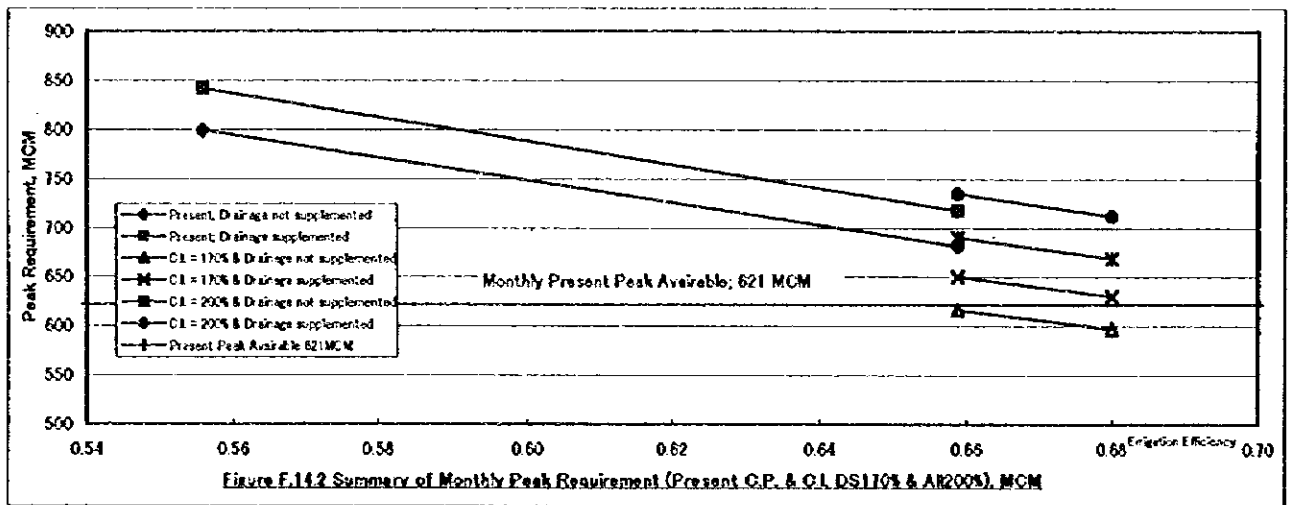
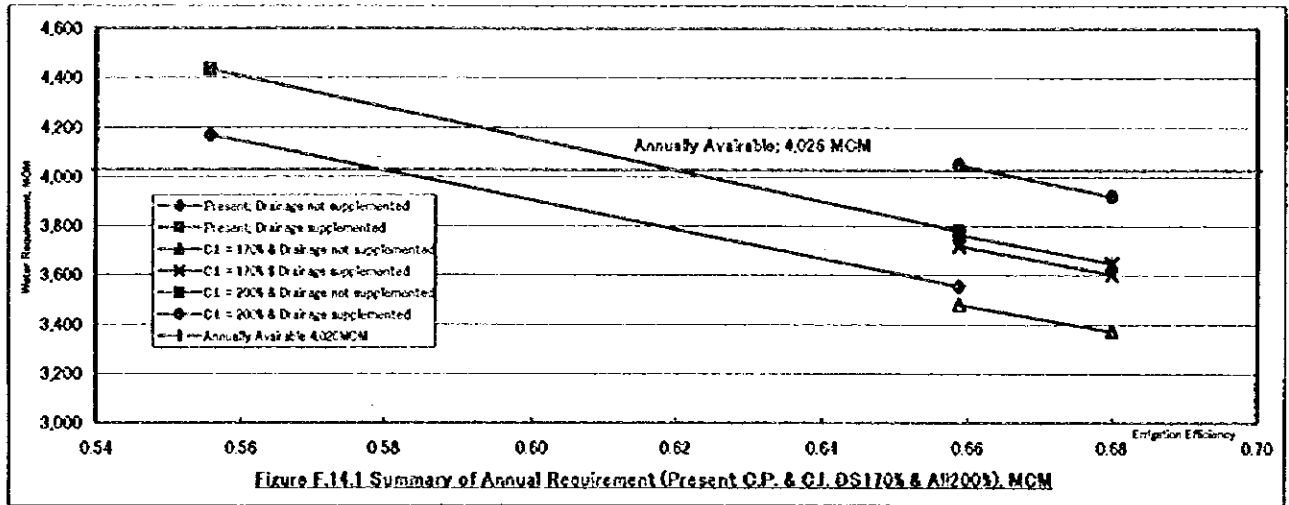


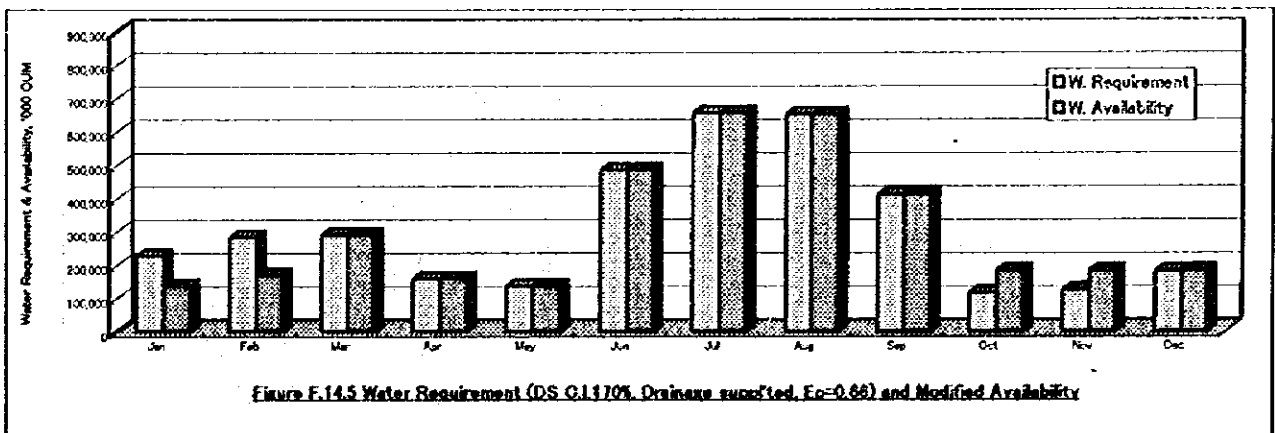
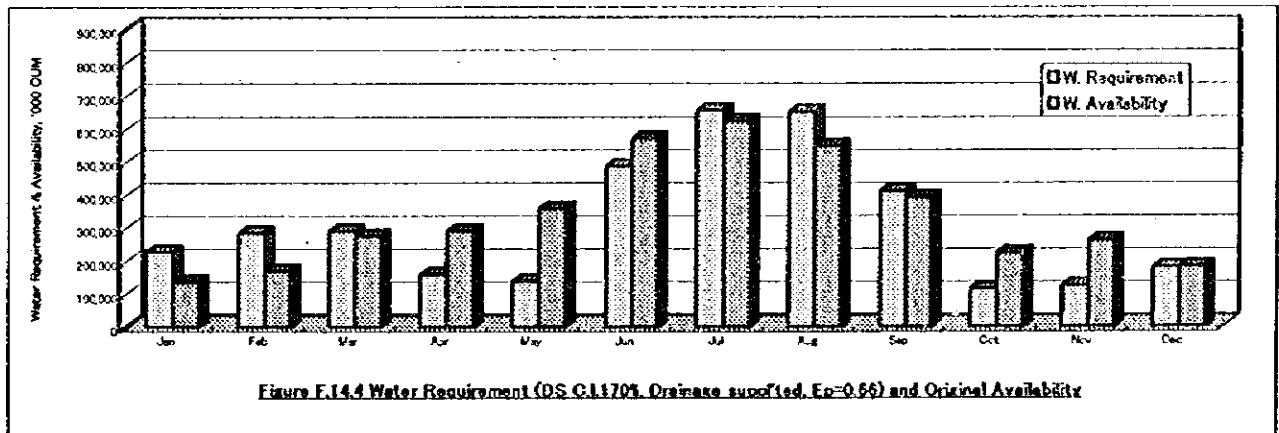
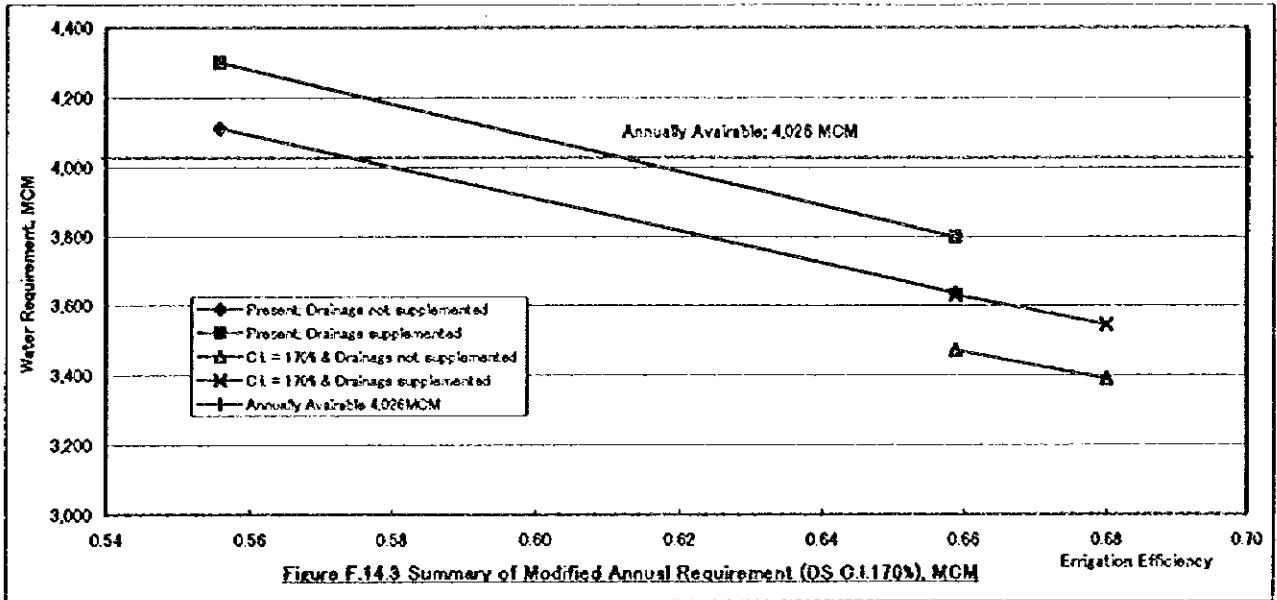
Table F.14.1 Irrigation Efficiency Applied

Item	Without project	With Project	With Project (enhnt)	Remarks
On-farm Application	0.65	0.73		
Meska Conveyance	0.90	0.95		Incl. direct pumping
Main, Sec. Del. Conveyance	0.95	0.95		
Overall Efficiency	0.556	0.659	0.650	

Table F.14.2 Summary of Water Requirements for Master Plan Area, Surpluses or Deficit and Modified Water Allocation, 000, CUM

Cropping Ep	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	% to Original
Available for Behr Shebin	135,169	160,264	274,616	209,145	356,904	566,640	621,467	547,233	391,532	223,846	260,253	161,603	4,026,117	
Water Requirement	206,164	260,783	266,997	146,088	128,587	457,036	619,316	616,446	366,249	100,992	114,601	166,000	3,400,365	
Crop Intensity 170% (Drainage not supplemented)	-64.0	-55.0	2.8	49.5	64.0	19.6	0.3	-12.6	0.8	51.3	50.0	9.2	13.6	
Surplus or Deficit %	135,169	160,264	266,997	146,088	128,587	457,036	619,316	616,446	366,249	100,992	114,601	161,603	3,471,662	13.77
Modified	-64.0	-55.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	37.0	9.2	-0.3	
Surplus or Deficit %	0.66	262,232	262,963	269,606	137,622	136,568	484,020	654,412	410,289	114,970	124,493	179,599	3,719,706	
Crop Intensity 170% (Drainage supplemented)	-67.4	-60.2	-5.5	45.5	61.8	14.9	-5.3	-19.9	-4.8	49.6	52.2	1.2	7.6	
Surplus or Deficit %	135,169	160,264	269,606	137,622	136,568	484,020	654,412	650,456	410,289	121,803	121,603	181,603	3,631,756	9.80
Modified	-67.4	-68.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	31.5	1.2	-2.4	
Surplus or Deficit %	0.66	201,682	252,063	258,083	141,539	124,583	442,806	600,030	597,249	370,256	105,598	111,033	159,667	3,371,988
Crop Intensity 170% (Drainage not supplemented)	-49.2	-50.2	5.8	51.0	65.1	22.1	3.4	-9.1	3.0	52.5	57.3	12.1	16.2	
Surplus or Deficit %	135,169	160,264	266,997	141,539	124,583	442,806	600,030	597,249	370,256	100,992	114,601	161,603	3,389,968	15.80
Modified	-49.2	-50.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.9	39.9	12.1	0.5	
Surplus or Deficit %	0.66	219,187	274,162	260,568	132,258	168,946	634,034	630,201	397,513	111,390	120,616	174,006	3,603,876	
Crop Intensity 170% (Drainage supplemented)	-62.2	-62.9	-2.2	47.2	62.9	17.5	-2.0	-15.2	-1.5	50.2	53.7	4.3	10.5	
Surplus or Deficit %	135,169	160,264	260,568	132,258	168,946	634,034	630,201	397,513	181,603	181,603	181,603	181,603	3,545,097	11.85
Modified	-62.2	-62.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.7	33.7	4.3	-1.7	
Surplus or Deficit %	0.66	210,000	263,466	271,260	155,323	153,756	602,454	600,397	423,674	116,782	115,465	160,234	3,765,112	
Crop Intensity 200% (Drainage not supplemented)	-55.4	-56.6	1.2	46.3	56.9	11.0	-11.4	-26.2	-8.2	47.8	55.6	8.0	6.5	
Surplus or Deficit %	135,169	160,264	271,260	155,323	153,756	506,250	692,484	690,397	423,674	181,603	181,603	181,603	3,741,968	7.56
Modified	-55.4	-56.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.8	36.5	8.0	-0.6	
Surplus or Deficit %	0.66	228,427	295,170	294,703	168,604	168,006	540,113	737,810	734,747	450,553	123,849	125,550	181,068	4,048,140
Crop Intensity 200% (Drainage supplemented)	-66.0	-70.1	-7.3	41.7	53.3	5.0	-19.7	-34.3	-15.1	44.7	51.8	0.4	-0.5	
Surplus or Deficit %	135,169	160,264	294,703	168,604	168,006	540,113	737,810	734,747	450,553	181,603	181,603	181,603	3,942,038	2.09
Modified	-66.0	-70.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.9	30.9	0.4	-2.7	
Surplus or Deficit %	0.66	203,461	255,261	262,813	150,487	143,970	490,436	670,920	668,893	410,463	112,145	111,889	161,057	3,647,863
Crop Intensity 200% (Drainage not supplemented)	-50.5	-51.7	4.3	48.0	58.3	13.7	-8.0	-22.2	-4.8	49.5	57.0	11.4	9.4	
Surplus or Deficit %	135,169	160,264	262,813	150,487	148,970	490,436	670,920	668,893	410,461	181,603	181,603	181,603	3,651,890	9.29
Modified	-50.5	-51.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.6	36.5	11.4	0.1	
Surplus or Deficit %	0.66	231,314	277,259	265,626	163,412	161,416	523,204	714,634	711,806	436,923	119,963	121,640	176,429	3,922,082
Crop Intensity 200% (Drainage supplemented)	-63.7	-64.8	-4.0	43.5	54.8	8.0	-15.0	-30.1	-11.5	48.4	53.9	3.5	2.6	
Surplus or Deficit %	135,169	160,264	265,626	163,412	161,416	523,204	714,634	711,806	436,923	181,603	181,603	181,603	3,845,717	4.48
Modified	-63.7	-64.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.0	33.1	3.5	-2.0	
Surplus or Deficit %	0.56	216,666	266,306	265,827	157,492	160,312	636,196	799,023	793,889	490,790	131,179	120,342	171,703	4,169,366
Crop Intensity 200% (Drainage not supplemented)	-60.3	-60.3	3.3	45.5	55.1	-11.9	-28.6	-37.8	-25.4	41.4	53.8	5.6	-3.6	
Surplus or Deficit %	135,169	160,264	265,827	157,462	160,312	636,196	799,023	793,889	490,790	181,603	181,603	181,603	4,112,031	-2.13
Modified	-60.3	-60.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.8	32.8	5.6	-1.4	
Surplus or Deficit %	0.56	233,530	286,567	265,743	169,851	172,978	670,665	841,768	794,016	516,196	137,903	129,857	165,439	4,434,652
Crop Intensity 200% (Drainage supplemented)	-72.8	-70.3	-4.1	43.3	51.5	-17.8	-35.5	-45.1	-19.6	38.4	50.1	2.0	-10.1	
Surplus or Deficit %	135,169	160,264	285,743	169,851	172,978	670,665	841,768	794,016	516,196	181,603	181,603	181,603	4,299,466	-6.70
Modified	-72.8	-70.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.1	28.6	-2.0	-3.1	
Surplus or Deficit %	0.66	182,766	224,642	223,964	132,618	135,231	550,582	661,190	643,116	420,950	113,040	101,514	144,839	3,554,854
Crop Intensity 200% (Drainage not supplemented)	-35.2	-33.5	18.4	54.1	62.1	3.2	-9.6	-17.5	-7.5	49.5	61.0	20.3	11.7	
Surplus or Deficit %	135,169	160,264	223,964	132,618	135,231	550,582	661,190	643,116	420,950	181,603	181,603	181,603	3,636,865	9.87
Modified	-35.2	-33.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.8	44.2	20.3	2.3	
Surplus or Deficit %	0.66	196,983	241,733	241,038	143,277	145,915	579,547	717,644	677,346	442,746	116,340	109,541	156,426	3,780,554
Crop Intensity 200% (Drainage supplemented)	-45.7	-43.7	12.2	50.4	59.1	-2.0	-15.5	-23.8	-13.1	46.9	57.9	14.0	6.1	
Surplus or Deficit %	135,169	160,264	241,038	143,277	145,915	579,547	717,644	677,346	442,746	181,603	181,603	181,603	3,796,056	5.70
Modified	-45.7	-43.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.0	39.7	14.0	0.4	
Surplus or Deficit %														





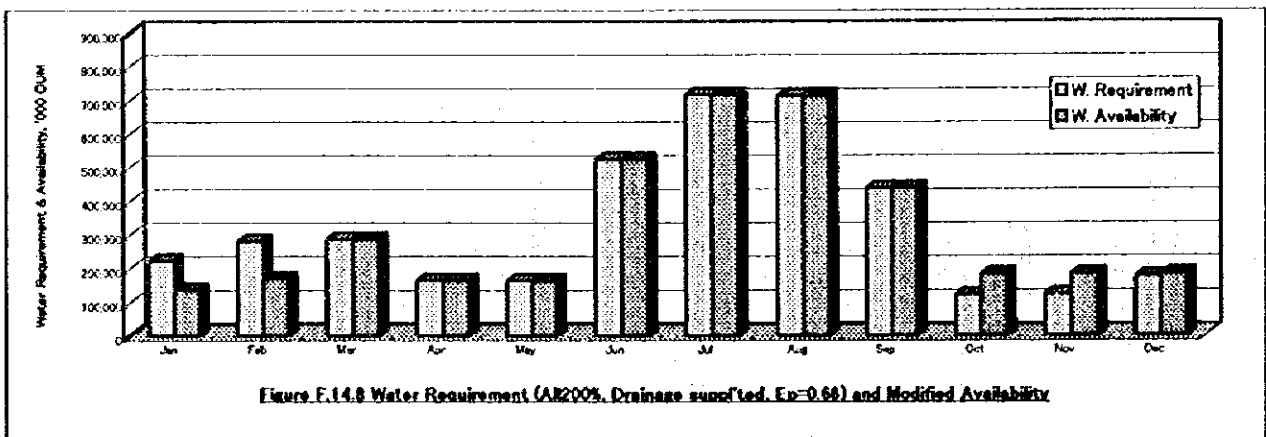
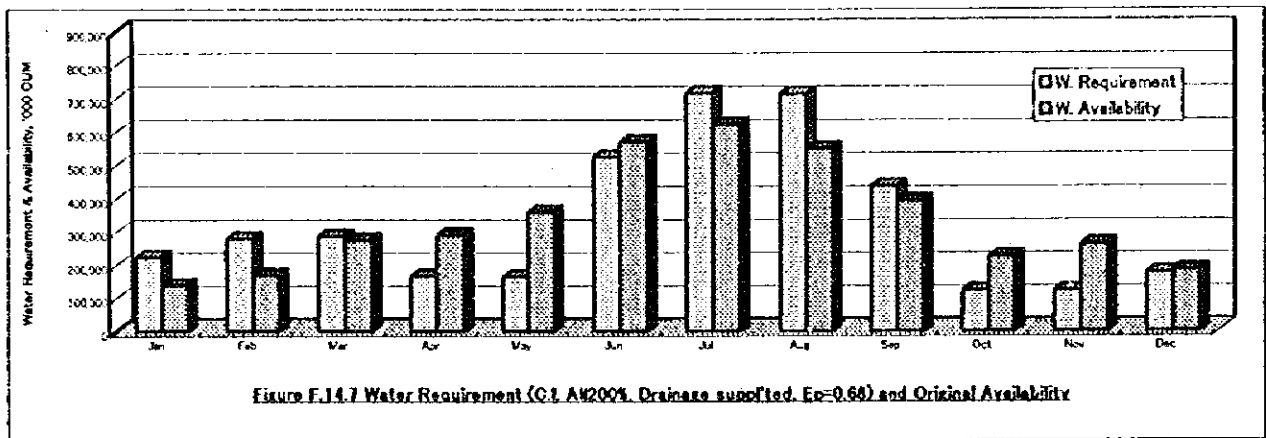
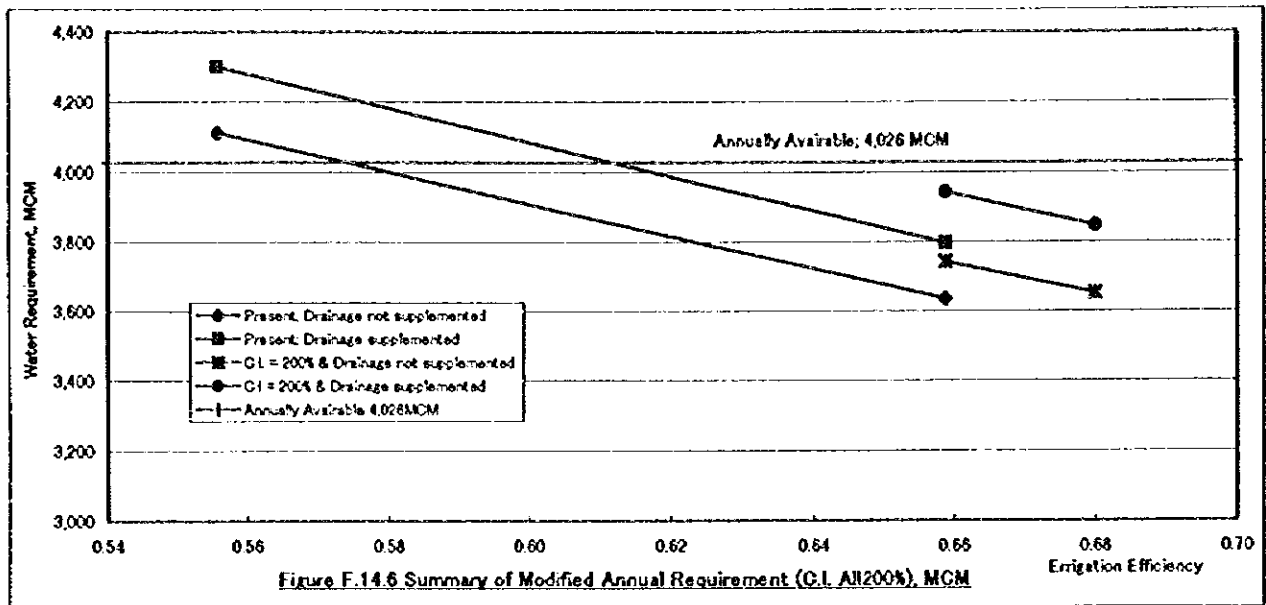


Table F.14.3 Summary of Peak Intake Volume based on Modified Penman Method at Representative Barrages

Location	Ep	Irrigation 000/Month	M. & L 000/M	Supplem'd 000/M	Subtracted 000/M	Peak 000/M	Peak CUM/sec	Remarks
<b>Bahr Tera (Designed)</b>								
Present (Drainage not supplemented)	0.56	203,096	1,660	40,573		164,363	61.37	-23%
Present (Drainage supplemented)	0.56	210,755				172,042	64.23	-28%
Present (Drainage not supplemented)	0.66	173,202				134,430	50.21	0%
Present (Drainage supplemented)	0.66	179,734				141,022	52.65	-5%
CI 170% (Drainage not supplemented)	0.66	159,930	870			120,228	44.83	10%
CI 170% (Drainage supplemented)	0.66	165,972				126,269	47.14	6%
CI 200% (Drainage not supplemented)	0.66	185,322				146,619	54.74	-9%
CI 200% (Drainage supplemented)	0.66	193,391				153,689	57.38	-15%
CI 170% (Drainage not supplemented)	0.66	154,950				115,248	43.03	14%
CI 170% (Drainage supplemented)	0.66	160,804				121,101	45.21	10%
CI 200% (Drainage not supplemented)	0.66	180,520				140,817	52.58	-5%
CI 200% (Drainage supplemented)	0.66	187,369				147,666	55.13	-10%
Maximum		210,755				172,042	64.23	-28%
<b>Rahben (Designed)</b>								
Present (Drainage not supplemented)	0.56	494,055	8,838	40,573		460,380	171.83	-15%
Present (Drainage supplemented)	0.56	529,727				495,993	185.18	-23%
Present (Drainage not supplemented)	0.66	421,412				387,677	144.74	4%
Present (Drainage supplemented)	0.66	451,786				418,051	156.08	-4%
CI 170% (Drainage not supplemented)	0.66	381,629	5,643			345,906	129.52	14%
CI 170% (Drainage supplemented)	0.66	409,940				375,215	140.09	7%
CI 200% (Drainage not supplemented)	0.66	438,299				403,575	150.68	0%
CI 200% (Drainage supplemented)	0.66	475,853				441,128	164.70	-10%
CI 170% (Drainage not supplemented)	0.66	369,745				335,021	125.08	17%
CI 170% (Drainage supplemented)	0.66	397,174				362,450	135.32	10%
CI 200% (Drainage not supplemented)	0.66	424,651				389,976	145.58	3%
CI 200% (Drainage supplemented)	0.66	451,035				426,310	159.17	-6%
Maximum		529,727				495,993	185.18	-23%
<b>Bahr El Sahel (Designed)</b>								
Present (Drainage not supplemented)	0.56	145,881	3,162	70,585		78,068	29.14	-32%
Present (Drainage supplemented)	0.56	153,013				85,190	31.81	-45%
Present (Drainage not supplemented)	0.66	124,380				56,551	21.12	4%
Present (Drainage supplemented)	0.66	130,459				62,638	23.39	-6%
CI 170% (Drainage not supplemented)	0.66	115,292	3,162			47,469	17.72	19%
CI 170% (Drainage supplemented)	0.66	121,195				53,372	19.93	5%
CI 200% (Drainage not supplemented)	0.66	135,747				67,924	25.35	-15%
CI 200% (Drainage supplemented)	0.66	143,520				75,697	28.26	-26%
CI 170% (Drainage not supplemented)	0.66	111,702				43,879	16.38	26%
CI 170% (Drainage supplemented)	0.66	117,421				49,593	18.52	16%
CI 200% (Drainage not supplemented)	0.66	131,520				63,697	23.78	-8%
CI 200% (Drainage supplemented)	0.66	139,051				71,228	26.59	-21%
Maximum		153,013				85,190	31.81	-45%
<b>Raih Abbasee (Designed)</b>								
Present (Drainage not supplemented)	0.56	799,023	12,790	145,735	-217,640	843,918	330.02	-22%
Present (Drainage supplemented)	0.56	841,788				926,683	345.98	-26%
Present (Drainage not supplemented)	0.66	681,190				765,065	286.02	-6%
Present (Drainage supplemented)	0.66	717,644				802,533	299.63	-11%
CI 170% (Drainage not supplemented)	0.66	616,445	11,800		-191,690	674,200	251.72	7%
CI 170% (Drainage supplemented)	0.66	650,456				708,211	264.42	2%
CI 200% (Drainage not supplemented)	0.66	690,397				748,152	279.33	-3%
CI 200% (Drainage supplemented)	0.66	724,747				792,502	295.89	-10%
CI 170% (Drainage not supplemented)	0.66	597,249				655,004	244.55	5%
CI 170% (Drainage supplemented)	0.66	630,201				687,556	256.85	5%
CI 200% (Drainage not supplemented)	0.66	668,838				726,653	271.30	0%
CI 200% (Drainage supplemented)	0.66	711,668				769,622	287.34	-6%
Maximum		841,788				926,683	345.98	-26%

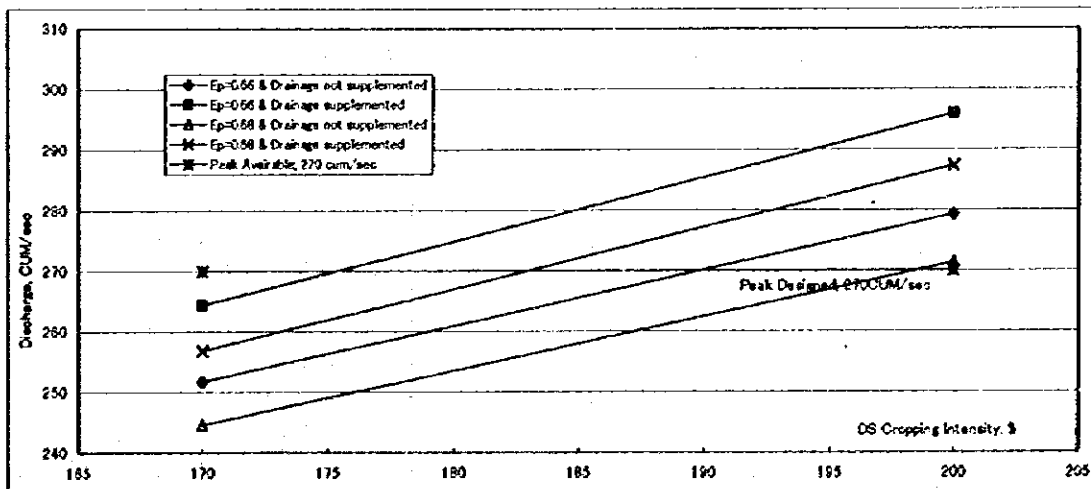


Figure F.14.9 Peak Discharge Required at Raiah Abbasee Intake, CUM/sec

Table F.14.4 Cropping Pattern DS:170% Water Requirement in '000 CUM based on Modified Penman Method (Canal; Bahr Tera, Downstream+Midstream)

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
<b>Downstream</b>															
After MPS	39,055	14,320	17,558	17,909	9,038	5,955	29,670	38,400	37,083	24,010	6,532	7,824	11,580	219,879	
Mixing	3,250	1,192	1,481	1,490	752	498	2,489	3,195	3,085	1,999	544	651	864	18,297	
Drainage only	6,600	2,420	2,957	3,027	1,527	1,008	5,014	6,489	6,267	4,059	1,104	1,322	1,827	37,153	
El Mansour	45,700	16,757	20,545	20,957	10,578	6,988	34,718	44,933	43,392	28,096	7,644	9,156	13,550	257,280	
Before MPS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fresh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Drainage (Mixed)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total of D.S. (Drainage)	9,850	3,612	4,438	4,517	2,279	1,502	7,493	9,684	9,352	5,058	1,648	1,973	2,691	55,452	
Total of D.S. (Ex. Drainage)	84,755	31,077	38,103	38,866	19,614	12,923	64,387	83,333	80,475	52,106	14,178	16,980	25,130	477,169	
Total of D.S.	94,605	34,689	42,541	43,383	21,893	14,425	71,870	93,018	89,828	58,162	15,824	18,953	28,050	532,625	
<b>Midstream</b>															
Fresh	64,360	23,593	29,418	29,709	17,417	17,776	55,487	76,597	77,209	47,771	13,256	13,249	18,721	420,173	
Drainage (Mixed)	4,700	1,721	2,148	2,170	1,272	1,298	4,052	5,594	5,638	3,489	968	967	1,367	30,684	
Total (Drainage)	14,550	5,312	6,572	6,689	3,551	2,800	11,539	15,278	14,201	8,544	2,616	2,841	4,288	88,139	
Total (Ex. Drainage)	149,115	54,040	67,521	68,575	37,031	30,699	119,874	159,930	157,894	99,877	27,432	30,228	43,950	897,342	
Total (+0.0mD)	149,115	54,040	67,521	68,575	37,031	30,699	119,874	159,930	157,684	99,877	27,432	30,228	43,850	897,342	
Total	163,665	59,972	74,098	75,261	40,582	33,498	131,409	175,209	172,675	109,422	30,047	33,189	48,138	983,481	

Table F.14.5 Cropping Pattern DS:170% Water Requirement in '000 CUM based on Modified Penman Method (Canal; Rajah Bilgas, Downstream+Midstream)

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
<b>Downstream</b>															
El Esiah	11,420	4,187	5,134	5,237	2,643	1,741	8,676	11,228	10,843	7,021	1,910	2,280	3,288	64,294	
Drainage only	18,981	6,980	8,533	8,704	4,393	2,894	14,420	18,863	18,023	11,669	3,175	3,903	5,628	106,863	
Fresh	23,990	8,793	10,781	10,996	5,549	3,656	18,217	23,578	22,768	14,743	4,011	4,804	7,110	135,007	
Drainage (Mixed)	11,921	4,281	5,224	5,329	2,699	1,772	8,828	11,426	11,034	7,144	1,944	2,328	3,446	65,426	
Total of El Nile (Drainage)	32,400	12,990	15,915	16,233	8,192	5,398	28,993	34,908	33,612	21,783	5,921	7,092	10,498	199,301	
Total of El Nile (Ex. Drain)	30,602	11,221	13,758	14,033	7,082	4,666	23,248	30,089	29,057	18,814	5,118	6,131	9,073	172,289	
Total of El Nile	66,002	24,201	29,672	30,266	15,274	10,064	50,141	64,895	62,669	40,577	11,039	13,223	19,569	371,590	
B. Hafir Shehab	6,700	2,457	3,012	3,072	1,550	1,022	5,090	6,588	6,382	4,119	1,121	1,342	1,987	37,721	
Total of D.S. (Drainage)	39,400	12,980	15,915	16,233	8,192	5,398	28,993	34,908	33,612	21,783	5,921	7,092	10,498	199,301	
Total of D.S. (Ex. Drainage)	37,302	13,677	16,770	17,106	8,632	5,688	28,338	36,676	35,419	22,933	6,239	7,473	11,060	210,010	
Total of D.S.	72,702	26,858	32,684	33,339	18,824	11,085	55,231	71,482	69,031	44,898	12,160	14,565	21,556	409,311	
Downstream	18,161	6,659	8,165	8,328	4,203	2,769	13,797	17,856	17,244	11,195	3,038	3,638	5,385	102,246	
<b>Midstream</b>															
B. Hafir Shehab	6,820	2,424	3,028	3,056	1,792	1,828	5,707	7,878	7,942	4,914	1,363	1,363	1,928	43,219	
Total of B. Hafir (Drainage)	35,400	12,980	15,915	16,233	8,192	5,398	28,993	34,908	33,612	21,783	5,921	7,092	10,498	199,301	
Total of B. Hafir (Ex. Drain)	32,083	22,760	27,960	28,489	14,627	10,285	47,842	62,411	60,604	39,012	10,640	12,474	18,370	355,474	
Total of B. Hafir	97,483	35,740	43,875	44,723	22,819	15,683	74,735	97,217	94,216	60,775	16,561	19,566	28,868	554,776	
Rajah Bilgas	14,248	5,216	6,513	6,577	3,856	3,935	12,294	16,957	17,093	9,576	2,935	2,933	4,144	93,018	
B. E. Masara	37,978	13,904	17,359	17,531	10,278	10,489	32,742	45,199	45,560	28,189	7,822	7,818	11,047	247,939	
Total of M.S.	58,946	21,544	26,898	27,184	15,925	16,253	50,733	70,933	70,594	43,678	12,120	12,113	17,117	394,175	
Total (Drainage)	95,400	12,980	15,915	16,233	8,192	5,398	28,993	34,908	33,612	21,783	5,921	7,092	10,498	199,301	
Total (Ex. Drainage)	114,309	41,881	51,832	52,597	28,760	24,710	92,867	124,567	123,257	77,776	21,397	23,225	33,561	696,431	
Total (+0.0mD)	114,309	41,881	51,832	52,597	28,760	24,710	92,867	124,567	123,257	77,776	21,397	23,225	33,561	696,431	
Total	149,709	54,961	67,747	68,830	38,952	30,107	119,760	159,540	156,869	99,540	27,318	30,317	44,058	895,732	

Table F.14.8 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal; Basandila, Downstream+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
<i>Drainage only</i>	11,694	4,288	5,257	5,362	2,768	1,783	8,884	11,488	11,103	7,189	1,958	2,343	3,487	65,837	
Downstream	29,088	10,858	13,067	13,328	6,726	4,432	22,031	28,578	27,598	17,869	4,862	5,823	8,618	163,641	
Midstream	18,377	6,728	8,400	8,483	4,973	5,078	15,843	21,871	22,048	13,840	3,785	3,783	5,345	119,974	
<i>Total (Drainage)</i>	11,694	4,288	5,257	5,362	2,768	1,783	8,884	11,488	11,103	7,189	1,958	2,343	3,487	65,837	
Total (Ex. Drainage)	47,443	17,386	21,467	21,812	11,700	9,507	37,924	50,450	49,644	31,510	8,646	9,606	13,963	283,615	
Total (+0.0% D)	47,443	17,386	21,467	21,812	11,700	9,507	37,924	50,450	49,644	31,510	8,646	9,606	13,963	283,615	
Total	59,137	21,673	26,724	27,174	14,468	11,291	46,808	61,947	60,748	38,699	10,602	11,949	17,431	349,452	

Table F.14.7 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal; Balamoun, Downstream+DS+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
Fr. Damietta	6,608	2,423	2,971	3,030	1,529	1,003	5,020	6,497	6,274	4,083	1,105	1,324	1,959	37,203	
Balamoun	8,611	3,157	3,871	3,949	1,993	1,313	6,542	8,467	8,176	5,294	1,440	1,725	2,553	48,480	
Downstream															
Fr. Damietta	5,400	1,980	2,428	2,476	1,250	823	4,102	5,309	5,127	3,320	903	1,082	1,601	30,402	
After K. Saad PS	28,381	10,773	13,209	13,473	6,799	4,490	22,320	28,888	27,997	18,083	4,914	5,886	8,711	165,415	
Before K. Saad PS	14,995	5,388	6,608	6,739	3,401	2,241	11,164	14,448	13,953	9,034	2,458	2,944	4,357	82,733	
Midstream															
Before K. Saad PS	8,185	2,989	3,732	3,769	2,210	2,255	7,039	9,717	9,795	6,080	1,682	1,681	2,375	53,305	
Total (Fr. Damietta)	12,008	4,403	5,398	5,506	2,779	1,831	9,122	11,807	11,402	7,382	2,008	2,406	3,560	67,605	
Total (Fr. Balamoun)	60,852	22,308	27,418	27,930	14,402	10,289	47,065	61,521	59,822	38,452	10,494	12,236	17,997	349,932	
Total (+0.0% D)	60,852	22,308	27,418	27,930	14,402	10,289	47,065	61,521	59,822	38,452	10,494	12,236	17,997	349,932	
Total	72,860	26,711	32,817	33,436	17,181	12,119	56,187	73,327	71,223	45,834	12,502	14,842	21,557	417,537	

Table F.14.8 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal; El Sahel, Downstream+DS+Midstream+Upstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Balamoun (Fr. Damietta)	12,008	4,403	5,398	5,506	2,779	1,831	9,122	11,807	11,402	7,382	2,008	2,406	3,560	67,605	
Balamoun (Fr. Balamoun)	60,852	22,308	27,418	27,930	14,402	10,289	47,065	61,521	59,822	38,452	10,494	12,236	17,997	349,932	
Balamoun (+0.0% D)	60,852	22,308	27,418	27,930	14,402	10,289	47,065	61,521	59,822	38,452	10,494	12,236	17,997	349,932	
Balamoun (Total)	72,860	26,711	32,817	33,436	17,181	12,119	56,187	73,327	71,223	45,834	12,502	14,842	21,557	417,537	
Downstream															
After B. PS	13,004	4,768	5,946	5,963	3,009	1,993	9,879	12,786	12,347	7,995	2,175	2,605	3,856	73,212	
Before B. PS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total of DS'	13,004	4,768	5,946	5,963	3,009	1,993	9,879	12,786	12,347	7,995	2,175	2,605	3,856	73,212	
Midstream															
Total at B'ndry (Fr. Damietta)	28,878	9,840	12,288	12,407	7,274	7,424	23,172	31,989	32,244	19,850	5,536	5,533	7,818	175,472	
Total at B'ndry (Fr. Balamoun)	100,734	36,916	45,550	46,300	24,685	19,995	80,116	106,295	104,413	66,397	18,205	20,374	29,670	598,617	
Total at B'ndry (+0.0% D)	106,768	39,998	49,329	50,154	26,831	20,877	84,677	112,198	110,114	70,088	19,209	22,058	32,163	637,598	
Total at B'ndry	112,742	41,319	50,949	51,806	27,464	21,526	89,239	118,101	115,815	73,779	20,213	22,780	33,231	666,222	
Upstream															
Total (Fr. Damietta)	12,008	4,403	5,398	5,506	2,779	1,831	9,122	11,807	11,402	7,382	2,008	2,406	3,560	67,605	
Total (Ex. Damietta)	108,754	39,865	49,431	50,400	26,973	21,970	86,440	115,292	113,620	72,130	19,938	21,956	31,900	649,915	
Total (+0.0% D)	108,754	39,865	49,431	50,400	26,973	21,970	86,440	115,292	113,620	72,130	19,938	21,956	31,900	649,915	
Total	120,762	44,268	54,829	55,906	29,752	23,801	95,563	127,099	125,021	78,512	21,947	24,362	35,461	717,519	

Table F.14.9 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr El Mallah, Upstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Upstream	67,080	24,663	32,457	34,293	18,131	19,029	52,894	75,252	77,005	47,954	14,406	13,233	18,650	429,060	

Table F.14.10 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr Shebin) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
<i>Beasandila (Drainage)</i>	11,694	4,288	5,657	5,282	2,708	1,263	8,684	11,408	11,103	7,189	1,958	2,349	3,487	66,697	
<i>Beasandila (Ex. Drainage)</i>	17,443	17,386	21,467	21,812	11,700	9,507	37,924	50,450	49,644	31,510	8,646	9,608	13,963	283,815	
<i>Bahr Shebin (MS)</i>	5,025	1,840	2,297	2,329	1,360	1,388	4,332	5,980	6,028	3,730	1,035	1,034	1,482	32,806	
<i>Raiyah Bilqas (Drainage)</i>	35,400	12,880	15,915	16,233	8,192	5,998	26,883	34,808	33,612	21,763	5,921	7,082	10,408	199,307	
<i>Raiyah Bilqas (Ex. Drainage)</i>	114,309	41,881	51,832	52,587	28,780	24,710	92,867	124,567	123,257	77,776	21,397	23,225	33,561	696,431	
<i>Bahr Shebin (MS)</i>	35,545	13,013	16,247	16,408	9,619	9,817	30,844	42,304	42,641	26,383	7,321	7,317	10,339	232,055	
<i>Bahr Tera (Drainage)</i>	14,550	5,332	6,577	6,688	3,551	2,600	11,535	15,278	14,891	9,544	2,616	2,921	4,288	68,138	
<i>Bahr Tera (Ex. Drainage)</i>	149,115	54,640	67,521	68,575	37,031	30,899	119,874	159,930	157,684	99,877	27,432	30,228	43,850	897,342	
<i>Bahr Shebin (MS)</i>	1,978	725	905	914	536	547	1,708	2,355	2,374	1,488	408	407	578	12,920	
<i>Total of Above (Drainage)</i>	81,844	22,600	27,748	28,282	14,450	9,981	47,312	61,582	59,707	36,487	10,492	12,378	18,251	361,278	
<i>Total of Above (Ex. Drainage)</i>	353,416	129,483	160,269	162,624	99,006	76,688	287,348	385,587	381,629	240,745	86,238	71,818	103,752	2,155,168	
<i>Total of Above</i>	415,060	152,084	188,018	180,906	103,455	88,649	334,660	447,169	441,336	279,242	76,731	84,193	122,003	2,508,446	
<i>Bahr Shebin (US)</i>	18,470	6,781	8,937	9,442	5,288	5,239	14,584	20,720	21,203	13,204	3,992	3,844	5,135	118,139	
<i>Bahr Sahel (Fr. Damietta)</i>	12,008	4,403	5,398	5,506	2,779	1,831	9,122	11,807	11,402	7,382	2,008	2,406	3,580	67,605	
<i>Bahr Sahel (Ex. Damietta)</i>	108,754	39,865	49,431	50,400	26,973	21,970	86,440	115,292	113,600	72,130	19,938	21,956	31,900	649,915	
<i>Bahr El Mallah</i>	67,080	24,663	32,457	34,293	19,131	19,029	52,894	75,252	77,005	47,954	14,406	13,233	18,650	429,060	
<i>Bahr Shebin (US)</i>	20,025	7,382	9,889	10,237	5,711	5,681	15,780	22,465	22,888	14,315	4,328	3,951	5,588	128,985	
<i>Total (Fr. Damietta)</i>	12,008	4,403	5,398	5,506	2,779	1,831	9,122	11,807	11,402	7,382	2,008	2,406	3,580	67,605	
<i>Total (Drainage)</i>	81,844	22,600	27,748	28,282	14,450	9,981	47,312	61,582	59,707	36,487	10,492	12,378	18,251	361,278	
<i>Total (Ex. Above both)</i>	567,745	208,164	260,783	266,997	148,088	128,587	457,038	619,316	616,445	388,349	108,992	114,601	165,005	3,490,365	
<i>Total (Ex. Damietta)</i>	629,389	230,764	288,532	295,280	180,538	138,568	504,349	680,898	676,152	428,846	119,494	126,977	183,256	3,631,643	
<i>Total of Bahr Shebin</i>	641,397	235,167	293,930	300,788	163,317	140,389	513,471	692,704	687,554	434,228	121,493	128,383	186,817	3,899,248	
+0.0 * Drainage															
<i>Beasandila</i>	47,443	17,386	21,467	21,812	11,700	9,507	37,924	50,450	49,644	31,510	8,646	9,608	13,963	283,815	
<i>Bahr Shebin (MS)</i>	5,025	1,840	2,297	2,329	1,360	1,388	4,332	5,980	6,028	3,730	1,035	1,034	1,482	32,806	
<i>Raiyah Bilqas</i>	114,309	41,881	51,832	52,587	28,780	24,710	92,867	124,567	123,257	77,776	21,397	23,225	33,561	696,431	
<i>Bahr Shebin (MS)</i>	35,545	13,013	16,247	16,408	9,619	9,817	30,844	42,304	42,641	26,383	7,321	7,317	10,339	232,055	
<i>Bahr Tera</i>	149,115	54,640	67,521	68,575	37,031	30,899	119,874	159,930	157,684	99,877	27,432	30,228	43,850	897,342	
<i>Bahr Shebin (MS)</i>	1,978	725	905	914	536	547	1,706	2,355	2,374	1,489	408	407	578	12,920	
<i>Total of Above</i>	353,416	129,483	160,269	162,624	99,006	76,688	287,349	385,587	381,629	240,745	86,238	71,818	103,752	2,155,168	
<i>Bahr Shebin (US)</i>	18,470	6,781	8,937	9,442	5,288	5,239	14,584	20,720	21,203	13,204	3,992	3,844	5,135	118,139	
<i>Bahr El Sahel</i>	108,754	39,865	49,431	50,400	26,973	21,970	86,440	115,292	113,620	72,130	19,938	21,956	31,900	649,915	
<i>Bahr El Mallah</i>	67,080	24,663	32,457	34,293	19,131	19,029	52,894	75,252	77,005	47,954	14,406	13,233	18,650	429,060	
<i>Bahr Shebin (US)</i>	20,025	7,382	9,889	10,237	5,711	5,681	15,780	22,465	22,888	14,315	4,328	3,951	5,588	128,985	
<i>Total of Bahr Shebin</i>	567,745	208,164	260,783	266,997	148,088	128,587	457,038	619,316	616,445	388,349	108,992	114,601	165,005	3,490,365	



Table F.14.11 Comparison between Cropping Pattern DS170% Water Requirement based on Modified Penman Method and Availability. '000 CUM Irriga. Efficiency= 0.66

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Bahr Tera (Required)	149,115	54,040	67,521	62,575	37,031	30,699	119,874	159,930	157,684	99,877	27,432	30,228	43,850	897,342	
Bahr Tera (Available)	26%	32,127	41,973	78,222	86,432	104,322	151,922	165,290	153,939	120,257	71,373	74,712	52,990	1,133,458	
Surplus or Deficit, %		-70	-81	12	57	71	21	3	-2	17	62	60	17	21	
Rahbeen (Required)	363,416	129,483	160,269	162,624	89,006	76,668	287,349	385,587	381,629	240,745	66,238	71,818	103,752	2,155,168	
Rahbeen (Available)	62%	65,958	100,550	165,646	175,730	221,416	344,977	379,982	336,172	232,179	125,132	155,318	112,741	2,415,802	
Surplus or Deficit, %		-96	-59	2	49	65	17	-1	-14	-4	47	54	8	11	
Bahr El Sahel (Required)	108,754	39,865	49,431	50,400	26,973	21,970	86,440	115,292	113,620	72,130	19,938	21,956	31,900	649,915	
Bahr El Sahel (Available)	19%	21,386	27,318	47,985	52,629	62,617	93,264	98,446	89,747	69,368	36,356	41,902	26,150	667,199	
Surplus or Deficit, %		-86	-81	-5	49	65	7	-17	-27	-4	45	48	-22	3	
Bahr Shebin (Required)	567,745	208,164	260,783	266,997	146,089	128,587	457,038	619,316	616,445	388,349	108,992	114,601	165,005	3,490,385	
Bahr Shebin (Available)	100%	135,169	189,264	274,616	289,145	358,904	568,640	621,467	547,233	391,532	223,846	290,253	181,803	4,026,117	
Surplus or Deficit, %		-54	-55	3	49	64	20	0	-13	1	51	56	9	14	
After Bahr Tera (Raiah Bilqas & Beandila)															
Required	202,322	74,119	91,843	93,136	51,439	45,423	165,769	223,301	221,571	139,399	38,399	41,182	59,326	1,244,908	
Available	36%	33,107	57,672	86,511	88,762	116,549	191,349	212,337	179,960	110,453	53,351	80,198	59,175	1,269,424	
Surplus or Deficit, %		-124	-59	-8	42	61	13	-5	-23	-26	28	49	-0	2	
Before Sahel-Rahbeen (Upstream of Bahr Shebin)															
Required	105,575	38,816	51,083	53,873	30,109	29,949	83,249	118,437	121,196	75,474	22,816	20,828	29,353	675,283	
Available	19%	47,825	40,396	60,985	60,787	72,871	130,399	143,039	121,314	89,985	62,357	63,003	42,911	943,117	
Surplus or Deficit, %		19	-26	11	50	59	36	17	0	16	63	67	32	28	
Irrigation Efficiency=	0.66														
Total of Bahr Shebin DS	303,927														
Total of Bahr Shebin MS	223,875														
Total of Bahr Shebin UP	113,595														
Total of Bahr Shebin	641,397														
Total of Other US	53,826														
Total	695,223														
Total of Upstream	167,421														
Total of Midstream	223,875														
Total of Downstream	303,927														
New Reclamation area	56,000														
Total	751,223														

695,223 Excluding New Reclamation Area of 56,000 feddan

695,223 (excluding New Reclamation Area of 56,000 feddan)





Table F.14.14. Unit Water Requirement based on Modified Penman Method in CUM per fadden (Downstream Area)

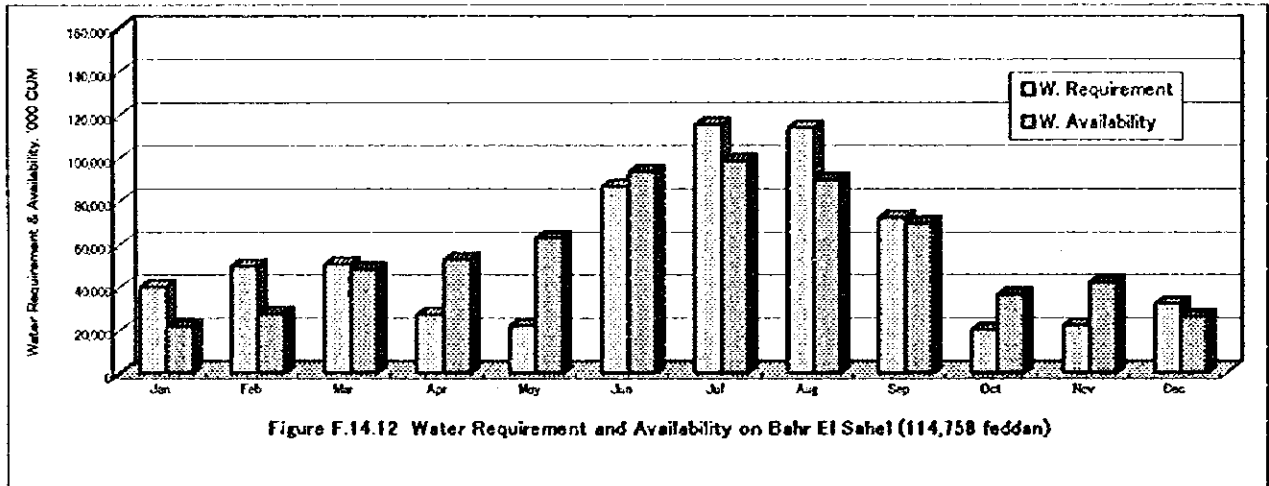
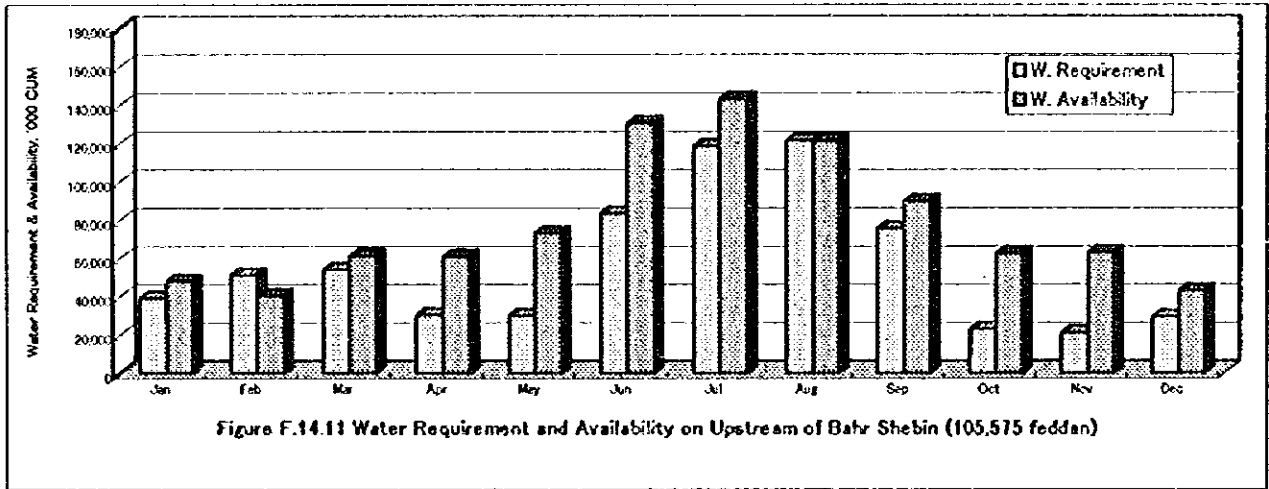
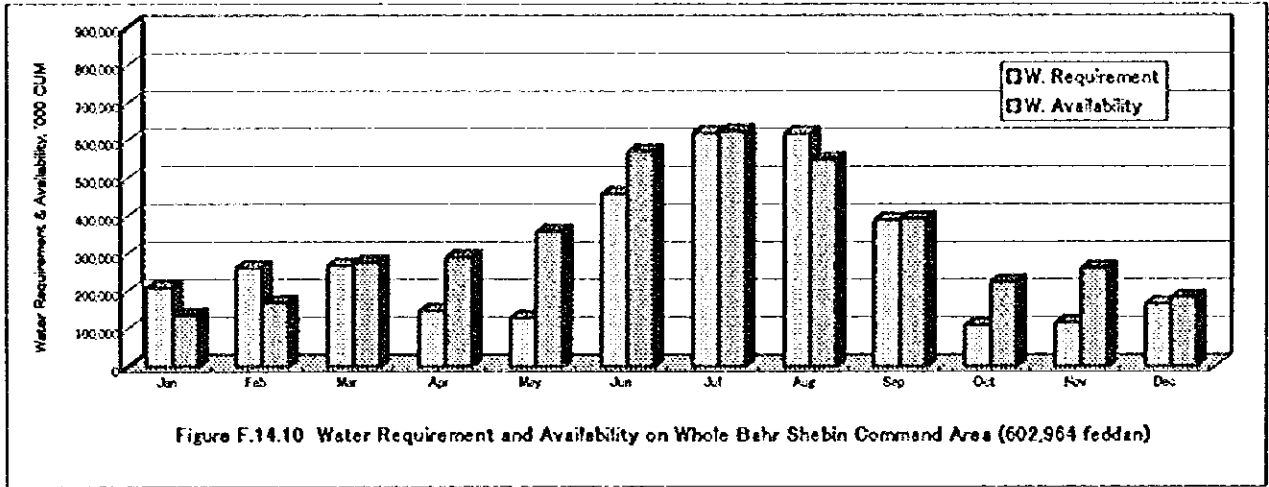
Crop	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Area																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
1% area/month	22	24	25	26	27	28	33	38	45	48	50	55	60	65	68	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000

Table F.14.15. Unit Water Requirement based on Modified Panman Method in CUM per feedlot (Downstream Area)

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks						
ET <sub>a</sub> , mm/10days	24	24	25	27	28	33	35	38	45	48	50	55	60	64	67	69	72	74	74	1,839
Short Duration	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	1,839
Net W. Req. CUM/10days	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	197
Wheat	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	349
Net W. Req. CUM/10days	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	353
Long Duration	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	353
Net W. Req. CUM/10days	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	121
Broad Beans	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	109	1,127
Winter Crop	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	1,127
Net W. Req. CUM/10days	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	104
Sugar Beet	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	1,040
Net W. Req. CUM/10days	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	121
Winter Vegetable	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	1,127
Onion	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	1,127
Net W. Req. CUM/10days	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	167
Cotton	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	1,127
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	480
Summer Maize	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	480
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	201
Maize	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	201
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,024
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,024
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,363
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,969
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	177
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,709
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,709
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,630
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,630
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,340

Table F.14.16. Specific of Gross Water Requirement per Feedlot based on Modified Panman Method, CUM/Feedlot

Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Ustunom	113,000	300	484	511	765	763	1122	1148	716	137	218	639	6,390
Midstream	223,076	366	467	462	271	276	862	1190	1200	742	206	200	2,911
Downstream	503,927	367	450	459	231	162	760	963	916	187	200	296	5,630
Total	840,003	1,133	1,102	1,112	1,056	1,149	2,142	3,100	3,116	1,145	414	514	14,951
Impreglon Efficiency	0.90												



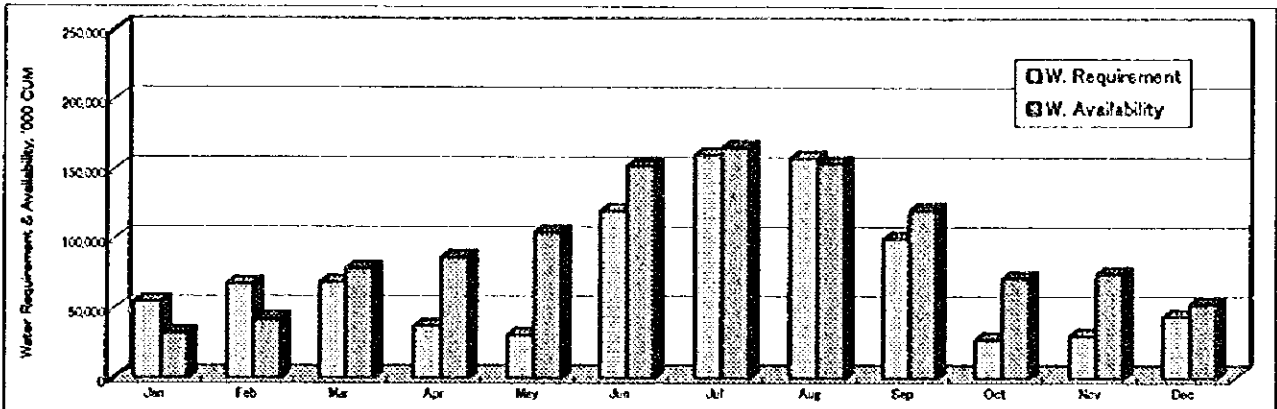


Figure F.14.13 Water Requirement and Availability on Bahr Tera (154,765 feddan)

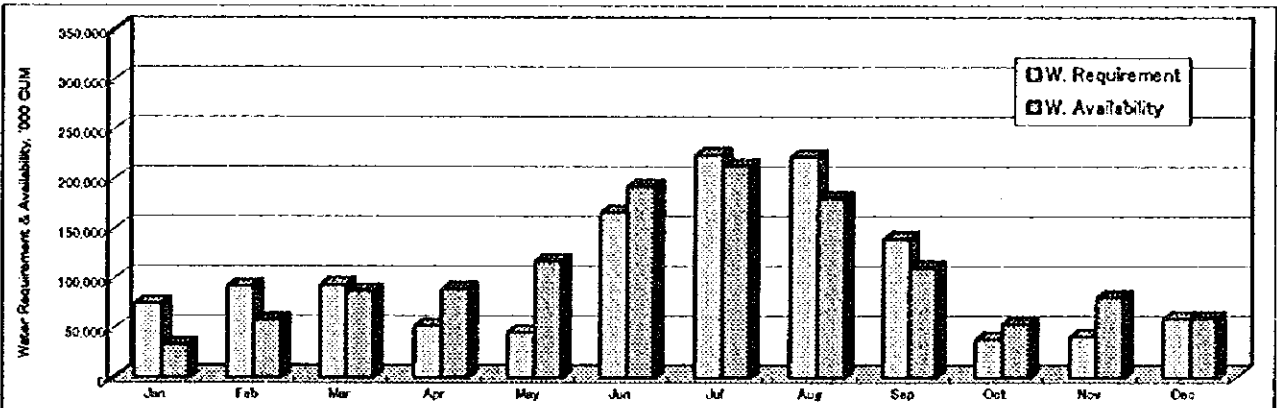


Figure F.14.14 Water Requirement and Availability on Raiah Bilqas & Basandila (225,869 feddan)

Table F.14.17 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr Tera, Downstream-Midstream)

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
<b>Downstream</b>															
After MPS															
Mixing	39,055	14,320	17,558	17,909	9,038	5,955	29,670	38,400	37,083	24,010	6,532	7,824	11,500	219,879	
<i>Drainage only</i>	3,260	1,192	1,461	1,490	752	496	2,469	3,167	3,086	1,928	544	651	964	18,297	
<i>Drainage (Mixed)</i>	6,600	2,420	2,967	3,027	1,527	1,006	5,014	6,499	6,367	4,058	1,104	1,322	1,957	37,158	
El Manour	45,700	16,757	20,545	20,957	10,576	6,968	34,718	44,933	43,392	28,096	7,644	9,156	13,550	257,290	
Before MPS															
Fresh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<i>Drainage (Mixed)</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total of D.S. (Drainage)	9,860	3,612	4,428	4,517	2,279	1,502	7,483	9,665	9,353	6,058	1,648	1,973	2,921	55,455	
Total of D.S. (Ex. Drainage)	84,755	31,077	38,103	38,866	19,614	12,923	64,387	83,333	80,475	52,108	14,176	16,980	25,130	477,169	
Total of D.S.	94,605	34,689	42,531	43,383	21,893	14,425	71,870	93,018	89,828	58,162	15,824	18,953	28,050	532,625	
<b>Midstream</b>															
Fresh	64,360	23,563	29,418	29,709	17,417	17,776	55,487	76,597	77,209	47,771	13,256	13,248	18,721	420,173	
<i>Drainage (Mixed)</i>	4,700	1,721	2,148	2,170	1,272	1,298	4,052	5,594	5,638	3,469	968	967	1,367	30,684	
Total (Drainage)	74,550	25,322	31,566	31,879	18,689	19,074	59,539	82,191	82,847	51,240	14,224	14,215	20,088	450,857	
Total (Ex. Drainage)	149,115	54,940	67,521	68,575	37,031	30,699	119,874	159,930	157,684	99,877	27,432	30,228	43,850	897,342	
Total (+0.7 or 0.5*0)	154,765	57,538	71,102	72,212	38,991	32,312	124,407	165,972	163,637	103,650	28,468	31,831	46,177	944,831	
Total	163,665	59,972	74,098	75,261	40,582	33,499	131,409	175,209	172,675	106,422	30,047	33,169	48,138	983,481	

Table F.14.18 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Raiah Bilgas, Downstream-Midstream)

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
<b>Downstream</b>															
El Eshah															
<i>Drainage only</i>	11,420	4,167	5,134	5,237	2,643	1,741	8,876	11,228	10,843	7,021	1,910	2,288	3,368	64,294	
Fresh	18,981	6,960	8,533	8,704	4,393	2,894	14,420	18,663	18,023	11,669	3,175	3,903	5,828	106,863	
El Nile															
<i>Drainage only</i>	23,880	8,793	10,781	10,998	5,549	3,656	18,217	23,579	22,769	14,743	4,011	4,804	7,110	135,007	
Fresh	11,921	4,261	5,224	5,329	2,689	1,772	8,928	11,426	11,034	7,144	1,944	2,328	3,446	65,426	
Total of El Nile (Drainage)	35,400	12,980	15,975	16,233	8,192	5,398	26,993	34,806	33,612	21,783	5,921	7,092	10,498	199,301	
Total of El Nile (Ex. Drain)	30,602	11,221	13,758	14,033	7,082	4,666	23,248	30,089	28,057	18,814	5,116	6,131	9,073	172,289	
Total of El Nile	66,002	24,201	28,672	30,266	15,274	10,064	50,141	64,895	62,669	40,577	11,039	13,223	19,569	371,590	
B. Hafr Shehab															
Total of D.S. (Drainage)	67,000	24,571	30,121	30,712	15,560	10,221	50,990	65,988	63,262	41,119	11,221	13,242	19,987	371,721	
Total of D.S. (Ex. Drainage)	35,400	12,980	15,975	16,233	8,192	5,398	26,993	34,806	33,612	21,783	5,921	7,092	10,498	199,301	
Total of D.S.	37,302	13,677	16,770	17,106	8,632	5,688	28,338	36,676	35,418	22,933	6,239	7,473	11,060	210,010	
Total of D.S. (Ex. Drainage)	72,702	26,658	32,684	33,339	16,824	11,085	55,231	71,482	69,031	44,698	12,160	14,565	21,556	469,311	
Downstream	18,161	6,659	8,165	8,328	4,203	2,769	13,787	17,856	17,244	11,165	3,038	3,638	5,395	102,246	
<b>Midstream</b>															
B. Hafr Shehab															
Total of B. Hafr (Drainage)	6,820	2,424	3,026	3,056	1,792	1,828	5,707	7,879	7,942	4,914	1,363	1,363	1,928	43,219	
Total of B. Hafr (Ex. Drain)	35,400	12,980	15,975	16,233	8,192	5,398	26,993	34,806	33,612	21,783	5,921	7,092	10,498	189,301	
Total of B. Hafr	62,063	22,760	27,960	28,499	14,627	10,285	47,842	62,411	60,904	39,012	10,640	12,474	19,370	355,474	
Raiah Bilgas															
Total of Raiah Bilgas	97,483	35,740	43,875	44,723	22,819	15,683	74,735	97,217	94,216	60,775	16,561	19,566	28,866	554,776	
B. E. Mansara															
Total of B. E. Mansara	14,248	5,216	6,513	6,577	3,856	3,935	12,284	16,957	17,093	10,576	2,935	2,935	4,144	93,018	
Total of M.S.	37,978	13,904	17,359	17,531	10,278	10,489	32,742	45,199	45,580	28,199	7,822	7,818	11,047	247,939	
Total of M.S. (Ex. Drainage)	58,946	21,544	26,898	27,164	15,925	16,253	50,733	70,035	70,594	43,678	12,120	12,113	17,117	384,175	
Total (Drainage)	35,400	12,980	15,975	16,233	8,192	5,398	26,993	34,806	33,612	21,783	5,921	7,092	10,498	189,301	
Total (Ex. Drainage)	114,309	41,881	51,832	52,597	28,760	24,710	92,867	124,597	123,257	77,776	21,397	23,225	33,561	696,431	
Total (+0.7 or 0.5*0)	132,009	50,967	62,972	63,960	34,495	28,488	106,314	141,970	140,063	89,658	24,357	28,189	40,909	811,243	
Total	149,709	54,861	67,747	68,830	36,952	30,107	119,760	159,374	158,869	99,540	27,318	30,317	44,058	895,732	



Table F.14.19 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Basandila, Downstream+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
Drainage only	11,694	4,288	5,257	5,392	2,706	1,783	8,884	11,498	11,193	7,189	1,956	2,343	3,467	65,837	
Downstream	29,086	10,658	13,067	13,329	6,726	4,432	22,081	29,578	27,598	17,889	4,882	5,823	8,918	163,641	
Midstream	18,377	6,728	8,400	8,483	4,873	5,076	15,843	21,871	22,046	13,640	3,785	3,783	5,345	119,974	
Total (Drainage)	11,694	4,288	5,257	5,392	2,706	1,783	8,884	11,498	11,193	7,189	1,956	2,343	3,467	65,837	
Total (Ex. Drainage)	47,443	17,386	21,467	21,812	11,700	9,507	37,924	50,450	49,644	31,510	8,646	9,606	13,963	283,615	
Total (+0.7 or 0.5*0)	53,290	20,387	25,147	25,585	13,594	10,756	42,366	58,198	55,196	35,104	9,624	11,246	16,390	321,575	
Total	59,137	21,673	26,724	27,174	14,406	11,291	46,808	61,947	60,748	38,699	10,902	11,949	17,431	349,452	

Table F.14.20 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Balamoun, Downstream+DS+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
Fr. Damietta	6,808	2,423	2,971	3,030	1,529	1,008	5,020	6,497	6,274	4,063	1,105	1,324	1,959	37,203	
Balamoun	8,611	3,157	3,871	3,949	1,993	1,313	6,542	8,467	8,176	5,294	1,440	1,725	2,553	43,480	
Downstream															
Fr. Damietta	5,400	1,980	2,428	2,476	1,250	823	4,102	5,309	5,127	3,320	903	1,082	1,601	30,402	
After K. Saad PS	29,381	10,773	13,209	13,473	6,799	4,490	22,320	28,988	27,897	18,063	4,914	5,886	8,711	165,415	
Before K. Saad PS	14,695	5,388	6,806	6,739	3,401	2,241	11,164	14,448	13,953	9,034	2,458	2,944	4,357	82,733	
Midstream															
Before K. Saad PS	8,165	2,989	3,732	3,769	2,210	2,255	7,039	9,717	9,795	6,060	1,892	1,681	2,375	53,305	
Total (Fr. Damietta)	12,008	4,403	5,398	5,506	2,779	1,831	9,122	11,807	11,402	7,382	2,008	2,406	3,560	67,605	
Total (Fr. Balamoun)	60,852	22,308	27,418	27,930	14,402	10,289	47,065	61,521	59,822	38,452	10,494	12,236	17,997	349,932	
Total (+0.7 or 0.5*0)	66,856	25,390	31,197	31,784	16,347	11,570	51,626	67,424	65,522	42,143	11,498	13,920	20,489	389,911	
Total	72,860	26,711	32,817	33,436	17,181	12,119	56,187	73,327	71,223	45,834	12,502	14,642	21,557	417,537	

Table F.14.21 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal: El Sahel, Downstream+DS'+Midstream+Upstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
Balamoun (Fr. Damietta)	12,008	4,403	5,398	5,506	2,779	1,831	9,122	11,807	11,402	7,382	2,008	2,406	3,560	67,605	
Balamoun (Fr. Balamoun)	60,852	22,308	27,418	27,930	14,402	10,289	47,065	61,521	59,822	38,452	10,494	12,236	17,997	349,932	
Balamoun (+0.7 or 0.5*0)	66,856	25,390	31,197	31,784	16,347	11,570	51,626	67,424	65,522	42,143	11,498	13,920	20,489	389,911	
Balamoun (Total)	72,860	26,711	32,817	33,436	17,181	12,119	56,187	73,327	71,223	45,834	12,502	14,642	21,557	417,537	
Downstream															
After B. PS	13,004	4,768	5,846	5,963	3,009	1,983	9,879	12,786	12,347	7,995	2,175	2,605	3,856	73,212	
Before B. PS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total of DS'	13,004	4,768	5,846	5,963	3,009	1,983	9,879	12,786	12,347	7,995	2,175	2,605	3,856	73,212	
Midstream															
Total at B'ndry (Fr. Damietta)	26,878	9,840	12,286	12,407	7,274	7,424	23,172	31,989	32,244	19,650	5,536	5,533	7,818	175,472	
Total at B'ndry (Fr. Balamoun)	12,008	4,403	5,398	5,506	2,779	1,831	9,122	11,807	11,402	7,382	2,008	2,406	3,560	67,605	
Total at B'ndry (Fr. Balamoun)	100,734	36,916	45,550	46,300	24,685	19,695	89,116	106,295	104,413	66,397	18,205	20,374	29,670	598,617	
Total at B'ndry (+0.7 or 0.5*0)	106,738	39,968	49,329	50,154	26,631	20,977	84,677	112,198	110,114	70,088	19,209	22,058	32,163	637,596	
Total at B'ndry	112,742	41,319	50,949	51,806	27,484	21,526	89,239	118,101	115,815	73,779	20,213	22,780	33,231	686,222	
Upstream															
Total	8,020	2,949	3,881	4,100	2,287	2,275	6,324	8,997	8,207	5,733	1,733	1,582	2,230	51,298	
Total (Fr. Damietta)	12,008	4,403	5,398	5,506	2,779	1,831	9,122	11,807	11,402	7,382	2,008	2,406	3,560	67,605	
Total (Ex. Damietta)	108,754	39,865	49,431	50,400	26,973	21,970	86,440	115,292	113,620	72,130	19,938	21,956	31,900	649,915	
Total (+0.5 or 0.7*0)	114,758	42,947	53,210	54,254	28,913	23,252	91,001	121,195	119,321	75,821	20,942	23,640	34,392	688,894	
Total	120,782	44,268	54,829	55,906	29,752	23,801	95,563	127,098	125,021	79,512	21,947	24,362	35,481	717,519	

Table F.14.22 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr El Mallah, Upstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Upstream	67,080	24,863	32,457	34,293	19,131	19,028	52,894	75,252	77,005	47,954	14,496	13,233	18,650	429,060	

Table F.14.23 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr Shebin) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
<b>Basandila (Drainage)</b>	<b>11,694</b>	<b>4,288</b>	<b>5,227</b>	<b>5,362</b>	<b>2,708</b>	<b>1,783</b>	<b>8,894</b>	<b>11,468</b>	<b>11,103</b>	<b>7,189</b>	<b>1,958</b>	<b>2,343</b>	<b>3,467</b>	<b>65,837</b>	
Basandila (Ex. Drainage)	47,443	17,386	21,467	21,812	11,700	9,507	37,924	50,450	31,510	8,646	9,606	9,906	13,963	283,615	
Bahr Shebin (MS)	5,025	1,840	2,297	2,320	1,360	1,388	4,332	5,990	6,028	3,730	1,035	1,034	1,482	32,806	
<b>Rajah Biqas (Drainage)</b>	<b>32,400</b>	<b>12,990</b>	<b>15,915</b>	<b>16,233</b>	<b>8,192</b>	<b>5,398</b>	<b>28,893</b>	<b>34,808</b>	<b>33,612</b>	<b>21,763</b>	<b>5,921</b>	<b>7,092</b>	<b>10,498</b>	<b>199,301</b>	
Rajah Biqas (Ex. Drainage)	114,309	41,881	51,832	52,597	28,760	24,710	92,867	124,587	123,257	77,778	21,397	23,225	33,581	688,431	
Bahr Shebin (MS)	35,545	13,013	16,247	16,408	9,619	9,817	30,644	42,304	42,641	26,393	7,321	7,317	10,339	232,055	
<b>Bahr Tera (Drainage)</b>	<b>14,530</b>	<b>5,332</b>	<b>6,577</b>	<b>6,686</b>	<b>3,551</b>	<b>2,800</b>	<b>11,535</b>	<b>15,278</b>	<b>14,991</b>	<b>9,544</b>	<b>2,676</b>	<b>2,941</b>	<b>4,268</b>	<b>86,139</b>	
Bahr Tera (Ex. Drainage)	149,115	54,840	67,521	68,575	37,031	30,699	119,874	159,950	157,684	99,877	27,432	30,228	43,850	887,942	
Bahr Shebin (MS)	1,979	725	905	914	538	547	1,706	2,355	2,374	1,469	408	407	576	12,920	
<b>Total of Above (Drainage)</b>	<b>61,644</b>	<b>22,600</b>	<b>27,749</b>	<b>28,282</b>	<b>14,450</b>	<b>9,981</b>	<b>47,312</b>	<b>61,592</b>	<b>59,707</b>	<b>38,497</b>	<b>10,492</b>	<b>12,378</b>	<b>18,251</b>	<b>351,278</b>	
Total of Above (Ex. Drainage)	353,418	129,483	160,269	162,824	89,006	76,668	287,349	385,587	381,629	240,745	66,238	71,818	103,752	2,155,168	
Total of Above	415,060	152,083	188,016	190,906	103,455	88,649	334,660	447,169	441,336	279,242	76,731	84,193	122,003	2,506,446	
Bahr Sahel (US)	18,470	6,791	8,937	9,442	5,288	5,239	14,594	20,720	21,203	13,204	3,992	3,644	5,135	118,139	
Bahr Sahel (Fr. Damietta)	12,008	4,403	5,398	5,506	2,779	1,831	9,122	11,807	11,402	7,382	2,008	2,406	3,560	67,605	
Bahr Sahel (Ex. Damietta)	108,754	39,865	49,431	50,400	26,973	21,970	86,440	115,292	113,620	72,130	19,938	21,950	31,900	649,915	
Bahr El Mallah	67,080	24,863	32,457	34,293	19,131	19,028	52,894	75,252	77,005	47,954	14,496	13,233	18,650	429,060	
Bahr Shebin (US)	20,025	7,362	9,689	10,237	5,711	5,681	15,790	22,465	22,988	14,315	4,328	3,951	5,568	128,085	
<b>Total (Fr. Damietta)</b>	<b>12,008</b>	<b>4,403</b>	<b>5,398</b>	<b>5,506</b>	<b>2,779</b>	<b>1,831</b>	<b>9,122</b>	<b>11,807</b>	<b>11,402</b>	<b>7,382</b>	<b>2,008</b>	<b>2,406</b>	<b>3,560</b>	<b>67,605</b>	
<b>Total (Drainage)</b>	<b>61,644</b>	<b>22,600</b>	<b>27,749</b>	<b>28,282</b>	<b>14,450</b>	<b>9,981</b>	<b>47,312</b>	<b>61,592</b>	<b>59,707</b>	<b>38,497</b>	<b>10,492</b>	<b>12,378</b>	<b>18,251</b>	<b>351,278</b>	
Total (Ex. Above both)	567,745	208,164	260,783	266,997	146,088	128,587	457,038	619,316	616,445	388,349	108,992	114,601	165,005	3,480,365	
Total (Ex. Damietta)	629,389	230,764	288,532	295,280	160,538	138,568	504,349	680,898	676,152	426,846	119,494	126,977	183,256	3,831,843	
Total of Bahr Shebin	641,397	235,167	293,930	300,786	163,317	140,399	513,471	692,704	687,554	434,228	121,493	129,383	186,817	3,899,248	
+0.7 or 0.5 * Drainage															
Basandila	53,290	20,387	25,147	25,565	13,594	10,756	42,366	56,198	55,196	35,104	9,624	11,246	16,390	321,575	
Bahr Shebin (MS)	5,025	1,840	2,297	2,320	1,360	1,388	4,332	5,990	6,028	3,730	1,035	1,034	1,482	32,806	
Rajah Biqas	132,009	50,967	62,972	63,960	34,495	28,488	106,314	141,970	140,063	88,858	24,357	28,188	40,909	811,343	
Bahr Shebin (MS)	35,545	13,013	16,247	16,408	9,619	9,817	30,644	42,304	42,641	26,393	7,321	7,317	10,339	232,055	
Bahr Tera	154,765	57,538	71,102	72,212	38,991	32,312	124,407	165,972	163,637	103,650	28,468	31,831	48,177	944,831	
Bahr Shebin (MS)	1,979	725	905	914	538	547	1,706	2,355	2,374	1,469	408	407	576	12,920	
Total of Above	382,613	144,469	178,670	181,379	98,594	83,308	309,770	414,780	409,940	258,995	71,213	80,025	115,853	2,355,529	
Bahr Shebin (US)	18,470	6,791	8,937	9,442	5,288	5,239	14,594	20,720	21,203	13,204	3,992	3,644	5,135	118,139	
Bahr El Sahel	114,758	42,947	53,210	54,254	28,918	23,252	91,001	121,195	119,321	75,921	20,942	23,940	34,392	688,894	
Bahr El Mallah	67,080	24,863	32,457	34,293	19,131	19,028	52,894	75,252	77,005	47,954	14,496	13,233	18,650	429,060	
Bahr Shebin (US)	20,025	7,362	9,689	10,237	5,711	5,681	15,790	22,465	22,988	14,315	4,328	3,951	5,568	128,085	
Total of Bahr Shebin	602,946	226,232	282,963	289,608	157,622	136,508	494,020	654,412	650,456	410,289	114,970	124,493	179,599	3,719,706	

Table F.14.24 Comparison between Cropping Pattern DS170% Water Requirement based on Modified Penman Method and Availability, '000 CUM Irriga. Efficiency= 0.66

Location	Area, 7	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Bahr Tera (Required)	154,785	57,538	71,102	72,212	38,991	32,312	124,407	165,972	163,637	103,850	28,468	31,831	46,177	944,831	
Bahr Tera (Available)	26%	32,127	41,973	78,222	86,432	104,322	151,922	165,290	153,839	120,257	71,373	74,712	52,990	1,133,458	
Surplus or Deficit, %		-79	-69	8	55	69	18	-0	-6	14	60	57	13	17	
Rahbeen (Required)	382,613	144,469	178,670	181,379	98,594	83,308	309,770	414,790	408,940	258,995	71,213	80,025	115,853	2,355,529	
Rahbeen (Available)	63%	65,958	100,550	166,646	175,730	221,416	344,977	379,982	336,172	232,179	125,132	155,318	112,741	2,415,802	
Surplus or Deficit, %		-119	-78	-9	44	62	10	-9	-22	-12	43	48	-3	2	
Bahr El Sahel (Required)	114,758	42,947	53,210	54,254	28,918	23,252	91,001	121,195	119,321	75,821	20,942	23,940	34,392	688,894	
Bahr El Sahel (Available)	19%	21,396	27,316	47,985	52,629	62,617	93,264	98,446	89,747	69,368	36,356	41,832	26,150	667,199	
Surplus or Deficit, %		-101	-95	-13	45	63	2	-23	-33	-9	42	44	-32	-3	
Bahr Shebin (Required)	602,946	228,232	282,963	289,606	157,622	138,508	484,020	654,412	650,456	410,289	114,970	124,493	179,599	3,719,706	
Bahr Shebin (Available)	100%	135,169	168,264	274,616	289,145	356,904	568,640	621,467	547,233	391,532	223,846	260,253	181,803	4,028,117	
Surplus or Deficit, %		-67	-68	-5	45	62	15	-5	-19	-5	49	52	1	8	
After Bahr Tera (Raiah Bilqas & Basandila)															
Required	225,869	86,207	106,664	103,253	59,068	50,449	183,657	246,453	243,929	153,875	42,337	47,796	69,100	1,397,778	
Available	37%	33,107	57,672	86,511	88,762	116,548	191,349	212,337	179,860	110,453	53,351	60,198	59,175	1,269,424	
Surplus or Deficit, %		-160	-85	-25	33	57	4	-16	-36	-39	21	40	-17	-10	
Before Sahel-Rahbeen (Upstream of Bahr Shebin)															
Required	105,575	33,816	51,083	53,973	30,109	29,949	83,249	118,437	121,198	75,474	22,816	29,828	29,353	675,283	
Available	18%	47,825	40,396	60,985	60,797	72,871	130,399	143,039	121,314	89,985	62,357	63,003	42,911	943,117	
Surplus or Deficit, %		19	-26	11	50	59	36	17	0	16	63	67	32	28	
Irrigation Efficiency=	0.66														
Total of Bahr Shebin DS	303,927														
Total of Bahr Shebin MS	223,875														
Total of Bahr Shebin UP	113,595														
Total of Bahr Shebin	641,397														
Total of Other US	53,826														
Total	695,223														
Excluding New Reclamation Area of 56,000 feddan															
Total of Upstream	167,421														
Total of Midstream	223,875														
Total of Downstream	303,927														
New Reclamation area	56,000														
Total	751,223														
695,223 (excluding New Reclamation Area of 56,000 feddan)															

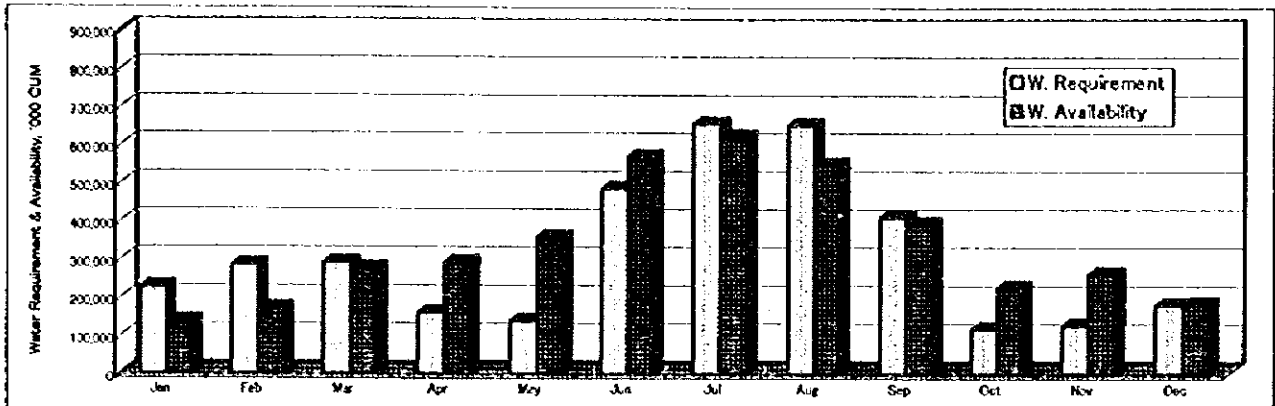


Figure F.14.15 Water Requirement and Availability on Whole Bahr Shebin Command Area (602,964 feddan)

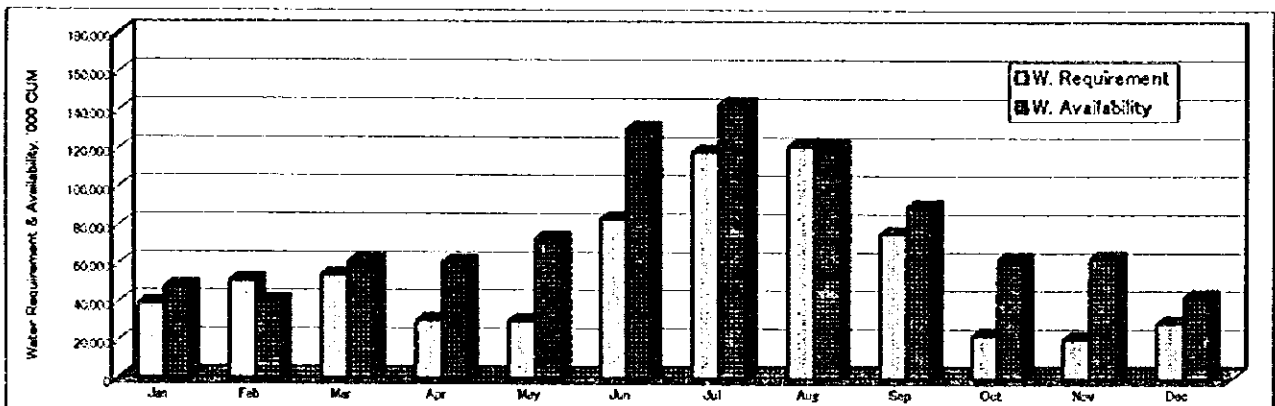


Figure F.14.16 Water Requirement and Availability on Upstream of Bahr Shebin (105,575 feddan)

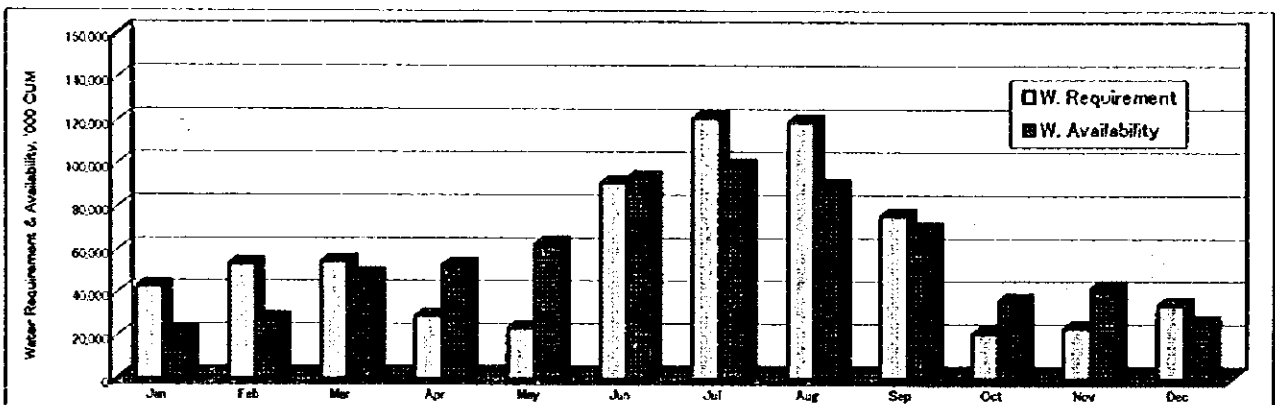


Figure F.14.17 Water Requirement and Availability on Bahr El Sahel (114,758 feddan)

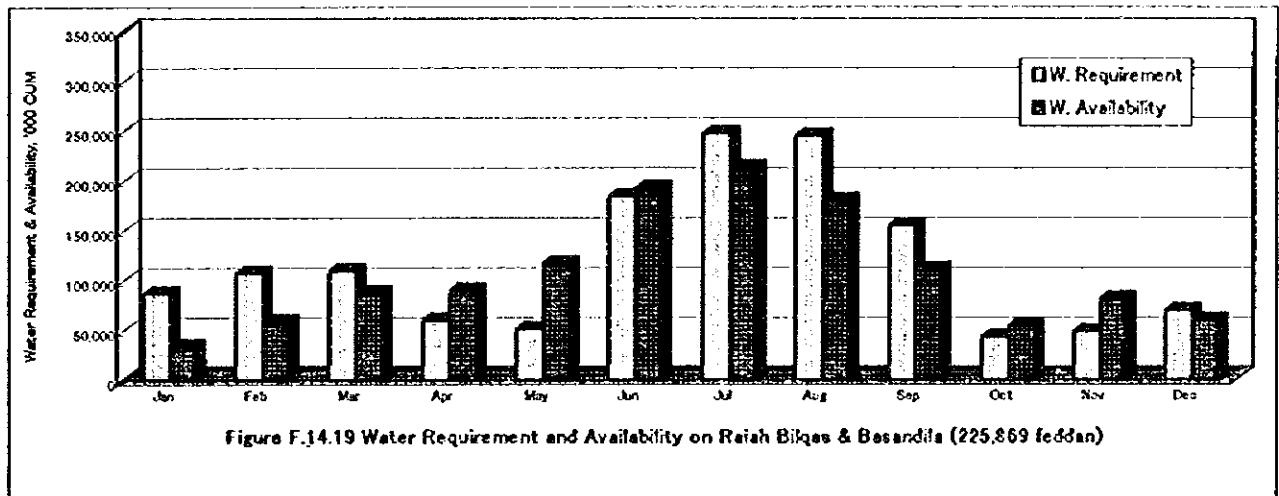
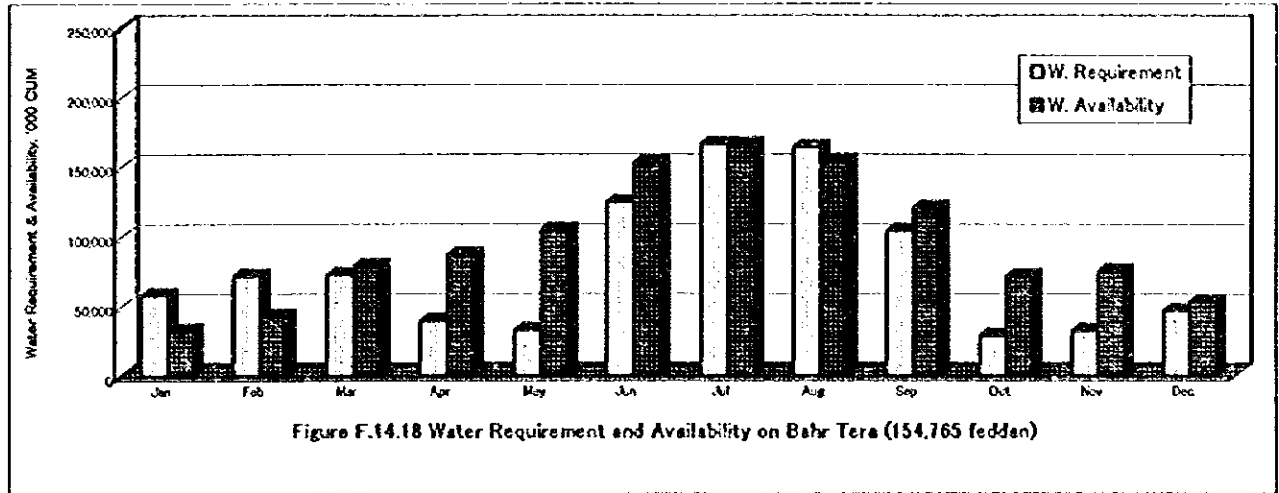


Table F.14.25 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal; Bahr Yera, Downstream+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
After MPS															
Mixing	39,055	13,874	17,011	17,352	8,757	5,769	28,746	37,204	35,928	23,263	6,329	7,581	11,219	213,032	
Drainage only	3,250	1,155	1,418	1,444	729	480	2,392	3,086	2,990	1,936	527	631	934	17,728	
Drainage (Mixed)	6,600	2,346	2,875	2,892	1,480	975	4,658	6,282	6,072	3,931	1,070	1,261	1,868	36,001	
El Mansour	45,700	16,235	19,905	20,304	10,246	6,751	33,637	43,534	42,041	27,221	7,408	8,870	13,128	249,278	
Before MPS															
Fresh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Drainage (Mixed)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total of D.S. (Drainage)	3,850	3,499	3,290	3,376	2,208	1,453	7,250	9,363	9,081	5,867	1,596	1,912	2,830	53,729	
Total of D.S. (Ex. Drainage)	84,755	30,109	36,916	37,656	19,003	12,521	62,382	80,738	77,969	50,484	13,735	16,451	24,347	462,310	
Total of D.S.	94,605	33,608	41,207	42,032	21,211	13,976	69,632	90,121	87,031	56,351	15,331	18,363	27,177	516,039	
Midstream															
Fresh	64,360	22,829	28,502	28,784	16,875	17,223	53,759	74,212	74,805	46,284	12,843	12,836	18,138	407,089	
Drainage (Mixed)	4,700	1,667	2,061	2,102	1,232	1,258	3,926	5,419	5,463	3,380	838	937	1,325	29,728	
Total (Drainage)	14,550	5,166	6,372	6,478	3,447	2,213	11,178	14,803	14,324	9,247	2,534	2,849	4,154	83,457	
Total (Ex. Drainage)	149,115	52,938	65,419	66,439	35,878	29,743	116,141	154,950	152,774	96,767	26,577	29,287	42,485	869,399	
Total (+0.0% D)	149,115	52,938	65,419	66,439	35,878	29,743	116,141	154,950	152,774	96,767	26,577	29,287	42,485	869,399	
Total	163,865	58,105	71,790	72,918	39,319	32,458	127,317	169,753	167,298	106,014	29,112	32,136	46,639	952,856	

Table F.14.26 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal; Raiah Bilqas, Downstream+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
El Esrah															
Drainage only	11,420	4,027	4,974	5,074	2,560	1,667	8,405	10,879	10,506	6,602	1,661	2,217	3,281	62,292	
Fresh	18,981	8,743	8,267	8,433	4,256	2,804	13,971	18,081	17,481	11,308	3,076	3,694	5,453	103,535	
El Nile															
Drainage only	23,980	8,519	19,445	10,664	5,277	3,542	17,650	22,843	22,060	14,293	3,698	4,655	6,882	130,803	
Fresh	11,621	4,128	5,082	5,163	2,608	1,717	8,553	11,070	10,891	6,922	1,983	2,256	3,338	63,389	
Total of El Nile (Drainage)	35,400	12,578	14,419	15,728	7,837	5,229	26,055	33,722	32,568	21,088	5,327	6,871	10,169	193,095	
Total of El Nile (Ex. Drain)	30,602	10,871	13,329	13,596	6,861	4,521	22,524	29,152	28,152	18,228	4,959	5,940	8,791	166,924	
Total of El Nile	66,002	23,447	28,748	29,324	14,798	9,750	48,579	62,874	60,718	39,313	10,896	12,811	18,960	360,019	
B. Hafr Shehab	6,700	2,380	2,918	2,977	1,502	990	4,931	6,382	6,164	3,991	1,086	1,300	1,925	36,546	
Total of D.S. (Drainage)	39,490	12,978	15,419	15,728	7,837	5,229	26,055	33,722	32,568	21,088	5,327	6,871	10,169	193,095	
Total of D.S. (Ex. Drainage)	27,302	13,252	16,247	16,573	8,363	5,510	27,455	35,534	34,315	22,219	6,045	7,240	10,716	203,470	
Total of D.S.	72,702	25,827	31,666	32,301	16,301	10,740	53,511	69,256	66,881	43,304	11,781	14,112	20,885	396,565	
Downstream	18,181	6,452	7,910	8,069	4,072	2,863	13,387	17,300	16,707	10,817	2,943	3,525	5,217	99,082	
Midstream															
B. Hafr Shehab	6,820	2,348	2,932	2,961	1,736	1,771	5,530	7,633	7,694	4,761	1,321	1,320	1,868	41,973	
Total of B. Hafr (Drainage)	35,400	12,578	15,419	16,728	7,837	5,229	26,055	33,722	32,568	21,088	5,327	6,871	10,169	193,095	
Total of B. Hafr (Ex. Drain)	62,083	22,051	27,089	27,602	14,171	9,985	46,352	60,468	58,717	37,797	10,309	12,086	17,798	344,405	
Total of B. Hafr	97,483	34,627	42,508	43,330	22,108	15,194	72,407	94,190	91,282	58,882	16,045	18,957	27,967	537,500	
Raiah Bilqas	14,248	5,054	6,310	6,372	3,736	3,813	11,901	16,429	16,360	10,246	2,943	2,842	4,015	90,121	
B. E. Mansara	37,978	13,471	16,819	16,985	9,958	10,763	31,722	43,792	44,141	27,311	7,578	7,574	10,703	240,218	
Total of M.S.	58,346	20,873	26,060	26,318	15,429	15,747	49,153	67,854	68,396	42,318	11,743	11,736	16,584	372,212	
Total (Drainage)	35,400	12,578	15,419	15,728	7,837	5,229	26,055	33,722	32,568	21,088	5,327	6,871	10,169	193,095	
Total (Ex. Drainage)	114,309	40,576	50,218	50,959	27,865	23,940	89,976	120,888	119,419	75,354	20,730	22,502	32,516	674,744	
Total (+0.0% D)	114,309	40,576	50,218	50,959	27,865	23,940	89,976	120,888	119,419	75,354	20,730	22,502	32,516	674,744	
Total	148,708	53,152	65,637	66,687	35,802	29,170	116,031	154,411	151,984	96,440	26,467	29,373	42,686	967,939	

Table F.14.27 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal; Balamou, Downstream+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
Drainage only	11,694	4,154	5,093	5,196	2,622	1,728	8,607	11,140	10,758	8,065	1,895	2,270	3,359	63,787	
Downstream	29,066	10,326	12,660	12,914	6,517	4,284	21,393	27,688	26,739	17,313	4,710	5,842	8,350	158,545	
Midstream	18,377	6,518	8,138	9,219	4,818	4,918	15,350	21,190	21,359	13,216	3,667	3,865	5,179	118,239	
Total (Drainage)	11,694	4,154	5,093	5,196	2,622	1,728	8,607	11,140	10,758	8,065	1,895	2,270	3,359	63,787	
Total (Ex. Drainage)	47,443	16,844	20,789	21,132	11,335	9,211	36,743	48,879	48,098	30,528	8,377	9,307	13,529	274,783	
Total (+0.0% D)	47,443	16,844	20,789	21,132	11,335	9,211	36,743	48,879	48,098	30,528	8,377	9,307	13,529	274,783	
Total	59,137	20,998	25,892	26,328	13,957	10,939	45,351	60,018	58,856	37,494	10,272	11,577	16,898	338,570	

Table F.14.28 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal; Balamou, Downstream+DS+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
Fr. Damietta	6,608	2,347	2,878	2,936	1,482	976	4,894	6,295	6,079	3,936	1,071	1,293	1,898	36,044	
Balamou	8,811	3,059	3,751	3,926	1,931	1,272	6,338	8,203	7,922	5,129	1,395	1,871	2,474	46,970	
Downstream															
Fr. Damietta	5,400	1,918	2,352	2,399	1,211	798	3,975	5,144	4,968	3,216	875	1,048	1,551	29,455	
After K. Saad PS	29,381	10,438	12,787	13,054	6,588	4,340	21,625	27,988	27,029	17,501	4,761	5,703	8,440	160,284	
Before K. Saad PS	14,695	5,220	6,401	6,529	3,295	2,171	10,816	13,999	13,518	8,753	2,381	2,852	4,221	80,156	
Midstream															
Before K. Saad PS	8,185	2,896	3,616	3,852	2,141	2,185	6,820	9,415	9,490	5,872	1,629	1,828	2,301	51,845	
Total (Fr. Damietta)	12,008	4,266	5,230	5,335	2,692	1,774	8,838	11,439	11,047	7,152	1,946	2,331	3,449	65,500	
Total (Fr. Balamou)	60,852	21,613	26,565	27,060	13,954	9,968	45,599	59,605	57,959	37,254	10,167	11,855	17,436	339,035	
Total (+0.0% D)	60,852	21,613	26,565	27,060	13,954	9,968	45,599	59,605	57,959	37,254	10,167	11,855	17,436	339,035	
Total	72,860	25,879	31,795	32,395	16,846	11,742	54,438	71,044	69,005	44,407	12,113	14,186	20,888	404,535	

Table F.14.29 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal; El Sahel, Downstream+DS+Midstream+Upstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Balamou (Fr. Damietta)	12,008	4,266	5,230	5,335	2,692	1,774	8,838	11,439	11,047	7,152	1,946	2,331	3,449	65,500	
Balamou (Fr. Balamou)	60,852	21,613	26,565	27,060	13,954	9,968	45,599	59,605	57,959	37,254	10,167	11,855	17,436	339,035	
Balamou (+0.0% D)	60,852	21,613	26,565	27,060	13,954	9,968	45,599	59,605	57,959	37,254	10,167	11,855	17,436	339,035	
Balamou (Total)	72,860	25,879	31,795	32,395	16,648	11,742	54,438	71,044	69,005	44,407	12,113	14,186	20,888	404,535	
Downstream															
After B. PS	13,004	4,620	5,664	5,778	2,916	1,921	9,571	12,388	11,963	7,746	2,107	2,524	3,736	70,933	
Before B. PS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total of DS	13,004	4,620	5,664	5,778	2,916	1,921	9,571	12,388	11,963	7,746	2,107	2,524	3,736	70,933	
Midstream															
Total at B'ndry (Fr. Damietta)	26,878	8,534	11,903	12,021	7,047	7,192	22,451	30,992	31,240	19,329	5,263	5,360	7,575	170,008	
Total at B'ndry (Fr. Balamou)	12,008	4,266	5,230	5,335	2,692	1,774	8,838	11,439	11,047	7,152	1,946	2,331	3,449	65,500	
Total at B'ndry (+0.0% D)	106,738	38,753	47,793	48,593	25,801	20,323	82,041	108,704	106,685	67,905	18,611	21,371	31,161	617,741	
Total at B'ndry	112,742	40,033	49,362	50,193	26,609	20,856	86,460	114,424	112,298	71,481	19,584	22,070	32,196	645,476	
Upstream															
Total (Fr. Damietta)	8,020	2,957	3,760	3,972	2,216	2,204	6,127	8,717	8,920	5,555	1,679	1,533	2,160	49,700	
Total (Ex. Damietta)	12,008	4,266	5,230	5,335	2,692	1,774	8,838	11,439	11,047	7,152	1,946	2,331	3,449	65,500	
Total (+0.0% D)	108,754	38,624	47,891	48,830	26,133	21,286	83,748	111,702	110,082	69,884	19,317	21,273	30,907	629,676	
Total	129,762	42,889	53,122	54,165	28,825	23,080	92,587	123,141	121,128	77,036	21,263	23,603	34,356	695,176	

Table F.14.30 Cropping Pattern DS:170% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr El Mailah, Upstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Upstream	67,080	23,895	31,447	33,226	18,535	18,436	51,247	72,908	74,607	46,461	14,045	12,821	18,070	415,699	

Table F.14.31 Cropping Pattern DS:170% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr Shebin) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
<i>Basandilla (Drainage)</i>	<i>11,684</i>	<i>4,154</i>	<i>5,083</i>	<i>5,188</i>	<i>2,622</i>	<i>1,728</i>	<i>11,140</i>	<i>10,758</i>	<i>6,885</i>	<i>1,885</i>	<i>1,885</i>	<i>2,272</i>	<i>3,358</i>	<i>63,782</i>	
Basandilla (Ex. Drainage)	47,443	16,844	20,799	21,132	11,335	9,211	36,743	48,878	48,098	30,528	8,377	9,307	13,529	274,783	
Bahr Shebin (MS)	5,025	1,782	2,225	2,247	1,318	1,345	4,197	5,794	5,841	3,614	1,003	1,002	1,416	31,784	
<i>Rajah Biliqa (Drainage)</i>	<i>35,402</i>	<i>12,576</i>	<i>15,418</i>	<i>15,728</i>	<i>7,827</i>	<i>5,229</i>	<i>26,055</i>	<i>33,722</i>	<i>32,588</i>	<i>21,086</i>	<i>5,727</i>	<i>6,871</i>	<i>10,188</i>	<i>183,085</i>	
Rajah Biliqa (Ex. Drainage)	114,309	40,576	50,218	50,959	27,865	23,940	89,976	120,888	119,419	75,354	20,730	22,502	32,516	674,744	
Bahr Shebin (MS)	35,545	12,908	15,741	15,897	9,320	9,512	29,890	40,986	41,314	25,562	7,093	7,089	10,017	224,829	
<i>Bahr Tera (Drainage)</i>	<i>14,550</i>	<i>5,166</i>	<i>6,372</i>	<i>6,478</i>	<i>3,441</i>	<i>2,713</i>	<i>11,176</i>	<i>14,893</i>	<i>14,524</i>	<i>9,247</i>	<i>2,534</i>	<i>2,849</i>	<i>4,154</i>	<i>83,457</i>	
Bahr Tera (Ex. Drainage)	149,115	52,938	65,419	66,439	35,878	29,743	116,141	154,950	152,774	96,767	26,577	29,287	42,485	888,399	
Bahr Shebin (MS)	1,979	702	878	885	519	530	1,653	2,282	2,300	1,423	395	395	558	12,518	
<i>Total of Above (Drainage)</i>	<i>61,644</i>	<i>21,886</i>	<i>26,884</i>	<i>27,402</i>	<i>14,000</i>	<i>9,670</i>	<i>45,838</i>	<i>59,685</i>	<i>57,848</i>	<i>37,288</i>	<i>10,166</i>	<i>11,890</i>	<i>17,683</i>	<i>340,339</i>	
Total of Above (Ex. Drainage)	353,416	125,451	155,279	157,580	86,234	74,281	278,401	373,580	369,745	233,248	64,176	69,581	100,521	2,088,057	
Total of Above	415,060	147,348	182,163	184,962	100,234	83,951	324,239	433,244	427,593	270,547	74,341	81,571	118,204	2,428,386	
Bahr Shebin (US)	18,470	6,579	8,659	8,148	5,104	5,076	14,111	20,075	20,543	12,783	3,867	3,530	4,975	114,460	
Bahr Sahel (Fr. Damietta)	12,008	4,266	5,230	5,335	2,992	1,774	8,838	11,439	11,047	7,152	1,946	2,331	3,449	65,500	
Bahr Sahel (Ex. Damietta)	108,754	39,624	47,891	48,830	26,133	21,286	83,748	111,702	110,082	69,894	19,317	21,273	30,907	629,676	
Bahr El Mailah	67,080	23,895	31,447	33,226	18,535	18,436	51,247	72,908	74,607	46,461	14,045	12,821	18,070	415,699	
Bahr Shebin (US)	20,025	7,133	9,388	9,919	5,533	5,504	15,289	21,765	22,272	13,670	4,193	3,827	5,394	124,086	
Total (Fr. Damietta)	12,008	4,266	5,230	5,335	2,992	1,774	8,838	11,439	11,047	7,152	1,946	2,331	3,449	65,500	
<i>Total (Drainage)</i>	<i>61,644</i>	<i>21,886</i>	<i>26,884</i>	<i>27,402</i>	<i>14,000</i>	<i>9,670</i>	<i>45,838</i>	<i>59,685</i>	<i>57,848</i>	<i>37,288</i>	<i>10,166</i>	<i>11,890</i>	<i>17,683</i>	<i>340,339</i>	
Total (Ex. Above both)	567,745	201,682	252,863	258,683	141,539	124,583	442,806	600,030	597,249	376,258	105,598	111,033	159,867	3,371,988	
Total (Ex. Damietta)	629,389	223,578	279,547	286,085	155,539	134,253	488,644	659,695	655,097	413,554	115,764	123,023	177,550	3,712,327	
Total of Bahr Shebin	641,397	227,844	294,777	291,420	158,231	136,027	497,482	671,134	666,143	420,708	117,709	125,354	190,999	3,777,827	
-0.0 * Drainage															
Basandilla	47,443	16,844	20,799	21,132	11,335	9,211	36,743	48,878	48,098	30,528	8,377	9,307	13,529	274,783	
Bahr Shebin (MS)	5,025	1,782	2,225	2,247	1,318	1,345	4,197	5,794	5,841	3,614	1,003	1,002	1,416	31,784	
Rajah Biliqa	114,309	40,576	50,218	50,959	27,865	23,940	89,976	120,888	119,419	75,354	20,730	22,502	32,516	674,744	
Bahr Shebin (MS)	35,545	12,908	15,741	15,897	9,320	9,512	29,890	40,986	41,314	25,562	7,093	7,089	10,017	224,829	
Bahr Tera	149,115	52,938	65,419	66,439	35,878	29,743	116,141	154,950	152,774	96,767	26,577	29,287	42,485	888,399	
Bahr Shebin (MS)	1,979	702	878	885	519	530	1,653	2,282	2,300	1,423	395	395	558	12,518	
Total of Above	353,416	125,451	155,279	157,580	86,234	74,281	278,401	373,580	369,745	233,248	64,176	69,581	100,521	2,088,057	
Bahr Shebin (US)	18,470	6,579	8,659	8,148	5,104	5,076	14,111	20,075	20,543	12,783	3,867	3,530	4,975	114,460	
Bahr El Sahel	108,754	39,624	47,891	48,830	26,133	21,286	83,748	111,702	110,082	69,894	19,317	21,273	30,907	629,676	
Bahr El Mailah	67,080	23,895	31,447	33,226	18,535	18,436	51,247	72,908	74,607	46,461	14,045	12,821	18,070	415,699	
Bahr Shebin (US)	20,025	7,133	9,388	9,919	5,533	5,504	15,289	21,765	22,272	13,670	4,193	3,827	5,394	124,086	
Total of Bahr Shebin	567,745	201,682	252,863	258,683	141,539	124,583	442,806	600,030	597,249	376,258	105,598	111,033	159,867	3,371,988	



Table F.14.32 Comparison between Cropping Pattern DS170% Water Requirement based on Modified Perman Method and Availability, '000 CUM Irriga. Efficiency= 0.68

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Bahr Tera (Required)	149,115	52,938	65,419	66,439	35,878	29,743	116,141	154,950	152,774	96,767	26,577	29,287	42,485	869,399	
Bahr Tera (Available)	26%	32,127	41,973	78,222	86,432	104,322	151,922	165,290	153,839	120,257	71,373	74,712	52,990	1,133,458	
Surplus or Deficit, %		-85	-56	15	58	71	24	6	1	20	63	61	20	23	
Rahbeen (Required)	353,416	125,451	155,279	157,560	86,234	74,231	278,401	373,590	399,745	233,248	64,176	69,531	100,521	2,088,057	
Rahbeen (Available)	62%	65,958	100,550	165,046	175,730	221,416	344,977	379,982	336,172	232,179	125,132	155,318	112,741	2,415,802	
Surplus or Deficit, %		-90	-54	5	51	66	19	2	-10	-0	49	55	11	14	
Bahr El Sahel (Required)	108,754	38,624	47,891	48,830	26,133	21,286	83,748	111,702	110,082	69,884	19,317	21,273	30,907	628,678	
Bahr El Sahel (Available)	19%	21,386	27,318	47,985	52,629	62,617	93,264	98,446	89,747	69,368	36,356	41,932	26,150	687,199	
Surplus or Deficit, %		-81	-75	-2	50	68	10	-13	-23	-1	47	49	-18	6	
Bahr Shebin (Required)	567,745	201,682	252,863	258,683	141,539	124,583	442,808	600,030	597,249	376,256	105,598	111,033	159,887	3,371,988	
Bahr Shebin (Available)	100%	135,169	188,284	274,616	289,145	356,904	588,640	621,467	547,233	391,532	223,846	260,253	181,903	4,026,117	
Surplus or Deficit, %		-49	-50	6	51	65	22	3	-9	4	53	57	12	16	
After Bahr Tera (Raiah Bilqas & Bazandila)															
Required	202,322	71,811	88,983	90,236	49,837	44,008	160,607	216,347	214,671	135,058	37,203	39,900	57,478	1,206,140	
Available	36%	33,129	57,700	96,539	88,779	116,585	191,402	212,410	180,034	110,499	53,364	80,211	59,193	1,269,826	
Surplus or Deficit, %		-117	-54	-4	44	62	16	-2	-19	-22	30	50	3	5	
Before Sahel-Rahbeen (Upstream of Bahr Shebin)															
Required	105,575	37,607	49,493	52,293	29,172	29,016	80,656	114,749	117,422	73,123	22,105	20,179	28,439	654,255	
Available	19%	47,825	40,396	60,985	60,787	72,871	130,399	143,039	121,314	89,985	62,357	63,003	42,911	943,117	
Surplus or Deficit, %		21	-23	14	52	60	38	20	3	19	65	68	34	31	
Irrigation Efficiency= 0.68															
Total of Bahr Shebin DS	303,927														
Total of Bahr Shebin MS	223,875														
Total of Bahr Shebin UP	113,595														
Total of Bahr Shebin	641,397														
Total of Other US	53,826														
Total	695,223	Excluding New Reclamation Area of 56,000 foddan													
Total of Upstream	167,421														
Total of Midstream	223,875														
Total of Downstream	303,927														
New Reclamation area	56,000														
Total	751,223	695,223 (excluding New Reclamation Area of 56,000 foddan)													



Table F-14.24 Unit Water Requirement based on Modified Penman Method in CUM per Feeder (Midstream Area)

Crop	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
ETc, mm/month	70	73	86	110	171	212	274	315	190	109	130	89	89	1746
ETc, mm/10days	24	24	28	37	57	61	68	74	63	58	47	37	37	574
Short Grassland	23	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	1995
Net W. Req. CUM/10days	34	0.87	0.90	0.98	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	578
Wheat	0.70	0.77	0.83	0.90	0.98	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	578
Net W. Req. CUM/10days	27	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	578
Long Grassland	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	578
Net W. Req. CUM/10days	2	1.09	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	578
Broad Beans	1.09	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	578
Net W. Req. CUM/10days	3	0.78	0.87	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	578
Winter Oats	0.78	0.87	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	578
Flax	0.87	0.70	0.78	0.87	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	578
Net W. Req. CUM/10days	10	0.70	0.76	0.82	0.89	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	578
Winter Vegetable	0.70	0.76	0.82	0.89	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	578
Chick	0.80	0.66	0.70	0.76	0.82	0.89	0.96	0.96	0.96	0.96	0.96	0.96	0.96	578
Net W. Req. CUM/10days	6	0.70	0.76	0.82	0.89	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	578
Corn	0.70	0.76	0.82	0.89	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	578
Net W. Req. CUM/10days	42	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	819
Summer Maize	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	819
Net W. Req. CUM/10days	21	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	819
Rice	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	819
Net W. Req. (ETc) CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	667
Lard Production, CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	667
Pork Production, CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	667
Net W. Req. CUM/10days	14	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	898
Summer Vegetable	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	898
Tomato	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	898
Net W. Req. CUM/10days	1	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	392
Tree Crops	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	392
Net W. Req. CUM/10days	199	78	79	87	98	97	108	108	94	75	68	42	67	4301
Net Total, CUM/Feeder	199	78	79	87	98	97	108	108	94	75	68	42	67	4301
Net Total, CUM/Feeder	199	18	13	21	23	23	26	26	22	17	14	10	15	1824
Net Total, CUM/Feeder	199	241	301	377	452	452	504	504	418	326	288	228	228	4301
Net Total, CUM/Feeder	199	266	344	421	504	504	556	556	466	388	348	288	288	4301
Net Total, CUM/Feeder	199	84	108	108	108	108	108	108	108	108	108	108	108	4301
Production Efficiency	0.68													0.68



Table F.14.38 Unit Water Requirement based on Modified Panman Method in CUM per Acre/Day (Downstream Area)

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
24	24	24	26	27	28	30	30	43	45	49	50	55	60	64	66	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000

Table F.14.37 Summary of Open Water Requirement for Various Crops based on Modified Panman Method (Downstream Area)

Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Upstream	113,500	360	469	490	276	276	764	1087	1117	690	209	191	269
Mid-Stream	232,876	366	443	447	282	280	835	1150	1182	719	200	199	287
Downstream	303,927	358	436	444	284	148	795	953	970	596	182	194	287
Total	649,303	1,124	1,149	1,161	846	704	1,994	3,032	3,069	2,005	581	584	843
Open Water Requirement	649,303	1,124	1,149	1,161	846	704	1,994	3,032	3,069	2,005	581	584	843
Evaporation Efficiency	0.98												

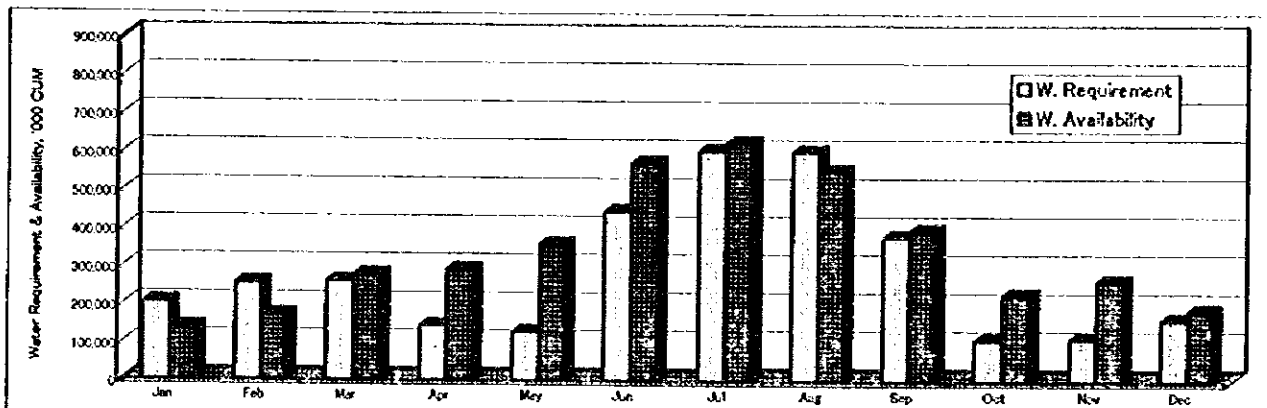


Figure F.14.20 Water Requirement and Availability on Whole Bahr Shebin Command Area (602,964 feddan)

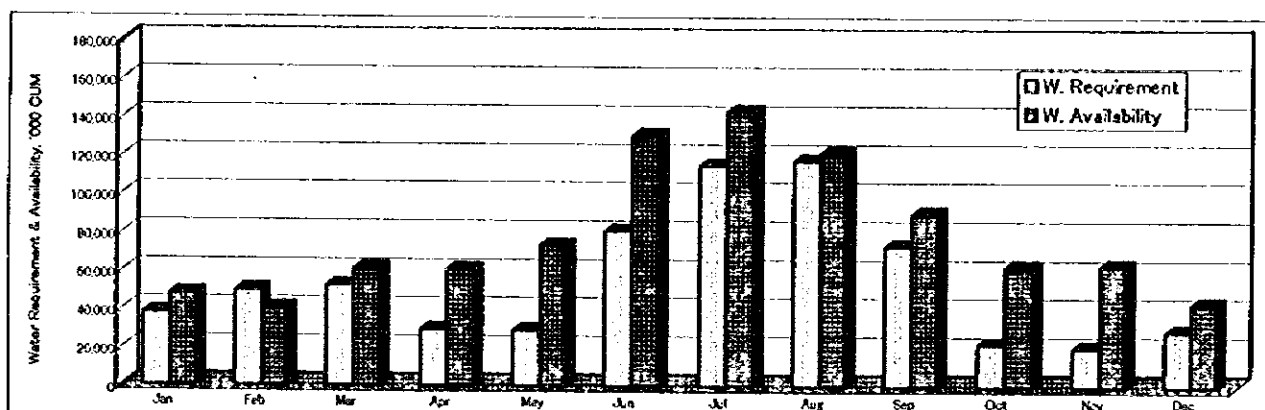


Figure F.14.21 Water Requirement and Availability on Upstream of Bahr Shebin (105,575 feddan)

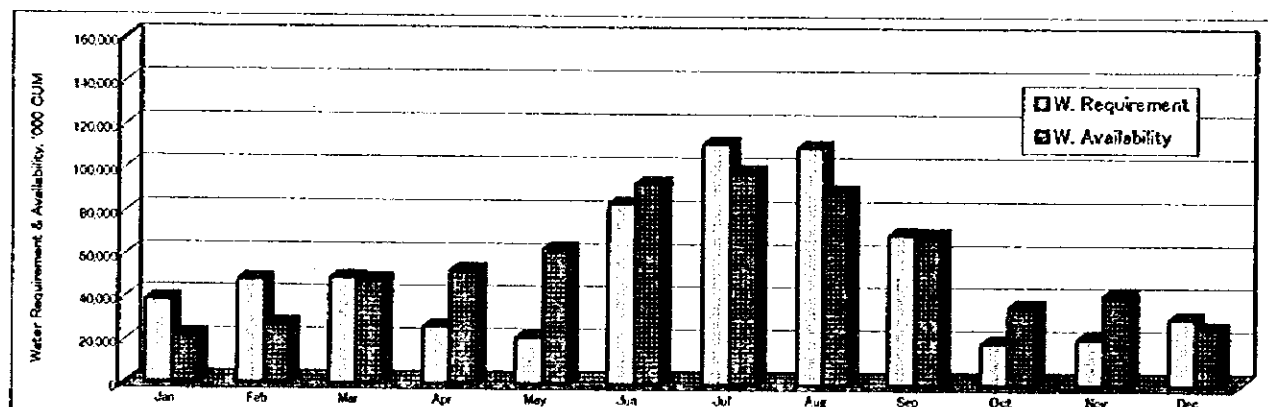


Figure F.14.22 Water Requirement and Availability on Bahr El Sahel (114,758 feddan)

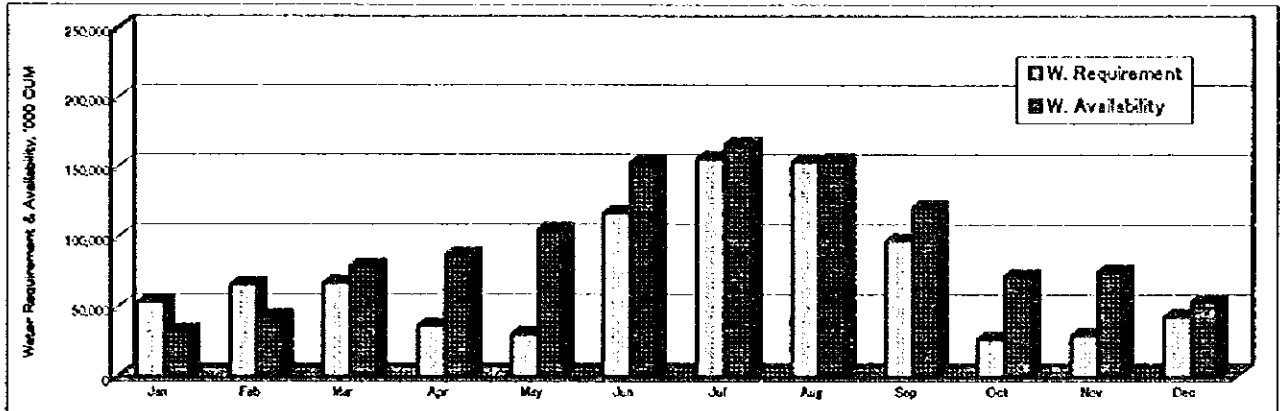


Figure F.14.23 Water Requirement and Availability on Bahr Tera (154,765 feddan)

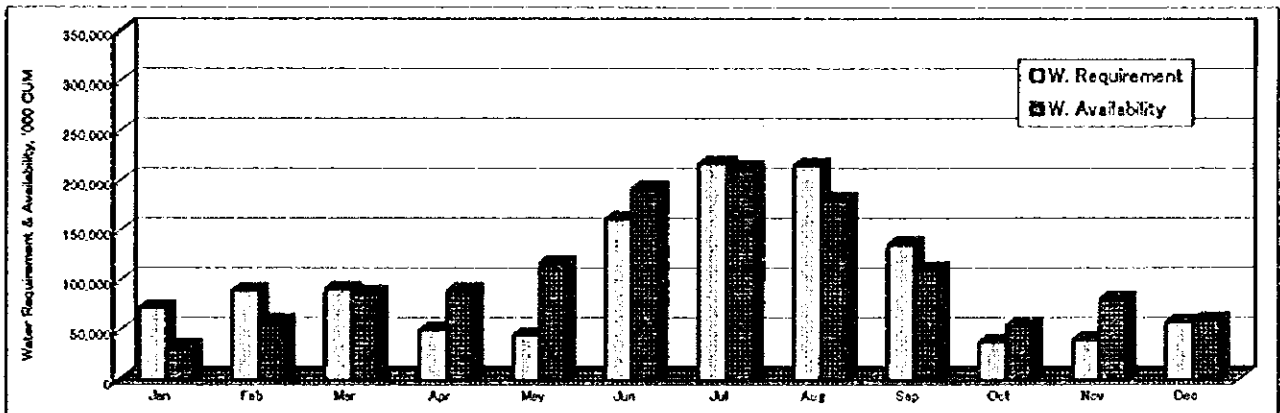


Figure F.14.24 Water Requirement and Availability on Reiah Bilqas & Basandila (225,869 feddan)

Table F.14.38 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal, Bahi Tera, Downstream+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
After MPS															
Mixing	39,055	13,874	17,011	17,352	8,757	5,769	28,746	37,204	35,928	23,263	6,329	7,581	11,219	213,032	
Drainage only	3,250	1,155	1,416	1,444	728	480	2,392	3,098	2,990	1,938	527	631	924	17,728	
Drainage (Mixed)	6,000	2,355	2,875	2,032	1,490	975	4,658	6,267	6,072	3,631	1,070	1,281	1,898	38,001	
Ei Mansour	45,700	18,235	19,905	20,304	10,246	6,751	33,637	43,534	42,041	27,321	7,406	8,870	13,128	249,278	
Before MPS															
Fresh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Drainage (Mixed)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total of D.S. (Drainage)	9,800	3,498	4,290	4,376	2,208	1,455	7,250	9,393	9,061	5,562	1,598	1,912	2,830	53,728	
Total of D.S. (Ex. Drainage)	84,755	30,109	36,916	37,656	19,003	12,521	62,382	80,738	77,969	50,484	13,735	16,451	24,347	482,310	
Total of D.S.	94,605	33,608	41,207	42,032	21,211	13,976	69,632	90,121	87,031	56,051	15,331	18,363	27,177	516,039	
Midstream															
Fresh	64,360	22,829	28,502	28,784	16,875	17,223	53,759	74,212	74,805	46,284	12,843	12,838	18,138	407,089	
Drainage (Mixed)	4,700	1,667	2,061	2,102	1,232	1,258	3,926	5,419	5,463	3,360	938	937	1,325	20,723	
Total (Ex. Drainage)	14,550	5,188	6,372	6,478	3,441	2,713	11,178	14,803	14,924	9,247	2,334	2,849	4,154	83,457	
Total (+0.7 or 0.5+D)	149,115	52,938	65,419	66,439	35,878	29,743	116,141	154,952	152,774	96,767	26,577	29,287	42,485	869,399	
Total	154,795	55,746	69,988	69,963	37,776	31,306	120,533	160,804	158,541	100,423	27,581	30,840	44,739	915,410	
Total	163,665	58,105	71,790	72,918	39,319	32,456	127,317	169,753	167,298	106,014	29,112	32,136	46,639	952,856	

Table F.14.39 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal, Raiha Bilqas, Downstream+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
Ei Eshah															
Drainage only	11,420	4,057	4,974	5,074	2,560	1,687	8,405	10,878	10,506	6,602	1,851	2,217	3,281	62,292	
Fresh	18,981	6,743	8,287	8,433	4,256	2,804	13,971	13,981	17,461	11,306	3,076	3,684	5,453	103,535	
Ei Nile															
Drainage only	23,980	8,618	10,445	10,654	5,277	3,542	17,650	22,843	22,060	14,203	3,896	4,655	6,889	130,803	
Fresh	11,621	4,128	5,082	5,163	2,808	1,717	8,553	11,070	10,691	6,922	1,893	2,258	3,338	63,389	
Total of Ei Nile (Drainage)	35,400	12,576	15,419	15,729	7,937	5,229	26,055	33,722	32,569	21,086	5,737	6,871	10,169	193,092	
Total of Ei Nile (Ex. Drain)	30,602	10,871	13,329	13,586	6,961	4,521	22,524	29,152	28,152	18,228	4,959	5,940	8,791	166,924	
Total of Ei Nile	66,002	23,447	28,748	29,324	14,798	9,750	48,579	62,874	60,718	39,313	10,696	12,811	18,960	360,019	
B. Hafir Shehab	6,700	2,380	2,918	2,977	1,502	990	4,931	6,382	6,164	3,991	1,098	1,300	1,925	36,548	
Total of D.S. (Drainage)	39,480	12,976	16,418	16,728	7,937	5,229	26,055	33,722	32,569	21,086	5,737	6,871	10,169	193,092	
Total of D.S. (Ex. Drainage)	37,302	13,252	16,247	16,573	8,363	5,510	27,455	35,534	34,315	22,219	6,045	7,240	10,716	203,470	
Total of D.S.	72,702	25,827	31,896	32,301	16,301	10,740	53,511	69,256	66,881	43,304	11,781	14,112	20,885	396,565	
Downstream'	18,161	6,452	7,910	8,069	4,072	2,683	13,367	17,300	16,707	10,817	2,943	3,525	5,217	99,062	
Midstream															
B. Hafir Shehab	6,820	2,348	2,932	2,961	1,736	1,771	5,530	7,633	7,694	4,761	1,321	1,320	1,866	41,873	
Total of B. Hafir (Drainage)	35,400	12,576	15,419	15,729	7,937	5,229	26,055	33,722	32,569	21,086	5,737	6,871	10,169	193,092	
Total of B. Hafir (Ex. Drain)	62,083	22,051	27,089	27,602	14,171	9,985	46,352	60,468	58,717	37,797	10,309	12,086	17,798	344,405	
Total of B. Hafir	97,483	34,627	42,508	43,330	22,108	15,194	72,407	94,190	91,282	59,882	16,045	18,957	27,967	537,500	
Raiha Bilqas	14,248	5,054	6,310	6,372	3,736	3,813	11,901	16,429	16,560	10,246	2,843	2,842	4,015	90,121	
B. E. Maasara	37,978	13,471	16,819	16,985	9,958	10,183	31,722	43,792	44,141	27,311	7,578	7,574	10,703	240,218	
Total of M.S.	58,846	20,873	26,090	26,318	15,429	15,747	49,153	67,954	68,996	42,313	11,743	11,736	16,584	372,212	
Total (Drainage)	35,400	12,576	15,419	15,728	7,937	5,229	26,055	33,722	32,569	21,086	5,737	6,871	10,169	193,092	
Total (Ex. Drainage)	114,309	40,576	50,218	50,959	27,865	23,940	89,976	120,688	119,419	75,354	20,730	22,502	32,516	674,744	
Total (+0.7 or 0.5+D)	132,009	49,379	61,011	61,969	33,421	27,801	103,003	137,550	135,701	95,897	23,589	27,311	39,635	786,078	
Total	149,709	53,152	65,637	66,697	35,802	29,170	116,031	154,411	151,984	96,440	26,467	29,373	42,686	867,839	



Table F.14.40 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Baeandila, Downstream+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
Drainage only	11,684	4,154	5,093	5,198	2,622	1,728	8,607	11,140	10,758	6,965	1,695	2,270	3,359	63,767	
Downstream	28,086	10,326	12,860	12,914	6,517	4,294	21,393	27,988	26,739	17,313	4,710	5,642	8,350	158,545	
Midstream	18,377	6,518	8,138	8,219	4,818	4,918	15,350	21,190	21,359	13,216	3,667	3,665	5,179	116,238	
Total (Drainage)	11,684	4,154	5,093	5,198	2,622	1,728	8,607	11,140	10,758	6,965	1,695	2,270	3,359	63,767	
Total (Ex. Drainage)	47,443	16,844	20,799	21,732	11,335	9,211	36,743	48,979	48,098	30,528	8,377	9,307	13,529	274,783	
Total (+0.7 or 0.5% D)	53,280	19,752	24,364	24,789	13,171	10,421	41,047	54,448	53,477	34,011	9,325	10,896	15,880	311,561	
Total	59,137	20,968	25,892	26,328	13,957	10,939	45,351	60,018	58,856	37,494	10,272	11,577	16,888	338,570	

Table F.14.41 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Balamoun, Downstream+DS+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
Fr. Damietta	6,808	2,347	2,878	2,936	1,482	976	4,864	6,295	6,079	3,936	1,071	1,283	1,398	26,044	
Balamoun	8,611	3,059	3,751	3,826	1,931	1,272	6,338	8,203	7,922	5,129	1,395	1,671	2,474	46,970	
Downstream															
Fr. Damietta	5,400	1,918	2,352	2,389	1,211	798	3,975	5,144	4,968	3,216	875	1,043	1,551	28,455	
After K. Saad PS	29,381	10,438	12,797	13,054	6,588	4,340	21,625	27,988	27,029	17,501	4,761	5,703	8,440	160,264	
Before K. Saad PS	14,895	5,220	6,401	6,529	3,295	2,171	10,816	13,999	13,518	8,753	2,361	2,852	4,221	80,156	
Midstream															
Before K. Saad PS	8,165	2,896	3,616	3,652	2,141	2,165	8,820	9,415	9,490	5,872	1,629	1,628	2,301	51,645	
Total (Fr. Damietta)	12,008	4,266	5,230	5,335	2,692	1,774	8,838	11,439	11,047	7,152	1,946	2,331	3,449	65,500	
Total (Fr. Balamoun)	60,852	21,613	26,565	27,060	13,954	9,968	45,599	59,605	57,959	37,254	10,167	11,855	17,436	339,035	
Total (+0.7 or 0.5% D)	66,856	24,599	30,226	30,794	15,838	11,210	50,018	65,324	63,482	40,831	11,140	13,487	19,851	376,801	
Total	72,860	25,879	31,795	32,395	16,646	11,742	54,438	71,044	69,005	44,407	12,113	14,186	20,886	404,535	

Table F.14.42 Cropping Pattern DS170% Water Requirement in '000 CUM based on Modified Penman Method (Canal: El Sahel, Downstream+DS+Midstream+Upstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
After B. PS	13,004	4,620	5,664	5,778	2,916	1,921	9,571	12,388	11,963	7,746	2,107	2,524	3,736	70,933	
Before B. PS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total of DS	13,004	4,620	5,664	5,778	2,916	1,921	9,571	12,388	11,963	7,746	2,107	2,524	3,736	70,933	
Midstream															
Total at Bndry (Fr. Damietta)	26,878	9,534	11,903	12,021	7,047	7,192	22,451	30,892	31,240	19,329	5,393	5,360	7,575	170,008	
Total at Bndry (Fr. Balamoun)	12,008	4,266	5,230	5,335	2,692	1,774	8,838	11,439	11,047	7,152	1,946	2,331	3,449	65,500	
Total at Bndry (+0.7 or 0.5% D)	100,734	35,767	44,132	44,858	23,917	19,082	77,621	102,985	101,162	64,329	17,638	19,740	28,746	579,976	
Total at Bndry	106,738	38,753	47,793	48,593	25,801	20,323	82,041	108,704	106,685	67,905	18,611	21,371	31,161	617,741	
Upstream															
Total (Fr. Damietta)	112,742	40,033	49,382	50,193	26,809	20,856	86,460	114,424	112,208	71,481	19,594	22,070	32,196	645,476	
Total (Fr. Balamoun)	8,020	2,857	3,760	3,972	2,216	2,204	6,127	8,717	8,920	5,555	1,679	1,533	2,160	49,700	
Total (+0.5 or 0.7% D)	120,762	42,889	53,122	54,165	28,925	23,060	92,587	123,141	121,128	77,036	21,263	23,603	34,356	695,176	

Table F.14.43 Cropping Pattern DS-170X Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr El Mallah, Upstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Upstream	67,080	23,895	31,447	33,226	18,535	18,436	51,247	72,909	74,607	46,461	14,045	12,821	18,070	415,689	

Table F.14.44 Cropping Pattern DS-170 Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr Shebin) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
<i>Beasandila (Drainage)</i>	11,694	4,164	5,093	5,196	2,622	1,728	6,602	11,140	10,258	6,965	1,895	2,272	3,358	63,787	
<i>Beasandila (Ex. Drainage)</i>	47,443	16,844	20,769	21,132	11,335	9,211	36,743	48,879	48,098	30,528	8,377	9,307	13,529	274,783	
<i>Bahr Shebin (MS)</i>	5,025	1,782	2,225	2,247	1,318	1,345	4,197	5,794	5,841	3,614	1,003	1,002	1,416	31,784	
<i>Bahr Bilgas (Drainage)</i>	36,402	12,528	16,418	16,728	7,937	4,228	26,065	33,722	32,268	21,068	5,737	6,871	10,169	193,692	
<i>Bahr Bilgas (Ex. Drainage)</i>	114,309	40,578	50,218	50,959	27,985	23,940	89,976	120,638	119,419	75,354	20,730	22,502	32,516	674,744	
<i>Bahr Shebin (MS)</i>	35,545	12,608	15,741	15,897	9,320	9,512	29,890	40,996	41,314	25,582	7,093	7,089	10,017	224,829	
<i>Bahr Tera (Drainage)</i>	14,550	5,168	6,372	6,447	3,447	2,713	11,178	14,803	14,924	9,247	2,594	2,848	4,154	63,457	
<i>Bahr Tera (Ex. Drainage)</i>	149,115	52,938	65,419	66,439	35,878	29,743	116,141	154,950	152,774	96,787	26,577	29,287	42,485	869,399	
<i>Bahr Shebin (MS)</i>	1,879	702	876	885	518	530	1,653	2,282	2,300	1,423	395	395	558	12,518	
<i>Total of Above (Drainage)</i>	61,644	21,898	26,894	27,402	14,020	9,670	45,838	58,665	57,648	37,288	10,168	11,892	17,683	340,332	
<i>Total of Above (Ex. Drainage)</i>	353,416	125,451	155,279	157,560	86,234	74,281	278,401	373,580	389,745	233,248	64,176	69,581	100,521	2,088,057	
<i>Total of Above</i>	415,060	147,348	182,163	184,962	100,234	89,951	324,239	433,244	427,593	270,547	74,341	81,571	118,204	2,428,388	
<i>Bahr Shebin (US)</i>	18,470	6,579	8,659	9,148	5,104	5,076	14,111	20,075	20,543	12,793	3,867	3,530	4,975	114,460	
<i>Bahr Sahel (Fr. Damietta)</i>	12,008	4,266	5,230	5,335	2,692	1,774	8,838	11,439	11,047	7,152	1,946	2,331	3,449	65,500	
<i>Bahr Sahel (Ex. Damietta)</i>	108,754	38,624	47,891	49,830	26,133	21,286	83,748	111,702	110,982	69,884	19,317	21,273	30,907	629,678	
<i>Bahr El Mallah</i>	67,080	23,895	31,447	33,226	18,535	18,436	51,247	72,909	74,607	46,461	14,045	12,821	18,070	415,689	
<i>Bahr Shebin (US)</i>	20,025	7,133	9,388	9,618	5,533	5,504	15,298	21,765	22,272	13,870	4,183	3,827	5,394	124,066	
<i>Total (Fr. Damietta)</i>	12,008	4,266	5,230	5,335	2,692	1,774	8,838	11,439	11,047	7,152	1,946	2,331	3,449	65,500	
<i>Total (Drainage)</i>	61,644	21,898	26,894	27,402	14,020	9,670	45,838	58,665	57,648	37,288	10,168	11,892	17,683	340,332	
<i>Total (Ex. Above both)</i>	567,745	201,982	252,083	258,683	141,539	124,583	442,806	600,030	597,249	376,256	105,598	111,033	159,987	3,371,988	
<i>Total (Ex. Damietta)</i>	629,389	228,578	279,547	286,085	155,539	134,253	498,044	659,695	655,097	413,554	115,784	123,023	177,550	3,712,327	
<i>Total of Bahr Shebin</i>	641,397	227,644	284,777	291,420	158,231	136,027	497,482	671,134	668,143	420,706	117,709	125,354	180,989	3,777,827	
+0.7 or 0.5 * Drainage															
<i>Beasandila</i>	53,290	19,752	24,364	24,769	13,171	10,421	41,047	54,448	53,477	34,011	9,325	10,866	15,880	311,561	
<i>Bahr Shebin (MS)</i>	5,025	1,782	2,225	2,247	1,318	1,345	4,197	5,794	5,841	3,614	1,003	1,002	1,416	31,784	
<i>Raiah Bilgas</i>	132,008	49,379	61,011	61,969	33,421	27,801	103,003	137,550	135,701	85,897	23,599	27,311	39,635	786,078	
<i>Bahr Shebin (MS)</i>	35,545	12,608	15,741	15,897	9,320	9,512	29,890	40,986	41,314	25,582	7,093	7,089	10,017	224,829	
<i>Bahr Tera</i>	154,765	55,748	68,888	69,963	37,776	31,306	120,533	160,804	158,541	100,423	27,581	30,840	44,739	915,410	
<i>Bahr Shebin (MS)</i>	1,879	702	876	885	518	530	1,653	2,282	2,300	1,423	395	395	558	12,518	
<i>Total of Above</i>	382,613	139,971	173,107	175,730	95,524	80,714	300,124	401,864	397,174	250,930	68,995	77,533	112,245	2,282,178	
<i>Bahr Shebin (US)</i>	18,470	6,579	8,659	9,148	5,104	5,076	14,111	20,075	20,543	12,793	3,867	3,530	4,975	114,460	
<i>Bahr El Sahel</i>	114,758	41,610	51,553	52,965	28,017	22,528	88,168	117,421	115,905	73,460	20,290	22,904	33,321	667,442	
<i>Bahr El Mallah</i>	67,080	23,895	31,447	33,226	18,535	18,436	51,247	72,909	74,607	46,461	14,045	12,821	18,070	415,689	
<i>Bahr Shebin (US)</i>	20,025	7,133	9,388	9,618	5,533	5,504	15,298	21,765	22,272	13,870	4,183	3,827	5,394	124,066	
<i>Total of Bahr Shebin</i>	602,946	219,187	274,152	280,588	152,713	132,258	488,948	634,034	630,201	397,513	111,390	120,616	174,006	3,603,875	

Table F.14.45 Comparison between Cropping Pattern DS170% Water Requirement based on Modified Penman Method and Availability, '000 CUM Irriga. Efficiency= 0.68

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Bahr Tera (Required)	154,765	55,746	68,888	69,963	37,776	31,308	120,533	180,904	158,541	100,423	27,521	30,840	44,739	915,410	
Bahr Tera (Available)	26%	32,127	41,973	78,222	86,432	104,322	151,922	165,290	153,839	120,257	71,373	74,712	52,990	1,133,458	
Surplus or Deficit, %		-74	-64	11	56	70	21	3	-3	16	61	59	16	19	
Rahbeen (Required)	382,613	139,971	173,107	175,730	95,524	80,714	300,124	401,984	397,174	250,930	68,995	77,533	112,245	2,282,178	
Rahbeen (Available)	63%	65,958	100,550	165,646	175,730	221,416	344,977	379,982	336,172	232,179	125,132	155,318	112,741	2,415,802	
Surplus or Deficit, %		-112	-72	-6	46	64	13	-6	-18	-8	45	50	0	6	
Bahr El Sahel (Required)	114,758	41,610	51,553	52,585	29,017	22,528	88,168	117,421	115,805	73,460	20,290	22,904	33,321	667,442	
Bahr El Sahel (Available)	19%	21,386	27,318	47,985	52,629	62,617	93,264	98,446	89,747	69,368	36,356	41,932	26,150	667,199	
Surplus or Deficit, %		-85	-89	-10	47	64	5	-19	-29	-6	44	45	-27	-0	
Bahr Shebin (Required)	602,946	219,187	274,152	290,588	152,713	132,258	468,948	634,034	630,201	397,513	111,390	120,616	174,006	3,603,875	
Bahr Shebin (Available)	100%	135,169	168,264	274,616	289,145	356,904	568,640	621,467	547,233	391,532	223,846	260,253	181,803	4,026,117	
Surplus or Deficit, %		-62	-63	-2	47	63	18	-2	-15	-2	50	54	4	10	
After Bahr Tera (Raiah Bilqas & Basandila)															
Required	225,869	83,522	103,342	104,862	57,229	48,878	177,938	238,778	236,333	149,084	41,019	46,298	66,948	1,354,251	
Available	37%	33,129	57,700	96,539	88,779	116,565	191,402	212,410	180,034	110,499	53,364	80,211	59,193	1,269,826	
Surplus or Deficit, %		-152	-79	-21	36	58	7	-12	-31	-35	23	42	-13	-7	
Before Sahel-Rahbeen (Upstream of Bahr Shebin)															
Required	105,575	37,607	49,493	52,293	29,172	29,016	80,656	114,749	117,422	73,123	22,105	20,179	28,439	654,255	
Available	18%	47,825	40,396	60,985	60,787	72,871	130,399	143,039	121,314	89,985	62,357	63,003	42,911	943,117	
Surplus or Deficit, %		21	-23	14	52	60	38	20	3	19	65	68	34	31	
Irrigation Efficiency=	0.68														
Total of Bahr Shebin DS	303,927														
Total of Bahr Shebin MS	223,875														
Total of Bahr Shebin UP	113,595														
Total of Bahr Shebin	641,397														
Total of Other US	53,826														
Total	695,223														
Excluding New Reclamation Area of 56,000 feddan															
Total of Upstream	167,421														
Total of Midstream	223,875														
Total of Downstream	303,927														
New Reclamation area	56,000														
Total	751,223														
695,223 (excluding New Reclamation Area of 56,000 feddan)															

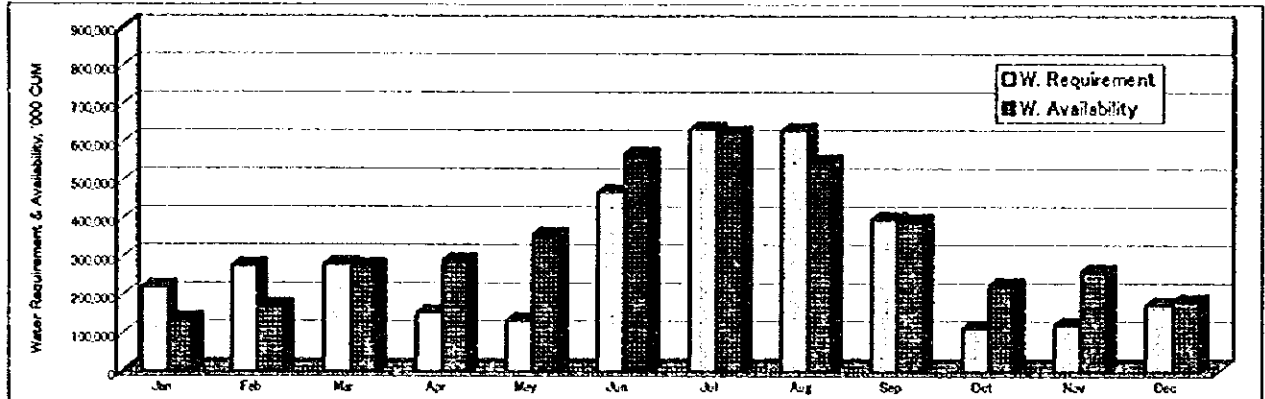


Figure F.14.25 Water Requirement and Availability on Whole Bahr Shebin Command Area (602,964 feddan)

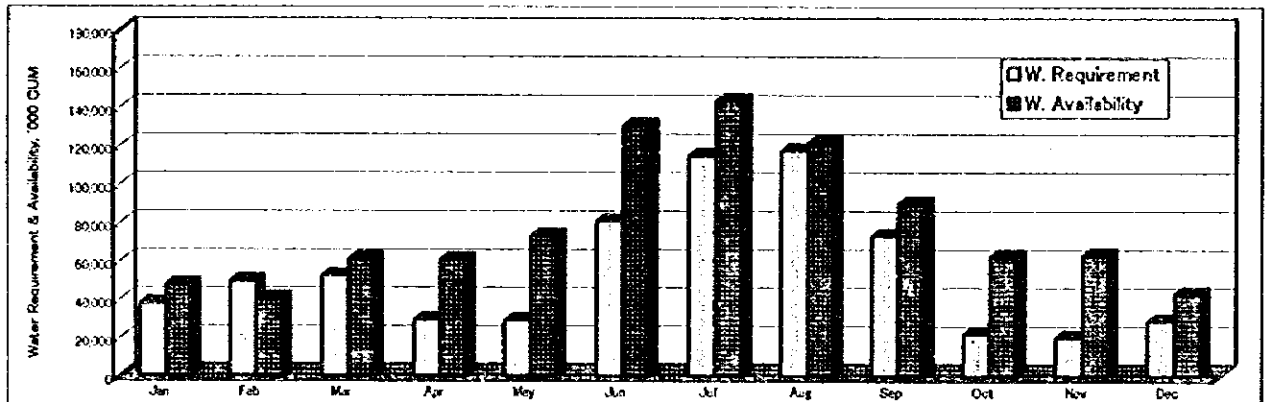


Figure F.14.26 Water Requirement and Availability on Upstream of Bahr Shebin (105,575 feddan)

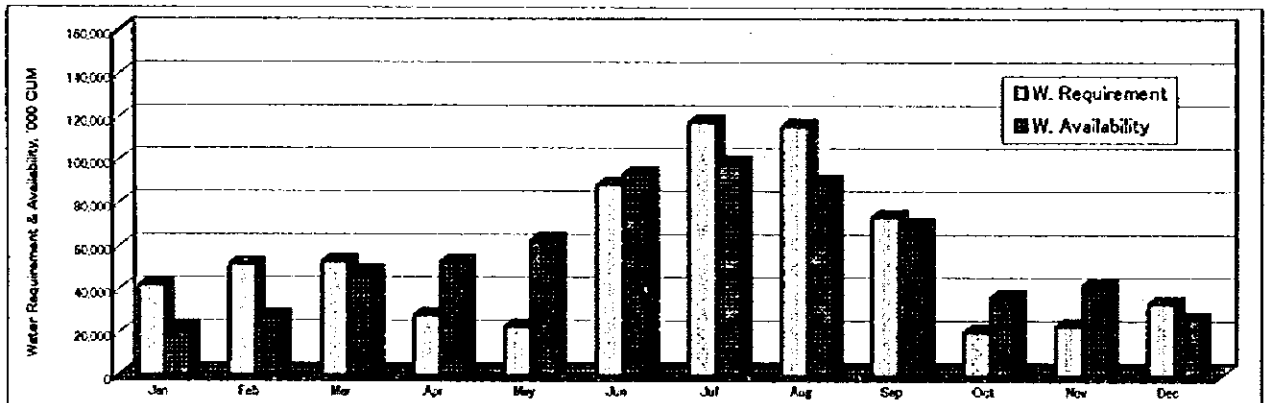


Figure F.14.27 Water Requirement and Availability on Bahr El Sahel (114,758 feddan)

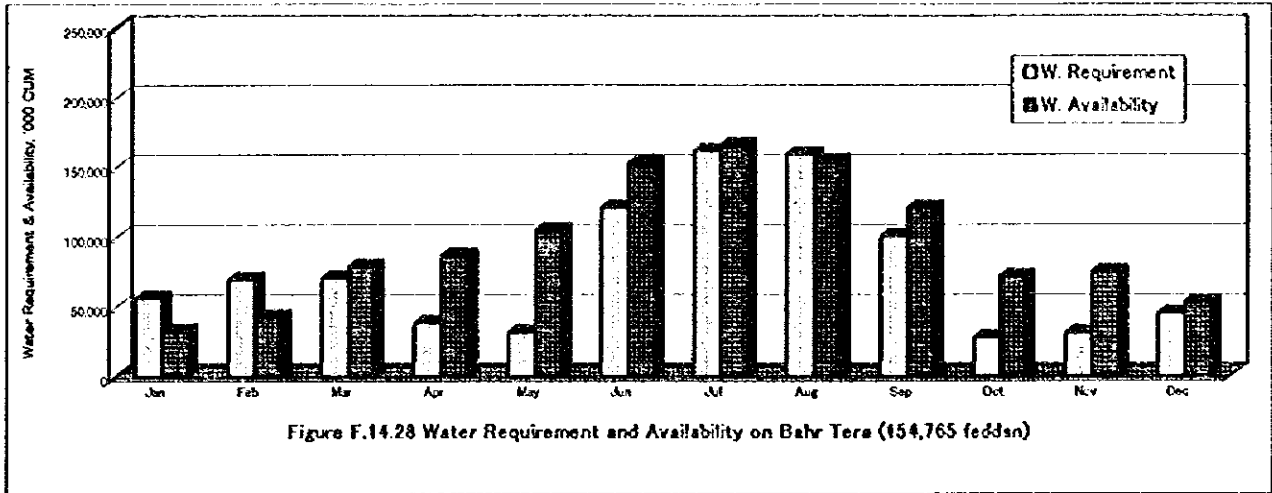


Figure F.14.28 Water Requirement and Availability on Bahr Tera (154,765 feddan)

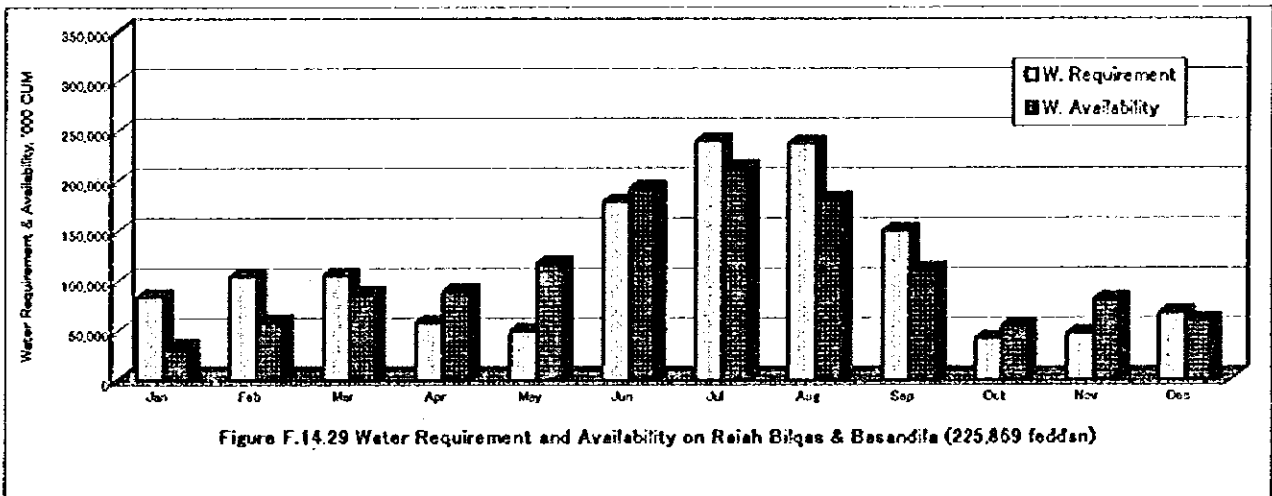


Figure F.14.29 Water Requirement and Availability on Raiah Bilqas & Basandifa (225,869 feddan)

Table F.14.46 Cropping Pattern 200% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr Tera, Downstream+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
After MPS															
Mixing	39,055	14,925	18,003	18,618	10,573	10,138	37,849	50,591	49,374	29,982	7,827	7,971	11,784	267,207	
<i>Drainage only</i>	3,252	1,217	1,439	1,549	882	844	3,152	4,207	4,102	2,487	651	662	981	22,229	
<i>Drainage (Mixed)</i>	6,600	2,472	3,042	3,146	1,787	1,713	6,396	8,544	8,344	5,052	1,323	1,347	1,991	45,159	
El Mansour	45,700	17,114	21,067	21,786	12,372	11,863	44,289	59,164	57,775	34,966	9,159	9,327	13,789	312,670	
Before MPS															
Fresh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<i>Drainage (Mixed)</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<i>Total of D.S. (Drainage)</i>	2,852	3,682	4,481	4,695	2,667	2,557	9,548	12,752	12,452	7,522	1,874	2,019	2,972	67,392	
Total of D.S. (Ex. Drainage)	84,755	31,739	39,070	40,404	22,945	22,002	82,138	109,725	107,149	64,948	16,986	17,299	25,573	579,877	
Total of D.S.	94,605	35,428	43,611	45,099	25,611	24,559	91,684	122,478	119,602	72,384	18,960	19,309	28,545	647,269	
Midstream															
Fresh	64,360	23,563	29,418	29,709	17,417	17,776	55,487	76,597	77,209	47,771	13,256	13,248	18,721	420,173	
<i>Drainage (Mixed)</i>	4,700	1,721	2,148	2,170	1,272	1,288	4,052	5,594	5,639	3,489	968	967	1,367	30,694	
<i>Total (Drainage)</i>	14,550	5,409	6,609	6,895	3,939	3,855	13,539	18,346	18,091	11,025	2,842	2,828	4,339	98,078	
Total (Ex. Drainage)	149,115	55,302	68,489	70,112	40,362	39,778	137,625	186,322	184,359	112,619	30,241	30,547	44,294	1,000,050	
Total (+0.040)	149,115	55,302	68,489	70,112	40,362	39,778	137,625	186,322	184,359	112,619	30,241	30,547	44,294	1,000,050	
Total	183,865	60,711	75,177	76,977	44,301	43,633	151,223	204,668	202,450	123,644	33,184	33,525	48,633	1,098,125	

Table F.14.47 Cropping Pattern 200% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Raiah Bilqas, Downstream+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
El Esiah															
<i>Drainage only</i>	11,420	4,272	5,264	5,444	3,022	2,995	11,067	14,784	14,437	8,738	2,282	2,331	3,446	78,133	
Fresh	18,981	7,108	8,750	9,048	5,139	4,927	18,395	24,573	23,996	14,523	3,904	3,874	5,727	129,864	
El Nile															
<i>Drainage only</i>	23,980	8,982	11,064	11,431	6,492	6,225	23,240	31,045	30,316	19,349	4,896	4,894	2,235	164,066	
Fresh	11,621	4,352	5,357	5,540	3,146	3,017	11,282	15,045	14,692	8,891	2,329	2,372	3,506	79,509	
<i>Total of El Nile (Drainage)</i>	35,400	13,257	16,319	16,879	9,633	9,190	34,307	45,829	44,754	27,085	7,095	7,225	10,681	242,202	
Total of El Nile (Ex. Drain)	30,602	11,480	14,107	14,588	8,285	7,944	29,657	39,618	38,688	23,414	6,133	6,246	9,233	208,373	
Total of El Nile	66,002	24,717	30,425	31,464	17,868	17,134	63,984	85,447	83,441	50,500	13,228	13,471	19,915	451,573	
B. Hafir Shehab															
<i>Drainage (Mixed)</i>	6,700	2,509	3,099	3,194	1,814	1,739	6,493	8,674	8,470	5,126	1,343	1,367	2,022	45,840	
<i>Total of D.S. (Drainage)</i>	35,400	13,257	16,319	16,879	9,583	9,190	34,307	45,829	44,754	27,085	7,095	7,225	10,681	242,202	
Total of D.S. (Ex. Drainage)	37,302	13,969	17,195	17,782	10,098	9,693	36,150	49,291	47,158	28,541	7,476	7,613	11,255	255,213	
Total of D.S.	72,702	27,228	33,514	34,658	19,982	18,873	70,457	94,121	91,912	55,626	14,570	14,839	21,938	497,413	
Downstream															
Midstream															
B. Hafir Shehab															
<i>Drainage (Mixed)</i>	6,820	2,424	3,026	3,056	1,792	1,828	5,707	7,979	7,942	4,914	1,363	1,363	1,928	43,219	
<i>Total of B. Hafir (Drainage)</i>	35,400	13,257	16,319	16,879	9,583	9,190	34,307	45,829	44,754	27,085	7,095	7,225	10,681	242,202	
Total of B. Hafir (Ex. Drain)	92,093	33,194	28,593	29,496	16,806	16,226	59,458	79,682	78,059	47,350	12,479	12,683	18,660	422,685	
Total of B. Hafir	97,483	38,450	44,912	46,371	28,390	25,416	93,765	125,511	122,813	74,435	19,573	19,908	28,341	664,885	
Raiah Bilqas															
<i>Drainage (Mixed)</i>	14,248	5,216	6,513	6,577	3,856	3,935	12,284	16,957	17,093	10,576	2,895	2,933	4,144	93,018	
Total of D.S. (Ex. Drainage)	37,978	13,904	17,359	17,531	10,278	10,489	32,742	45,189	45,590	28,189	7,822	7,818	11,047	247,939	
Total of D.S.	58,846	21,544	26,898	27,164	15,925	16,253	50,733	70,035	70,594	43,678	12,120	12,113	17,117	384,175	
Midstream															
<i>Drainage (Mixed)</i>	35,400	13,257	16,319	16,879	9,583	9,190	34,307	45,829	44,754	27,085	7,095	7,225	10,681	242,202	
Total (Ex. Drainage)	114,309	42,314	52,465	53,603	30,940	30,051	104,483	141,838	140,712	86,114	23,235	23,433	33,851	763,642	
Total (+0.040)	114,309	42,314	52,465	53,603	30,940	30,051	104,483	141,838	140,712	86,114	23,235	23,433	33,851	763,642	
Total	149,709	55,571	68,784	70,479	40,524	39,841	138,790	187,667	185,466	113,200	30,330	30,659	44,533	1,005,841	

Table F.14.48 Cropping Pattern 200% Water Requirement in '000 CUM based on Modified Penman Method Canal: Basandila, Downstream+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
Drainage only	11,694	4,379	5,991	5,575	3,166	3,036	11,333	15,139	14,794	8,947	2,144	2,397	3,529	80,008	
Downstream	29,066	10,885	13,399	13,856	7,869	7,545	28,169	37,629	36,746	22,239	5,925	5,932	8,770	198,864	
Midstream	18,377	6,728	8,400	8,433	4,973	5,078	15,843	21,871	22,046	13,640	3,785	3,783	5,345	118,974	
Total (Drainage)	11,694	4,379	5,991	5,575	3,166	3,036	11,333	15,139	14,794	8,947	2,144	2,397	3,529	80,008	
Total (Ex. Drainage)	47,443	17,613	21,799	22,339	12,842	12,621	44,012	59,500	58,792	35,879	9,610	9,715	14,115	318,838	
Total (+0.0+D)	47,443	17,613	21,799	22,339	12,842	12,621	44,012	59,500	58,792	35,879	9,610	9,715	14,115	318,838	
Total	59,137	21,992	27,189	27,914	18,008	15,657	55,345	74,639	73,576	44,827	11,954	12,102	17,644	393,946	

Table F.14.49 Cropping Pattern 200% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Balamoun, Downstream+DS+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
Fr. Damieta	6,608	2,475	3,046	3,150	1,789	1,715	6,404	8,555	8,354	5,056	1,324	1,349	1,984	45,211	
Balamoun	8,611	3,225	3,969	4,105	2,331	2,235	8,345	11,148	10,986	6,588	1,728	1,758	2,598	52,915	
Downstream															
Fr. Damieta	5,400	2,022	2,469	2,574	1,462	1,402	5,233	6,991	6,827	4,132	1,082	1,102	1,629	36,948	
After K. Saed PS	29,381	11,003	13,544	14,006	7,954	7,827	28,474	38,037	37,144	22,480	5,888	5,997	8,865	201,019	
Before K. Saed PS	14,695	5,503	6,774	7,005	3,978	3,815	14,241	18,024	18,578	11,243	2,945	2,889	4,434	100,540	
Midstream															
Before K. Saed PS	8,165	2,989	3,732	3,769	2,210	2,255	7,039	9,717	9,795	6,060	1,892	1,881	2,375	53,305	
Total (Fr. Damieta)	12,008	4,497	5,535	5,724	3,251	3,117	11,637	15,546	15,181	9,188	2,407	2,451	3,623	82,156	
Total (Fr. Balamoun)	60,852	22,720	28,020	28,885	16,473	15,932	58,100	77,927	76,403	46,372	12,241	12,434	18,272	413,779	
Total (+0.0+D)	60,852	22,720	28,020	28,885	16,473	15,932	58,100	77,927	76,403	46,372	12,241	12,434	18,272	413,779	
Total	72,860	27,216	33,555	34,610	19,724	19,050	69,737	93,472	91,584	55,560	14,647	14,895	21,895	495,935	

Table F.14.50 Cropping Pattern 200% Water Requirement in '000 CUM based on Modified Penman Method (Canal: El Sahel, Downstream+DS+Midstream+Upstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Balamoun (Fr. Damieta)	12,008	4,497	5,535	5,724	3,251	3,117	11,637	15,546	15,181	9,188	2,407	2,451	3,623	82,156	
Balamoun (Fr. Balamoun)	60,852	22,720	28,020	28,885	16,473	15,932	58,100	77,927	76,403	46,372	12,241	12,434	18,272	413,779	
Balamoun (+0.0+D)	60,852	22,720	28,020	28,885	16,473	15,932	58,100	77,927	76,403	46,372	12,241	12,434	18,272	413,779	
Balamoun (Total)	72,860	27,216	33,555	34,610	19,724	19,050	69,737	93,472	91,584	55,560	14,647	14,895	21,895	495,935	
Downstream															
After B. PS	13,004	4,870	5,995	6,189	3,520	3,376	12,602	16,835	16,440	9,950	2,608	2,654	3,924	88,971	
Before B. PS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total of DS	13,004	4,870	5,995	6,189	3,520	3,376	12,602	16,835	16,440	9,950	2,608	2,654	3,924	88,971	
Midstream															
Total at Bndry (Fr. Damieta)	26,878	9,840	12,286	12,407	7,274	7,424	23,172	31,989	32,244	19,950	5,536	5,533	7,818	175,472	
Total at Bndry (Fr. Balamoun)	12,008	4,497	5,535	5,724	3,251	3,117	11,637	15,546	15,181	9,188	2,407	2,451	3,623	82,156	
Total at Bndry (+0.0+D)	100,784	37,430	46,300	47,491	27,267	26,732	93,874	126,750	125,088	76,272	20,383	20,621	30,014	678,222	
Total at Bndry	106,738	40,577	50,175	51,499	29,543	28,914	99,693	134,523	132,678	80,866	21,598	22,337	32,550	724,940	
Upstream															
Total at Bndry	112,742	41,926	51,835	53,216	30,518	29,849	105,512	142,286	140,288	85,480	22,789	23,072	33,637	760,379	
Total (Fr. Damieta)	8,020	2,849	3,891	4,100	2,287	2,215	6,324	8,997	9,207	5,733	1,733	1,582	2,230	51,298	
Total (Ex. Damieta)	12,008	4,497	5,535	5,724	3,251	3,117	11,637	15,546	15,181	9,188	2,407	2,451	3,623	82,156	
Total (+0.0+D)	108,754	40,378	50,180	51,592	29,555	29,007	100,198	135,747	134,294	82,006	22,116	22,203	32,244	729,520	
Total	120,762	44,875	55,716	57,316	32,805	32,124	111,836	151,293	149,475	91,193	24,522	24,654	35,867	811,878	

Table F.14.51 Cropping Pattern 200% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr El Mallah, Upstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Upstream	67,080	24,663	32,457	34,293	19,131	19,029	52,894	75,292	77,005	47,954	14,496	13,233	18,650	429,060	

Table F.14.52 Cropping Pattern 200% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr Shebin) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
<i>Beasandila (Drainage)</i>	11,694	4,378	5,391	5,275	1,166	2,026	11,333	16,139	14,784	6,947	2,344	2,387	3,528	89,008	
<i>Beasandila (Ex. Drainage)</i>	47,443	17,613	21,789	22,339	12,842	12,621	44,012	59,500	58,792	35,879	9,610	8,715	14,115	318,838	
<i>Bahr Shebin (MS)</i>	5,025	1,840	2,297	2,320	1,360	1,388	4,332	5,980	6,028	3,730	1,035	1,034	1,462	32,806	
<i>Rajah Bilqes (Drainage)</i>	39,400	13,297	16,378	16,878	9,953	9,190	34,307	45,829	44,794	27,093	7,092	7,222	10,691	242,202	
<i>Rajah Bilqes (Ex. Drainage)</i>	114,309	42,314	52,465	53,603	30,940	30,651	104,493	141,838	140,712	86,114	23,235	23,433	33,851	763,642	
<i>Bahr Shebin (MS)</i>	35,545	13,013	16,247	16,408	9,619	9,817	30,844	42,304	42,641	26,383	7,321	7,317	10,339	232,055	
<i>Bahr Tera (Drainage)</i>	14,950	5,408	6,689	6,668	3,699	3,668	13,698	18,349	18,091	11,025	2,842	2,878	4,339	96,078	
<i>Bahr Tera (Ex. Drainage)</i>	149,115	55,302	68,489	70,112	40,362	39,778	137,625	186,322	184,359	112,619	30,241	30,547	44,294	1,000,050	
<i>Bahr Shebin (MS)</i>	1,979	725	965	914	536	547	1,708	2,355	2,374	1,469	408	407	576	12,920	
<b>Total of Above (Drainage)</b>	<b>61,644</b>	<b>23,045</b>	<b>28,388</b>	<b>29,315</b>	<b>16,688</b>	<b>16,080</b>	<b>62,314</b>	<b>79,314</b>	<b>77,628</b>	<b>47,058</b>	<b>12,380</b>	<b>12,380</b>	<b>18,549</b>	<b>420,262</b>	
<b>Total of Above (Ex. Drainage)</b>	<b>353,416</b>	<b>130,806</b>	<b>162,201</b>	<b>165,995</b>	<b>95,656</b>	<b>94,802</b>	<b>322,803</b>	<b>438,299</b>	<b>434,907</b>	<b>266,195</b>	<b>71,850</b>	<b>72,454</b>	<b>104,637</b>	<b>2,360,309</b>	
<b>Total of Above</b>	<b>415,060</b>	<b>153,851</b>	<b>190,589</b>	<b>195,010</b>	<b>112,347</b>	<b>110,882</b>	<b>382,041</b>	<b>517,613</b>	<b>512,535</b>	<b>313,252</b>	<b>84,231</b>	<b>85,044</b>	<b>123,185</b>	<b>2,780,593</b>	
<i>Bahr Shebin (US)</i>	18,470	6,791	8,937	9,442	5,268	5,239	14,564	20,720	21,203	13,204	3,992	3,644	5,135	118,139	
<i>Bahr Sahel (Fr. Damietta)</i>	12,008	4,497	5,535	5,724	3,251	3,117	11,637	15,546	15,181	9,188	2,407	2,451	3,623	82,156	
<i>Bahr Sahel (Ex. Damietta)</i>	108,754	40,378	50,180	51,592	29,555	29,007	100,198	135,747	134,294	82,008	22,116	22,203	32,244	729,520	
<i>Bahr El Mallah</i>	67,080	24,663	32,457	34,293	19,131	19,029	52,894	75,292	77,005	47,954	14,496	13,233	18,650	429,060	
<i>Bahr Shebin (US)</i>	20,025	7,362	9,689	10,237	5,711	5,681	15,790	22,465	22,988	14,315	4,328	3,951	5,588	128,085	
<b>Total (Fr. Damietta)</b>	<b>12,008</b>	<b>4,497</b>	<b>5,535</b>	<b>5,724</b>	<b>3,251</b>	<b>3,117</b>	<b>11,637</b>	<b>15,546</b>	<b>15,181</b>	<b>9,188</b>	<b>2,407</b>	<b>2,451</b>	<b>3,623</b>	<b>82,156</b>	
<b>Total (Drainage)</b>	<b>61,644</b>	<b>23,045</b>	<b>28,388</b>	<b>29,315</b>	<b>16,688</b>	<b>16,080</b>	<b>62,314</b>	<b>79,314</b>	<b>77,628</b>	<b>47,058</b>	<b>12,380</b>	<b>12,380</b>	<b>18,549</b>	<b>420,262</b>	
<b>Total (Ex. Above both)</b>	<b>567,745</b>	<b>210,000</b>	<b>263,465</b>	<b>271,260</b>	<b>155,323</b>	<b>153,758</b>	<b>506,250</b>	<b>692,494</b>	<b>690,397</b>	<b>423,674</b>	<b>116,782</b>	<b>115,485</b>	<b>166,234</b>	<b>3,765,112</b>	
<b>Total (Ex. Damietta)</b>	<b>629,389</b>	<b>233,045</b>	<b>291,863</b>	<b>300,575</b>	<b>172,011</b>	<b>169,838</b>	<b>585,488</b>	<b>771,797</b>	<b>768,026</b>	<b>470,732</b>	<b>129,162</b>	<b>128,075</b>	<b>184,782</b>	<b>4,185,306</b>	
<b>Total of Bahr Shebin</b>	<b>641,397</b>	<b>237,542</b>	<b>297,399</b>	<b>306,300</b>	<b>175,262</b>	<b>172,955</b>	<b>577,125</b>	<b>787,343</b>	<b>783,206</b>	<b>479,919</b>	<b>131,509</b>	<b>130,526</b>	<b>188,406</b>	<b>4,267,552</b>	
+0.0 * Drainage															
<i>Beasandila</i>	47,443	17,613	21,789	22,339	12,842	12,621	44,012	59,500	58,792	35,879	9,610	8,715	14,115	318,838	
<i>Bahr Shebin (MS)</i>	5,025	1,840	2,297	2,320	1,360	1,388	4,332	5,980	6,028	3,730	1,035	1,034	1,462	32,806	
<i>Rajah Bilqes</i>	114,309	42,314	52,465	53,603	30,940	30,651	104,493	141,838	140,712	86,114	23,235	23,433	33,851	763,642	
<i>Bahr Shebin (MS)</i>	35,545	13,013	16,247	16,408	9,619	9,817	30,844	42,304	42,641	26,383	7,321	7,317	10,339	232,055	
<i>Bahr Tera</i>	149,115	55,302	68,489	70,112	40,362	39,778	137,625	186,322	184,359	112,619	30,241	30,547	44,294	1,000,050	
<i>Bahr Shebin (MS)</i>	1,979	725	965	914	536	547	1,708	2,355	2,374	1,469	408	407	576	12,920	
<b>Total of Above</b>	<b>353,416</b>	<b>130,806</b>	<b>162,201</b>	<b>165,995</b>	<b>95,656</b>	<b>94,802</b>	<b>322,803</b>	<b>438,299</b>	<b>434,907</b>	<b>266,195</b>	<b>71,850</b>	<b>72,454</b>	<b>104,637</b>	<b>2,360,309</b>	
<i>Bahr Shebin (US)</i>	18,470	6,791	8,937	9,442	5,268	5,239	14,564	20,720	21,203	13,204	3,992	3,644	5,135	118,139	
<i>Bahr El Sahel</i>	108,754	40,378	50,180	51,592	29,555	29,007	100,198	135,747	134,294	82,008	22,116	22,203	32,244	729,520	
<i>Bahr El Mallah</i>	67,080	24,663	32,457	34,293	19,131	19,029	52,894	75,292	77,005	47,954	14,496	13,233	18,650	429,060	
<i>Bahr Shebin (US)</i>	20,025	7,362	9,689	10,237	5,711	5,681	15,790	22,465	22,988	14,315	4,328	3,951	5,588	128,085	
<b>Total of Bahr Shebin</b>	<b>567,745</b>	<b>210,000</b>	<b>263,465</b>	<b>271,260</b>	<b>155,323</b>	<b>153,758</b>	<b>506,250</b>	<b>692,494</b>	<b>690,397</b>	<b>423,674</b>	<b>116,782</b>	<b>115,485</b>	<b>166,234</b>	<b>3,765,112</b>	



Table F.14.53 Comparison between Cropping Pattern 200% Water Requirement based on Modified Penman Method and Availability, '000 CUM Irriga. Efficiency= 0.66

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Bahr Tera (Required)	149,115	55,302	68,489	70,112	40,382	39,778	137,825	186,322	124,359	112,619	30,241	30,547	44,284	1,000,050	
Bahr Tera (Available)	28%	32,127	41,973	78,222	86,432	104,322	151,922	165,290	153,639	120,257	71,373	74,712	52,990	1,133,458	
Surplus or Deficit, %		-72	-83	10	53	9	9	-13	-20	6	58	59	16	12	
Rahbeen (Required)	353,416	130,806	162,201	165,695	95,659	94,802	322,803	438,299	434,907	266,195	71,850	72,454	104,637	2,360,309	
Rahbeen (Available)	62%	65,958	100,550	165,646	175,730	221,416	344,977	379,982	336,172	232,179	125,132	155,318	112,741	2,415,802	
Surplus or Deficit, %		-98	-61	-0	46	57	6	-15	-29	-15	43	53	7	2	
Bahr El Sahel (Required)	108,754	40,378	50,180	51,592	29,555	29,007	100,198	135,747	134,294	82,006	22,116	22,203	32,244	729,520	
Bahr El Sahel (Available)	19%	21,386	27,318	47,985	52,629	62,617	93,284	98,448	89,747	69,368	36,356	41,932	26,150	667,199	
Surplus or Deficit, %		-89	-84	-8	44	54	-7	-38	-50	-18	39	47	-23	-9	
Bahr Shebin (Required)	567,745	210,000	263,465	271,260	155,323	153,758	506,250	692,494	690,397	423,674	116,782	115,485	166,234	3,765,112	
Bahr Shebin (Available)	100%	135,169	168,264	274,616	289,145	356,904	588,640	621,467	547,233	391,532	223,846	260,253	181,803	4,026,117	
Surplus or Deficit, %		-55	-57	1	46	57	11	-11	-26	-8	48	56	9	6	
<b>After Bahr Tera (Raish Bilqas &amp; Bascandila)</b>															
Required	202,322	74,780	92,808	94,669	54,761	54,477	193,472	249,622	248,174	152,107	41,201	41,500	58,768	1,347,340	
Available	36%	33,107	57,672	86,511	88,762	116,548	191,349	212,337	179,960	110,453	53,351	80,198	59,175	1,269,424	
Surplus or Deficit, %		-126	-81	-9	38	53	4	-18	-38	-28	23	48	-1	-6	
<b>Before Sahel+Rahbeen (Upstream of Bahr Shebin)</b>															
Required	105,575	38,816	51,083	53,973	30,109	29,949	83,249	118,437	121,196	75,474	22,816	20,828	29,353	675,283	
Available	19%	47,825	40,396	60,985	60,787	72,871	130,399	143,039	121,314	89,985	62,357	63,003	42,911	943,117	
Surplus or Deficit, %		19	-26	11	50	59	36	17	0	16	63	67	32	28	
Irrigation Efficiency=	0.66														
<b>Total of Other US</b>															
Total	53,828														
<b>Total of Bahr Shebin DS</b>															
Total of Bahr Shebin MS	303,927														
Total of Bahr Shebin UP	223,875														
Total of Bahr Shebin	113,595														
Total of Bahr Shebin	641,397														
<b>Total of Other US</b>															
Total	695,223	Excluding New Reclamation Area of 56,000 foddan													
<b>Total of Upstream</b>															
Total of Midstream	167,421														
Total of Downstream	223,875														
Total of Downstream	303,927														
New Reclamation area	56,000														
Total	751,223	695,223 (excluding New Reclamation Area of 56,000 foddan)													

Table F-15.5. Unit Water Requirement based on Modified Penman Method in CUM Per Fed/ha (Downstream Area)

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
ET <sub>c</sub> , mm/month	24	24	26	27	28	32	38	45	48	50	55	60	64	1,036
ET <sub>0</sub> , mm/10 days	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	1,036
Short Duration	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheat	30	0.80	0.90	0.98	1.00	1.06	1.06	1.06	1.06	0.83	0.20	0.10	0.10	0.10
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long Duration	20	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ground Beans	7	1.09	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Crop	6	1.00	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sugar Beet	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Vegetable	10	0.70	0.75	0.82	0.89	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Onion	0.80	0.75	0.75	0.75	0.82	0.89	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Onion	0.86	0.60	0.65	0.70	0.75	0.82	0.89	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cotton	22	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Maize	20	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maize	30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net W. Req. (ET <sub>c</sub> ) CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Land Preparation, CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percolation, CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net W. Req. for Rain, CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Vegetable	15	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Tomato	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sunflower	8	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tree Crop	2	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Total CUM/ha/ann	120	17	81	89	97	109	109	105	105	105	105	105	105	105
Net Total CUM/ha	198	18	119	127	136	145	154	154	154	154	154	154	154	154
Net Total CUM/ha/ann	138	19	119	127	136	145	154	154	154	154	154	154	154	154
Net Total CUM/ha/ann	138	19	119	127	136	145	154	154	154	154	154	154	154	154
Crops Yield, CUM/ha/ann	138	19	119	127	136	145	154	154	154	154	154	154	154	154
Net W. Req. CUM/ha/ann	138	19	119	127	136	145	154	154	154	154	154	154	154	154
Net W. Req. CUM/ha/ann	138	19	119	127	136	145	154	154	154	154	154	154	154	154
Net W. Req. CUM/ha/ann	138	19	119	127	136	145	154	154	154	154	154	154	154	154
Net W. Req. CUM/ha/ann	138	19	119	127	136	145	154	154	154	154	154	154	154	154
Net W. Req. CUM/ha/ann	138	19	119	127	136	145	154	154	154	154	154	154	154	154
Net W. Req. CUM/ha/ann	138	19	119	127	136	145	154	154	154	154	154	154	154	154

Table F-15.6. Summary of Gross Water Requirements and Evapotranspiration based on Modified Penman Method, CUM/ha/ann

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
ET <sub>c</sub> , mm/month	24	24	26	27	28	32	38	45	48	50	55	60	64	1,036
ET <sub>0</sub> , mm/10 days	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	1,036
Short Duration	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheat	30	0.80	0.90	0.98	1.00	1.06	1.06	1.06	1.06	0.83	0.20	0.10	0.10	0.10
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long Duration	20	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ground Beans	7	1.09	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Crop	6	1.00	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sugar Beet	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Winter Vegetable	10	0.70	0.75	0.82	0.89	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Onion	0.80	0.75	0.75	0.75	0.82	0.89	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Onion	0.86	0.60	0.65	0.70	0.75	0.82	0.89	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cotton	22	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Maize	20	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maize	30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net W. Req. (ET <sub>c</sub> ) CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Land Preparation, CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percolation, CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net W. Req. for Rain, CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Vegetable	15	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Tomato	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sunflower	8	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tree Crop	2	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Net W. Req. CUM/10days	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Total CUM/ha/ann	120	17	81	89	97	109	109	105	105	105	105	105	105	105
Net Total CUM/ha	198	18	119	127	136	145	154	154	154	154	154	154	154	154
Net Total CUM/ha/ann	138	19	119											