			216.1			145.2			93.4			57.5			41.2	
Req.(1)		168.9			190.2			136.9			62.8			26.1			15.8	
Rainfall		0.0			0.0			0.3			23.5			44.7			152.1	
Effective rain		0.0			0.0			0.3			23.5			41.5			102.2	
K.A.R.		0.0			0.0			0.0			0.0			0.0			0.0	
Wate requirement		168.9			190.2			135.6			39.3			0.0			0.0	
harvested area 10%		*16.9*			*19.0*			*13.7*			*3.9*			*0.0*			*0.0*	

Total 661.6 mm; *66.2 mm*

Table H-6 Proposed Irrigation Water Requirement in Aktas Area

Proposed Unit Water Requirement in Each Crop in Aktas Area

Averaged from 1957 to 1993 (Unit:mm)

	Cotton	Vegetable	Watermelon	Cereals	Fodders	Green Leg.	Potatoes	PotetosII	VegetaII	F.Fruits
Jan.	0.0	0.0	0.0	0.4	2.8	0.0	0.0	0.0	0.0	0.0
Feb.	0.0	0.0	0.0	1.2	3.3	0.0	0.0	0.0	0.0	0.0
Mar.	0.0	0.0	0.0	15.4	17.5	0.0	0.0	0.0	0.0	0.0
Apr.	0.0	5.7	0.7	58.1	50.9	0.0	9.2	0.0	0.0	0.1
May	8.4	86.6	28.2	71.0	88.1	0.0	99.1	0.0	0.0	24.2
Jun.	104.9	113.2	45.4	4.6	38.8	0.0	76.9	0.0	0.0	123.7
Jul.	169.3	38.3	5.1	0.0	80.4	52.7	0.0	28.7	39.4	164.4
Aug.	155.7	0.0	0.0	0.0	211.5	119.9	0.0	141.1	127.3	187.9
Sep.	53.4	0.0	0.0	0.0	140.6	86.9	0.0	126.8	98.3	122.5
Oct.	1.8	0.0	0.0	3.7	58.9	47.2	0.0	75.5	36.3	33.0
Nov.	0.0	0.0	0.0	3.6	8.7	7.5	0.0	22.7	0.4	0.6
Dec.	0.0	0.0	0.0	1.0	1.2	0.2	0.0	0.8	0.0	0.2
	493.4	243.9	79.4	159.1	702.6	314.4	185.2	395.6	301.6	656.7

Proposed Water Requirement in Aktas Area

Total Crop Intencity: 140%

Crops	Cotton	Vegetable	Watermelon	Cereals	Fodders	Green Leg.	Potatoes	PotetosII	VegetaII	F.Fruits	Net Total	Gross Total	Total (m3/s/1,000ha)
Areal Parcentage	30.0	10.0	15.0	15.0	5.0	10.0	15.0	15.0	15.0	10.0	(mm)	0.78	
Jan.	0.00	0.00	0.00	0.06	0.14	0.00	0.00	0.00	0.00	0.00	0.20	0.25	0.001
Feb.	0.00	0.00	0.00	0.18	0.16	0.00	0.00	0.00	0.00	0.00	0.35	0.44	0.002
Mar.	0.00	0.00	0.00	2.32	0.87	0.00	0.00	0.00	0.00	0.00	3.19	4.09	0.015
Apr.	0.00	0.57	0.11	8.72	2.54	0.00	1.37	0.00	0.00	0.01	13.33	17.09	0.066
May	2.53	8.66	4.23	10.66	4.40	0.00	14.87	0.00	0.00	2.42	47.76	61.24	0.229
Jun.	31.46	11.32	6.81	0.70	1.94	0.00	11.54	0.00	0.00	12.37	76.13	97.61	0.377
Jul.	50.78	3.83	0.77	0.00	4.02	5.27	0.00	4.31	5.90	16.44	91.33	117.09	0.437
Aug.	46.70	0.00	0.00	0.00	10.57	11.99	0.00	21.16	19.09	18.79	128.32	164.51	0.614
Sep.	16.01	0.00	0.00	0.00	7.03	8.69	0.00	19.02	14.74	12.25	77.74	99.67	0.385
Oct.	0.54	0.00	0.00	0.55	2.94	4.72	0.00	11.32	5.45	3.30	28.82	36.95	0.138
Nov.	0.00	0.00	0.00	0.54	0.44	0.75	0.00	3.40	0.06	0.06	5.26	6.74	0.026
Dec.	0.00	0.00	0.00	0.15	0.06	0.02	0.00	0.12	0.00	0.02	0.37	0.47	0.002
	148.02	24.39	11.91	23.87	35.13	31.44	27.78	59.35	45.25	65.67	472.79	606.14	

Table H-7 Proposed Irrigation Water Requirement in Burgaz, Ergenli and Uladi Area

Proposed Unit Water Requirement in Burgaz and Ergenli Area

Averaged from 1957 to 1993 (Unit:mm)

	Cotton	Vegetable	Watermelon	Cereals	Fodders	Green Leg.	Potatoes	Potetos II	Vegeta.II	Olive	F.Fruits
Jan.	0.0	0.0	0.0	0.4	2.8	0.0	0.0	0.0	0.0	0.0	0.0
Feb.	0.0	0.0	0.0	1.2	3.3	0.0	0.0	0.0	0.0	0.0	0.0
Mar.	0.0	0.0	0.0	15.4	17.5	0.0	0.0	0.0	0.0	0.0	0.0
Apr.	0.0	5.7	0.7	58.1	50.9	0.0	9.2	0.0	0.0	1.4	0.1
May	8.4	86.6	28.2	71.0	88.1	0.0	99.1	0.0	0.0	80.0	24.2
Jun.	104.9	113.2	45.4	4.6	38.8	0.0	76.9	0.0	0.0	173.3	123.7
Jul.	169.3	38.3	5.1	0.0	80.4	52.7	0.0	28.7	39.4	189.3	164.4
Aug.	155.7	0.0	0.0	0.0	211.5	119.9	0.0	141.1	127.3	172.8	187.9
Sep.	53.4	0.0	0.0	0.0	140.6	86.9	0.0	126.8	98.3	83.6	122.5
Oct.	1.8	0.0	0.0	3.7	58.9	47.2	0.0	75.5	36.3	22.3	33.0
Nov.	0.0	0.0	0.0	3.6	8.7	7.5	0.0	22.7	0.4	0.4	0.6
Dec.	0.0	0.0	0.0	1.0	1.2	0.2	0.0	0.8	0.0	0.0	0.2
	493.4	243.9	79.4	159.1	702.6	314.4	185.2	395.6	301.6	723.2	656.7

Proposed Water Requirement in Burgaz and Ergenli Area

Total Crop Intencity: 131%

Crops	Cotton	Vegetable	Watermelon	Cereals	Fodders	Green Leg.	Potatoes	Potetos II	Vegeta.II	Olive	F.Fruits	Net Total	Gross Total	Total
Areal Parcentage	25.0	16.0	10.0	15.0	4.0	8.0	5.0	0.0	23.0	12.0	13.0	(mm)	0.78	(m3/s/1,000ha)
Jan.	0.00	0.00	0.00	0.06	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.22	0.001
Feb.	0.00	0.00	0.00	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.40	0.002
Mar.	0.00	0.00	0.00	2.32	0.70	0.00	0.00	0.00	0.00	0.00	0.00	3.02	3.87	0.014
Apr.	0.00	0.92	0.07	8.72	2.04	0.00	0.46	0.00	0.00	0.17	0.02	12.39	15.88	0.061
May	2.10	13.86	2.82	10.66	3.52	0.00	4.96	0.00	0.00	9.60	3.14	50.66	64.95	0.243
Jun.	26.22	18.11	4.54	0.70	1.55	0.00	3.85	0.00	0.00	20.80	16.09	91.85	117.75	0.454
Jul.	42.32	6.13	0.51	0.00	3.22	4.22	0.00	0.00	9.05	22.72	21.37	109.54	140.43	0.524
Aug.	38.92	0.00	0.00	0.00	8.46	9.59	0.00	0.00	29.27	20.74	24.43	131.41	168.47	0.629
Sep.	13.34	0.00	0.00	0.00	5.62	6.95	0.00	0.00	22.61	10.04	15.92	74.48	95.49	0.368
Oct.	0.45	0.00	0.00	0.55	2.35	3.77	0.00	0.00	8.35	2.68	4.30	22.45	28.78	0.107
Nov.	0.00	0.00	0.00	0.54	0.35	0.60	0.00	0.00	0.10	0.04	0.08	1.71	2.19	0.008
Dec.	0.00	0.00	0.00	0.15	0.05	0.02	0.00	0.00	0.00	0.00	0.02	0.24	0.30	0.001
	123.35	39.02	7.94	23.87	28.10	25.15	9.26	0.00	69.38	86.78	85.37	498.22	638.75	

Table H-8 Soil Test on Irrigation Experiment Field

Farm plot	Sample No.	Depth (cm)	pH	Total salt (%)	Grain distribution (%)			Specific gravity	Porocity (%)	Inteke rate*	Water-holding capcity of soil(%)		Available soil	Remarks
					Sand	Silt	Clay			(mm/hr)	Field capacity	Wilt point	moisuture (mm)	
I-1	1359	0-30	7.06	0.048	50.13	14.43	35.44	2.698	47.7	2.38	20.02	10.88	18.27	
	1360	30-60	7.11	0.058	49.77	14.53	35.70	2.698	47.7		19.48	10.59	17.79	
	1361	60-90	6.35	0.077	50.07	14.44	35.49	2.698	47.7		20.96	11.39	19.14	
I-2	1362	0-30	7.05	-	60.80	10.57	28.63	2.627	42.1	1.84	17.46	9.49	15.94	
	1363	30-60	6.14	0.059	58.31	12.77	28.92	2.773	45.2		18.86	10.25	17.22	
	1364	60-90	5.09	0.092	60.35	12.78	26.87	2.698	43.7		18.44	10.02	16.84	
I-3	1365	0-30	6.86	-	69.29	6.38	24.33	2.627	42.1	4.86	15.23	8.28	13.90	
	1366	30-60	6.84	-	60.86	8.48	30.66	2.698	43.7		17.57	9.55	16.03	
	1367	60-90	6.02	0.074	58.43	12.73	28.84	2.773	45.2		19.01	10.33	17.35	
I-4	1368	0-30	6.97	0.031	58.78	10.55	30.67	2.627	42.1	1.83	17.87	9.71	16.32	
	1369	30-60	6.66	0.041	58.25	10.69	31.06	2.773	45.2		18.85	10.23	17.19	
	1370	60-90	6.30	0.042	58.27	10.69	31.04	2.698	43.7		18.41	10.01	16.81	
II-1	1371	0-30	7.15	-	58.87	10.53	30.60	2.698	43.7	1.74	18.31	9.95	16.71	
	1372	30-60	6.90	0.031	58.32	10.67	31.01	2.773	45.2		17.96	9.76	16.39	
	1373	60-90	6.48	-	62.80	6.13	31.07	2.629	42.2		16.40	8.91	14.97	
II-2	1374	0-30	7.25	-	58.73	10.29	30.98	2.629	42.2	1.80	17.78	9.66	16.23	
	1375	30-60	6.85	-	58.82	12.35	28.83	2.629	42.2		17.71	9.63	16.16	
	1376	60-90	6.33	0.041	58.69	10.30	31.01	2.629	42.2		17.84	9.70	16.29	
II-3	1377	0-30	7.12	-	52.51	12.36	35.13	2.561	40.7	1.65	20.70	11.25	18.90	
	1378	30-60	7.08	-	56.67	12.37	30.96	2.629	42.2		18.87	10.26	17.23	
	1379	60-90	7.03	-	57.35	10.82	31.83	2.561	40.7		17.99	9.78	16.42	
II-4	1380	0-30	7.22	-	53.94	12.71	33.35	2.561	40.7	2.22	18.80	10.22	17.17	
	1381	30-60	7.07	0.034	51.72	12.75	35.53	2.629	42.2		21.37	11.62	19.51	
	1382	60-90	6.52	0.055	55.34	12.91	31.75	2.700	43.7		20.74	11.28	18.93	
		0-30												
		30-60												
		60-90												
		0-30												
		30-60												
		60-90												

*: Estimated values 24 hours passing

FIGURES

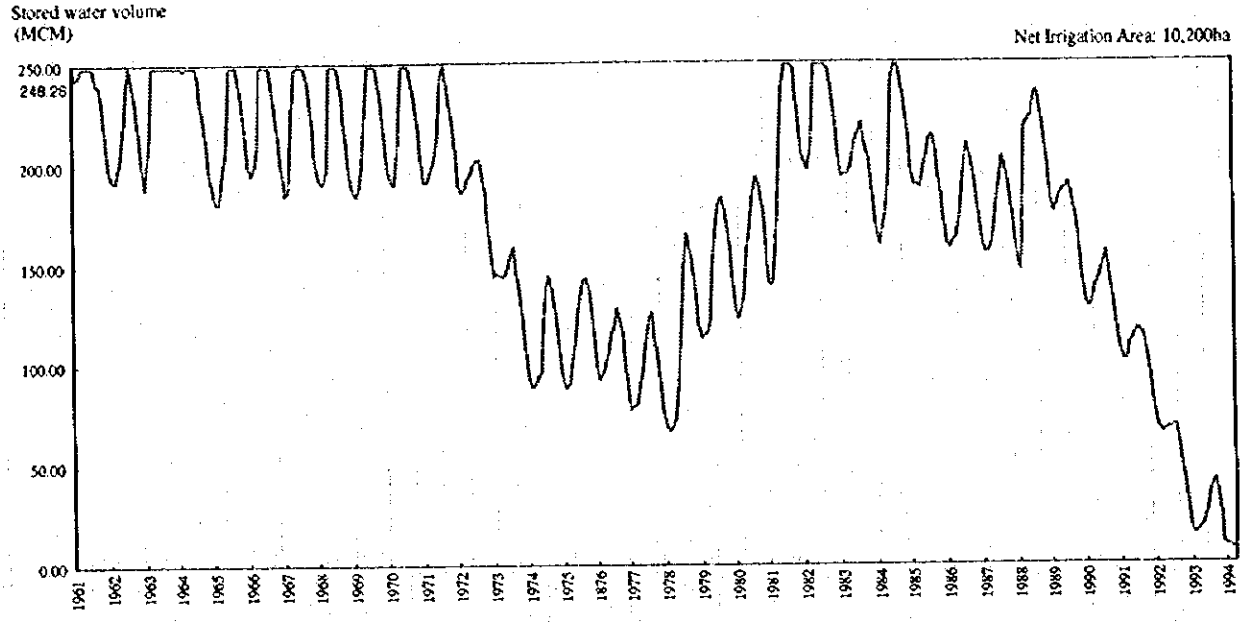


Figure-H.1 Dam Operation for Beydag Dam

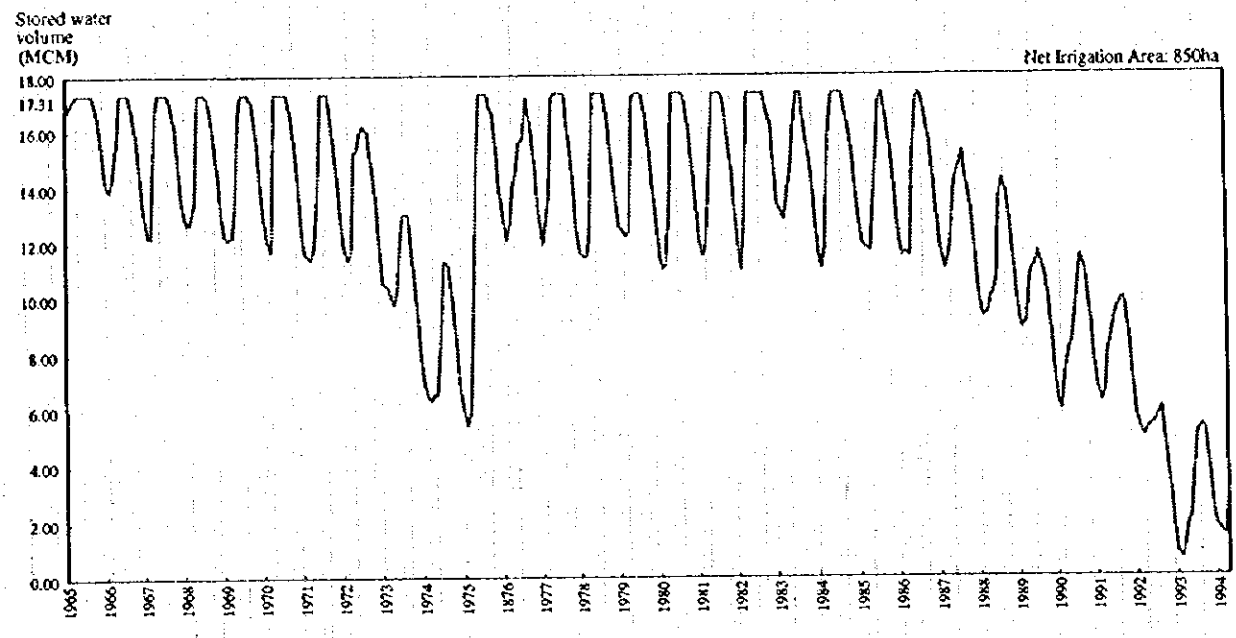


Figure-H.2 Dam Operation for Aktas Dam

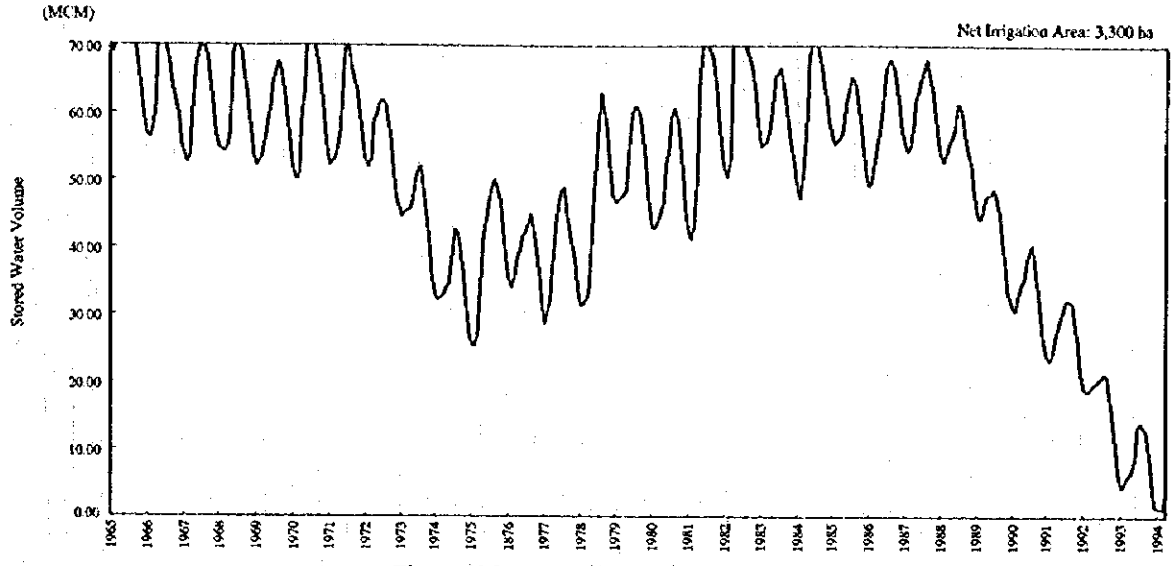


Figure-H.3 Dam Operation Study for Brugaz Dam

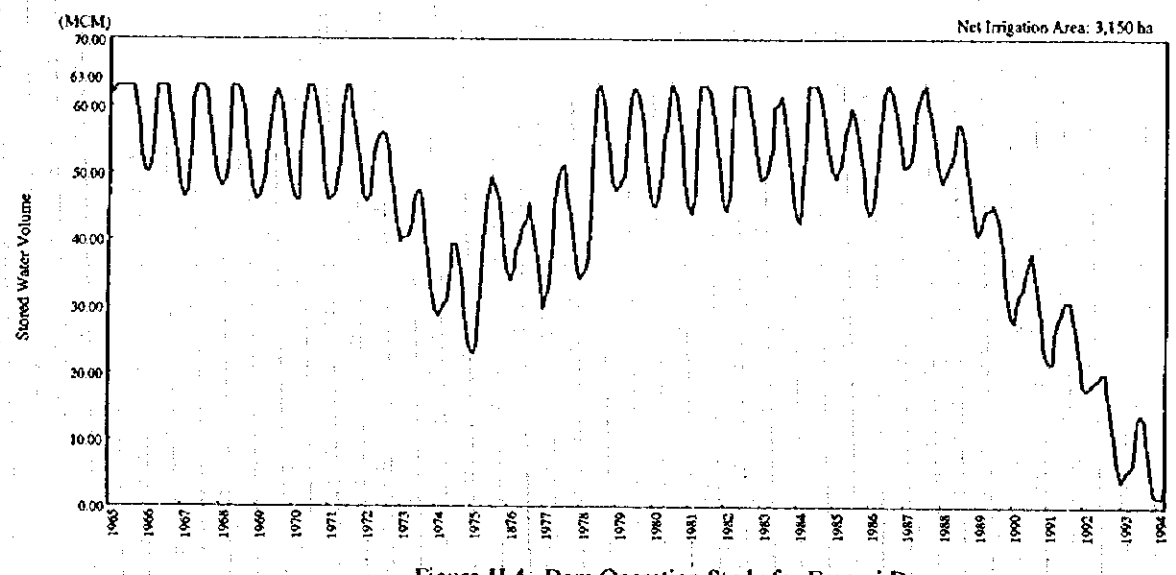


Figure-H.4 Dam Operation Study for Ergenri Dam

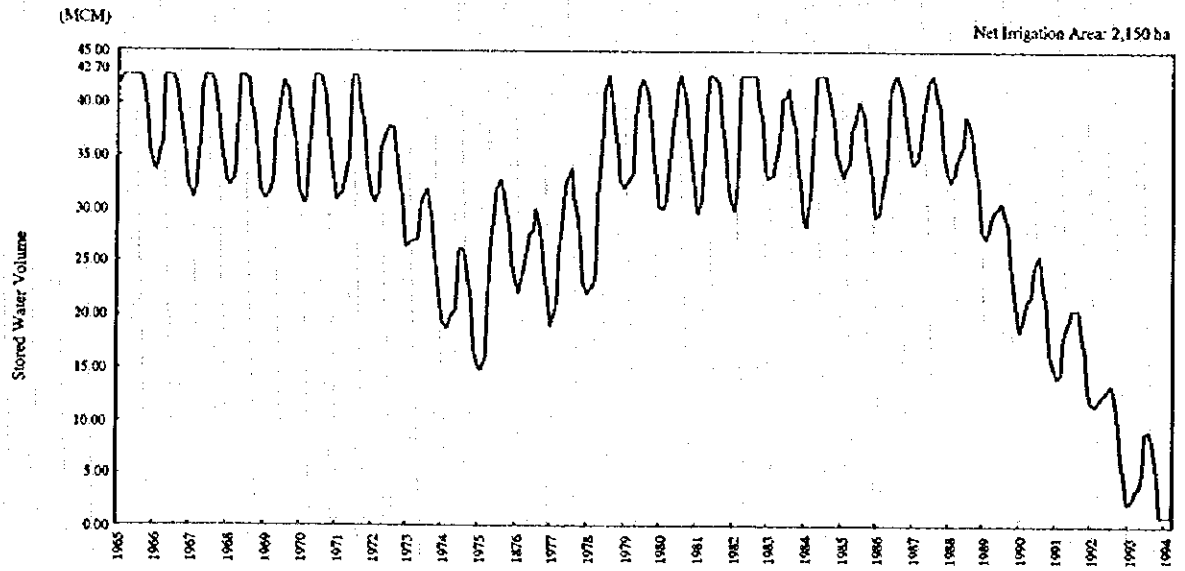
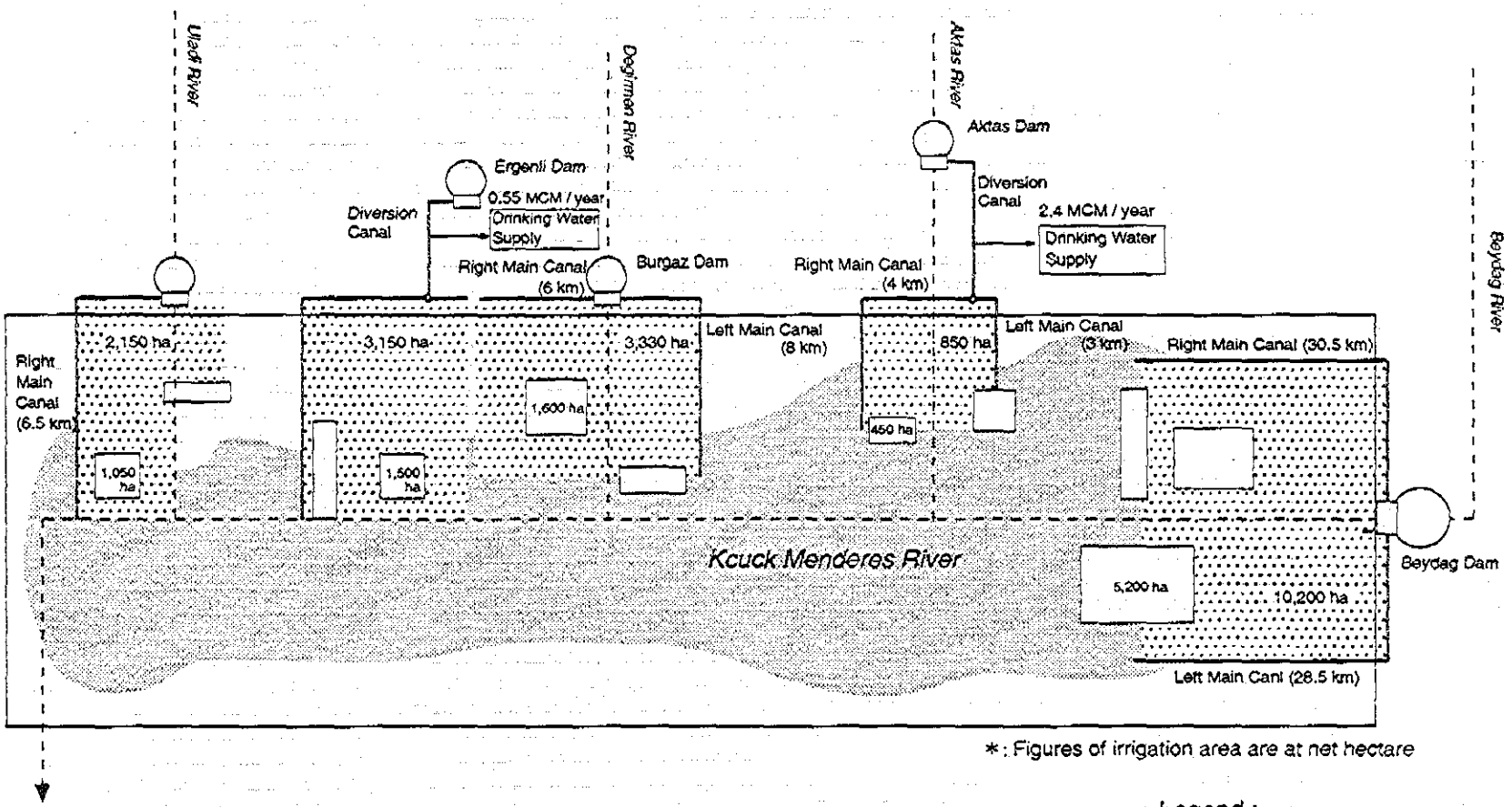


Figure-H.5 Dam Operation Study for Uladi Dam



*: Figures of irrigation area are at net hectare

Legend :

- Irrigation area by storage water of proposed dam
- Development area through rehabilitation of well system(Cooperatives and private users)
- Area to be controled in ground-water use rather than present situation

Figure-H.6 Schematic Diagram of Benefitial Area of the Project

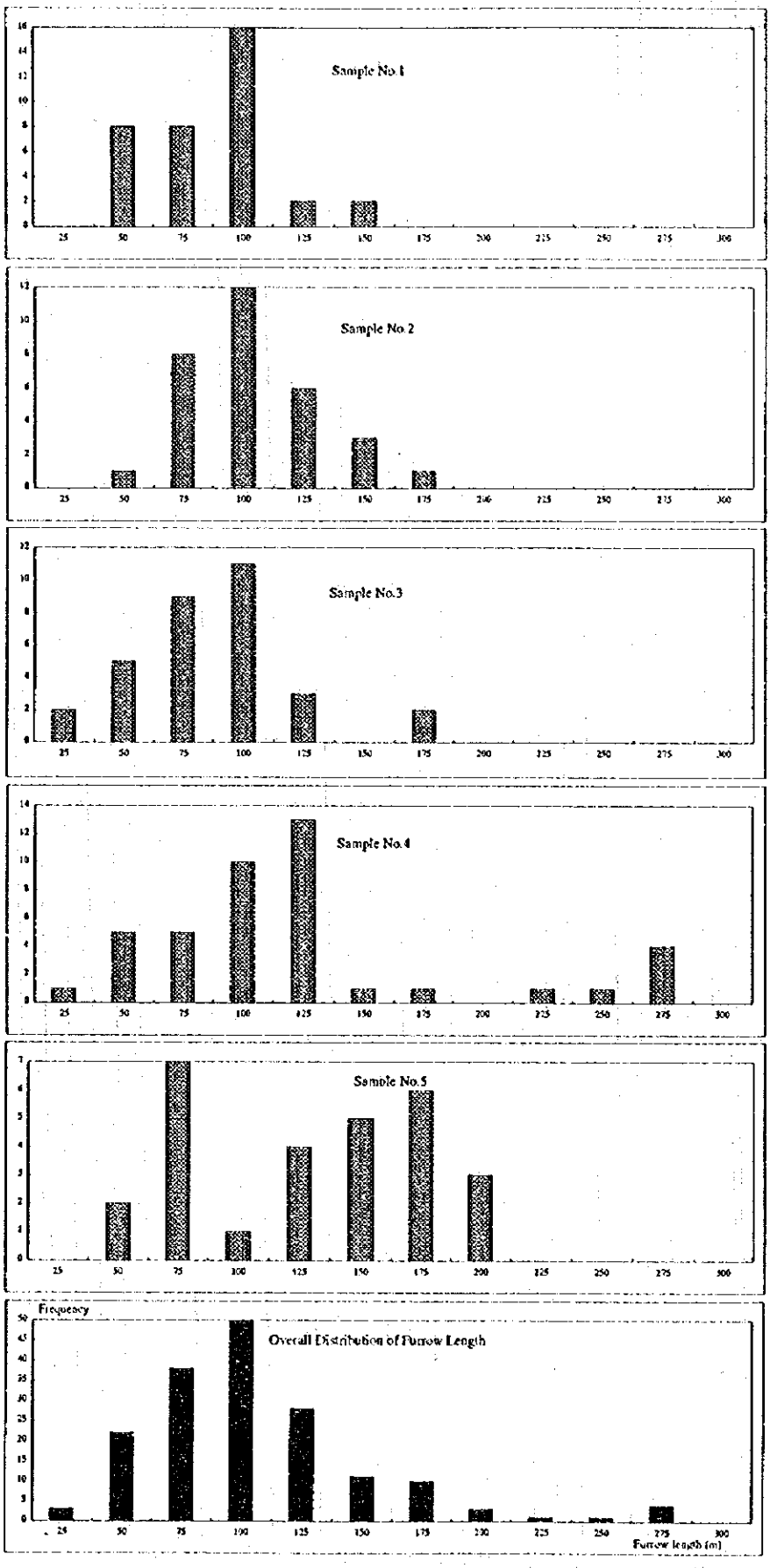


Figure-H.7 Distribution of Furrow Length in the Project Area

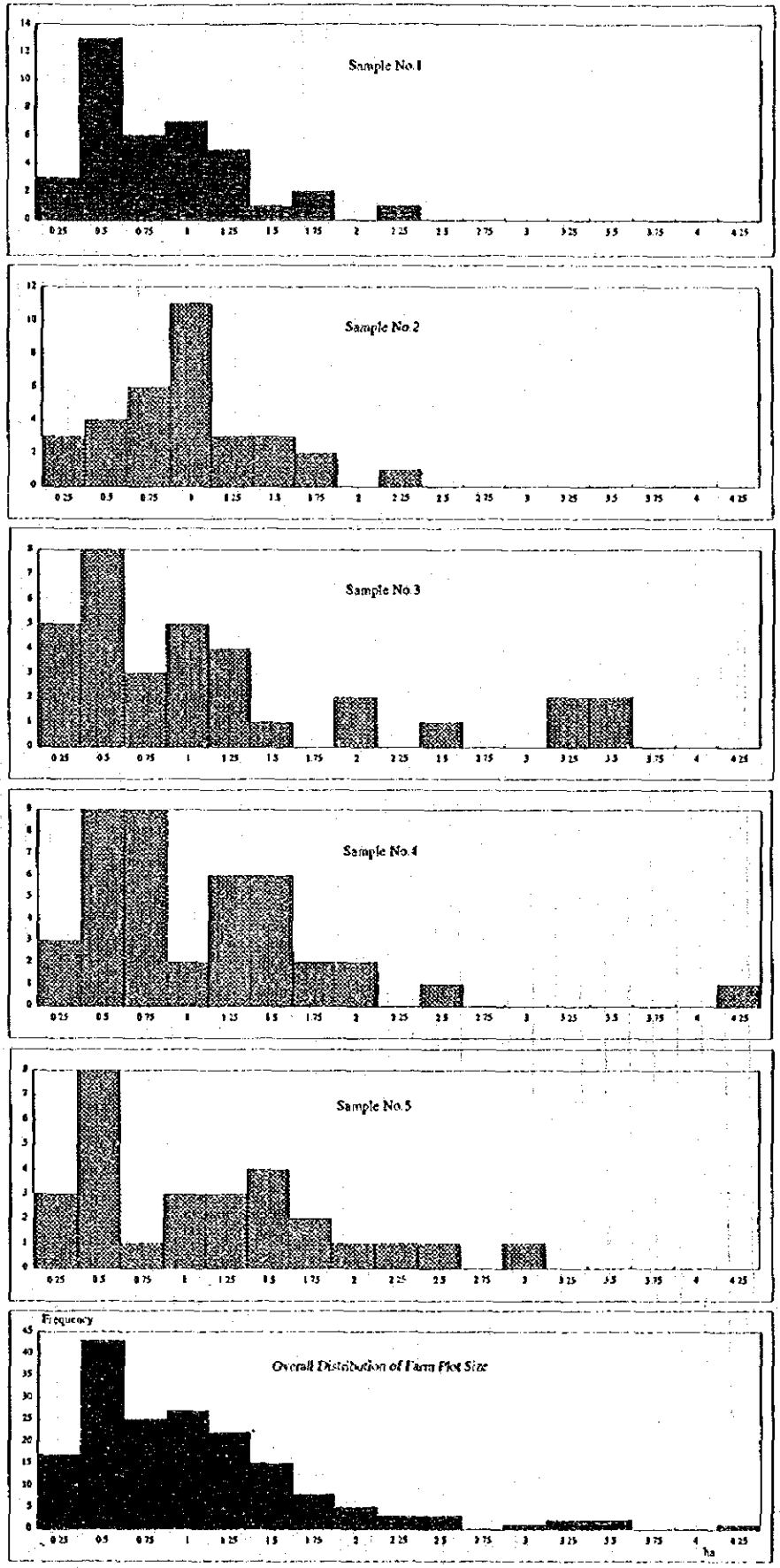


Figure-H.8 Distribution of Farm Plot Size in the Project Area

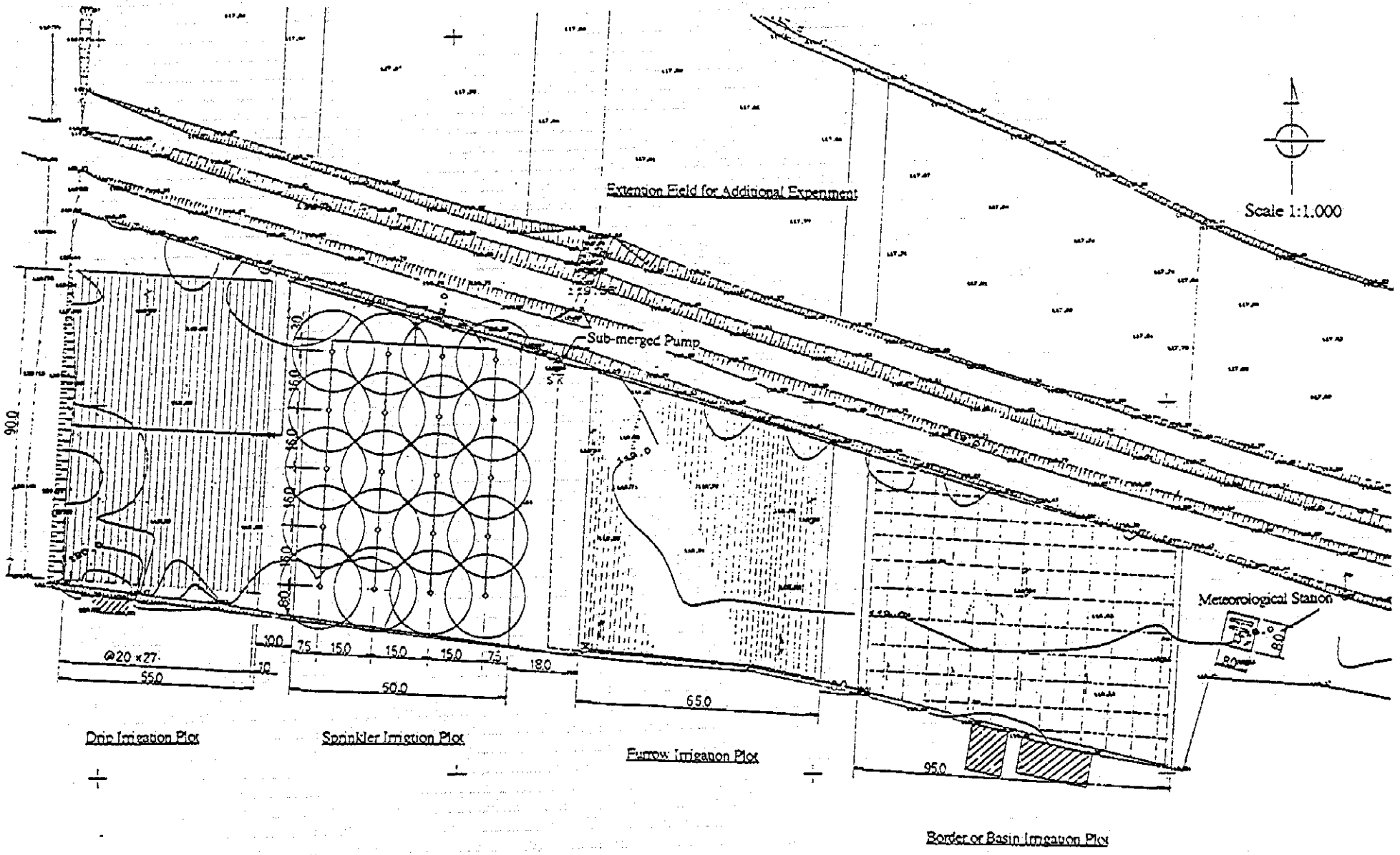
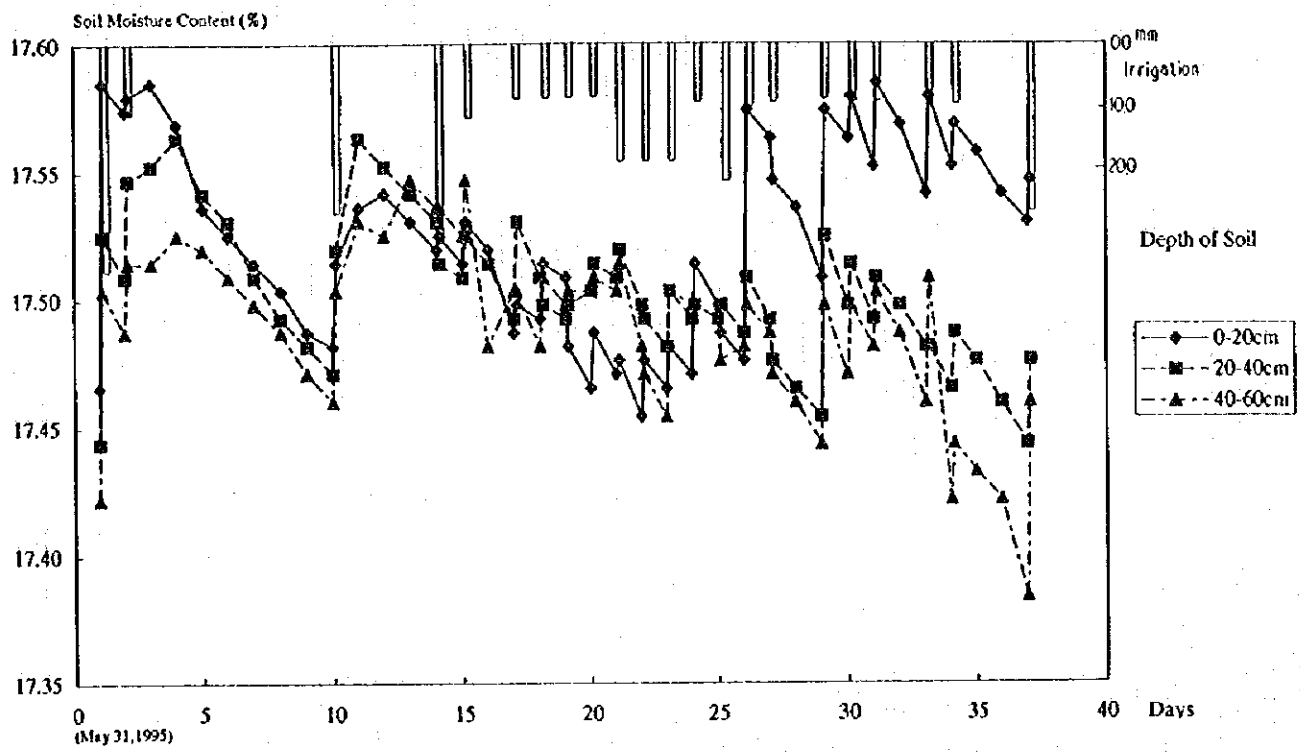


Figure-H.9 Layout of the Experiment Field

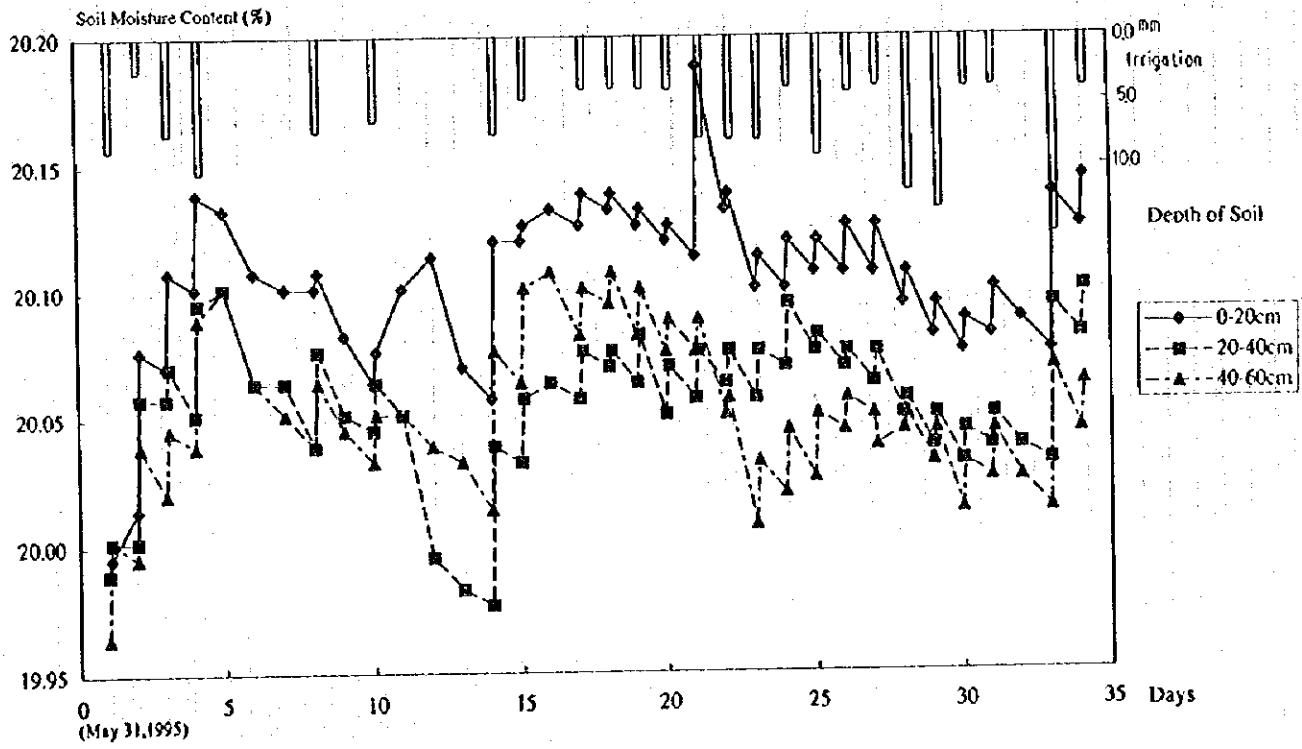
Attachment

Results of Experiment in Summer Season

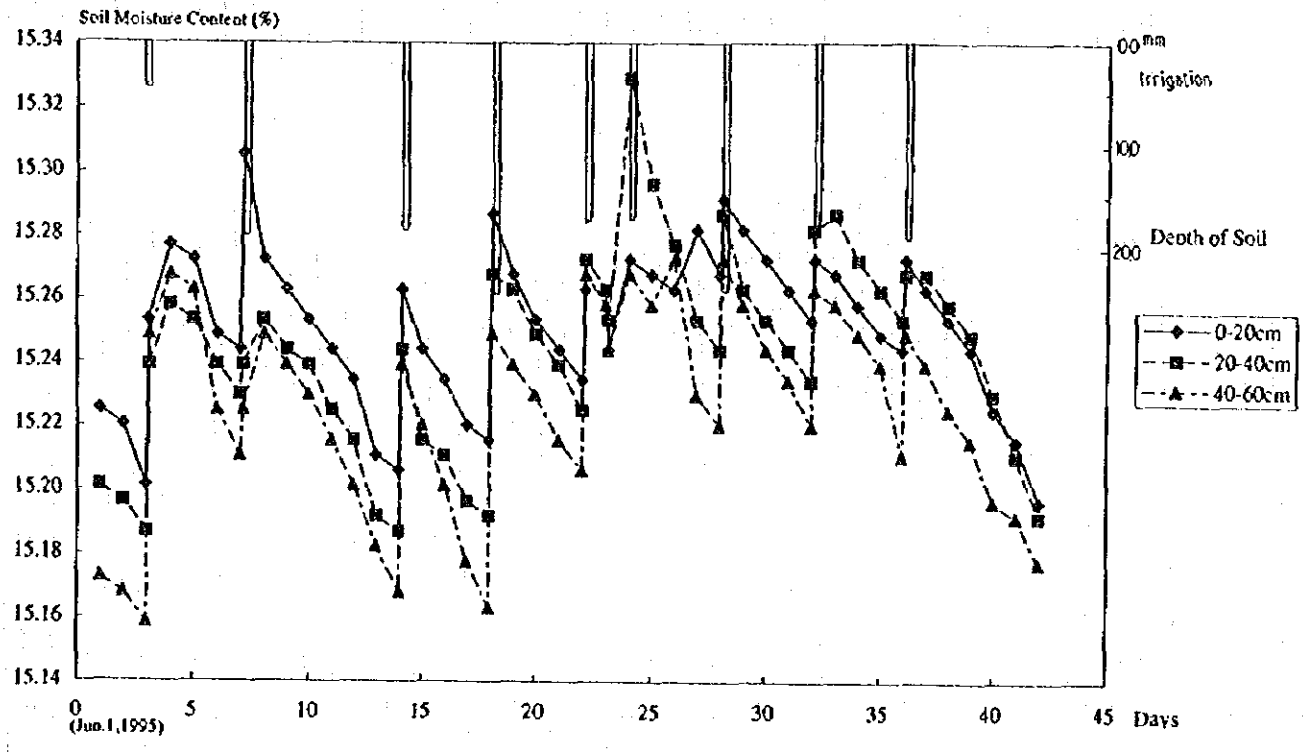
Teansition of Soil Moisture Content (Sprinkler Irrigation Plot)



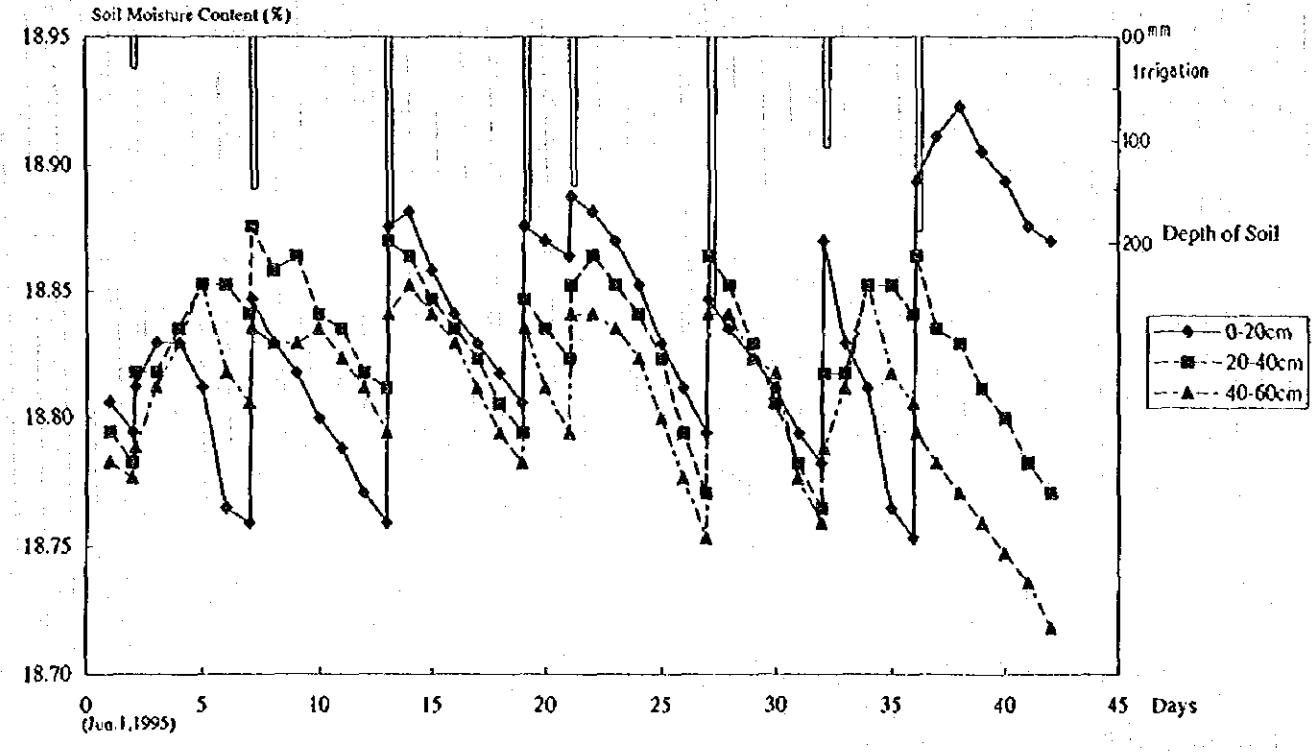
Transition of Soil Water Content (Drip Irrigation Plot)



Transition of Soil Moisture Content (Border Irrigation Plot)



Transition of Soil Moisture Content (Special Furrow Irrigation Plot)



Soil Moisture Investigation on Experimental Farm

Month, Year May 1995 Irrigation Metod; Drip Farm Plot; I-1

Day	Crop	Irrigation Hour (hr)	Discherge (l/s)	Values of tensiometer(before Irrig. 0 - 20 cm	20 - 40 cm	40 - 60 cm	Values of tensiometer (after Irrig.) 0 - 20 cm	20 - 40 cm	40 - 60 cm	Remarks
1	Watermelon									
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31		3.50	3.500	38	38	42	37	36	36	Irrigation was started.
Sub-Total		3.5hour	44.10m3							
Total										

Soil Moisture Investigation on Experimental Farm

Month, Year June 1995 Irrigation Metod; Drip Farm Plot; I-1

Day	Crop	Irrigation Hour (hr)	Discherge (l/s)	Values of tensiometer(before Irrig. 0 - 20 cm	20 - 40 cm	40 - 60 cm	Values of tensiometer (after Irrig.) 0 - 20 cm	20 - 40 cm	40 - 60 cm	Remarks
1	Watermelon	1.00	3.500	34	36	37	24	27	30	
2		3.00	3.500	25	27	33	19	25	29	
3		4.00	3.500	20	28	30	14	21	22	
4							15	20	20	
5							19	26	26	
6							20	26	28	
7		3.08	3.505	20	30	30	19	24	26	
8							23	28	29	
9		2.50	3.500	26	29	31	24	26	28	
10							20	28	28	
11							18	37	30	
12							25	39	31	
13		3.00	3.500	27	40	34	17	30	24	
14		1.17	5.500	17	31	26	16	27	20	
15							15	26	19	
16		1.00	5.500	16	27	23	14	24	20	
17		1.00	5.500	15	25	21	14	24	19	
18		1.00	5.500	16	26	23	15	23	20	
19		1.00	5.500	17	28	24	16	25	22	
20		2.00	5.500	18	27	24	6	24	22	
21		2.00	5.500	15	26	28	14	24	27	
22		2.00	5.500	20	27	35	18	24	31	
23		1.00	5.500	20	25	33	17	21	29	
24		2.33	5.500	19	24	32	17	23	28	
25		1.08	5.513	19	25	29	16	24	27	
26		1.00	5.500	19	26	28	16	24	30	
27		3.08	5.550	21	28	29	19	27	28	
28		3.75	5.501	23	30	31	21	28	29	
29		1.00	5.500	24	31	34	22	29	31	
30		1.00	5.500	23	30	32	20	28	29	
31										

Sub-Total 42.0hour 712.74m3

Total

Soil Moisture Investigation on Experimental Farm

Month, Year July 1995 Irrigation Metod; Drip Farm Plot; I-1

Day	Crop	Irrigation Hour (hr)	Discherge (l/s)	Values of tensiometer(before Irrig. 0 - 20 cm	20 - 40 cm	40 - 60 cm	Values of tensiometer (after Irrig.) 0 - 20 cm	20 - 40 cm	40 - 60 cm	Remarks
1	Watermelon						22	30	32	
2		4.33	5.513	24	31	34	14	21	25	
3		1.00	5.500	16	23	29	13	20	26	
4										Harvested
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
Sub-Total		5.3hour	105.74m3							
Total		50.8hour	862.6m3							

Soil Moisture Investigation on Experimental Farm

Month, Year May 1995 Irrigation Metod; Sprinkler Farm Plot; I-2

Day	Crop	Irrigation Hour (hr)	Discherge (l/s)	Values of tensiometer(before Irrig. 0 - 20 cm	20 - 40 cm	40 - 60 cm	Values of tensiometer (after Irrig.) 0 - 20 cm	20 - 40 cm	40 - 60 cm	Remarks
1	Watermelon									
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31		3.50	14.381	32	36	40	10	21	25	Irrigation was started

Sub-Total 3.5hour 181.20m3

Total

Soil Moisture Investigation on Experimental Farm

Month, Year June 1995 Irrigation Metod; Sprinkler Farm Plot; I-2

Day	Crop	Irrigation Hour (hr)	Discherge (l/s)	Values of tensiometer(before Irrig. 0 - 20 cm	20 - 40 cm	40 - 60 cm	Values of tensiometer (after Irrig.) 0 - 20 cm	20 - 40 cm	40 - 60 cm	Remarks
1	Watermelon	1.00	3.500	34	36	37	24	27	30	
2		3.00	3.500	25	27	33	19	25	29	
3		4.00	3.500	20	28	30	14	21	22	
4							15	20	20	
5							19	26	26	
6							20	26	28	
7		3.08	3.505	20	30	30	19	24	26	
8							23	28	29	
9		2.50	3.500	26	29	31	24	26	28	
10							20	28	28	
11							18	37	30	
12							25	39	31	
13		3.00	3.500	27	40	34	17	30	24	
14		1.17	5.500	17	31	26	16	27	20	
15							15	26	19	
16		1.00	5.500	16	27	23	14	24	20	
17		1.00	5.500	15	25	21	14	24	19	
18		1.00	5.500	16	26	23	15	23	20	
19		1.00	5.500	17	28	24	16	25	22	
20		2.00	5.500	18	27	24	6	24	22	
21		2.00	5.500	15	26	28	14	24	27	
22		2.00	5.500	20	27	35	18	24	31	
23		1.00	5.500	20	25	33	17	21	29	
24		2.33	5.500	19	24	32	17	23	28	
25		1.08	5.513	19	25	29	16	24	27	
26		1.00	5.500	19	26	28	16	24	30	
27		3.08	5.550	21	28	29	19	27	28	
28		3.75	5.504	23	30	31	21	28	29	
29		1.00	5.500	24	31	34	22	29	31	
30		1.00	5.500	23	30	32	20	28	29	
31										

Sub-Total 42.0hour 712.74m3

Total

Soil Moisture Investigation on Experimental Farm

Month, Year July 1995 Irrigation Metod; Sprinkler Fann Plot; I-2

Day	Crop	Irrigation Hour (hr)	Discherge (l/s)	Values of tensiometer(before Irrig. 0 - 20 cm	20 - 40 cm	40 - 60 cm	Values of tensiometer (after Irrig.) 0 - 20 cm	20 - 40 cm	40 - 60 cm	Remarks
1	Watermelon						13	26	28	
2		1.00	12.444	18	29	33	11	29	24	
3		1.00	12.444	16	32	40	13	28	36	
4							15	30	38	
5							18	33	40	
6		2.00	17.944	20	36	44	17	30	33	
7										Harvesting
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
Sub-Total		4.0hour	218.79m3							
Total		49.5hour	1112.7m3							

Soil Moisture Investigation on Experimental Farm

Month, Year June 1995 Irrigation Metod; Special Furrow Farm Plot; I - 3

Day	Crop	Irrigation Hour (hr)	Discherge (l/s)	Values of tensiometer(before Irrig.			Values of tensiometer (after Irrig.)			Remarks
				0 - 20 cm	20 - 40 cm	40 - 60 cm	0 - 20 cm	20 - 40 cm	40 - 60 cm	
1	Watermelon						32	34	36	Irrigation was started.
2		3.00	14.352	34	36	37	31	30	35	
3							28	30	31	
4							28	27	28	
5							31	24	24	
6							39	24	30	
7		1.42	14.549	40	26	32	25	20	27	
8							28	23	28	
9							30	22	28	
10							33	26	27	
11							35	27	29	
12							38	30	31	
13		1.42	17.961	40	31	34	20	21	26	
14							19	22	24	
15							23	25	26	
16							26	27	28	
17							28	29	31	
18							30	32	34	
19		1.42	17.902	32	34	36	20	25	27	
20							21	27	31	
21		1.17	18.095	22	29	34	18	24	26	
22							19	22	26	
23							21	24	27	
24							24	26	29	
25							28	29	33	
26							31	34	37	
27		3.08	12.351	34	38	41	25	22	26	
28							27	24	26	
29							29	28	29	
30							31	32	30	
31										
Sub-Total		11.5hour	625.9m3							
Total										

Soil Moisture Investigation on Experimental Farm

Month, Year July 1995 Irrigation Metod; Special Furrow Farm Plot; I-3

Day	Crop	Irrigation Hour (hr)	Discherge (l/s)	Values of tensiometer(before Irrig. 0 - 20 cm	20 - 40 cm	40 - 60 cm	Values of tensiometer (after Irrig.) 0 - 20 cm	20 - 40 cm	40 - 60 cm	Remarks
1	Watermelon						34	36	37	
2		1.33	12.354	36	39	40	21	30	35	
3							28	30	31	
4							31	24	24	
5							39	24	30	
6		1.50	17.889	41	26	32	17	22	34	
7							14	27	36	
8							12	28	38	
9							15	31	40	
10							17	33	42	
11							20	36	44	
12							21	38	47	
13										Harvesting
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
Sub-Total		2.8hour	155.8m3							
Total		14.3hour	781.7m3							

Soil Moisture Investigation on Experimental Farm

Month, Year June 1995 Irrigation Metod; Border Farm Plot; I- 4

Day	Crop	Irrigation Hour (hr)	Discherge (l/s)	Values of tensiometer(before Irrig.			Values of tensiometer (after Irrig.)			Remarks
				0 - 20 cm	20 - 40 cm	40 - 60 cm	0 - 20 cm	20 - 40 cm	40 - 60 cm	
1	Watermelon						34	39	45	Irrigation was started.
2							35	40	46	
3		4.00	14.563	39	42	48	28	31	29	
4							23	27	25	
5							24	28	26	
6							29	31	34	
7		1.67	14.467	30	33	37	17	31	34	
8							24	28	29	
9							26	30	31	
10							28	31	33	
11							30	34	36	
12							32	36	39	
13							37	41	43	
14		1.33	17.938	38	42	46	26	30	31	
15							30	36	35	
16							32	37	39	
17							35	40	44	
18		2.00	17.944	36	41	47	21	25	29	
19							25	26	31	
20							28	29	33	
21							30	31	36	
22		1.33	17.896	32	34	38	26	24	25	
23							26	26	27	
24		1.33	17.896	30	28	30	24	12	25	
25							25	19	27	
26							26	23	24	
27							22	28	33	
28		2.75	12.394	25	30	35	20	21	24	
29							22	26	27	
30							24	28	30	
31										
Sub-Total		14.4hour	805.84m3							
Total										

Soil Moisture Investigation on Experimental Farm

Month, Year July 1995 Irrigation Metod; Border Farm Plot; I- 4

Day	Crop	Irrigation Hour (hr)	Discherge (l/s)	Values of tensiometer(before Irrig.) 0 - 20 cm	20 - 40 cm	40 - 60 cm	Values of tensiometer (after Irrig.) 0 - 20 cm	20 - 40 cm	40 - 60 cm	Remarks
1	Watermelon						26	30	32	
2		2.00	12.403	28	32	35	24	22	26	
3							25	21	27	
4							27	24	29	
5							29	26	31	
6		1.50	17.889	30	28	37	24	25	29	
7							26	25	31	
8							28	27	34	
9							30	29	36	
10							34	33	40	
11							36	37	41	
12										Harvesting
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										

Sub-Total 3.5hour 185.90m3

Total 17.9hour 991.7m3

Soil Moisture Investigation on Experimental Farm

Month, Year May 1995 Irrigation Metod; Furrow Farm Plot; I1

Day	Crop	Irrigation Hour (hr)	Discherge (l/s)	Values of tensiometer(before Irrig. 0 - 20 cm	20 - 40 cm	40 - 60 cm	Values of tensiometer (after Irrig.) 0 - 20 cm	20 - 40 cm	40 - 60 cm	Remarks
1	Watermelon									
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27		8.00	17.899							Irrigation was started.
28		8.00	17.924							
29		8.00	17.913							
30										
31										
Sub-Total		24.0hour	1547.6m3							
Total										

Soil Moisture Investigation on Experimental Farm

Month, Year June 1995 Irrigation Metod; Furrow Farm Plot; II

Day	Crop	Irrigation Hour (hr)	Discherge (l/s)	Values of tensiometer(before Irrig. 0 - 20 cm	20 - 40 cm	40 - 60 cm	Values of tensiometer (after Irrig.) 0 - 20 cm	20 - 40 cm	40 - 60 cm	Remarks
1	Watermelon									
2										
3										
4		4.00	17.917							
5										
6										
7										
8		2.75	17.929							
9										
10										
11										
12										
13										
14										
15										
16										
17										
18		7.50	17.900							
19		7.00	17.901							
20		7.75	17.900							
21		11.00	17.902							
22										
23										
24										
25										
26										
27										
28										
29		7.75	17.900							
30		13.17	17.899							
31										
Sub-Total		60.9hour	3926.3m3							
Total										

Soil Moisture Investigation on Experimental Farm

Month, Year July 1995 Irrigation Metod; Furrow Farm Plot; II

Day	Crop	Irrigation Hour (hr)	Discherge (l/s)	Values of tensiometer(before Irrig. 0 - 20 cm	20 - 40 cm	40 - 60 cm	Values of tensiometer (after Irrig.) 0 - 20 cm	20 - 40 cm	40 - 60 cm	Remarks
1	Watermelon	8.25	17.902							
2										
3										
4										
5										
6										
7										
8										
9		9.00	17.898							
10		9.00	17.898							
11										
12		2.00	17.944							
13										Harvesting
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
Sub-Total		28.3hour	1820.7m3							
Total		113.2hour	7294.6m3							

ANNEX I

OPERATION AND MAINTENANCE AND WATER MANAGEMENT

ANNEX I

O&M AND WATER MANAGEMENT

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ANNEX I

O&M AND WATER MANAGEMENT

1. Present O&M Situations in Similar Projects

1.1 General

In order to know the present O&M and water management situation in similar irrigation projects, a field survey was carried out in the following four surface water irrigation projects in the Gediz river basin and three DSİ/GDRS-assisted groundwater irrigation cooperatives in the Küçük Menderes river basin in the Phase-I Study Period:

(a) Surface Water Irrigation Projects

(i) Menemen Irrigation Project
(ii) Manisa Irrigation Project
(iii) Adala Irrigation Project
(iv) Alaşehir Irrigation Project

(b) Groundwater Irrigation Schemes

(i) Elifli Irrigation Cooperative
(ii) Kaharat Irrigation Cooperative
(iii) Youlstu Irrigation Cooperative

In addition to the above field survey, the other field survey was conducted in the Phase-II Study Period to know the present conditions and activities particularly of the water users' associations (WUAs). For this survey, following four WUAs were selected in the Gediz river basin:

(i) Menemen Left Side WUA in the Menemen Irrigation Project
(ii) Mesir WUA in the Manisa Irrigation Project
(iii) Gediz WUA in the Manisa Irrigation Project
(iv) Salihli Left Side WUA in the Adala Irrigation Project

The above survey results are presented in Tables I.1 ~ I.3 and summarized below.

1.2 Results of Field Survey

1.2.1 Surface Irrigation Projects in the Gediz River Basin

(1) Outline of the Surface Water Irrigation Development in the Basin

The Gediz river basin is located immediately north of the Küçük Menderes river basin. The irrigation development in the basin has started in 1940s and 107,000 ha has been provided with irrigation and drainage systems consisting of the following facilities:

(i)	Storage dams	
	- Buldan:	35.2 MCM of net storage capacity
	- Avşar:	78.6 MCM of net storage capacity
	- Demirköprü:	813.2 MCM of net storage capacity
	- Marmara:	291.9 MCM of net storage capacity
(ii)	Diversion weirs:	3 Nos.
(iii)	Irrigation canals:	
	- Main canals	1,450 km
	- Canalettes:	2,030 km
(iv)	Drainage canals:	1,260 km

The main crops cultivated in the irrigated area are cotton (58%) followed by grape (23%), fruits (6%), vegetables (4%), maize (3%), etc. The cropping intensity is estimated at about 115%. The average yields of crops are rather high as compared with the averages of the country showing 2.5 ~ 4.0 tons/ha of cotton, 3.5 ~ 5.0 tons/ha of grape, 5.0 ~ 10 .0 tons/ha of fruits, 20 ~ 30 tons/ha of vegetables and 3.50 ~ 5.0 tons/ha of wheat.

(2) Organization of the Project Office

The above-mentioned irrigation area is divided into following six irrigation projects (Figure I.1):

(i)	Menemen Irrigation Project:	23,000 ha
(ii)	Manisa Irrigation Project:	23,000 ha
(iii)	Saruhanlı Irrigation Project:	14,000 ha
(iv)	Turgutlu Irrigation Project:	15,000 ha
(v)	Adala Irrigation Project:	18,000 ha
(vi)	Alaşehir Irrigation Project:	14,000 ha

The O&M for these projects are being conducted by six District O&M Offices under the control of DSİ Second Regional Director as shown in Figure I.2. The Regional O&M Department is responsible for O&M of project facilities operated by the DSİ in the region concerned. This department is a part of the Regional Directorate and therefore directly responsible to the Regional Director. The District O&M Office is headed by the Chief Engineer and responsible for the O&M of the project facilities operated by DSİ in the district concerned. The Menemen District O&M Office is supported by the Maintenance Engineer, Operation Engineer and Mechanical and Electrical Engineer, and responsible to the Director of No. 21 District Office. While, the other five District O&M Offices are supported by the Operation Engineer and Maintenance Engineer respectively, these O&M offices are a part of the Manisa District Office and therefore directly responsible to the Director of the Manisa District Office.

(3) Operation and Maintenance

(a) Operation

Due to the chronic water constraints in the Gediz river basin, four storage dams have been constructed on the Gediz river and its tributaries for irrigation purpose. Even after the construction of these storage dams, the shortage of irrigation water is still occurring in the basin, and DSİ has a plan to construct several additional dams. Under such situation, the irrigation water is only supplied for summer crops cultivation generally from May to October, and winter crops are irrigated by groundwater mainly from the wells owned by farmers themselves or some creeks. In a drought year, however, the water supply is only made in the period from July to October giving a priority to perennial crops such as grape and citrus. Since the available water in the river basin is equally distributed to all the projects, there have never been any conflicts among them.

Rotational irrigation is generally practiced on both secondary and tertiary canal basis, starting from the downstream parts. The tertiary canals branching off from the secondary canal are grouped into two: upstream and downstream groups, and the command area of each tertiary canal is further divided into two blocks of upstream and the downstream areas. The downstream areas of the tertiary canals in the downstream group is first given water for 3.5 days. Then, the downstream areas of the tertiary canals in the upstream group is given water for 3.5 days, followed by the upstream areas of tertiary canals in the downstream groups in the upstream areas in the peak irrigation period. This means that each area can get irrigation water for 3.5 days after one and a half week of off-irrigation period.

The irrigation methods widely applied in the basin are border irrigation for the cultivation of wheat and maize and furrow irrigation for cotton, orchards and vegetables. The

sprinkler irrigation is also applied for the cultivation of potato and drip irrigation for grape in a limited area of the basin.

(b) Maintenance

The maintenance works mainly consist of silt removal, weed control and repair of structures for the canals and drains. The silt removal is mainly done by means of Gradall or excavator for wider primary canals and by loader with combination of Gradall or excavator for smaller main canals and secondary canals. In some spots which are not accessible by the machinery, the silt is removed manually. For the weed control, chemical treatment is widely applied in addition to the mechanical removal, depending on the type of canal.

Most of these maintenance works, except large-scale works which are done by local contractors, are at present conducted by DSİ using its own machinery and man power. Due to increase of maintenance works and labor cost, the maintenance cost is becoming an overburden to DSİ and the required amount of maintenance cost can not be fully allocated to the projects, resulting in a malfunction of the canal system.

(3) O&M Equipment

According to the inventory list provided by O&M Department of DSİ-II, following number of O&M equipment are possessed by the respective offices:

Equipment	Center at Manisa	Menemen	Manisa	Saruhanlı	Turgutlu	Adala	Alaşehir	Total
Gradall	0	2	0	0	0	0	0	2
Excavator	5	1	0	1	1	1	1	10
Grader	0	1	1	1	1	1	1	5
Dozer	0	1	0	0	0	0	0	1
Tractor	6	2	2	0	2	2	3	17
Loader	2	0	0	0	0	0	0	2
Truck	2	2	1	1	1	1	1	9
Vehicle	7	3	3	3	3	4	3	26

Most of the above-mentioned equipment are well maintained and under workable condition.

(4) O&M Cost

For the estimation of the O&M cost, the irrigation and drainage facilities in each project are inspected by the DSİ Regional Directorate at the end of irrigation season (November to December) and annual inspection report is prepared. This report is sent to the Operation and Maintenance Department of DSİ Head Quarter for evaluation. The budget for the O&M activities of next year is estimated after evaluation of the inspection report of this year. Then, the budget is prepared by the said Operation and Maintenance Department of the DSİ Head Quarter. According to the field survey, the O&M budgets allocated to the respective project offices in 1994 are as follows:

(i) Menemen Irrigation Project: TL 30 billion
(ii) Manisa Irrigation Project: TL 23 billion
(iii) Adala Irrigation Project: TL 19 billion
(iv) Alaşehir Irrigation Project: TL 14 billion

(5) Collection of Water Charge

The water charge covers the actual cost required for the operation and maintenance in the last year and the investment cost of irrigation project. The rate of water charge is assessed by DSİ and discussed by an inter ministerial commission formed by the representatives of the

Ministry of Finance, the Ministry of Agriculture and Rural Affairs and the Ministry of Public Works and Settlement. The discussed result is presented to the Government for approval. The rate of the water charge should be announced before the end of April every year. The different rates of water charges are set based on the land types and crops respectively as shown in Table I.4.

The collection of the water charges is made by the tax collecting agent of the Ministry of Finance, which is attached to the DSİ Regional Directorate. According to the inquiry to the project offices, the performance of the water charge collection has not been encouraging, showing 10 ~ 43% of the dues. The poor recovery is mainly due to inadequate penalty for non payment.

1.2.2 Groundwater Irrigation Schemes in the Küçük Menderes River Basin

(1) Outline of the Groundwater Irrigation Development in the Basin

The main irrigation water source in the Küçük Menderes River Basin is groundwater, which covers about 49,000 ha out of the total irrigated land of 53,000 ha, and the remaining area of 4,000 ha is fed by stream flow (2,300 ha) and spring(1,700 ha).

The area irrigated by groundwater is broadly categorized into two: one is irrigated by 208 wells constructed jointly by DSİ and GDRS and the other is irrigated by about 6,500 wells, most of which have been illegally constructed by farmers themselves without reporting to DSİ for their construction. The former one is transferred to irrigation cooperatives and operated and maintained by themselves in a legal manner. The latter one is operated by farmers themselves not in a systematic way.

The irrigation cooperatives were established under the Cooperative Law and related regulations. Their main functions are the operation and maintenance of groundwater irrigation schemes. The construction of a new groundwater irrigation scheme is started only after establishment of the legal cooperative. Upon the request from more than 24 farmers through GDRS, DSİ will start planning and hydrological investigation at its own expense, and investigation results will be reported to GDRS. Then, the construction of the well will be started, if the scheme is judged by DSİ to be economically and technically justifiable. Before submitting their official request to DSİ for the well construction, the farmers have to show their intention to definitely organize an irrigation cooperative with documents. The farmers have to establish the cooperative under the guidance of GDRS before completion of the well construction. DSİ will construct a well with a pump and power supply system and hand over them to the irrigation cooperative after concluding a transfer agreement. This agreement obligates the irrigation cooperative to pay the total investment cost within 30 years including a grace period of 5 years. GDRS will construct a main delivery system down to the tertiary canal system free of charge. The on-farm facilities will be constructed by the farmers themselves.

(2) Organization

The board member of irrigation cooperative consists of a president, an assistant, a treasurer and two members. Under this board of cooperative, a working group consisting of several pump operators is organized in each cooperative. Each pump operator is in charge of 2 ~ 3 pumps. In some cooperatives, a few pump operators are employed on the temporary basis in the main irrigation season.

A general assembly meeting is held once a year. In this meeting, the accounting of the cooperative is reported and the board members of cooperative are elected by the majority for a year.

The duties of the board of the cooperative are to: (i) evaluate and fix the water charge at the commencement of their term of services, (ii) operate and maintain the irrigation facilities,

(iii) collect water charge based on the records of pumping hours, (iv) settle disputes among farmers and (v) hold meetings for statement of accounts by the board.

The farmer who wants to be a member of irrigation cooperative has to pay the earnest money, of which amount is TL.100,000 ~ TL.110,000/person as a basic portion and additional money at the rate of TL.20,000 ~ TL.1,000,000/ha, both of which vary from cooperative to cooperative.

(3) Irrigation Practices

The pump operation is generally made for the period from April to November. The rotational schedule for irrigation is so decided that the farmers first inform of the desired irrigation dates to the pump operator at the onset of irrigation season, and these requests are adjusted by the pump operator. While irrigating, the pump operator goes round the fields everyday to check the irrigation conditions and adjust the irrigation schedule based on his judgment and farmers' request. Usually the pump is operated for 12 hours from 8:00 to 20:00 in the peak irrigation season, and urgent supply of irrigation water is made in night time. The irrigation interval varies from 4 to 18 days depending on the cultivated crops soil characteristics and availability of water.

In the surveyed scheme areas, furrow irrigation and border irrigation are widely practiced except some areas where sprinkler irrigation method is applied for the cultivation of potato. According to the field survey result, the furrow irrigation method is mainly applied for the cultivation of cucumber, vegetables and other crops, while the border irrigation method is applied for the cultivation of potato, watermelon and poplar.

(4) Collection of Water Charge

The water charge is collected from the beneficiary farmers at the rate of TL 20,000 ~ TL 60,000/hour/pump, which varies from cooperative to cooperative. The beneficiary farmers should pay the water charge by the end of December for each year, but they are graced for the payment for 2 years at maximum. If they don't pay the water charge within the grace period, this will be the case of court. Within the grace period, these farmers have to pay the interest at the rate of 7 ~ 10%/month. According to the field survey result, the collection rate was 62.5 % for the Elifli Cooperative, 76.5% for the Youlstu Cooperative and 66.7% for the Kaharat Cooperative.

1.2.3 Water Users' Associations in the Gediz River Basin

(1) Procedure of WUA Establishment

In the Gediz river basin, the operation and maintenance works of the irrigation and drainage facilities had been conducted jointly by DSİ and irrigators' groups (IGs) until 1994. In the early 1995, however, based on the persuasion and encouragement from the World Bank, seven water users' associations (WUAs) have been established, which cover the total area of DSİ's surface irrigation area in the Gediz river basin. The procedure for the establishment of WUA is summarized below.

(a) DSİ informs of its intention to transfer the project facilities to beneficiary farmers and suggests them to establish a WUA.

(b) The mayor/muhtar holds a meeting to exchange a view with farmers in the command area and gets all farmers' consent on the establishment of the WUA.

(c) The mayor/muhtar reports the farmers' consent to DSİ.

(d) The statute of WUA, for which the standard form prepared by the Ministry of Interior is used, is prepared by the mayor/muhtar under the guidance of DSİ and signed by the mayor/muhtar..

(e) The statute of WUA thus prepared is approved by the Governor of the province.

(f) Upon the Governor's approval of the statute, the procedure of the establishment of WUA is completed.

(2) Transfer of Project Facilities

After completion of the procedure for the establishment of WUA, the first meeting is held under the chairmanship of the Governor, and a transfer agreement between DSİ and WUA is signed by the authorized persons and approved by the Ministry of Public Works and Settlement. Then, the transfer of the project facilities is completed officially.

(3) Organization

The typical organization chart of WUA is shown in Figure I.3. The members of the WUA Council are comprised of muhtars and farmers' representatives selected from the villages concerned and a member of the Chamber of Agriculture. In these members, the muhtars are permanent members of WUA Council, and the number of farmers' representatives is decided in each village depending on the irrigation area involved in the village.

In the first meeting of the WUA Council, they elect the WUA Committee members consisting of a president, a general secretary (agricultural engineer), an accountant and four members. The term of the service is five years for the president and one year for the other members. Under this WUA Committee, there is a working group staffed by operation and maintenance staff, administrative staff and irrigators' groups.

(4) Collection of Water Charge

Since all the surveyed WUAs have been just established in this year, and notable performance of the water charge collection has not been made by these WUAs. The annual water charge will be collected at the rate of TL 2,000,000/ha for the Menemen Left Side WUA, Mesir WUA and Gediz WUA on the trial basis, while the Salihli WUA has a plan to collect the water charge at the rate of TL 1,600,000/ha. All the WUAs have a plan to collect the water charge through the Agricultural Bank. The collected water charge will be spent for their own purposes without repayment to the Government for the recovery of the project cost.

1.3 Results of Evaluation and Recommendation

Through the analysis and evaluation on the data and information collected from the above-mentioned field surveys, various problems and constraints on the present O&M practices have become clear for the respective projects. Some problems and constraints are common to all the surveyed projects and some are particular for the respective projects. These evaluated results and the recommendation for the improvement of the present situations are summarized below.

(a) Shortage of Water Supply

All the projects and schemes surveyed are suffering from a shortage of water supply particularly in the summer season, and reliable and equitable water supply are not being made. Since this problem will be common to the Küçük Menderes river basin, it is necessary to introduce the efficient and effective irrigation practices to the Study Area in order to solve this problem within the limited water supply.

(b) Less Development of On-farm Facilities and Land Consolidation

Less development of the on-farm facilities and land consolidation is common to all the projects and resulted in the inefficient and unequitable water supply to the fields. The implementation of these works is proposed to be made in parallel with the construction of teritary canal system, so that an efficient and equitable water supply to the fields can be attained immediately after completion of the canal system.

(c) Weakness of O&M Wing of Project Offices

Every project office has a O&M section or units, but these are not fully functioning, because these are not fully provided with properly trained staff and well-defined responsibilities, and adequate funds and equipment to carry out their designated works.

(d) Less Progress in Establishment of WUA

After completion of the project facilities partly or totally, some decades of year have passed, but the progress in establishment of water users association (WUA) has not been encouraging. From the viewpoint that an essential prerequisite for successful operation of the irrigation system would be to organize WUAs so that they can manage the rotation of water supplies themselves in proper way.

(e) Less Coordination between DSİ and Other Agencies

In order to achieve the successful irrigated farming and common goal of improving agricultural production, the coordination and cooperation between DSİ and other agencies such as GDRS, General Directorate of Organization and Support (GDOS) and General Directorate of Agricultural Research (GDAR) will become necessary. From this viewpoint, the project coordination committee is proposed to be established among the above-mentioned agencies.

(f) Low Response of Farmers to Water Charge Collection

The performance of water charge collection has not been satisfactory, showing only 10 to 40% of the dues particularly for the surface water irrigation projects. This low collection rate is mainly due to the fact that a fine of 10% for non-payment of the water charge is very low when inflation levels are high, and it is consequently in the farmers' own financial interest to default on their payment.

(g) Less Activities for Project Monitoring and Evaluation

All the project offices are responsible for collecting and analyzing data on effectiveness of water management, operations and effectiveness of WUAs in securing compliance of their members to their directives, maintenance quality and cost and agricultural progress. However, these activities are not properly done in these offices because of less number of well-trained staff and less availability of fund and equipment.

2 Proposed Organization and Management of the Beydağ Irrigation Project

2.1 Proposed Project Office

2.1.1 Office Organization

For the successful implementation and O&M of the project, it is proposed to establish a Project Office at the existing DSİ compound in Ödemiş. The Project Office will mainly function as a construction office during the construction period of the project works, and as an O&M office after completion of the construction work. The project office, being coordinated to the General Directorate of Rural Services (GDRS) and the Ministry of Agriculture and Rural Affairs (MARA) through the proposed Project Coordination Committee, will consist of one unit, six divisions and 21 sections under the said divisions as shown in Figure I.4. Those respective functions and roles are explained below.

(a) Project Coordination Committee

DSİ would have overall responsibility for projects implementation including planning, design, construction and O&M of the projects, and undertake the supervision and coordination among the agencies concerned, mainly with GDRS and MARA. GDRS is responsible for on-farm development and for research on irrigated agriculture, while the General Directorate of Organization and Support (GDOS) of MARA is responsible for dissemination of the research results obtained by GDRS to the farmers and training on irrigated agriculture in general. The General Directorate of Agricultural Research would also be responsible for agricultural research activities involving irrigation and drainage, though indirectly. Thus, these agencies have overlapped or similar responsibilities. In order to achieve successful farming and attain the common goal of improving agricultural production, therefore, adequate coordination and cooperation among these agencies are essential. From this viewpoint, a Project Coordination Committee is proposed to be established among these agencies.

The member of the proposed committee will consist of the Director of DSİ-II, (Chairman of the Committee), the Director of Operation and Maintenance Department of DSİ-II, the Director of the Menemen Branch of Research Institute Directorate of GDRS, the Director of Irrigation and Soil Department of GDRA, the Director of the Aegean Agricultural Research Institute of MARA, the Director of the Farmers Training and Extension Division of the Provincial Office of MARA and the Project Manager of the Project Office as the Secretary of the Committee.

The meeting of the Committee will be held twice a year. The first meeting will be held before start of the main irrigation season to discuss the annual programs of agricultural extension, agricultural research and subjects of training and dissemination for of the respective agencies. While, the second meeting will be held after the main irrigation season to review the performances and results of the above-mentioned activities and to prepare the programs of the next year.

(b) Survey and Design Division

This Division will be responsible for the design of the proposed irrigation and drainage canal systems. The irrigation and drainage plan and canal layout plan made in the JICA feasibility study will be reviewed and finalized by the Design Section to be established under this Division immediately after start of the project. Based on the finalized plan, topographic and canal route survey will be carried out by a local survey company under the supervision of the Survey Section and detailed design will be made by the consultants under the supervision of the Design Section. The tender documents will also be prepared also by consultants under supervision by the Design Section. In addition to these two Sections, the Hydrogeology and Well Section will

be established under this Division for the collection of hydrogeological data, survey and design for re-drilling or new drilling of wells in the project construction period, if required. This Division will be phased out by the completion of the construction works.

(c) Construction Division

This Division will be responsible for the tender evaluation and construction supervision for the construction work of the project facilities. Since the construction work will consist of three large components of dam, irrigation and drainage canals and groundwater wells, three Sections will be established under this Division for the construction supervision for the respective components. This Division will totally be phased out after completion of the total construction works.

(d) O&M Division

This Division having four Sections will be organized two year before completion of the construction work, so that the Division will fully function from start of the O&M period of the project. The Dam Section will have a direct responsibility for the operation and maintenance of the Beydağ dam and intake structure. The Canal Section will provide training to members of WUAs for the efficient water management and operation of water supply system and assist and advise the WUAs in supervision of the maintenance and repairing works to be done by the local contractors who will be employed by WUAs at their own cost. The O&M Equipment Section will also be established under this Division for the operation and maintenance of O&M equipment, of which number will be limited to the minimum to be required for the day-to-day and periodical maintenance of the dam. In addition to the above three Sections, The Hydrogeology and Well Section will be attached to this Division to train the pump operators for groundwater wells and assist and advise WUAs in repair and replacement of the pumps and electrical supply system of the wells.

(e) Agricultural Division

The Agricultural Division will be responsible for the facilitation of the agricultural extension, the marketing of agricultural products and farm inputs and agricultural credits to farmers. For these purposes, this Division will keep close coordination with the District Agricultural Offices, agricultural development cooperatives, the Agricultural Bank, the agricultural credit cooperatives and the Chamber of Agriculture. In addition to these activities, this Division will be in charge of collection of technical data and demonstration activities at the demonstration farms to be established in the project area. In order to deal with these activities efficiently, three sections, i.e. Extension and Research Section, Cooperative Development Section, Credit Section and Demonstration Farm Section will be established under this Division.

(f) Administration Division

This Division having four Sections will be responsible for personnel, contract procurement, land acquisition and general administration of the Beydağ Irrigation Project Office.

(g) Finance Division

This Division will be responsible for the project budgeting, finance, internal audit, stores and inventory control of equipment and supplies, for which four Sections will be established under this Division.

(h) Monitoring and Evaluation Unit

The Monitoring and Evaluation Unit will be responsible for collecting and analyzing data on project planning, implementation and performance, particularly with respect to: (i) construction targets, progress and quality control; (ii) actual disbursements compared to targets; (iii) measurement of the reservoir water level and groundwater table at the representative sites on the daily basis; (iv) effectiveness of water management (timeliness and quantity of deliveries compared to projected schedules); (v) operations and effectiveness of WUAs in securing compliance of their members to their directives; (vi) maintenance quality and costs; (vii) agricultural progress in terms of changing patterns of land use, cropping patterns, institutional changes in tenancy agreements, trends, if any, to increase or decrease owner occupancy; (viii) support from the Agricultural Bank, cooperatives and the District Agricultural Offices; (ix) water charge collection; (x) monitoring of quality control under the project; and (xi) monitoring of environmental aspects.

To undertake the tasks listed above, the staff of this Unit would collect the necessary data from the line divisions and other agencies responsible for the activity. To obtain the agricultural performance data required, the staff of the Unit would complete questionnaires for each crop season on a sample group of farmers, spatially distributed over the project area and covering a range of farm sizes and land tenure arrangements. Periodic Monitoring and Evaluation Reports would be prepared for DSİ. These reports would compare actual achievements with established targets and make it possible to set realistic targets for the coming year or season.

2.1.2 Project Management

The chief executive officer for the Beydağ Irrigation Project would be the Project Manager, who will be responsible for day-to-day project administration and management, work programming and supervision, budgeting, and financial control. He would be appointed by DSİ and would be based at the Project Office in Ödemiş. He would: (i) ensure the design and implementation of the project in accordance with the time schedule; (ii) prepare annual implementation programs and progress reports; (iii) prepare the project's annual budget proposal; (iv) manage all project staff and consultant; (v) supervise preparation of tender documents, issuance of calls for tender and evaluation of bids for procurement of works goods and services; and (vi) ensure coordination of all project activities at the project and district levels. The Project Manager would be assisted in these functions by the Project Consultant.

2.1.3 Staffing

The key staff required to implement and to operate and maintain the project are listed in Table I.5 and summarized below.

Division	Design and Construction Stage								O&M Stage
	1st year	2nd year	3rd year	4th year	5th year	6th year	7th year	8th year	
(1) Project Manager	1	1	1	1	1	1	1	1	1
(2) Survey & Design	11	11	6	10	10	8	8	7	0
(3) Construction	4	4	4	13	13	12	9	8	0
(4) O&M	0	0	0	0	0	0	5	10	15
(5) Agriculture	5	5	5	6	6	6	9	9	9
(6) Administration	10	10	10	10	10	10	10	8	7
(7) Finance Division	8	8	8	10	10	10	10	10	9
(8) Monitoring & Evaluation	6	6	6	6	6	6	6	6	6
Total	45	45	40	56	56	53	58	59	47

2.2 Water Users Organization

An essential prerequisite for successful O&M of the irrigation and drainage systems in terminal units would be to organize the Tertiary Group (TG) which will cover 60 ha on an average and headed by a Gate Operator. About 20 ~40 TGs will form an Irrigators' Group (IG) which will basically be organized for each secondary canal which will cover about 450 ha of net irrigation area on an average. To be successful, IGs should be as cohesive as possible. Therefore, as far as the topography allows, their areas of activity would coincide with the boundaries of the villages. Each IG will have a leader selected in the village concerned, preferably the muhtar.

The IGs included in the command area of a main canal will form a Water Users' Association (WUA) as shown in Figure I.5. The WUA will have an Association Council as an executive body, which will be staffed by the presidents of municipalities or muhtars concerned, the presidents of Farmers' Possessions Protections Organizations, the presidents of Chambers of Agriculture, two members selected from each village concerned. Under the Association Council, a Association Committee will be organized, which will be staffed by a President, a General Secretary, a Treasurer and four members. Since there will be two main canals in the project area, two WUAs: Right Bank WUA and Left Bank WUA, will be established in the project area.

The above-mentioned two WUAs will form a Water Users' Union (WUU) which will have a function for coordinating two WUAs for an equitable water distribution to the two main canals and maintenance work. In addition to this function, WUU will have a function as a contact point with the O&M Division of the Project Office for preparing the operation program of the dam reservoir and the dam intake and assisting and advising WUAs in preparing a maintenance and repairing program. The WUU will be staffed by a chief of district or mayor of mayor of municipality concerned as a chairman, two Presidents of the Association Committee and a secretary.

The main objectives of this organization are to: (i) deliver water in a timely and equitable manner in the project area so as to ensure a fair distribution of the limited water resource; (ii) deliver water to each farmer at a flow rate that enables efficient on-farm irrigation; (iii) notify farmers of the time they receive their water allocations before the onset of the irrigation season, by preparing operation schedules which take account of the physical constraints of the network and expected water supplies at the head of main canals; and (iv) adapt as far as possible the delivery schedules to the crop requirements. To achieve these objectives, it would be necessary to make the water management body fully conversant with its task by providing full and thorough training to all pertinent staff and farmers.

TABLES

Table I-1 Results on Field Survey for Existing Surface Irrigation Project (1/3)

Survey Items	Alflehir Project	Adala Project	Manisa Project	Menemen Project
1 Outline of the Project				
(1) Location	Gediz river basin	Gediz river basin	Gediz river basin	Gediz river basin
(2) Irrigation area	- Alaflehir area 11,417 ha (gravity) - Sarigol area 1,927 ha (gravity) - Avflar area 212 ha (gravity) - Avflar area 178 ha (pump) total 13,734 ha	- Adala area 18,338 ha - Akpinar area 886 ha Total 19,224 ha	- 23,052 ha (gravity)	- Gravity: 20,730 ha - Pump: 2,135ha Total 22,865 ha
(3) Project facilities	Main canal: 76.71 km Secondary canal: 19.29 km Tertiary canal: 350.54 km Service road: 1,814.00 km	Main canal: 84.13 km Secondary canal: 363.97 km Tertiary canal: 237.25 km Drainage canal 349.48 km Service road: 272.33 km	Main canal: 69.16 km Secondary canal: 175.96 km Tertiary canal: 630.06 km Drainage canal 286.00 km Service road: 294.11 km	Main canal: 54.80 km Diversion canal 15.90 km Secondary canal: 317.11 km Tertiary canal: 459.24 km Drainage canal 206.66 km Service road: 294.11 km
(4) Project construction cost	TL 19.22 million (only for Sarigol Area of 1,927 ha)	No data are available.	No data are available.	No data are available.
2 Cultivated Crop, Area and unit Yield in 1994				

Crops	Area (ha)	U.Y (ton/ha)
Water melon	14	23.32
Cotton	44	4.00
Tobacco	4	0.85
Sesame	8	0.96
Maize	128	1.89
Tree nursery	481	-
Grape	6,975	5.12
Olive	5	8.44
Orchard	12	4.77
Vegetables	30	13.20
Potato	2	25.00
Onion	2	20.00
Fodder crops	3	5.57
Poplar	1	-
Others	6	-
Total	7,715	

Note: U.Y: Unit yield

Crops	Area (ha)	U.Y (ton/ha)
Water melon	67	22.50
Cotton	2,498	3.51
Sesame	13	0.83
Maize	436	3.30
Legumes	6	-
Sugar beet	81	41.00
Sunflower	2	-
Tree nursery	435	-
Grape	3,590	4.40
Olive	10	-
Orchard	101	-
Vegetables	193	28.70
Fodder crops	61	-
Poplar	8	-
Others	46	-
Total	7,547	

Note: U.Y: Unit yield

Crops	Area (ha)	U.Y (ton/ha)
Water melon	121	24.40
Cotton	5,073	2.67
Sesame	10	-
Maize	149	4.50
Tobacco	5	-
Tree nursery	282	-
Grape	1,968	2.98
Olive	60	6.21
Orchard	180	9.75
Vegetables	185	39.10
Fodder crops	69	40.00
Poplar	9	-
Others	500	-
Total	8,611	

Note: U.Y: Unit yield

Crops	Area (ha)	U.Y (ton/ha)
Wheat	370	5.34
Legumes	7	-
Water melon	528	-
Cotton	7,664	3.14
Tobacco	1	-
Sesame	21	-
Maize	382	4.81
Tree nursery	266	-
Grape	1,553	3.54
Olive	33	4.67
Orchard	447	14.74
Strawberry	6	3.00
Citrus	82	23.40
Vegetables	390	6.34
Onion	14	-
Fodder crops	62	-
Others	320	-
Total	12,146	

Note: U.Y: Unit yield

3 Irrigation Practices

(1) Irrigation water requirement and period

Crop	I.W.R.(mm)	I.P
Cotton	569	Jun - Oct
Maize	720	May - Sep
Sesame	403	May - Aug
Onion	629	Apr - Aug
Wheat	277	Oct - Jun
Potato	365	Apr - Jun
Water melon	333	May - Aug
Vegetables	315	Jul - Sep
Orchard	787	May - Oct

Note: I.W.R.: Total Irrigation Water Requirement.
I.P. : Irrigation period

Crop	I.W.R.(mm)	I.P
Wheat	156	Oct - May
Water melon	209	May - Jul
Sugar beet	676	May - Aug
Cotton	486	May - Sep
Sunflower	483	May - Aug
Sesame	404	May - Sep
Maize	596	May - Sep
Orchard	691	May - Oct
Grape	389	May - Aug
Fodder crops	786	May - Oct

Note: I.W.R.: Total Irrigation Water Requirement.
I.P. : Irrigation period

Crop	I.W.R.(mm)	I.P
Cotton	465	Jun - Sep
Wheat	88	Oct - May
Water melon	182	Jun - Aug
Sesame	365	May - Aug
Maize	577	May - Sep
Grape	333	Jun - Aug
Orchard	630	May - Sep
Vegetables	71	Sep - Oct
Fodder crops	825	May - Oct

Note: I.W.R.: Total Irrigation Water Requirement.
I.P. : Irrigation period

Crop	I.W.R.(mm)	I.P
Water melon	258	May - Aug
Maize	236	May - Aug
Wheat	117	Oct - May
Sesame	350	May - Aug.
Strawberry	255	May - Jul
Legumes	545	May - Sep
Onion	480	Jun - Sep

Note: I.W.R.: Total Irrigation Water Requirement.
I.P. : Irrigation period

Table I-1 Results on Field Survey for Existing Surface Irrigation Project (2/3)

Survey Items	Alflehir Project	Adala Project	Manisa Project	Menemen Project
(2) Irrigation method	- Irrigation water is released to all irrigation canals down to tertiary canals, but water distribution to the tertiary block area is made in rotational manner of 24 days interval starting from the downstream area. - Due to shortage of surface water, the upstream area is irrigated combinedly with groundwater while the downstream area is mainly irrigated by groundwater. For this, DSI dug 72 tubewells and farmers dug about 3,000 tubewells in the area.	- In normal year, the irrigation water supply is started from May and terminated in November, but in a drought year, the water supply is only made in the period from July to October. - The available water in the Gediz river is equally distributed to other project areas along the river and the irrigation rates of these areas are almost same. Therefore, there have never been any conflicts among them. - Rotational irrigation is generally practiced on both secondary and tertiary canals basis, starting from the downstream portion. Each command area of the tertiary canal is divided into two blocks and the downstream area is first given water for 3.5 days. The upstream area can get water only after 3.5 days from the completion of the downstream irrigation, because the tertiary canals branching off from a secondary canal are grouped into two and each group is given water in alternate 3.5 days. The upstream area is also fed with irrigation water for 3.5 days in a time.	- Same as that for the Adala Project - Same as that for the Adala Project	- The irrigation period covers a period of 180 days, starting on May 1. - About 90% of farmers receive water directly from the tertiary canal and 10% through neighboring fields. - Same in other projects, the irrigation methods applied in this project area are wild flooding or border irrigation for the cultivation of wheat and maize and furrow irrigation for cotton, orchards and vegetables.
4 Drainage Practices				
(1) Drainage water requirement	No information	No information	No information	- Unit drainage requirement: 0.55 lit/sec/ha
(2) Leaching requirement	No information	No information	No information	- Not considered in the design
5 Project Organization				
(1) Project Level Organization	The O&M works of this project is carried out by the Alflehir District O&M Office under the control of the Manisa District Office consisting of Operation Unit, Maintenance Unit, Mechanical Unit and Administrative Unit, and this project office has its own Operation Section and Maintenance Section.		- Same as that for the Adala Project	The O&M works of this project is carried out by the Menemen District O&M Office under the control of No.21 District Office of DSI-IL. This O&M Office consists of Operation Unit, Maintenance Unit and Machinery and Electric Unit.
(2) Number of staff in the project office	Manisa District Office - Operation Unit 6 persons - Maintenance Unit 6 persons - Mechanical Unit 50 persons - Administrative Unit 14 persons Manisa District O&M Office - Chief Engineer's Office 2 persons - Operation Section 53 persons - Maintenance Section 27 persons	The Manisa District Office controls also this O&M Office. Adala District O&M Office - Chief Engineer's Office 2 persons - Operation Section 68 persons - Maintenance Section 24 persons	The Manisa District Office controls also this O&M Office. Manisa District O&M Office - Chief Engineer's Office 2 persons - Operation Section 49 persons - Maintenance Section 30 persons	Chief Engineer's Office - Operation Section 15 persons - Maintenance Section 9 persons - Mech.and Elec. Section 33 persons
(3) Other governmental organization	Other governmental organizations are not included in the project O&M practices.	Other governmental organizations are not included in the project O&M practices.	Other governmental organizations are not included in the project O&M practices.	Other governmental organizations are not included in the project O&M practices.

Table I-1 Results on Field Survey for Existing Surface Irrigation Project (3/3)

Survey Items	Alflehir Project	Adala Project	Manisa Project	Menemen Project
6 O&M of Project Facilities				
(1) Detailed organization chart	Not available	Not available	Not available	Not available
(2) Maintenance and repair works	The operation and maintenance of main and secondary canals are being made by DSI and tertiary canals by farmers.	- Same as that for the Alaflehir Project	- Same as that for the Alaflehir Project	- Same as that for the Alaflehir Project
(3) Number of O&M equipment	Equipment / Main Office / Project Office - Vehicle 7 3 - Grader 0 1 - Tractor 6 3 - Loader 2 0 - Excavator 5 1 Truck 2 1	Equipment / Main Office / Project Office - Vehicle 7 4 - Grader 0 1 - Tractor 6 2 - Loader 2 0 - Excavator 5 1 Truck 2 1	Equipment / Main Office / Project Office - Vehicle 7 3 - Grader 0 1 - Tractor 6 2 - Loader 2 0 - Excavator 5 0 Truck 2 1	Equipment / Number - Gradoll 2 - Excavator 1 - Grader 1 - Dozer 1 - Tractor 2 - Truck 2 - Pick-up 3
(4) Annual O&M budget	TL 14 billion	TL 19 billion	TL 23 billion	TL 30 billion
7 Water Management and Water Users Association				
(1) Number of water users groups established	An irrigation cooperative was established in the Avflar area of 390 ha in 1994 and two are scheduled to be established in the Alaflehir area of 11,417 ha in 1995.	Whole project area will be covered by two irrigation cooperatives which are scheduled to be established by the end of 1995.	Whole project area will be covered by two irrigation cooperatives which are scheduled to be established by the end of 1995 and will cover 10,962 ha and 12,090 ha respectively.	- In the irrigation area of 4,600 ha along the Right Main Canal, an irrigation cooperative including 17 villages was just established under the guidance of DSI.
(2) Water Charge Collection	- Unit rate of water charge - Grape: TL 600,000/ha - Cotton: TL 950,000/ha - Performance rate for collection: 12%	- Unit rate of water charge - Grape: TL 600,000/ha - Cotton: TL 950,000/ha - Performance rate for collection: 10%	- Unit rate of water charge - Grape: TL 600,000/ha - Cotton: TL 950,000/ha - Performance rate for collection: 10%	- Unit rate of water charge - Grape: TL 600,000/ha - Cotton: TL 860,000/ha - Performance rate for collection: 43%
8 Project Monitoring and Evaluation				
(1) Items monitored and evaluated	- Groundwater table - Crop production - Operation and maintenance of the facilities - Water charge collection - Irrigation water supply	- Water surface fluctuation of reservoir - Groundwater table and quality - Irrigation water distribution - Water charge collection - Crop production	- Same as that for the Adala Project	- Irrigation water supply - Crop production - Water charge collection
(2) Interval of data collection	Monthly	Monthly		Monthly
9 Other Findings	- Irrigation facilities are generally designed for the unit discharge of 1.0 lit/sec/ha. - In the project area, a farmer has installed a drip irrigation system in his own field of 0.3 ha. The total construction cost was TL 5.6 million.	- The irrigation priority is given to the cultivation of cotton and grape in this area and that for the wheat cultivation is low. - The average hectareage of a tertiary canal is 30 ~40ha in the area covered by new tertiary system (kanalet), but that of the old tertiary system ranges from 20 ha to 180 ha. - The under-drain system has been constructed in the project area and since then, there have been no drainage and salinity problems in the area.	- In May, the water distribution schedule is prepared by the DSI agricultural engineer after collecting the requests from the farmers. - The O&M cost was planned to be prepared at the rate of TL 1,000,000/ha, of which 25% would be collected from the beneficiary farmers and 75% would be prepared by DSI, but actually the farmers paid only for 10% of their due payment. - Other findings are almost same as those for the Adala Project.	- The Chief Engineer is of the opinion that water should be saved through the economized water management by mean of drip irrigation. - Since 1986, available irrigation water has been decreasing and about 30% of the area can not be irrigated properly in the dry season. - The technical training should be conducted by DSI to the farmers for the smooth and effecuve water management.

Table I.2 Results on Field Survey for Existing Groundwater Irrigation Project (1/2)

Survey Items	Elitli Scheme	Kaharat Scheme	Youlstu Scheme
1 Location	Bayndir	Tire	Odemiſi
2 Outline of the Scheme			
(1) Irrigation Area	100 ha	392 ha	350 ha
(2) Number of tubewell	5 wells	6 wells	12 wells
(3) Total discharge	100 lit/sec	305 lit/sec	360 lit/sec
(4) Length of pipe line	2.4 km	27.0 km	No information
(5) Number of beneficiary farmers	110 persons	194 persons	304 persons
3 Irrigation Practices	- Irrigation is started on April 10 every year. - The rotational schedule for irrigation is so decided that the farmers first inform of the desired irrigation dates to the pump operator, and these requests are adjusted by the pump operator. While irrigating, the pump operator goes round the fields every day to check the irrigation conditions and adjust the irrigation schedule based on his judgment and farmers' requests. - Some farmers irrigating the fields by using a sprinkler system. These farmers operate the system only in night time. - The pump operation hours are recorded by the pump operator in a operation book consisting 3 sheets. The second and third sheets are carbon-copied. The original sheet is kept by a water user, and second and third sheets are kept by the irrigation cooperative.	- Based on the farmers requests made at the onset of irrigation season, the irrigation rotation schedule is decided with some modifications by the pump operator. - The interval of irrigation rotation is 15 days. - Usually the pump is operated for 12 hours from 8:00 to 20:00, and an urgent supply of irrigation water is made in night time.	- Irrigation water supplied at the request of the farmers.
4 Irrigation Cooperative	- This irrigation cooperative was established in 1991. - The board member of cooperative consists of a president (associate manager), a vice president, a treasurer and two pump operators. - The general meeting is held once a year, In this meeting, the accounting of the cooperative is reported and the board member are elected.	- This irrigation cooperative was established in 1972. - The board member of cooperative consists of a president (associate manager), a vice president, a treasurer and 3 pump operators. In addition, 2 pump operators are temporarily employed in the main irrigation season. - The general meeting is held once in two years, and the board menmbers are	This irrigation cooperative was established in 1983. The board member of cooperative consists of a president (associate manager), a vice president, a treasurer and 12 pump operators. The general meeting is held once a year. In this meeting, the accounting of the cooperative is reported and the board menmbers are elected.

Table I.2 Results on Field Survey for Existing Groundwater Irrigation Project (2/2)

Survey Items	Elitli Scheme	Kaharat Scheme	Youlstu Scheme
	- To be the member of the cooperative, the farmers should pay the earnest money, of which amount is TL100,000/person as a basic portion and additional money at the rate of TL 1,000,000/ha. The earnest money thus collected is not used for the O&M purpose but for emergency.	elected in this meeting, but the accounting of cooperative is reported every year. - To be the member of the cooperative, the farmers should pay the earnest money, of which amount is TL 100,000/person as a basic portion and additional money at the rate of TL 20,000/ha. The earnest money thus collected is used for the O&M and the other activities of the cooperative.	- To be the member of the cooperative, the farmers should pay the earnest money, of which amount is TL110,000/person as a basic portion and additional money at the rate of TL 20,000/ha. The earnest money thus collected is not used for the O&M purpose but for emergency.
5 Payment of Water Charge	- The water charge is collected from beneficiary farmers at the rate of TL 40,000/hour/well. - The beneficiary farmers should pay the water charge by the end of December for each year, but they are graced for the payment for 2 years at maximum. If they do not pay the water charge within the grace period, this will be the case of court. - If the cooperative does not have enough money for the payment of O&M cost, the cooperative ask rich farmers to make advance payment of the water charge. - The water charge paid by the beneficiaries amounted to TL 250 million which is equivalent to 62.5% of the due payment.	- The water charge is collected from beneficiary farmers at the rate of TL 60,000/hour/well. - Twenty five percent of water charge is paid before start of the irrigation season and the remaining 75% is paid after the irrigation season but within the same year. - The beneficiary farmers should pay the water charge by the end of December for each year, but they are graced for the payment for 2 years at maximum. If they do not pay the water charge within the grace period, this will be the case of court. Within the grace period, these farmers have to pay the interest at the rate of 7%/month. - The water charge paid by the beneficiaries amounted to TL 660 million which is equivalent to 76.5% of the due payment.	- The beneficiary farmers should pay the water charge by the end of December for each year, but they are graced for the payment for 2 years at maximum. If they do not pay the water charge within the grace period, this will be the case of court. - The water charge paid by the beneficiaries amounted to TL 732.9million which is equivalent to 66.7% of the due payment.
6 Others		- This cooperative is selling commodities and coals , and the selling benefit is being used as the subsidy for the O&M cost. The sale is conducted by the above-mentioned temporary pump operators.	

Table I.3 Results on Field Survey for Existing Water Users' Association (1/3)

Survey Items	Menemen Left Side WUA	Mesir WUA	Gediz WUA	Salihli Left Side WUA
1 Outline of the Project				
(1) Irrigation Area	16,500 ha	13,679 ha	11,000 ha	9,237 ha
(2) Irrigation and Drainage Facilities				
- Reservoir	Demirköprü Reservoir and Emiralem Regulator	Demirköprü and Gölnarmaro Reservoir	Demirköprü and Gölnarmaro Reservoir	Gölmarmara and Demirköprü Reservoirs
- Main canal	10.80 km	37.714 km	30.0 km	57.90 km
- Secondary canal	50.577 km (4nos.)	23.38 km	?	31.22 km (4 nos.)
- Tertiary canal	84.745 km	-	?	-
- Kanalet	28.249 km	561.38 km	?	45.30 km
- Main drain	114.796 km	?	?	?
- Secondary drain	12.147 km	?	?	?
- Tertiary drain	105.715 km	?	?	?
(3) Main Crops Cultivated	Cotton, grapes, water melon, melon, vegetables	Cotton, grapes, vegetables	Cotton, grapes (80%)	Grapes (55%), cotton (30%), vegetables (15%)
(4) Number of WUA Members	about 6,000	about 3,000	?	about 7,000
2 Establishment of WUA				
(1) Year of Establishment	June, 1995	April, 1995	April, 1995	June, 1995
(2) Procedure of Establishment	- DS‹ informs of the transfer of project facilities to farmers and suggests to establish a WUA. - The mayor/muhtar organizes a meeting to exchange a view with farmers in the command area and gets all farmers' consents on the establishment of the WUA. - The mayor/muhtar reports the farmers' consents to DS‹. - The statute of WUA, for which the standard form prepared by the Ministry of Interior is used, is prepared by the mayor/muhtar under the guidance of DS‹ and signed by the mayor/muhtar. - The statute of WUA thus prepared is approved by the Governor of the province. - Upon the Governor's approval of the statute, the procedure of the establishment of WUA is completed.	- Same as the case of Menemen WUA.	- Same as the case of Menemen WUA.	- Same as the case of Menemen WUA.
(3) Position and Number of WUA Staff	- Board members - 1 president - 1general secretary - 1 treasurer - 4 members - Working level staff - 1 secretary - 1 O&M technician - 4 water allocation technicians - 3 pump operation technicians - 1 computer technician	- Board members - 1 president - 1general secretary (Irrigation Engineer) - 1 treasurer - 4 members - Working level staff - 50 guards cum gate operators	- Board members - 1 president - 1general secretary - 1 treasurer - 4 members - Working level staff - 50 guards cum gate operators	- Board members - 1 president - 1general secretary - 1 treasurer - 4 members - Working level staff - 60 guards cum gate operators

Table I.3 Results on Field Survey for Existing Water Users' Association (2/3)

Survey Items	Menemen Left Side WUA	Mesir WUA	Gediz WUA	Salihli Left Side WUA
(4) Procedure of Election of Board Members	- The 43 members of WUA Council consisting of muhtars and farmers representatives selected from the villages concerned and a member of the Chamber of Agriculture have a first meeting under the chairmanship of the Governor to elect the board members. - The number of above-mentioned farmers' representatives is determined in the following manner: irrigation area (I.A) < 1,000 ha: 1 person 1,000 ha ≤ I.A < 1,500 ha: 2 persons I.A ≥ 1,500 ha: 3 persons	- The 40 members of WUA Council consisting of muhtars and farmers representatives selected from the villages concerned and a member of the Chamber of Agriculture have a first meeting under the chairmanship of the Governor to elect the board members. - The number of the above-mentioned farmers' representatives is determined in the same standard as that of the Menemen WUA.	- The 37 members of WUA Council consisting of muhtars and farmers representatives selected from the villages concerned and a member of the Chamber of Agriculture have a first meeting under the chairmanship of the Governor to elect the board members. - The number of the above-mentioned farmers' representatives is determined in the same standard as that of the Menemen WUA.	- Same as the case of Menemen WUA.
3 Transfer Procedure of Project Facilities	- The transfer agreement is signed between the DS-II Director and the president of WUA and approved by the Minister of Public Works and Settlement.	- Same as the case of Menemen WUA.	- Same as the case of Menemen WUA.	- Same as the case of Menemen WUA.
4 Annual Budget of WUA	- The annual budget of WUA will amount to TL 25 billion which is calculated on the basis of the unit rate of water charge of 2 million/ha, which is paid by beneficiaries dividing into two portions equally, the first portion in May and the second portion in October. - If the farmer who is not the WUA member uses the canal water, he has to pay 2.5 million/ha.	- The annual budget of WUA will amount to TL 27 billion which is calculated on the basis of the unit rate of water charge of 2 million/ha, which is paid by beneficiaries dividing into two portions equally, the first portion in May and the second portion in October.	- Not clear.	TL 4.37 billion
5 Rule and Regulation of WUA	- Available	Available	Available	Available
6 Operation and Maintenance Works				
(1) Size and Number of Rotation Block	- The command area of each secondary canal is divided into two as rotation blocks; upstream and downstream areas. - The size of rotation block ranges from 1,050 ha to 3,000 ha.			- One rotational block varies from 370 ha to 1,400 ha.
(2) Boundary of Rotation Block	- Secondary canal basis.			- Tertiary canal basis.
(3) Irrigation Method	- 48-hour rotation	- Irrigation water is supplied upon the farmer's request without the rotation system.	- Irrigation water is supplied upon the farmer's request without the rotation system.	- 48-hour rotation
(4) Water Supply Period - Winter/spring irrigation - Summer irrigation	- February 1 - June 15 - July 5 - September 10	- No water supply from the DS-I canal system. - June 10 - September 15	- No water supply from the DS-I canal system. - June 10 - September 15	- Irrigation water is led from creeks. - June 8 - June 18: irrigation for grape - July 1 - August 31: irrigation for other crops
(5) Irrigator Group (IG)	- There exist 15 irrigator groups organized in each village. - The obligations of the group leader are to control of water distribution and to collect water charge.	- There exist 15 irrigator groups organized in each village. - The obligations of the group leader are to control of water distribution and to collect water charge.	- There exist 10 irrigator groups organized in each village. - The obligations of the group leader are to control of water distribution and to collect water charge.	Not clear

Table I.3 Results on Field Survey for Existing Water Users' Association (3/3)

Survey Items	Menemen Left Side WUA	Mesir WUA	Gediz WUA	Salihli Left Side WUA
(6) Maintenance Work	- The maintenance work is being carried out by DS< but gradually transferred to WUA. - After transferring the project facilities to WUA, the DS<'s obligation should be the release of water from the dam reservoir and technical advice to WUA.	- Same as the case of Menemen WUA	- Same as the case of Menemen WUA	- Same as the case of Menemen WUA
7 Water Charge Collection	- The rate of water charge is TL 2,000,000/ha. - All collected water charge will be spent by WUA without paying to the Government. - Twenty five percent of total collected water charge will be paid back to IGs for their own use. - No cost recovery is made by WUA.	- The rate of water charge is TL 2,000,000/ha. - All collected water charge will be spent by WUA without paying to the Government. - Procedure of water charge collection is as follows: (i) WUA prepares unsigned receipts. (ii) The unsigned receipts are kept by the Agricultural Bank. (iii) The signed receipts are issued to the farmers who paid water charges. (iv) The farmer who does not pay water charge is punished (court case). - No cost recovery is made by WUA.	- The rate of water charge is TL 2,000,000/ha. - All collected water charge will be spent by WUA without paying to the Government. - No cost recovery is made by WUA. - The water charge amounting to TL 2,216,158,300, which is equivalent to 1/4 of total amount, was collected in May 1995. The remaining amount will be collected in November and December 1995. - For the payment of water charge, no grace period is allowed to the farmers.	- The rate of water charge is TL 1,600,000/ha. - The above water charge is collected in four times; TL 400,000 for each. - All collected water charge will be spent by WUA without paying to the Government. - The water charge collected will be spent also by IGs, whenever necessary. - No cost recovery is made by WUA.
8 Obligation of the Government Agencies to WUA - DP< - GDRS - MARA	 - Technical assistance - Supply of water from the dam reservoir - Rental of O&M equipment without the cost. - Land consolidation - Construction of on-farm facilities - No direct involvement	- Same as the case of Menemen WUA.	- Same as the case of Menemen WUA.	- Same as the case of Menemen WUA.
9 Others	- Farmers want to manage marketing activities for agricultural inputs and agricultural products. - Farmers want to introduce sprinkler and drip irrigation systems to their farms for water saving. - Farmers want to be independent from the Government control for O&M works.	- Board meeting is held once a week, and the general meeting is held in May and November every year. - Salary of WUA members - President: TL 10 million/month - Treasurer: TL 7 million/month - Members No payment - IG: TL 10 million/year (Leader: TL 5 million) (Others: TL 5 million)	- Salary of WUA members - President: TL 25 million/month - Treasurer: TL 10 million/month - Members No payment	- They want to manage a marketing activities for agricultural inputs and agricultural products. - They want to be independent from the Government control for O&M and cooperative activities. - Farmers don't need a community center, because they have a town hall. - The existing canal system needs rehabilitation and additional kanalets. - WUA needs their own O&M equipment.

Table I.4 1994 Irrigation and Drainage Installations
Operation and Maintence and Annual Investment Tariff

A. 1994 Irrigation Installation O&M Tariff Rate

Crops	O&M Rate TL/da				
	Group 1	Group 2	Group 3	Group 4	Group 5
Grain	17,000	24,000	33,000	59,000	76,000
Legumes	39,000	48,000	63,000	107,000	135,000
Melons	35,000	44,000	66,000	98,000	122,000
Sugar beet	52,000	67,000	83,000	146,000	179,000
Cotton	52,000	67,000	83,000	146,000	179,000
Tobacco	48,000	63,000	76,000	135,000	170,000
Anise	48,000	63,000	76,000	135,000	170,000
Groundnuts	52,000	67,000	83,000	146,000	179,000
Sunflower	31,000	39,000	48,000	83,000	104,000
Hashish	31,000	43,000	52,000	87,000	111,000
Flower garden	72,000	94,000	115,000	202,000	253,000
Flax, hemp, jute	28,000	35,000	44,000	76,000	98,000
Sesame, oil plant	31,000	39,000	48,000	83,000	104,000
Maize, heather	28,000	35,000	44,000	76,000	98,000
Rice, sugar cane	135,000	167,000	207,000	368,000	457,000
All types of tree nursery	20,000	28,000	35,000	59,000	75,000
Fig	48,000	63,000	76,000	135,000	170,000
Grape	31,000	43,000	52,000	87,000	111,000
Olive grove	31,000	39,000	48,000	83,000	104,000
Every type of fruit garden	76,000	94,000	118,000	205,000	257,000
Strawberry	67,000	80,000	100,000	178,000	222,000
Sour orange	107,000	131,000	167,000	289,000	361,000
Banana	178,000	222,000	278,000	485,000	611,000
Every type of vegetable	70,000	87,000	111,000	191,000	239,000
Potatoes	43,000	56,000	70,000	118,000	145,000
Onion, garlic	39,000	48,000	59,000	104,000	131,000
Fodder	28,000	35,000	43,000	72,000	94,000
Poplar, eucalyptus, forest	43,000	56,000	70,000	118,000	146,000
Meadow, pasture	7,000	11,000	15,000	24,000	28,000
Green house	140,000	174,000	222,000	382,000	478,000
Out of season irrigation	17,000	20,000	28,000	48,000	59,000
Windmills (each stone	2,750,000	2,705,000	2,705,000	-	-
Brick oven (each machine)	2,028,000	2,028,000	2,028,000	3,154,000	3,154,000
water rate per m3 (TL/m3)	66	87	107	194	239

B. 1994 Drainage Installation O&M Tariff Rate
Group 6 : 6,000 TL/da

C. 1994 Irrigation Installation Annual Investment Tariff Rate
Group 7 : 300 TL/da
Group 8 : 450 TL/da
Group 9 : 600 TL/da
Group 10 : 750 TL/da

D. 1994 Drainage Installations Annual Investment Tariff Rate
Group 11 : 200 TL/da

(Translation)

Table 1.5 Key Staff Reqirement for The Beydağ Project Office

Division and Staff Category	Design and Construction Stage								O&M Stage
	1st year	2nd year	3rd year	4th year	5th year	6th year	7th year	8th year	
A Project Head Office									
- Project Manager	1	1	1	1	1	1	1	1	1
B Survey and Design Division									
- Chief Engineer	1	1	1	1	1	1	1	1	-
- Survey Engineer	2	2	-	1	1	1	1	1	-
- Dam Design Engineer	1	1	1	1	1	-	-	-	-
- Canal Design Engineer	1	1	-	1	1	1	1	1	-
- Hydrogeologist	1	1	1	1	1	1	1	1	-
- Technician	5	5	3	5	5	4	4	3	-
Sub-total	11	11	6	10	10	8	8	7	0
C Construction Division									
- Chief Engineer	1	1	1	1	1	1	1	1	-
- Dam Construction Engineer	2	2	2	2	2	1	-	-	-
- Canal Construction Engineer	-	-	-	2	2	2	2	2	-
- Well Construction Engineer	-	-	-	1	1	1	1	-	-
- Technician	1	1	1	7	7	7	5	5	-
Sub-total	4	4	4	13	13	12	9	8	0
D O&M Division									
- Chief Engineer	-	-	-	-	-	-	1	1	1
- Dam Engineer	-	-	-	-	-	-	1	1	1
- Irrigation Engineer	-	-	-	-	-	-	1	1	1
- Hydrogeologist	-	-	-	-	-	-	-	1	1
- Equipment Engineer	-	-	-	-	-	-	-	1	1
- Technician & Equ. Operator	-	-	-	-	-	-	2	5	10
Sub-total	0	0	0	0	0	0	5	10	15
E Agricultural Division									
- Senior Agronomist	1	1	1	1	1	1	1	1	1
- Agronomist	1	1	1	1	1	1	1	1	1
- Agricultural Engineer	1	1	1	1	1	1	1	1	1
- Extension Expert	-	-	-	1	1	1	1	1	1
- Cooperative Expert	-	-	-	-	-	-	1	1	1
- Credit Expert	-	-	-	-	-	-	1	1	1
- Technician	2	2	2	2	2	2	3	3	3
Sub-Total	5	5	5	6	6	6	9	9	9
F Administration Division									
- Chief Administrator	1	1	1	1	1	1	1	1	1
- Personnel Officer	1	1	1	1	1	1	1	1	1
- Procurement Officer	1	1	1	1	1	1	1	-	-
- Land Acquisition Officer	1	1	1	1	1	1	1	-	-
- Store Officer	1	1	1	1	1	1	1	1	1
- Assistant Officer	5	5	5	5	5	5	5	5	4
Sub-total	10	10	10	10	10	10	10	8	7
G Finance Division									
- Chief Accountant	1	1	1	1	1	1	1	1	1
- Accountant	1	1	1	1	1	1	1	1	1
- Section officer	3	3	3	3	3	3	3	3	3
- Assistant Officer	3	3	3	5	5	5	5	5	4
Sub-total	8	8	8	10	10	10	10	10	9
H Monitoring and Evaluation Unit									
- Senior M&E Officer	1	1	1	1	1	1	1	1	1
- Agricultural Engineer	1	1	1	1	1	1	1	1	1
- Agronomist	1	1	1	1	1	1	1	1	1
- Assistant Officer	3	3	3	3	3	3	3	3	3
Sub-total	6	6	6	6	6	6	6	6	6
Total	45	45	40	56	56	53	58	59	47