

Table E-2-1 Monthly Inflows(Normal year, 1985)

Unit: MCM

Month	Mariut Lake				Total inflow (Lake) (1)	Omoum main drain				Total inflow (Omoum) (2)	Grand total (1)+(2)
	Qalla	Hares	Abis	Inflow (others)		Abu Hommos	Shereshera	Truga	Dishudi		
Jan	6	30	4	39	79	18	45	37	15	116	195
Feb	6	31	4	33	74	18	45	38	15	117	191
Mar	5	27	3	30	65	18	44	36	13	111	176
Apr	6	31	4	26	67	20	48	40	16	123	190
May	7	36	4	28	75	22	52	43	16	134	209
Jun	8	42	5	22	77	25	61	50	19	156	233
Jul	13	55	8	25	101	43	99	82	32	256	357
Aug	12	51	7	22	92	39	90	75	29	233	325
Sep	7	30	4	20	61	24	57	47	18	146	207
Oct	4	17	2	21	44	14	35	28	10	88	132
Nov	5	29	3	69	106	18	44	37	14	112	218
Dec	8	40	5	67	120	23	61	52	20	154	274
Total	87	419	53	402	961	282	681	565	217	1746	2707

*** Inflow(others) includes rainfall runoff, Nubariya drain escape, Nubariya by-pass, Lock water, Sea water intrusion, WTP water and Amreya drain water

Table E-2-1 Monthly Inflows(Design year, 1994)

Unit: MCM

Month	Mariut Lake				Total inflow (Lake) (1)	Omour main drain				Total inflow (Omour) (2)	Grand total (1)+(2)
	Qalla	Iares	Abis	Inflow (others)		Abu Hommos	Shereshera	Truga	Dishudi		
Jan	7	33	4	40	84	20	49	41	16	125	209
Feb	4	24	3	31	62	14	35	29	11	89	151
Mar	6	33	4	32	75	21	52	43	16	132	207
Apr	6	30	4	26	66	19	47	39	15	120	186
May	7	36	4	28	75	22	52	43	16	134	209
Jun	8	42	5	22	77	25	61	50	19	156	233
Jul	13	55	8	25	101	43	99	82	32	256	357
Aug	12	51	7	22	92	39	90	75	29	233	325
Sep	7	30	4	20	61	24	57	47	18	146	207
Oct	4	16	2	20	42	13	33	26	9	82	124
Nov	9	46	6	75	136	27	70	60	24	182	318
Dec	8	30	5	66	115	21	54	46	18	139	254
Total	91	432	56	407	986	288	699	581	223	1794	2780

*** Inflow(others) includes rainfall runoff, Nubariya drain escape, Nubariya by-pass, Lock water, Sea water intrusion, WTP water and Amreya drain water

Table E-2-1 Monthly Inflows(Flood year, 1991)

Unit: MCM

Month	Mariut Lake				Total inflow (Lake) (1)	Omoum main drain				Total inflow (Omoum) (2)	Grand total (1)+(2)
	Qalla	Iares	Abis	Inflow (others)		Abu Hommos	Shereshera	Truga	Dishudi		
Jan	8	38	5	42	93	22	57	48	19	148	241
Feb	5	29	4	33	71	17	43	36	14	110	181
Mar	6	33	4	32	75	21	52	43	16	133	208
Apr	6	32	4	26	68	20	50	42	16	128	196
May	7	36	4	28	75	22	52	43	16	134	209
Jun	8	42	5	22	77	25	61	50	19	156	233
Jul	13	55	8	25	101	43	99	82	32	256	357
Aug	12	51	7	22	92	39	90	75	29	233	325
Sep	7	30	4	20	61	24	57	47	18	146	207
Oct	4	15	2	20	41	13	32	25	9	80	121
Nov	8	40	5	73	126	24	61	52	21	158	284
Dec	11	53	7	72	143	30	80	69	28	207	350
Total	95	454	59	414	1022	300	734	612	237	1889	2911

*** Inflow(others) includes rainfall runoff, Nubariya drain escape, Nubariya by-pass, Lock water, Sea water intrusion, WTP water and Amreya drain water

Table E-2-2 Detail of Water Balance Study(present condition)
(October, 1994)

Date	Rainfall (mm)	Inflow from seven pump stations							Total (7 pumps) (1)	Inflow from other sources							Total (2)	Total Inflow (3) (1)+(2)	Out flow				Total out flow (4)	Balance (3)-(4)	Change in W.L.	Calculated W.L. (m.MSL)	W.L. (Mariut) (m.MSL)	
		Dalla	Abis	Hares	Dishudi	Truga	Shereshera	Hommos		Direct runoff	Indirect runoff	W.T.P. water	Lock water	Nuba.drn escape	Nubariya Bypass	Amreya Drn. intru.			S.W.	Evapo. lake	Evapo. Omoum	Mariut No.1						EL Max
1	0	0.86	0.18	1.66	0.61	1.17	2.21	0.52	7.21	0	0	0.20	0.26	0	0	0.13	0.05	0.65	7.86	0.22	0.005	0.35	7.47	0.04	-0.18	-0.0033	-2.2033	-2.20
2	0	0.85	0.27	1.54	0.65	1.17	2.21	0.52	7.21	0	0	0.20	0.26	0	0	0.13	0.05	0.65	7.87	0.22	0.005	0.35	6.70	7.28	0.59	-0.0108	-2.1926	-2.19
3	0	0.92	0.27	1.57	0.52	1.15	2.12	0.52	7.06	0	0	0.20	0.26	0	0	0.13	0.05	0.65	7.71	0.22	0.005	0.35	6.79	7.37	0.34	0.0063	-2.1863	-2.19
4	0	0.92	0.24	1.66	0.80	1.27	2.21	0.50	7.42	0	0	0.20	0.26	0	0	0.13	0.05	0.65	8.06	0.22	0.005	0.35	6.48	7.05	1.01	0.0185	-2.1677	-2.18
5	0	0.92	0.25	1.64	0.59	1.35	2.21	0.48	7.43	0	0	0.20	0.26	0	0	0.13	0.05	0.65	8.08	0.22	0.005	0.35	7.07	7.64	0.44	0.0081	-2.1596	-2.17
6	0	0.94	0.18	1.66	0.59	1.37	2.21	0.43	7.30	0	0	0.18	0.26	0	0	0.13	0.05	0.63	8.01	0.22	0.005	0.35	7.51	8.09	-0.88	-0.0015	-2.1611	-2.17
7	2	0.91	0.11	1.59	0.64	1.39	2.21	0.40	7.26	0.11	0	0.21	0.26	0	0	0.13	0.05	0.77	8.02	0.22	0.005	0.35	7.20	7.77	0.25	0.0046	-2.1586	-2.16
8	0	0.91	0.15	1.66	0.69	1.73	2.21	0.36	7.71	0	0	0.19	0.26	0	0	0.13	0.05	0.64	8.34	0.22	0.005	0.35	7.56	8.13	0.21	0.0039	-2.1527	-2.15
9	0	0.95	0.09	1.66	0.69	1.83	2.21	0.45	7.88	0	0	0.20	0.26	0	0	0.13	0.05	0.65	8.53	0.22	0.005	0.35	7.61	8.18	0.35	0.0064	-2.1463	-2.12
10	0	0.91	0.09	1.66	0.69	1.71	2.21	0.45	7.72	0	0	0.20	0.26	0	0	0.13	0.05	0.64	8.36	0.22	0.005	0.35	7.51	8.09	0.28	0.0050	-2.1412	-2.11
11	0	0.85	0.09	1.66	0.69	1.67	2.21	0.45	7.62	0	0	0.20	0.26	0	0	0.13	0.05	0.65	8.27	0.22	0.005	0.35	7.83	8.40	-0.13	-0.0024	-2.1436	-2.09
12	0	0.92	0.18	1.54	0.51	1.45	2.42	0.40	7.43	0	0	0.20	0.26	0	0	0.13	0.05	0.65	8.08	0.22	0.005	0.35	7.81	8.39	-0.30	-0.0056	-2.1491	-2.08
13	0	0.92	0.09	1.24	0.60	1.29	2.76	0.37	7.28	0	0	0.20	0.26	0	0	0.13	0.05	0.65	7.93	0.22	0.005	0.35	8.15	8.72	-0.79	-0.0144	-2.1635	-2.09
14	0	0.84	0.14	1.11	0.51	1.19	2.44	0.30	6.52	0	0	0.20	0.26	0	0	0.13	0.05	0.65	7.17	0.22	0.005	0.35	7.56	8.13	-0.97	-0.0177	-2.1813	-2.11
15	0	0.81	0.12	1.06	0.68	1.13	2.21	0.24	6.25	0	0	0.20	0.26	0	0	0.13	0.05	0.65	6.90	0.22	0.005	0.35	7.92	8.49	-1.59	-0.0292	-2.2104	-2.13
16	1.4	0.88	0.09	1.06	0.56	1.07	2.21	0.24	6.11	0.08	0	0.20	0.26	0	0	0.13	0.05	0.73	6.84	0.22	0.005	0.35	7.56	8.13	-1.29	-0.0237	-2.2341	-2.16
17	0	0.91	0.18	1.11	0.63	1.03	1.89	0.26	6.00	0	0	0.19	0.26	0	0	0.13	0.05	0.64	6.64	0.22	0.005	0.35	7.56	8.13	-1.49	-0.0274	-2.2615	-2.18
18	0	0.82	0.12	1.11	0.62	1.05	1.66	0.24	5.62	0	0	0.18	0.26	0	0	0.13	0.05	0.63	6.25	0.22	0.005	0.35	7.56	8.13	-1.88	-0.0345	-2.2959	-2.20
19	0	0.89	0.09	1.20	0.58	1.05	1.52	0.27	5.61	0	0	0.20	0.26	0	0	0.13	0.05	0.65	6.26	0.22	0.005	0.35	7.56	8.13	-1.88	-0.0344	-2.3303	-2.22
20	0.2	0.92	0.08	1.31	0.43	0.99	1.38	0.29	5.40	0.01	0	0.18	0.26	0	0	0.13	0.05	0.64	6.04	0.22	0.005	0.35	6.93	7.50	-1.46	-0.0267	-2.3570	-2.26
21	1.4	0.86	0.09	1.31	0.48	1.09	1.38	0.32	5.54	0.08	0	0.19	0.26	0	0	0.13	0.05	0.72	6.25	0.22	0.005	0.35	6.43	7.01	-0.76	-0.0138	-2.3709	-2.27
22	0	0.82	0.09	1.41	0.42	1.07	1.57	0.32	5.69	0	0	0.19	0.26	0	0	0.13	0.05	0.64	6.33	0.22	0.005	0.35	6.48	7.05	-0.73	-0.0133	-2.3842	-2.27
23	0	0.85	0.09	1.34	0.52	0.99	1.43	0.37	5.59	0	0	0.20	0.26	0	0	0.13	0.05	0.65	6.23	0.22	0.005	0.35	6.30	6.87	-0.64	-0.0117	-2.3959	-2.27
24	0	0.92	0.07	1.57	0.49	1.05	1.43	0.35	5.87	0	0	0.20	0.26	0	0	0.13	0.05	0.65	6.52	0.22	0.005	0.35	6.78	7.28	-0.76	-0.0140	-2.4098	-2.27
25	0	0.91	0.09	1.66	0.49	0.97	1.31	0.30	5.73	0	0	0.20	0.26	0	0	0.13	0.05	0.65	6.37	0.22	0.005	0.35	6.48	7.05	-0.60	-0.0124	-2.4223	-2.29
26	0	0.78	0.09	1.66	0.42	0.99	1.38	0.26	5.57	0	0	0.19	0.26	0	0	0.13	0.05	0.64	6.21	0.22	0.005	0.35	6.48	7.05	-0.84	-0.0154	-2.4377	-2.30
27	0	0.73	0.15	1.66	0.43	0.97	1.24	0.26	5.44	0	0	0.21	0.26	0	0	0.13	0.05	0.65	6.10	0.22	0.005	0.35	6.48	7.05	-0.96	-0.0175	-2.4552	-2.30
28	0	0.76	0.18	1.66	0.41	0.97	1.52	0.19	5.68	0	0	0.20	0.26	0	0	0.13	0.05	0.64	6.33	0.22	0.005	0.35	5.40	5.97	0.36	0.0065	-2.4487	-2.30
29	0	0.73	0.18	1.59	0.37	0.85	1.24	0.19	5.15	0	0	0.20	0.26	0	0	0.13	0.05	0.64	5.80	0.22	0.005	0.35	5.40	5.97	-0.17	-0.0032	-2.4519	-2.31
30	0	0.71	0.09	1.66	0.45	0.87	1.24	0.19	5.20	0	0	0.19	0.26	0	0	0.13	0.05	0.64	5.84	0.22	0.005	0.35	5.40	5.97	-0.13	-0.0024	-2.4543	-2.32
31	0	0.73	0.09	1.66	0.41	0.77	1.29	0.19	5.14	0	0	0.19	0.26	0	0	0.13	0.05	0.64	5.78	0.22	0.005	0.35	5.40	5.97	-0.20	-0.0036	-2.4579	-2.33
Total	5.00	26.65	4.21	45.85	16.97	36.63	57.78	10.25	198.73	0.28	0.00	6.08	8.20	0.00	0.00	4.02	1.69	20.27	218.99	6.77	0.15	10.85	215.31	233.08	-14.08			

- Note: 1) 80% of recorded discharge(seven pumps) is used
2) Monthly rainfall of Alexandria is used
3) Daily actual discharge of WTP is used
4) For lock water, 3.44 cum/s in summer and 3.06 cum/s in winter is used
5) Nubariya drain escape data supplied by EPADP, Amreya office
6) For Mariut lake, 5.468 ha as water surface and 3950 ha as catchment area is used
7) Omoum main drain water surface area =1.2 sq.km is used (L=30km, T=40m)
8) For Mariut No.1, average discharge is used
9) For sea water intrusion, Q=T*L*I formula is used
where, T= transmissivity(Permeability=d=3000sq.m/day), L= length(4.5km and 6.3km) and
I= hydraulic gradient(0.0025 and 0.0011)
10) For Amreya drain 4.5 cum/s as peak flow in rainy months and for rest 1.60 cum/s is used
11) For Nubariya by-pass actual data is used

Table E-2-2 Detail of Water Balance Study(present condition)
(December, 1994)

Date	Rainfall (mm)	Inflow from seven pump stations							Total (7 pumps) (1)	Inflow from other sources							Total (2)	Total Inflow (3) (1)+(2)	Out flow				Total out flow (4)	Balance (3)-(4)	Change in W.L.	Calculated W.L. (m.MSL)	W.L. (Mariut) (m.MSL)	
		Galla	Abis	Hares	Dishudi	Truga	Shereshera	Hommos		Direct runoff	Indirect runoff	W.T.P.	Lock water	Nuba.drn escape	Nubariya Bypass	Amreya Drn.			S.W. intru.	Evapo. lake	Evapo. Omoum	Mariut No.1						EL Max
1	4	0.63	0.16	1.45	0.58	1.31	2.08	0.40	6.54	0.22	0	0.21	0.26	0.09	0	0.13	0.05	1.65	8.19	0.22	0.005	0.08	9.72	10.02	-1.83	-0.0334	-1.8435	-1.92
2	1	0.79	0.15	1.15	0.54	1.15	2.10	0.35	6.22	0.05	0	0.18	0.26	0	0	0.13	0.05	1.56	7.78	0.22	0.005	0.08	9.72	10.02	-2.24	-0.0410	-1.8844	-1.94
3	4.3	0.59	0.11	1.11	0.49	0.99	1.84	0.30	5.43	0.23	0	0.20	0.26	0	0	0.13	0.05	1.84	7.27	0.22	0.005	0.08	9.72	10.02	-2.75	-0.0503	-1.9348	-1.98
4	0	0.65	0.14	1.06	0.47	0.99	1.82	0.29	5.35	0	0	0.19	0.26	0	0.33	0.13	0.05	1.96	7.31	0.22	0.005	0.08	9.72	10.02	-2.71	-0.0496	-1.9844	-2.01
5	0	0.63	0.09	1.01	0.39	0.91	1.45	0.29	4.77	0	0	0.22	0.26	0	0.33	0.13	0.05	1.89	6.66	0.22	0.005	0.08	9.31	9.61	-2.95	-0.0541	-2.0385	-2.04
6	0	0.59	0.09	0.83	0.40	0.79	1.29	0.26	4.24	0	0	0.21	0.26	0	0.23	0.13	0.05	1.79	6.03	0.22	0.005	0.08	8.64	8.94	-2.91	-0.0533	-2.0918	-2.07
7	0	0.57	0.13	0.81	0.35	0.85	1.11	0.26	4.07	0	0	0.21	0.26	0	0.23	0.13	0.05	1.57	5.64	0.22	0.005	0.08	8.51	8.80	-3.17	-0.0580	-2.1497	-2.11
8	0	0.60	0.09	0.85	0.37	0.91	1.11	0.22	4.15	0	0	0.23	0.26	0	0	0.13	0.05	1.34	5.49	0.22	0.005	0.08	8.64	8.94	-3.45	-0.0632	-2.2129	-2.14
9	0	0.65	0.09	0.83	0.40	0.79	1.11	0.24	4.10	0	0	0.21	0.26	0	0	0.13	0.05	1.33	5.43	0.22	0.005	0.08	8.19	8.49	-3.06	-0.0560	-2.2690	-2.16
10	0	0.60	0.09	0.81	0.51	0.85	1.11	0.17	4.14	0	0	0.21	0.26	0	0	0.13	0.05	1.32	5.45	0.22	0.005	0.08	7.56	7.86	-2.41	-0.0441	-2.3131	-2.18
11	0	0.60	0.09	0.97	0.47	0.79	1.14	0.19	4.25	0	0	0.20	0.26	0	0	0.13	0.05	1.30	5.55	0.22	0.005	0.08	7.56	7.86	-2.31	-0.0422	-2.3553	-2.20
12	0	0.56	0.09	1.04	0.37	0.73	1.38	0.17	4.34	0	0	0.20	0.26	0	0	0.13	0.05	1.63	5.97	0.22	0.005	0.08	7.56	7.86	-1.88	-0.0345	-2.3898	-2.21
13	0	0.56	0.09	1.11	0.25	0.77	1.66	0.20	4.63	0	0	0.21	0.26	0	0.33	0.13	0.05	2.05	6.88	0.22	0.005	0.08	6.89	7.18	-0.50	-0.0092	-2.3998	-2.21
14	1.5	0.60	0.09	1.15	0.35	0.64	1.66	0.17	4.67	0.08	0	0.21	0.26	0	0.33	0.13	0.05	2.06	6.73	0.22	0.005	0.08	6.57	6.87	-0.14	-0.0026	-2.4016	-2.21
15	0	0.59	0.09	1.04	0.35	0.77	1.66	0.19	4.68	0	0	0.21	0.26	0	0.33	0.13	0.05	2.44	7.12	0.22	0.005	0.08	6.75	7.05	0.07	0.0012	-2.4003	-2.22
16	8.2	0.60	0.09	1.11	0.47	0.89	1.66	0.19	5.08	0.45	0	0.22	0.26	0	0.33	0.13	0.05	3.65	8.65	0.22	0.005	0.08	6.99	7.18	1.46	0.0268	-2.3735	-2.22
17	13.2	0.65	0.09	1.06	0.47	0.81	1.66	0.19	4.92	0.72	0.08	0.22	0.26	0	0.47	0.39	0.05	4.57	9.50	0.22	0.005	0.08	6.84	7.14	2.36	0.0432	-2.3303	-2.23
18	18.5	0.82	0.09	0.72	0.56	0.93	1.06	0.17	4.95	0.57	0.38	0.25	0.26	0	0.47	0.39	0.05	4.17	9.12	0.22	0.005	0.08	6.84	7.14	1.98	0.0362	-2.2941	-2.21
19	0.3	0.86	0.16	1.89	0.69	1.05	1.66	0.17	6.48	0.02	0.38	0.22	0.26	0	0.47	0.39	0.05	3.81	9.49	0.22	0.005	0.08	7.25	7.54	1.95	0.0356	-2.2584	-2.16
20	0	0.71	0.18	1.91	0.69	1.05	1.66	0.22	6.42	0	0	0.21	0.26	0	0.55	0.13	0.05	2.30	8.72	0.22	0.005	0.08	7.56	7.86	0.86	0.0158	-2.2426	-2.13
21	0	0.68	0.16	1.36	0.54	0.95	1.54	0.22	5.45	0	0	0.22	0.26	0	0.42	0.13	0.05	2.17	7.62	0.22	0.005	0.08	7.56	7.86	-0.24	-0.0044	-2.2470	-2.16
22	0	0.69	0.11	1.11	0.45	0.87	1.10	0.24	4.64	0	0	0.21	0.26	0	0.42	0.13	0.05	2.06	6.70	0.22	0.005	0.08	7.51	7.81	-1.11	-0.0203	-2.2673	-2.18
23	0	0.65	0.18	0.92	0.43	0.83	1.11	0.20	4.32	0	0	0.21	0.26	0	0.33	0.13	0.05	1.86	6.18	0.22	0.005	0.08	6.75	7.05	-0.87	-0.0159	-2.2833	-2.22
24	0	0.68	0.09	0.99	0.40	0.79	1.36	0.19	4.42	0	0	0.20	0.26	0	0.23	0.13	0.05	1.76	6.18	0.22	0.005	0.08	6.48	6.78	-0.59	-0.0109	-2.2942	-2.22
25	0	0.63	0.09	0.83	0.38	0.73	1.11	0.17	3.94	0	0	0.21	0.26	0	0.23	0.13	0.05	1.78	5.72	0.22	0.005	0.08	6.48	6.78	-1.06	-0.0194	-2.3136	-2.25
26	0	0.59	0.09	1.06	0.35	0.73	1.15	0.19	4.15	0	0	0.22	0.26	0	0.23	0.13	0.05	1.71	5.86	0.22	0.005	0.08	6.48	6.78	-0.92	-0.0169	-2.3304	-2.27
27	3	0.59	0.09	0.97	0.33	0.69	1.24	0.20	4.11	0.16	0	0.20	0.26	0	0.00	0.13	0.05	2.29	6.48	0.22	0.005	0.08	6.84	7.14	-0.73	-0.0135	-2.3439	-2.28
28	9.3	0.63	0.09	1.08	0.33	0.77	1.41	0.22	4.53	0.51	0.05	0.21	0.26	0	0	0.39	0.05	3.21	7.74	0.22	0.005	0.08	6.84	7.14	0.60	0.0110	-2.3329	-2.28
29	12.2	0.85	0.09	1.15	0.39	0.75	1.11	0.19	4.52	0.67	0.10	0.25	0.26	0	0	0.39	0.05	2.65	7.17	0.22	0.005	0.08	6.48	6.78	0.39	0.0071	-2.3258	-2.29
30	0	0.76	0.18	1.27	0.34	0.81	1.11	0.20	4.67	0	0	0.22	0.26	0	0	0.39	0.05	1.84	6.51	0.22	0.005	0.08	7.07	7.36	-0.86	-0.0157	-2.3415	-2.29
31	0	0.68	0.09	1.08	0.35	0.85	1.52	0.20	4.76	0	0	0.20	0.26	0	0	0.39	0.05	0.91	5.68	0.22	0.005	0.08	6.43	6.73	-1.06	-0.0193	-2.3608	-2.28
Total	67.50	20.24	3.45	33.71	13.47	26.59	44.56	6.46	148.87	3.68	0.99	6.58	8.20	0.09	6.25	5.83	1.69	65.65	214.52	6.77	0.15	2.32	235.35	244.59	-30.07			

- Note: 1) 80% of recorded discharge(seven pumps) is used
2) Monthly rainfall of Alexandria is used
3) Daily actual discharge of WTP is used
4) For lock water, 3.44 cum/s in summer and 3.06 cum/s in winter is used
5) Nubariya drain escape data supplied by EPADP, Amreya office
6) For Mariut lake, 5,460 ha as water surface and 3950 ha as catchment area is used
7) Omoum main drain water surface area =1.2 sq.km is used (L=30km, T=40m)
8) For Mariut No.1, average discharge is used
9) For sea water intrusion, Q=T*L*I formula is used
where, T= transmissivity(Permeability*d=3000sq.m/day), L= length(4.5km and 6.3km) and
I= hydraulic gradient(0.0025 and 0.0011)
10) For Amreya drain 4.5 cum/s as peak flow in rainy months and for rest 1.60 cum/s is used
11) For Nubariya by-pass actual data is used

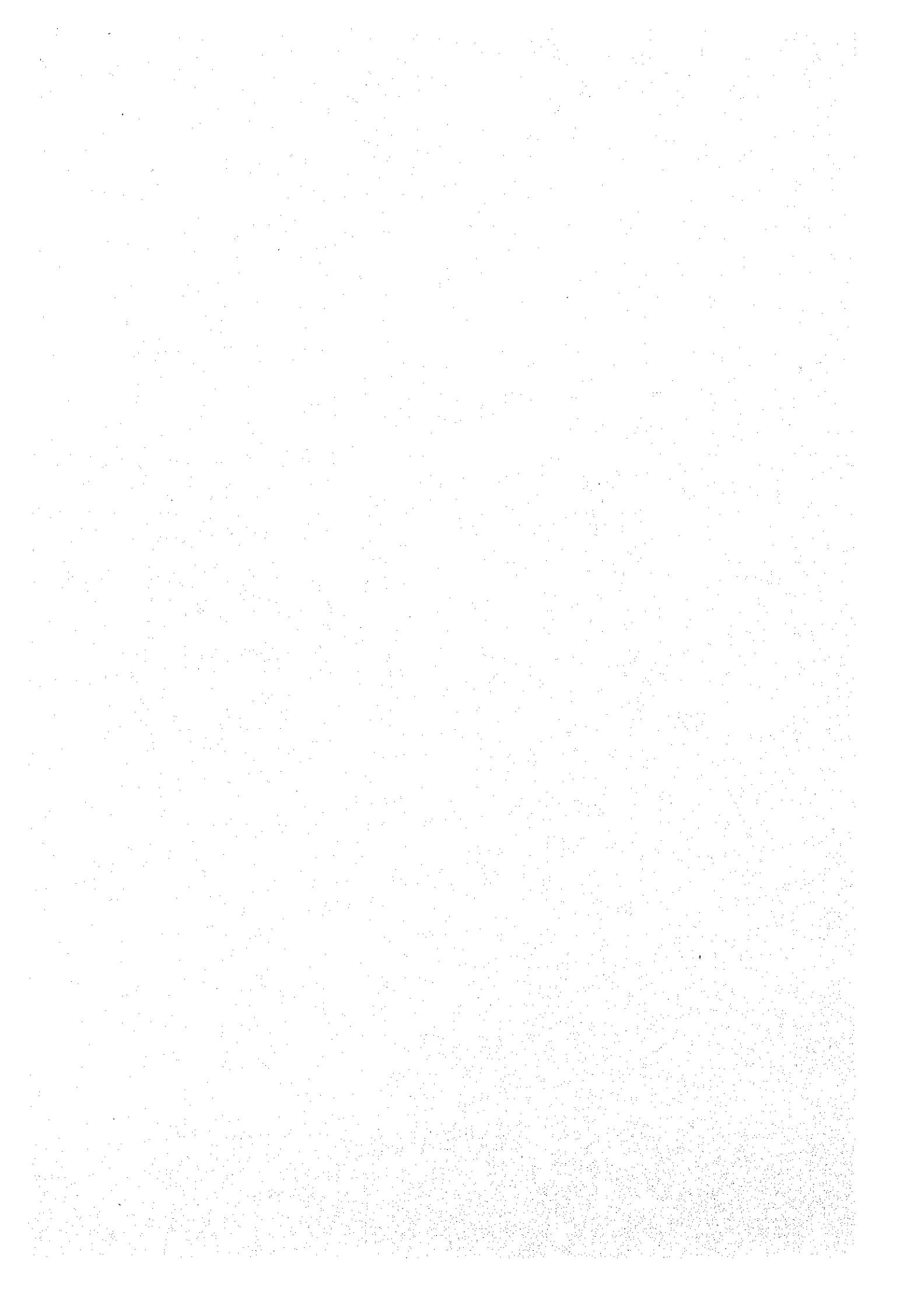


Table E-2-3 Summary of Case Studies

Month	Normal year					Design year				
	Number of Gate	Pump Operation hour (w/out reuse)	Pump Operation hour (with reuse)	Lake Water Level (m.MSL)		Number of Gate	Pump Operation hour w/out reuse	Pump Operation hour with reuse	Lake Water Level (m.MSL)	
				Max.	Min.				Max.	Min.
Jan	10	791	613	(-)2.401	(-)2.475	8	800	622	(-)2.337	(-)2.429
Feb	10	793	660	(-)2.334	(-)2.466	6	630	451	(-)2.367	(-)2.430
Mar	6	678	306	(-)2.381	(-)2.432	6	795	423	(-)2.320	(-)2.426
Apr	6	724	478	(-)2.400	(-)2.404	6	712	345	(-)2.400	(-)2.404
May	6	796	478	(-)2.370	(-)2.400	6	796	478	(-)2.370	(-)2.390
Jun	6	879	508	(-)2.362	(-)2.398	6	800	508	(-)2.362	(-)2.398
Jul	8	1385	1042	(-)2.334	(-)2.395	8	1385	1042	(-)2.334	(-)2.395
Aug	8	1252	804	(-)2.384	(-)2.398	8	1252	804	(-)2.384	(-)2.398
Sep	4	778	273	(-)2.375	(-)2.398	4	778	273	(-)2.375	(-)2.398
Oct	4	523	201	(-)2.404	(-)2.448	4	486	186	(-)2.404	(-)2.456
Nov	6	653	431	(-)2.392	(-)2.433	8	1027	804	(-)2.301	(-)2.451
Dec	10	947	701	(-)2.317	(-)2.597	8	839	593	(-)2.376	(-)2.493
Total		10,199	6,495				10,379	6,529		

Table E-2-4 Case Study for Water Balance (Design year, 1994)

Month	Number of Gate	Pump operation hour			Total hours	Lake V.L. (m. MSL)		End V.L.
		P1 (14.6cum*6)	P2 (12.5cum*4)	P3 (12.5cum*1)		Max	Min	
Jan(31)	10	409	409	0	819	-2.360	-2.524	-2.452
	08	400	400	0	800	-2.342	-2.431	-2.364
	06	-	-	-	-	-	-	-
Feb(28)	08	324	325	0	649	-2.386	-2.511	-2.511
	06	315	315	0	630	-2.367	-2.432	-2.432
	04	-	-	-	-	-	-	-
Mar(31)	08	-	-	-	-	-	-	-
	06	397	397	0	795	-2.314	-2.426	-2.375
	04	-	-	-	-	-	-	-
Apr(30)	08	-	-	-	-	-	-	-
	06	356	356	0	712	-2.400	-2.402	-2.404
	04	-	-	-	-	-	-	-
May(31)	08	-	-	-	-	-	-	-
	06	398	398	0	796	-2.370	-2.400	-2.391
	04	-	-	-	-	-	-	-
Jun(30)	08	-	-	-	-	-	-	-
	06	440	440	0	879	-2.361	-2.400	-2.361
	04	-	-	-	-	-	-	-
Jul(31)	10	-	-	-	-	-	-	-
	08	693	693	0	1385	-2.334	-2.400	-2.344
	06	687	687	0	1374	-2.284	-2.399	-2.291
Aug(31)	08	626	626	0	1252	-2.384	-2.400	-2.384
	06	-	-	-	-	-	-	-
	04	-	-	-	-	-	-	-
Sep(30)	08	-	-	-	-	-	-	-
	06	-	-	-	-	-	-	-
	04	389	389	0	778	-2.375	-2.400	-2.375
Oct(31)	08	-	-	-	-	-	-	-
	06	-	-	-	-	-	-	-
	04	243	243	0	486	-2.400	-2.456	-2.456
Nov(30)	08	513	513	0	1027	-2.301	-2.449	-2.310
	06	-	-	-	-	-	-	-
	04	-	-	-	-	-	-	-
Dec(31)	10	-	-	-	-	-	-	-
	08	420	420	0	839	-2.376	-2.493	-2.401
	06	-	-	-	-	-	-	-

*** Gate opening is 0.30m

*** Calculation started from winter cropping season i.e. September

*** Weir length =100m. EL=-2.50 m.MSL

Table E-2-4 Case Study for Water Balance (Normal year, 1985)

Month	Number of Gate	Pump operation hour			Total hours	Lake F.L. (m.MSL)		End F.L.
		P1	P2	P3		Max	Min	
		(14.6cum*6)	(12.5cum*4)	(12.5cum*1)				
Jan(31)	10	395	395	0	791	-2.387	-2.476	-2.387
	08	392	392	-	784	-2.322	-2.424	-2.322
	06	-	-	-	-	-	-	-
Feb(28)	10	396	396	0	793	-2.333	-2.466	-2.466
	08	389	389	0	778	-2.312	-2.404	-2.401
	06	-	-	-	-	-	-	-
Mar(31)	08	-	-	-	-	-	-	-
	06	339	339	0	678	-2.381	-2.431	-2.381
	04	-	-	-	-	-	-	-
Apr(30)	08	-	-	-	-	-	-	-
	06	362	362	0	724	-2.400	-2.404	-2.404
	04	-	-	-	-	-	-	-
May(31)	08	-	-	-	-	-	-	-
	06	398	398	0	796	-2.374	-2.400	-2.391
	04	-	-	-	-	-	-	-
Jun(30)	08	-	-	-	-	-	-	-
	06	440	440	0	879	-2.361	-2.400	-2.361
	04	-	-	-	-	-	-	-
Jul(31)	10	-	-	-	-	-	-	-
	08	693	693	0	1385	-2.334	-2.400	-2.334
	06	-	-	-	-	-	-	-
Aug(31)	08	626	626	0	1252	-2.384	-2.400	-2.384
	06	-	-	-	-	-	-	-
	04	-	-	-	-	-	-	-
Sep(30)	08	-	-	-	-	-	-	-
	06	-	-	-	-	-	-	-
	04	389	389	0	778	-2.375	-2.400	-2.375
Oct(31)	08	-	-	-	-	-	-	-
	06	-	-	-	-	-	-	-
	04	261	261	0	523	-2.400	-2.447	-2.415
Nov(30)	08	-	-	-	-	-	-	-
	06	326	327	0	653	-2.388	-2.434	-2.418
	04	-	-	-	-	-	-	-
Dec(31)	10	473	473	0	947	-2.312	-2.598	-2.434
	08	471	471	0	942	-2.242	-2.509	-2.372
	06	-	-	-	-	-	-	-

*** Gate opening is 0.30m
 *** Calculation started from winter cropping season i.e. September
 *** Weir length = 100m, EL = -2.50 m.MSL

Table E-2-4 Case Study for Water Balance (Flood year, 1991)

Month	Number of Gate	Pump operation hour			Total hours	Lake W.L. (m.MSL)		End W.L.
		P1 (14.6cum*6)	P2 (12.5cum*4)	P3 (12.5cum*1)		Max	Min	
Jan(31)	10	464	464	0	927	-2.327	-2.503	-2.327
	08	-	-	-	-	-	-	-
	06	-	-	-	-	-	-	-
Feb(28)	08	-	-	-	-	-	-	-
	06	334	334	0	669	-2.351	-2.425	-2.384
	04	-	-	-	-	-	-	-
Mar(31)	08	-	-	-	-	-	-	-
	06	396	396	0	793	-2.289	-2.417	-2.370
	04	-	-	-	-	-	-	-
Apr(30)	08	-	-	-	-	-	-	-
	06	356	356	0	712	-2.400	-2.428	-2.428
	04	-	-	-	-	-	-	-
May(31)	08	-	-	-	-	-	-	-
	06	398	398	0	796	-2.397	-2.420	-2.420
	04	-	-	-	-	-	-	-
Jun(30)	08	-	-	-	-	-	-	-
	06	440	440	0	879	-2.394	-2.402	-2.394
	04	-	-	-	-	-	-	-
Jul(31)	10	-	-	-	-	-	-	-
	08	693	693	0	1385	-2.373	-2.400	-2.383
	06	687	687	0	1374	-2.336	-2.399	-2.344
Aug(31)	08	626	626	0	1252	-2.400	-2.400	-2.400
	06	-	-	-	-	-	-	-
	04	-	-	-	-	-	-	-
Sep(30)	08	-	-	-	-	-	-	-
	06	-	-	-	-	-	-	-
	04	389	389	0	778	-2.375	-2.400	-2.375
Oct(31)	08	-	-	-	-	-	-	-
	06	-	-	-	-	-	-	-
	04	238	238	0	477	-2.400	-2.456	-2.456
Nov(30)	10	461	461	0	921	-2.322	-2.629	-2.474
	08	447	447	0	894	-2.306	-2.501	-2.350
	06	-	-	-	-	-	-	-
Dec(31)	10	614	614	0	1228	-2.285	-2.447	-2.341
	08	-	-	-	-	-	-	-
	06	-	-	-	-	-	-	-

*** Gate opening is 0.30m
 *** Calculation started from winter cropping season i.e. September
 *** Weir length =100m, EL=-2.50 m.MSL

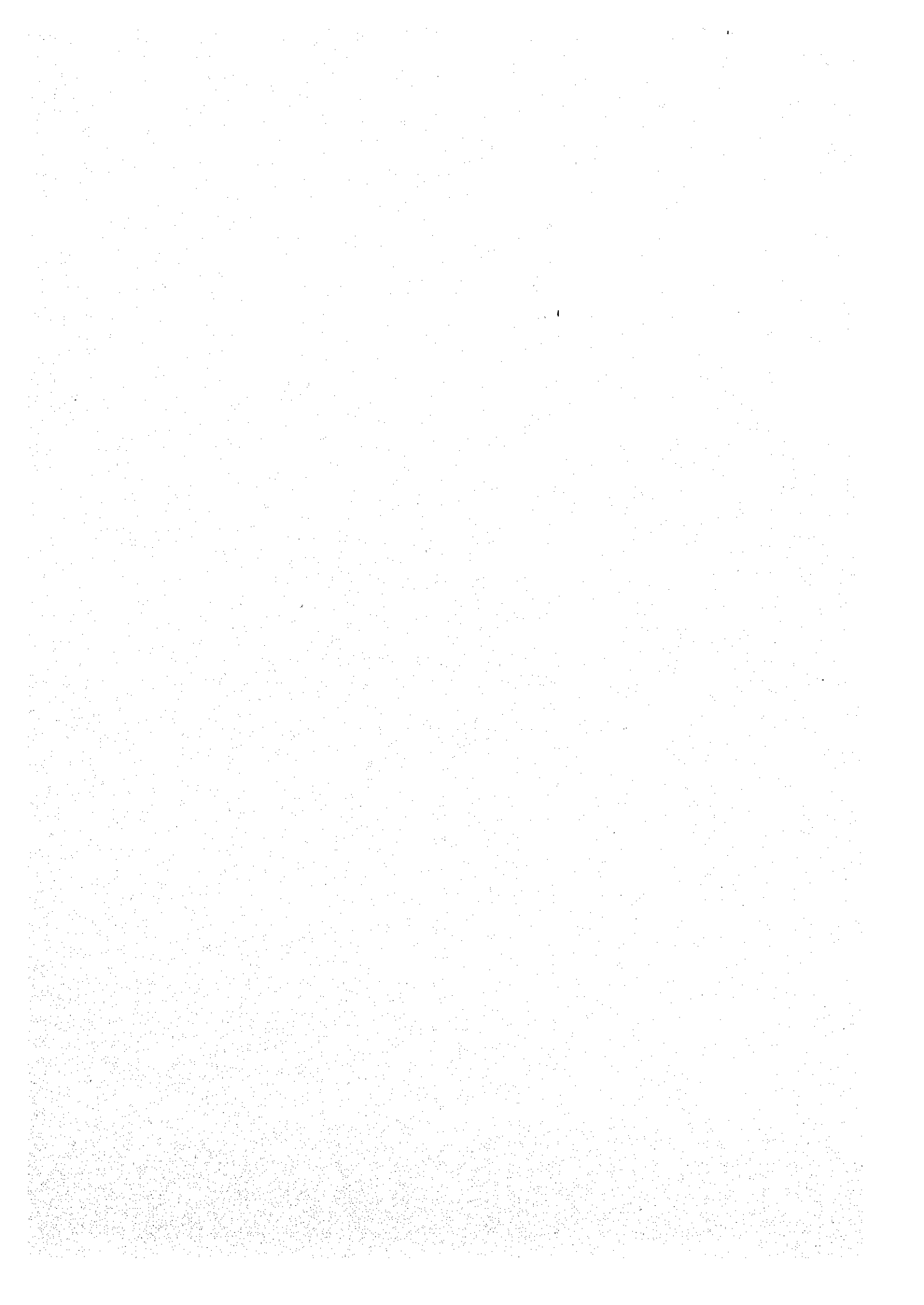


Table E-2-5 Analyzed Daily Water Levels of Mariut Lake and Omoum Main Drain
(Normal year, 1985)

Unit: (m.MSL)

Date	J		F		M		A		M		J		J		A		S		O		N		D	
	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum
1	-2.408	-3.275	-2.381	-3.275	-2.403	-3.276	-2.400	-3.275	-2.400	-3.276	-2.398	-3.276	-2.395	-3.277	-2.398	-3.275	-2.398	-3.276	-2.404	-3.276	-2.401	-3.276	-2.411	-3.274
2	-2.420	-3.275	-2.347	-3.275	-2.408	-3.275	-2.400	-3.276	-2.398	-3.274	-2.395	-3.274	-2.385	-3.275	-2.395	-3.276	-2.393	-3.276	-2.410	-3.275	-2.403	-3.275	-2.432	-3.276
3	-2.430	-3.275	-2.334	-3.274	-2.413	-3.275	-2.400	-3.274	-2.394	-3.275	-2.392	-3.276	-2.376	-3.272	-2.392	-3.274	-2.389	-3.275	-2.415	-3.275	-2.404	-3.275	-2.451	-3.273
4	-2.440	-3.275	-2.336	-3.276	-2.418	-3.275	-2.400	-3.275	-2.389	-3.275	-2.389	-3.274	-2.367	-3.274	-2.388	-3.276	-2.386	-3.275	-2.420	-3.275	-2.406	-3.276	-2.464	-3.275
5	-2.449	-3.275	-2.345	-3.274	-2.420	-3.275	-2.400	-3.275	-2.384	-3.275	-2.386	-3.276	-2.359	-3.274	-2.386	-3.275	-2.382	-3.275	-2.424	-3.274	-2.407	-3.274	-2.474	-3.275
6	-2.456	-3.275	-2.356	-3.274	-2.422	-3.275	-2.400	-3.275	-2.379	-3.276	-2.383	-3.274	-2.353	-3.276	-2.385	-3.275	-2.379	-3.276	-2.427	-3.277	-2.405	-3.276	-2.483	-3.275
7	-2.463	-3.275	-2.368	-3.275	-2.424	-3.276	-2.400	-3.274	-2.375	-3.275	-2.380	-3.274	-2.350	-3.273	-2.385	-3.275	-2.376	-3.274	-2.431	-3.275	-2.402	-3.275	-2.493	-3.275
8	-2.468	-3.275	-2.378	-3.274	-2.425	-3.275	-2.400	-3.276	-2.372	-3.274	-2.379	-3.275	-2.346	-3.274	-2.385	-3.275	-2.376	-3.276	-2.434	-3.275	-2.401	-3.274	-2.508	-3.275
9	-2.473	-3.274	-2.388	-3.275	-2.428	-3.274	-2.400	-3.275	-2.370	-3.275	-2.379	-3.275	-2.343	-3.275	-2.385	-3.275	-2.376	-3.275	-2.437	-3.276	-2.405	-3.276	-2.526	-3.274
10	-2.474	-3.276	-2.396	-3.274	-2.430	-3.276	-2.400	-3.275	-2.370	-3.275	-2.379	-3.275	-2.340	-3.273	-2.384	-3.275	-2.376	-3.275	-2.439	-3.276	-2.406	-3.275	-2.543	-3.274
11	-2.475	-3.275	-2.405	-3.275	-2.431	-3.275	-2.400	-3.274	-2.370	-3.275	-2.379	-3.275	-2.337	-3.270	-2.384	-3.275	-2.376	-3.275	-2.441	-3.277	-2.398	-3.276	-2.560	-3.276
12	-2.470	-3.275	-2.415	-3.274	-2.432	-3.275	-2.400	-3.276	-2.370	-3.275	-2.377	-3.275	-2.334	-3.274	-2.384	-3.274	-2.376	-3.275	-2.443	-3.276	-2.392	-3.274	-2.576	-3.274
13	-2.466	-3.276	-2.423	-3.275	-2.432	-3.276	-2.400	-3.275	-2.371	-3.275	-2.375	-3.274	-2.334	-3.273	-2.384	-3.275	-2.376	-3.276	-2.444	-3.275	-2.400	-3.276	-2.587	-3.275
14	-2.468	-3.275	-2.408	-3.274	-2.430	-3.275	-2.400	-3.275	-2.373	-3.276	-2.374	-3.274	-2.334	-3.274	-2.384	-3.274	-2.376	-3.275	-2.446	-3.276	-2.407	-3.274	-2.592	-3.274
15	-2.472	-3.274	-2.394	-3.275	-2.427	-3.275	-2.400	-3.274	-2.374	-3.274	-2.373	-3.275	-2.335	-3.271	-2.384	-3.275	-2.376	-3.275	-2.448	-3.274	-2.415	-3.275	-2.597	-3.274
16	-2.470	-3.275	-2.400	-3.275	-2.423	-3.275	-2.400	-3.275	-2.375	-3.275	-2.373	-3.275	-2.336	-3.276	-2.384	-3.275	-2.376	-3.275	-2.447	-3.276	-2.420	-3.275	-2.590	-3.274
17	-2.468	-3.275	-2.411	-3.274	-2.415	-3.275	-2.400	-3.276	-2.375	-3.275	-2.373	-3.274	-2.338	-3.270	-2.384	-3.275	-2.375	-3.275	-2.439	-3.275	-2.422	-3.276	-2.551	-3.276
18	-2.457	-3.275	-2.421	-3.275	-2.408	-3.276	-2.400	-3.275	-2.375	-3.274	-2.373	-3.274	-2.340	-3.275	-2.384	-3.275	-2.375	-3.276	-2.421	-3.275	-2.425	-3.276	-2.514	-3.275
19	-2.446	-3.275	-2.429	-3.275	-2.405	-3.274	-2.400	-3.274	-2.374	-3.275	-2.373	-3.275	-2.341	-3.275	-2.384	-3.275	-2.375	-3.275	-2.407	-3.274	-2.428	-3.275	-2.506	-3.275
20	-2.444	-3.275	-2.437	-3.274	-2.402	-3.275	-2.400	-3.274	-2.374	-3.276	-2.373	-3.275	-2.342	-3.273	-2.384	-3.275	-2.375	-3.275	-2.407	-3.276	-2.431	-3.274	-2.510	-3.275
21	-2.424	-3.275	-2.445	-3.275	-2.402	-3.275	-2.400	-3.275	-2.375	-3.275	-2.373	-3.275	-2.342	-3.275	-2.384	-3.275	-2.375	-3.275	-2.413	-3.276	-2.432	-3.276	-2.475	-3.274
22	-2.406	-3.274	-2.454	-3.274	-2.399	-3.275	-2.400	-3.275	-2.376	-3.275	-2.373	-3.274	-2.342	-3.273	-2.384	-3.274	-2.375	-3.275	-2.415	-3.276	-2.432	-3.275	-2.409	-3.275
23	-2.401	-3.275	-2.462	-3.275	-2.394	-3.274	-2.401	-3.275	-2.376	-3.275	-2.373	-3.274	-2.342	-3.274	-2.384	-3.275	-2.375	-3.275	-2.415	-3.276	-2.432	-3.274	-2.369	-3.274
24	-2.404	-3.275	-2.466	-3.275	-2.390	-3.276	-2.403	-3.275	-2.377	-3.275	-2.373	-3.274	-2.342	-3.275	-2.384	-3.274	-2.375	-3.275	-2.415	-3.276	-2.432	-3.276	-2.351	-3.276
25	-2.413	-3.275	-2.452	-3.275	-2.386	-3.276	-2.404	-3.275	-2.379	-3.275	-2.372	-3.275	-2.342	-3.273	-2.384	-3.274	-2.375	-3.276	-2.415	-3.274	-2.432	-3.275	-2.333	-3.272
26	-2.421	-3.275	-2.446	-3.275	-2.383	-3.275	-2.404	-3.276	-2.381	-3.275	-2.370	-3.274	-2.342	-3.275	-2.384	-3.275	-2.375	-3.274	-2.415	-3.275	-2.432	-3.274	-2.317	-3.276
27	-2.428	-3.274	-2.454	-3.275	-2.381	-3.275	-2.404	-3.275	-2.382	-3.275	-2.369	-3.274	-2.342	-3.274	-2.384	-3.275	-2.375	-3.276	-2.415	-3.274	-2.433	-3.277	-2.322	-3.276
28	-2.434	-3.275	-2.462	-3.275	-2.381	-3.276	-2.404	-3.275	-2.384	-3.275	-2.365	-3.275	-2.343	-3.274	-2.384	-3.275	-2.375	-3.274	-2.415	-3.275	-2.430	-3.275	-2.347	-3.273
29	-2.439	-3.275			-2.381	-3.274	-2.404	-3.275	-2.386	-3.276	-2.364	-3.275	-2.344	-3.274	-2.384	-3.275	-2.375	-3.276	-2.415	-3.275	-2.425	-3.274	-2.377	-3.275
30	-2.443	-3.275			-2.381	-3.276	-2.404	-3.275	-2.388	-3.274	-2.362	-3.274	-2.344	-3.274	-2.384	-3.274	-2.375	-3.274	-2.415	-3.275	-2.420	-3.275	-2.402	-3.274
31	-2.413	-3.275			-2.381	-3.274			-2.390	-3.276			-2.344	-3.275	-2.384	-3.275			-2.415	-3.275			-2.424	-3.275

Table E-2-6 Analyzed Daily Water Levels of Mariut Lake and Omoum Main Drain
(Design year, 1994)

Unit: (m.MSL)

Date	J		F		M		A		M		J		J		A		S		O		N		D	
	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum	Lake	Omoum
1	-2.385	-3.275	-2.388	-3.276	-2.403	-3.275	-2.400	-3.275	-2.400	-3.276	-2.398	-3.276	-2.395	-3.277	-2.398	-3.275	-2.398	-3.276	-2.404	-3.275	-2.402	-3.275	-2.396	-3.275
2	-2.377	-3.275	-2.378	-3.275	-2.408	-3.276	-2.400	-3.276	-2.398	-3.274	-2.395	-3.274	-2.385	-3.275	-2.395	-3.276	-2.393	-3.276	-2.410	-3.276	-2.395	-3.275	-2.399	-3.275
3	-2.356	-3.275	-2.377	-3.275	-2.413	-3.275	-2.400	-3.274	-2.394	-3.275	-2.392	-3.276	-2.376	-3.272	-2.392	-3.274	-2.389	-3.275	-2.415	-3.276	-2.391	-3.274	-2.396	-3.274
4	-2.337	-3.275	-2.375	-3.276	-2.417	-3.274	-2.400	-3.274	-2.389	-3.275	-2.389	-3.274	-2.367	-3.260	-2.388	-3.276	-2.386	-3.275	-2.420	-3.275	-2.398	-3.275	-2.395	-3.274
5	-2.348	-3.275	-2.370	-3.275	-2.419	-3.275	-2.400	-3.275	-2.384	-3.275	-2.386	-3.276	-2.359	-3.274	-2.386	-3.275	-2.382	-3.275	-2.424	-3.276	-2.388	-3.274	-2.408	-3.275
6	-2.364	-3.275	-2.367	-3.274	-2.421	-3.276	-2.400	-3.275	-2.379	-3.276	-2.383	-3.274	-2.353	-3.276	-2.385	-3.275	-2.379	-3.276	-2.427	-3.276	-2.366	-3.274	-2.413	-3.275
7	-2.378	-3.275	-2.367	-3.276	-2.422	-3.274	-2.400	-3.275	-2.375	-3.275	-2.380	-3.274	-2.350	-3.273	-2.385	-3.275	-2.376	-3.274	-2.429	-3.277	-2.362	-3.274	-2.422	-3.276
8	-2.389	-3.275	-2.367	-3.275	-2.424	-3.275	-2.400	-3.274	-2.372	-3.274	-2.379	-3.275	-2.346	-3.274	-2.385	-3.275	-2.376	-3.276	-2.431	-3.276	-2.376	-3.275	-2.434	-3.274
9	-2.398	-3.275	-2.367	-3.274	-2.426	-3.276	-2.400	-3.275	-2.370	-3.275	-2.379	-3.275	-2.343	-3.275	-2.385	-3.275	-2.376	-3.275	-2.434	-3.275	-2.393	-3.274	-2.450	-3.274
10	-2.405	-3.275	-2.367	-3.272	-2.395	-3.275	-2.400	-3.276	-2.370	-3.275	-2.379	-3.275	-2.340	-3.273	-2.384	-3.275	-2.376	-3.275	-2.438	-3.275	-2.409	-3.275	-2.463	-3.276
11	-2.410	-3.275	-2.369	-3.275	-2.347	-3.274	-2.400	-3.275	-2.370	-3.275	-2.379	-3.275	-2.337	-3.270	-2.384	-3.275	-2.376	-3.275	-2.439	-3.276	-2.422	-3.275	-2.476	-3.274
12	-2.415	-3.276	-2.373	-3.275	-2.320	-3.275	-2.400	-3.275	-2.370	-3.275	-2.377	-3.275	-2.334	-3.274	-2.384	-3.274	-2.376	-3.275	-2.441	-3.276	-2.433	-3.275	-2.488	-3.275
13	-2.419	-3.274	-2.375	-3.276	-2.321	-3.275	-2.400	-3.275	-2.371	-3.275	-2.375	-3.274	-2.334	-3.273	-2.384	-3.275	-2.376	-3.276	-2.443	-3.275	-2.433	-3.275	-2.493	-3.274
14	-2.416	-3.274	-2.377	-3.275	-2.332	-3.275	-2.400	-3.276	-2.373	-3.276	-2.374	-3.274	-2.334	-3.274	-2.384	-3.274	-2.376	-3.275	-2.445	-3.274	-2.451	-3.274	-2.490	-3.275
15	-2.413	-3.276	-2.379	-3.275	-2.340	-3.275	-2.400	-3.275	-2.374	-3.274	-2.373	-3.275	-2.335	-3.271	-2.384	-3.275	-2.376	-3.275	-2.446	-3.275	-2.432	-3.275	-2.485	-3.275
16	-2.415	-3.274	-2.381	-3.276	-2.347	-3.275	-2.400	-3.274	-2.375	-3.275	-2.373	-3.275	-2.336	-3.276	-2.384	-3.275	-2.376	-3.275	-2.445	-3.275	-2.387	-3.275	-2.466	-3.275
17	-2.418	-3.275	-2.383	-3.275	-2.352	-3.274	-2.400	-3.275	-2.375	-3.275	-2.373	-3.274	-2.338	-3.270	-2.384	-3.275	-2.375	-3.275	-2.444	-3.275	-2.357	-3.275	-2.429	-3.274
18	-2.421	-3.275	-2.384	-3.275	-2.356	-3.274	-2.400	-3.275	-2.375	-3.274	-2.373	-3.274	-2.340	-3.275	-2.384	-3.275	-2.375	-3.276	-2.445	-3.276	-2.361	-3.274	-2.392	-3.275
19	-2.420	-3.274	-2.389	-3.276	-2.359	-3.276	-2.400	-3.275	-2.374	-3.275	-2.373	-3.275	-2.341	-3.275	-2.384	-3.275	-2.375	-3.275	-2.447	-3.275	-2.377	-3.272	-2.376	-3.275
20	-2.419	-3.274	-2.395	-3.274	-2.362	-3.274	-2.400	-3.275	-2.374	-3.276	-2.373	-3.275	-2.342	-3.273	-2.384	-3.275	-2.375	-3.275	-2.449	-3.274	-2.392	-3.275	-2.381	-3.276
21	-2.417	-3.276	-2.401	-3.276	-2.365	-3.276	-2.401	-3.275	-2.375	-3.275	-2.373	-3.275	-2.342	-3.275	-2.384	-3.275	-2.375	-3.275	-2.446	-3.275	-2.400	-3.274	-2.390	-3.273
22	-2.413	-3.274	-2.401	-3.275	-2.369	-3.275	-2.403	-3.276	-2.376	-3.275	-2.373	-3.274	-2.342	-3.273	-2.384	-3.274	-2.375	-3.275	-2.445	-3.276	-2.372	-3.274	-2.398	-3.274
23	-2.407	-3.276	-2.402	-3.276	-2.372	-3.275	-2.403	-3.276	-2.376	-3.275	-2.373	-3.274	-2.342	-3.274	-2.384	-3.275	-2.375	-3.275	-2.447	-3.276	-2.326	-3.271	-2.406	-3.275
24	-2.409	-3.274	-2.409	-3.275	-2.375	-3.276	-2.403	-3.275	-2.377	-3.275	-2.373	-3.274	-2.342	-3.275	-2.384	-3.274	-2.375	-3.275	-2.449	-3.275	-2.304	-3.277	-2.415	-3.276
25	-2.417	-3.275	-2.416	-3.276	-2.376	-3.275	-2.404	-3.275	-2.379	-3.275	-2.372	-3.275	-2.342	-3.273	-2.384	-3.274	-2.375	-3.276	-2.451	-3.274	-2.301	-3.270	-2.424	-3.274
26	-2.425	-3.275	-2.421	-3.275	-2.378	-3.274	-2.404	-3.275	-2.381	-3.275	-2.381	-3.274	-2.342	-3.275	-2.384	-3.275	-2.375	-3.274	-2.452	-3.274	-2.311	-3.271	-2.432	-3.275
27	-2.428	-3.275	-2.426	-3.274	-2.381	-3.276	-2.404	-3.275	-2.382	-3.275	-2.369	-3.274	-2.342	-3.274	-2.384	-3.275	-2.375	-3.276	-2.453	-3.275	-2.327	-3.276	-2.437	-3.275
28	-2.429	-3.275	-2.430	-3.274	-2.384	-3.274	-2.404	-3.275	-2.384	-3.275	-2.365	-3.275	-2.342	-3.274	-2.384	-3.275	-2.375	-3.274	-2.454	-3.276	-2.319	-3.269	-2.426	-3.275
29	-2.434	-3.276			-2.387	-3.276	-2.404	-3.275	-2.386	-3.276	-2.364	-3.275	-2.342	-3.274	-2.384	-3.275	-2.375	-3.276	-2.455	-3.275	-2.313	-3.276	-2.403	-3.275
30	-2.429	-3.275			-2.386	-3.275	-2.404	-3.276	-2.388	-3.274	-2.362	-3.274	-2.342	-3.274	-2.384	-3.274	-2.375	-3.274	-2.455	-3.274	-2.314	-3.273	-2.396	-3.275
31	-2.391	-3.275			-2.379	-3.275			-2.390	-3.276			-2.342	-3.275	-2.384	-3.275			-2.456	-3.276			-2.401	-3.275

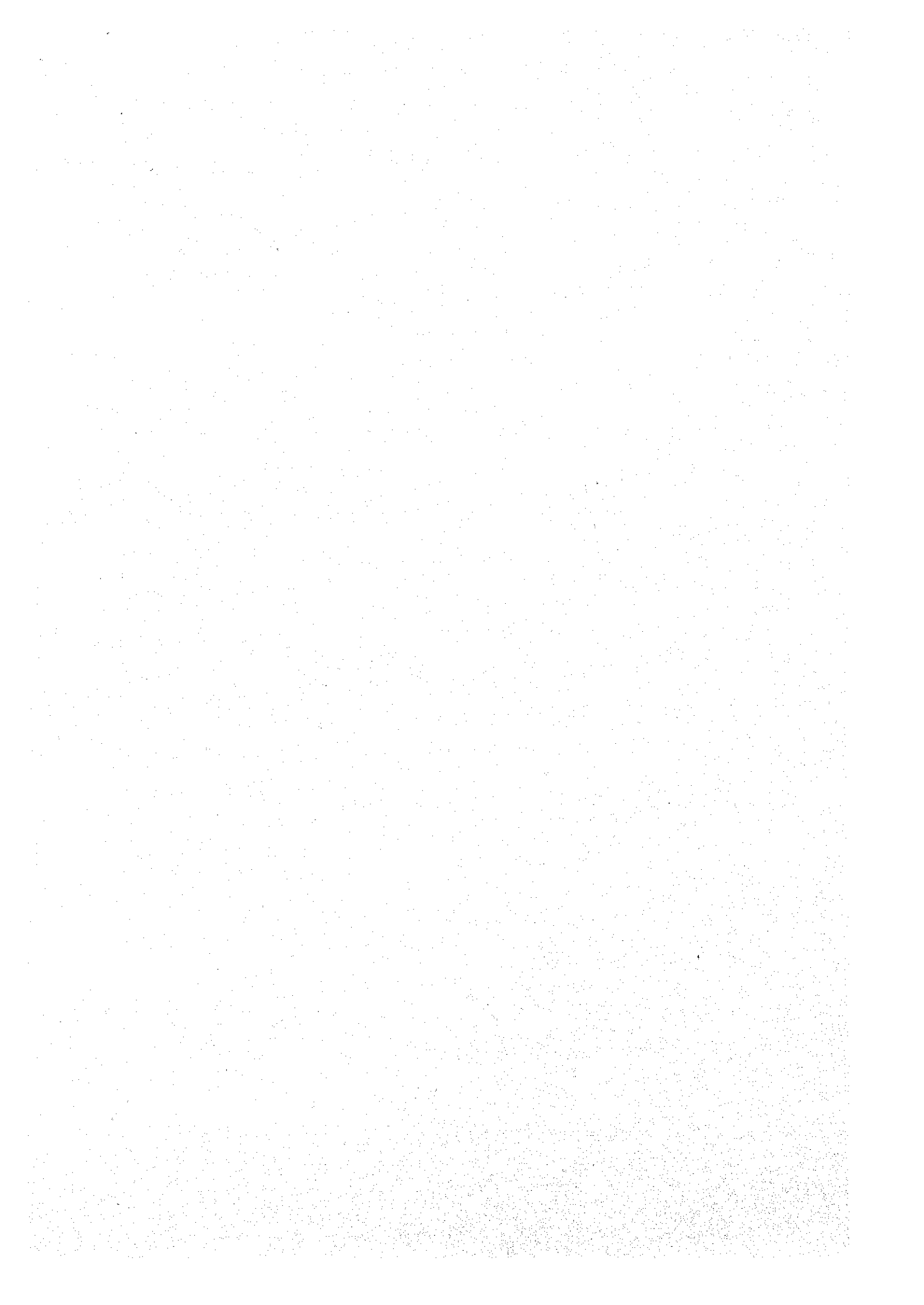
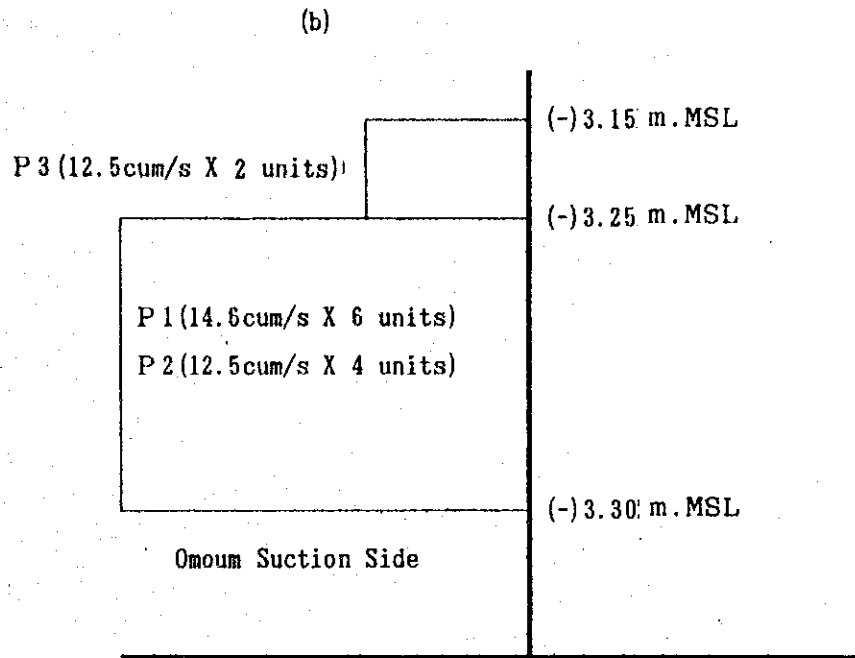
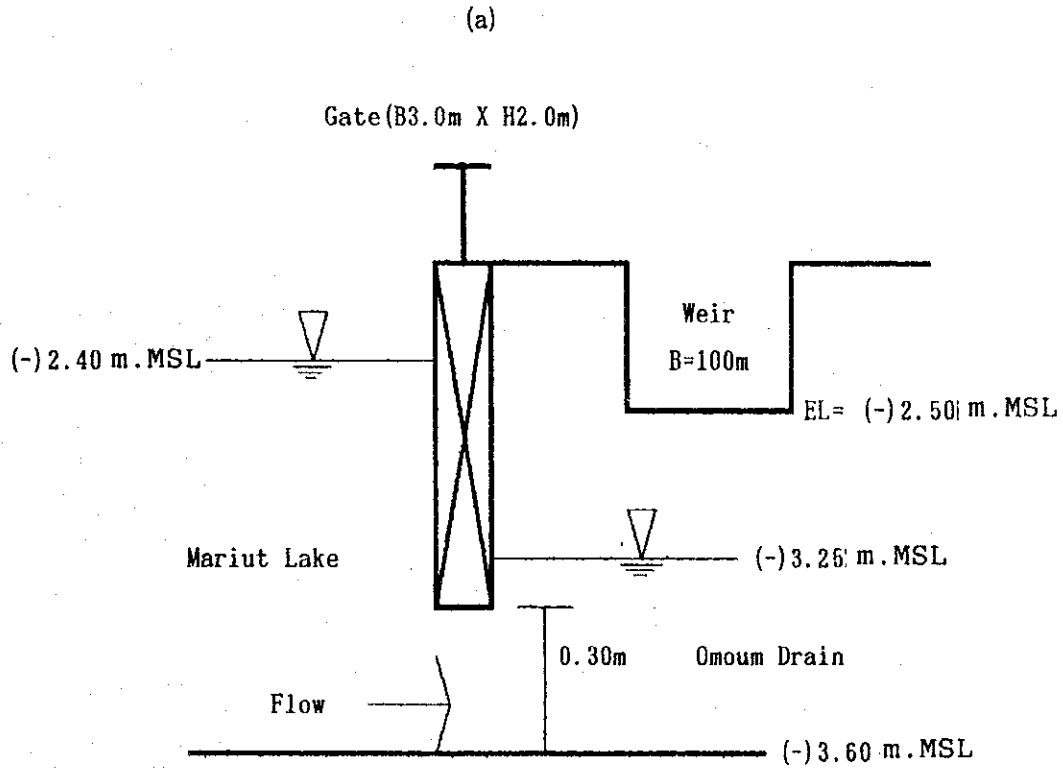


FIGURE E-2-1 DIMENSIONS OF THE FACILITIES
AND
PUMP OPERATION WATER LEVELS



F. AGRICULTURE AND AGRO-ECONOMY

1950-1951

ANNEX F. AGRICULTURE AND AGRO-ECONOMY

F-1. Agriculture(M/P)

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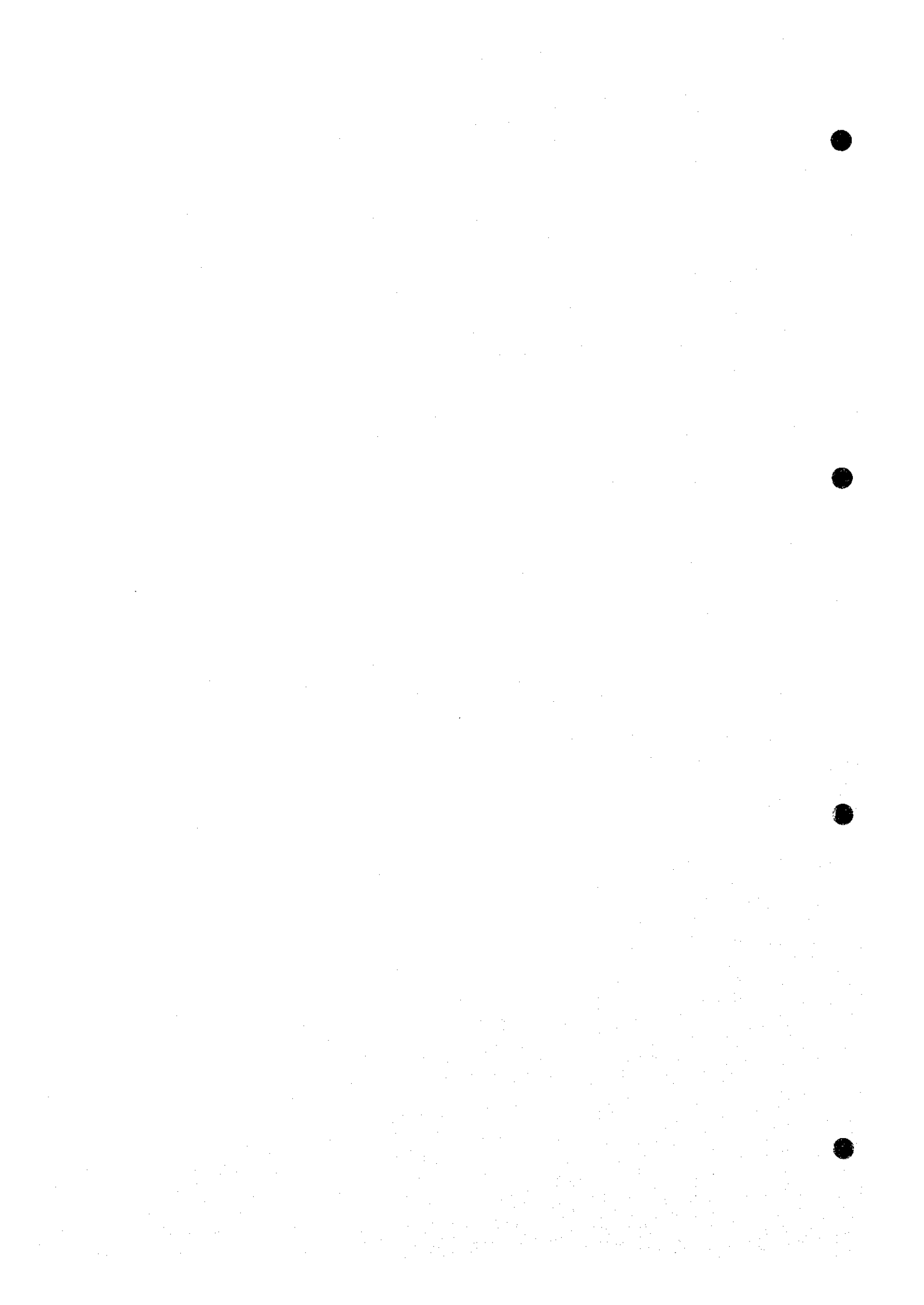


Table F-1-1 Population by Census Year

Gavonrate/District	(Unit : 1.000persons. %)						Ave. Increase Rate per Year (1976-1986) (%)
	1993 Estimated (6.8)	1986 (6.7)	1976 (6.7)	1966 (6.6)	1960 (6.5)		
1. Whole Behera	3,853	3,249	2,465	1,979	1,693	3.2	
Project Districts							
(1) El Delengat	241	199	144	N.A	N.A	3.8	
(2) Damanhur	595	491	399	N.A	N.A	2.3	
(3) Housh Esa	152	125	94	N.A	N.A	3.3	
(4) Abu Hommos	345	285	216	N.A	N.A	1.3	
(5) Abu El Matameer	255	210	132	N.A	N.A	1.6	
(5) Kafr El Dawar	668	550	414	N.A	N.A	1.3	
Subtotal	2,256	1,860	1,399	N.A	N.A	3.3	
2. Whole Alexandria	3,353	2,927	2,318	1,802	1,513	2.6	
Project Districts							
(1) Khorshed*	27	23	8	N.A	N.A	16.6	
(2) Abis**	28	13	5	N.A	N.A	15.1	
(3) Ameriya	131	111	47	N.A	N.A	13.7	
Subtotal	186	147	60	N.A	N.A	14.5	
4. Total	2,442	2,007	1,459	N.A	N.A	3.8	
Project Districts							
3. Egypt	56,984	48,254	36,627	30,076	26,085	3.2	
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)		

Note : The figures in the parenthesis show the share to the total population in Egypt

*...A part of El Montaza plus a part of East in Alexandria city

**...A part of East in Alexandria city

Source : Computer Center, Behera Governorate, CAPMAS Data Center, Alexandria

Table F-1-2 Number of Household and Farm Size (1986)

District	Population		No. of Household		Ave. Family Size				
	Total	Urban	Rural	Total	Urban	Rural			
Whole Behera	3,248,829	760,158	2,485,204	593,684	155,355	438,279	5.5	4.9	5.7
Project Districts	198,606	27,767	170,839	34,556	5,044	29,489	5.7	5.5	5.8
(1)El Delengat	490,744	188,939	301,805	68,188	20,620	49,568	7.2	9.2	6.1
(2)Damanhur	125,267	53,619	71,648	21,232	9,060	12,172	5.9	5.9	5.9
(3)Housh Esa	284,721	23,923	260,798	35,634	2,916	32,918	8.0	8.2	7.9
(4)Abu Hommas	209,939	27,227	182,712	35,440	4,221	31,219	5.9	6.5	5.9
(5)Abu El Matameer	550,405	192,609	357,796	73,088	21,641	51,447	7.5	8.9	7.0
(6)Kafr El Dawar	1,859,682	514,084	1,345,598	268,138	63,502	206,813	6.9	8.1	6.5
Subtotal									
Whole Alexandria	2,906,152	2,906,152	0	640,209	640,209	0	4.5	4.5	-
Project Districts	22,616	22,616	0	3,968	3,968	0	5.7	5.7	-
(1)Khorshed	13,371	13,371	0	2,346	2,346	0	5.7	5.7	-
(2)Abis	111,641	111,641	0	24,809	24,809	0	4.5	4.5	-
(3)Ameriya	147,628	147,628	0	31,123	31,123	0	4.7	4.7	-
Subtotal									
Project Districts	2,007,310	661,712	1,345,598	299,261	94,625	206,813	6.7	7.0	6.5

Note: *... A part of El Montaza plus a part of East in Alexandria city

* *... A part of East in Alexandria city

Source : 1986 Population Census

Table F-1-3 Total Population (Older than 10 Years) by Education and Sex

(Unit : thousand persons)

Governorate	Illite- Rate	Read & Write	Primary	Below Inter- mediate	Inter- mediate	Above Inter- mediate	University Degree & Above	University Not Stated	Total
Behera(R+U)									
-Male	503	305	89	84	136	10	27	6	1,160
-Female	810	155	50	41	53	6	5	5	1,125
Total	1,313	460	139	125	189	16	32	11	2,285
Behera(R)									
-Male	415	222	67	60	85	6	12	4	871
-Female	665	102	33	22	23	2	1	4	852
Total	1,080	324	100	82	108	8	13	8	1,723
Alexandria(U)									
-Male	294	301	115	113	217	13	90	4	1,147
-Female	459	227	100	88	160	13	30	3	1,080
Total	753	528	215	201	377	26	120	7	2,227
Egypt(R+U)									
-Male	6,606	4,225	1,495	1,494	2,741	215	834	75	17,685
-Female	10,542	2,515	1,031	896	1,438	149	230	66	16,867
Total	17,148	6,740	2,526	2,390	4,179	364	1,064	141	34,552
Egypt(R)									
-Male	4,485	2,270	748	702	1,071	79	169	38	9,562
-Female	7,090	1,050	392	282	316	32	19	35	9,216
Total	11,575	3,320	1,140	984	1,387	111	188	73	18,778

Note : R ... Rural, U ... Urban

Source : Census of Population, 1986, CAPMAS

Table F-1-4 Labor Force Population (Older Than 6 Years) by Employment Status and Sex (1986)

(Unit : thousand persons)

Governorate	Population		Population in Labor Force (More than 6 Years Old)						
	More than 6 years Old (Total)	12~65 Years Old	Total	Self Employed	Employed	Employee	Unpaid Family Labor	Seeking Work (Old)	Seeking Work (New)
Behera (R+U)									
-Male	1,264	1,021	811	239	71	405	36	15	45
-Female	1,225	996	70	3	1	40	9	1	16
Total	2,489	2,017	881	242	72	445	45	16	61
Behera (R)									
-Male	958	766	620	195	58	291	34	11	31
-Female	932	752	40	2	1	20	8	0	9
Total	1,890	1,518	660	197	59	311	42	11	40
Alexandria (U)									
-Male	1,207	1,023	752	130	28	518	5	25	46
-Female	1,152	977	149	2	1	112	1	1	32
Total	2,359	2,000	901	132	29	630	6	26	78
Egypt (R+U)									
-Male	18,968	15,497	11,933	3,206	503	6,827	319	263	815
-Female	18,115	14,903	1,467	52	13	996	46	10	350
Total	37,083	30,400	13,400	3,258	516	7,823	365	273	1,165
Egypt (R)									
-Male	10,330	8,297	6,638	2,162	295	3,373	283	109	416
-Female	9,910	8,059	400	28	6	202	43	3	118
Total	20,240	16,356	7,038	2,190	301	3,575	326	112	534

Note : R ... Rural, U ... Urban

Source : Census of Population, 1986, CAPMAS

Total F-i-5 Population (Older Than 5 Years) by Economic Activity and Sex

(Unit : thousand person)

Governorate	Agriculture Hunting & Fishery	Mining & Quarrying	Manufac- turing	Electric- ity, Gas & Water	Const- ruction	Commerce, Restaurants, & Hotels	Transport, Storage & Commu- nications	Financing, Insurance, Real Estate & Business Services	Community, Social & Personal Services	Activities, Not Adequ- ately Described	Subtotal	Not Economic- ally Active	Total
Behera (R+U)													
-Male	460	1	74	6	30	35	28	5	100	27	766	551	1,317
-Female	19	-	3	-	-	1	-	1	24	4	52	1,222	1,274
Total	479	1	77	6	30	36	28	6	124	31	818	1,773	2,591
Behera (R)													
-Male	419	1	37	4	16	13	16	3	60	20	589	408	997
-Female	18	-	1	-	-	1	-	-	9	3	32	939	971
Total	437	1	38	4	16	14	16	3	69	23	621	1,347	1,968
Alexandria (U)													
-Male	79	3	189	9	82	89	78	21	123	31	704	563	1,267
-Female	3	-	23	2	1	8	6	5	67	3	118	1,081	1,199
Total	82	3	212	11	83	97	84	26	190	34	822	1,644	2,466
Egypt (R+U)													
-Male	4,664	41	1,414	88	862	806	628	197	1,979	439	11,118	8,843	19,961
-Female	113	3	110	8	11	63	34	41	670	64	1,117	17,876	18,993
Total	4,777	44	1,524	96	873	869	662	238	2,649	503	12,235	26,719	38,954
Egypt (R)													
-Male	4,027	14	409	33	297	206	204	38	800	195	6,223	4,656	10,879
-Female	98	1	14	1	2	10	2	3	123	28	282	10,148	10,430
Total	4,125	15	423	34	299	216	206	41	923	223	6,505	14,804	21,309

Note : R ... Rural , U ... Urban
Source : Census of Population , 1986 , CAPMAS

Table F-1-6 Number of Farm Households in the Study Area(1993)

Sub Drain	Total Area (sq. km)	Population	Population Density (person /sq. km)	No. of Households	No. of		No. of Landless Farm Households
					Farm Households	Land Owner	
1. Abu Hommos	199.10	187,550	942	32,904	9,390	6,778	1,857
2. Shreshra	567.20	329,236	580	78,370	27,420	18,466	2,078
3. Truga	430.80	238,463	554	41,837	18,144	14,702	3,528
4. Dishudi	153.30	253,734	1,655	42,835	8,908	6,490	1,108
5. El Hares	266.00	95,838	360	16,901	11,095	9,593	4,643
6. Abis	37.80	10,118	268	1,775	1,775	1,396	0
7. Qalls	58.80	22,616	NA	3,968	2,336	2,020	1,090
Total	1,713.00	1,137,555	664	218,590	79,068	59,445	14,304

Source : Computer Center, Behera Governorate
Agricultural Statistics Zone Office, Behera, MALRF

Table F-1-7 Distribution of Agrarian Reform Lands and Number of Benefitted Families (As of 1993)

Item	El Delengat	Damanhur	Abu Hommos	Hsoh Esa	Abu El Matameer	Kafr El Dawar	Khorshed	Ameriya	Total
(1)178/1952	Area(fed) 4,932	3,679	9,555	7,267	21,590	15,045	N.A	N.A	62,068
	No. of Family 1,901	1,320	3,200	2,600	8,310	5,550	N.A	N.A	22,881
(2)127/1961	Area(fed) 4,666	1,281	5,080	1,979	9,122	1,311	N.A	N.A	23,439
	No. of Family 1,792	440	1,800	745	3,590	449	N.A	N.A	8,816
(3)15/1963	Area(fed) 1,000	624	1,086	589	2,778	1,364	N.A	N.A	7,441
	No. of Family 365	235	380	210	1,008	500	N.A	N.A	2,698
(4)Awkafs Land	Area(fed) 4,500	128			750	20	N.A	N.A	5,398
	No. of Family 1,725	50			285	8	N.A	N.A	2,068
(5)Herasa's Land	Area(fed) 1,053			241		704	N.A	N.A	945
	No. of Family 398			90		272	N.A	N.A	362
(6)60/1969	Area(fed) 1,197	392	1,197	449	360	243	N.A	N.A	3,694
	No. of Family 398	140	405	157	140	92	N.A	N.A	1,332
(7)Others 152/57	Area(fed) 179	4,654	586		184	1,244	N.A	N.A	6,847
	No. of Family 53	1,735	224		70	480	N.A	N.A	2,562
	Area(fed) 16,330	10,758	17,504	10,525	34,784	19,931	N.A	N.A	109,832
	No. of Family 6,234	3,920	6,009	3,802	13,403	7,351	N.A	N.A	40,719

Source : Land Reform Authority, Beheira Reseach Unit, MALRF

Table F-1-8 Distribution of Agricultural Land Owners by Area Owned

(Unit : feddan, no. of owner)

Governorate	Less than 1 fed.	1~2fed.	2~3fed.	3~4fed.	4~5fed.	5~10fed.	10~100 fed.	More than 100fed.	Total	Average Area Per Owner
Behera										
-Area	58,664	79,642	67,082	57,906	46,140	64,697	246,078	129,860	749,569	2.86
-No. of Owner	134,765	44,782	31,300	18,609	12,394	9,697	10,020	565	262,082	
Alexandria										
-Area	41,066	5,415	1,869	4,155	6,621	8,731	17,331	35,994	121,182	2.40
-No. of Owner	41,985	2,393	842	1,348	1,641	1,327	958	44	50,538	
Egypt										
-Area	1,059,902	657,705	603,355	530,392	433,590	565,147	1,481,138	497,699	5,828,928	1.49
-No. of Owner	2,707,779	493,293	265,684	163,187	106,406	88,984	72,085	2,340	3,899,758	

Source : Statistical Year Book, 1993, CAPMAS

Table F-1-9 Number of Farm Households by Farm Size (1993)

Sub Drain	No. of Land Owners			No. of Farm Households (Owner + Tenant)			Average Size (fed)			
	Total	Less than 1 fed.	1~5 fed.	More than 5 fed.	Average Size (fed)	Total		Less than 1 fed.	1~5 fed.	More than 5 fed.
1. Abu Hommos	6,778	1,386	1,869	2,073	4.4	9,390	2,988	3,598	2,609	3.2
2. Shreshra	18,466	3,250	7,179	8,037	5.4	27,420	11,428	8,180	7,525	3.6
3. Truga	14,702	4,115	5,264	5,323	5.5	18,144	8,127	5,376	4,641	4.4
4. Dishudi	6,490	1,607	2,538	2,345	4.9	8,908	3,542	3,345	1,920	3.6
5. El Hares	9,593	357	4,598	4,638	4.9	11,095	1,154	5,298	4,298	4.2
6. Abis	1,396	0	1,231	165	5.0	1,775	0	1,231	165	5.0
7. Qalla	2,020	NA	NA	NA	4.1	2,336	NA	NA	NA	3.5
Total	59,445	10,715	22,679	22,581	4.5	79,068	27,239	27,023	21,158	3.4

Source : Agricultural Statistics Zone Office, Behera, MALRF

Table F-1-10 Production of Major Winter Crops (1993)

Sub Drain	Wheat			Beans			Berseem		
	Planted Area (fed)	Yield per fed. (ard/fed)	Production (ard)	Planted Area (ard/fed)	Yield per fed. (ard)	Production (ard)	Planted Area (fed)	Yield per fed. (ton/fed)	Production (ton)
	1. Abu Hommos	8,907	15.50	138,986	1,755	7.01	12,302	10,510	14.96
2. Shreshra	15,577	16.47	256,628	2,133	7.42	15,819	13,768	14.78	203,511
3. Truga	9,245	15.31	140,761	2,113	7.56	16,118	8,760	13.35	119,769
4. Dishudi	14,503	14.00	202,391	2,678	7.90	21,155	14,408	14.18	204,341
5. El Hares	3,494	15.49	54,139	910	7.17	6,522	3,223	12.71	40,968
6. Abis	1,805	12.41	22,409	850	6.82	5,795	1,440	7.04	10,133
7. Qalla	1,115	12.08	13,471	7,024	3.60	25,285	11,507	21.00	241,647
Total	54,646	14.48	828,785	17,463	6.78	102,996	63,616	14.00	977,553

Source : Agricultural Statistics Zone Office, Behera, MALRF

Table P-1-11 Production of Major Summer Crops (1993)

Sub Drain	Cotton			Rice			Maize		
	Planted Area (fed)	Yield per fed. (qtr/fed)	Production (qtr)	Planted Area (fed)	Yield per fed. (kg/fed)	Production (ton)	Planted Area (fed)	Yield per fed. (ard/fed)	Production ('000ard)
1. Abu Hommos	18,843	8.53	160,779	20,592	2,961	60,938	10,560	24.15	255,035
2. Shreshra	12,091	8.52	102,969	10,626	2,924	31,066	11,025	24.73	272,658
3. Truga	8,907	8.77	78,568	5,091	2,980	15,129	8,002	21.16	169,368
4. Dishudi	4,799	8.77	41,110	2,468	3,104	7,660	3,597	22.69	81,608
5. El Hares	3,756	8.58	32,236	931	3,004	2,797	3,698	22.77	84,220
6. Abis	0	0.00	0	950	1,500	1,425	1,251	12.00	15,012
7. Qalla	2,589	5.86	15,183	-	-	-	7,445	10.31	76,673
Total	50,985	7.00	430,845	40,658	2,927	119,015	45,578	20.94	954,574

Source : Agricultural Statistics Zone Office, Behera, MALRF

Table F-1-12 Unit Yield of Major Crops per Feddan

Crop	Unit	National (a)	Behera (b)	Project Area			Mohamoudia		Without Project	
				Districts (c)	Villages (d)	Sample Village (e)	Irrigation Improvement Project	Main Product (f)	Second Product (g)	
Wheat	ardab(150kg)	14.40	15.73	15.20	14.47	9.33	14.00	14.00	11.20	load
Beans	ardab(155kg)	8.45	5.68	5.48	6.77	5.74	5.96	5.50	4.20	load
Berseem, Long	ton	25.60	29.70	27.15	14.00	11.75	25.06	25.00	-	-
Short	ton	10.90	11.71	9.42	14.00	6.31	11.27	11.00	-	-
Cotton	M. qantar(157.5kg)	6.98	7.43	8.25	6.92	7.11	6.50	7.00	6.40	load
Rice	ton	3.21	3.46	3.22	2.93	2.59	2.58	2.60	8.00	load
Maize	ardab(140kg)	18.20	24.20	22.07	21.57	15.30	10.00	15.30	10.70	load
Cabbage	ton	9.22	9.70	8.10	N.A	N.A	-	8.00	-	-
Tomato	ton	12.70	10.11	5.53	N.A	N.A	-	12.00	-	-
Orange	ton	6.56	7.20	8.70	N.A	N.A	6.19	6.20	-	-

Note: The unit second production are estimated based on the study report on Irrigation Improvement Project for Mohamoudia area

Source and Crop Year :

(a), (b), (c) ... DOS MALRF (1991~1993)

(d) ... Agricultural Statistical Zone Office, Damanhur, MALRF

(e), (f) ... Farm Economic Survey by Study Team (1993)

Table F-1-13 Unit Yield With and Without Tille Drainage in the Study Area (1983-1993)
(Unit : ton / feddan)

Year	Wheat		Cotton		Maize		Rice	
	With	W/O	With	W/O	With	W/O	With	W/O
1983	1.616	1.304	1.322	1.120	2.200	2.068	2.705	2.458
1983	1.485	1.372	1.306	1.022	2.418	1.916	2.819	2.079
1984	1.599	1.419	1.355	1.192	2.535	2.067	2.852	2.842
1985	1.532	1.375	1.225	1.096	2.450	2.260	2.837	2.599
1986	1.923	1.693	1.291	0.992	2.730	2.182	2.787	2.859
1987	1.913	1.628	1.180	1.128	2.777	2.815	2.834	2.324
1988	2.076	2.092	1.097	1.101	3.016	2.725	2.840	3.108
1989	2.177	2.040	1.190	1.114	2.837	2.978	2.543	3.027
1990	2.117	2.130	1.122	1.108	2.966	2.910	2.626	2.968
1991	2.221	2.720	1.385	1.466	3.111	3.266	2.884	2.932
1992	2.294	2.511	1.315	1.181	3.051	3.722	2.990	2.505
Average	1.905	1.844	1.253	1.138	2.736	2.637	2.792	2.700
Percent	103	100	110	100	104	100	103	100

Note : W / O ... Without tile drainage

With ... With tile drainage

Average Unit yield of one site in the Abu Hommos area and the other three sites in the Shreshra area.

Table F-1-14 Estimates of Livestock and Poultry in Behera

(unit : head)

Type of Livestock & Poultry	1984	1985	1986	1987	1988	1989	1990	1991	1992
1. Livestock									
(1) Buffaloes	190,127	195,316	210,450	226,623	223,434	258,183	329,912	398,755	470,530
(2) Camel	9,431	9,302	8,541	8,206	7,926	7,813	7,535	7,440	7,366
(3) Cows	342,704	336,521	327,642	331,278	337,268	354,409	380,554	395,147	413,923
(4) Goats	146,343	164,258	186,381	192,785	208,321	195,988	183,452	171,746	169,925
(5) Pigs									
(6) Sheep	290,643	284,654	279,962	275,824	271,462	251,350	242,130	225,463	213,472
2. Poultry									
(1) Chicken bred at homes	4,987,653	623,785	8,189,543	11,035,197	10,916,000	19,909,400	13,634,000	12,654,350	11,852,072
(2) Ducks	1,456,732	1,528,734	1,593,211	1,614,357	1,698,841	1,789,432	1,855,995	1,884,329	1,994,183
(3) Geese	542,982	637,534	689,865	785,431	743,092	801,375	833,462	839,541	843,455
(4) Pigeons	745,576	898,437	905,122	740,738	895,479	892,082	995,153	1,013,217	1,063,119
(5) Rabbits	882,932	1,014,893	932,720	1,205,235	1,104,159	1,352,137	1,567,193	1,152,141	1,649,885
(6) Turkey	189,423	205,675	219,094	270,579	301,616	335,101	360,653	428,119	433,967

Source : DOS, MALRF

Table F-1-15 Estimates of Livestock and Poultry (1993)

(unit : no. of head)

Type of Livestock / Poultry	El Dehengat	Damanhour	Abu Hommos	Hosh Esa	Abu El Matameer	Kafr El Dawar	Khorshed Ameriya	Total
1. Livestock								
(1) Buffaloes	39,478	74,346	49,115	17,390	23,512	42,110	12,042	257,993
(2) Camel	382	1,278	579	724	685	549	13	4,210
(3) Cows	46,560	87,588	61,626	19,632	30,636	34,438	8,160	288,640
(4) Goats	26,547	31,472	4,257	7,362	2,346	18,472	5,913	96,369
(5) Sheep	21,044	56,862	10,132	4,278	12,128	97,693	6,488	208,625
2. Poultry								
(1) Chicken bred at homes	1,214,369	1,877,528	993,857	552,347	542,743	883,560	140,000	6,204,404
(2) Ducks	188,287	217,151	144,560	72,452	86,941	117,718	N.A	827,109
(3) Geese	75,433	86,782	56,736	29,465	35,428	47,271	N.A	331,115
(4) Pigeons	102,874	148,516	146,237	57,315	80,478	102,876	N.A	688,296
(5) Rabbits	161,756	247,325	211,368	95,453	121,856	166,453	N.A	1,004,211
(6) Turkey	58,263	80,485	27,654	27,325	26,149	28,123	N.A	247,999

Source : DOS, MALRF

Table F-1-16 Milk Production Estimates

(unit : tons)

Source	El. Delengat	Damanhur	Abu Hommos	Hosh Esa	Abu El Mataneer	Kafr El Dawar	Khorshed	Ameriya	Total
1. Total	22,839	60,494	71,086	9,284	26,172	30,280	N.A	N.A	220,155
2. Cows	9,920	16,896	8,896	7,808	17,340	20,160	6,406	3,702	87,426
3. Buffaloes	1,440	41,824	1,434	1,024	8,832	9,063	15,336	16,473	78,953
4. Goats	1559	1774	262	452	137	1057	N.A	N.A	5,241

Source : DOS, MAIRF.

Table F-1-17 Number of Hatches and Eggs by Item

Source	El Delengat	Damanhour	Abu Hommos	Hoshesa	Abu El Matameer	Kafr El Dawar	Khorshed	Ameriya	Total
Eggs production (mill.)	13.3	8.9	9.2	12.0	4.5	10.0	N.A	36.6	57.9
Hatching Labs (no.)	3.0	2.0	2.0	3.0	1.0	2.0	N.A	N.A	13.0
Eggs Hatching (mill.)	1.0	0.7	0.7	1.0	0.3	0.7	N.A	N.A	4.5
Hatched Chicken (mill.)	0.6	0.4	0.4	0.6	0.2	0.4	N.A	N.A	2.6
%of Hatched Chicken	57	58	55	62	58	55	N.A	N.A	345

Source : Agricultural Statistics Zone Office, Behera, MALRF

Table F-1-18 Number of Hives and Honey and Wax Production

Source	El Delengat	Dananhur	Abu Hommos	Hosh Esa	Abu El Matameer	Kafr El Dawar	Khorshed	Ameriya	Total
Hives(000s):									
Total	7,527	1,318	1,188	2,431	6,389	20,270	-	-	39,123
Traditional	293	22	53	103	247	834	-	-	1,552
Modern	7,234	1,286	1,135	2,328	6,142	19,436	513	326	38,074
Honey production(ton):									
Total	38,349	6,607	6,159	11,371	30,526	97,749	-	-	6565.761
Traditional	0,732	0,048	0,143	0,196	0,481	1,541	-	-	3,141
Modern	37,617	6,559	6,016	11,175	30,045	96,208	6,375	1,762	6562.62
Wax production(ton):									
Total	1,34	0,225	0,207	0,432	1,161	3,673	-	-	78,253
Traditional	0,07	0,006	0,014	0,25	0,059	0,27	-	-	0,669
Modern	1,27	0,219	0,193	0,397	1,102	3,403	71	-	77,584

Source : Agricultural Statistics Zone Office, Behara, MALRF

Table F-1-19 Selection of Sample Villages in Farm Economic Survey

Area/Sub Drain	Village	District	Population Size	Subsurface Drainage	Soils
1. Upper Stream (1) Sherishera	① El Ab Kaein	Hosh Esa	12,000	Implemented	Vtt
	② Hafs	Damanhour	10,000	Implemented	Vtt
	③ Truga	Abo El Matameer	13,900	Not Yet	Eftt
	④ El Gheta	-do-	14,900	Not Yet	Eftt
2. Down Stream (1) Deshoud	⑤ El Baslakoun	Kafr El Dawar	16,000	Not Yet	Vtt
	⑥ Kom Eshow	-do-	10,600	Not Yet	Eftt
	⑦ Kom El Farag	Abo El Matameer	8,600	Not Yet	Eftr
(2) Hares	⑧ Hares	Kafr El Dawar	N.A	Not Yet	Eftt

* Not Yet Identified

Table F-1-20 Family Member and Labor Force

Village	No. of Sample	No. of Family members		No. of Family Labor						No. of Non Farm Labor (Total)		
		Total	Male	Female	Your Farm		Other Farm		Male		Female	
					Regular	Non Regular	Regular	Non Regular				
												Male
1 El Ab Kaein	25	8.1	4.1	4.0	0.3	0.1	0.1	0.0	0.0	0.0	0.1	0.0
2 Hafs	25	8.8	4.4	4.4	0.2	0.1	0.1	0.3	0.0	0.0	0.1	0.0
3 Truga	25	8.9	4.2	4.7	0.5	0.1	0.1	0.0	0.0	0.0	0.1	0.0
4 El Ghta	25	8.8	4.4	4.4	0.3	0.0	0.2	0.0	0.0	0.0	0.1	0.0
Average(1-4)	25	8.7	4.3	4.4	0.3	0.1	0.1	0.1	0.0	0.0	0.1	0.0
5 El Baslakoum	25	7.4	3.9	3.5	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0
6 Kom Eshow	25	10.1	5.1	5.0	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0
7 Kom El Farag	25	9.5	5.1	4.4	0.5	0.3	0.2	0.1	0.0	0.0	0.0	0.1
8 Hares	25	8.0	4.6	3.4	0.3	0.1	0.3	0.0	0.0	0.0	0.0	0.3
Average(5-8)	25	8.8	4.7	4.1	0.4	0.1	0.2	0.0	0.0	0.0	0.0	0.1
Average(1-8)	25	8.7	4.5	4.2	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0

Source : Farm Economic Survey (1994)

Table F-1-21 Land Holding

(unit: feddan/household)

	Land for Temporary Crops				Land for Permanent Crops				Land of House Lots and Others	
	Own+Rent		Lease		Total	Own+Rent		Lease		
	Own	Lease	Own	Lease		Own	Lease	Own		Lease
	Total		Total							
1 El Ab Kaein	5.8	5.1	0.7	0.6	0.3	0.3	0.0	0.0	0.4	
2 Hafs	4.7	3.4	1.3	0.2	0.0	0.0	0.0	0.0	0.1	
3 Truga	4.6	4.3	0.3	0.1	0.0	0.0	0.0	0.0	0.1	
4 El Gheta	3.5	3.1	0.4	0.0	0.0	0.0	0.0	0.0	0.1	
Average(1-4)	4.6	4.0	0.7	0.2	0.1	0.1	0.0	0.0	0.2	
5 El Baslakoun	4.4	3.5	0.7	1.0	0.0	0.0	0.0	0.0	0.1	
6 Kom Eshow	5.5	4.2	1.3	0.6	0.0	0.0	0.0	0.0	0.1	
7 Kom El Farag	11.5	10.7	0.8	0.2	0.0	0.0	0.0	0.0	2.9	
8 Hares	3.7	3.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	
Average(5-8)	6.3	5.4	0.9	0.4	0.0	0.0	0.0	0.0	0.8	
Average(1-8)	5.5	4.7	0.8	0.3	0.0	0.0	0.0	0.0	0.5	

Source : Farn Economic Survey (1994)

Table F-1-22 Crop Area, Winter

Village	Clover		Wheat	Faba bean	Onion	Archicot	Barley	Peas	Potato	Others	Total
	Short	Long									
1 El Ab Kaein	0.17	2.16	1.67	0.18	0.00	0.00	0.00	0.00	0.00	0.00	4.18
2 Hafs	1.18	1.39	1.46	0.29	0.00	0.20	0.00	0.00	0.00	0.00	4.52
3 Truga	1.26	0.58	1.31	0.65	0.00	0.20	0.00	0.00	0.55	0.18	4.73
4 El Gheta	1.16	0.51	1.19	0.44	0.00	0.00	0.00	0.00	0.00	0.00	3.30
Average(1-4)	0.94	1.16	1.41	0.39	0.00	0.10	0.00	0.00	0.14	0.05	4.18
5 El Basiakoum	1.21	0.40	1.32	0.26	0.00	0.00	0.00	0.00	0.23	0.00	3.42
6 Kom Eshow	2.13	0.65	4.39	0.22	0.00	0.12	0.08	0.01	0.08	0.06	7.74
7 Kom El Parag	4.36	0.35	4.54	0.82	0.00	0.68	0.18	0.02	0.00	0.00	10.95
8 Hares	1.34	0.36	1.12	0.63	0.04	0.00	0.00	0.00	0.05	0.08	3.62
Average(5-8)	2.26	0.44	2.84	0.48	0.01	0.20	0.07	0.01	0.09	0.04	6.43
Average(1-8)	1.60	0.80	2.13	0.44	0.01	0.15	0.03	0.00	0.11	0.04	5.31

(Unit: feddan/household)

Source : Farm Economic Survey (1994)

Table F-1-23 Crop Area, Summer and Perennial (Unit: feddan/household)

Village	Cotton	Corn	Rice	Sunflower	Squash	Melon Seeds	Tomato	Fodder Maize	Others	Total	Perennial		
											(Winter)	Total	
1 El Ab Kaein	0.79	2.70	2.19	0.08	0.04	0.03	3.47	0.00	0.25	9.55	4.18	0.26	
2 Hafs	1.86	0.94	1.50	0.02	0.00	0.02	0.02	0.16	2.16	6.68	4.52	0.00	
3 Truga	1.28	1.72	0.00	0.08	0.14	0.14	0.12	0.15	1.22	4.85	4.73	0.00	
4 El Gheta	1.39	1.48	0.00	0.47	0.00	0.07	0.00	0.00	0.00	3.41	3.3	0.00	
Average(1-4)	1.33	1.71	0.92	0.16	0.05	0.07	0.90	0.08	0.91	6.12	4.18	0.07	
5 El Baslakoum	1.45	0.50	1.09	0.00	0.00	0.01	0.08	0.06	0.00	3.19	3.42	0.00	
6 Kom Eshow	2.35	1.37	0.63	0.04	0.00	0.00	0.34	0.06	0.04	4.83	7.74	0.00	
7 Kom El Farag	4.30	2.54	0.01	1.75	0.04	0.05	0.42	0.36	0.18	9.65	10.95	0.00	
8 Hares	1.38	0.89	0.76	0.04	0.00	0.02	0.42	0.34	0.29	4.14	3.62	0.26	
Average(5-8)	2.37	1.33	0.62	0.46	0.01	0.02	0.32	0.21	0.13	5.45	6.43	0.07	
Average(1-8)	1.85	1.52	0.77	0.31	0.03	0.04	0.61	0.14	0.52	5.79	5.31	0.07	
													11.16

Source : Farm Economic Survey (1994)

Table F-1-24 Unit Yield

Village	Winter Crops						Summer Crops				Orange
	Clover Short	Clover Long	Wheat	Faba bean	Cotton	Corn	Rice	Tomato			
	(unit: kg/feddan)										
1 El Ab Kaein	6,005	7,011	804	573	727	558	1,276	136	2,846		
2 Hafs	3,153	9,905	1,711	1,032	974	2,041	2,612	1,429	0		
3 Truga	7,002	13,243	1,474	653	864	2,135	0	* 8,185	0		
4 El Gheta	4,504	8,699	1,527	837	908	1,511	0	0	0		
Average(1-4)	5,166	9,715	1,379	774	868	1,561	972	2,438	712		
5 El Baslakoum	2,873	8,417	1,383	1,105	999	2,256	2,701	* 8,000	0		
6 Kom Eshow	6,771	13,182	554	596	868	2,129	2,621	4,412	0		
7 Kom El Farag	5,692	2,296	1,566	751	792	2,522	2,857	* 5,143	0		
8 Hares	6,512	13,453	959	655	716	1,210	0	2,826	0		
Average(5-8)	5,462	9,337	1,116	777	844	2,029	2,045	* 5,095	0		
Average(1-8)	5,314	9,526	1,247	775	856	1,795	1,508	3,766	356		
								* 6,606			

Note: * --- The figures in the parenthesis show the average yield of selected villages.

Source : Farm Economic Survey (1994)

Table F-1-25 Crop Damage by Soil Salinity

(Unit: %)

Village	Winter Crops			Summer Crops				Orange	
	Clover Short	Clover Long	Wheat	Faba bean	Cotton	Corn	Rice		Tomato
1 El Ab Kaein	8.0	48.0	72.0	16.0	28.0	40.0	60.0	12.0	12.0
2 Hafs	16.0	16.0	44.0	8.0	44.0	44.0	36.0	0.0	0.0
3 Truga	52.0	40.0	64.0	36.0	52.0	76.0	0.0	8.0	0.0
4 El Gheta	44.0	28.0	56.0	24.0	52.0	60.0	0.0	0.0	0.0
Average(1-4)	30.0	33.0	59.0	21.0	44.0	55.0	24.0	5.0	3.0
5 El Baslakoum	88.0	20.0	72.0	24.0	84.0	52.0	68.0	0.0	0.0
6 Kom Eshow	76.0	40.0	76.0	12.0	80.0	80.0	28.0	4.0	0.0
7 Kom El Farag	44.0	16.0	100.0	36.0	84.0	84.0	4.0	0.0	0.0
8 Hares	92.0	40.0	96.0	68.0	96.0	72.0	0.0	0.0	0.0
Average(5-8)	75.0	29.0	86.0	35.0	86.0	72.0	25.0	1.0	0.0
Average(1-8)	52.5	31.0	72.5	28.0	65.0	63.5	24.5	3.0	1.5

Note: % --- the percent of severely and moderately damaged households to the total households

Table F-1-26 Crop Damage by Ill Drainage

Village	Winter Crops				Summer Crops				Orange
	Clover Short	Clover Long	Wheat	Faba bean	Cotton	Corn	Rice	Tomato	
1 El Ab Kaein	0.0	4.0	8.0	4.0	8.0	8.0	0.0	8.0	16.0
2 Hafs	8.0	0.0	16.0	0.0	12.0	12.0	12.0	4.0	0.0
3 Truga	12.0	8.0	12.0	8.0	8.0	8.0	0.0	4.0	0.0
4 El Gheta	52.0	32.0	68.0	28.0	56.0	68.0	0.0	0.0	0.0
Average(1-4)	18.0	11.0	26.0	10.0	21.0	24.0	3.0	4.0	4.0
5 El Baslakoum	16.0	0.0	12.0	0.0	12.0	0.0	8.0	0.0	0.0
6 Kom Eshow	64.0	44.0	64.0	12.0	36.0	68.0	28.0	12.0	0.0
7 Kom El Farag	88.0	12.0	96.0	36.0	88.0	88.0	4.0	8.0	0.0
8 Hares	92.0	40.0	96.0	68.0	24.0	18.0	64.0	12.0	0.0
Average(5-8)	65.0	24.0	67.0	29.0	40.0	43.5	26.0	8.0	0.0
Average(1-8)	41.5	17.5	46.5	19.5	30.5	33.8	14.5	6.0	2.0

Note: % --- the percent of severely and moderately damaged households to the total households

Source : Farm Economic Survey (1994)

Table F-1-27 Major Items of Future Farm Management

(Unit : % N=25)

Village	1. Grain Crops			2. Sugar Crops			3. Fiber Crops			4. Fruit Crops			5. Vegetables		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
1 El Ab Kaein	20.0	64.0	16.0	24.0	52.0	16.0	20.0	56.0	16.0	28.0	52.0	16.0	28.0	44.0	16.0
2 Hafs	24.0	56.0	20.0	8.0	60.0	20.0	28.0	52.0	20.0	8.0	60.0	20.0	16.0	56.0	20.0
3 Truga	16.0	72.0	12.0	0.0	88.0	12.0	16.0	72.0	12.0	0.0	88.0	12.0	16.0	72.0	12.0
4 El Ghetta	20.0	72.0	8.0	8.0	68.0	12.0	28.0	68.0	4.0	4.0	72.0	12.0	16.0	60.0	12.0
Average(1-4)	20.0	66.0	14.0	10.0	67.0	15.0	23.0	62.0	13.0	10.0	68.0	15.0	19.0	58.0	15.0
5 El Basiakoum	28.0	56.0	16.0	0.0	56.0	44.0	28.0	56.0	16.0	12.0	64.0	24.0	4.0	68.0	28.0
6 Kom Eshow	16.0	52.0	32.0	0.0	64.0	36.0	28.0	44.0	28.0	4.0	64.0	32.0	20.0	52.0	28.0
7 Kom El Farag	8.0	60.0	32.0	0.0	68.0	32.0	20.0	48.0	32.0	0.0	68.0	32.0	20.0	48.0	32.0
8 Hares	24.0	64.0	28.0	4.0	72.0	24.0	16.0	60.0	24.0	4.0	72.0	24.0	8.0	68.0	24.0
Average(5-8)	19.0	58.0	27.0	1.0	65.0	34.0	23.0	52.0	25.0	5.0	67.0	28.0	13.0	59.0	28.0
Average(1-8)	19.5	62.0	20.5	5.5	66.0	24.5	23.0	57.0	19.0	7.5	67.5	21.5	16.0	58.5	21.5

Note : 1st --- plan to develop

2nd --- no plan to develop

3rd --- no reply

Source : Farm Economic Survey (1994)

Table F-1-28 Source of Domestic Water

Village	Survey	Source, Drinking Water				Distance, Drinking Water		Volume, Drinking Water				Quality, Drinking Water						
		Portable Water Supply		Irrigation Canal		Drain		Others		Sufficient		Not Sufficient		Good		Not Good		
		Whole	%	Whole	%	Whole	%	Whole	%	Whole	%	Whole	%	Whole	%	Whole	%	
1 El Ab Kaein	FES	3	50	1	17	0	0	2	33	12.510	4	67	2	33	1	17	5	83
2 Hafs	FES	4	67	2	33	0	0	0	0	17.000	1	17	5	83	2	33	4	67
3 Truga	FES	4	67	2	83	0	0	0	0	29.000	1	17	5	83	2	33	4	67
4 El Gheta	FES	6	100	0	0	0	0	0	0	10.522	1	17	5	83	5	83	1	17
Average(1-4)		4	71	1	33	0	0	1	8	17.258	2	30	4	71	3	42	4	59
5 El Baslakoum	FES	6	100	0	0	0	0	0	0	5.500	2	33	4	67	3	50	3	50
6 Kom Eshow	FES	6	100	0	0	0	0	0	0	15.080	0	0	6	100	4	67	2	33
7 Kom El Farag	FES	6	100	0	0	0	0	0	0	32.000	1	17	5	83	4	67	2	33
8 Hares	FES	5	83	1	17	0	0	0	0	500	5	83	1	17	5	83	1	17
Average(5-8)		6	96	0	4	0	0	0	0	13.270	2	33	4	67	4	67	2	33
Average(1-8)		5	83	1	19	0	0	0	4	15.264	2	31	4	69	3	54	3	46

Village	Survey	Source, Other Water				Distance, Other Water		Volume, Other Water				Quality, Other Water						
		Portable Water Supply		Irrigation Canal		Drain		Others		Sufficient		Not Sufficient		Good		Not Good		
		Whole	%	Whole	%	Whole	%	Whole	%	Whole	%	Whole	%	Whole	%	Whole	%	
1 El Ab Kaein	FES	1	17	5	83	0	0	0	0	0	4	67	2	33	1	17	5	83
2 Hafs	FES	2	33	4	67	0	0	0	0	0	4	67	2	33	1	17	5	83
3 Truga	FES	0	0	6	100	0	0	0	0	0	4	67	2	33	0	0	6	100
4 El Gheta	FES	3	50	3	50	0	0	0	0	0	3	50	3	50	1	17	5	83
Average(1-4)		2	25	5	75	0	0	0	0	0	4	68	2	37	1	13	5	87
5 El Baslakoum	FES	2	33	4	67	0	0	0	0	0	1	17	5	83	1	17	5	83
6 Kom Eshow	FES	1	17	5	83	0	0	0	0	0	5	83	1	17	0	0	6	100
7 Kom El Farag	FES	2	33	4	67	0	0	0	0	0	5	83	1	17	1	17	5	83
8 Hares	FES	3	50	3	50	0	0	0	0	0	6	100	0	0	4	67	2	33
Average(5-8)		2	33	4	67	0	0	0	0	0	4	71	2	29	2	25	5	75
Average(1-8)		2	29	4	71	0	0	0	0	0	4	67	2	33	1	19	5	81

Note : % --- the percent of answers to the total households
Source : Farm Economic Survey (1994)

Table F-1-29 Village wise Major Problem

Village	Farm Drainage	Soil Salinity	Shortage of Irrigation Water	Lack of Farm Credit	Lack of Road Facilities	Lack of Public Communication Facilities	Lack of Rural Hospital Facilities	Lack of Electric Facilities	Lack of Education Facilities	Lack of Sewage Facilities	Others	(Unit: %)										
1 El Ab Kaein	88.0	76.0	88.0	40.0	44.0	72.0	112.0	96.0	76.0	92.0	0.0											
2 Hafs	56.0	60.0	88.0	36.0	48.0	80.0	64.0	64.0	20.0	92.0	0.0											
3 Truga	16.0	20.0	20.0	12.0	24.0	16.0	20.0	24.0	24.0	20.0	0.0											
4 El Ghet	68.0	56.0	92.0	32.0	48.0	76.0	56.0	56.0	56.0	92.0	0.0											
Average(1-4)	57.0	53.0	72.0	30.0	41.0	61.0	63.0	60.0	44.0	74.0	0.0											
5 El Baslakoum	84.0	84.0	88.0	36.0	80.0	96.0	68.0	48.0	52.0	92.0	0.0											
6 Kom Eshow	72.0	76.0	94.0	60.0	72.0	80.0	72.0	76.0	64.0	88.0	0.0											
7 Kom El Farag	72.0	84.0	80.0	48.0	68.0	80.0	76.0	64.0	68.0	96.0	0.0											
8 Hares	100.0	100.0	96.0	60.0	60.0	100.0	88.0	44.0	76.0	96.0	0.0											
Average(5-8)	82.0	86.0	89.5	51.0	70.0	89.0	76.0	58.0	65.0	93.0	0.0											
Average(1-8)	69.5	69.5	80.8	40.5	55.5	75.0	69.5	59.0	54.5	83.5	0.0											

Note: % --- the percent of severely and moderately affected households to the total sample households

Source : Farm Economic Survey (1994)

Table F-1-80 Village-wise Solution of Major Problem

Village	Farm Drainage	Shortage of Irrigation Water	Lack of Farm Credit	Lack of Road Facilities	Lack of Public Communication Facilities	Lack of Rural Hospital Facilities	Lack of Electric Facilities	Lack of Education Facilities	Lack of Sewage Facilities	(Unit: %)
										Others
1 El Ab Kaein	92.0	96.0	92.0	92.0	88.0	96.0	100.0	92.0	96.0	0.0
2 Hafs	76.0	80.0	64.0	56.0	92.0	76.0	76.0	58.0	56.0	0.0
3 Truga	80.0	96.0	72.0	80.0	96.0	76.0	68.0	58.0	96.0	0.0
4 El Ghetta	88.0	95.0	48.0	64.0	84.0	60.0	52.0	64.0	88.0	0.0
Average(1-4)	84.0	92.0	69.0	73.0	90.0	77.0	74.0	73.0	84.0	0.0
5 El Baslakoum	88.0	88.0	56.0	56.0	96.0	64.0	60.0	56.0	92.0	0.0
6 Kom Eshow	80.0	92.0	64.0	76.0	88.0	96.0	76.0	64.0	88.0	0.0
7 Kom El Farag	88.0	96.0	68.0	80.0	16.0	24.0	20.0	24.0	24.0	0.0
8 Hares	100.0	100.0	68.0	72.0	96.0	92.0	60.0	60.0	100.0	0.0
Average(5-8)	89.0	94.0	64.0	71.0	74.0	69.0	54.0	51.0	76.0	0.0
Average(1-8)	86.5	93.0	66.5	72.0	82.0	73.0	64.0	62.0	80.0	0.0

Note: % --- the percent of the households who are very and moderately necessary to the total sample households

Source : Farm Economic Survey (1994)

Table F-1-31 Present Crop Production in the Project Area

Study Area Crop	Cropping Intensity (%)	Cropped Area (fed.)	Production			
			Unit Yield		Amount (ton)	
			Unit	Yield (ton/fed.)		
Actual Cultivated Area	100	295.500				
<u>1. Winter Season</u>						
(1) Wheat*1	28	82,740	ardab(150kg)	14.00	2.10	173,754
(2) Beans	5	14,775	ardab(155kg)	5.50	0.85	12,596
(3) Berseem, Long	15	44,325	ton(fresh)	25.00	25.00	1,108,125
(4) Berseem, Short	25	73,875	ton(fresh)	11.00	11.00	812,625
(5) Vegetables*2 (Potato)	8	23,640	ton	8.00	8.00	189,120
Subtotal	<u>81</u>	<u>239,355</u>				<u>2,296,220</u>
<u>2. Summer Season</u>						
(1) Cotton	22	65,010	qantar(157.5kg)	7.00	1.10	71,674
(2) Maize*3	28	82,740	ardab(140kg)	15.30	2.14	177,229
(3) Rice	20	59,100	ton	2.60	2.60	153,660
(5) Vegetables*4 (Tomato)	11	32,505	ton	12.00	12.00	390,060
Subtotal	<u>81</u>	<u>239,355</u>				<u>792,623</u>
3. Fruit Crops	13	38,415		6.20	6.20	238,173
Total	175.0	517,125				3,327,015

Note:

- *1... including barley, flax and others
- *2... including potato and onion
- *3... including Nile maize
- *4... including Nile vegetables

Table F-1-32 Crop Production With Project

Study Area	Crop	Cropping Intensity	Cropped Area	Production		
				Unit Yield		Amount
				Unit	Yield	
	(%)	(fed.)				
A. Plan to Construct Tile Drainage						
<u>Cultivated Area</u>		100	177,800			
1. Winter Season						
(1) Wheat	28	49,784	ardab (150kg)	16.10	2.42	120,228
(2) Beans	5	8,890	ardab (155kg)	6.60	0.99	8,801
(3) Berseem, Long	15	26,670	ton (fresh)	30.00	30.00	800,100
(4) Berseem, Short	25	44,450	ton (fresh)	13.20	13.20	586,740
(5) Vegetables	14	24,892	ton	10.00	10.00	248,920
Subtotal	87	154,686				1,764,789
2. Summer Season						
(1) Cotton	22	39,116	qantar (157.5kg)	8.75	1.38	53,907
(2) Maize	28	49,784	ardab (140kg)	17.60	2.46	122,668
(3) Rice	19	33,782	ton	2.73	2.73	92,225
(5) Vegetables	18	32,004	ton	15.00	15.00	480,060
Subtotal	87	154,686				748,859
3. Fruit Crops	13	23,114		6.82	6.82	157,637
Total	187.0	332,486				2,671,286
B. With Existing Tile Drainage						
<u>Cultivated Area</u>		100	138,000			
1. Winter Season						
(1) Wheat	28	38,640	ardab (150kg)	15.05	2.26	87,230
(2) Beans	5	6,900	ardab (155kg)	6.05	0.91	6,262
(3) Berseem, Long	15	20,700	ton (fresh)	27.50	27.50	569,250
(4) Berseem, Short	25	34,500	ton (fresh)	12.10	12.10	417,450
(5) Vegetables	14	19,320	ton	9.00	9.00	173,880
Subtotal	87	120,060				1,254,072
2. Summer Season						
(1) Cotton	22	30,360	qantar (157.5kg)	7.88	1.24	37,680
(2) Maize	28	38,640	ardab (140kg)	16.45	2.30	88,988
(3) Rice	19	26,220	ton	2.67	2.67	70,007
(5) Vegetables	18	24,840	ton	13.50	13.50	335,340
Subtotal	87	120,060				532,015
3. Fruit Crops	13	17,940		6.51	6.51	116,789
Total	187.0	258,060				1,902,876
Grandtotal		590,546				4,574,162

Table F-1-33(1) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Wheat

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	ardab	14.00	15.12	15.54	15.96	16.10
2. Second product(Grain)	caml/load	11.20	12.10	12.43	12.77	12.88
B. PRODUCTION COST						
1. Non Yield Depend' t						
(1)Seed	kg	50.00	50.00	50.00	50.00	50.00
(2)Manure	cubic m.	15.00	15.00	15.00	15.00	15.00
(3)Fertilizers						
- N	kg	70.00	70.00	70.00	70.00	70.00
- P2O5	kg	30.00	30.00	30.00	30.00	30.00
- K2O	kg	40.00	40.00	40.00	40.00	40.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	15.00	15.00	15.00	15.00	15.00
(5)Fungicides	liter	0.00	0.00	0.00	0.00	0.00
(6)Herbicides	liter	2.00	1.00	1.00	1.00	1.00
(7)Machinery Works						
- Land Preparation	hour	2.50	2.50	2.50	2.50	2.50
- Spraying	hour	2.00	2.00	2.00	2.00	2.00
- Irrigation	hour	20.00	20.00	20.00	20.00	20.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	45.00	45.00	45.00	45.00	45.00
(9)Labor						
- Family	man/hour	61.00	61.00	61.00	61.00	61.00
- Hired	man/hour	61.00	61.00	61.00	61.00	61.00
2. Yield Depend' t						
(1)Machinery Works						
- Threshing	hour	2.70	2.92	3.00	3.08	3.11
- Winnowing	hour	2.40	2.59	2.74	2.74	2.76
(2)Animal Works						
- Transportation	donk/hour	30.00	32.40	33.30	34.20	34.50
(3)Labor						
- Family	man/hour	45.00	48.60	49.95	51.30	51.75
- Hired	man/hour	45.00	48.60	49.95	51.30	51.75

Table F-1-33(2) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Beans

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	ardab	5.50	6.05	6.33	6.44	6.60
2. Second product(Grain)	caml/load	4.20	4.62	4.83	4.91	5.04
B. PRODUCTION COST						
1. Non Yield Depend't						
(1)Seed	kg	60.00	60.00	60.00	60.00	60.00
(2)Manure	cubic m.	20.00	20.00	20.00	20.00	20.00
(3)Fertilizers						
- N	kg	15.50	15.50	15.50	15.50	15.50
- P205	kg	15.00	15.00	15.00	15.00	15.00
- K20	kg	30.00	30.00	30.00	30.00	30.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	0.00	0.00	0.00	0.00	0.00
(5)Fungicides	liter	0.00	0.00	0.00	0.00	0.00
(6)Herbicides	liter	2.00	2.00	2.00	2.00	2.00
(7)Machinery Works						
- Land Preparation	hour	3.00	3.00	3.00	3.00	3.00
- Spraying	hour	4.00	4.00	4.00	4.00	4.00
- Irrigation	hour	16.00	16.00	16.00	16.00	16.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	30.00	30.00	30.00	30.00	30.00
(9)Labor						
- Family	man/hour	34.00	34.00	34.00	34.00	34.00
- Hired	man/hour	34.00	34.00	34.00	34.00	34.00
2. Yield Depend't						
(1)Machinery Works						
- Threshing	hour	2.00	2.20	2.30	2.34	2.40
- Winnowing	hour	2.40	2.64	2.76	2.81	2.88
(2)Animal Works						
- Transportation	donk/hour	18.00	19.80	20.70	21.06	21.60
(3)Labor						
- Family	man/hour	47.64	52.40	54.79	55.74	57.17
- Hired	man/hour	47.64	52.40	54.79	55.74	57.17

Table F-1-33(3) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Berseem, Long Season

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	ton	25.00	27.50	28.75	29.25	30.00
2. Second product(Grain)	caml/load	0.00	0.00	0.00	0.00	0.00
3. Green fodders		0.00				
B. PRODUCTION COST						
1. Non Yield Depend' t						
(1)Seed	kg	25.00	25.00	25.00	25.00	25.00
(2)Manure	cubic m.	0.00	0.00	0.00	0.00	0.00
(3)Fertilizers						
- N	kg	15.00	15.00	15.00	15.00	15.00
- P2O5	kg	20.00	20.00	20.00	20.00	20.00
- K2O	kg	75.00	75.00	75.00	75.00	75.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	1.00	1.00	1.00	1.00	1.00
(5)Fungicides	liter	0.00	0.00	0.00	0.00	0.00
(6)Herbicides	liter	0.00	0.00	0.00	0.00	0.00
(7)Machinery Works						
- Land Preparation	hour	2.50	2.50	2.50	2.50	2.50
- Spraying	hour	2.00	2.00	2.00	2.00	2.00
- Irrigation	hour	30.00	30.00	30.00	30.00	30.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	30.00	30.00	30.00	30.00	30.00
(9)Labor						
- Family	man/hour	60.00	60.00	60.00	60.00	60.00
- Hired	man/hour	60.00	60.00	60.00	60.00	60.00
2. Yield Depend' t						
(1)Machinery Works						
- Threshing	hour	0.00	0.00	0.00	0.00	0.00
- Winnowing	hour	0.00	0.00	0.00	0.00	0.00
(2)Animal Works						
- Transportation	donk/hour	0.00	0.00	0.00	0.00	0.00
(3)Labor						
- Family	man/hour	72.00	79.20	82.80	84.24	86.40
- Hired	man/hour	0.00	0.00	0.00	0.00	0.00

Table F-1-33(4) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Berseem, Short Season

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	ton	11.00	12.10	12.65	12.87	13.20
2. Second product(Grain)	caml/load	0.00	0.00	0.00	0.00	0.00
B. PRODUCTION COST						
1. Non Yield Depend' t						
(1)Seed	kg	25.00	25.00	25.00	25.00	25.00
(2)Manure	cubic m.	0.00	0.00	0.00	0.00	0.00
(3)Fertilizers						
- N	kg	7.50	7.50	7.50	7.50	7.50
- P2O5	kg	20.00	20.00	20.00	20.00	20.00
- K2O	kg	40.00	40.00	40.00	40.00	40.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	0.00	0.00	0.00	0.00	0.00
(5)Fungicides	liter	0.00	0.00	0.00	0.00	0.00
(6)Herbicides	liter	0.00	0.00	0.00	0.00	0.00
(7)Machinery Works						
- Land Preparation	hour	0.00	0.00	0.00	0.00	0.00
- Spraying	hour	0.00	0.00	0.00	0.00	0.00
- Irrigation	hour	12.00	12.00	12.00	12.00	12.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	0.00	30.00	30.00	30.00	30.00
(9)Labor						
- Family	man/hour	30.00	15.00	15.00	15.00	15.00
- Hired	man/hour	30.00	15.00	15.00	15.00	15.00
2. Yield Depend' t						
(1)Machinery Works						
- Threshing	hour	0.00	0.00	0.00	0.00	0.00
- Winnowing	hour	0.00	0.00	0.00	0.00	0.00
(2)Animal Works						
- Transportation	donk/hour	0.00	0.00	0.00	0.00	0.00
(3)Labor						
- Family	man/hour	36.00	39.60	41.40	42.12	43.20
- Hired	man/hour	0.00	0.00	0.00	0.00	0.00

Table F-1-33(5) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Winter Vegetables(Cabbage)

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	ton	8.00	9.20	9.60	10.00	10.00
2. Second product(Grain)	caml/load	0.00	0.00	0.00	0.00	0.00
B. PRODUCTION COST						
1. Non Yield Depend' t						
(1)Seed	ton	1.00	1.00	1.00	1.00	1.00
(2)Manure	cubic m.	30.00	30.00	30.00	30.00	30.00
(3)Fertilizers						
- N	kg	40.00	40.00	40.00	40.00	40.00
- P2O5	kg	25.00	25.00	25.00	25.00	25.00
- K	kg	0.00	0.00	0.00	0.00	0.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	1.50	1.50	1.50	1.50	1.50
(5)Fungicides	liter	2.00	2.00	2.00	2.00	2.00
(6)Herbicides	liter	0.00	0.00	0.00	0.00	0.00
(7)Machinery Works						
- Land Preparation	hour	3.50	3.50	3.50	3.50	3.50
- Spraying	hour	8.00	8.00	8.00	8.00	8.00
- Irrigation	hour	27.00	27.00	27.00	27.00	27.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	75.00	75.00	75.00	75.00	75.00
(9)Labor						
- Family	man/hour	148.00	148.00	148.00	148.00	148.00
- Hired	man/hour	148.00	148.00	148.00	148.00	148.00
2. Yield Depend' t						
(1)Machinery Works						
- Threshing	hour	0.00	0.00	0.00	0.00	0.00
- Winnowing	hour	0.00	0.00	0.00	0.00	0.00
(2)Animal Works						
- Transportation	donk/hour	0.00	0.00	0.00	0.00	0.00
(3)Labor						
- Family	man/hour	72.50	83.37	87.00	90.62	90.62
- Hired	man/hour	72.50	83.37	87.00	90.62	90.62

Table F-1-33(6) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Cotton

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	qantar	7.00	8.05	8.40	8.75	8.75
2. Second product(Grain)	caml/load	6.40	7.36	7.68	8.00	8.00
B. PRODUCTION COST						
1. Non Yield Depend' t						
(1)Seed	ton	65.00	65.00	65.00	65.00	65.00
(2)Manure	cubic m.	20.00	20.00	20.00	20.00	20.00
(3)Fertilizers						
- N	kg	80.00	80.00	80.00	80.00	80.00
- P205	kg	30.00	30.00	30.00	30.00	30.00
- K20	kg	0.00	0.00	0.00	0.00	0.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	7.00	7.00	7.00	7.00	7.00
(5)Fungicides	liter	1.00	1.00	1.00	1.00	1.00
(6)Herbicides	liter	0.00	0.00	0.00	0.00	0.00
(7)Machinery Works						
- Land Preparation	hour	3.00	3.00	3.00	3.00	3.00
- Spraying	hour	14.00	14.00	14.00	14.00	14.00
- Irrigation	hour	32.00	32.00	32.00	32.00	32.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	60.00	60.00	60.00	60.00	60.00
(9)Labor						
- Family	man/hour	155.00	155.00	155.00	155.00	155.00
- Hired	man/hour	155.00	155.00	155.00	155.00	155.00
2. Yield Depend' t						
(1)Machinery Works						
- Threshing	hour	0.00	0.00	0.00	0.00	0.00
- Winnowing	hour	0.00	0.00	0.00	0.00	0.00
(2)Animal Works						
- Transportation	donk/hour	30.00	34.50	36.00	37.50	37.50
(3)Labor						
- Family	man/hour	125.00	143.75	150.00	156.25	156.25
- Hired	man/hour	125.00	143.75	150.00	156.25	156.25

Table F-1-33(7) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Maize

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	qantar	15.30	16.37	16.83	17.44	17.60
2. Second product(Grain)	caml/load	10.70	11.45	11.77	12.20	12.31
3. Green fodders	caml/load	1.00	1.07	1.10	1.14	1.15
B. PRODUCTION COST						
1. Non Yield Depend' t						
(1)Seed	ton	25.00	25.00	25.00	25.00	25.00
(2)Manure	cubic m.	20.00	20.00	20.00	20.00	20.00
(3)Fertilizers						
- N	kg	80.00	80.00	80.00	80.00	80.00
- P205	kg	70.00	40.00	40.00	40.00	40.00
- K20	kg	60.00	60.00	60.00	60.00	60.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	1.00	1.00	1.00	1.00	1.00
(5)Fungicides	liter	1.50	1.50	1.50	1.50	1.50
(6)Herbicides	liter	0.00	0.00	0.00	0.00	0.00
(7)Machinery Works						
- Land Preparation	hour	3.00	3.00	3.00	3.00	3.00
- Spraying	hour	4.00	4.00	4.00	4.00	4.00
- Irrigation	hour	27.00	27.00	27.00	27.00	27.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	60.00	60.00	60.00	60.00	60.00
(9)Labor						
- Family	man/hour	85.00	85.00	85.00	85.00	85.00
- Hired	man/hour	85.00	85.00	85.00	85.00	85.00
2. Yield Depend' t						
(1)Machinery Works						
- Threshing	hour	0.00	0.00	0.00	0.00	0.00
- Winnowing	hour	0.00	0.00	0.00	0.00	0.00
(2)Animal Works						
- Transportation	donk/hour	24.00	25.68	26.40	27.36	27.60
(3)Labor						
- Family	man/hour	44.50	47.62	48.95	50.73	51.18
- Hired	man/hour	44.50	47.62	48.95	50.73	51.18

Table F-1-33(8) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Rice

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	ton	2.60	2.65	2.68	2.70	2.73
2. Second product(Grain)	caml/load	8.00	8.16	8.24	8.32	8.40
B. PRODUCTION COST						
1. Non Yield Depend't						
(1)Seed	kg	65.00	65.00	65.00	65.00	65.00
(2)Manure	cubic m.	5.00	5.00	5.00	5.00	5.00
(3)Fertilizers						
- N	kg	50.00	50.00	50.00	50.00	50.00
- P2O5	kg	15.00	15.00	15.00	15.00	15.00
- K2O	kg	30.00	30.00	30.00	30.00	30.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	1.00	1.00	1.00	1.00	1.00
(5)Fungicides	liter	0.00	0.00	0.00	0.00	0.00
(6)Herbicides	liter	2.00	2.00	2.00	2.00	2.00
(7)Machinery Works						
- Land Preparation	hour	2.00	2.00	2.00	2.00	2.00
- Spraying	hour	6.00	6.00	6.00	6.00	6.00
- Irrigation	hour	55.00	55.00	55.00	55.00	55.00
(8)Animal Works						
- Cultivation	cow/hour	10.00	10.00	10.00	10.00	10.00
- Transportation	donk/hour	15.00	15.00	15.00	15.00	15.00
(9)Labor						
- Family	man/hour	88.50	88.50	88.50	88.50	88.50
- Hired	man/hour	88.50	88.50	88.50	88.50	88.50
2. Yield Depend't						
(1)Machinery Works						
- Threshing	hour	2.00	2.04	2.06	2.08	2.10
- Winnowing	hour	2.00	2.04	2.06	2.08	2.10
(2)Animal Works						
- Transportation	donk/hour	20.00	20.40	20.60	20.80	21.00
(3)Labor						
- Family	man/hour	30.00	30.60	30.90	31.20	31.50
- Hired	man/hour	30.00	30.60	30.90	31.20	31.50

Table F-1-33(9) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Summer Vegetables(Tomato)

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	qantar	12.00	13.80	14.40	15.00	15.00
2. Second product(Grain)	camel/load	0.00	0.00	0.00	0.00	0.00
3. Green fodders		0.00	0.00	0.00	0.00	0.00
B. PRODUCTION COST						
1. Non Yield Depend' t						
(1)Seedlings	1000	12.00	5.00	5.00	5.00	5.00
(2)Manure	cubic m.	20.00	20.00	20.00	20.00	20.00
(3)Fertilizers						
- N	kg	60.00	60.00	60.00	60.00	60.00
- P2O5	kg	45.00	45.00	45.00	45.00	45.00
- K	kg	0.00	0.00	0.00	0.00	0.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	5.00	5.00	5.00	5.00	5.00
(5)Fungicides	liter	10.00	10.00	10.00	10.00	10.00
(6)Herbicides	liter	0.00	0.00	0.00	0.00	0.00
(7)Machinery Works						
- Land Preparation	hour	3.50	3.50	3.50	3.50	3.50
- Spraying	hour	25.00	25.00	25.00	25.00	25.00
- Irrigation	hour	30.00	30.00	30.00	30.00	30.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	75.00	75.00	75.00	75.00	75.00
(9)Labor						
- Family	man/hour	150.00	150.00	150.00	150.00	150.00
- Hired	man/hour	150.00	150.00	150.00	150.00	150.00
2. Yield Depend' t						
(1)Machinery Works						
- Threshing	hour	0.00	0.00	0.00	0.00	0.00
- Winnowing	hour	0.00	0.00	0.00	0.00	0.00
(2)Animal Works						
- Transportation	donk/hour	7.14	8.21	8.57	8.93	8.93
(3)Labor						
- Family	man/hour	72.50	83.38	87.00	90.63	90.63
- Hired	man/hour	72.50	83.38	87.00	90.63	90.63

Table F-1-33(10) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Citrus

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	ton	6.20	6.70	6.88	7.07	7.13
2. Second product(Grain)	canl/load	0.00	0.00	0.00	0.00	0.00
3. Green fodders		0.00	0.00	0.00	0.00	0.00
B. PRODUCTION COST						
1. Non Yield Depend' t						
(1)Seed	kg	25.00	25.00	25.00	25.00	25.00
(2)Manure	cubic m.	0.00	0.00	0.00	0.00	0.00
(3)Fertilizers						
- N	kg	80.00	15.00	15.00	15.00	15.00
- P205	kg	20.00	20.00	20.00	20.00	20.00
- K20	kg	100.00	100.00	100.00	100.00	100.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	172.00	1.00	1.00	1.00	1.00
(5)Fungicides	liter	10.00	0.00	0.00	0.00	0.00
(6)Herbicides	liter	0.00	0.00	0.00	0.00	0.00
(7)Machinery Works						
- Land Preparation	hour	4.17	2.50	2.50	2.50	2.50
- Spraying	hour	2.00	2.00	2.00	2.00	2.00
- Irrigation	hour	60.00	30.00	30.00	30.00	30.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	60.00	30.00	30.00	30.00	30.00
(9)Labor						
- Family	man/hour	90.00	60.00	60.00	60.00	60.00
- Hired	man/hour	90.00	60.00	60.00	60.00	60.00
2. Yield Depend' t						
(1)Machinery Works						
- Threshing	hour	0.00	0.00	0.00	0.00	0.00
- Winnowing	hour	0.00	0.00	0.00	0.00	0.00
(2)Animal Works						
- Transportation	donk/hour	0.00	0.00	0.00	0.00	0.00
(3)Labor						
- Family	man/hour	55.00	59.40	61.05	62.70	63.25
- Hired	man/hour	55.00	59.40	61.05	62.70	63.25
(4)Bagging	ton	5.83	6.30	6.47	6.65	6.70

Table F-1-34 Farmers' Organization for Irrigation and Drainage

Name of Organization	Area	Nos. of Members	Established Year	Facilities	District	Activity
(fed.)						
1. Water Users' Association (1) Abuhommos	11,000	1,800	1992	30 mesquas	Abu Hommos	Moderate
2. Drainage Users' Association						
(1) Damanhur 1	2,000	330	1993	11 collectors	Damanhur	Moderate
(2) Damanhur 2	2,100	400	1993	9 collectors	Damanhur	Moderate
(3) Delengat	3,000	500	1993	20 collectors	Delengat	Moderate
Total	4,100	730				

Source: EPADP, West Delta Directorate Office

Table F-1-35 Flood Damage in December, 1991

1. Damaged Area

District	Damaged Area by Crop					Total (fed.)
	Wheat (fed.)	Berseem, L (fed.)	Berseem, S (fed.)	Beans (fed.)	Vegetables (fed.)	
1. Behera Gov.						
(1) Hosh Esa	80	42	69	20	100	311
(2) Abu Homos	665	122	204	101	55	1,147
(3) Janakles	845	115	191	127	-	1,278
(4) Abu El Matameer	1,926	969	1,616	94	651	5,256
(5) Kafr El Dawar	3,271	260	433	612	352	4,928
Subtotal	6,787	1,508	2,513	954	1,158	12,920
2. Alexandria Gov.						
(1) Khorshed (Abis)	450	-	-	360	1,705	2,515
(2) Nahda	1,345	167	277	732	399	2,920
Subtotal	1,795	167	277	1,092	2,104	5,435
Total	8,582	1,675	2,790	2,046	3,262	18,355

Source: MALRF, Behera and Alexandria Governorates

2. Amount of Compensation

District	Amount of Compensation by Crop					Total (' 000LE)
	Wheat (' 000LE)	Barley (' 000LE)	Berseem (' 000LE)	Beans (' 000LE)	Vegetables (' 000LE)	
1. Behera Gov.	458	124	216	278	1,123	2,199
2. Alexandria Gov.	N.A	N.A	N.A	N.A	N.A	808
Total	N.A	N.A	N.A	N.A	N.A	3,007

Source: MALRF, Behera and Alexandria Governorates

3. Estimated Crop Damage

Item	Wheat	Berseem, L	Berseem, S	Beans	Vegetables	Total
Total Area (feddan)	8,582	1,675	2,790	2,046	3,262	18,355
Unit Yield (ton/ha)	2.10	25.00	11.00	0.85	8.00	
Amount (ton)	18,022	41,875	30,690	1,739	26,096	118,422

Note: The unit yield is referred to Table F-1-12

Table F-2-1 Area and Population by Administrative Division(1993)

Sheyakha	Area	Population	Population Density	No. of Household	No. of Farm Household	No. of Landless Farm H. H
	(ha)		(pers. /sq. km)			
1. Behera Gov.						
(1) Moshtarak Area						
(Koum El Farag L. U)						
1) Koum El Farag (C.)	2,627	10,627	405	1,820	1,939	246
2) El Yaseneya	1,557	4,441	285	795	603	134
3) El Mahadeya	2,838	14,288	503	2,588	1,238	293
4) Koum Efeen	786	1,051	134	191	359	8
5) El Gheta	1,662	17,997	1,083	3,185	1,361	395
Subtotal	<u>9,470</u>	<u>48,404</u>	<u>511</u>	<u>8,579</u>	<u>5,500</u>	<u>1,076</u>
(2) El Hager Ext. Area						
(El Omara L. U)						
1) Abu Nom Coop.	1,800	2,656	148	466	466	0
2) El Hager Coop.	2,430	3,574	147	627	627	0
3) El Oroba Coop.	1,640	2,405	147	422	422	0
4) Educated Coop.	1,160	707	61	124	124	0
Subtotal	<u>7,030</u>	<u>9,342</u>	<u>133</u>	<u>1,639</u>	<u>1,639</u>	<u>0</u>
2. Alexandria Gov.						
1. Nahda Area						
1) Sanad	1,068	2,983	279	523	522	0
2) Hares	1,165	4,951	425	869	623	0
3) Mesery	1,336	6,333	474	1,111	707	0
4) Ola	705	6,366	903	1,117	548	0
5) Tiba	1,186	4,501	380	790	348	0
6) Fangary &Wakad	3,518	4,276	122	750	274	0
7) Nubaria Copamy	1,122	8,680	774	1,523	934	0
Subtotal	<u>10,100</u>	<u>38,090</u>	<u>377</u>	<u>6,683</u>	<u>3,956</u>	<u>0</u>
	(63,330fed.)					
Grand Total	26,600	95,836	360	16,901	11,095	1,076

Note:(1) It is estimated that the Koum El Farag and El Gheta areas are covered by the study area, respectively at 40 % and 60 % of the area.

- (2) U.C....Union Council
C.....Center of Union Council
Coop...Village Agricultural Cooperative

Source: (1) 1986 Population Census, Computer Center, Behera Gvernorate, IDSC
Alexandria Governorate for the Moshtarak and Nahda areas.

- (2) Population for the El Hager Extention area is estimated on the number of settled farm households.

Table F-2-2 Number of Landowner and Farm Households

Village	Number of Owner				Number of Farm Households(Owner+Tenant)			
	Total	Less than 1 fed.	1~5 fed.	More than 5 fed.	Total	Less than 1 fed.	1~5 fed.	More than 5 fed.
1. El Hager Ext. Area (El Omara L. U)								
(1)Abu Nom Coop.	466	0	0	466	466	0	0	466
(2)El Hager Coop.	627	0	0	627	627	0	0	627
(3)El Oroba Coop.	422	0	0	422	422	0	0	422
(4)Educated Coop.	124	0	0	124	124	0	0	124
Total	1.639	0	0	1.639	1.639	0	0	1.639
2. Nahda Area (Nahda L. U)								
(1)Sanad	467	0	467	0	522	0	522	0
(2)Hares	557	0	557	0	623	0	623	0
(3)El Meserey	632	0	632	0	707	0	707	0
(4)Teba	490	0	490	0	548	0	548	0
(5)El Ola	311	0	311	0	348	0	348	0
(6)Fangary 1.2	82	0	0	82	92	0	0	92
(7)Fangary3 & Wkad1	89	0	0	89	100	0	0	100
(8)Fangary5 & Wkad3	73	0	0	73	82	0	0	82
Subtotal.	2.701	0	2.457	244	3.022	0	2.748	274
(9)Nubariya Company	934	0	846	88	934	0	846	88
Total	3.635	0	3.303	332	3.956	0	3.594	362
3. Moshtarak Area (Koum El Farag L. U)								
(1)Koum El Farag	1.548	78	420	1.050	1.939	359	557	1.023
(2)El Yasaneya	475	72	165	238	603	162	258	183
(3)El Mohdeya	981	81	200	700	1.238	172	242	824
(4)Koum Efeen	270	31	70	169	359	55	136	168
(5)El Ghefa	1.045	95	440	510	1.361	406	511	444
Total	4.319	357	1.295	2.667	5.500	1.154	1.704	2.642
Grand total	9.593	357	4.598	4.638	11.095	1.154	5.298	4.643

Source : MALRF, Behera, Alexandria Governorates

Table F-2-3(1) Crop Production, Wheat

Village	1990/91			1991/92			1992/93			Average Yield (1991/92-1992/93) (ard/fed)
	Area (fed)	Unit Yield (ard/fed)	Production (ard)	Area (fed)	Unit Yield (ard/fed)	Production (ard)	Area (fed)	Unit Yield (ard/fed)	Production (ard)	
1. Abu El Matameer										
(Koum El Farag L. U)										
(1) Koum El Farag	907	18.0	16,326	679	15.7	10,660	919	16.0	20,320	15.9
(2) El Yaseneya	780	17.0	13,260	613	15.7	9,624	660	15.8	13,193	15.8
(3) El Mahdeya*1	1,233	14.0	17,262	1,250	14.0	17,500	1,340	15.0	10,880	14.5
(4) Koum Efeen	386	17.0	6,562	386	14.4	4,838	550	15.7	8,635	15.1
(5) El Cheta	3,306	16.2	53,410	2,878	14.8	42,623	3,469	15.3	53,028	15.0
Total										
2. Kafr El Dawar (El Hager Area)										
(1) Abu Nom	N.A	N.A	N.A	N.A	N.A	N.A	600	12.0	7,200	6.0
(2) El Hager	2,250	19.0	42,750	2,500	10.0	25,000	2,250	12.0	27,000	11.0
(3) El Oroba	N.A	N.A	N.A	N.A	N.A	N.A	700	12.0	8,400	6.0
(4) Educated	N.A	N.A	N.A	N.A	N.A	N.A	200	12.0	2,400	6.0
Total	2,250	19.0	42,750	2,500	10.0	25,000	3,750	12.0	45,000	11.0
3. Amreya (Nahda Area)										
(1) Sanad	250	12.0	3,000	250	14.0	3,500	600	16.0	9,600	15.0
(2) Hares	400	11.3	4,500	500	14.0	7,000	400	16.0	6,400	15.0
(3) El Meserey	300	8.7	2,600	350	14.0	4,900	600	16.0	9,600	15.0
(4) Teba	200	12.0	2,400	200	14.0	2,800	601	16.0	9,616	15.0
(5) El Ola	200	12.0	2,400	270	14.0	3,780	340	16.0	5,440	15.0
(6) Fangary *2	2,542	8.5	21,540	2,471	9.9	24,430	3,290	8.3	27,168	9.1
Total	3,892	9.4	36,440	4,041	11.5	46,410	5,831	11.6	67,824	11.6
Grand Total	9,448	14.0	132,600	9,419	12.1	114,033	13,050	12.7	165,852	12.4

Note: *1... Including the figures for Koum Efeen

*2... Including the figures for other villages

Source: MALRF, Behera and Alexandria Governorates

Table F-2-3(2) Crop Production. Beans

Village	1990/91			1991/92			1992/93			Average Yield (1991/92-1992/93) (ard/fed)
	Area (fed)	Unit Yield (ard/fed)	Production (ard)	Area (fed)	Unit Yield (ard/fed)	Production (ard)	Area (fed)	Unit Yield (ard/fed)	Production (ard)	
1. Abu El Matameer (Koum El Farag L. U)										
(1) Koum El Farag	117	7.0	819	77	8.4	647	98	6.8	666	7.6
(2) El Yaseneya	105	7.0	735	132	7.5	990	70	6.8	476	7.2
(3) El Mahdeya*1	473	5.0	2,365	450	4.5	2,780	507	5.0	1,518	4.8
(4) Koum Efeen										
(5) El Gheta	177	7.0	1,239	66	8.2	541	68	6.8	462	7.5
Total	872	5.9	5,158	725	6.8	4,958	743	4.2	3,123	5.5
2. Kafr El Dawar (El Hager Area)										
(1) Abu Nom	N.A	N.A	N.A	N.A	N.A	N.A	100	4.0	400	2.0
(2) El Hager	1,000	4.0	4,000	200	4.0	800	100	4.0	400	4.0
(3) El Oroba	N.A	N.A	N.A	N.A	N.A	N.A	350	4.0	1,400	2.0
(4) Educated	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
Total	1,000	4.0	4,000	200	4.0	800	550	4.0	2,200	4.0
3. Amreya (Nahda Area)										
(1) Sanad	250	5.0	1,250	250	5.5	1,375	200	6.0	1,200	5.8
(2) Hares	500	5.0	2,500	300	5.5	1,650	200	6.0	1,200	5.8
(3) El Meserey	100	5.0	500	150	5.5	825	400	6.0	2,400	5.8
(4) Teba	400	5.0	2,000	400	5.5	2,200	550	6.0	3,300	5.8
(5) El Ola	320	5.0	1,600	270	5.5	1,485	370	6.0	2,220	5.8
(6) Fangary *2	1,356	3.5	4,750	1,213	3.9	4,675	2,177	6.0	13,062	4.9
Total	2,926	4.3	12,600	2,583	4.7	12,210	3,897	6.0	23,382	5.4
Grand Total	4,798	4.5	21,758	3,508	5.1	17,968	5,190	5.5	28,705	5.3

Note: *1... Including the figures for Koum Efeen

*2... Including the figures for other villages

Table F-2-3(3) Crop Production. Beseem. Long Season

Village	1990/91			1991/92			1992/93			Average Yield (1991/92-1992/93) (ton/fed)
	Area (fed)	Unit Yield #3 (ton/fed)	Production (ton)	Area (fed)	Unit Yield (ton/fed)	Production (ton)	Area (fed)	Unit Yield (ton/fed)	Production (ton)	
1. Abu El Matameer (Koum El Farag L.U)										
(1) Koum El Farag	N.A	N.A	N.A	N.A	N.A	N.A	838			
(2) El Yaseneva	N.A	N.A	N.A	N.A	N.A	N.A	490			
(3) El Mahdeya #1	N.A	N.A	N.A	N.A	N.A	N.A	1.989			
(4) Koum Efeen	N.A	N.A	N.A	N.A	N.A	N.A				
(5) El Cheta	N.A	N.A	N.A	N.A	N.A	N.A	1.361			
Total	N.A	N.A	N.A	N.A	N.A	N.A				
2. Kafr El Dawar (El Hager)										
(1) Abu Nom	N.A	N.A	N.A	N.A	N.A	N.A	667	20.0	13.340	20.0
(2) El El Hager	788	25.0	19.700	2.800	30.0	84.000	1.000	30.0	30.000	28.3
(3) El Oroba	N.A	N.A	N.A	N.A	N.A	N.A	350	30.0	10.500	18.0
(4) Educated	N.A	N.A	N.A	N.A	N.A	N.A	168	30.0	5.040	18.0
Total	788	25.0	19.700	2.800	30.0	84.000	2.185	8.4	18.380	19.2
3. Amreya (Nahda Area)										
(1) Sanad	420	12.5	4.375	360	15.0	4.500	500	18.0	9.000	16.0
(2) Hares		12.5	5.000		15.0	4.500				10.0
(3) El Meserey	600	12.5	7.500	631	15.0	9.465	331	27.2	9.000	19.1
(4) Teba	503	12.5	6.290	503	15.0	7.545	74	83.5	6.180	37.8
(5) El Oia	270	12.5	3.375	250	17.0	4.250	380	15.0	5.700	16.3
(6) Pangary #2	1.252	12.5	15.650	4.675	15.0	70.125	1.542	14.7	22.730	14.9
Subtotal	3.045	13.9	42.190	6.419	15.6	100.385	2.827	18.6	52.610	16.6
Total	8.488	12.2	103.564	15.364	15.1	231.306	8.594	16.3	140.042	15.5

Note: #1... Including the figures for Koum Efeen
 #2... Including the figures for other villages
 #3... fresh weight

Table F-2-3(4) Crop Production. Beseem. Short Season

Village	1990/91		1991/92		1992/93		Average Yield (1991/92-1992/93) (ton./fed)
	Area (fed)	Unit Yield (ton./fed)	Production (ton)	Area (fed)	Unit Yield (ton./fed)	Production (ton)	
1. Abu El Matameer (Koum El Farag L.U)							
(1) Koum El Farag	869	8.0	6.952	560	12.3	6.888	11.6
(2) El Yaseneva	605	8.0	4.840	1.276	11.8	15.057	11.8
(3) El Mahdeyaxl	454	8.0	3.632	519	12.5	6.488	12.1
(4) Koum Efeen							8.639
(5) El Cheta	470	8.0	3.760	171	12.3	2.103	12.0
Total	2,398	8.0	19,184	2,526	12.1	30,536	11.8
2. Kafr El Dawar (El Hager)							
(1) Abu Nom	N.A	N.A	N.A	N.A	N.A	N.A	30.0
(2) El Hager	404	5.0	2.020	667	5.0	3.335	5.0
(3) El Oroba	N.A	N.A	N.A	N.A	N.A	N.A	5.0
(4) Educated	N.A	N.A	N.A	N.A	N.A	N.A	5.0
Total	404	5.0	2,020	667	5.0	3,335	7.3
3. Amreya (Nahda L. U)							
(1) Sanad	0	-	0	0	-	0	15.0
(2) Hares	500	12.5	6,250	750	15.0	11,250	15.0
(3) El Meserey	400	12.5	5,000	500	15.0	7,500	15.0
(4) Teba	0	-	0	0	-	0	-
(5) El Ola	0	-	0	0	-	0	-
(6) Fangary #1	0	-	0	34	15.0	510	15.0
Subtotal	900	12.5	11,250	1,284	15.0	19,260	13.3
Total	1,800	12.5	22,500	2,568	15.0	38,520	13.3

Note: *1... Including the figures for Koum Efeen
 *2... Including the figures for other villages
 *3... fresh weight

Table f-2-3(5) Crop Production. Potato.

Village	1990/91			1991/92			1992/93			Average Yield (1990/91-1992/93) (ard/fed)
	Area (fed)	Unit Yield (ard/fed)	Production (ard)	Area (fed)	Unit Yield (ard/fed)	Production (ard)	Area (fed)	Unit Yield (ard/fed)	Production (ard)	
1. Abu El Matameer (Koum El Farag L. U)										
(1) Koum El Farag	30	7.0	210	154	8.0	1,232	6	6.0	36	7.0
(2) El Yaseneya	32	7.0	224	171	8.0	1,368	66	6.0	396	7.0
(3) El Mahdeya*1	181	8.0	1,448	751	8.0	6,008	210	8.5	1,785	8.3
(4) Koum Efeen										-
(5) El Gheta	194	7.0	1,358	150	8.0	1,200	207	6.0	1,242	7.0
Total	437	7.4	3,240	1,226	8.0	9,808	489	7.1	3,459	7.5
2. Kafr El Dawar (El Hager Area)										
(1) Abu Nom	N.A	N.A	N.A	N.A	N.A	N.A	100	10.0	1,000	10.0
(2) El Hager	100	8.0	800	-	-	-	100	12.0	1,200	12.0
(3) El Oroba	N.A	N.A	N.A	N.A	N.A	N.A	-	-	-	0.0
(4) Educated	N.A	N.A	N.A	N.A	N.A	N.A	-	-	-	N.A
Total	100	8.0	800	0	-	0	200	11.0	2,200	11.0
3. Amreya (Nahda Area)										
(1) Sanad	N.A	N.A	N.A	N.A	N.A	N.A	145	4.5	653	4.5
(2) Hares	N.A	N.A	N.A	N.A	N.A	N.A	100	4.0	400	4.0
(3) El Meserey	N.A	N.A	N.A	N.A	N.A	N.A	15	3.5	53	3.5
(4) Teba	N.A	N.A	N.A	N.A	N.A	N.A	57	4.0	228	4.0
(5) El Oia	N.A	N.A	N.A	N.A	N.A	N.A	146	4.5	657	4.5
(6) Fangary *2	N.A	N.A	N.A	N.A	N.A	N.A	241	4.2	1,012	4.2
Total	N.A	N.A	N.A	N.A	N.A	N.A	704	4.3	3,002	4.3
Grand Total	537	7.5	4,040	1,226	8.0	9,808	1,393	6.2	8,661	7.1

Source: WALRF, Behera and Alexandria Governorates

Table F-2-3(6) Crop Production. Cotton

Village	1990/91			1991/92			1992/93			Average Yield (1990/91-1992/93) (qtr/fed)
	Area (fed)	Unit Yield (qtr/fed)	Production (qtr)	Area (fed)	Unit Yield (qtr/fed)	Production (qtr)	Area (fed)	Unit Yield (qtr/fed)	Production (qtr)	
1. Abu El Matameer (Koum El Farag L. U)										
(1) Koum El Farag	526	10.0	5.260	653	9.7	6.335	888	9.1	8.081	9.6
(2) El Yaseneva	465	9.0	4.185	660	9.4	6.205	870	8.7	7.589	9.0
(3) El Mahdeya*1	580	8.0	4.640	423	7.0	2.962	714	8.6	6.140	7.9
(4) Koum Efeen										
(5) El Gheta	303	9.0	2.727	521	9.6	5.003	468	8.8	4.118	9.1
Total	1.874	9.0	16.812	2.257	9.1	20.505	2.940	8.8	25.909	9.0
2. Kafr El Dawar (El Hager Area)										
(1) Abu Nom. Coop.	N.A	N.A	N.A	N.A	N.A	N.A	233	3.0	699	3.0
(2) El Hager Coop.	100	4.0	400	1.000	4.0	4.000	1.000	5.0	5.000	4.3
(3) El Oroba Coop.	N.A	N.A	N.A	N.A	N.A	N.A	700	4.0	2.800	4.0
(4) Educated Coop.	N.A	N.A	N.A	N.A	N.A	N.A	132	4.0	528	2.0
Total	N.A	N.A	N.A	N.A	N.A	N.A	365	3.4	1.227	1.7
3. Amreya (Nahda L. U)										
(1) Sanad	0	-	0	0	-	0	300	4.0	1.200	4.0
(2) Hares	380	4.0	1.520	620	4.0	2.480	750	4.0	3.000	4.0
(3) El Meserey	450	4.0	1.800	0	-	0	700	-	2.800	4.0
(4) Teba	0	-	0	112	4.0	448	338	4.0	1.344	4.0
(5) El Ola	0	-	0	540	4.0	2.160	0	-	0	4.0
(6) Fangary 1, 2*	0	-	0	0	-	0	364	4.0	1.456	4.0
(7) Fangary 3 & Wkad1										0.0
(8) Fangary 5 & Wkad3										0.0
Total	830	4.0	3.320	1.272	4.0	5.088	2.452	4.0	9.800	4.0
Grand Total	2.704	7.4	20.132	3.529	7.3	25.593	5.757	6.4	36.986	7.0

Source: MALR, Behera and Alexandria Governorates
 Note: *1.... Including the concerned figures for Koum Efeen

Table F-2-3(7) Crop Production. Maize

Village	1990/91			1991/92			1992/93			Average Yield (1990/91-1992/93) (ard/fed)
	Area (fed)	Unit Yield (ard/fed)	Production (ard)	Area (fed)	Unit Yield (ard/fed)	Production (ard)	Area (fed)	Unit Yield (ard/fed)	Production (ard)	
1. Abu El Matameer (Koum El Farag L. U)										
(1) Koum El Farag	2.772	18.0	49.896	2.567	18.0	46.206	2.755	18.0	49.590	18.0
(2) El Yaseneya	880	17.0	14.960	720	17.0	12.240	600	17.0	10.200	17.0
(3) El Mahdeya*1	1.800	14.0	25.200	2.000	15.0	30.000	2.060	15.8	32.548	14.9
(4) Koum Efeen										
(5) El Gheta	1.348	17.0	22.916	1.164	16.0	18.624	1.000	16.0	16.000	16.3
Total	6.800	16.6	112.972	6.451	16.6	107.070	6.415	16.9	108.338	16.7
2. Kafr El Dawar (El Hager Area)										
(1) Abu Nom Coop.	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	817	15.0
(2) El Hager Coop.	3.000	18.0	54.000	3.000	10.0	30.000	2.700	15.0	40.500	14.3
(3) El Oroba Coop.	N.A	N.A	N.A	N.A	N.A	N.A	400	15.0	6.000	15.0
(4) Educated Coop.	N.A	N.A	N.A	N.A	N.A	N.A	100	15.0	8.103	15.0
Total	3.000	18.0	54.000	3.000	10.0	30.000	4.017	16.6	66.858	13.3
3. Amreya (Mahda L. U)										
(1) Sanad	200	12.0	2.400	338	11.0	3.718	400	12.0	4.800	11.7
(2) Hares	600	12.7	7.600	220	11.0	2.420	150	12.0	1.800	11.9
(3) El Meserey	75	12.0	900	631	11.0	6.941	700	10.6	7.400	11.2
(4) Teba	100	12.0	1.200	100	11.0	1.100	350	12.0	4.200	11.7
(5) El Ola	140	12.0	1.680	240	11.0	2.640	250	12.0	3.000	11.7
(6) Fangary 1.2*	1.521	12.0	18.252	2.250	11.0	24.750	2.296	10.3	23.552	11.1
(7) Fangary3 & Wkadl										
(8) Fangary5 & Wkad3										
Total	2.636	12.2	32.032	3.779	11.0	41.569	4.146	10.8	44.752	11.3
Grand Total	12.436	16.0	199.004	13.230	13.5	178.639	14.578	15.1	219.948	14.9

Source: MALR. Behera and Alexandria Governorates

Table F-2-3(8) Crop Production. Sunflower

Village	1990/91			1991/92			1992/93			Average Yield (1990/91-1992/93) (ard/fed)
	Area (fed)	Unit Yield (ard/fed)	Production (ard)	Area (fed)	Unit Yield (ard/fed)	Production (ard)	Area (fed)	Unit Yield (ard/fed)	Production (ard)	
1. Abu El Matameer (Koum El Farag L. U)										
(1) Koum El Farag	180	0.8	144	147	0.8	118	118	0.8	94	0.8
(2) El Yaseneya	200	0.8	160	150	0.8	120	90	0.8	72	0.8
(3) El Mahdeya	761	0.8	609	622	0.8		500	0.8		
(4) Koum Efeen			0							
(5) El Cheta	150	0.8	120	100	0.8	80	60	0.8	48	0.8
Total	1,291	0.8	1,033	1,019	0.8	318	768	0.8	214	0.8
2. Kafr El Dawar (El Hager Area)										
(1) Abu Nom Coop.	N.A	N.A	N.A	N.A	N.A	N.A	0	1.0	0	1.0
(2) El Hager Coop.	200	1.0	200	500	1.0	500	100	1.0	100	1.0
(3) El Oroba Coop.	N.A	N.A	N.A	N.A	N.A	N.A	200	1.0	200	1.0
(4) Educated Coop.	N.A	N.A	N.A	N.A	N.A	N.A	200	1.0	200	1.0
Total	200	1.0	200	500	1.0	500	500	1.0	500	1.0
3. Amreya (Nahda Area)										
(1) Sanad	0	-	0	0	-	0	0	-	0	-
(2) Hares	0	-	0	0	-	0	0	-	0	-
(3) El Meserey	0	-	0	0	-	0	0	-	0	-
(4) Teba	0	-	0	0	-	0	0	-	0	-
(5) El Ola	0	-	0	0	-	0	0	-	0	-
(6) Fangary 1, 2*	0	-	0	0	-	0	350	1.0	350	1.0
(7) Fangary 3 & Wkad1										
(8) Fangary 5 & Wkad3										
Subtotal	0	-	0	0	-	0	350	1.0	350	1.0
Total	1,491	0.8	1,233	1,519	0.5	818	1,618	0.7	1,064	0.7

Source: MALR, Behera and Alexandria Governorates

Note: *1.... Including the concerned figures for Koum Efeen

Table F-2-3(9) Crop Production. Tomato

Village	1990/91			1991/92			1992/93			Average Yield (1990/91-1992/93) (ton/fed)
	Area (fed)	Unit Yield (ton/fed)	Production (ton)	Area (fed)	Unit Yield (ton/fed)	Production (ton)	Area (fed)	Unit Yield (ton/fed)	Production (ton)	
1. Abu El Matameer (Koum El Farag L. U)										
(1) Koum El Farag	75	8.0	600	175	10.0	1,750	75	15.0	1,125	11.0
(2) El Yaseneya	65	9.0	585	60	10.0	600	20	12.0	240	10.3
(3) El Mahdeya*1	230	11.0	2,530	250	10.0	2,500	280	10.5	2,940	10.5
(4) Koum Efeen	165	10.0	1,650	70	10.0	700	60	11.0	660	10.3
(5) El Gheta	535	10.0	5,365	555	10.0	5,550	435	11.4	4,965	10.5
Total										
2. Kafr El Dawar (El Hager Area)										
(1) Abu Nom Coop.	N.A	N.A	N.A	N.A	N.A	N.A	200	18.0	3,600	18.0
(2) El Hager Coop.	150	8.0	1,200	200	10.0	2,000	250	18.0	4,500	12.0
(3) El Oroba Coop.	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
(4) Educated Coop.	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A
Total	150	8.0	1,200	200	10.0	2,000	450	18.0	8,100	12.0
3. Amreya (Nahda L. U)										
(1) Sanad	400	8.0	3,200	500	8.0	4,000	400	8.0	3,200	8.0
(2) Hares	500	6.0	3,000	350	8.0	2,800	500	8.0	4,000	7.3
(3) El Meserey	350	8.0	2,800	400	8.0	3,200	300	8.0	2,400	8.0
(4) Teba	1,200	8.0	9,600	1,200	8.0	9,600	750	8.0	6,000	8.0
(5) El Ola	600	8.0	4,800	500	8.0	4,000	450	8.0	3,600	8.0
(6) Fangary 1, 2*	1,643	8.0	13,144	1,227	8.0	9,816	1,337	7.9	11,024	8.0
(7) Fangary3 & Wkadi										
(8) Fangary5 & Wkad3										
Total	4,693	7.8	36,544	4,177	8.0	33,416	3,787	8.0	30,224	7.9
Grand Total	5,378	8.0	43,109	4,932	8.3	40,966	4,672	9.3	43,289	8.5

Source: MALR. Behera and Alexandria Governorates

Note: *1.... Including the concerned figures for Koum Efeen

Table P-2-4 Cropped Area by Season, 1993:

Crops	El Wosthahak Area			El Ghetra Subtotal			El Hazer Ezz Area			Hahds Area			Fangary Nubaria Subtotal			Total	Cropping Intensity (%)							
	Koum El Farag	El Masheva	El Nohda	Subtotal	El Hazer Ezz	El Ghetra	Subtotal	Hahds	El Hazer Ezz	El Ghetra	Subtotal	Fangary Nubaria	Subtotal	Total										
1. Winter Season																								
(1) Crops	338	430	1,600	389	1,361	4,678	667	1,000	350	188	2,185	300	74	380	1,142	400	2,827	9,690	20.5					
1) Berseem Long	338	430	1,600	389	1,361	4,678	667	1,000	350	188	2,185	300	74	380	1,142	400	2,827	9,690	20.5					
2) Berseem Short	888	870	400	314	468	2,940	233	1,000	700	132	2,065	800	59	250	2,100	859	5,138	12,526	26.5					
3) Wheat	919	660	380	480	550	3,469	500	2,500	700	200	3,750	500	600	940	2,323	976	5,740	12,959	27.3					
4) Beans	98	70	434	73	18	693	100	130	350	550	2,000	200	400	370	1,523	652	3,897	5,140	10.3					
5) Barley	164	200	1,600	164	293	1,821						350	100	200	550	100	900	2,721	5.8					
6) Lentil																								
7) Fenugreek																								
8) Onion																								
9) Flax																								
10) Lupine																								
11) Sugarbeet																								
12) Medical Plants																								
13) Others	2	66	4,294	6	0	74	1,700	4,700	2,300	600	9,300	1,600	1,759	2,181	1,763	1,090	5,354	2,770	16,467	39.442				
Subtotal	2,939	2,356	4,294	1,426	2,680	13,675	1,700	4,700	2,300	600	9,300	1,600	1,759	2,181	1,763	1,090	5,354	2,770	16,467	39.442				
(2) Vegetables	988	200	120	551	10	1,177	200	400	600	100	1,300	877	135	325	177	214	610	410	2,449	4,926	10.4			
Total	3,205	2,556	4,414	1,977	2,700	14,852	1,900	5,100	2,900	700	10,600	1,877	2,195	2,456	1,940	1,304	5,964	3,180	18,316	44,368	94.0			
2. Summer Season																								
(1) Crops	388	870	400	314	468	2,940	233	1,000	700	132	2,065	800	59	250	2,100	859	5,138	12,526	26.5					
1) Cotton	14	26	11	6	11	68	350	250	400	100	3,917	400	353	400	240	319	1,906	1,906	4.0					
2) Sorghum	906	600	1,200	365	400	3,471	717	2,700	400	100	3,917	187												
3) Rice																								
4) Maize White																								
5) Maize Yellow																								
6) Groundnut																								
7) Sesame																								
8) Onion																								
9) Sorghum																								
10) Medical Plants																								
11) Green Fodders	118	90	500	66	60	334	100	200	200	200	500													
12) Sunflower																								
13) Others	1,926	1,565	2,111	750	929	7,312	1,900	4,250	2,300	532	8,882	887	1,433	1,776	1,117	490	2,945	1,741	10,409	26,103	53.3			
Subtotal	1,600	1,000	713	523	340	2,136	600	950	600	100	2,650	1,090	742	830	825	814	3,019	1,439	8,609	12,995	27.5			
(2) Vegetables	2,336	1,685	2,824	1,273	1,279	9,448	1,300	5,200	2,900	632	10,632	1,977	2,195	2,456	1,942	1,304	5,964	3,180	19,016	38,093	82.8			
3. Fife Season																								
(1) Crops	503	350	707	410	450	2,420																		
1) Maize White																								
2) Maize Yellow																								
3) Rice																								
4) Onion																								
5) Green Fodders																								
6) Sunflower	503	350	707	410	450	2,420	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,420	5.1		
Subtotal	187	100	300	250	720	1,557	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,420	3.2	
(2) Vegetables	680	450	1,007	660	1,170	3,977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,977	8.4	
4. Fruit Garden	0	47			213	260	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	278	593	1.3
Ground Total	5,831	4,729	8,245	3,910	5,362	28,537	3,800	10,900	5,800	1,332	21,222	3,854	4,390	4,912	3,882	2,806	12,206	6,415	38,267	88,936	186.5			
Net Cultivated Area	3,932	2,830	5,730	2,668	2,700	16,430	1,360	5,400	3,240	769	11,369	1,977	2,195	2,456	1,940	1,304	6,243	3,235	19,350	47,199	100.0			
Cropping Intensity (%)	193.1	187.3	143.9	172.4	198.6	173.2	193.9	190.7	179.0	172.2	188.8	194.9	209.0	209.0	200.1	200.0	195.5	198.2	197.8	186.5				

Source: MARRF, Behaira & Alexandria
 Note: Above areas have different area coverage than that of irrigation blocks

Table F-2-5 Flood Damage in December, 1991

1. Damaged Area

District	Damaged Area by Crop					Total (fed.)
	Wheat (fed.)	Berseem, L (fed.)	Berseem, S (fed.)	Beans (fed.)	Vegetables (fed.)	
1. Behera Gov.						
(1) Abu El Matameer	1,348	678	1,131	66	456	3,679
(2) Kafr El Dawar	1,962	156	260	367	211	2,956
Subtotal	<u>3,310</u>	<u>834</u>	<u>1,391</u>	<u>433</u>	<u>667</u>	<u>6,635</u>
2. Alexandria Gov.						
Nahda	1,345	167	277	732	399	2,920
Total	4,655	1,001	1,668	1,165	1,066	9,555

Source: MALRF, Behera and Alexandria Governorates

2. Amount of Compensation

District	Amount of Compensation by Crop					Total (' 000LE)
	Wheat (' 000LE)	Barley (' 000LE)	Berseem (' 000LE)	Beans (' 000LE)	Vegetables (' 000LE)	
1. Behera Gov.	235	64	111	143	577	1,130
2. Alexandria Gov.	N.A	N.A	N.A	N.A	N.A	434
Total	N.A	N.A	N.A	N.A	N.A	1,564

Source: MALRF, Behera and Alexandria Governorates

3. Estimated Crop Damage

Item	Wheat	Berseem, L	Berseem, S	Beans	Vegetables	Total
Amount (ton)	9,371	21,775	15,959	904	13,570	61,579

Note: The amount of crop damage is estimated based on the area coverage in the project area to the total damage in the Study Aea (118,422tonx52%).

Table F-2-6 Unit Yield of Major Crops by District

Crop	Unit	Abu El Matameer			Kafr El Dawar			Ameriya			Three Districts Average			
		1990/91	1991/92	1992/93	Average	1990/91	1991/92	1992/93	Average	1990/91		1991/92	1992/93	Average
		Winter												
Wheat	ardab(150kg)	14.67	15.13	16.87	16.00	14.60	14.47	15.39	14.93	12.53	11.05	10.94	11.00	13.98
Beans	ardab(155kg)	3.94	4.84	6.50	5.67	7.55	6.58	8.11	7.34	5.03	4.32	5.99	5.16	6.06
Berseem	ton	30.01	28.80	38.00	33.40	33.44	35.00	41.50	38.25	8.75	18.53	15.00	16.77	29.47
Short	ton	10.92	8.44	9.89	9.17	9.33	9.27	17.24	13.26	5.80	10.00	6.00	8.00	10.14
Vegetables (Potato)	ton	3.65	4.69	7.57	6.13	3.25	7.04	6.86	6.95	N.A	N.A	10.60	10.60	7.89
Summer	metric qantar													
Cotton	(57.5kg)	10.15	9.99	8.68	9.61	8.83	9.45	8.13	8.80	6.79	5.84	5.80	6.14	8.18
Maize	ardab(140kg)	18.78	21.64	23.12	21.18	22.14	20.93	20.92	21.33	12.00	12.71	12.29	12.33	18.28
Sunflower	ton	N.A	1.00	N.A	1.00					0.25	1.00	0.40	1.00	0.67
Vegetables (Tomato)	ton	7.08	11.27	6.90	8.42	9.55	11.66	7.60	9.60	N.A	N.A	8.20	8.20	8.74

Note: The average yield

Winter crops....average yild from1991/92 to 1992/93

Summer crops....average yild from1990/91 to 1992/93

Source:DOS, MALRF

Table F-2-7 Unit Yield of Major Crops per Feddan

Project Area	Crop	Unit	National	Behera	Alexandria	Project Area			Mahnoudia		Without Project		Ratio of Straw/ Stalk (%)
						Three Districts	Village	Sample Villages	Without Project	Project	Main Product	Straw/ Stalk	
Winter	Wheat	ardab(150kg)	14.40	15.97	11.28	13.98	12.40	9.30	14.00	12.40	4.40	5.85	133
			8.45	6.00	5.5	6.06	5.30	5.40	5.96	5.40	1.99	2.29	115
Berseem	Long	ton	25.41	30.12	19.54	29.47	N.A	11.75	25.06	25.00	70.20	-	-
			10.66	11.80	10.00	10.14	15.60	6.31	11.27	11.80	28.10	-	-
Vegetables	(Cabbage)	ton	11.74	9.89	7.80	N.A	10.00	5.00	N.A	8.00	19.05	-	-
			6.94	8.54	5.47	8.18	7.00	7.13	5.50	7.00	2.63	3.81	145
Summer	Cotton	gantar, 157.5kg	18.21	24.21	13.45	18.28	14.90	15.29	10.00	14.90	5.00	6.25	125
			N.A	1.00	0.75	0.67	0.70	0.50	0.75	0.75	1.78	-	-
Vegetables	(Tomato)	ton	12.70	10.11	11.60	8.74	8.50	12.00	N.A	12.00	23.80	-	-

Note : The crop year are as follows;

- (a)~(e) ...1991~1993, excluding the winter crops in Behera and Alexandria Governorates
- (g) ...1993/94

Source:

- (a)~(e) ...Dept. of Statistics, MALRF
- (f) ...Farm Economic Survey by Study Team (1994)
- (g) ...IIP, Mahnoudia, Wasat & Manafa Preparation Draft Report (1994)

Table F-2-8 Number of Farm Machinery by District

Item	District			Total
	Abu El Matameer	Kafr El Dawar	Ameriya	
1. Nos. of Farm Households(a)	30,035	31,875	8,621	70,531
2. Tractor				
(1) Nos. of owners	1,433	1,524	825	3,782
(2) Nos. of machines	1,821	1,298	989	4,108
3. Irrigation Machines				
(1) Nos. of owners	8,466	12,074	1,655	22,195
(2) Nos. of machines	8,007	11,062	1,901	20,970
4. Threshers				
(1) Nos. of owners	646	589	304	1,539
(2) Nos. of machines	684	515	417	1,616
5. Sprayer				
(1) Nos. of owners	291	804	215	1,310
(2) Nos. of machines	473	824	287	1,584
6. Duster				
(1) Nos. of owners	11	6	13	30
(2) Nos. of machines	19	6	35	60
7. Chopper				
(1) Nos. of owners	212	253	234	699
(2) Nos. of machines	428	199	537	1,164

Note: (a)....number of individual farms

Source: 1989/90 Agricultural Census

Table F-2-9 Present Crop Production in the Project Area

Crop	Cropping Intensity	Cropped Area	Production			
			Unit Yield		Amount	
			Unit	Yield		(ton/fed.)
(%)	(fed.)					
Actual Cultivated Area	100	47,190				
<u>Winter</u>						
(1) Wheat*1	36	16,990	ardab(150kg)	12.40	1.86	31,601
(2) Beans	11	5,190	ardab(155kg)	5.40	0.84	4,360
(3) Berseem, Long	21	9,910	ton(fresh)	22.50	22.50	222,975
(4) Berseem, Short	17	8,020	ton(fresh)	9.90	9.90	79,398
(5) Vegetables*3 (Cabbage)	12	5,660	ton	8.00	8.00	45,280
Subtotal	<u>97</u>	<u>45,770</u>				<u>383,614</u>
<u>Summer</u>						
(1) Cotton	17	8,020	qantar(157.5kg)	7.00	1.10	8,842
(2) Maize*4	36	16,990	ardab(140kg)	14.90	2.09	35,441
(3) Sunflower*5	8	3,780	ton	0.75	0.75	2,835
(5) Vegetables*3 (Tomato)	37	17,460	ton	12.00	12.00	209,520
Subtotal	<u>98</u>	<u>46,250</u>				<u>256,638</u>
Total	195.0	92,020				640,252

Note:

- *1...including barley, flax and others
- *2...including Nile season maize
- *3...including fruit trees
- *4...including Nile season maize
- *5...including rice

Table F-2-10 Number of Raised Animals per Farm Households

Item	District			Total
	Abu El Matameer	Kafr El Dawar	Ameriya	
1. Nos. of Total Farm Households	30,035	31,875	8,621	70,531
2. Cattle				
(1) Nos. of raisers				
- Total raisers	23,041	23,566	5,379	51,986
- Rasers with land	17,645	21,938	4,573	44,156
(2) Nos. of cattle				
- Female, less than 3 years	22,571	13,736	10,644	46,951
- Female, more than 3 years	39,370	27,455	7,391	74,216
- Male, fattening	8,747	2,091	4,029	14,867
- Male, free	1,010	303	214	1,527
3. Buffaloes				
(1) Nos. of raisers				
- Total raisers	19,036	21,289	4,621	44,946
- Rasers with land	14,980	20,031	3,880	38,891
(2) Nos. of buffaloes				
- Female, less than 3 years	10,499	11,246	4,056	25,801
- Female, more than 3 years	24,831	24,705	5,409	54,945
- Male, fattening	1,424	2,681	8,389	12,494
- Male, free	659	275	70	1,004
4. Donkey/Mule				
(1) Nos. of raisers	18,340	23,184	4,424	45,948
(2) Nos. of donkey/mule	21,181	25,726	5,184	52,091
5. Goat				
(1) Nos. of raisers				
- Total raisers	10,898	6,806	2,856	20,560
- Rasers with land	7,941	6,290	2,333	16,564
(2) Nos. of goats				
- Female, less than a year	11,954	5,702	6,195	23,851
- Female, more than a year	12,062	6,132	6,992	25,186
- Male, less than a year	7,026	2,700	5,080	14,806
- Male, more than a year	4,633	2,429	4,519	11,581
6. Sheep				
(1) Nos. of raisers				
- Total raisers	15,345	12,197	3,484	31,026
- Rasers with Land	11,035	11,211	2,419	24,665
(2) Nos. of sheep				
- Female, less than a year	15,499	10,038	13,529	39,066
- Female, more than a year	32,067	14,304	18,463	64,834
- Male, less than a year	7,226	3,504	11,258	21,988
- Male, more than a year	5,065	5,890	10,621	21,576

Note: 1... number of individual farms

Source: 1989/90 Agricultural Census

Table F-2-11 Proposed Crop Yield

Project Area	Crop	Unit	Present Yield	Rate of Increase			
				1 (%)	2 (%)	3 (%)	4 (%)
<u>1. Winter Season</u>							
	(1) Wheat	ardab(150kg)	12.40	8	11	14	15
	(2) Beans	ardab(155kg)	5.40	10	15	17	20
	(3) Berseem, Long	ton(fresh)	22.50	10	15	17	20
	(4) Berseem, Short	ton(fresh)	9.90	10	15	17	20
	(5) Vegetables	ton	8.00	15	20	25	25
		(Cabbage)					
<u>2. Summer Season</u>							
	(1) Cotton	qantar(157.5kg)	7.00	15	20	25	25
	(2) Maize	ardab(140kg)	14.90	7	10	14	15
	(3) Sunflower	ton	0.75	7	10	14	15
	(5) Vegetables*4	ton	12.00	15	20	25	25
		(Tomato)					

Note:

The increase rate are estimated based on the data of "Abel-Daem Al Saftiy. 1992

*2...including potato and onion

*3...including Nile maize

*4...including Nile vegetables

Table F-2-12(1) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Wheat

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	ardab	12.40	13.39	13.76	14.14	14.26
2. Second product(Grain)	caml/load	9.80	10.58	10.88	11.17	11.27
B. PRODUCTION COST						
1. Non Yield Depend' t						
(1)Seed	kg	50.00	50.00	50.00	50.00	50.00
(2)Manure	cubic m.	15.00	15.00	15.00	15.00	15.00
(3)Fertilizers						
- N	kg	70.00	70.00	70.00	70.00	70.00
- P2O5	kg	30.00	30.00	30.00	30.00	30.00
- K2O	kg	40.00	40.00	40.00	40.00	40.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	15.00	15.00	15.00	15.00	15.00
(5)Fungicides	liter	0.00	0.00	0.00	0.00	0.00
(6)Herbicides	liter	2.00	1.00	1.00	1.00	1.00
(7)Machinery Works						
- Land Preparation	hour	2.50	2.50	2.50	2.50	2.50
- Spraying	hour	2.00	2.00	2.00	2.00	2.00
- Irrigation	hour	20.00	20.00	20.00	20.00	20.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	45.00	45.00	45.00	45.00	45.00
(9)Labor						
- Family	man/hour	61.00	61.00	61.00	61.00	61.00
- Hired	man/hour	61.00	61.00	61.00	61.00	61.00
2. Yield Depend' t						
(1)Machinery Works						
- Threshing	hour	2.70	2.92	3.00	3.08	3.11
- Winnowing	hour	2.40	2.59	2.74	2.74	2.76
(2)Animal Works						
- Transportation	donk/hour	30.00	32.40	33.30	34.20	34.50
(3)Labor						
- Family	man/hour	45.00	48.60	49.95	51.30	51.75
- Hired	man/hour	45.00	48.60	49.95	51.30	51.75

Table F-2-12(2) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Beans

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	ardab	5.40	5.94	6.21	6.32	6.48
2. Second product(Grain)	caml/load	4.10	4.51	4.71	4.80	4.92
B. PRODUCTION COST						
1. Non Yield Depend' t						
(1)Seed	kg	60.00	60.00	60.00	60.00	60.00
(2)Manure	cubic m.	20.00	20.00	20.00	20.00	20.00
(3)Fertilizers						
- N	kg	15.50	15.50	15.50	15.50	15.50
- P2O5	kg	15.00	15.00	15.00	15.00	15.00
- K2O	kg	30.00	30.00	30.00	30.00	30.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	0.00	0.00	0.00	0.00	0.00
(5)Fungicides	liter	0.00	0.00	0.00	0.00	0.00
(6)Herbicides	liter	2.00	2.00	2.00	2.00	2.00
(7)Machinery Works						
- Land Preparation	hour	3.00	3.00	3.00	3.00	3.00
- Spraying	hour	4.00	4.00	4.00	4.00	4.00
- Irrigation	hour	16.00	16.00	16.00	16.00	16.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	30.00	30.00	30.00	30.00	30.00
(9)Labor						
- Family	man/hour	34.00	34.00	34.00	34.00	34.00
- Hired	man/hour	34.00	34.00	34.00	34.00	34.00
2. Yield Depend' t						
(1)Machinery Works						
- Threshing	hour	2.00	2.20	2.30	2.34	2.40
- Winnowing	hour	2.40	2.64	2.76	2.81	2.88
(2)Animal Works						
- Transportation	donk/hour	18.00	19.80	20.70	21.06	21.60
(3)Labor						
- Family	man/hour	47.64	52.40	54.79	55.74	57.17
- Hired	man/hour	47.64	52.40	54.79	55.74	57.17

Table F-2-12(3) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Berseem, Long Season

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	ton	22.50	24.75	25.88	26.33	27.00
2. Second product(Grain)	canal/load	0.00	0.00	0.00	0.00	0.00
3. Green fodders		0.00				
B. PRODUCTION COST						
1. Non Yield Depend't						
(1)Seed	kg	25.00	25.00	25.00	25.00	25.00
(2)Manure	cubic m.	0.00	0.00	0.00	0.00	0.00
(3)Fertilizers						
- N	kg	15.00	15.00	15.00	15.00	15.00
- P2O5	kg	20.00	20.00	20.00	20.00	20.00
- K2O	kg	75.00	75.00	75.00	75.00	75.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	1.00	1.00	1.00	1.00	1.00
(5)Fungicides	liter	0.00	0.00	0.00	0.00	0.00
(6)Herbicides	liter	0.00	0.00	0.00	0.00	0.00
(7)Machinery Works						
- Land Preparation	hour	2.50	2.50	2.50	2.50	2.50
- Spraying	hour	2.00	2.00	2.00	2.00	2.00
- Irrigation	hour	30.00	30.00	30.00	30.00	30.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	30.00	30.00	30.00	30.00	30.00
(9)Labor						
- Family	man/hour	60.00	60.00	60.00	60.00	60.00
- Hired	man/hour	60.00	60.00	60.00	60.00	60.00
2. Yield Depend't						
(1)Machinery Works						
- Threshing	hour	0.00	0.00	0.00	0.00	0.00
- Winnowing	hour	0.00	0.00	0.00	0.00	0.00
(2)Animal Works						
- Transportation	donk/hour	0.00	0.00	0.00	0.00	0.00
(3)Labor						
- Family	man/hour	72.00	79.20	82.80	84.24	86.40
- Hired	man/hour	0.00	0.00	0.00	0.00	0.00

Table F-2-12(4) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Berseem, Short Season

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	ton	9.90	10.89	11.39	11.58	11.88
2. Second product(Grain)	caml/load	0.00	0.00	0.00	0.00	0.00
B. PRODUCTION COST						
1. Non Yield Depend' t						
(1)Seed	kg	25.00	25.00	25.00	25.00	25.00
(2)Manure	cubic m.	0.00	0.00	0.00	0.00	0.00
(3)Fertilizers						
- N	kg	7.50	7.50	7.50	7.50	7.50
- P205	kg	20.00	20.00	20.00	20.00	20.00
- K	kg	40.00	40.00	40.00	40.00	40.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	0.00	0.00	0.00	0.00	0.00
(5)Fungicides	liter	0.00	0.00	0.00	0.00	0.00
(6)Herbicides	liter	0.00	0.00	0.00	0.00	0.00
(7)Machinery Works						
- Land Preparation	hour	0.00	0.00	0.00	0.00	0.00
- Spraying	hour	0.00	0.00	0.00	0.00	0.00
- Irrigation	hour	12.00	12.00	12.00	12.00	12.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	0.00	30.00	30.00	30.00	30.00
(9)Labor						
- Family	man/hour	30.00	15.00	15.00	15.00	15.00
- Hired	man/hour	30.00	15.00	15.00	15.00	15.00
2. Yield Depend' t						
(1)Machinery Works						
- Threshing	hour	0.00	0.00	0.00	0.00	0.00
- Winnowing	hour	0.00	0.00	0.00	0.00	0.00
(2)Animal Works						
- Transportation	donk/hour	0.00	0.00	0.00	0.00	0.00
(3)Labor						
- Family	man/hour	36.00	39.60	41.40	42.12	43.20
- Hired	man/hour	0.00	0.00	0.00	0.00	0.00

Table F-2-12(5) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Winter Vegetables(Cabbage)

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	ton	8.00	9.20	9.60	10.00	10.00
2. Second product(Grain)	camel/load	0.00	0.00	0.00	0.00	0.00
B. PRODUCTION COST						
1. Non Yield Depend't						
(1)Seed	ton	1.00	1.00	1.00	1.00	1.00
(2)Manure	cubic m.	30.00	30.00	30.00	30.00	30.00
(3)Fertilizers						
- N	kg	40.00	40.00	40.00	40.00	40.00
- P2O5	kg	25.00	25.00	25.00	25.00	25.00
- K2O	kg	0.00	0.00	0.00	0.00	0.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	1.50	1.50	1.50	1.50	1.50
(5)Fungicides	liter	2.00	2.00	2.00	2.00	2.00
(6)Herbicides	liter	0.00	0.00	0.00	0.00	0.00
(7)Machinery Works						
- Land Preparation	hour	3.50	3.50	3.50	3.50	3.50
- Spraying	hour	8.00	8.00	8.00	8.00	8.00
- Irrigation	hour	27.00	27.00	27.00	27.00	27.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	75.00	75.00	75.00	75.00	75.00
(9)Labor						
- Family	man/hour	148.00	148.00	148.00	148.00	148.00
- Hired	man/hour	148.00	148.00	148.00	148.00	148.00
2. Yield Depend't						
(1)Machinery Works						
- Threshing	hour	0.00	0.00	0.00	0.00	0.00
- Winnowing	hour	0.00	0.00	0.00	0.00	0.00
(2)Animal Works						
- Transportation	donk/hour	0.00	0.00	0.00	0.00	0.00
(3)Labor						
- Family	man/hour	72.50	83.37	87.00	90.62	90.62
- Hired	man/hour	72.50	83.37	87.00	90.62	90.62

Table F-2-12(6) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Cotton

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	qantar	7.00	8.05	8.40	8.75	8.75
2. Second product(Grain)	camel/load	6.40	7.36	7.68	8.00	8.00
B. PRODUCTION COST						
1. Non Yield Depend't						
(1)Seed	ton	65.00	65.00	65.00	65.00	65.00
(2)Manure	cubic m.	20.00	20.00	20.00	20.00	20.00
(3)Fertilizers						
- N	kg	80.00	80.00	80.00	80.00	80.00
- P2O5	kg	30.00	30.00	30.00	30.00	30.00
- K2O	kg	30.00	30.00	30.00	30.00	30.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	7.00	7.00	7.00	7.00	7.00
(5)Fungicides	liter	1.00	1.00	1.00	1.00	1.00
(6)Herbicides	liter	0.00	0.00	0.00	0.00	0.00
(7)Machinery Works						
- Land Preparation	hour	3.00	3.00	3.00	3.00	3.00
- Spraying	hour	14.00	14.00	14.00	14.00	14.00
- Irrigation	hour	32.00	32.00	32.00	32.00	32.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	60.00	60.00	60.00	60.00	60.00
(9)Labor						
- Family	man/hour	155.00	155.00	155.00	155.00	155.00
- Hired	man/hour	155.00	155.00	155.00	155.00	155.00
2. Yield Depend't						
(1)Machinery Works						
- Threshing	hour	0.00	0.00	0.00	0.00	0.00
- Winnowing	hour	0.00	0.00	0.00	0.00	0.00
(2)Animal Works						
- Transportation	donk/hour	30.00	34.50	36.00	37.50	37.50
(3)Labor						
- Family	man/hour	125.00	143.75	150.00	156.25	156.25
- Hired	man/hour	125.00	143.75	150.00	156.25	156.25

Table F-2-12(7) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Maize

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	qantar	14.90	15.94	16.39	16.99	17.14
2. Second product(Grain)	caml/load	8.34	8.92	9.17	9.51	9.59
3. Green fodders	caml/load	1.00	1.07	1.10	1.14	1.15
B. PRODUCTION COST						
1. Non Yield Depend' t						
(1)Seed	ton	25.00	25.00	25.00	25.00	25.00
(2)Manure	cubic m.	20.00	20.00	20.00	20.00	20.00
(3)Fertilizers						
- N	kg	80.00	80.00	80.00	80.00	80.00
- P2O5	kg	70.00	40.00	40.00	40.00	40.00
- K2O	kg	60.00	60.00	60.00	60.00	60.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	1.00	1.00	1.00	1.00	1.00
(5)Fungicides	liter	1.50	1.50	1.50	1.50	1.50
(6)Herbicides	liter	0.00	0.00	0.00	0.00	0.00
(7)Machinery Works						
- Land Preparation	hour	3.00	3.00	3.00	3.00	3.00
- Spraying	hour	4.00	4.00	4.00	4.00	4.00
- Irrigation	hour	27.00	27.00	27.00	27.00	27.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	60.00	60.00	60.00	60.00	60.00
(9)Labor						
- Family	man/hour	85.00	85.00	85.00	85.00	85.00
- Hired	man/hour	85.00	85.00	85.00	85.00	85.00
2. Yield Depend' t						
(1)Machinery Works						
- Threshing	hour	0.00	0.00	0.00	0.00	0.00
- Winnowing	hour	0.00	0.00	0.00	0.00	0.00
(2)Animal Works						
- Transportation	donk/hour	24.00	25.68	26.40	27.36	27.60
(3)Labor						
- Family	man/hour	44.50	47.62	48.95	50.73	51.18
- Hired	man/hour	44.50	47.62	48.95	50.73	51.18

Table F-2-12(8) Crop Production Model
 Input-output, Physical Quantities per Feddan
 Crop Name : Sunflower

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	ton	0.75	0.80	0.83	0.86	0.86
2. Second product	caml/load	0.00	0.00	0.00	0.00	0.00
B. PRODUCTION COST						
1. Non Yield Depend' t						
(1)Seed	ton	5.00	5.00	5.00	5.00	5.00
(2)Manure	cubic m.	20.00	20.00	20.00	20.00	20.00
(3)Fertilizers						
- N	kg	70.00	70.00	70.00	70.00	70.00
- P205	kg	30.00	30.00	30.00	30.00	30.00
- K20	kg	0.00	0.00	0.00	0.00	0.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	0.00	0.00	0.00	0.00	0.00
(5)Fungicides	liter	0.00	0.00	0.00	0.00	0.00
(6)Herbicides	liter	0.00	0.00	0.00	0.00	0.00
(7)Machinery Works						
- Land Preparation	hour	3.00	3.00	3.00	3.00	3.00
- Spraying	hour	0.00	0.00	0.00	0.00	0.00
- Irrigation	hour	20.00	20.00	20.00	20.00	20.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	60.00	60.00	60.00	60.00	60.00
(9)Labor						
- Family	man/hour	100.00	100.00	100.00	100.00	100.00
- Hired	man/hour	100.00	100.00	100.00	100.00	100.00
2. Yield Depend' t						
(1)Machinery Works						
- Threshing	hour	0.00	0.00	0.00	0.00	0.00
- Winnowing	hour	0.00	0.00	0.00	0.00	0.00
(2)Animal Works						
- Transportation	donk/hour	12.00	12.84	13.20	13.68	13.80
(3)Labor						
- Family	man/hour	30.00	32.10	33.00	34.20	34.50
- Hired	man/hour	30.00	32.10	33.00	34.20	34.50

Table F-2-12(9) Crop Production Model
 Input-output: Physical Quantities per Feddan
 Crop Name : Summer Vegetables(Tomato)

Item	Unit	Without Project	With Project			
			Yr. 1	Yr. 2	Yr. 3	Yr. 4
A. INCOME						
1. Main product(Grain)	qantar	12.00	13.80	14.40	15.00	15.00
2. Second product(Grain)	camel/load	0.00	0.00	0.00	0.00	0.00
3. Green fodders		0.00	0.00	0.00	0.00	0.00
B. PRODUCTION COST						
1. Non Yield Depend' t						
(1)Seedlings	1000	12.00	5.00	5.00	5.00	5.00
(2)Manure	cubic m.	20.00	20.00	20.00	20.00	20.00
(3)Fertilizers						
- N	kg	60.00	60.00	60.00	60.00	60.00
- P2O5	kg	45.00	45.00	45.00	45.00	45.00
- K2O	kg	80.00	80.00	80.00	80.00	80.00
- Others	kg	0.00	0.00	0.00	0.00	0.00
(4)Insecticides	liter	5.00	5.00	5.00	5.00	5.00
(5)Fungicides	liter	10.00	10.00	10.00	10.00	10.00
(6)Herbicides	liter	0.00	0.00	0.00	0.00	0.00
(7)Machinery Works						
- Land Preparation	hour	3.50	3.50	3.50	3.50	3.50
- Spraying	hour	25.00	25.00	25.00	25.00	25.00
- Irrigation	hour	30.00	30.00	30.00	30.00	30.00
(8)Animal Works						
- Cultivation	cow/hour	0.00	0.00	0.00	0.00	0.00
- Transportation	donk/hour	75.00	75.00	75.00	75.00	75.00
(9)Labor						
- Family	man/hour	150.00	150.00	150.00	150.00	150.00
- Hired	man/hour	150.00	150.00	150.00	150.00	150.00
2. Yield Depend' t						
(1)Machinery Works						
- Threshing	hour	0.00	0.00	0.00	0.00	0.00
- Winnowing	hour	0.00	0.00	0.00	0.00	0.00
(2)Animal Works						
- Transportation	donk/hour	7.14	8.21	8.57	8.93	8.93
(3)Labor						
- Family	man/hour	72.50	83.38	87.00	90.63	90.63
- Hired	man/hour	72.50	83.38	87.00	90.63	90.63

Table F-2-13 Crop Production with Project

Crop	Cropping Intensity	Cropped Area	Production			
			Unit Yield		Amount	
			Unit	Yield		(ton/fed.)
(%)	(fed.)					
Actual Cultivated Area	100	53,920				
<u>Winter</u>						
(1) Wheat	32	17,270	ardab(150kg)	14.26	2.14	36,941
(2) Beans	12	6,470	ardab(155kg)	6.48	0.97	6,289
(3) Berseem, Long	21	11,320	ton(fresh)	27.00	27.00	305,640
(4) Berseem, Short	17	9,160	ton(fresh)	11.88	11.88	108,821
(5) Vegetables (Cabbage)	18	9,700	ton	10.00	10.00	97,000
Subtotal	100	53,920				554,690
<u>Summer</u>						
(1) Cotton	17	9,160	qantar(157.5kg)	8.75	1.38	12,624
(2) Maize	32	17,250	ardab(140kg)	17.14	2.40	41,393
(3) Sunflower	8	4,310	ton	0.86	0.86	3,707
(5) Vegetables (Tomato)	43	23,200	ton	15.00	15.00	348,000
Subtotal	100	53,920				405,723
Total	200.0	107,840				

Table F-2-14 Gypsum Requirement

Item	Unit	Class 1 & 2 Land	Class 3 & 4 Land	Remarks
1. Average CEC	meq/100g	47.5	47.5	
2. ESP	%	12.5-15.0	22.5-30.0	
3. Average ESP	%	13.8	22.5	
4. Gypsum Requirement	meq/100g	1.8	5.9	
5. Soil Depth	cm	20	20	
6. Apparent Soil Specific Gravity		1.3	1.3	
7. Gypsum Requirement	ton/ha	4.0	13.2	
8. Application Efficiency	%	55.0	55.0	
9. Gypsum Requirement	ton/ha	7.2	24.0	Application amount after application efficiency
10. Gypsum Application per Year	ton/ha/year	2.4	4.8	
11. Duration of Application	year	3	5	

Note: 4= CEC x (Initial CEC-10)/100

5= $860 \times 1/1,000,000 \times 2.6 \times 1,000,000 \times \text{Gypsum Requirement (meq/100g)}$
 Where, 2.6=1.3 x 100m x 100m x 0.2m

Source: 4, 5....refer to Guidelines: Land Evaluation for Irrigated Agriculture

Table F-3-1 Projection of Population and Labor Force
for the year 2000 and 2025

(unit : million)

Growth Rate (1992-2000)	1992	2000	Growth Rate (2000-2025)	2025
Population	58			
High (2.4%)		70.1	(2.2%)	114.9
Medium (2.2%)		69.0	(2.0%)	105.0
Low (1.7%)		66.1	(1.7%)	95.9
Labor Force (Age 15-64)	15			
High (2.4%)		18.1	(2.2%)	31.2
Medium (2.2%)		17.9	(2.0%)	29.3
Low (1.7%)		17.2	(1.7%)	26.2
Population in Behera	3.7			
High (2.4%)		4.5	(2.2%)	7.7
Medium (2.2%)		4.4	(2.0%)	7.2
Low (2.0%)		4.3	(1.7%)	6.6
Labor Force in Behera	0.95			
High (2.4%)		1.2	(2.2%)	2.0
Medium (2.2%)		1.1	(2.0%)	1.9
Low (2.0%)		1.1	(1.7%)	1.7

Source: Statistical Yearbook 1993. CAMPUS. Cairo for 1992

Table F-3-2 Production, Consumption, Import and Export

(unit : '000 ton)

Major Item	1980	1990	1991	2000	2025
Wheat					
Production	: 1,796	4,268	4,483		
Consumption	: 5,175				
Import	: 3,919	4,984	4,412		
Export	: 0	0	0		
Rice					
Production	: 2,381	3,166	3,447		
Consumption	: 2,242				
Import	: 0				
Export	: 129	664	138		
Maize					
Production	: 3,231	4,799	5,122		
Consumption	: 2,857				
Import	: 1,062	130	101		
Export	: 0				
Cotton					
Production	: 528.7	287.8	292		
Consumption	: 284.5				
Import	: 0				
Export	: 155.7	0.789	0.26		
Meat					
Production	: 482	631	644		
Consumption	: 604				
Import	: 137				
Export	:				
Dairy					
Production	: 1,900	2,443	2,262		
Consumption	: 3,003				
Import	: 1,138				
Export	:				

Source : The Third Five Year Plan, Ministry of Planning
 Consumption in recent years will be released from
 AERI (Agricultural Economic Research Institute).

Table F-3-3 Agricultural Projects, 1994-95, Egypt
for Improvements by Four Divisions

Department	Total	Local Loan	Foreign Loan	Foreign Grant
Agriculture	348	242	24	82
Reclamation	500	436	43	21
Irrigation	720	360	244	116
Drainage	196	100	81	15
Grand Total	1,764	1,138	392	234

Source : Undersecretary's Office, Ministry of Planning
Cairo, Egypt, 1994

Table F-3-4A Rural Family Income in Egypt, 1990-91

Income Level	Family	Person
Under 1,500	280	317
1,500	290	351
2,000	444	528
2,500	1,107	1,438
3,500	1,098	1,529
4,500	1,140	1,726
6,000	795	1,285
8,000	467	809
12,000	141	250
16,000	56	100
20,000	31	46
25,000	32	52
Total	5,881	8,431

Source: Household Income and Expenditure
Survey 1990-91, CAMPUS, 1993, Cairo

Table F-3-4B Rural Family Expenditures in Egypt, 1990-91

Item	Item Code	Lower	Upper	Frnt'r	All Rural
Food & Drink	1	3,036	2,324	2,775	2,730
Cigarettes	2	211	223	155	215
Clothing	3	404	269	428	347
Household	4	553	387	407	480
Exp	5	244	135	158	196
Medi care	6	192	114	115	158
Transport	7	143	110	112	129
Education	8	96	53	64	77
Entertainm't	9	88	71	80	81
Outside food	10	44	47	29	45
Other	11	176	99	123	143
Total	100	5,187	3,832	4,446	4,601

Source : Household Income and Expenditure Survey, 1990-91
CAMPUS, 1993, Cairo

Table F-3-5 Agricultural Cooperatives between 1987 and 1992 by Type

Type of Cooperatives	Year					
	1987	1988	1989	1990	1991	1992
All Cooperatives	5,197	5,260	5,298	5,270	5,277	5,242
Local Cooperatives	4,324	4,350	4,357	4,368	4,381	4,384
Specialised Cooperatives	873	910	941	902	896	858
Marketing	52	53	48	46	57	59
Livestock	695	739	770	743	778	744
Other	126	118	123	113	61	55

Source : Statistical Year Book 1993, CAMPUS, Cairo

Table F-3-6 Service rendered by the Agrarian Reform Cooperative Societies, by Type of Service and Agricultural Year

Type of Service	Year						Percent of change 87/88-91/9
	86/87	87/88	88/89	89/90	90/91	91/92	
Total	44,373	54,590	64,292	90,446	131,324	153,733	181.6
Seed	7,995	8,336	10,136	16,427	20,887	26,852	222.1
Fertilizers	22,995	30,851	38,250	58,131	80,997	87,478	183.5
Insecticides	13,383	15,403	15,906	15,888	29,440	39,403	155.8

Source : Statistical Year Book 1993, CAMPUS, Cairo

Table F-3-7 Total Loans granted by Principal Bank of Agricultural Credit by Governorate, 1991/1992

Governorate	Short Term Loans		Medium Term Loans		Long Term Loans		Total Loans	
	Subsidized	Unsubsidized	Subsidized	Unsubsidized	Subsidized	Unsubsidized	Subsidized	Unsubsidized
Total	9,144	1,524,228	63,954	819,727	21,231	2,831	87,571	2,346,787
Behera	43	149,843	3,784	51,357	9,619	555	13,445	201,755

Source : Statistical Year Book 1993, CAMPUS, Cairo

Table F-3-8 Distribution of Agrarian Reform Lands and Number of Families by Land Reform Laws

Number of Land Reform Law	Area (feddan)	No. of Benefited Families
Total	714,208	346,469
178/1952	388,831	186,009
127/1961	110,581	56,262
15/1963	21,850	10,658
Awkaf's Land	105,322	51,484
Herasa's Land	22,574	11,550
50/1969	32,525	17,399
Other	32,525	13,107

Source : Statistical Year Book 1993, CAMPUS, Cairo

Table F-3-9 Distribution of Land Ownership in Egypt before the Promulgation of the 1952 Land Reform Law

Bracket	Land Owners (' 000)	Area Owned (' 000 feddan)	Land Owners (%)	Area owned (percent)
Total	3,008	5,984	100	100
less than 5 feddan	2,841	2,781	94.4	46.5
5 feddan	79	526	2.6	8.8
10 feddan	47	638	1.6	10.7
20 feddan	30	818	1	13.7
50 feddan	6	430	0.2	7.1
100 feddan	3	437	0.1	7.3
200 feddan	2	354	0.1	5.9

Source : Statistical Year Book 1993, CAMPUS Cairo