Table C-49 Summary of Leaching Requirement on 100 feddans Small Scale Investors (Vegetable + Beef Cattle)

Items	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
100 feds Field Requirement	3086	3450	2211	862	4006	7159	7837	4042	1451	1694	2178	2544	40629
100 feds Canal Req. (/.90)	3429	3833	2456	958	4451	7955	8708	4491	1623	1882	2420	2933	45143
Field Req. in cum/fed/month	31	34	22	9	40	72	78	40	15	17	22	26	406
in cum/fed/day	1.00	1.23	0.71	0.29	1.29	2.39	2.53	1.30	0.43	0.55	0.73	0.85	13.11
in lit/fed/sec	0.01	0.01	0.01	0.00	0.01	0.03	0.03	0.02	0.01	0.01	0.01	0.01	0.15
Canal Req. in cum/fed/month	34	38	25	10	45	80	87	45	16	19	24	29	451
in cum/fed/day	1.11	1.37	0.79	0.32	1.44	2.65	2.81	1.45	0.54	0.61	0.81	0.95	14.56
in lit/fed/sec	0.01	0.02	0.01	0.00	0.02	0.03	0.03	0.02	0.01	0.01	0.01	0.01	0.17
Field Req. in mcm/Net.A/month	0.26	0.29	0.18	0.07	0.33	0.60	0.65	0.34	0.12	0.14	0.18	0.22	3.38
in mcm/Net.A/day	0.01	0.01	0.01	0.00	0.01	0.02	0.02	0.01	0.00	0.00	0.01	0.01	0.11
in lit/Net.A/sec	96	119	69	28	125	230	244	126	47	53	70	82	1263
Canal Req. in mcm/Net.A/month	0.29	0.32	0.20	0.08	0.37	0.66	0.72	0.37	0.14	0.16	0.20	0.24	3.76
in mcm/Net.A/day	0.01	0.01	0.01	0.00	0.01	0.02	0.02	0.01	0.00	0.01	0.01	0.01	0.12
in lit/Net.A/sec	107	132	76	31	138	255	271	140	52	59	78	91	1403

Table C-50 Leaching Requirement for Each Crop on 100 feddans Small Scale Investors (Vegetable + Fruit)

Crops	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1.Tomato ETc mm	0.0	0.0	0.0	4.7	39.3	256.5	270.3	165.8	28.0	4.4	0.0	0.0	769.1
LR(ECe=13., LR=5.4%) mm	0.0	0.0	0.0	0.3	2.1	13.9	14.6	9.0	1.5	0.2	0.0	0.0	41.5
Leaching Requirem't cum	0.0	0.0	0.0	10.7	89.2	581.8	613.1	376.0	63.4	10.1	0.0	0.0	1744.2
2.Potato ETc mm	0.0	0.0	0.0	0.0	50.6	195.4	270.3	138.2	0.0	0.0	0.0	0.0	654.5
LR(ECe=1.7, LR=20.%) mm	0.0	0.0	0.0	0.0	10.0	38.5	53.3	27.2	0.0	0.0	0.0	0.0	128.9
Leaching Requirem't cum	0.0	0.0	0.0	0.0	418.4	1617.1	2236.6	1143.1	0.0	0.0	0.0	0.0	5415.1
3.Sesame ETc mm	0.0	0.0	0.0	0.0	0.0	73.3	206.0	230.3	139.5	11.1	0.0	0.0	651.1
LR(ECe=1.5, LR=23.%) mm	0.0	0.0	0.0	0.0	0.0	16.9	47.4	53.0	30.0	2.6	0.0	0.0	149.8
Leaching Requirem't cum	0.0	0.0	0.0	0.0	0.0	708.0	1989.5	2224.2	1261.0	107.1	0.0	0.0	6289.9
4.Soybean ETc mm	0.0	0.0	0.0	0.0	0.0	24.4	180.2	207.2	149.2	44.4	0.0	0.0	605.4
LR(ECe=5.0, LR=5.9%) mm	0.0	0.0	0.0	0.0	0.0	1.4	10.7	12.3	8.8	2.6	0.0	0.0	35.9
Leaching Requirem't cum	0.0	0.0	0.0	0.0	0.0	60.8	448.8	516.1	371.6	110.5	0.0	0.0	1507.9
5.Onion ETc mm	66.0	99.7	132.3	18.8	0.0	0.0	0.0	0.0	0.0	2.2	12.4	50.1	381.5
LR(ECe=7.4, LR=9.5%) mm	6.3	9.5	12.6	1.8	0.0	0.0	0.0	0.0	0.0	0.2	1.2	4.8	36.2
Leaching Requirem't cum	263.2	397.8	527.8	75.1	0.0	0.0	0.0	0.0	0.0	8.9	49.7	199.8	1522.2
6.Cabbege ETc mm	83.6	104.9	18.4	0.0	0.0	0.0	0.0	0.0	0.0	2.2	37.3	58.4	304.8
LR(ECe=12., LR=5.8%) mm	4.8	6.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.2	3.4	17.7
Leaching Requirem't cum	203.6	255.6	44.8	0.0	0.0	0.0	0.0	0.0	0.0	5.4	90.9	142.3	742.6
7.Onion ETc mm	66.0	99.7	132.3	56.4	0.0	0.0	0.0	0.0	0.0	2.2	12.4	50.1	419.1
LR(ECe=7.4, LR=9.5%) mm	6.3	9.5	12.6	5.4	0.0	0.0	0.0	0.0	0.0	0.2	1.2	4.8	39.8
Leaching Requirem't cum	263.2	397.8	527.8	225.2	0.0	0.0	0.0	0.0	0.0	8.9	49.7	199.8	1672.3
8.Cabbege ETc mm	83.6	104.9	55.1	0.0	0.0	0.0	0.0	0.0	0.0	2.2	37.3	58.4	341.6
LR(ECe=12., LR=5.8%) mm	4.8	6.1	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.2	3.4	19.8
Leaching Requirem't cum	203.6	255.6	131.3	0.0	0.0	0.0	0.0	0.0	0.0	5.4	90.9	142.3	832.1
9.Grape ETc mm	0.0	0.0	29.4	56.4	73.0	85.5	90.1	74.8	51.3	33.3	17.4	0.0	511.3
LR(ECe=12., LR=5.8%) mm	0.0	0.0	1.7	3.3	4.2	5.0	5.2	4.3	3.0	1.9	1.0	0.0	29.7
Leaching Requirem't cum	0.0	0.0	143.2	275.0	355.8	416.6	439.0	364.6	249.9	162.1	84.9	0.0	2491.1
10.Olive ETc mm	42.2	50.4	70.6	90.3	107.9	117.3	123.6	110.5	89.5	71.0	47.8	40.1	951.0
LR(ECe=12., LR=5.8%) mm	2.4	2.9	4.1	5.2	6.3	6.8	7.2	6.4	5.2	4.1	2.8	2.3	55.7
Leaching Requirem't cum	205.7	245.4	343.7	440.0	525.6	571.3	602.1	538.5	436.1	345.8	232.8	195.1	4682.2
11.Orange ETc mm	52.8	63.0	91.1	120.4	125.9	127.0	133.9	119.7	97.0	82.8	55.8	46.7	1119.0
LR(ECe= 8., LR=8.8%) mm	4.6	5.5	8.3	10.6	11.1	11.2	11.8	10.5	8.5	7.3	4.9	4.1	98.5
Leaching Requirem't cum	390.1	465.4	695.4	890.2	930.3	939.0	989.6	885.1	716.8	612.1	412.1	345.4	8271.6

Table C-51 Summary of Leaching Requirement on 100 feddans Small Scale Investors (Vegetable + Fruit)

Items	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
100 feds Field Requirement	1529	2018	2417	1916	2319	4895	7319	6048	3099	1376	1011	1225	35171
100 feds Canal Req. (/.90)	1699	2242	2686	2129	2577	5438	8132	6719	3443	1529	1123	1361	39079
Field Req. in cum/fed/month	15	20	24	19	23	49	73	60	31	14	10	12	352
in cum/fed/day	0.49	0.72	0.78	0.64	0.75	1.63	2.36	1.95	1.03	0.44	0.34	0.40	11.35
in lit/fed/sec	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.02	0.01	0.01	0.00	0.00	0.13
Canal Req. in cum/fed/month	17	22	27	21	26	54	81	67	34	15	11	14	391
in cum/fed/day	0.55	0.80	0.87	0.71	0.83	1.81	2.62	2.17	1.15	0.49	0.37	0.44	12.61
in lit/fed/sec	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.03	0.01	0.01	0.00	0.01	0.15
Field Req. in mcm/Net.A/mnh	0.13	0.17	0.20	0.16	0.19	0.41	0.61	0.50	0.26	0.11	0.08	0.10	2.93
in mcm/Net.A/day	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.00	0.00	0.00	0.09
in lit/Net.A/sec	48	69	75	62	72	157	227	188	100	43	32	38	1093
Canal Req. in mcm/Net.A/mnh	0.14	0.19	0.22	0.18	0.21	0.45	0.68	0.56	0.29	0.13	0.09	0.11	3.25
in mcm/Net.A/day	0.00	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.00	0.00	0.00	0.10
in lit/Net.A/sec	53	77	83	68	80	175	253	209	111	48	36	42	1215

Table C-52 Crop and Field Water Requirement for Each Crop on 720 feddans Large Scale Investors (Land Use Crops)

Crops	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1.Maize ETc mm	0.0	0.0	0.0	0.0	0.0	55.0	206.0	172.7	130.5	25.9	0.0	0.0	590.0
LR(ECe=1.8, LR=18.%) mm	0.0	0.0	0.0	0.0	0.0	10.1	37.9	31.8	24.0	4.8	0.0	0.0	108.6
Leaching Requirem't cum	0	0	0	0	0	7646	28630	24022	18159	3600	0	0	82076
2.Soybean ETc mm	0.0	0.0	0.0	0.0	0.0	24.4	180.2	207.2	149.2	44.4	0.0	0.0	605.4
LR(ECe=5.0, LR=5.9%) mm	0.0	0.0	0.0	0.0	0.0	1.4	10.6	12.2	8.8	2.6	0.0	0.0	35.7
Leaching Requirem't cum	0	0	0	0	0	1090	8038	9243	6654	1979	0	0	27004
3.Potato ETc mm	0.0	0.0	0.0	14.1	179.8	256.5	206.0	40.3	0.0	0.0	0.0	0.0	696.7
LR(ECe=1.7, LR=20.%) mm	0.0	0.0	0.0	2.8	35.4	50.5	40.6	7.9	0.0	0.0	0.0	0.0	137.2
Leaching Requirem't cum	0	0	0	2102	26776	38203	30674	6001	0	0	0	0	103755
4.Sesame ETc mm	0.0	0.0	0.0	0.0	0.0	73.3	206.0	230.3	130.5	11.1	0.0	0.0	651.1
LR(ECe=1.5, LR=23.%) mm	0.0	0.0	0.0	0.0	0.0	16.9	47.4	53.0	30.0	2.6	0.0	0.0	149.8
Leaching Requirem't cum	0	0	0	0	0	12744	35812	40036	22698	1928	0	0	113218
5.Barley ETc mm	88.0	104.9	147.0	94.1	16.9	0.0	0.0	0.0	0.0	0.0	8.2	75.1	531.1
LR(ECe=8.0, LR=3.6%) mm	3.2	3.8	5.3	3.4	0.6	0.0	0.0	0.0	0.0	0.0	0.3	2.7	19.2
Leaching Requirem't cum	2394	2856	4000	2561	459	0	0	0	0	0	224	2044	14537
6.Onion ETc mm	66.0	99.7	132.3	18.8	0.0	0.0	0.0	0.0	0.0	2.2	12.4	50.1	381.5
LR(ECe=7.4, LR=9.5%) mm	6.3	9.5	12.6	1.8	0.0	0.0	0.0	0.0	0.0	0.2	1.2	4.8	36.2
Leaching Requirem't cum	4738	7160	9501	1351	0	0	0	0	0	159	894	3596	27399
7.Cabbege ETc mm	83.6	104.9	18.4	0.0	0.0	0.0	0.0	0.0	0.0	2.2	37.3	58.4	304.8
LR(ECe=12., LR=5.8%) mm	4.8	6.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.2	3.4	17.7
Leaching Requirem't cum	3664	4602	806	0	0	0	0	0	0	97	1637	2561	13367
8.Wheat ETc mm	79.2	110.2	154.3	197.6	33.7	0.0	0.0	0.0	0.0	0.0	10.0	58.4	643.3
LR(ECe=6.0, LR=4.9%) mm	3.9	5.4	7.6	9.7	1.7	0.0	0.0	0.0	0.0	0.0	0.5	2.9	31.5
Leaching Requirem't cum	2933	4082	5717	7319	1243	0	0	0	0	0	369	2164	23932

Table C-53 Summary of Leaching Requirement on 600 feddans Large Scale Investors (Land Use Crops)

Items	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
720 feds Field Requirement	13729	18700	20024	13332	28483	59682	103173	79302	47511	7764	3123	10365	405189
720 feds Canal Req. (/.90)	15255	20777	22249	14814	31643	66314	114637	88114	52790	8626	3470	11516	450210
Field Req. in cum/fed/month	19	26	28	19	40	83	143	110	66	11	4	14	563
in cum/fed/day	0.62	0.93	0.90	0.62	1.28	2.76	4.62	3.55	2.20	0.35	0.14	0.45	18.15
in lit/fed/sec	0.01	0.01	0.01	0.01	0.01	0.03	0.05	0.04	0.03	0.00	0.00	0.01	0.21
Canal Req. in cum/fed/month	21	29	31	21	44	92	159	122	73	12	5	16	625
in cum/fed/day	0.68	1.03	1.00	0.69	1.42	3.07	5.14	3.95	2.44	0.39	0.16	0.52	20.17
in lit/fed/sec	0.01	0.01	0.01	0.01	0.02	0.04	0.06	0.05	0.03	0.00	0.00	0.01	0.23
Field Req. in mcm/Net.A/month	0.32	0.43	0.46	0.31	0.66	1.38	2.39	1.83	1.10	0.18	0.07	0.24	9.37
in mcm/Net.A/day	0.01	0.02	0.01	0.01	0.02	0.05	0.08	0.05	0.04	0.01	0.00	0.01	0.30
in lit/Net.A/sec	119	179	173	119	246	532	891	685	424	67	28	89	3198
Canal Req. in mcm/Net.A/month	0.35	0.48	0.51	0.34	0.73	1.53	2.65	2.04	1.22	0.20	0.08	0.27	10.41
in mcm/Net.A/day	0.01	0.02	0.02	0.01	0.02	0.05	0.09	0.07	0.04	0.01	0.00	0.01	0.34
in lit/Net.A/sec	132	199	192	132	273	592	990	761	471	74	31	99	3387

Table C-54 Crop and Field Water Requirement for Each Crop on 720 feddans Large Scale Investors (Dairy)

Crops	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1.Maize ETc mm	0.0	0.0	0.0	0.0	50.6	195.4	193.1	161.2	32.6	0.0	0.0	0.0	632.9
LR(ECe=1.8, LR=18.%) mm	0.0	0.0	0.0	0.0	9.3	36.0	35.5	29.7	6.0	0.0	0.0	0.0	116.5
Leaching Requirem't cum	0	0	0	0	7034	27186	26859	22420	4540	0	0	0	88039
2.Sorghum ETc mm	0.0	0.0	0.0	0.0	0.0	18.3	206.0	241.8	111.9	66.5	0.0	0.0	644.5
LR(ECe=6.8, LR=4.3%) mm	0.0	0.0	0.0	0.0	0.0	0.8	8.8	10.4	4.8	2.9	0.0	0.0	27.6
Leaching Requirem't cum	0	0	0	0	0	594	6680	7841	3623	2158	0	0	20902
3.Maize ETc mm	0.0	0.0	0.0	0.0	16.9	195.4	193.1	161.2	97.9	0.0	0.0	0.0	664.5
LR(ECe=1.8, LR=18.%) mm	0.0	0.0	0.0	0.0	3.1	36.0	35.5	29.7	18.0	0.0	0.0	0.0	122.3
Leaching Requirem't cum	0	0	0	0	2345	27186	26859	22420	13619	0	0	0	92429
4.Sorghum ETc mm	0.0	0.0	0.0	0.0	0.0	55.0	206.0	241.8	111.3	22.2	0.0	0.0	636.8
LR(ECe=6.8, LR=4.3%) mm	0.0	0.0	0.0	0.0	0.0	2.4	8.8	10.4	4.8	1.0	0.0	0.0	27.3
Leaching Requirem't cum	0	0	0	0	0	1783	6680	7841	3623	719	0	0	20652
5.Wheat ETc mm	79.2	110.2	154.3	197.6	33.7	0.0	0.0	0.0	0.0	0.0	10.0	58.4	643.3
LR(ECe=6.0, LR=4.9%) mm	3.9	5.4	7.6	9.7	1.7	0.0	0.0	0.0	0.0	0.0	0.5	2.9	31.5
Leaching Requirem't cum	2933	4082	5717	7319	1249	0	0	0	0	0	369	2164	23832
6.Berseem ETc mm	66.0	78.7	82.7	0.0	0.0	0.0	0.0	0.0	0.0	18.5	74.7	62.6	383.1
LR(ECe=1.5, LR=23.%) mm	15.1	18.0	18.9	0.0	0.0	0.0	0.0	0.0	0.0	4.2	17.1	14.3	87.7
Leaching Requirem't cum	11422	13626	14314	0	0	0	0	0	0	3200	12927	10835	66324
7.Fodderbeat ETc mm	92.4	110.2	132.3	42.3	0.0	0.0	0.0	0.0	0.0	14.8	59.7	75.1	526.8
LR(ECe=1.2, LR=30.%) mm	28.1	33.5	40.2	12.9	0.0	0.0	0.0	0.0	0.0	4.5	18.2	22.8	160.1
Leaching Requirem't cum	21227	25324	30402	9730	0	0	0	0	0	3399	13729	17260	121071
8.Barley ETc mm	83.0	104.9	147.0	94.1	16.9	0.0	0.0	0.0	0.0	0.0	8.2	75.1	534.1
LR(ECe=8.0, LR=3.6%) mm	3.2	3.8	5.3	3.4	0.6	0.0	0.0	0.0	0.0	0.0	0.3	2.7	19.2
Leaching Requirem't cum	2394	2856	4000	2561	459	0	0	0	0	0	224	2044	14537

Table C-55 Summary of Leaching Requirement on 720 feddans Large Scale Investors (Dairy)

Items	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
720 feds Field Requirement	37976	45883	54433	19609	11086	56749	67077	60523	25416	9476	27249	32302	447786
720 feds Canal Req. (/.90)	42195	50987	60481	21788	12318	63055	74530	67247	28240	10529	30276	35892	497539
Field Req. in cum/fed/month	53	64	76	27	15	79	93	84	35	13	38	45	622
in cum/fed/day	1.70	2.28	2.44	0.91	0.50	2.63	3.01	2.71	1.18	0.42	1.26	1.45	20.06
in lit/fed/sec	0.02	0.03	0.03	0.01	0.01	0.03	0.03	0.03	0.01	0.00	0.01	0.02	0.23
Canal Req. in cum/fed/month	59	71	84	30	17	88	104	93	39	15	42	50	691
in cum/fed/day	1.89	2.53	2.71	1.01	0.55	2.92	3.34	3.01	1.31	0.47	1.40	1.61	22.29
in lit/fed/sec	0.02	0.03	0.03	0.01	0.01	0.03	0.04	0.03	0.02	0.01	0.02	0.02	0.26
Field Req. in mcm/Net.A/month	0.88	1.06	1.26	0.45	0.26	1.31	1.55	1.40	0.59	0.22	0.63	0.75	10.36
in mcm/Net.A/day	0.03	0.04	0.04	0.02	0.01	0.04	0.05	0.05	0.02	0.01	0.02	0.02	0.33
in lit/Net.A/sec	328	439	470	175	96	506	579	523	227	82	243	279	3866
Canal Req. in mcm/Net.A/month	0.98	1.18	1.40	0.50	0.28	1.45	1.72	1.56	0.65	0.24	0.70	0.83	11.51
in mcm/Net.A/day	0.03	0.04	0.05	0.02	0.01	0.05	0.06	0.05	0.02	0.01	0.02	0.03	0.37
in lit/Net.A/sec	364	487	522	194	106	563	643	581	252	91	270	310	4296

Table C-56 Crop and Field Water Requirement for Each Crop on 720 feddans Large Scale Investors (Beef Cattle)

Crops	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1.Maize ETc mm	0.0	0.0	0.0	0.0	16.9	195.4	193.1	161.2	97.9	0.0	0.0	0.0	664.5
LR(ECe=1.8, LR=18.%) mm	0.0	0.0	0.0	0.0	3.1	36.0	35.5	29.7	18.0	0.0	0.0	0.0	122.3
Leaching Requirem't cum	0	0	0	0	2345	27186	26859	22420	13619	0	0	0	92429
2.Sorghum ETc mm	0.0	0.0	0.0	0.0	0.0	18.3	206.0	241.8	111.9	66.5	0.0	0.0	644.5
LR(ECe=6.8, LR=4.3%) mm	0.0	0.0	0.0	0.0	0.0	0.8	8.8	10.4	4.8	2.9	0.0	0.0	27.6
Leaching Requirem't cum	0	0	0	0	0	594	6680	7841	3629	2158	0	0	20902
3.Sorghum ETc mm	0.0	0.0	0.0	0.0	0.0	55.0	206.0	241.8	111.9	22.2	0.0	0.0	636.8
LR(ECe=6.8, LR=4.3%) mm	0.0	0.0	0.0	0.0	0.0	2.4	8.8	10.4	4.8	1.0	0.0	0.0	27.3
Leaching Requirem't cum	0	0	0	0	0	1783	6680	7841	3629	719	0	0	20652
4.Maize ETc mm	0.0	0.0	0.0	0.0	50.6	195.4	193.1	161.2	32.6	0.0	0.0	0.0	632.9
LR(ECe=1.8, LR=18.%) mm	0.0	0.0	0.0	0.0	9.3	36.0	35.5	29.7	6.0	0.0	0.0	0.0	116.5
Leaching Requirem't cum	0	0	0	0	7034	27186	26859	22420	4540	0	0	0	88039
5.Berseem ETc mm	66.0	78.7	110.2	141.1	126.4	0.0	0.0	0.0	0.0	18.5	74.7	62.6	678.2
LR(ECe=1.5, LR=23.%) mm	15.1	18.0	25.2	32.3	28.9	0.0	0.0	0.0	0.0	4.2	17.1	14.3	155.3
Leaching Requirem't cum	11422	13626	19085	24432	21885	0	0	0	0	3200	12927	10835	117414
6.Wheat ETc mm	79.2	110.2	154.3	197.6	33.7	0.0	0.0	0.0	0.0	0.0	10.0	58.4	643.3
LR(ECe=6.0, LR=4.9%) mm	3.9	5.4	7.6	9.7	1.7	0.0	0.0	0.0	0.0	0.0	0.5	2.9	31.5
Leaching Requirem't cum	2933	4082	5717	7319	1249	0	0	0	0	0	369	2164	23832
7.Barley ETc mm	88.0	104.9	147.0	94.1	16.9	0.0	0.0	0.0	0.0	0.0	8.2	75.1	534.1
LR(ECe=8.0, LR=3.6%) mm	3.2	3.8	5.3	3.4	0.6	0.0	0.0	0.0	0.0	0.0	0.3	2.7	19.2
Leaching Requirem't cum	2394	2856	4000	2561	459	0	0	0	0	0	224	2044	14537
8.Berseem ETc mm	66.0	78.7	82.7	0.0	0.0	0.0	0.0	0.0	0.0	18.5	74.7	62.6	383.1
LR(ECe=1.5, LR=23.%) mm	15.1	18.0	18.9	0.0	0.0	0.0	0.0	0.0	0.0	4.2	17.1	14.3	87.7
Leaching Requirem't cum	11422	13626	14314	0	0	0	0	0	0	3200	12927	10835	66324

Table C-57 Summary of Leaching Requirement on 600 feddans Large Scale Investors (Beef Cattle)

Items	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
720 feds Field Requirement	28170	34190	43116	34311	32971	56749	67077	60523	25416	9278	26447	25877	444126
720 feds Canal Req. (/.90)	31300	37989	47906	38123	36634	63055	74530	67247	28240	10309	29386	28753	493473
Field Req. in cum/fed/month	39	47	60	48	46	79	93	84	35	13	37	36	617
in cum/fed/day	1.26	1.70	1.93	1.59	1.48	2.63	3.01	2.71	1.18	0.42	1.22	1.16	19.90
in lit/fed/sec	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.01	0.00	0.01	0.01	0.23
Canal Req. in cum/fed/month	43	53	67	53	51	88	104	93	39	14	41	40	685
in cum/fed/day	1.40	1.88	2.15	1.76	1.64	2.92	3.34	3.01	1.31	0.45	1.36	1.29	22.11
in lit/fed/sec	0.02	0.02	0.02	0.02	0.02	0.03	0.04	0.03	0.02	0.01	0.02	0.01	0.26
Field Req. in mcm/Net.A/month	0.65	0.79	1.00	0.79	0.76	1.31	1.55	1.40	0.59	0.21	0.61	0.60	10.27
in mcm/Net.A/day	0.02	0.03	0.03	0.03	0.02	0.04	0.05	0.05	0.02	0.01	0.02	0.02	0.33
in lit/Net.A/sec	243	327	372	306	285	506	579	523	227	80	236	223	3835
Canal Req. in mcm/Net.A/month	0.72	0.88	1.11	0.88	0.85	1.46	1.72	1.56	0.65	0.24	0.68	0.66	11.41
in mcm/Net.A/day	0.02	0.03	0.04	0.03	0.03	0.05	0.06	0.05	0.02	0.01	0.02	0.02	0.37
in lit/Net.A/sec	270	363	414	340	316	563	643	581	252	89	262	248	4261

Table C-58 Crop and Field Water Requirement for Each Crop on 720 feddans Large Scale Investors (Fruit)

Crops	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1.Grape ETc mm	0.0	0.0	29.4	56.4	73.0	85.5	90.1	74.8	51.3	33.3	17.4	0.0	511.3
LR(ECe=12., LR=5.8%) mm	0.0	0.0	1.7	3.3	4.2	5.0	5.2	4.3	3.0	1.9	1.0	0.0	29.7
Leaching Requirem't cum	0	0	1289	2475	3203	3749	3951	3281	2249	1459	764	0	22420
2.Olive ETc mm	42.2	50.4	70.6	90.3	107.9	117.3	123.6	110.5	89.5	71.0	47.8	40.1	961.0
LR(ECe=12., LR=5.8%) mm	2.4	2.9	4.1	5.2	6.3	6.8	7.2	6.4	5.2	4.1	2.8	2.3	55.7
Leaching Requirem't cum	1851	2209	3094	3960	4730	5142	5418	4846	3925	3112	2095	1756	42139
3.Orange ETc mm	52.8	63.0	94.1	120.4	125.9	127.0	133.9	119.7	97.0	82.8	55.8	46.7	1119.0
LR(ECe= 8., LR=8.8%) mm	4.6	5.5	8.3	10.6	11.1	11.2	11.8	10.5	8.5	7.3	4.9	4.1	98.5
Leaching Requirem't cum	3511	4189	6258	8012	8373	8451	8906	7965	6451	5509	3709	3169	74444
4.Almond ETc mm	0.0	0.0	76.4	112.9	134.8	156.4	164.8	128.9	104.4	76.9	43.8	0.0	999.4
LR(ECe=6.8, LR=10.3) mm	0.0	0.0	7.9	11.6	13.9	16.1	17.0	13.3	10.8	7.9	4.5	0.0	102.9
Leaching Requirem't cum	0	0	5952	8791	10500	12175	12830	10040	8132	5988	3411	0	77818

Table C-59 Summary of Leaching Requirement on 720 feddans Large Scale Investors (Fruit)

Items	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
720 feds Field Requirement	5363	6398	16592	23238	26805	29517	31106	26133	20757	16068	9980	4865	216822
720 feds Canal Req. (/.90)	5959	7109	18436	25820	29783	32797	34562	29037	23063	17854	11089	5406	240913
Field Req. in cum/fed/month	7	9	23	32	37	41	43	36	29	22	14	7	301
in cum/fed/day	0.24	0.32	0.74	1.08	1.20	1.37	1.39	1.17	0.96	0.72	0.46	0.22	9.71
in lit/fed/sec	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.11
Canal Req. in cum/fed/month	8	10	26	36	41	45	48	40	32	25	15	8	335
in cum/fed/day	0.27	0.35	0.83	1.20	1.33	1.52	1.55	1.30	1.07	0.80	0.51	0.24	10.79
in lit/fed/sec	0.00	0.00	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.00	0.12
Field Req. in mcm/Net.A/month	0.12	0.15	0.38	0.54	0.62	0.68	0.72	0.60	0.48	0.37	0.23	0.11	5.01
in mcm/Net.A/day	0.00	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.00	0.16
in lit/Net.A/sec	46	61	143	207	231	263	269	226	185	139	89	42	1872
Canal Req. in mcm/Net.A/month	0.14	0.16	0.43	0.60	0.69	0.76	0.80	0.67	0.53	0.41	0.26	0.13	5.57
in mcm/Net.A/day	0.00	0.01	0.01	0.02	0.02	0.03	0.03	0.02	0.02	0.01	0.01	0.00	0.18
in lit/Net.A/sec	51	68	159	230	257	293	298	251	206	154	99	47	2080

Table C-60 Summary of Each Category's Unit Leaching Requirement

Category	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Small Scale & Graduate													
Small Scale Farmers	Net Area	16650											
Field Req. cum/fed/day	1.83	2.06	1.30	0.64	0.90	1.17	1.17	1.33	1.27	1.46	1.09	1.53	15.42
Canal Req. cum/fed/day	2.03	2.29	1.45	0.72	1.00	1.30	1.30	1.48	1.41	1.62	1.21	1.70	17.14
Graduate (Veg+Fruit)	Net Area	5550											
Field Req. cum/fed/day	2.25	2.71	2.42	1.38	1.71	1.71	1.39	2.30	2.90	2.57	0.93	1.76	23.61
Canal Req. cum/fed/day	2.50	3.02	2.68	1.53	1.91	1.90	1.55	2.56	3.22	2.85	1.09	1.96	26.23
Graduate (Veg+Livestock)	Net Area	5550											
Field Req. cum/fed/day	1.93	2.13	1.20	0.51	0.82	1.18	1.14	1.37	1.37	1.63	1.32	1.69	16.04
Canal Req. cum/fed/day	2.20	2.42	1.33	0.56	0.91	1.32	1.26	1.52	1.53	1.82	1.47	1.88	17.83
Small Scale Investor													
Vegetable+Beef Cattle	Net Area	8325											
Field Req. cum/fed/day	1.00	1.23	0.71	0.29	1.29	2.39	2.53	1.30	0.49	0.55	0.73	0.85	13.11
Canal Req. cum/fed/day	1.11	1.37	0.79	0.32	1.44	2.65	2.81	1.45	0.54	0.61	0.81	0.95	14.56
Vegetable+Fruit	Net Area	8325											
Field Req. cum/fed/day	0.49	0.72	0.78	0.64	0.75	1.63	2.36	1.95	1.03	0.44	0.34	0.49	11.35
Canal Req. cum/fed/day	0.55	0.80	0.87	0.71	0.83	1.81	2.62	2.17	1.15	0.49	0.37	0.44	12.61
Large Scale Investor													
Land Use Crop	Net Area	16650											
Field Req. cum/fed/day	0.62	0.93	0.90	0.62	1.28	2.76	4.62	3.55	2.20	0.35	0.14	0.46	18.15
Canal Req. cum/fed/day	0.68	1.03	1.00	0.69	1.42	3.07	5.14	3.95	2.44	0.39	0.16	0.52	20.17
Dairy	Net Area	16650											
Field Req. cum/fed/day	1.70	2.28	2.44	0.91	0.50	2.63	3.01	2.71	1.18	0.42	1.26	1.45	20.06
Canal Req. cum/fed/day	1.89	2.53	2.71	1.01	0.55	2.92	3.34	3.01	1.31	0.47	1.40	1.61	22.29
Beef Cattle	Net Area	16650											
Field Req. cum/fed/day	1.26	1.70	1.93	1.59	1.48	2.63	3.01	2.71	1.18	0.42	1.22	1.16	19.90
Canal Req. cum/fed/day	1.40	1.88	2.15	1.76	1.64	2.92	3.34	3.01	1.31	0.46	1.36	1.29	22.11
Fruit	Net Area	16650											
Field Req. cum/fed/day	0.24	0.32	0.74	1.08	1.20	1.37	1.39	1.17	0.96	0.72	0.46	0.22	9.71
Canal Req. cum/fed/day	0.27	0.35	0.83	1.20	1.33	1.52	1.55	1.30	1.07	0.80	0.51	0.24	10.79

Table C-61 Summary of Each Category's Leaching Requirement and Project Leaching Requirement

Category	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Small Scale & Graduate	Net Area	27750											
Field Req. in cum/Net.A/day	53690	61420	41758	21204	29099	35475	33598	42512	44784	47699	30963	44685	476872
Canal Req. in cum/Net.A/day	59878	68244	46398	23560	32332	39417	37331	47236	49760	52999	34403	49651	529858
Small Scale Investor	Net Area	16650											
Field Req. in cum/Net.A/day	12394	16256	12428	7709	16985	33450	40701	27095	12653	8245	8850	10389	203560
Canal Req. in cum/Net.A/day	13772	18062	13809	8565	18872	37166	45223	30105	14059	9162	9833	11543	226178
Large Scale Investor	Net Area	66600											
Field Req. in cum/Net.A/day	63585	86854	100083	69753	74108	156245	200243	168947	91807	31768	51491	54761	1129337
Canal Req. in cum/Net.A/day	70650	96515	111203	77504	82342	173607	222492	187719	102008	35297	57212	60846	1254819
Grand Total	Net Area	111000											
Field Req. in cum/Net.A/day	129869	164539	154268	98667	120192	225171	274541	238555	149244	87712	91304	109836	1809769
Canal Req. in cum/Net.A/day	144299	182821	171409	109630	133547	250190	305046	265061	165827	97458	101448	122040	2010854
Field Req. in cum/Net.A/mnth	4025917	4607092	4782321	2960005	3725957	6755135	8510772	7395192	4477325	2719067	2739109	3404911	5.6E+07
Canal Req. in cum/Net.A/mnth	4473275	5118991	5313690	3288894	4139953	7505705	9456413	8216880	4974806	3021186	3043456	3783235	6.2E+07
F. Req. in cum/day/111000	1.17	1.48	1.39	0.89	1.08	2.03	2.47	2.15	1.34	0.79	0.82	0.99	16.30
C. Req. in cum/day/111000	1.30	1.65	1.54	0.99	1.20	2.25	2.75	2.39	1.49	0.88	0.91	1.10	18.12
F. Req. in cum/day/135000	0.96	1.22	1.14	0.73	0.89	1.67	2.03	1.77	1.11	0.65	0.68	0.81	13.41
C. Req. in cum/day/135000	1.07	1.35	1.27	0.81	0.99	1.85	2.26	1.96	1.23	0.72	0.75	0.90	14.90
F. Req. (July shift)	0.96	1.22	1.14	0.73	0.89	1.67	0.00	3.80	1.11	0.65	0.68	0.81	13.41
C. Req. (July shift)	1.07	1.35	1.27	0.81	0.99	1.85	0.00	4.22	1.23	0.72	0.75	0.90	14.90

Table C-62 Summary of the Project Irrigation and Leaching Requirement

Items	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Irrigation Requirement	Net Area	111000											
Field Req. in cum/Net.A/mnth	3.7E+07	4.4E+07	5.0E+07	4.3E+07	4.2E+07	7.0E+07	1.0E+08	8.6E+07	4.4E+07	1.9E+07	1.8E+07	3.1E+07	5.9E+08
Mesqa Req. in cum/Net.A/mnth	3.9E+07	4.7E+07	5.3E+07	4.6E+07	4.4E+07	7.4E+07	1.1E+08	9.1E+07	4.6E+07	2.0E+07	1.9E+07	3.2E+07	6.2E+08
Canal Req. in cum/Net.A/mnth	4.4E+07	5.2E+07	5.9E+07	5.1E+07	4.9E+07	8.2E+07	1.2E+08	1.0E+08	5.1E+07	2.3E+07	2.1E+07	3.6E+07	6.9E+08
Field Req. in cum/Net.A/day	1206220	1586180	1617587	1443425	1341372	2346924	3329174	2775547	1461628	626311	592645	995450	1.7E+07
Mesqa Req. in cum/Net.A/day	1269705	1669663	1702723	1519395	1411971	2470445	3504394	2921628	1538556	659275	623837	1047842	1.8E+07
Canal Req. in cum/Net.A/day	1410783	1855181	1891915	1688217	1568856	2744940	3893771	3246253	1709506	732528	693152	1164269	2.0E+07
F. Req. in cum/day/111000	10.87	14.29	14.57	13.00	12.08	21.14	29.99	25.00	13.17	5.64	5.34	8.97	155.43
M. Req. in cum/day/111000	11.44	15.04	15.34	13.69	12.72	22.26	31.57	26.32	13.86	5.94	5.62	9.44	163.61
C. Req. in cum/day/111000	12.71	16.71	17.04	15.21	14.13	24.73	35.08	29.25	15.40	6.60	6.24	10.49	181.79
F. Req. in cum/day/135000	8.93	11.75	11.98	10.69	9.94	17.38	24.66	20.56	10.83	4.64	4.39	7.37	127.80
M. Req. in cum/day/135000	9.41	12.37	12.61	11.25	10.46	18.30	25.96	21.64	11.40	4.88	4.62	7.76	134.53
C. Req. in cum/day/135000	10.45	13.74	14.01	12.51	11.62	20.33	28.84	24.05	12.66	5.43	5.13	8.62	149.48
Leaching Requirement	Net Area	111000											
Field Req. in cum/Net.A/mnth	4.0E+06	4.6E+06	4.8E+06	3.0E+06	3.7E+06	6.8E+06	8.5E+06	7.4E+06	4.5E+06	2.7E+06	2.7E+06	3.4E+06	5.6E+07
Canal Req. in cum/Net.A/mnth	4.5E+06	5.1E+06	5.3E+06	3.3E+06	4.1E+06	7.5E+06	9.5E+06	8.2E+06	5.0E+06	3.0E+06	3.0E+06	3.8E+06	6.2E+07
Field Req. in cum/Net.A/day	129869	164539	154268	98667	120192	225171	274541	238555	149244	87712	91304	109836	1809769
Canal Req. in cum/Net.A/day	144299	182821	171409	109630	133547	250190	305046	265061	165827	97458	101448	122040	2010854
Field Req. in cum/Net.A/mnth	4.0E+06	4.6E+06	4.8E+06	3.0E+06	3.7E+06	6.8E+06	0.0E+00	1.6E+07	4.5E+06	2.7E+06	2.7E+06	3.4E+06	5.6E+07
Canal Req. in cum/Net.A/mnth	4.5E+06	5.1E+06	5.3E+06	3.3E+06	4.1E+06	7.5E+06	0.0E+00	1.8E+07	5.0E+06	3.0E+06	3.0E+06	3.8E+06	6.2E+07
Field Req. in cum/Net.A/day	129869	164539	154268	98667	120192	225171	0	513095	149244	87712	91304	109836	1809769
Canal Req. in cum/Net.A/day	144299	182821	171409	109630	133547	250190	0	570106	165827	97458	101448	122040	2010854
F. Req. in cum/day/111000	1.17	1.48	1.39	0.89	1.08	2.03	2.47	2.15	1.34	0.79	0.82	0.99	16.30
C. Req. in cum/day/111000	1.30	1.65	1.54	0.99	1.20	2.25	2.75	2.39	1.49	0.88	0.91	1.10	18.12
F. Req. in cum/day/135000	0.96	1.22	1.14	0.73	0.89	1.67	2.03	1.77	1.11	0.65	0.68	0.81	13.41
C. Req. in cum/day/135000	1.07	1.35	1.27	0.81	0.99	1.85	2.26	1.96	1.23	0.72	0.75	0.90	14.90
F. Req. (July shift)	0.96	1.22	1.14	0.73	0.89	1.67	0.00	3.80	1.11	0.65	0.68	0.81	13.41
C. Req. (July shift)	1.07	1.35	1.27	0.81	0.99	1.85	0.00	4.22	1.23	0.72	0.75	0.90	14.90

Table C-63 Summary of the Total Project Requirement including Industrial Water (500000 cum/day) but Excluding Leaching

Items	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Field Req. in cum/Net.A/mn	5.3E+07	5.8E+07	6.6E+07	5.8E+07	5.7E+07	8.5E+07	1.2E+08	1.0E+08	5.9E+07	3.5E+07	3.3E+07	4.6E+07	7.7E+08
Mesqa Req. in cum/Net.A/mn	5.5E+07	6.1E+07	6.8E+07	6.1E+07	5.9E+07	8.9E+07	1.2E+08	1.1E+08	6.1E+07	3.6E+07	3.4E+07	4.8E+07	8.0E+08
Canal Req. in cum/Net.A/mn	6.9E+07	6.6E+07	7.4E+07	6.6E+07	6.4E+07	9.7E+07	1.4E+08	1.2E+08	6.6E+07	3.8E+07	3.6E+07	5.2E+07	8.7E+08
Field Req. in cum/Net.A/day	1706220	2086180	2117587	1943425	1841372	2845924	3829174	3275547	1961628	1126311	1092615	1495450	2.5E+07
Mesqa Req. in cum/Net.A/day	1769705	2169683	2202723	2019395	1911971	2970445	4004394	3421628	2033556	1159275	1123837	1547842	2.6E+07
Canal Req. in cum/Net.A/day	2910783	2355181	2391915	2183217	2068856	3244340	4393771	3746253	2209506	1232528	1193152	1664269	2.9E+07
F. Req. in cum/day/111000	15.37	18.79	19.08	17.51	16.59	25.65	34.50	29.51	17.67	10.15	9.84	13.47	228.13
M. Req. in cum/day/111000	15.94	19.55	19.84	18.19	17.22	26.76	36.08	30.83	18.37	10.44	10.12	13.94	237.29
C. Req. in cum/day/111000	17.21	21.22	21.55	19.71	18.64	29.23	39.58	33.75	19.91	11.10	10.75	14.99	257.65
F. Req. in cum/day/135000	12.64	15.45	15.69	14.40	13.64	21.09	28.36	24.26	14.53	8.34	8.09	11.08	187.57
M. Req. in cum/day/135000	13.11	16.07	16.32	14.96	14.16	22.00	29.68	25.35	15.10	8.59	8.32	11.47	195.11
C. Req. in cum/day/135000	14.15	17.45	17.72	16.21	15.32	24.04	32.55	27.75	16.37	9.13	8.84	12.33	211.85

APPENDIX D

LAND RECLAMATION
AND
AGRICULTURAL INFRASTRUCTURE

Appendix D

Land Reclamation and Agricultural Infrastructure

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Table D-1 Land Allocation

Items		Area (feddans)	Remarks
Farm Land	Irrigation Area	111,000	
	Roads & Canals	11,100	Internal : Net x 1.10
	Sub-total	122,100	
Main Irrigation Canal		1,030	Include O&M Road
Main Drainage Canal		3,290	Include Wadi El Arish
Trunk Road		270	
Existing Road		340	3 route
Shelterbelts		2,110	B=50m
Villages	Center	1,440	3 Villages
	Satellite	4,420	12 Villages
	Sub-total	5,860	
Total		135,000	
Excluded Area		19,670	
Additional Area		-770	
Grand Total		153,900	Inside the Project Boundary

Table D-2 Designed Main Irrigation Canal

Main Canal			Division	Specification				
From	To	Discharge	Discharge	Length	Bed Width	Water Depth	Velocity	Bed Slope
		m^3/sec	m^3/sec	km	m	m	m/sec	
BP	No.1	52.662		1.20	12.0	3.287	0.863	8.00E-05
			2.175					
No.1	No.2	50.487		5.55	11.5	3.271	0.856	8.00E-05
			1.858					
No.2	No.3	48.629		12.20	11.0	3.265	0.850	8.00E-05
			0.443					
No.3	No.4	48.186		1.40	11.0	3.249	0.848	8.00E-05
			5.545					
No.4	No.5	42.641		0.70	9.0	3.292	0.831	8.00E-05
			0.507					
No.5	No.6	42.134		4.85	9.0	3.272	0.829	8.00E-05
			0.253					
No.6	No.7	41.881		1.15	9.0	3.262	0.827	8.00E-05
			12.238					
No.7	No.8	29.643		0.20	5.5	3.220	0.771	8.00E-05
			1.394					
No.8	No.9	28.249		1.05	5.5	3.147	0.761	8.00E-05
			1.436					
No.9	No.10	26.813		2.45	5.0	3.151	0.753	8.00E-05
			0.845					
No.10	No.11	25.968		7.35	4.5	3.189	0.749	8.00E-05
			0.275					
No.11	No.12	25.693		4.90	4.5	3.173	0.747	8.00E-05
			1.182					
No.12	No.13	24.511		6.05	4.5	3.104	0.738	8.00E-05
			2.251					
No.13	No.14	22.260		2.70	4.0	3.054	0.721	8.00E-05
			2.158					
No.14	No.15	20.102		2.00	3.5	3.003	0.704	8.00E-05
			2.128					
No.15	No.16	17.974		3.05	3.0	2.947	0.686	8.00E-05
			2.128					
No.16	No.17	15.846		5.95	2.0	2.986	0.666	8.00E-05
			1.427					
No.17	No.18	14.419		8.55	2.0	2.867	0.650	8.00E-05
			Total	71.30				

Note: Side slopes are 1:2.0
Structure is concrete lining (n=0.018)

Table D-3 Extent and Water Demand of Service Units

Division Works	Branch Canal	Nos. of Service Units SSF/G	SSI	LSI	Net Area (Feddans)	Irrigation Water (m^3/day)	(m^3/sec)
		100 Fed.	100 Fed.	720 Fed.			
No.1	1-1		16.0		1,600	58,378	0.676
	1-2		35.5		3,550	129,527	1.499
No.2			44.0		4,400	160,541	1.858
No.3			10.5		1,050	38,311	0.443
No.4	4-1	24.0	18.0	9.0	10,680	389,676	4.510
	4-2		24.5		2,450	89,392	1.035
No.5			12.0		1,200	43,784	0.507
No.6			6.0		600	21,892	0.253
No.7	7-1	71.0		5.0	10,700	390,405	4.519
	7-2	15.0			1,500	54,730	0.633
	7-3			5.3	3,820	139,378	1.613
	7-4			5.6	4,030	147,041	1.702
	7-5			5.9	4,250	155,068	1.795
	7-6			4.5	3,240	118,216	1.368
	7-7			2.0	1,440	52,541	0.608
No.8		33.0			3,300	120,405	1.394
No.9		34.0			3,400	124,054	1.436
No.10		20.0			2,000	72,973	0.845
No.11		6.5			650	23,716	0.275
No.12		28.0			2,800	102,162	1.182
No.13				7.4	5,330	194,473	2.251
No.14				7.1	5,110	186,446	2.158
No.15				7.0	5,040	183,892	2.128
No.16				7.0	5,040	183,892	2.128
No.17				4.7	3,380	123,324	1.427
No.18	18-1	46.0		6.0	8,920	325,459	3.767
	18-2			4.5	3,240	118,216	1.368
	18-3			11.5	8,280	302,108	3.497
Total		277.5	166.5	92.5	111,000	4,050,000	46.875

Note : SSF/G Small Scale Farmer/Graduate
SSI Small Scale Investor
LSI Large Scale Investor

Table D-4 Design Drainage Discharge for Each Catchment Area

Destination		Branch Canal	Net Area (Feddans)	Drainage Discharge (m^3/sec.) Base	20% of I.W.	Total
West Basin No.1			11,000	1.07	0.93	2.00
West Basin No.2			1,400	0.14	0.12	0.26
Wadi El Arish	South-West Bank	3	23,830	2.32	2.01	4.33
		4	1,440	0.14	0.12	0.26
		5	3,240	0.31	0.27	0.58
		6	4,250	0.41	0.36	0.77
		7	4,030	0.39	0.34	0.73
		8	8,620	0.84	0.73	1.57
		9	14,180	1.38	1.20	2.58
		10	5,110	0.50	0.43	0.93
		11	5,040	0.49	0.43	0.92
		12	5,040	0.49	0.43	0.92
		13	3,380	0.33	0.29	0.62
	Sub-Total		78,160	7.60	6.60	14.20
	North-East Bank	14	8,920	0.87	0.75	1.62
		15	11,520	1.12	0.97	2.09
	Sub-Total		20,440	1.99	1.72	3.71
Total (Wadi El Arish)			98,600	9.59	8.32	17.91

Note: Base 2mm/day
I.W. Irrigation Water

Table D-5 Amount of Irrigation Canals and Other Structures

	Branch/Distribution Irrigation Canal (km)				Nos. of					
	Bed Width B=1.0m			B=2.0m	Division Work		Intake	Check Gate		Tail-end
	h=1.5m	h=2.0m	h=2.5m	h=2.5m	1 vent	2 vents	to Night	1 vent	2 vents	Spillway
Div. Work	0.0-1.6	1.4-3.3	3.0-6.5	6.5<	<4.0	4.0<	Storage	<4.0	4.0<	
No.1	31.26	0.26			10		52	11		10
No.2	19.20	2.32			4		46	8		4
No.3	3.26				1		11	1		1
No.4	35.80	9.62	13.66		13	1	77	16	5	13
No.5	6.60				2		12	2		2
No.6	1.82				1		6	1		1
No.7	90.90	19.96	3.12	15.00	22	1	115	39	6	22
No.8	22.58				7		35	8		7
No.9	22.36				8		35	8		7
No.10	11.12				4		20	4		4
No.11	4.72				2		7	2		2
No.12	14.12				4		28	5		4
No.13	8.56	8.48			1		8	6		1
No.14	8.54	6.58			1		8	5		1
No.15	6.64	7.60			1		7	5		1
No.16	7.28	5.30			1		7	4		1
No.17	4.50				1		4	2		1
No.18	43.14	6.08	7.38	24.04	9	1	71	17	11	10
Total	342.40	66.20	24.16	39.04	92	3	549	144	22	92

Table D-6 Total Length of Drainage Canals

Destination		Branch	Drainge Canals (km)					
			Bed Width B=1.0m			Bed Width B=2.0m		
			h=2.0m	h=2.5m	Total	h=3.0m	h=4.0m	Total
No.1 West Basin			36.28	23.94	60.22			
No.2 West Basin			6.26	3.08	9.34			
No.3 Wadi El Arish	South-West Bank	3	46.72	20.60	67.32	6.40	9.92	16.32
		4	5.36		5.36			
		5	6.70	4.90	11.60			
		6	5.88	5.40	11.28			
		7	7.66	6.04	13.70			
		8	17.84	35.96	53.80			
		9	27.30	28.92	56.22	14.90		14.90
		10	9.58	7.50	17.08			
		11	9.30	5.78	15.08			
		12	8.46	5.76	14.22			
		13	9.78	2.70	12.48			
		Catch		2.52	2.52	9.28	8.00	17.28
	North-East Bank	14	23.40		23.40			
		15	18.04	8.86	26.90	9.62		9.62
		Catch		6.28	6.28	10.68		10.68
Total (km)			238.56	168.24	406.80	50.88	17.92	68.80

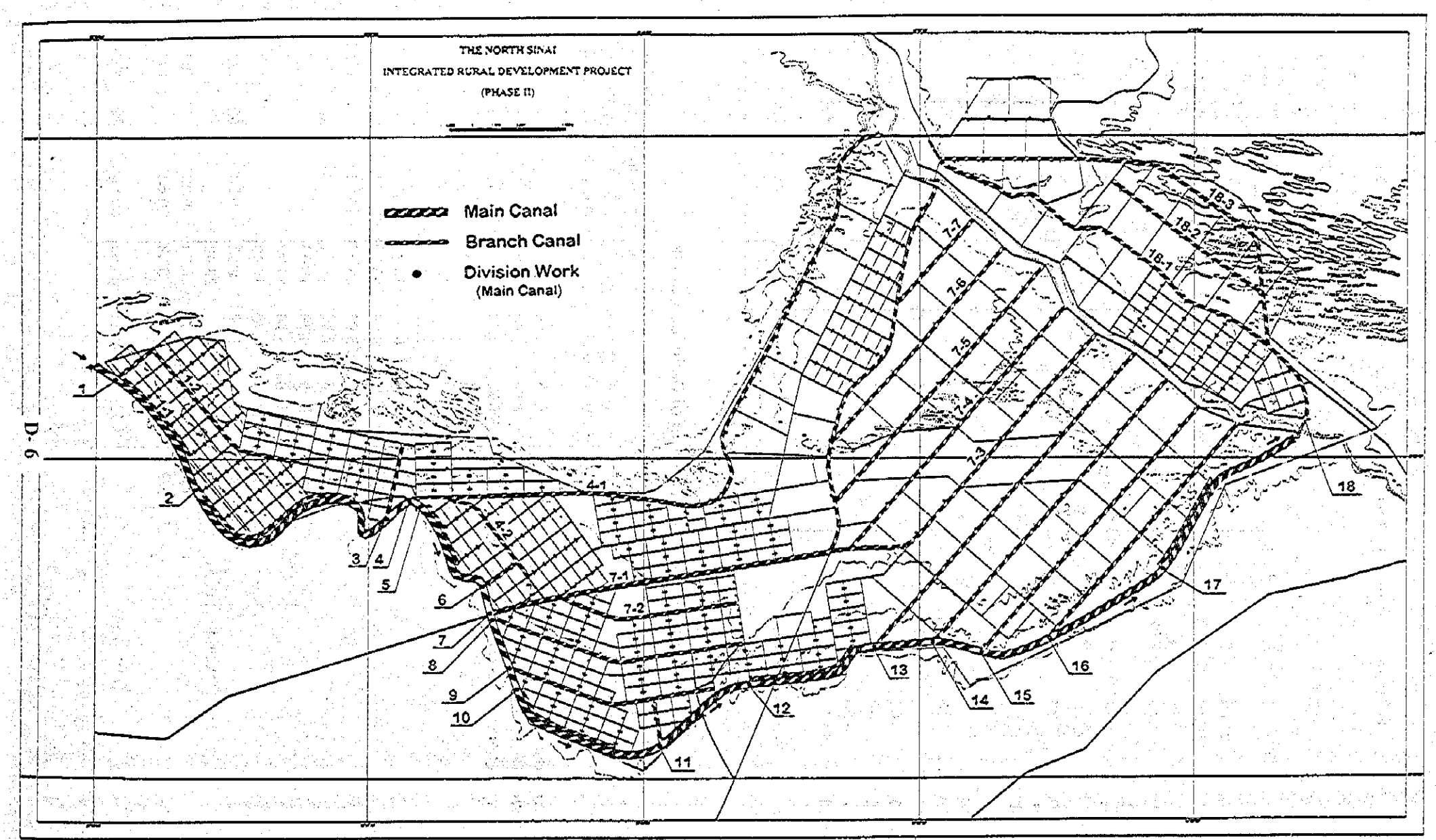

Figure D-1 Irrigation Canal Network

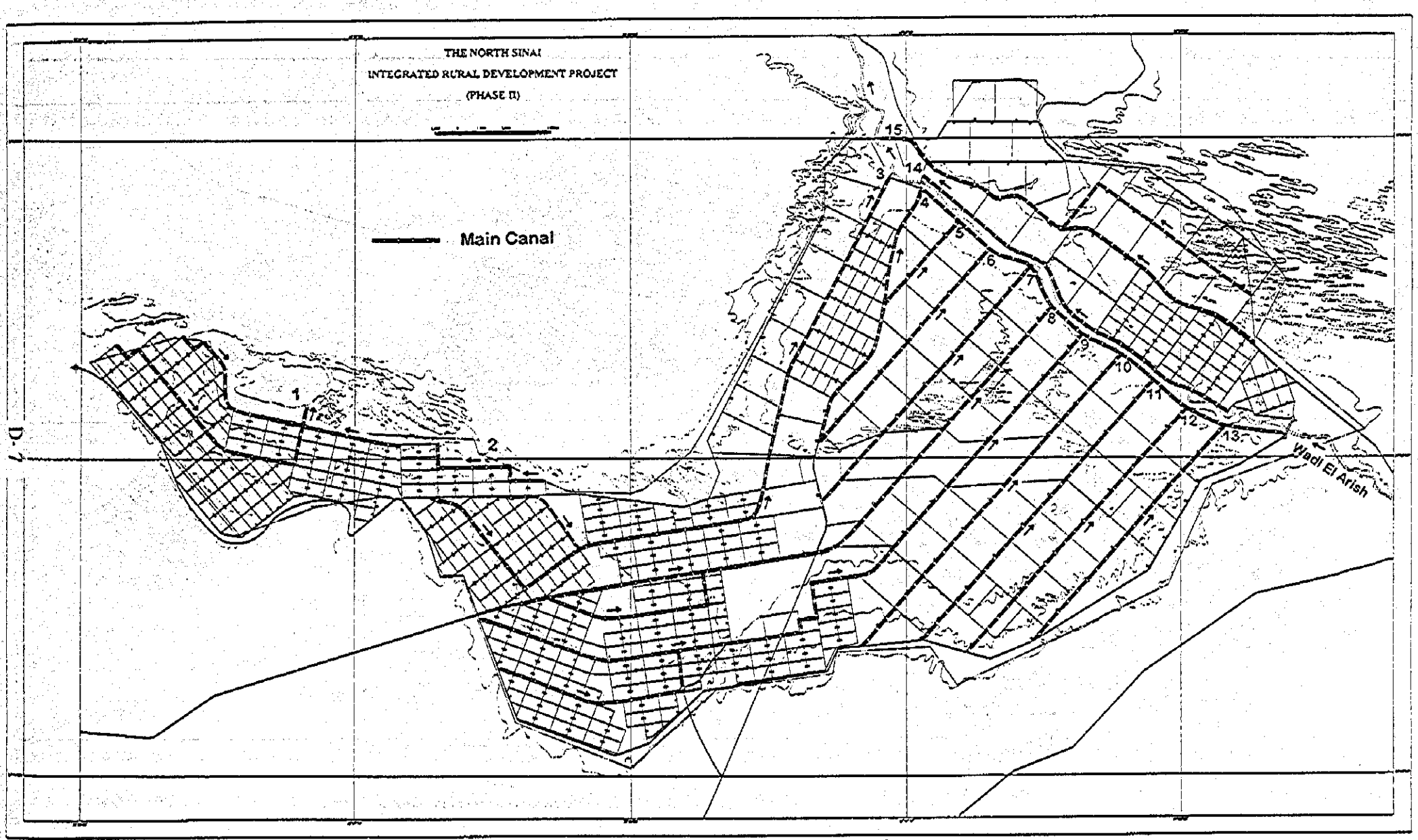

Figure D-2 Drainage Canal Network

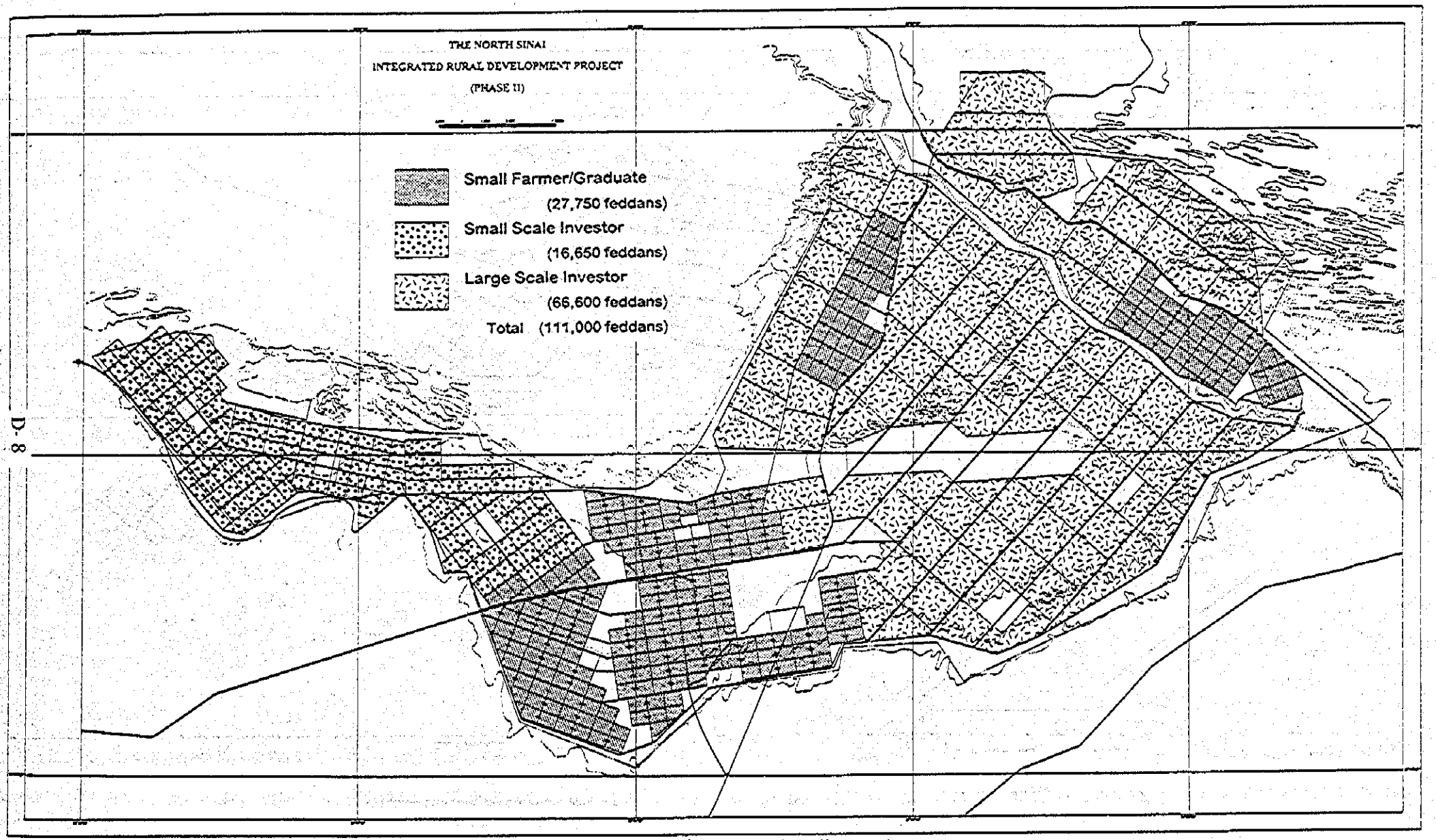

Figure D-3 Service Units Allotment

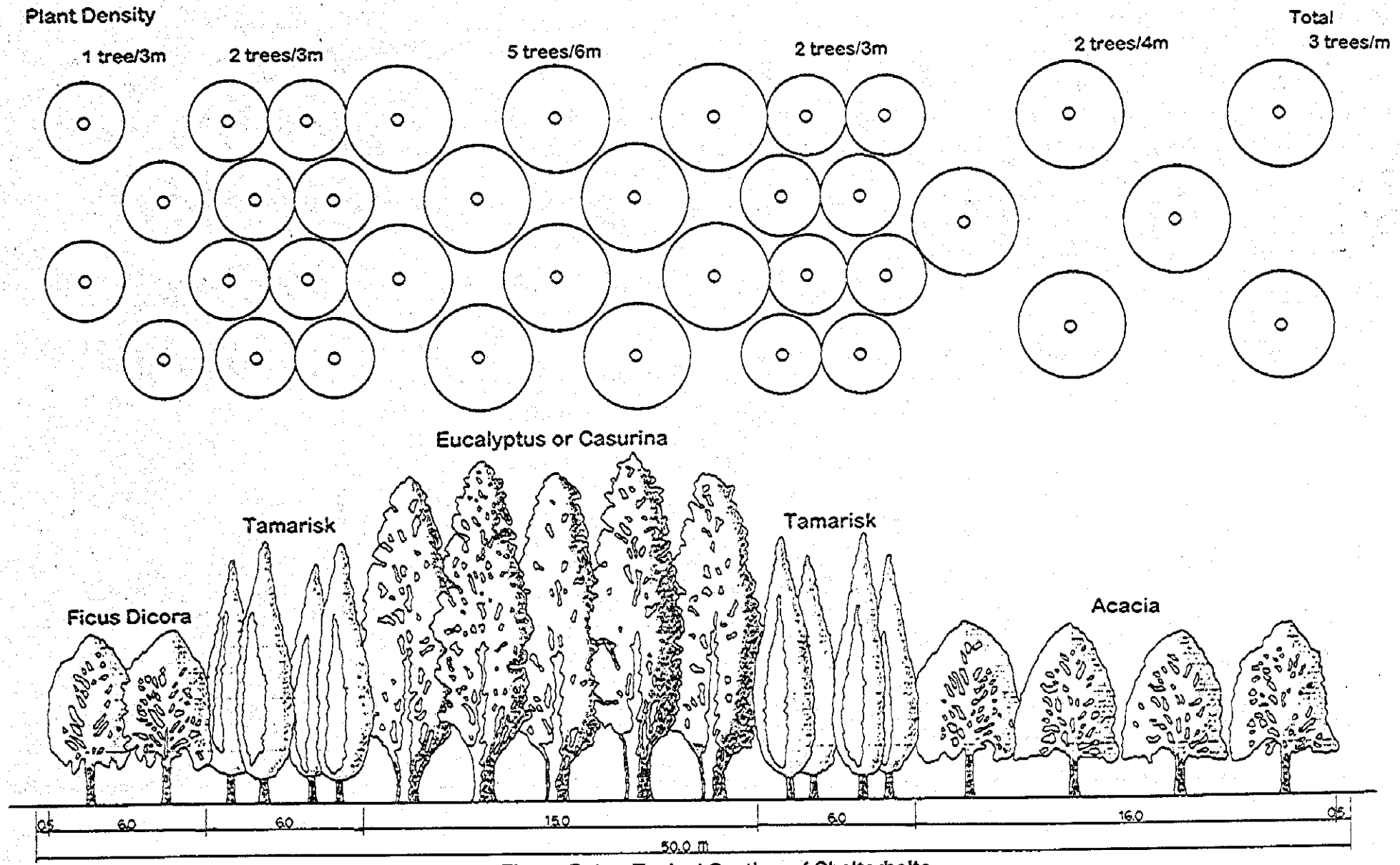

Figure D-4 Typical Section of Sheiterbelts

APPENDIX E

SETTLEMENT AND SOCIAL INFRASTRUCTURES

APPENDIX E

SETTLEMENT and SOCIAL INFRASTRUCTURES

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E-1 The Study Area

The Study Area is located in El Sir and Kawareer zone within North Sinai Governorate, 300 km north-east of Cairo. It is about 30 km from El Arish, the capital city of North Sinai Governorate. In the Study Area, there are only five small villages with a population of around 3,100, all of which are Bedouin. (see Table E-1-1 and Figure E-1-2)

The Area lies between latitude 30° 45' and 31° 00'N, and 33° 30' and 34° 05'E. and being bounded on north by hoot hills of Mt. Risan Aneuza, on south by the hills of Mt. Lobna and on east by Wadi El Aeish. Total land area is 135,000 feddans gross (56,700 ha), which has been selected by MPWWR and MALR based on the result of soil survey carried out in 1994.

To the Study area, there are two national road net work, one is the coastal route via El Ismailia, El Kantara, El Arish and Bir Lahfen; and other one is inland route via El Ismailia, Bir Jifjafah and Bagdad or Abu Aweigil.(see Figure E-1-1)

To cross the Suez Canal, five (5) ferry ports, one (1) tunnel and one (1) temporally (seasonal) bridge are used. The location of ferry ports are at Port Fuad, El Kantara Gharb, El Ferdan, El Ismailia (No.6) and El Sarabum. Ferry boats are operated through the year on day time (6:00 a.m. to 12:00 p.m.) except Port Fuad and El Kantara ports, in where these ferry boats work 24 hours through a day. All ferry boats are operated free charge for users under the control of the Suez Canal Authority.

Table E-1-1 Existing Village in the Study Area

No.	1	2	3	4	5	
Name of Village	Bir Lehfen	El Korcah	El Magdaba	El Awld Ali	El Resan	Remarks
Population	[250]	1,331	921	[210]	583	
(houses)	[40]	[75]	[100]	[35]	[9]	*1)
Agricultural Land		1,920	2,144		Non	Feddans
Road Network	< - - Asphalt Pav. (B:6~8 m) - - >					
Electric Network	G	P/L	G	G	G	*2)
Water Supply System		1,850	1,000	Non	Non	Pipe Line (m)
Supply Volume		66(50)	46(50)		17(30)	m3/day(l/Acp.)
School		2	2		1	
Hospital		1	1	Non	Non	
(Health Center)		1	Non	Non	2	
Post Office		Non	1	Non	Non	
Mosque		6	1	Non	Non	

*1): The figures of [] are no statistic data. They are our field survey result.
*2): "G" means generated in their village, "P/L" means Public Lined Electricity from El Arish.

Figure E-1-2 Existing Village in the Study Area

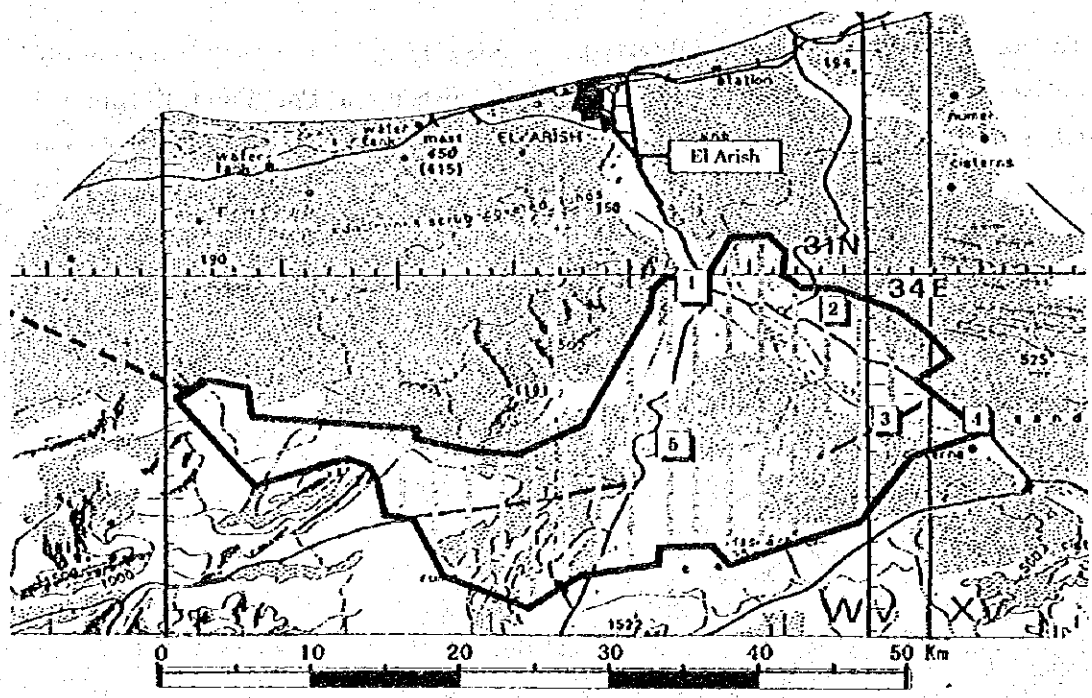
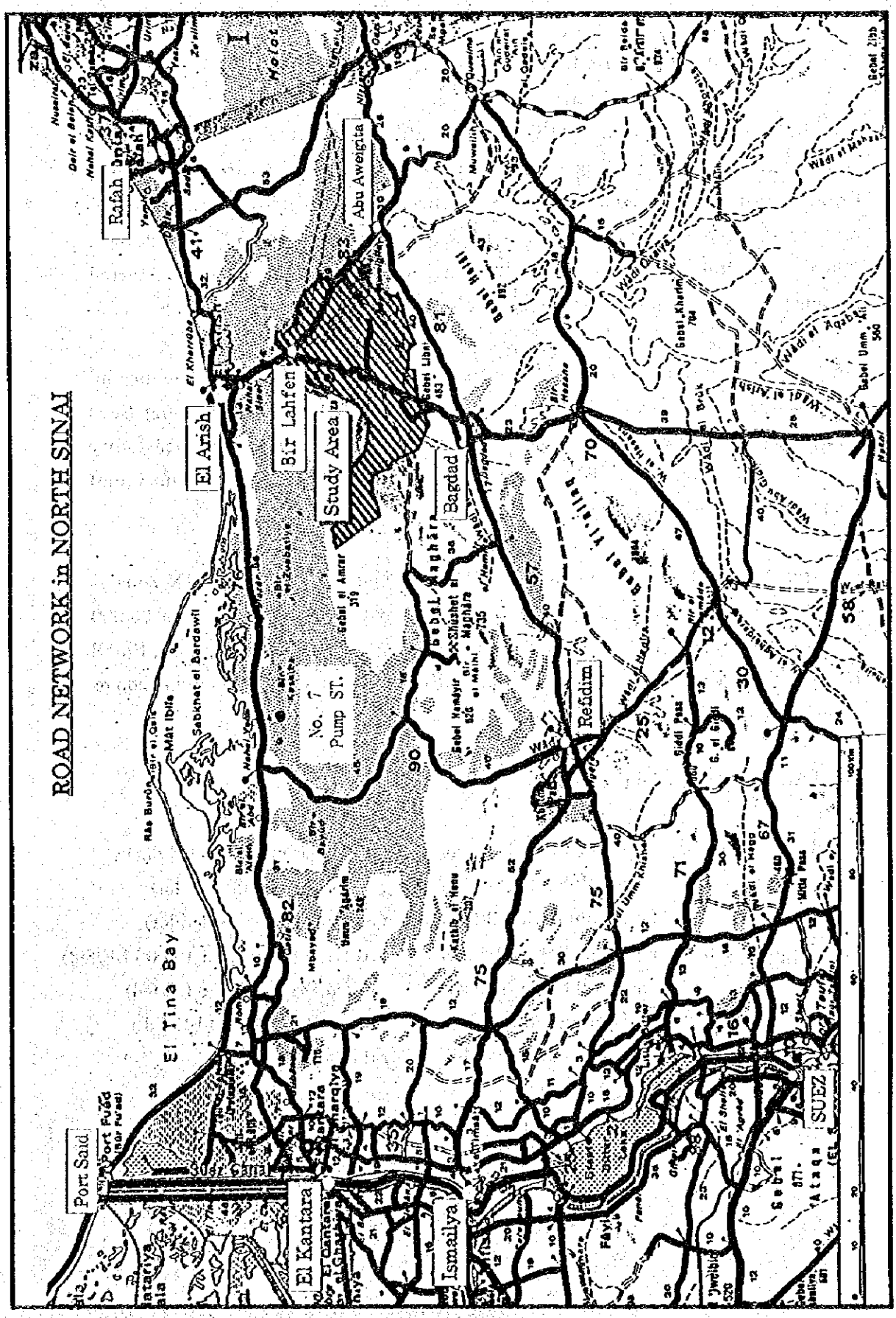


Figure E-1-1 Road Networks in North SINAI



E-2 Settlement in El Salam Canal Project

The zoning of settlement in the El Salam Canal Project is divided into eleven (11) zones. The construction of agricultural infrastructures such as irrigation canal, drainage canal and farm road etc., in six (6) zones of western side of Suez Canal had already been completed. Social infrastructures such as public office buildings, schools, hospitals, etc. are now under construction. Some settlers has started coming to the settlement area to create their new life.

On hand, in the four (4) zones of the eastern side of Suez Canal, the main and secondary irrigation canal and drainage canal system including crossing Suez siphon, and some pumping stations are under construction now. This feasibility study is for the final zone (El Sir and El Kawareer zone) in the El Salam Canal Project. (refer to Figure E-2-1)

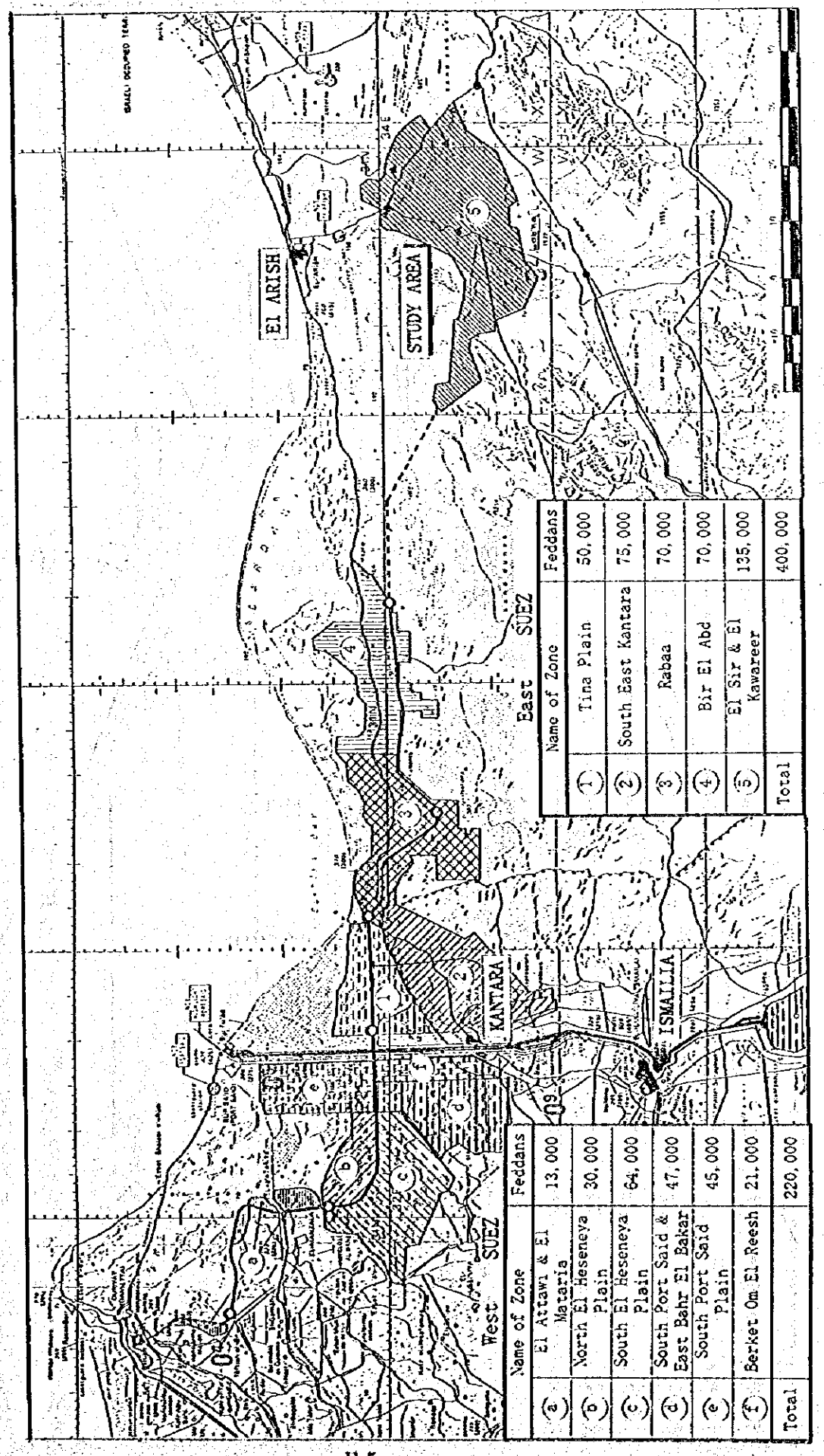
On 31st August 1996, the invitation for the settlement to TINA PLAIN Zone is closed. The number of total applicants for this invitation was more than 28,000 peoples. This invitation is prepared for three category; i.e. Large Investor, Small Investor and Graduate/Small Farmer. The outline and situation of this invitation or application is as follows: (see Figure E-2-2)

Total Area :35,000 feddans (gloss)

Number of farm lots	for Large Scale Investor	: 30 lots(@ more 500 fed./lot)
	for Small Scale Investor	: 50 lots(@ 10-500 fed./lot)
	for graduate/Small Farmer	: 800 lots(@ less 10 fed/lot)
The Selling Method	for Large Scale Investor	: Auction (minimum 10,000 LE/fed)
	for Small Scale Investor	: Fixed Price (10,000 LE/fed)
	for Graduate/Small Farmer	: Fixed Price (3,000 LE/fed.)
	(The attendants can buy several lots by their will.)	

Housing lot for Graduate/Small Farmer : 200 LE/lot (200 m²/lot)

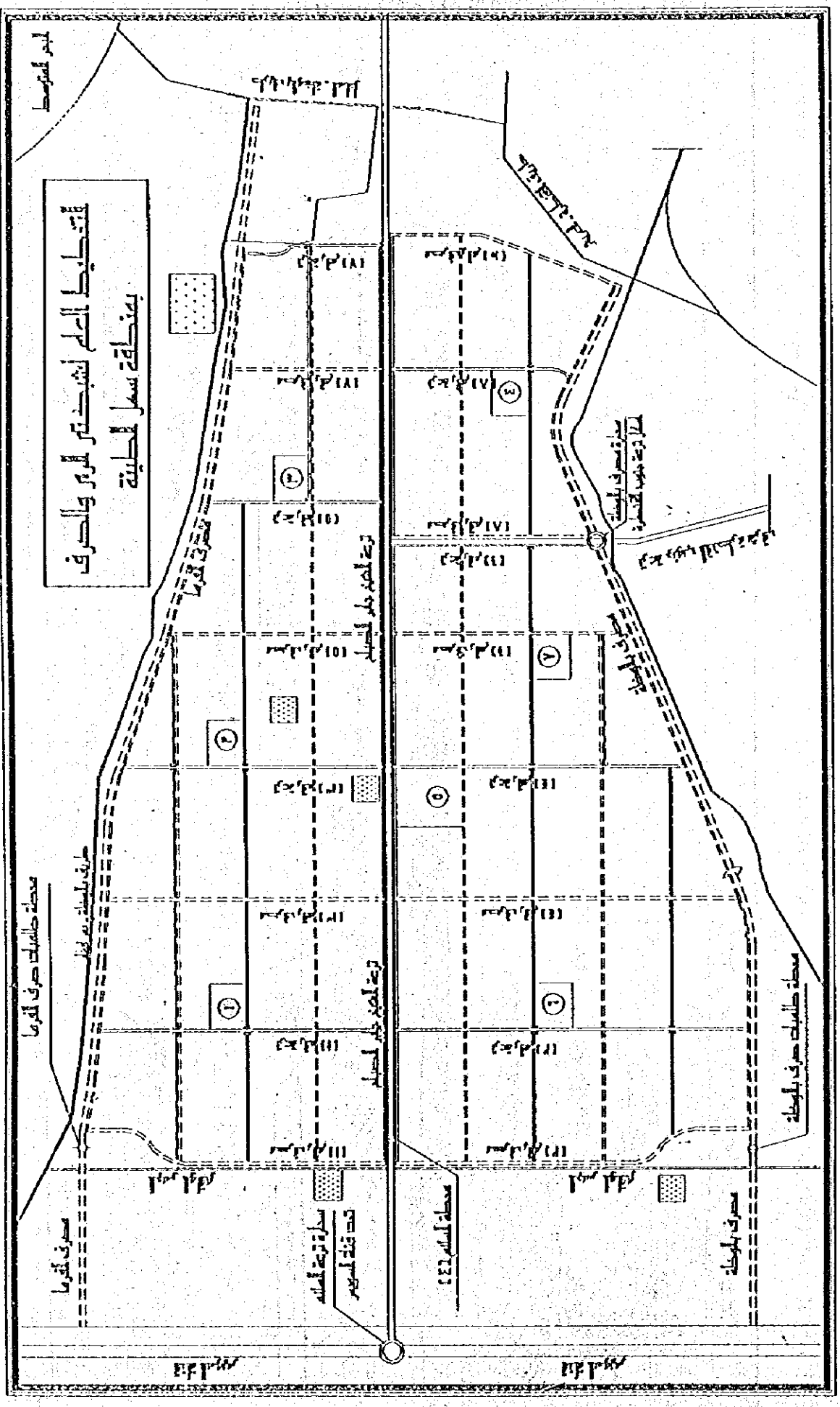
Figure E-2-1 **Location Map of El Salam Canal Projects**



	Name of Zone	Feddans
①	Tina Plain	50,000
②	South East Kantara	75,000
③	Rabaa	70,000
④	Bir El Abd	70,000
⑤	El Sir & El Kawareer	135,000
Total		400,000

	Name of Zone	Feddans
ⓐ	El Attawi & El Mataria	13,000
ⓑ	North El Heseneya Plain	30,000
ⓒ	South El Heseneya Plain	64,000
ⓓ	South Port Said & East Bahr El Bakar	47,000
ⓔ	South Port Said Plain	45,000
ⓕ	Berket Om El Reesh	21,000
Total		220,000

Figure E-2-2 **General Layout of TINA Plain Project**



E-3 Social Infrastructure

Considering the population of each village, following facilities are planed in the study area. (refer to Tables E-3-1 to E-3- 6 and Figures E-3-1 to E-3-3)

- Road network
- Domestic water supply
- Electric power supply
- Sewerage and Refuse system
- Public services facilities

Education :	Kindergarten, Primary school, Secondary school and Preparatory school
Health and welfare:	Hospital, Health center
Other services :	Governmental office, Police office, Post office, Telephone office, Fire station, Bank, Social community center, Cinema/Theater, Bus station, Fuel service station, Mechanical Service station, Market/Store, Mosque, Cemetery and Open space

Table E-3-1 Criteria of Manpower Requirement

	Pre-F/S(135,000 Fed.)		for This Study	
Agricultural Labor for				
Investor :	10 /Owner	(3.1/100 Fed.)	20.0 /100Fed.	Average
Graduate/Small Farmer :	-		1.0 /100 Fed.	Average
Irrigation Labor :	-		1.0 /100 Fed.	Irrigation Unit
Animal Product Labor for				
Milk (Large Scale) :	5.6 /Farm		40 /600 Fed.	Large Investor Farm Size
Meat (Large Scale) :	1.95 /Farm			
Milk (Small Scale) :	1.25 to 1.41 /Farm		5 / 50 Fed.	Small Investor Farm Size
Meat (Small Scale) :	0.98 /Farm			
Industrial Labor for				
Large Scale :	500 /Factory		500 /Factory	
Small Scale :			200 /Factory	
Administrative Employee for				
Branch Village	270 /Village	(9.1 %)	20 % of	Exclude Administrative
Central Village	450 /Village	(16.8 %)	Population	Employee
Total Population	49,335		116,100	

Table E-3-2 Land Allocation and Total Population Study Area

	Area (Fed.)	%	Land Unit (Fed.)	No. of Unit	Labor Required /Unit	No. of Land Holder /manpower	Family Size	Capita	Remarks
Total Study Area	135,000	100							
Net Cultivate Area	111,000	82							
Land Holder									
Large Scale Investor	66,600	60	*) 720			90	5	450	500-700 Fed./Unit
Small Scale Investor	16,650	15	*) 100			170	5	850	10-100 Fed./Unit
Graduate	11,100	10	10			1,110	5	5,550	*) Average
Small farmer	11,100	10	10			1,110	5	5,550	
Bedouin	5,550	5	10			560	5	2,800	
Sub Total	111,000	100				[3,040]		[15,200]	
Agricultural Labor for									
Large Scale Investor	(50,400)		100	504	20	10,080	5	50,400	Exclude Livestock Farm
Small Scale Investor	(12,400)		100	124	20	2,480	5	12,400	ditto
Graduate/Small Farmer :	(22,200)		100	222	1	220	5	1,100	
Sub Total						[12,780]		[63,900]	
Irrigation Labor			100	1,100	1	[1,100]	5	[5,500]	
Animal Product Labor for									
Large Scale Farm	(16,200)		720	23	40	900	5	4,500	25 % of L/S Investor
Small Scale Farm	(4,250)		50	85	5	430	5	2,150	50 % of S/S Investor
Sub Total						[1,330]		[6,650]	
Industrial Labor for									
Large Scale Factory				1	500	500	5	2,500	
Small Scale Factory				3	200	600	5	3,000	
Sub Total						[1,100]		[5,500]	
Administrative Employee						[3,870]	5	[19,350]	20% of above
Total						23,220	of Ind	116,100	

Table E-3-3 Population in Each Village (1/2, 2/2)

Category of Settler		Large Scale Investor (@720 Fed.)			Small Scale Investor (@100 Fed.)			Graduate & Small Farmer (@10 Fed.)			Bedouin (@10 Fed.)			Total of Land Holder	Total of Arable Land (Fed)
Village Type	Name	Arable Land	Land Holder	Family	Arable Land	Land Holder	Family	Arable Land	Land Holder	Family	Arable Land	Land Holder	Family		
Satellite Village	A-1	7,344	10	50	0	0	0	2,650	265	1,325	850	85	425	360	10,844
Satellite Village	A-2	7,920	11	55	0	0	0	0	0	0	0	0	0	11	7,920
Central Village	A-3	5,544	8	40	0	0	0	0	0	0	0	0	0	8	5,544
Satellite Village	A-4	7,416	10	50	0	0	0	1,382	138	691	1,418	142	709	290	10,216
Satellite Village	A-5	2,808	4	20	0	0	0	819	82	409	981	98	491	184	4,608
Sub Total		31,032	43	215	0	0	0	4,851	485	2,425	3,249	325	1,625	853	39,132
Central Village	B-1	8,100	11	55	0	0	0	0	0	0	0	0	0	11	8,100
Satellite Village	B-2	9,252	13	65	0	0	0	0	0	0	0	0	0	13	9,252
Satellite Village	B-3	0	0	0	0	0	0	3,698	370	1,849	502	50	251	420	4,200
Satellite Village	B-4	9,360	13	65	0	0	0	0	0	0	0	0	0	13	9,360
Satellite Village	B-5	8,856	12	60	0	0	0	0	0	0	0	0	0	12	8,856
Sub Total		35,568	49	245	0	0	0	3,698	370	1,849	502	50	251	469	39,768
Satellite Village	C-1	0	0	0	5,800	58	290	0	0	0	0	0	0	58	5,800
Satellite Village	C-2	0	0	0	4,800	48	240	0	0	0	0	0	0	48	4,800
Central Village	C-3	0	0	0	6,050	61	303	880	88	440	120	12	60	161	7,050
Satellite Village	C-4	0	0	0	0	0	0	7,263	726	3,632	987	99	493	825	8,250
Satellite Village	C-5	0	0	0	0	0	0	5,458	546	2,729	742	74	371	620	6,200
Sub Total		0	0	0	16,650	167	833	13,602	1,360	6,801	1,848	185	924	1,712	32,100
Total	15	66,600	92	460	16,650	167	833	22,150	2,215	11,075	5,600	560	2,800	3,034	111,000

Population in Each Village (2/2)

Category of Settler		Agricultural Labor		Irrigation Labor		Animal Production Labor		Industrial Labor			Administrative Employee		Total Number of House Holder	Total Population	Village Area (20 Cap/Fed)
Village Type	Name	Man Power	Family	Man Power	Family	Man Power	Family	No. of Factory	Man Power	Family	Man Power	Family			
Satellite Village	A-1	1,135	5,676	108	542	100	500		0	0	340	1,700	2,044	10,220	520
Satellite Village	A-2	1,188	5,940	79	396	110	550		0	0	280	1,400	1,668	8,340	420
Central Village	A-3	821	4,104	55	277	80	400	S - 1	200	1,000	230	1,150	1,394	6,970	350
Satellite Village	A-4	1,137	5,685	102	511	100	500		0	0	330	1,650	1,959	9,800	490
Satellite Village	A-5	426	2,129	46	230	40	200		0	0	140	700	836	4,180	210
Sub Total		4,707	23,535	391	1,957	430	2,150		200	1,000	1,320	6,600	7,901	39,510	1,990
Central Village	B-1	1,224	6,120	81	405	110	550	L-1, S-1	700	3,500	430	2,150	2,556	12,780	640
Satellite Village	B-2	1,382	6,912	93	463	130	650		0	0	320	1,600	1,938	9,690	490
Satellite Village	B-3	37	185	42	210	0	0		0	0	100	500	599	2,990	150
Satellite Village	B-4	1,404	7,020	94	468	130	650		0	0	330	1,650	1,971	9,850	500
Satellite Village	B-5	1,339	6,696	89	443	120	600		0	0	310	1,550	1,870	9,350	470
Sub Total		5,387	26,933	398	1,988	490	2,450		700	3,500	1,490	7,450	8,933	44,660	2,250
Satellite Village	C-1	870	4,350	58	290	145	725		0	0	230	1,150	1,361	6,810	350
Satellite Village	C-2	720	3,600	48	240	120	600		0	0	190	950	1,126	5,630	290
Central Village	C-3	916	4,582	71	353	151	756	S - 1	200	1,000	300	1,500	1,799	8,990	450
Satellite Village	C-4	73	363	83	413	0	0		0	0	200	1,000	1,180	5,900	300
Satellite Village	C-5	55	273	62	310	0	0		0	0	150	750	887	4,430	230
Sub Total		2,634	13,168	321	1,605	416	2,081		200	1,000	1,070	5,350	6,352	31,760	1,620
Total	15	12,727	63,635	1,110	5,550	1,336	6,681		1,100	5,500	3,880	19,400	23,187	115,930	5,860

Table E-3-4 Public Services Facilities

No.	Facility	Central Village	Branch Village	
1	Kindergarten	O	O	
1.1	Primary School	O	O	
1.2	Preparatory School	O		
1.3	Secondary School	O		
2	Hospital	O		
2.1	Health Center & Drag Store		O	
3	Government Office	O		
3.1	Police Office	O		
3.2	Police Box	O		
3.3	Fire Station	O		
3.4	Telephone Office	O	O	
3.5	Post Office	O	O	
4	Mosque	O	O	
4.1	Community Center	O	O	
4.4	Social Sports Club	O		
4.5	Cinema/Theater	O		
4.6	Sports Ground	O	O	
7	Bank (Brach Office)	O		
7.1	Bank (sub-Brach)		O	
8	Bus Station	O		
8.1	Fuel Service Station	O		
8.2	Mechanical Service Station	O		
6.6	Shops/Store	O	O	
6.7	Bakery	O	O	
	Number of Facilities	22	11	
	No. of Village	3	12	
	Total No. of Facilities	66	132	
	Administrative Manpower			
	Each Village	430	215	
	Total	1,290	2,580	3,870

Table E-3-5 Demands of Facilities

Category of Settler		Total	Water Demand (200 l/cap/day)				Electric Demand	Sewerage Discharge	Refuse Volume	Housing					
Type of Village	No.	Population	Total Demand	Capacity of Pipeline	Capacity of Elevated Tank	Number of Facility	(0.4 kw/cap)	(80 % of Domestic Water)	(0.5 kg/cap. /day)	Type 1 (Labor/Bedouin)	Type 2 (Grad./S. Farmer)	Type 3 (Public Officer)	Type 4 (S/Investor)	Type 5 (L/Investor)	Total
			m^3/day	l/sec	m^3	Unit	KW	(m3/day)	(ton/day)	Unit	Unit	Unit	Unit	Unit	Unit
Satellite Village	A-1	10,220	2,040	29.5	850	2	4,090	1,840	5.11	1,429	265	340	0	10	2,044
Satellite Village	A-2	8,340	1,670	24.2	700	2	3,340	1,500	4.17	1,377	0	280	0	11	1,668
Central Village	A-3	6,970	1,390	20.1	580	2	2,790	1,250	3.49	1,156	0	230	0	8	1,394
Satellite Village	A-4	9,800	1,960	28.4	820	2	3,920	1,760	4.90	1,481	138	330	0	10	1,959
Satellite Village	A-5	4,180	840	12.2	350	1	1,680	750	2.09	610	82	140	0	4	836
Sub Total		39,510	7,900	114.3		9	15,820	7,100	19.76	6,053	485	1,320	0	43	7,901
Central Village	B-1	12,780	2,560	37.0	1,070	3	5,120	2,300	6.39	2,115	0	430	0	11	2,556
Satellite Village	B-2	9,690	1,940	28.1	810	2	3,880	1,740	4.85	1,605	0	320	0	13	1,938
Satellite Village	B-3	2,990	600	8.7	250	1	1,200	540	1.50	129	370	100	0	0	599
Satellite Village	B-4	9,850	1,970	28.5	820	2	3,940	1,770	4.93	1,628	0	330	0	13	1,971
Satellite Village	B-5	9,350	1,870	27.1	780	2	3,740	1,680	4.68	1,548	0	310	0	12	1,870
Sub Total		44,660	8,940	129.3		10	17,880	8,030	22.33	7,025	370	1,490	0	49	8,933
Satellite Village	C-1	6,810	1,360	19.7	570	2	2,730	1,230	3.41	1,073	0	230	58	0	1,361
Satellite Village	C-2	5,630	1,130	16.4	470	1	2,260	1,010	2.82	888	0	190	48	0	1,126
Central Village	C-3	8,990	1,800	26.0	750	2	3,600	1,620	4.50	1,350	88	300	61	0	1,799
Satellite Village	C-4	5,900	1,180	17.1	490	1	2,360	1,060	2.95	254	726	200	0	0	1,180
Satellite Village	C-5	4,430	890	12.9	370	1	1,780	800	2.22	191	546	150	0	0	887
Sub Total		31,760	6,360	92.0		7	12,730	5,720	15.88	3,756	1,360	1,070	167	0	6,352
Total	15	115,930	23,200	335.7		26	46,430	20,850.00	57.97	16,833	2,215	3,880	167	92	23,187

Table E-3-6 Scale of Schools

Village Name	Total Popula-tion	Kindergarten			Primary School			Secondary School			Preparatory School		
		Pupil	Staff	Flower	Pupil	Staff	Flower	Pupil	Staff	Flower	Pupil	Staff	Flower
Enrollment rate		60%	(Number	(m2)	90%	(Number	(m2)	70%	(Number	(m2)	50%	(Number	(m2)
A-1	10,220	480	14	960	1,510	69	5,390						
A-2	8,340	390	12	780	1,260	57	4,410						
A-3	6,970	330	10	660	1,050	47	3,680	1,830	137	9,150	1,230	92	6,150
A-4	9,800	460	14	920	1,480	67	5,180						
A-5	4,180	200	6	400	630	28	2,210						
Sub Total	39,510	1,860	56	3,720	5,960	268	20,870						
B-1	12,780	600	18	1,200	1,930	87	6,760	2,060	155	10,300	1,400	105	7,000
B-2	9,690	450	14	900	1,460	66	5,110						
B-3	2,990	140	4	280	450	20	1,580						
B-4	9,850	460	14	920	1,490	67	5,220						
B-5	9,350	440	13	880	1,410	63	4,940						
Sub Total	44,660	2,090	63	4,180	6,740	303	23,610						
C-1	6,810	320	10	640	1,030	46	3,610						
C-2	5,630	260	8	520	850	38	2,980						
C-3	8,990	420	13	840	1,360	61	4,760	1,470	110	7,350	990	74	4,950
C-4	5,900	280	8	560	890	40	3,120						
C-5	4,430	210	6	420	670	30	2,350						
Sub Total	31,760	1,490	45	2,980	4,800	216	16,820						
Total	115,930	5,440	161	5,960	9,600	787	33,610	5,360	402	26,800	3,620	272	18,100

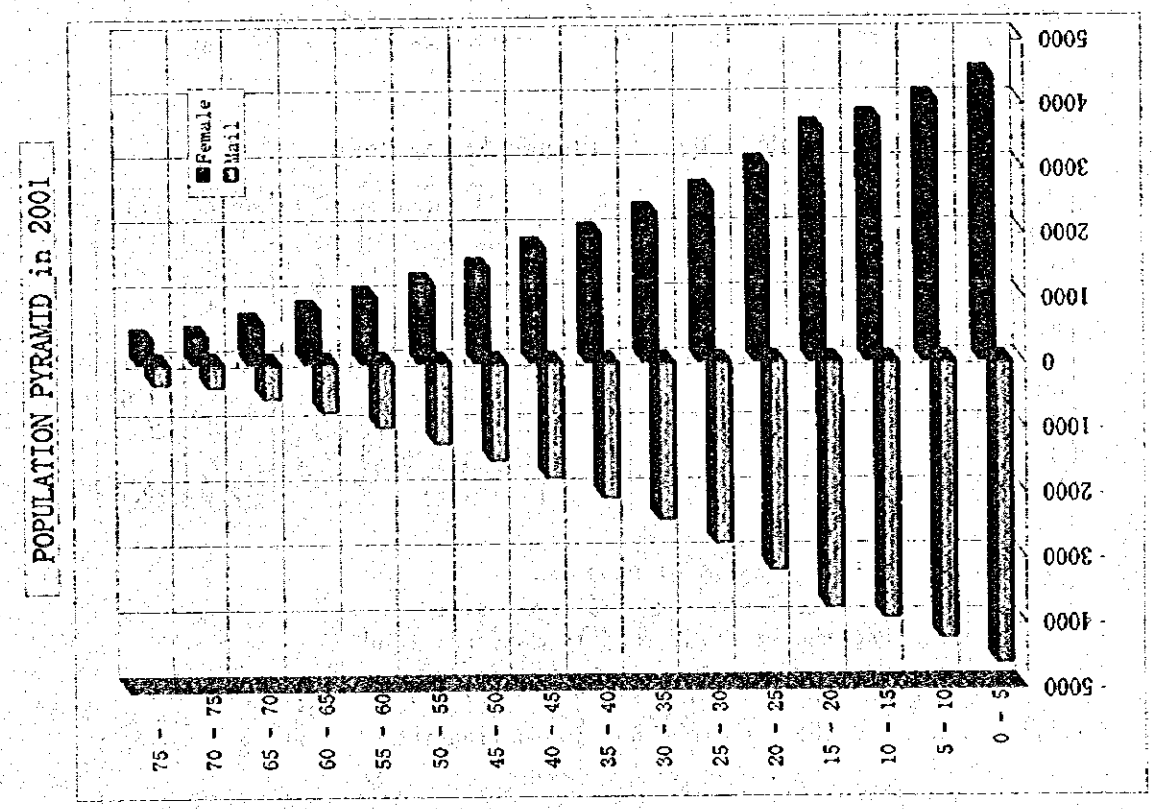
AGE GROUP of PUPIL

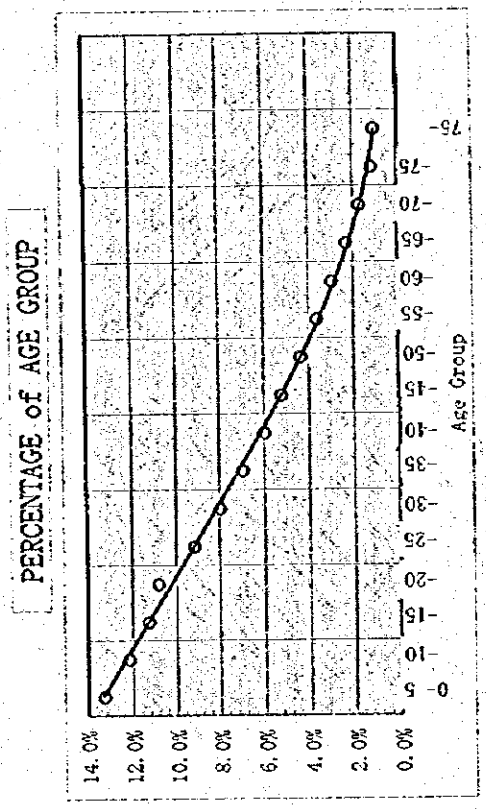
Age Group	%	Age Grope for
3- 5	7.8%	Kindergarten
6-12	16.9%	Primary School
13-15	6.6%	Secondary School
16-18	6.3%	Preparatory School

CRITERIA of SCHOOL SCALE

No. of	Class	Teacher/Staff	Flower
	% for Pupil	% for Pupil	m^2/Pupil
Kindergarten	2.0	3.0	2.0
Elementary School	3.0	4.5	3.5
econdary School	4.0	7.5	5.0
Preparatory School	3.5	7.5	5.0

Figure E-3-1 Population Pyramid in 2001 and Age Grope Percentage





Percentage of Age Group

Age Group	Mail	Female	Total	Percentage
0 - 5	4,628	4,408	9,036	13.3%
5 - 10	4,243	4,042	8,285	12.2%
10 - 15	3,932	3,742	7,674	11.3%
15 - 20	3,769	3,590	7,359	10.8%
20 - 25	3,202	3,031	6,233	9.2%
25 - 30	2,787	2,640	5,427	8.0%
30 - 35	2,418	2,300	4,718	6.9%
35 - 40	2,080	1,989	4,069	6.0%
40 - 45	1,777	1,771	3,548	5.2%
45 - 50	1,503	1,461	2,964	4.4%
50 - 55	1,240	1,227	2,467	3.6%
55 - 60	982	1,024	2,006	3.0%
60 - 65	743	818	1,561	2.3%
65 - 70	536	623	1,159	1.7%
70 - 75	356	426	782	1.2%
75 -	315	380	695	1.0%
Total	34,511	33,472	67,983	100.0%

3 - 5	7.8%	Age Grope of Kindergarten
6 - 12	16.9%	Age Grope of Primary School
13 - 15	6.6%	Age Grope of Preparatory School
16 - 18	6.3%	Age Grope of Secondary School

STATISTICAL YEAR BOOK June, 1995

Figure E-3-2 Village Distribution and Access Road

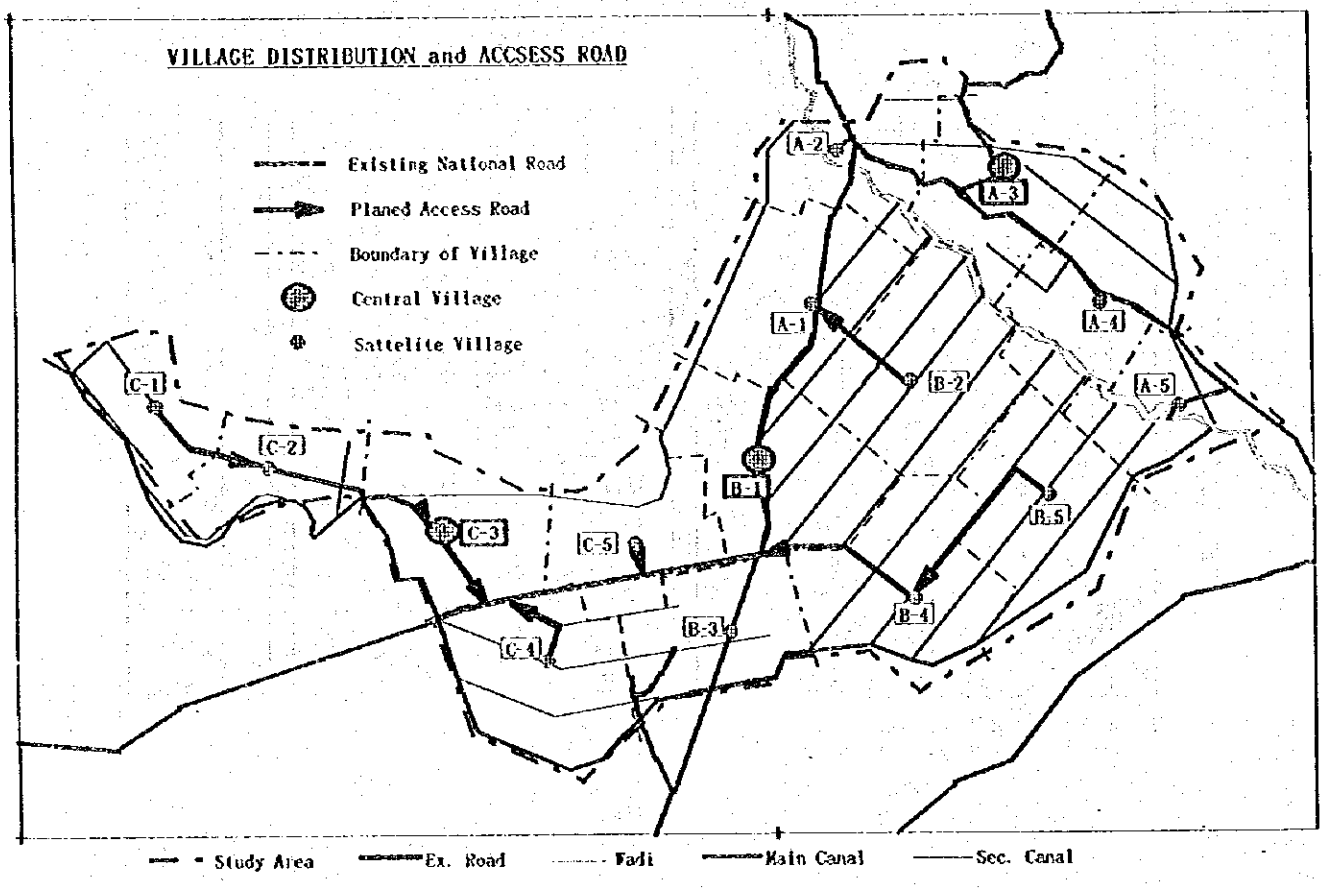


Table E-3-8 Planed Access Road

Village	Access to	Use by (*)	Road Length F/R	Road Length I/R
A - 1	N. Road	R/S	--	--
A - 2	N. Road	Ex. R	--	--
A - 3	N. Road	Ex. R	--	--
A - 4	N. Road	R/S	--	--
A - 5	N. Road	Ex. R	--	--
B - 1	N. Road	R/S	--	--
B - 2	N. Road	F/R	5.2	--
B - 3	N. Road	R/S	--	--
B - 4	N. Road	F/R & I/R	3.6	4.1
B - 5	B - 1	F/R & I/R	6.1	2.1
C - 1	C - 2	I/R	--	6.4
C - 2	C - 3	F/R & I/R	3.8	4.2
C - 3	N. Road	I/R	--	3.6
C - 4	N. Road	F/R & I/R	1.8	2.2
C - 5	N. Road	F/R	1.2	--
Total			22.0	22.6

Note :
N. Road : Existing National Road
R/S : Village is located just Road side
Ex. R : Use the existing road to national road
F/R : Use the farm road to national road
I/R : Use the inspection road of irrigation canal
F/R & I/R : Use the farm road and instection road