

Figure F.14.30 Water Requirement and Availability on Whole Bahr Shebin Command Area (602,964 feddan)

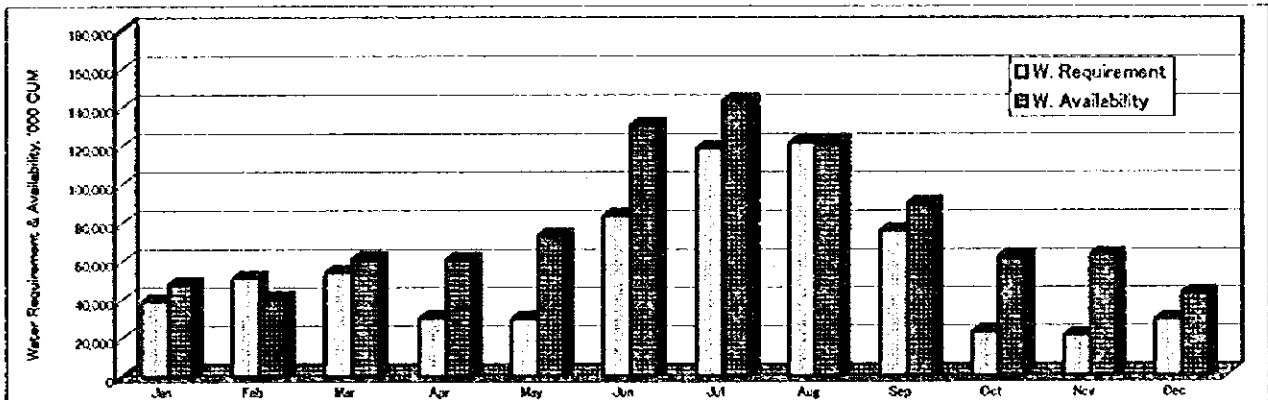


Figure F.14.31 Water Requirement and Availability on Upstream of Bahr Shebin (105,575 feddan)

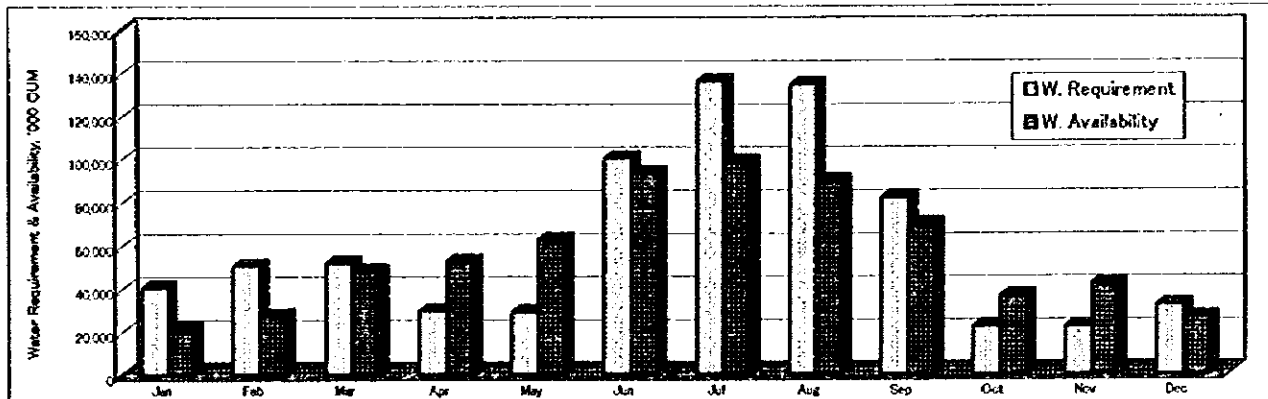


Figure F.14.32 Water Requirement and Availability on Bahr El Sahel (114,758 feddan)

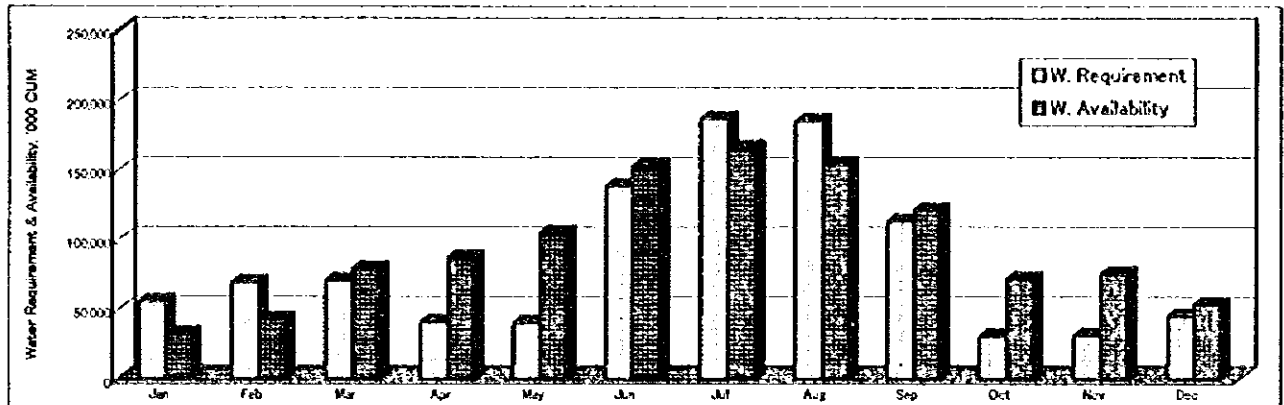


Figure F.14.33 Water Requirement and Availability on Bahr Tera (154,765 feddan)

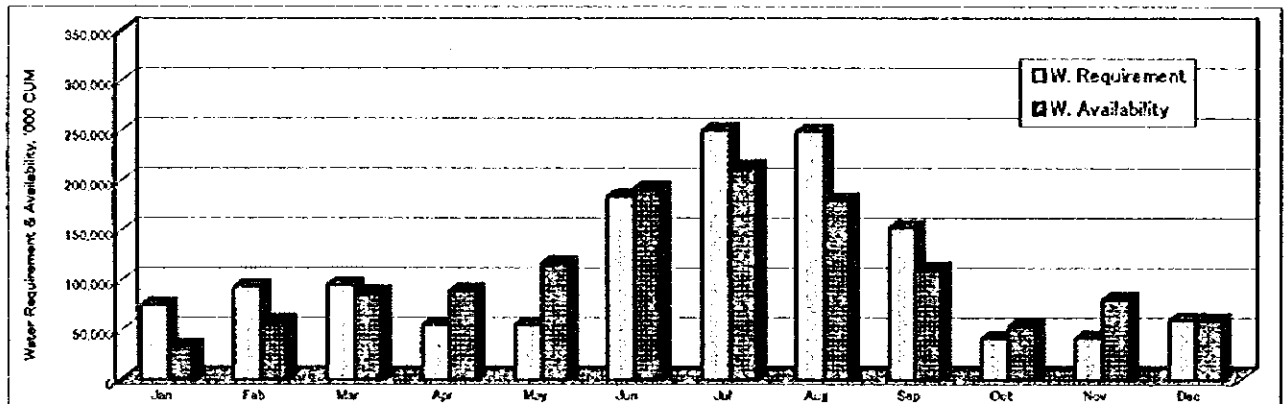


Figure F.14.34 Water Requirement and Availability on Raiah Bilqas & Basandila (225,869 feddan)

Table F.14.56 Cropping Pattern 200% 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
Downstream															
After MPS															
Mixing	39,055	14,625	18,003	18,618	10,573	10,138	37,849	50,561	49,374	29,882	7,827	7,971	11,784	267,207	
Drainage only	3,262	1,217	1,498	1,549	880	844	3,150	4,207	4,199	2,487	661	663	981	22,238	
Drainage (Mixed)	6,600	2,472	3,042	3,148	1,787	1,713	6,396	8,644	8,344	5,050	1,323	1,347	1,891	45,158	
El Mansour	45,700	17,114	21,087	21,788	12,372	11,863	44,288	59,164	57,775	34,968	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	
Drainage (Mixed)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total of D.S.(Drainage)	9,862	3,689	4,541	4,698	2,667	2,557	9,548	12,852	12,453	7,536	1,974	2,010	2,972	67,392	
Total of D.S.(Ex. Drainage)	94,755	31,739	39,070	40,404	22,945	22,002	82,138	109,725	107,149	64,848	16,986	17,299	25,573	579,877	
Total of D.S.	94,805	35,428	43,611	45,099	25,611	24,559	91,684	122,476	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	
Drainage (Mixed)	4,700	1,721	2,148	2,170	1,272	1,298	4,052	5,594	5,636	3,489	968	987	1,367	30,684	
Total (Drainage)	14,550	5,409	6,689	6,865	3,939	3,955	13,539	18,348	18,091	11,025	2,924	2,978	4,332	98,078	
Total (Ex. Drainage)	149,115	55,302	69,489	70,112	40,362	39,778	137,625	186,322	184,559	112,619	30,241	30,547	44,294	1,000,050	
Total (+0.7 or 0.5*0)	154,765	58,237	72,122	73,833	42,503	41,886	142,849	193,391	191,350	116,838	31,397	32,167	46,644	1,053,138	
Total	163,865	60,711	75,177	76,977	44,301	43,633	151,223	204,668	202,456	123,644	33,194	33,525	48,633	1,098,125	

Table F.14.57 Cropping Pattern 200% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Raiah Bilqas, Downstream+Midstream)

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
El Esrah															
Drainage only	11,420	4,277	5,284	5,444	3,092	2,965	11,067	14,784	14,437	8,738	2,289	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	3,804	3,874	5,727	129,964	
El Nile															
Drainage only	23,990	8,980	11,064	11,491	6,492	6,225	23,240	31,045	30,316	18,348	4,805	4,894	7,235	164,068	
Fresh	11,621	4,352	5,357	5,540	3,146	3,017	11,262	15,045	14,692	8,891	2,329	2,372	3,506	79,509	
Total of El Nile (Drainage)	35,611	13,332	16,319	16,876	9,638	9,190	34,302	45,929	44,754	27,095	7,095	7,225	10,661	242,200	
Total of El Nile (Ex. Drain)	30,602	11,460	14,107	14,588	8,285	7,944	29,657	38,618	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	63,964	85,447	83,441	50,500	13,228	13,471	19,915	451,573	
B. Hafir Shehab															
Fresh	6,700	2,509	3,089	3,194	1,814	1,739	6,493	8,674	8,470	5,128	1,343	1,367	2,022	45,840	
Total of D.S. (Drainage)	35,400	13,257	16,319	16,876	9,637	9,190	34,302	45,829	44,754	27,095	7,095	7,225	10,661	242,200	
Total of D.S. (Ex. Drainage)	37,302	13,969	17,195	17,782	10,098	9,693	36,150	48,281	47,159	28,541	7,476	7,613	11,255	255,213	
Total of D.S.	72,702	27,226	33,514	34,658	19,682	18,873	70,457	94,121	91,912	55,628	14,570	14,839	21,938	497,413	
Downstream															
Midstream															
B. Hafir Shehab	6,620	2,424	3,026	3,058	1,782	1,828	5,707	7,879	7,942	4,914	1,363	1,363	1,928	43,219	
Total of B. Hafir (Drainage)	35,400	13,257	16,319	16,876	9,637	9,190	34,302	45,829	44,754	27,095	7,095	7,225	10,661	242,200	
Total of B. Hafir (Ex. Drain)	62,083	23,194	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	36,450	44,912	46,371	26,390	25,416	93,765	125,511	122,813	74,435	19,573	19,908	29,341	664,885	
Raiah Bilqas	14,248	5,216	6,513	6,577	3,856	3,935	12,294	16,957	17,093	10,576	2,935	2,933	4,144	99,018	
B. E. Mansara	37,978	13,904	17,359	17,531	10,278	10,489	32,742	45,199	45,560	28,199	7,822	7,818	11,047	247,939	
Total of M.S.	58,946	21,544	26,898	27,164	15,925	16,253	50,733	70,035	70,594	43,878	12,120	12,113	17,117	394,175	
Total (Drainage)	35,400	13,257	16,319	16,876	9,593	9,190	34,302	45,829	44,754	27,095	7,095	7,225	10,661	242,200	
Total (Ex. Drainage)	114,309	42,314	52,465	53,603	30,940	30,651	104,483	141,838	140,712	86,114	23,235	23,433	33,651	763,642	
Total (+0.7 or 0.5*0)	132,009	51,594	63,888	65,416	37,649	37,084	121,637	164,752	163,089	99,657	26,783	28,491	41,328	901,366	
Total	149,709	55,571	68,784	70,479	40,524	39,841	138,790	187,867	185,466	113,200	30,330	30,659	44,533	1,005,841	

Table F.14.58 Cropping Pattern 200K 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	4,378	5,391	5,675	3,166	3,036	11,333	15,139	14,784	8,947	2,344	2,387	3,528	60,008	
Downstream	29,086	10,885	13,399	13,856	7,889	7,545	28,169	37,629	36,746	22,239	5,825	5,832	8,770	198,864	
Midstream	18,377	6,728	8,400	8,483	4,973	5,076	15,843	21,871	22,046	13,640	3,785	3,783	5,345	119,974	
Total (Drainage)	11,694	4,378	5,391	5,675	3,166	3,036	11,333	15,139	14,784	8,947	2,344	2,387	3,528	60,008	
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 (+0.7 or 0.5*D)	53,290	20,678	25,572	26,241	15,058	14,746	49,678	67,070	66,184	40,353	10,782	11,386	16,585	364,334	
Total	59,137	21,992	27,189	27,914	16,008	15,657	55,345	74,639	73,576	44,827	11,954	12,102	17,644	398,846	

Table F.14.59 Cropping Pattern 200K 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	1,994	45,211	
After K. Saad PS	8,611	3,225	3,969	4,105	2,331	2,235	8,345	11,148	10,886	6,598	1,726	1,758	2,598	58,915	
Downstream															
Fr. Damieta	5,400	2,022	2,489	2,574	1,462	1,402	5,233	6,991	6,827	4,132	1,082	1,102	1,629	36,946	
After K. Saad PS	29,381	11,003	13,544	14,006	7,954	7,627	28,474	38,037	37,144	22,490	5,888	5,987	8,865	201,019	
Before K. Saad PS	14,695	5,503	6,774	7,005	3,978	3,815	14,241	19,024	18,578	11,243	2,945	2,989	4,434	100,540	
Midstream															
Before K. Saad PS	8,165	2,889	3,732	3,769	2,210	2,255	7,039	9,717	9,795	6,060	1,682	1,681	2,375	53,305	
Total (Fr. Damieta)	12,008	4,497	5,535	5,724	3,251	3,117	11,637	15,548	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 (+0.7 or 0.5*D)	66,856	25,867	31,894	32,892	18,749	18,114	63,918	85,699	83,994	50,966	13,444	14,150	20,808	460,497	
Total	72,860	27,216	33,555	34,610	19,724	19,050	69,737	93,472	91,584	55,560	14,647	14,885	21,895	495,935	

Table F.14.60 Cropping Pattern 200K 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 (+0.7 or 0.5*D)	66,856	25,867	31,894	32,892	18,749	18,114	63,918	85,699	83,994	50,966	13,444	14,150	20,808	460,497	
Balamoun (Total)	72,860	27,216	33,555	34,610	19,724	19,050	69,737	93,472	91,584	55,560	14,647	14,885	21,895	495,935	
Downstream															
After B. PS	13,004	4,870	5,995	6,199	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	6,199	3,520	3,376	12,602	16,835	16,440	9,950	2,608	2,654	3,924	88,971	
Midstream															
Total at B'ndry (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 B'ndry (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 B'ndry (Fr. Balamoun)	100,734	37,430	46,300	47,491	27,672	26,732	93,674	126,750	125,088	76,272	20,388	20,621	30,014	678,222	
Total at B'ndry (+0.7 or 0.5*D)	106,738	40,577	50,175	51,499	29,543	28,914	99,693	134,523	132,678	80,866	21,588	22,337	32,550	724,940	
Total at B'ndry	112,742	41,926	51,835	53,216	30,518	29,849	105,512	142,236	140,268	85,460	22,778	23,072	33,637	760,370	
Upstream															
Total (Fr. Damieta)	8,020	2,946	3,881	4,100	2,287	2,275	6,324	8,997	9,207	5,733	1,733	1,582	2,230	51,298	
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 (Ex. Damieta)	108,754	40,378	50,190	51,592	29,007	28,555	100,198	135,747	134,204	82,006	22,116	22,203	32,244	729,520	
Total (+0.5 or 0.7*D)	114,758	43,526	54,055	55,589	31,830	31,189	106,017	143,520	141,885	86,599	23,319	23,919	34,780	776,238	
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	35,967	811,676	

Table F.14.61 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	24,883	32,457	34,283	19,131	19,029	52,394	75,252	77,005	47,954	14,496	13,233	18,650	429,060	

Table F.14.62 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
Basandila (Drainage)	11,694	4,379	5,391	5,673	3,166	3,036	11,333	15,139	14,784	9,947	2,344	2,327	3,528	80,008	
Basandila (Ex. Drainage)	47,443	17,613	21,799	22,339	12,842	12,621	44,012	59,500	58,782	35,879	9,810	9,715	14,115	318,838	
Bahr Shebin (MS)	5,025	1,840	2,297	2,320	1,360	1,388	4,332	5,890	6,028	3,730	1,035	1,024	1,462	32,906	
Raiah Bikas (Drainage)	35,400	13,257	16,319	16,876	9,583	9,190	34,307	45,820	44,784	27,085	7,082	7,225	10,681	242,200	
Raiah Bikas (Ex. Drainage)	114,309	42,314	52,465	53,903	30,940	30,851	104,483	141,838	140,712	86,114	23,235	23,432	33,851	763,642	
Bahr Shebin (MS)	35,545	13,013	16,247	16,408	9,619	9,817	30,644	42,904	42,841	26,383	7,321	7,317	10,339	232,055	
Bahr Tera (Drainage)	14,520	5,409	6,689	6,869	3,838	3,838	13,328	18,346	18,091	11,022	2,824	2,828	4,339	88,076	
Bahr Tera (Ex. Drainage)	149,115	55,302	68,489	70,112	40,362	39,778	137,625	198,322	184,359	112,619	30,241	30,547	44,294	1,000,050	
Bahr Shebin (MS)	1,979	725	905	914	536	547	1,706	2,355	2,374	1,469	408	407	576	12,920	
Total of Above (Drainage)	61,644	23,045	28,388	28,315	16,688	16,080	59,238	79,314	77,628	47,028	12,380	12,580	18,540	420,283	
Total of Above (Ex. Drainage)	353,416	130,806	162,201	165,895	95,659	94,802	322,803	438,289	434,907	266,195	71,850	72,454	104,637	2,360,309	
Total of Above	415,060	153,851	190,589	195,010	112,347	110,882	382,041	512,535	512,535	313,252	84,231	85,044	123,185	2,780,593	
Bahr Shebin (US)	18,470	6,791	8,937	9,442	5,268	5,239	14,564	20,720	21,203	13,204	3,982	3,844	5,135	118,139	
Bahr Sahel (Fr. Damietta)	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	
Bahr Sahel (Ex. Damietta)	108,754	40,378	50,180	51,592	28,555	29,007	100,198	135,747	134,294	82,006	22,116	22,202	32,244	729,520	
Bahr El Mallah	67,080	24,683	32,457	34,283	19,131	19,029	52,394	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	5,661	15,790	22,465	22,988	14,315	4,328	3,951	5,568	128,085	
Total (Fr. Damietta)	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 (Drainage)	61,644	23,045	28,388	28,315	16,688	16,080	59,238	79,314	77,628	47,028	12,380	12,580	18,540	420,283	
Total (Ex. Above both)	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	
Total (Ex. Damietta)	629,389	233,045	291,863	300,575	172,011	169,838	565,488	771,797	769,026	470,732	129,162	128,075	184,782	4,185,396	
Total of Bahr Shebin	641,397	237,542	297,399	308,300	175,262	172,955	577,125	787,343	783,206	479,919	131,569	130,526	188,406	4,267,552	
+0.7 or 0.5 * Drainage															
Basandila	53,290	20,678	25,572	26,241	15,058	14,746	49,678	67,070	66,184	40,353	10,782	11,386	16,585	364,334	
Bahr Shebin (MS)	5,025	1,840	2,297	2,320	1,360	1,388	4,332	5,890	6,028	3,730	1,035	1,034	1,462	32,806	
Raiah Bikas	132,009	51,594	63,888	65,416	37,649	37,084	121,637	164,752	163,089	99,657	26,783	28,491	41,328	901,368	
Bahr Shebin (MS)	35,545	13,013	16,247	16,408	9,619	9,817	30,644	42,904	42,841	26,383	7,321	7,317	10,339	232,055	
Bahr Tera	154,765	58,237	72,122	73,833	42,503	41,896	142,849	193,391	191,350	116,888	31,397	32,167	46,644	1,053,138	
Bahr Shebin (MS)	1,979	725	905	914	536	547	1,706	2,355	2,374	1,469	408	407	576	12,920	
Total of Above	382,613	146,088	181,931	185,131	106,725	105,468	350,847	475,653	471,667	283,480	77,715	80,803	116,934	2,596,619	
Bahr Shebin (US)	18,470	6,791	8,937	9,442	5,268	5,239	14,564	20,720	21,203	13,204	3,992	3,844	5,135	118,139	
Bahr El Sahel	114,758	43,526	54,055	55,599	31,930	31,189	106,017	143,520	141,885	86,599	23,319	23,919	34,780	776,238	
Bahr El Mallah	67,080	24,683	32,457	34,283	19,131	19,029	52,394	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	228,427	286,170	294,703	168,664	166,606	540,113	737,810	734,747	450,553	123,849	125,550	181,068	4,048,140	

Table F.14.83 Comparison between Cropping Pattern 200% Water Requirement based on Modified Penman Method and Availability, '000 CUM Irriga. Efficiency: 0.86

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Bahr Tera (Required)	154,765	58,237	72,122	73,833	42,503	41,888	142,849	193,391	191,350	116,888	31,337	32,167	46,644	1,053,138	
Bahr Tera (Available)	26%	32,127	41,973	79,222	86,432	104,322	151,922	165,290	153,939	120,257	71,373	74,712	52,980	1,133,458	
Surplus or Deficit, %		-81	-72	6	51	90	6	-17	-24	3	56	57	12	7	
Rahbeen (Required)	382,613	146,066	181,031	185,131	108,725	105,468	350,847	475,853	471,667	288,480	77,715	80,803	116,934	2,596,619	
Rahbeen (Available)	63%	65,959	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, %		-121	-90	-12	39	52	-2	-25	-40	-24	38	48	-4	-7	
Bahr El Sahel (Required)	114,758	43,526	54,055	55,599	31,830	31,189	106,017	143,520	141,885	88,599	23,319	23,919	34,780	776,238	
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, %		-104	-98	-18	40	50	-14	-48	-58	-25	36	43	-33	-16	
Bahr Shebin (Required)	602,946	228,427	288,170	294,703	168,664	166,606	540,113	737,810	734,747	450,553	123,849	125,550	181,068	4,048,140	
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	181,903	4,026,117	
Surplus or Deficit, %		-69	-70	-7	42	53	5	-19	-34	-15	45	52	0	-1	
After Bahr Tera (Raiah Bilqas & Basandila)															
Required	225,869	87,125	108,005	110,385	63,688	63,035	206,292	280,106	277,943	170,123	45,920	48,228	69,714	1,530,562	
Available	37%	33,107	57,672	86,511	88,762	116,548	191,349	212,337	178,960	110,453	53,351	60,198	59,175	1,269,424	
Surplus or Deficit, %		-163	-97	-28	28	46	-8	-32	-54	-54	14	40	-18	-21	
Before Sahel-Rahbeen (Upstream of Bahr Shebin)															
Required	105,575	38,816	51,083	53,973	30,109	29,949	83,249	118,437	121,196	75,474	22,816	20,328	29,352	675,283	
Available	18%	47,925	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: 0.86															
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)													

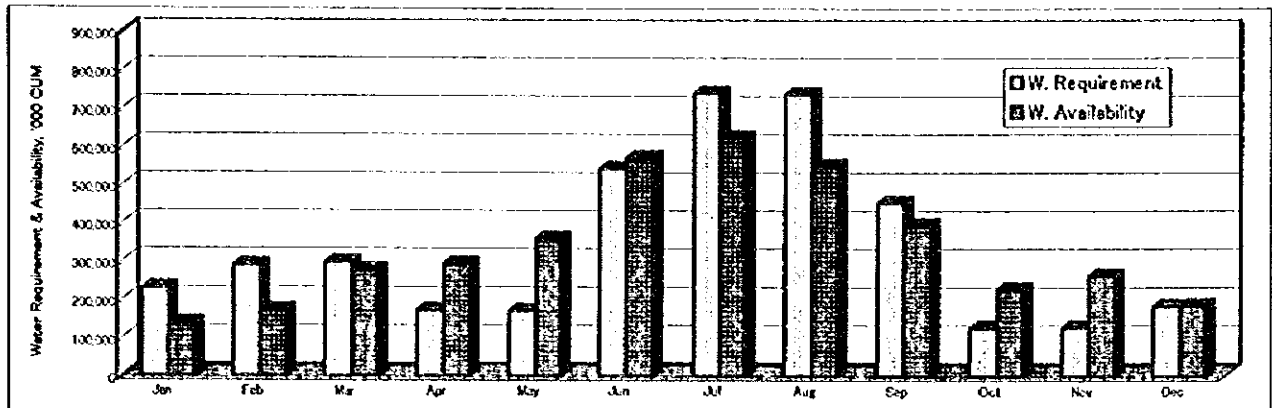


Figure F.14.35 Water Requirement and Availability on Whole Bahr Shebin Command Area (602,964 feddan)

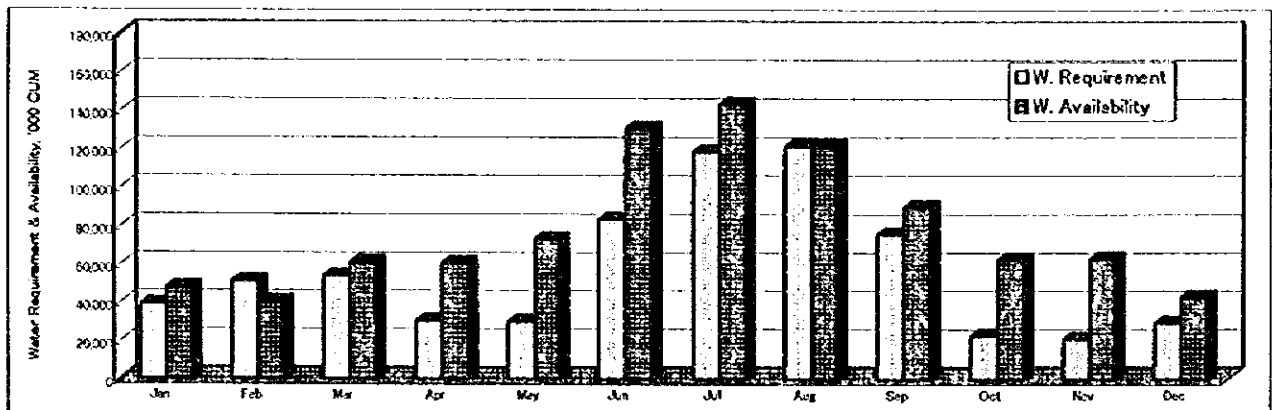


Figure F.14.36 Water Requirement and Availability on Upstream of Bahr Shebin (105,575 feddan)

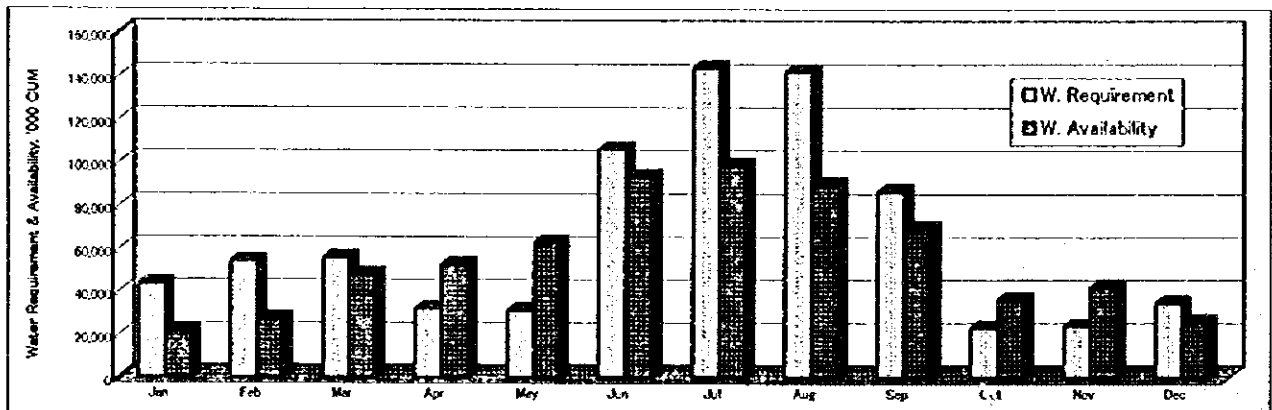


Figure F.14.37 Water Requirement and Availability on Bahr El Sahel (114,758 feddan)

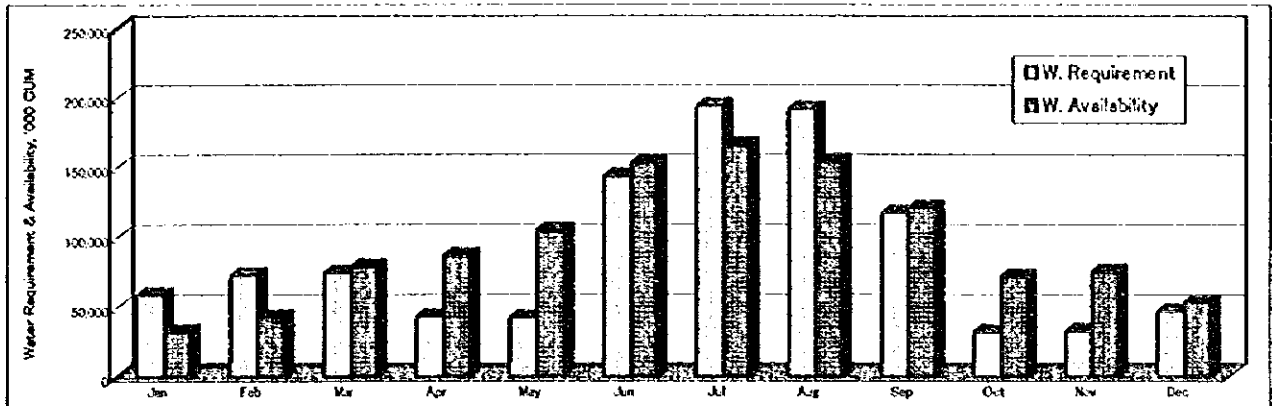


Figure F.14.38 Water Requirement and Availability on Bahr Tera (154,765 feddan)

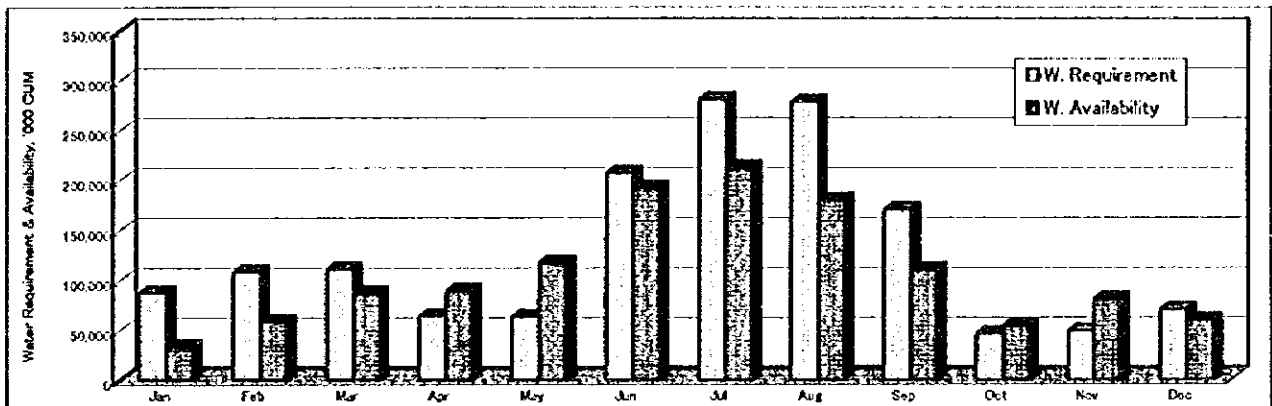


Figure F.14.39 Water Requirement and Availability on Reish Bilqas & Basandila (225,869 feddan)

Table F.14.66 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	14,170	17,443	18,038	10,244	9,823	36,671	48,986	47,837	28,951	7,583	7,723	11,417	258,886	
Drainage only	3,250	1,179	1,452	1,501	852	817	3,052	4,076	3,991	2,409	831	643	950	21,543	
Drainage (Mixed)	8,600	2,392	2,998	3,048	1,731	1,690	6,197	9,278	8,084	4,893	1,292	1,305	1,929	43,750	
El Mansour	45,700	16,581	20,411	21,107	11,987	11,484	42,910	57,321	55,976	33,877	8,874	9,037	13,359	302,934	
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)	9,850	3,574	4,398	4,549	2,384	2,477	9,249	12,352	12,005	7,302	1,913	1,948	2,879	65,233	
Total of D.S. (Ex. Drainage)	84,755	30,751	37,853	38,145	22,230	21,317	79,580	106,508	103,813	62,829	16,457	16,760	24,776	581,820	
Total of D.S.	94,605	34,325	42,253	43,695	24,814	23,794	88,829	118,863	115,878	70,130	18,389	18,708	27,656	627,113	
Midstream															
Fresh	64,380	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	2,091	2,102	1,232	1,258	3,926	5,419	5,463	3,380	938	937	1,325	29,728	
Total (Drainage)	14,550	5,241	6,491	6,651	3,816	3,735	13,174	17,774	17,928	10,682	2,850	2,895	4,204	95,022	
Total (Ex. Drainage)	149,115	53,580	66,356	67,928	38,105	38,539	133,339	180,520	178,618	109,112	29,300	29,598	42,914	988,908	
Total (+0.0+0)	149,115	53,580	66,356	67,928	38,105	38,539	133,339	180,520	178,618	109,112	29,300	29,598	42,914	988,908	
Total	163,665	58,821	72,836	74,580	42,921	42,274	146,514	198,284	196,148	119,704	32,150	32,431	47,118	1,063,930	

Table F.14.67 Cropping Pattern 200% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Raiah Bilqes, Downstream-Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
El Esiah															
Drainage only	11,420	4,143	5,100	5,274	2,995	2,872	10,723	14,324	13,988	8,468	2,217	2,258	3,339	75,700	
Fresh	18,981	6,887	8,477	8,767	4,979	4,774	17,822	23,908	23,248	14,071	3,868	3,753	5,549	125,820	
El Nile															
Drainage only	23,980	8,700	10,710	11,076	6,290	6,031	22,516	30,078	29,322	17,776	4,658	4,742	7,010	158,927	
Fresh	11,621	4,216	5,190	5,367	3,048	2,923	10,911	14,576	14,234	8,615	2,256	2,292	3,397	77,093	
Total of El Nile (Drainage)	35,400	12,844	15,870	16,380	9,285	8,923	33,239	44,402	43,360	26,242	6,874	7,000	10,349	234,658	
Total of El Nile (Ex. Drain)	30,602	11,103	13,688	14,134	8,027	7,697	28,734	38,384	37,483	22,685	5,942	6,051	8,946	202,853	
Total of El Nile	66,002	23,947	29,478	30,484	17,312	16,800	61,972	82,788	80,843	48,927	12,816	13,052	19,294	437,511	
B. Hafir Shehab	6,700	2,431	2,892	3,094	1,757	1,695	6,291	8,404	8,207	4,967	1,301	1,325	1,959	44,413	
Total of D.S. (Drainage)	35,400	12,844	15,870	16,380	9,285	8,923	33,239	44,402	43,360	26,242	6,874	7,000	10,349	234,658	
Total of D.S. (Ex. Drainage)	37,302	13,534	16,680	17,228	9,784	9,382	35,025	46,788	45,690	27,652	7,243	7,376	10,905	247,286	
Total of D.S.	72,702	26,378	32,470	33,579	19,069	18,285	68,263	91,190	89,050	53,894	14,117	14,377	21,253	481,923	
Downstream	18,161	6,589	8,111	8,388	4,763	4,568	17,052	22,778	22,245	13,463	3,528	3,591	5,309	120,385	
Midstream															
B. Hafir Shehab	6,620	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	12,844	15,870	16,380	9,285	8,923	33,239	44,402	43,360	26,242	6,874	7,000	10,349	234,658	
Total of B. Hafir (Ex. Drain)	62,083	22,471	27,703	28,577	16,283	15,721	57,608	77,200	75,629	45,875	12,090	12,288	18,079	409,523	
Total of B. Hafir	97,483	35,315	43,513	44,927	25,568	24,624	90,845	121,602	118,989	72,117	18,984	18,288	28,428	644,181	
Raiah Bilqes	14,248	5,054	6,310	6,372	3,736	3,813	11,901	16,429	16,590	10,246	2,843	2,842	4,015	90,121	
B. E. Masara	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	26,060	26,318	15,429	15,747	49,153	67,854	68,396	42,318	11,743	11,736	16,594	372,212	
Total (Drainage)	35,400	12,844	15,870	16,380	9,285	8,923	33,239	44,402	43,360	26,242	6,874	7,000	10,349	234,658	
Total (Ex. Drainage)	114,309	40,996	50,831	51,934	29,977	29,697	101,230	137,421	136,331	83,433	22,512	22,704	32,797	739,862	
Total (+0.0+0)	114,309	40,996	50,831	51,934	29,977	29,697	101,230	137,421	136,331	83,433	22,512	22,704	32,797	739,862	
Total	149,709	53,840	66,642	68,284	39,282	38,600	134,469	181,823	179,691	109,675	29,385	29,704	43,148	974,520	

Table F.14.68 Cropping Pattern 200% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Basmadila, 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	4,243	5,223	5,401	3,067	2,941	10,990	14,668	14,323	8,668	2,271	2,312	3,419	77,517	
Downstream	29,066	10,546	12,982	13,425	7,624	7,310	27,291	36,457	35,602	21,547	5,644	5,748	8,497	192,671	
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	
<i>Total (Drainage)</i>	11,694	4,243	5,223	5,401	3,067	2,941	10,990	14,668	14,323	8,668	2,271	2,312	3,419	77,517	
Total (Ex. Drainage)	47,443	17,064	21,120	21,643	12,442	12,228	42,641	57,647	56,961	34,762	9,311	9,413	13,676	308,909	
Total (+0.0% D)	47,443	17,064	21,120	21,643	12,442	12,228	42,641	57,647	56,961	34,762	9,311	9,413	13,676	308,909	
Total	59,137	21,307	26,343	27,044	15,509	15,169	53,621	72,315	71,285	43,431	11,581	11,725	17,094	386,426	

Table F.14.69 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. Damietta	6,608	2,398	2,951	3,052	1,733	1,662	6,205	8,288	8,094	4,898	1,283	1,307	1,932	43,803	
Balamoun	8,611	3,124	3,846	3,977	2,259	2,166	8,085	10,801	10,547	6,383	1,672	1,703	2,517	57,080	
Downstream															
Fr. Damietta	5,400	1,959	2,412	2,494	1,416	1,358	5,070	6,773	6,614	4,003	1,049	1,068	1,579	35,795	
After K. Saad PS	29,381	10,660	13,122	13,570	7,706	7,390	27,587	36,852	35,938	21,780	5,705	5,810	8,589	194,759	
Before K. Saad PS	14,695	5,332	6,563	6,787	3,854	3,698	13,798	18,432	17,999	10,893	2,853	2,906	4,296	97,409	
Midstream															
Before K. Saad PS	8,165	2,896	3,616	3,652	2,141	2,185	6,820	9,415	9,490	5,872	1,629	1,628	2,301	51,845	
Total (Fr. Damietta)	12,008	4,357	5,363	5,546	3,150	3,020	11,275	15,062	14,708	8,901	2,332	2,375	3,510	79,598	
Total (Fr. Balamoun)	60,852	22,012	27,147	27,986	15,960	15,436	56,290	74,024	74,024	44,928	11,860	12,047	17,703	400,894	
Total (+0.0% D)	60,852	22,012	27,147	27,986	15,960	15,436	56,290	74,024	74,024	44,928	11,860	12,047	17,703	400,894	
Total	72,860	26,369	32,510	33,532	19,110	18,456	67,565	90,561	88,732	53,830	14,191	14,422	21,213	480,492	

Table F.14.70 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. Damietta)	12,008	4,357	5,363	5,546	3,150	3,020	11,275	15,062	14,708	8,901	2,332	2,375	3,510	79,598	
Balamoun (Fr. Balamoun)	60,852	22,012	27,147	27,986	15,960	15,436	56,290	74,024	74,024	44,928	11,860	12,047	17,703	400,894	
Balamoun (+0.0% D)	60,852	22,012	27,147	27,986	15,960	15,436	56,290	74,024	74,024	44,928	11,860	12,047	17,703	400,894	
Balamoun (Total)	72,860	26,369	32,510	33,532	19,110	18,456	67,565	90,561	88,732	53,830	14,191	14,422	21,213	480,492	
Downstream															
After B. PS	13,004	4,718	5,908	6,006	3,411	3,271	12,210	16,311	15,928	9,640	2,525	2,571	3,801	86,200	
Before B. PS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total of DS'	13,004	4,718	5,908	6,006	3,411	3,271	12,210	16,311	15,928	9,640	2,525	2,571	3,801	86,200	
Midstream															
Total at B'dry (Fr. Damietta)	26,878	9,534	11,902	12,021	7,047	7,192	22,451	30,992	31,240	19,329	5,363	5,360	7,575	170,008	
Total at B'dry (Fr. Balamoun)	12,008	4,357	5,363	5,546	3,150	3,020	11,275	15,062	14,708	8,901	2,332	2,375	3,510	79,598	
Total at B'dry (Fr. Balamoun)	100,734	36,264	44,558	46,013	28,418	25,899	90,951	122,803	121,192	73,897	19,748	19,979	29,079	657,103	
Total at B'dry (+0.0% D)	108,738	39,314	49,612	49,895	29,623	28,013	96,589	130,334	128,546	78,348	20,914	21,641	31,536	702,366	
Total at B'dry	112,742	40,621	50,221	51,559	29,588	28,919	102,226	137,865	135,900	82,799	22,080	22,354	32,590	736,701	
Upstream															
Total (Fr. Damietta)	8,020	2,857	3,760	3,912	2,216	2,204	6,127	8,717	8,920	5,555	1,679	1,533	2,160	49,700	
Total (Fr. Damietta)	12,008	4,357	5,363	5,546	3,150	3,020	11,275	15,062	14,708	8,901	2,332	2,375	3,510	79,598	
Total (Ex. Damietta)	108,754	39,121	48,618	49,995	28,634	28,104	97,078	131,520	130,112	79,452	21,427	21,512	31,240	706,803	
Total (+0.0% D)	108,754	39,121	48,618	49,995	28,634	28,104	97,078	131,520	130,112	79,452	21,427	21,512	31,240	706,803	
Total	120,762	43,478	53,981	55,531	31,784	31,124	108,353	146,582	144,820	88,353	23,759	23,887	34,750	786,401	

Table F.14.71 Cropping Pattern 200% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr El Mallah, Upstream) 1/1

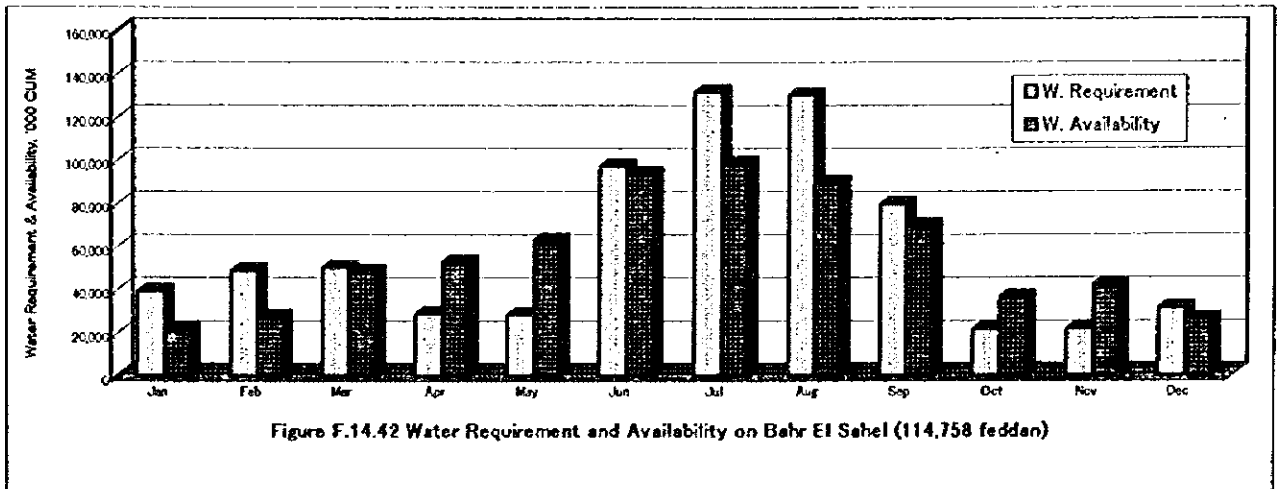
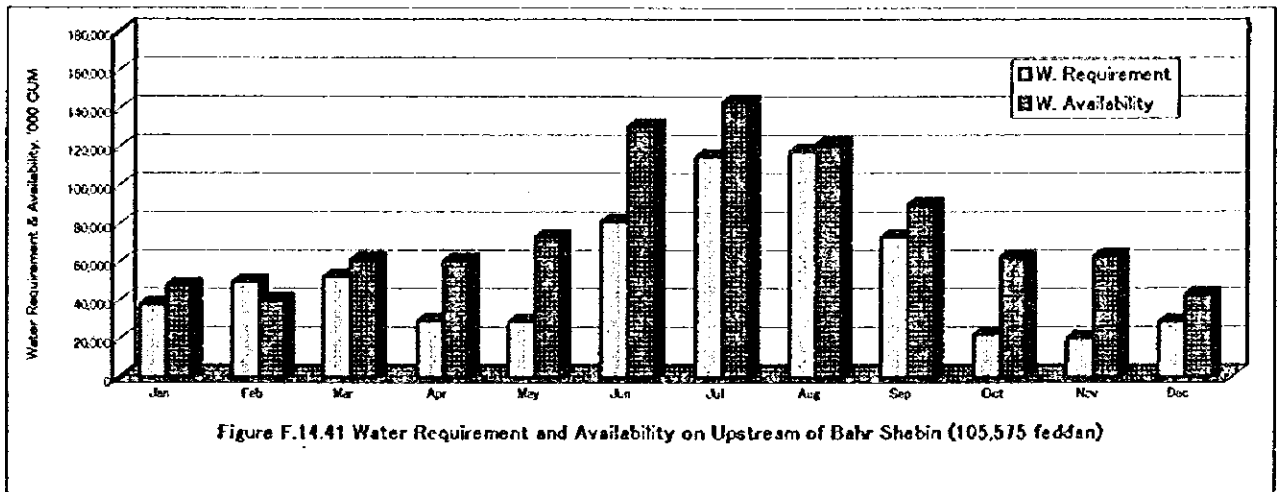
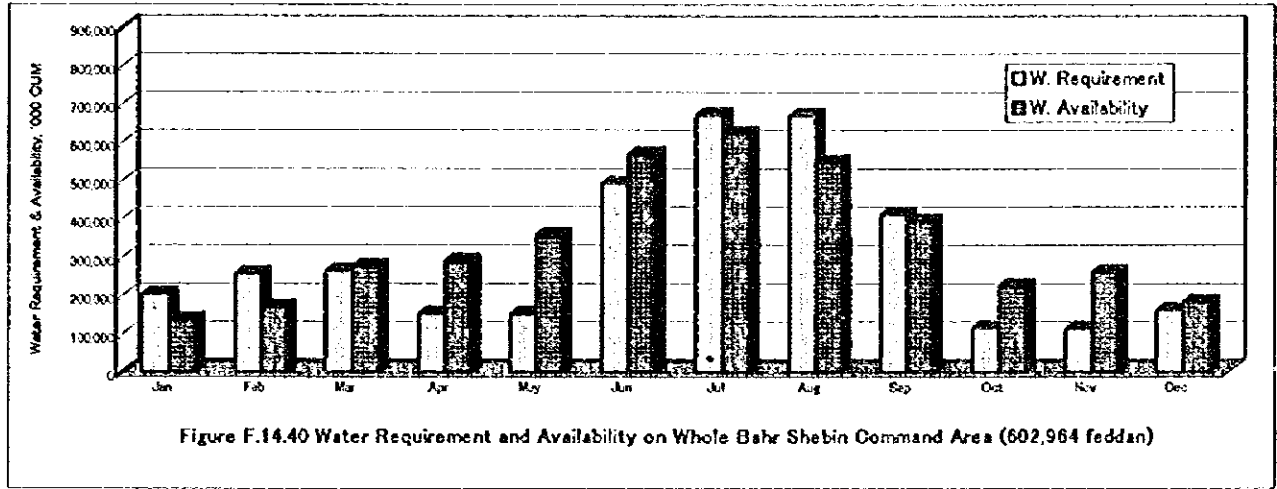
Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Upstream	67,080	23,895	31,447	33,226	18,535	18,436	51,247	72,909	74,607	46,461	14,045	12,821	18,070	415,699	

Table F.14.72 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
Basandila (Drainage)	11,684	4,243	5,223	5,491	3,087	2,941	10,990	14,088	14,323	9,698	2,271	2,312	2,419	77,517	
Basandila (Ex. Drainage)	47,443	17,064	21,120	21,843	12,442	12,228	42,641	57,647	56,981	34,762	9,311	9,413	13,676	308,909	
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 Bliqas (Drainage)	35,402	12,844	15,810	16,360	9,266	8,903	33,239	45,402	43,360	26,234	9,874	7,092	10,328	235,638	
Rajah Bliqas (Ex. Drainage)	114,309	40,996	50,831	51,934	29,977	29,697	101,230	137,421	136,331	83,433	22,512	22,704	32,797	739,862	
Bahr Shebin (MS)	35,545	12,608	15,741	15,897	9,320	9,512	29,690	40,986	41,314	25,562	7,093	7,089	10,017	224,829	
Bahr Tera (Drainage)	14,530	5,247	6,461	6,657	3,818	3,730	13,174	17,174	17,688	10,682	2,660	2,888	4,204	95,022	
Bahr Tera (Ex. Drainage)	149,115	53,580	66,356	67,929	39,105	38,539	133,339	180,520	178,618	109,112	28,300	29,596	42,914	968,908	
Bahr Shebin (MS)	1,978	702	878	885	519	530	1,653	2,300	2,300	1,423	395	395	558	12,518	
Total of Above (Drainage)	61,644	22,328	27,514	28,402	16,168	15,590	57,393	76,844	75,211	45,592	11,995	12,198	17,971	407,196	
Total of Above (Ex. Drainage)	353,416	126,733	157,150	160,536	92,680	91,850	312,751	424,651	421,364	257,906	69,613	70,198	101,378	2,286,810	
Total of Above	415,060	149,060	184,664	188,988	108,849	107,430	370,144	501,495	496,575	303,498	81,008	82,396	119,349	2,694,008	
Bahr Shebin (US)	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	
Bahr Sahel (Fr. Damietta)	12,008	4,357	5,363	5,546	3,150	3,020	11,275	15,062	14,708	8,901	2,332	2,375	3,510	79,598	
Bahr Sahel (Ex. Damietta)	108,754	39,121	48,618	49,965	28,634	28,104	97,078	131,520	130,112	79,452	21,427	21,512	31,240	706,903	
Bahr El Mallah	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	415,699	
Bahr Shebin (US)	20,025	7,133	9,388	9,919	5,533	5,504	15,299	21,765	22,272	13,870	4,193	3,927	5,394	124,066	
Total (Fr. Damietta)	12,008	4,357	5,363	5,546	3,150	3,020	11,275	15,062	14,708	8,901	2,332	2,375	3,510	79,598	
Total (Drainage)	61,644	22,328	27,514	28,402	16,168	15,590	57,393	76,844	75,211	45,592	11,995	12,198	17,971	407,196	
Total (Ex. Above both)	567,745	203,481	255,261	262,813	150,487	148,970	490,486	670,920	668,898	410,481	113,145	111,889	161,057	3,647,868	
Total (Ex. Damietta)	629,389	225,788	282,775	291,216	166,655	164,550	547,879	747,764	744,110	458,073	125,140	124,087	179,028	4,055,064	
Total of Bahr Shebin	641,397	230,145	288,138	296,782	169,804	167,570	559,153	782,825	758,818	464,975	127,472	126,462	182,539	4,134,662	
+0.0 * Drainage															
Basandila	47,443	17,064	21,120	21,643	12,442	12,228	42,641	57,647	56,981	34,762	9,311	9,413	13,676	308,909	
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 Bliqas	114,309	40,996	50,831	51,934	29,977	29,697	101,230	137,421	136,331	83,433	22,512	22,704	32,797	739,862	
Bahr Shebin (MS)	35,545	12,608	15,741	15,897	9,320	9,512	29,690	40,986	41,314	25,562	7,093	7,089	10,017	224,829	
Bahr Tera	149,115	53,580	66,356	67,929	39,105	38,539	133,339	180,520	178,618	109,112	29,300	29,596	42,914	968,908	
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	126,733	157,150	160,536	92,680	91,850	312,751	424,651	421,364	257,906	69,613	70,198	101,378	2,286,810	
Bahr Shebin (US)	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	
Bahr El Sahel	108,754	39,121	48,618	49,965	28,634	28,104	97,078	131,520	130,112	79,452	21,427	21,512	31,240	706,903	
Bahr El Mallah	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	415,699	
Bahr Shebin (US)	20,025	7,133	9,388	9,919	5,533	5,504	15,299	21,765	22,272	13,870	4,193	3,927	5,394	124,066	
Total of Bahr Shebin	567,745	203,481	255,261	262,813	150,487	148,970	490,486	670,920	668,898	410,481	113,145	111,889	161,057	3,647,868	

Table F.14.73. Comparison between Cropping Pattern 20% 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)	148,115	53,580	66,356	67,929	39,105	38,539	133,339	180,520	178,618	109,112	29,300	29,596	42,914	968,902	
Bahr Tera (Available)	26%	32,127	41,973	78,222	86,432	104,322	151,922	185,280	153,839	120,257	71,373	74,712	52,990	1,132,458	
Surplus or Deficit, %		-67	-58	13	55	63	12	-9	-16	9	59	60	19	15	
Rahbeen (Required)	353,416	126,733	157,150	160,536	92,890	91,850	312,751	424,651	421,364	257,906	69,613	70,198	101,378	2,286,810	
Rahbeen (Available)	62%	65,958	100,550	165,646	175,730	221,419	344,977	379,982	336,172	232,179	125,132	155,318	112,741	2,415,802	
Surplus or Deficit, %		-92	-58	3	47	59	9	-12	-25	-11	44	55	10	5	
Bahr El Sahel (Required)	108,754	39,121	48,618	49,985	28,634	28,104	87,078	131,520	130,112	79,452	21,427	21,512	31,240	706,903	
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, %		-83	-78	-4	48	55	-4	-34	-45	-15	41	49	-19	-6	
Bahr Shebin (Required)	567,745	203,461	255,261	262,813	150,487	148,970	490,486	670,920	668,898	410,481	113,145	111,889	161,057	3,647,868	
Bahr Shebin (Available)	100%	135,169	169,264	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, %		-51	-52	4	48	58	14	-8	-22	-5	49	57	11	9	
After Bahr Tera (Raiyah Bilqas & Beasandila)															
Required	202,322	72,451	89,918	91,721	53,056	52,781	177,759	241,849	240,446	147,370	39,918	40,208	57,907	1,305,384	
Available	36%	33,129	57,700	86,539	88,779	116,565	191,402	212,410	180,034	110,499	53,364	80,211	59,193	1,269,826	
Surplus or Deficit, %		-119	-56	-6	40	55	7	-14	-34	-33	25	50	2	-3	
Before Sahel-Rahbeen (Upstream of Bahr Shebin)															
Required	195,575	37,607	49,493	52,293	29,172	29,016	80,856	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	89,895	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)													



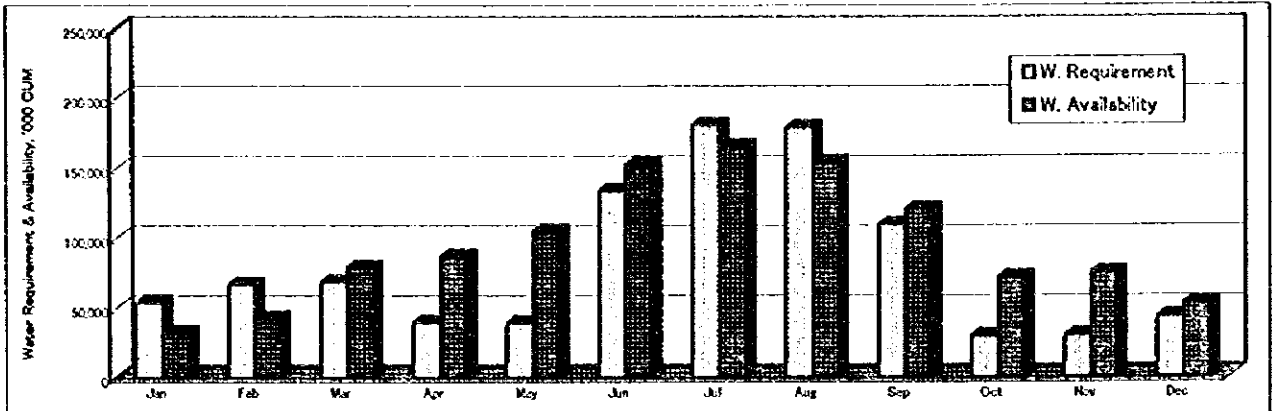


Figure F.14.43 Water Requirement and Availability on Bahr Tera (154,765 feddan)

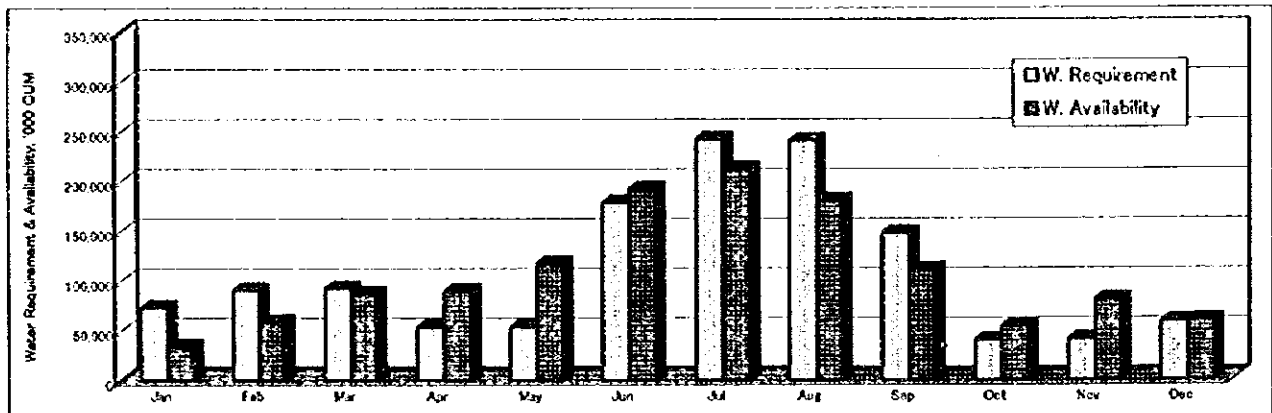


Figure F.14.44 Water Requirement and Availability on Raiah Bilqas & Basandifa (225,869 feddan)

Table F.14.76 Cropping Pattern 200% 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
Downstream															
After MPS	39,055	14,170	17,443	18,038	10,244	9,823	36,671	48,988	47,837	28,951	7,583	7,723	11,417	258,886	
Mixing	3,280	1,178	1,452	1,501	852	817	3,052	4,076	3,881	2,408	621	643	940	21,543	
Drainage only	6,600	2,395	2,948	3,048	1,731	1,660	6,187	8,278	8,084	4,893	1,282	1,305	1,928	43,780	
Drainage (Mixed)	45,700	16,591	20,411	21,107	11,987	11,494	42,910	57,321	55,976	33,877	8,874	9,037	13,359	302,934	
El Mansour															
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)	8,880	3,574	4,892	4,549	2,584	2,477	9,249	12,355	12,065	7,302	1,913	1,949	2,878	65,293	
Total of D.S. (Ex. Drainage)	84,755	30,751	37,853	38,145	22,230	21,317	79,580	106,308	103,813	62,829	16,457	16,760	24,776	561,920	
Total of D.S.	94,605	34,325	42,253	43,695	24,814	23,794	88,829	118,683	115,878	70,130	18,369	18,708	27,656	627,113	
Midstream															
Fresh	64,380	22,829	28,502	28,784	16,875	17,223	53,759	74,212	74,905	48,284	12,843	12,936	18,138	407,089	
Drainage (Mixed)	4,700	1,687	2,081	2,102	1,232	1,258	3,826	5,419	5,463	3,360	938	937	1,325	29,728	
Total (Drainage)	14,550	5,241	6,481	6,651	3,818	3,735	13,174	17,774	17,528	10,682	2,850	2,885	4,204	95,022	
Total (Ex. Drainage)	149,115	53,580	66,356	67,929	39,105	38,539	133,339	180,520	178,618	109,112	29,300	29,596	42,914	988,908	
Total (+0.7 or 0.5+D)	154,765	56,423	69,876	71,534	41,180	40,582	138,401	187,369	185,391	113,248	30,409	31,166	45,192	1,020,243	
Total	183,665	58,821	72,836	74,580	42,921	42,274	146,514	198,294	196,146	119,794	32,150	32,481	47,118	1,063,930	

Table F.14.77 Cropping Pattern 200% Water Requirement in '000 CUM based on Modified Penman Method (Canal: Raiah Bilqas, Downstream+Midstream)

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
El Eshah	11,420	4,143	5,100	5,274	2,995	2,872	10,783	14,324	13,988	8,488	2,217	2,258	3,328	75,782	
Drainage only	18,981	6,887	8,477	8,767	4,979	4,774	17,822	23,808	23,249	14,071	3,686	3,753	5,549	125,820	
Fresh															
El Nile	23,980	8,700	10,710	11,078	6,290	6,031	22,518	30,078	29,872	17,778	4,668	4,742	7,010	158,857	
Drainage only	11,821	4,218	5,180	5,387	3,048	2,923	10,911	14,576	14,234	8,615	2,256	2,298	3,397	77,033	
Fresh	32,400	12,844	15,810	16,350	9,285	8,953	33,239	44,402	43,990	26,242	6,924	7,000	10,348	234,688	
Total of El Nile (Drainage)	30,802	11,103	13,668	14,134	8,027	7,897	28,734	38,384	37,483	22,665	5,942	6,051	8,946	202,853	
Total of El Nile (Ex. Drain)	66,002	23,947	29,478	30,484	17,312	16,800	61,972	82,796	80,843	48,927	12,816	13,052	19,294	437,511	
Total of El Nile	6,700	2,431	2,992	3,094	1,757	1,885	6,291	8,404	8,267	4,967	1,301	1,325	1,959	44,413	
B. Hafir Shehab	39,400	12,844	16,810	16,980	9,285	8,953	33,239	44,402	43,990	26,242	6,924	7,000	10,348	234,658	
Total of D.S. (Drainage)	37,302	13,534	16,660	17,228	9,784	9,382	35,025	46,788	45,890	27,652	7,243	7,376	10,905	247,266	
Total of D.S. (Ex. Drainage)	72,702	26,378	32,470	33,578	19,069	18,285	68,263	91,180	89,050	53,894	14,117	14,377	21,253	481,923	
Total of D.S.	18,161	6,589	8,111	8,388	4,763	4,568	17,052	22,779	22,245	13,463	3,526	3,591	5,309	120,385	
Downstream															
Midstream															
B. Hafir Shehab	6,620	2,348	2,932	2,961	1,736	1,771	5,530	7,833	7,694	4,761	1,321	1,320	1,866	41,873	
Total of B. Hafir (Drainage)	35,400	12,844	16,810	16,980	9,285	8,953	33,239	44,402	43,990	26,242	6,924	7,000	10,348	234,658	
Total of B. Hafir (Ex. Drain)	62,083	22,471	27,703	28,577	16,283	15,721	57,608	77,200	75,629	45,875	12,090	12,288	18,079	409,523	
Total of B. Hafir	97,483	35,315	43,513	44,927	25,568	24,674	90,845	121,602	118,909	72,117	18,984	19,288	28,428	644,181	
Raiah Bilqas	14,248	5,054	6,310	6,372	3,736	3,813	11,901	16,429	16,580	10,246	2,942	2,942	4,015	90,121	
B. E. Maasara	37,978	13,471	16,819	16,985	9,958	10,193	31,722	43,792	44,141	27,311	7,578	7,574	10,703	240,218	
Total of M.S.	58,846	20,873	26,060	26,318	15,429	15,747	49,153	68,396	68,396	42,318	11,743	11,736	16,584	372,212	
Total (Drainage)	35,400	12,844	16,810	16,980	9,285	8,953	33,239	44,402	43,990	26,242	6,924	7,000	10,348	234,658	
Total (Ex. Drainage)	114,309	40,996	50,831	51,934	29,977	29,697	101,230	137,421	136,331	83,433	22,512	22,704	32,767	739,862	
Total (+0.7 or 0.5+D)	132,009	48,987	61,899	63,379	36,476	35,928	117,849	159,622	158,011	96,554	25,949	27,604	40,041	873,298	
Total	149,709	53,840	66,942	68,284	39,262	38,600	134,469	181,823	179,691	109,675	28,385	29,704	43,146	974,520	

Table F.14.78 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	4,243	5,223	5,401	3,067	2,941	10,980	14,668	14,323	8,669	2,271	2,312	3,419	77,517	
Downstream	29,066	10,546	12,982	13,425	7,624	7,310	27,291	36,457	35,602	21,547	5,644	5,748	8,497	192,671	
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)	11,694	4,243	5,223	5,401	3,067	2,941	10,980	14,668	14,323	8,669	2,271	2,312	3,419	77,517	
Total (Ex. Drainage)	47,443	17,064	21,120	21,843	12,442	12,228	42,641	57,647	56,961	34,762	9,311	9,413	13,676	308,909	
Total (+0.7 or 0.5*0)	53,290	20,034	24,776	25,424	14,589	14,287	48,131	64,981	64,123	39,096	10,448	11,031	16,068	352,989	
Total	59,137	21,307	26,343	27,044	15,509	15,169	53,621	72,315	71,285	43,431	11,581	11,725	17,094	388,426	

Table F.14.79 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. Damietta	6,608	2,398	2,951	3,052	1,733	1,662	6,205	8,288	8,094	4,998	1,283	1,307	1,932	43,803	
Balamoun	8,611	3,124	3,846	3,977	2,259	2,166	8,085	10,801	10,547	6,383	1,672	1,703	2,517	57,080	
Downstream															
Fr. Damietta	5,400	1,959	2,412	2,494	1,416	1,358	5,070	6,773	6,614	4,003	1,049	1,068	1,579	35,795	
After K. Saad PS	29,381	10,680	13,122	13,570	7,706	7,390	27,587	36,852	35,888	21,780	5,705	5,810	8,589	194,759	
Before K. Saad PS	14,695	5,332	6,563	6,787	3,854	3,696	13,798	18,432	17,999	10,883	2,853	2,906	4,286	97,409	
Midstream															
Before K. Saad PS	8,165	2,896	3,616	3,652	2,141	2,185	6,820	9,415	9,490	5,872	1,629	1,628	2,301	51,845	
Total (Fr. Damietta)	12,008	4,357	5,363	5,546	3,150	3,020	11,275	15,062	14,708	8,901	2,332	2,375	3,510	79,598	
Total (Fr. Balamoun)	60,852	22,012	27,147	27,986	15,960	15,436	56,290	75,500	74,024	44,928	11,860	12,047	17,703	400,894	
Total (+0.7 or 0.5*0)	66,856	25,062	30,901	31,868	18,165	17,550	61,928	83,031	81,378	49,378	13,025	13,708	20,160	446,157	
Total	72,860	26,369	32,510	33,532	19,110	18,456	67,565	90,561	88,732	53,830	14,181	14,422	21,213	480,492	

Table F.14.80 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
Downstream															
After B. PS	13,004	4,718	5,808	6,006	3,411	3,271	12,210	16,311	15,928	9,640	2,525	2,571	3,801	86,200	
Before B. PS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total of DS	13,004	4,718	5,808	6,006	3,411	3,271	12,210	16,311	15,928	9,640	2,525	2,571	3,801	86,200	
Midstream															
Total at B'ndry (Fr. Damietta)	26,878	9,534	11,903	12,021	7,047	7,192	22,451	30,992	31,240	19,329	5,363	5,360	7,575	170,008	
Total at B'ndry (Fr. Balamoun)	12,008	4,357	5,363	5,546	3,150	3,020	11,275	15,062	14,708	8,901	2,332	2,375	3,510	79,598	
Total at B'ndry (Fr. Balamoun)	100,734	36,284	44,858	46,013	26,418	25,899	90,951	122,803	121,192	73,897	18,748	18,879	28,079	657,103	
Total at B'ndry (+0.7 or 0.5*0)	106,738	38,314	46,612	48,895	28,623	28,013	96,599	130,334	128,546	78,348	20,914	21,641	31,536	702,366	
Total at B'ndry	112,742	40,621	50,221	51,559	29,588	28,919	102,226	137,865	135,900	82,799	22,080	22,354	32,580	738,701	
Upstream															
Total (Fr. Damietta)	8,020	2,857	3,760	3,972	2,216	2,204	6,127	8,177	8,920	5,555	1,679	1,533	2,180	49,700	
Total (Fr. Balamoun)	12,008	4,357	5,363	5,546	3,150	3,020	11,275	15,062	14,708	8,901	2,332	2,375	3,510	79,598	
Total (Ex. Damietta)	108,754	39,121	48,618	49,985	28,634	28,104	97,078	131,520	130,112	79,452	21,427	21,512	31,240	706,803	
Total (+0.5 or 0.7*0)	114,758	42,171	52,372	53,867	30,839	30,218	102,176	139,051	137,486	83,903	22,593	23,174	33,697	752,066	
Total	120,762	43,478	53,981	55,531	31,794	31,124	108,353	146,582	144,820	88,353	23,759	23,887	34,750	786,401	

Table F.14.81 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	23,895	31,447	33,226	18,535	18,438	51,247	72,809	74,607	46,461	14,045	12,821	18,070	415,689	

Table F.14.82 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>Basandila (Drainage)</i>	11,694	4,243	5,223	5,401	3,067	2,941	10,980	14,688	14,923	8,689	2,271	2,312	3,419	77,517	
<i>Basandila (Ex. Drainage)</i>	47,443	17,064	21,120	21,843	12,442	12,228	42,841	57,647	58,981	34,782	9,311	9,413	13,676	308,909	
<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>Rajah Bilqas (Drainage)</i>	35,400	12,844	15,810	16,350	9,285	9,023	33,239	44,402	43,360	26,242	6,874	7,000	10,348	234,628	
<i>Rajah Bilqas (Ex. Drainage)</i>	114,309	40,998	50,931	51,934	29,977	29,997	101,230	137,421	136,331	83,433	22,512	22,704	32,797	739,882	
<i>Bahr Shebin (MS)</i>	35,545	12,608	15,741	15,897	9,320	9,512	29,690	40,986	41,314	25,562	7,063	7,089	10,017	224,829	
<i>Bahr Tera (Drainage)</i>	14,550	5,241	6,481	6,651	3,816	3,735	13,174	17,714	17,928	10,682	2,890	2,895	4,204	95,022	
<i>Bahr Tera (Ex. Drainage)</i>	149,115	53,580	66,358	67,929	39,105	38,539	133,339	180,520	178,618	109,112	29,300	29,598	42,814	968,908	
<i>Bahr Shebin (MS)</i>	1,979	702	876	885	516	530	1,653	2,282	2,300	1,423	395	395	558	12,518	
Total of Above (Drainage)	61,644	22,328	27,514	28,402	16,168	15,580	57,393	76,844	75,211	45,592	11,995	12,168	17,971	407,168	
Total of Above (Ex. Drainage)	353,416	128,733	157,150	160,536	92,680	91,850	312,751	424,851	421,364	257,906	69,613	70,198	101,378	2,236,810	
Total of Above	415,060	149,060	184,664	188,938	108,849	107,430	370,144	501,495	496,575	303,498	81,608	82,396	119,349	2,684,006	
<i>Bahr Shebin (US)</i>	18,470	6,576	8,659	9,148	5,104	5,076	14,111	20,075	20,543	12,793	3,867	3,530	4,975	114,480	
<i>Bahr Sahel (Fr. Damietta)</i>	12,008	4,357	5,363	5,546	3,150	3,020	11,275	15,062	14,708	8,901	2,332	2,375	3,510	79,598	
<i>Bahr Sahel (Ex. Damietta)</i>	108,754	39,121	48,818	49,985	28,634	28,104	97,078	130,520	130,112	79,452	21,427	21,512	31,240	706,803	
<i>Bahr El Mallah</i>	67,080	23,895	31,447	33,226	18,535	18,438	51,247	72,809	74,607	46,461	14,045	12,821	19,070	415,699	
<i>Bahr Shebin (US)</i>	20,025	7,133	9,388	9,918	5,533	5,504	15,299	21,765	22,272	13,870	4,193	3,827	5,394	124,096	
Total (Fr. Damietta)	12,008	4,357	5,363	5,546	3,150	3,020	11,275	15,062	14,708	8,901	2,332	2,375	3,510	79,598	
Total (Drainage)	61,644	22,328	27,514	28,402	16,168	15,580	57,393	76,844	75,211	45,592	11,995	12,168	17,971	407,168	
Total (Ex. Above both)	567,745	203,461	255,261	262,813	150,487	149,970	490,496	670,920	668,898	410,481	113,145	111,889	161,057	3,647,368	
Total (Ex. Damietta)	629,389	225,788	282,775	291,216	166,655	164,550	547,878	747,784	744,110	450,073	125,140	124,087	179,028	4,055,084	
Total of Bahr Shebin	641,397	230,145	288,138	298,782	169,804	167,570	559,153	782,825	758,818	464,975	127,472	126,462	182,539	4,134,662	
+0.7 or 0.5 w Drainage															
<i>Basandila</i>	53,290	20,034	24,776	25,424	14,589	14,287	48,131	64,981	64,123	39,096	10,446	11,031	16,089	352,989	
<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>Rajah Bilqas</i>	132,006	48,987	61,899	63,379	36,476	35,929	117,849	159,822	158,011	96,554	25,948	27,604	40,041	873,299	
<i>Bahr Shebin (MS)</i>	35,545	12,608	15,741	15,897	9,320	9,512	29,690	40,986	41,314	25,562	7,063	7,089	10,017	224,829	
<i>Bahr Tera</i>	154,765	56,423	69,876	71,534	41,180	40,582	138,401	187,369	185,391	113,248	30,499	31,166	45,182	1,020,343	
<i>Bahr Shebin (MS)</i>	1,979	702	876	885	519	530	1,653	2,282	2,300	1,423	395	395	558	12,518	
Total of Above	382,613	141,537	175,394	179,366	103,401	102,183	339,922	481,035	456,979	279,497	75,255	78,287	113,293	2,515,761	
<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	42,171	52,372	53,867	30,218	30,218	102,716	139,051	137,466	83,903	22,593	23,174	33,887	752,066	
<i>Bahr El Mallah</i>	67,080	23,895	31,447	33,226	18,535	18,438	51,247	72,809	74,607	46,461	14,045	12,821	18,070	415,699	
<i>Bahr Shebin (US)</i>	20,025	7,133	9,388	9,918	5,533	5,504	15,299	21,765	22,272	13,870	4,193	3,827	5,394	124,096	
Total of Bahr Shebin	602,948	221,314	277,259	285,526	161,418	161,418	523,294	714,934	711,868	436,523	119,983	121,640	175,429	3,922,082	

Table F.14.83 Comparison between Cropping Pattern 200% 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	56,423	69,876	71,534	41,180	40,582	138,401	187,369	185,391	113,248	30,409	31,166	45,192	1,020,343	
Bahr Tera (Available)	28%	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, %		-76	-68	9	52	61	9	-13	-21	6	57	58	15	10	
Rahbeon (Required)	382,613	141,537	175,394	179,366	103,401	102,183	339,922	481,035	456,979	279,497	75,295	78,287	113,293	2,515,761	
Rahbeon (Available)	63%	65,958	100,550	165,846	175,730	221,416	344,977	379,982	336,172	232,179	125,132	155,318	112,741	2,415,802	
Surplus or Deficit, %		-115	-74	-8	41	54	1	-21	-36	-20	40	50	-0	-4	
Bahr El Sahel (Required)	114,758	42,171	52,372	53,867	30,839	30,218	102,716	139,051	137,466	83,903	22,593	23,174	33,697	752,066	
Bahr El Sahel (Available)	19%	21,386	27,318	47,985	52,929	62,617	93,264	99,446	99,747	69,388	36,356	41,932	28,150	667,199	
Surplus or Deficit, %		-97	-92	-12	41	52	-10	-41	-53	-21	38	45	-29	-13	
Bahr Shebin (Required)	602,946	221,314	277,259	285,526	163,412	161,418	523,294	714,834	711,868	436,523	119,993	121,940	175,429	3,922,082	
Bahr Shebin (Available)	100%	135,169	168,264	274,616	289,145	356,904	569,840	621,467	547,233	391,532	223,846	280,253	181,803	4,026,117	
Surplus or Deficit, %		-64	-65	-4	43	55	8	-15	-30	-11	46	50	4	3	

After Bahr Tera (Raiah Bilqas & Bissandilia)

Required	225,869	34,412	104,641	106,947	61,703	61,072	199,868	271,384	269,238	164,826	44,490	46,727	67,543	1,482,901	
Available	37%	33,129	57,700	86,539	88,779	116,565	191,402	212,410	180,034	110,499	53,364	50,211	58,193	1,269,826	
Surplus or Deficit, %		-155	-81	-24	30	48	-4	-28	-50	-49	17	42	-14	-17	
Before Sahel+Rahbeon (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	20,178	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
 Total of Bahr Shebin MS
 Total of Bahr Shebin Up
 Total of Bahr Shebin

Total of Other US
 Total

Total of Upstream
 Total of Midstream
 Total of Downstream
 New Reclamation area
 Total

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

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

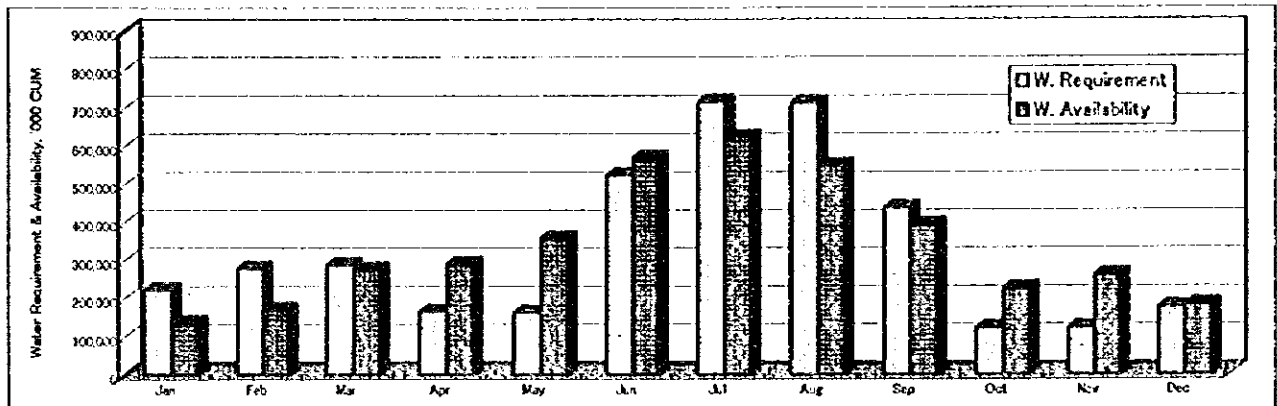


Figure F.14.45 Water Requirement and Availability on Whole Bahr Shebin Command Area (602,964 feddan)

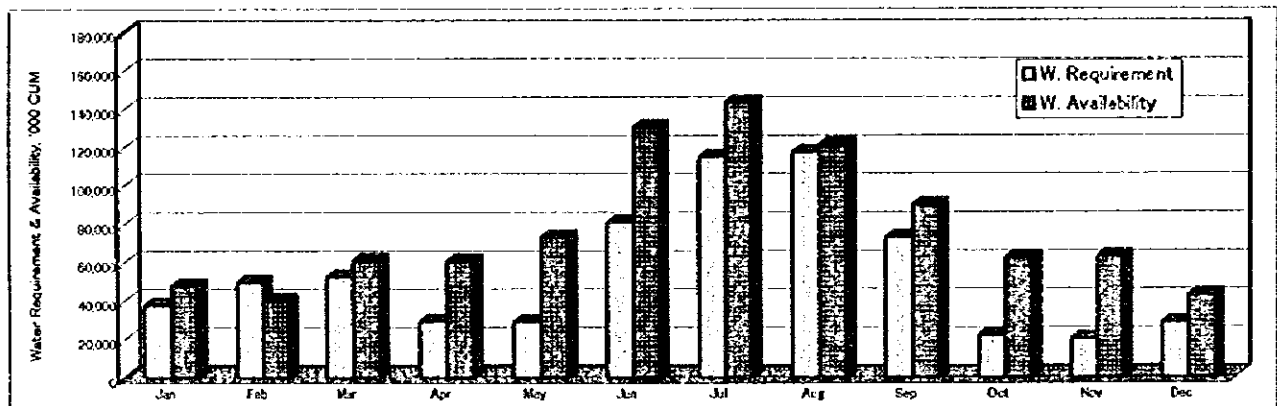


Figure F.14.46 Water Requirement and Availability on Upstream of Bahr Shebin (105,575 feddan)

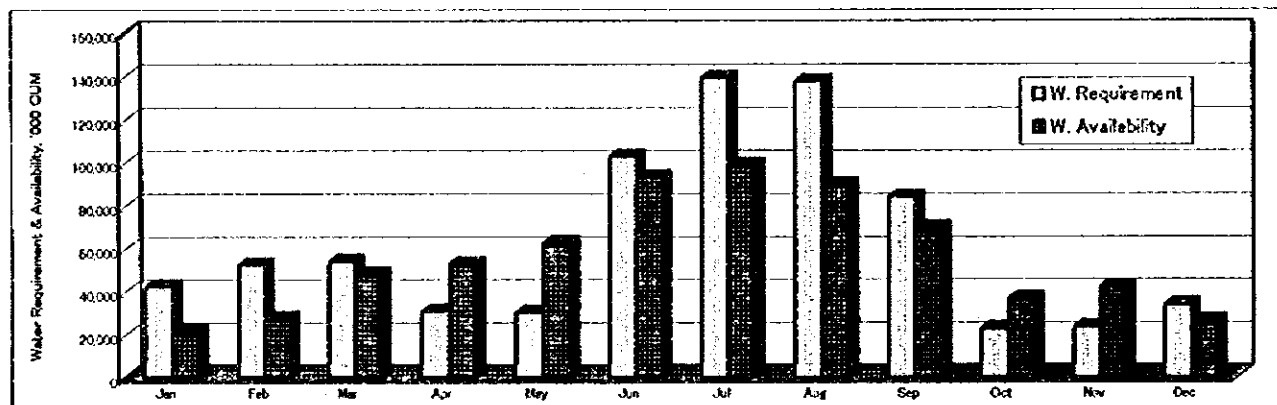


Figure F.14.47 Water Requirement and Availability on Bahr El Sahel (114,758 feddan)

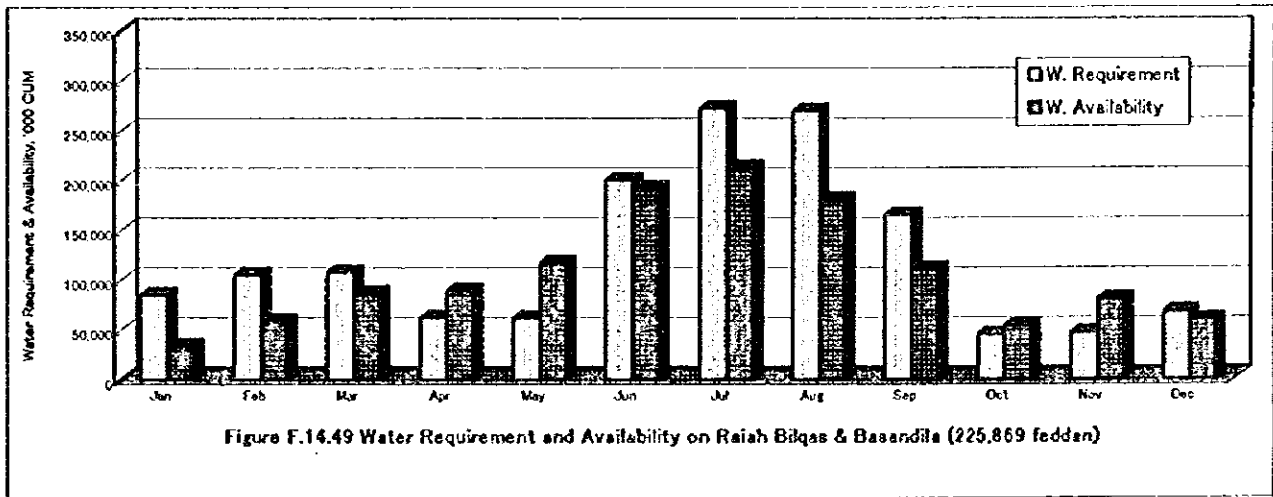
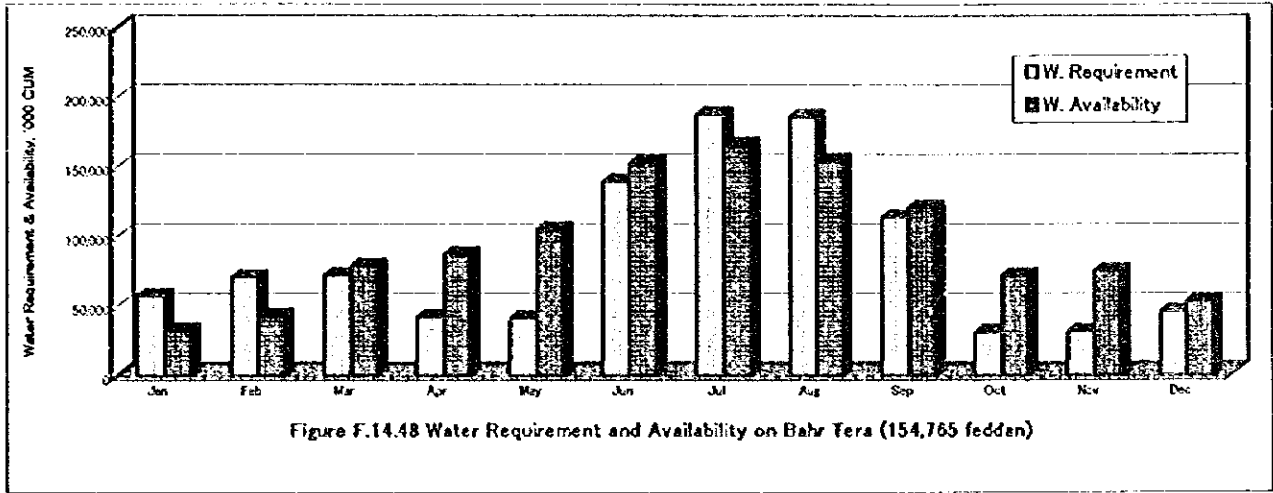


Table F.14.86 Present Cropping Pattern Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr Tara, Downstream+Midstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
After MPS															
Mixing	39,055	13,201	15,827	15,835	9,761	9,801	36,633	46,396	43,548	27,445	7,263	7,473	10,792	244,125	
Drainage only	3,250	1,099	1,317	1,319	812	826	3,049	3,861	3,624	2,284	606	622	898	20,315	
Drainage (Mixed)	6,800	2,231	2,675	2,678	1,650	1,678	6,191	7,841	7,358	4,638	1,231	1,293	1,824	41,255	
Ei Mansour	45,700	15,447	18,520	18,529	11,422	11,621	42,866	54,290	50,957	32,115	8,522	3,745	12,629	285,682	
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)	9,550	3,322	3,992	3,994	2,462	2,502	9,238	11,701	10,993	6,922	1,637	1,895	2,722	61,570	
Total of D.S. (Ex. Drainage)	84,755	26,649	34,348	34,363	21,183	21,552	79,498	100,985	94,505	59,559	15,805	16,218	23,421	529,787	
Total of D.S.	94,605	31,978	38,340	38,357	23,645	24,057	88,738	112,686	105,498	66,481	17,642	18,103	26,143	591,357	
Midstream															
Fresh	64,360	25,788	31,738	30,702	17,701	18,987	83,382	102,410	95,750	63,554	16,374	13,983	20,079	520,450	
Drainage (Mixed)	4,700	1,883	2,318	2,242	1,293	1,387	6,089	7,478	6,992	4,641	1,196	1,021	1,466	38,007	
Total (Drainage)	14,560	5,212	6,310	6,238	3,754	3,991	15,328	18,180	17,872	11,969	3,033	2,808	4,188	80,377	
Total (Ex. Drainage)	149,115	54,437	66,086	65,085	38,894	40,540	162,890	203,096	190,255	123,114	32,179	30,201	43,500	1,050,237	
Total (+0.0mD)	149,115	54,437	66,086	65,085	38,894	40,540	162,890	203,096	190,255	123,114	32,179	30,201	43,500	1,050,237	
Total	163,695	59,649	72,396	71,301	42,639	44,431	178,208	222,276	208,231	134,677	35,212	33,107	47,689	1,149,814	

Table F.14.87 Present Cropping Pattern 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															
Ei Esiah															
Drainage only	11,420	3,980	4,628	4,630	2,854	2,894	10,712	13,566	12,724	8,025	2,130	2,185	3,159	71,384	
Fresh	18,981	6,416	7,892	7,698	4,744	4,827	17,804	22,549	21,185	13,338	3,540	3,632	5,245	118,647	
Ei Nile															
Drainage only	23,880	8,108	9,718	9,723	5,923	6,088	22,493	28,497	26,739	16,851	4,472	4,589	6,627	149,894	
Fresh	11,621	3,929	4,710	4,712	2,904	2,955	10,900	13,905	12,958	8,168	2,167	2,224	3,211	72,641	
Total of Ei Nile (Drainage)	35,400	11,969	14,248	14,353	8,848	9,002	33,204	42,054	39,472	24,876	6,601	6,774	9,782	221,278	
Total of Ei Nile (Ex. Drain)	30,602	10,344	12,402	12,407	7,948	7,782	28,704	36,354	34,122	21,505	5,707	5,856	8,457	191,287	
Total of Ei Nile	66,002	22,310	26,748	26,760	16,496	16,784	61,909	78,407	73,595	46,381	12,308	12,629	19,239	412,566	
E. Hafir Shehab	6,700	2,265	2,715	2,716	1,675	1,704	6,284	7,959	7,471	4,708	1,249	1,282	1,851	41,890	
Total of D.S. (Drainage)	35,400	11,969	14,348	14,353	8,848	9,002	33,204	42,054	39,472	24,876	6,601	6,774	9,782	221,278	
Total of D.S. (Ex. Drainage)	37,302	12,609	15,117	15,124	9,323	9,486	34,989	44,313	41,593	26,215	6,956	7,198	10,308	233,167	
Total of D.S.	72,702	24,575	29,463	29,477	18,171	18,487	68,193	86,367	81,065	51,089	13,557	13,912	20,090	454,446	
Downstream															
Midstream															
E. Hafir Shehab	6,620	2,853	3,265	3,158	1,821	1,953	8,577	10,534	9,849	6,537	1,884	1,438	2,065	53,533	
Total of E. Hafir (Drainage)	35,400	11,969	14,348	14,353	8,848	9,002	33,204	42,054	39,472	24,876	6,601	6,774	9,782	221,278	
Total of E. Hafir (Ex. Drain)	62,083	21,400	25,742	25,845	15,683	16,057	60,600	76,421	71,892	45,512	12,027	12,051	17,392	400,221	
Total of E. Hafir	97,483	33,368	40,988	40,988	24,530	25,059	93,804	118,475	111,164	70,389	18,628	18,825	27,174	621,500	
Raiah Bilqas	14,248	5,769	6,797	6,797	3,919	4,203	18,459	22,672	21,197	14,070	3,825	3,096	4,445	115,217	
B. E. Mansara	37,973	15,217	18,728	18,117	10,445	11,204	49,202	60,431	58,501	37,503	9,462	8,251	11,849	307,111	
Total of M.S.	58,946	23,579	29,019	28,072	16,185	17,361	76,238	93,636	87,547	58,109	14,971	12,785	18,359	475,861	
Total (Drainage)	32,400	11,969	14,348	14,353	8,848	9,002	33,204	42,054	39,472	24,876	6,601	6,774	9,782	221,278	
Total (Ex. Drainage)	114,309	42,326	51,496	50,559	30,047	31,484	128,281	159,524	149,390	97,094	25,314	23,398	33,686	822,549	
Total (+0.0mD)	114,309	42,326	51,496	50,559	30,047	31,484	128,281	159,524	149,390	97,094	25,314	23,398	33,686	822,549	
Total	148,709	54,292	65,842	64,912	38,894	40,466	161,468	201,578	188,863	121,861	31,915	30,172	43,463	1,043,828	

1/1

Table F.14.88 Present Cropping Pattern Water Requirement in '000 CUM based on Modified Penman Method (Canal: Baramulla, Downstream+Midstream)

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
Drainage only	11,694	3,953	4,739	4,741	2,923	2,974	10,669	13,892	13,039	8,218	2,181	2,238	3,231	73,097	
Downstream	29,066	8,825	11,779	11,785	7,265	7,391	27,263	34,529	32,410	20,425	5,420	5,562	8,032	181,686	
Midstream	18,377	7,363	8,062	8,767	5,054	5,422	23,908	29,242	27,340	18,147	4,675	3,993	5,733	149,607	
Total (Drainage)	11,694	3,953	4,739	4,741	2,923	2,974	10,669	13,892	13,039	8,218	2,181	2,238	3,231	73,097	
Total (Ex. Drainage)	47,443	17,188	20,842	20,551	12,319	12,813	63,771	83,771	59,750	38,572	10,096	9,554	13,765	330,292	
Total (+0.0mD)	47,443	17,188	20,842	20,551	12,319	12,813	63,771	83,771	59,750	38,572	10,096	9,554	13,765	330,292	
Total	59,137	21,141	25,581	25,292	15,242	15,786	62,040	77,663	72,789	46,790	12,276	11,792	16,997	403,389	

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Table F.14.89 Present Cropping Pattern Water Requirement in '000 CUM based on Modified Penman Method (Canal: Balamoun, Downstream+DS+Midstream)

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Downstream															
Fr. Damietta	6,808	2,234	2,073	2,879	1,652	1,680	6,188	7,850	7,388	4,644	1,232	1,284	1,826	41,305	
Balamoun	8,611	2,911	3,490	3,491	2,152	2,190	8,077	10,229	9,602	6,051	1,806	1,648	2,380	53,826	
Downstream															
Fr. Damietta	5,400	1,825	2,188	2,189	1,350	1,273	5,065	6,415	6,021	3,795	1,007	1,033	1,492	33,754	
After K. Seed PS	29,381	9,931	11,907	11,912	7,343	7,471	27,559	34,903	32,761	20,647	5,479	5,622	8,119	183,655	
After K. Seed PS	14,695	4,967	5,955	5,958	3,673	3,737	13,784	17,457	16,385	10,327	2,740	2,812	4,061	91,856	
Midstream															
Before K. Seed PS	8,165	3,272	4,026	3,895	2,246	2,409	10,578	12,992	12,147	8,063	2,077	1,774	2,547	66,027	
Total (Fr. Damietta)	12,008	4,059	4,866	4,869	3,001	3,054	11,263	14,265	13,389	8,438	2,239	2,298	3,318	75,060	
Total (Fr. Balamoun)	60,852	21,081	25,378	25,257	15,414	15,807	59,997	75,582	70,895	45,087	11,902	11,856	17,107	395,363	
Total (+0.0mD)	60,852	21,081	25,378	25,257	15,414	15,807	59,997	75,582	70,895	45,087	11,902	11,856	17,107	395,363	
Total	72,960	25,140	30,245	30,125	18,415	18,860	71,261	89,847	84,285	53,526	14,141	14,153	20,425	470,422	

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Table F.14.90 Present Cropping Pattern Water Requirement in '000 CUM based on Modified Penman Method (Canal: El Sahel, Downstream+DS+Midstream+Upstream)

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Balamoun (Fr. Damietta)	12,008	4,059	4,866	4,869	3,001	3,054	11,263	14,265	13,389	8,438	2,239	2,298	3,318	75,060	
Balamoun (Fr. Balamoun)	60,852	21,081	25,378	25,257	15,414	15,807	59,997	75,582	70,895	45,087	11,902	11,856	17,107	395,363	
Balamoun (+0.0mD)	60,852	21,081	25,378	25,257	15,414	15,807	59,997	75,582	70,895	45,087	11,902	11,856	17,107	395,363	
Balamoun (Total)	72,860	25,140	30,245	30,125	18,415	18,860	71,261	89,847	84,285	53,526	14,141	14,153	20,425	470,422	
Downstream															
After B. PS	13,004	4,398	5,270	5,272	3,250	3,307	12,197	15,448	14,500	9,138	2,425	2,488	3,594	81,285	
Before B. PS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total of DS	13,004	4,398	5,270	5,272	3,250	3,307	12,197	15,448	14,500	9,138	2,425	2,488	3,594	81,285	
Midstream															
Total at Bndry (Fr. Damietta)	26,878	10,770	13,255	12,822	7,392	7,829	34,822	42,769	39,887	26,542	6,838	5,840	8,386	217,350	
Total at Bndry (Fr. Balamoun)	12,008	4,059	4,866	4,869	3,001	3,054	11,263	14,265	13,389	8,438	2,239	2,298	3,318	75,060	
Total at Bndry (Fr. Balamoun)	100,734	36,246	43,903	43,351	28,056	27,043	107,017	133,799	125,382	80,767	21,195	20,184	29,086	693,999	
Total at Bndry (+0.0mD)	106,738	39,087	47,399	46,759	28,157	28,190	112,648	140,931	132,077	84,986	22,285	21,792	31,409	736,621	
Total at Bndry	112,742	40,305	48,768	48,219	29,058	30,086	118,280	148,064	138,772	89,205	23,405	22,481	32,404	789,058	
Upstream															
After B. PS	8,020	3,489	4,443	4,639	2,714	2,535	9,308	12,082	11,706	7,712	2,231	1,960	2,710	65,535	
Before B. PS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total (Fr. Damietta)	12,008	4,059	4,866	4,869	3,001	3,054	11,263	14,265	13,389	8,438	2,239	2,298	3,318	75,060	
Total (Ex. Damietta)	108,754	39,735	48,351	47,990	28,770	29,577	116,325	145,881	137,089	88,479	23,396	22,143	31,796	759,533	
Total (+0.0mD)	108,754	39,735	48,351	47,990	28,770	29,577	116,325	145,881	137,089	88,479	23,396	22,143	31,796	759,533	
Total	120,762	43,794	53,217	52,858	31,772	32,631	127,588	160,146	150,478	96,918	25,636	24,441	35,115	834,593	

Table F.14.91 Present Cropping Pattern Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr El Mallah, Upstream)

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Upstream	67,080	29,183	37,200	38,799	22,701	21,200	77,855	101,055	97,914	64,506	18,660	18,393	22,870	548,139	

Table F.14.92 Present Cropping Pattern Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr Shebin)

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Basandila (Drainage)	11,694	3,953	4,739	4,721	2,923	2,974	10,969	13,092	13,092	8,218	2,181	2,238	3,231	72,097	
Basandila (Ex. Drainage)	47,443	17,188	20,942	20,551	12,319	12,813	51,072	63,771	59,750	38,572	10,096	9,554	13,765	330,292	
Bahr Shebin (MS)	5,025	2,013	2,478	2,397	1,382	1,432	6,510	7,996	7,476	4,962	1,278	1,092	1,568	40,635	
Rajah Biliqas (Drainage)	35,400	11,866	14,346	14,393	8,848	9,092	33,224	32,024	32,472	24,870	8,601	8,774	8,782	221,476	
Rajah Biliqas (Ex. Drainage)	114,309	42,326	51,498	50,559	30,047	31,464	128,261	159,524	149,390	97,084	25,314	23,398	33,686	822,549	
Bahr Shebin (MS)	35,545	14,242	17,529	16,956	9,776	10,488	46,050	56,560	52,881	35,100	9,043	7,723	11,089	287,436	
Bahr Tera (Drainage)	14,530	5,213	6,310	6,238	3,754	3,881	15,328	19,180	17,875	11,563	3,033	2,926	4,189	92,577	
Bahr Tera (Ex. Drainage)	149,115	54,437	66,086	65,085	38,894	40,540	162,890	203,096	190,255	123,114	32,179	30,201	43,500	1,050,237	
Bahr Shebin (MS)	1,979	793	976	944	544	584	2,584	3,149	2,944	1,954	503	430	617	16,003	
Total of Above (Drainage)	61,644	21,131	25,392	25,330	15,525	15,667	59,501	75,120	70,407	44,657	11,815	11,917	17,202	393,853	
Total of Above (Ex. Drainage)	353,416	131,000	159,407	156,473	92,952	97,369	397,337	494,095	462,897	300,787	78,414	72,397	104,226	2,547,154	
Total of Above	415,060	152,131	184,802	181,803	108,477	113,236	456,839	589,220	533,194	345,444	90,228	84,315	121,428	2,941,106	
Bahr Shebin (US)	18,470	8,035	10,243	10,693	6,251	5,937	21,437	27,825	26,960	17,761	5,138	4,514	6,242	150,926	
Bahr Sahel (Fr. Damietta)	12,008	4,059	4,966	4,869	3,001	3,054	11,263	14,265	13,389	8,438	2,298	2,298	3,318	75,060	
Bahr Sahel (Ex. Damietta)	108,754	39,735	49,351	47,990	28,770	29,577	116,325	145,981	137,059	89,479	23,396	22,143	31,706	759,533	
Bahr El Mallah	67,080	29,183	37,200	38,799	22,701	21,200	77,855	101,055	97,914	64,506	18,660	18,393	22,870	548,139	
Bahr Shebin (US)	20,025	8,712	11,105	11,582	6,777	6,329	23,242	30,167	29,230	18,257	5,571	4,894	6,768	163,833	
Total (Fr. Damietta)	12,008	4,059	4,866	4,869	3,001	3,054	11,263	14,265	13,389	8,438	2,239	2,298	3,318	75,060	
Total (Drainage)	61,644	21,131	25,392	25,330	15,525	15,667	59,501	75,120	70,407	44,657	11,815	11,917	17,202	393,853	
Total (Ex. Above both)	567,745	216,866	266,306	265,527	157,452	160,312	636,196	799,023	753,889	490,790	131,179	120,342	171,703	4,199,385	
Total (Ex. Damietta)	629,389	237,797	291,701	290,858	172,976	176,179	695,698	874,149	824,376	535,447	142,994	132,259	188,905	4,563,337	
Total of Bahr Shebin	641,397	241,856	298,567	295,725	175,978	179,232	706,961	888,414	837,786	543,896	145,233	134,557	192,223	4,638,397	
-0.0 * Drainage															
Basandila	47,443	17,188	20,942	20,551	12,319	12,813	51,072	63,771	59,750	38,572	10,096	9,554	13,765	330,292	
Bahr Shebin (MS)	5,025	2,013	2,478	2,397	1,382	1,432	6,510	7,996	7,476	4,962	1,278	1,092	1,568	40,635	
Rajah Biliqas	114,309	42,326	51,498	50,559	30,047	31,464	128,261	159,524	149,390	97,084	25,314	23,398	33,686	822,549	
Bahr Shebin (MS)	35,545	14,242	17,529	16,956	9,776	10,488	46,050	56,560	52,881	35,100	9,043	7,723	11,089	287,436	
Bahr Tera	149,115	54,437	66,086	65,085	38,894	40,540	162,890	203,096	190,255	123,114	32,179	30,201	43,500	1,050,237	
Bahr Shebin (MS)	1,979	793	976	944	544	584	2,584	3,149	2,944	1,954	503	430	617	16,003	
Total of Above	353,416	131,000	159,407	156,473	92,952	97,369	397,337	494,095	462,897	300,787	78,414	72,397	104,226	2,547,154	
Bahr Shebin (US)	18,470	8,035	10,243	10,693	6,251	5,937	21,437	27,825	26,960	17,761	5,138	4,514	6,242	150,926	
Bahr El Sahel	108,754	39,735	49,351	47,990	28,770	29,577	116,325	145,981	137,059	89,479	23,396	22,143	31,796	759,533	
Bahr El Mallah	67,080	29,183	37,200	38,799	22,701	21,200	77,855	101,055	97,914	64,506	18,660	18,393	22,870	548,139	
Bahr Shebin (US)	20,025	8,712	11,105	11,582	6,777	6,329	23,242	30,167	29,230	18,257	5,571	4,894	6,768	163,833	
Total of Bahr Shebin	567,745	216,866	266,306	265,527	157,452	160,312	636,196	799,023	753,889	490,790	131,179	120,342	171,703	4,199,385	

Table F.14.93 Comparison between Present Cropping Pattern Water Requirement based on Modified Penman Method and Availability, '000 CUM Irriga. Efficiency= 0.56

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Bahr Tera (Required)	149,115	54,437	66,086	65,065	38,884	40,540	162,880	203,086	190,255	123,114	32,179	30,201	43,500	1,050,237	
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, %		-69	-57	17	55	81	-7	-23	-24	-2	55	60	18	7	
Rahbeem (Required)	353,416	131,000	159,407	156,473	92,952	97,369	397,337	494,095	462,697	300,787	78,414	72,397	104,226	2,547,154	
Rahbeem (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, %		-99	-59	6	47	56	-15	-30	-38	-30	37	53	8	-5	
Bahr El Sahel (Required)	108,754	39,735	48,351	47,990	28,770	29,577	116,325	145,821	137,089	88,479	23,398	22,143	31,796	759,533	
Bahr El Sahel (Available)	19%	21,388	27,318	47,985	52,629	62,617	93,284	98,446	89,747	69,368	36,356	41,932	26,150	667,199	
Surplus or Deficit, %		-86	-77	-0	45	53	-25	-48	-53	-28	36	47	-22	-14	
Bahr Shebin (Required)	567,745	216,666	266,306	265,527	157,452	160,312	636,196	799,023	753,889	490,790	131,179	120,342	171,703	4,169,365	
Bahr Shebin (Available)	100%	135,169	168,264	274,618	289,145	356,904	568,640	621,467	547,233	391,532	223,846	260,253	181,803	4,026,117	
Surplus or Deficit, %		-80	-58	3	46	55	-12	-29	-38	-25	41	54	6	-4	
After Bahr Tera (Raiah Bliqas & Basandila)															
Required	202,322	75,770	92,345	90,463	53,524	56,246	231,893	287,850	269,497	175,719	45,731	41,767	60,108	1,480,913	
Available	36%	33,038	57,601	86,480	88,753	116,510	190,492	211,543	179,390	109,968	53,256	80,176	59,133	1,266,340	
Surplus or Deficit, %		-129	-60	-5	40	52	-22	-36	-50	-60	14	48	-2	-17	
Before Sahel/Rahbeem (Upstream of Bahr Shebin)															
Required	105,575	45,931	58,549	61,064	35,729	33,365	122,534	159,047	154,104	101,524	29,369	25,801	35,880	862,697	
Available	19%	47,925	40,398	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, %		4	-45	-0	41	54	6	-11	-27	-13	53	59	17	9	
Irrigation Efficiency=	0.56														
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														

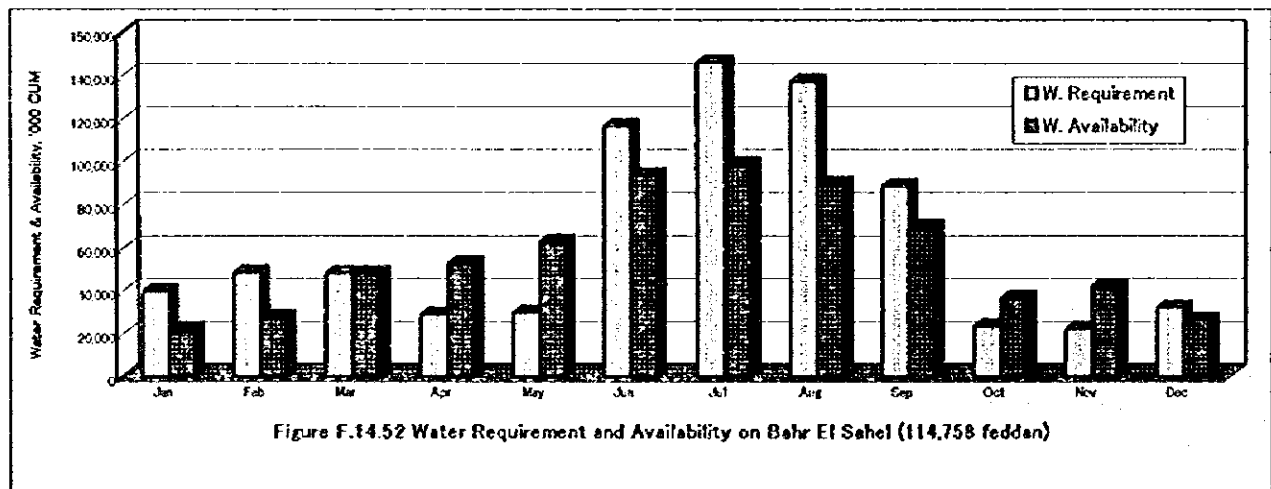
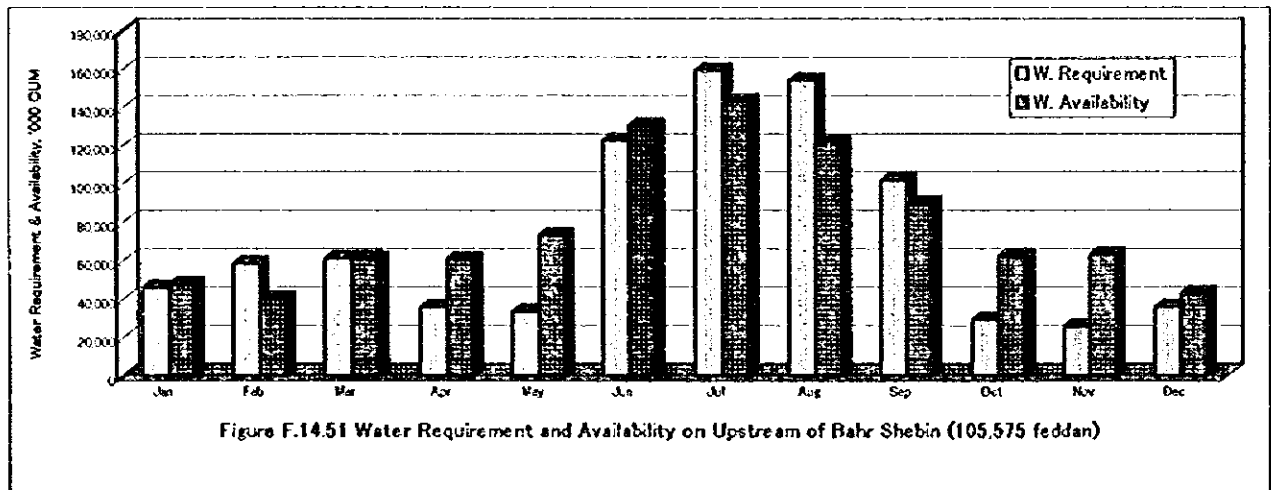
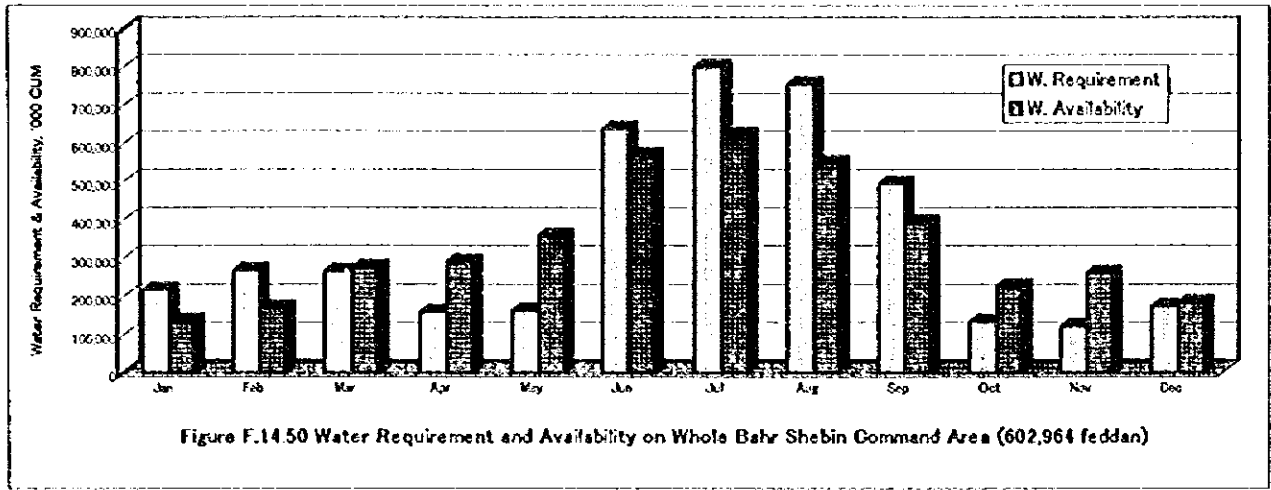
695,223 Excluding New Reclamation Area of 56,000 feddan

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

Table F.14.93 Unit Water Requirement based on Modified Panman Method in CUM per Feddan (Midstream Area)

Crop	Area, S	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual	Remarks	
Lira, mm/month		24	24	26	27	29	34	38	43	48	52	57	61	65	69	1,748
ETo, mm/10days		22	21	20	19	18	17	16	15	14	13	12	11	10	9	1,748
Short between																
Net W. Req. CUM/10days		0.76	0.76	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Wheat		17	17	18	19	19	19	19	19	19	19	19	19	19	19	197
Net W. Req. CUM/10days		0.77	0.83	0.90	0.98	1.05	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Long Greenhouse		24	28	30	34	38	42	45	48	52	56	60	64	68	72	370
Net W. Req. CUM/10days		0.76	0.76	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Leafy Vegetables		18	18	19	21	22	23	24	25	26	27	28	29	30	31	318
Broad Beans		0	1.02	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		0.70	0.78	0.87	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Winter Crops		0	0.70	0.78	0.87	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Pink		0	0.70	0.78	0.87	0.95	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	0.70	0.78	0.87	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Winter Vegetable		0	0.70	0.75	0.82	0.89	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Chick		0	0.70	0.75	0.82	0.89	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Net W. Req. CUM/10days		0	0.70	0.75	0.82	0.89	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Cotton		22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
Net W. Req. CUM/10days		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summer Maize		16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Net W. Req. CUM/10days		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Face		49	49	49	49	49	49	49	49	49	49	49	49	49	49	49
Net W. Req. CUM/10days		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net W. Req (ETo), CUM/10days		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Land Preparation, CUM/10days																
Pest Control, CUM/10days																
Net W. Req. CUM/10days		184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Summer Vegetable		184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Tomato		184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Net W. Req. CUM/10days		184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Tree Crops		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net W. Req. CUM/10days		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Net Total, CUM/10days		184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Net CUM/10days		184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Net Total, CUM/10days		184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Net Total, CUM/10days		184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Cross Total, CUM/10days		184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Cross Total, CUM/10days		184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Cross Total, CUM/10days		184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
Cross Total, CUM/10days		184	184	184	184	184	184	184	184	184	184	184	184	184	184	184

Inflation Emphasis: 0.08



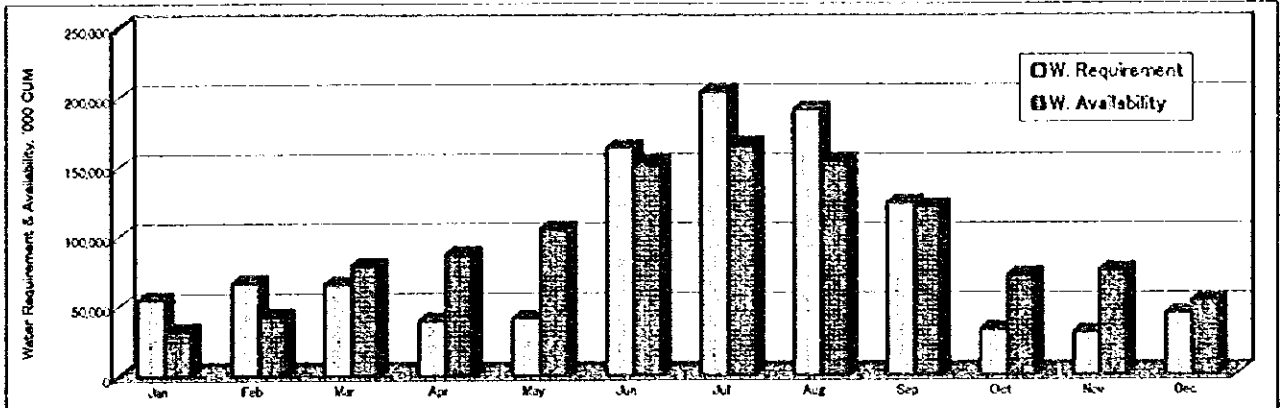


Figure F.14.53 Water Requirement and Availability on Bahr Tera (154,765 feddan)

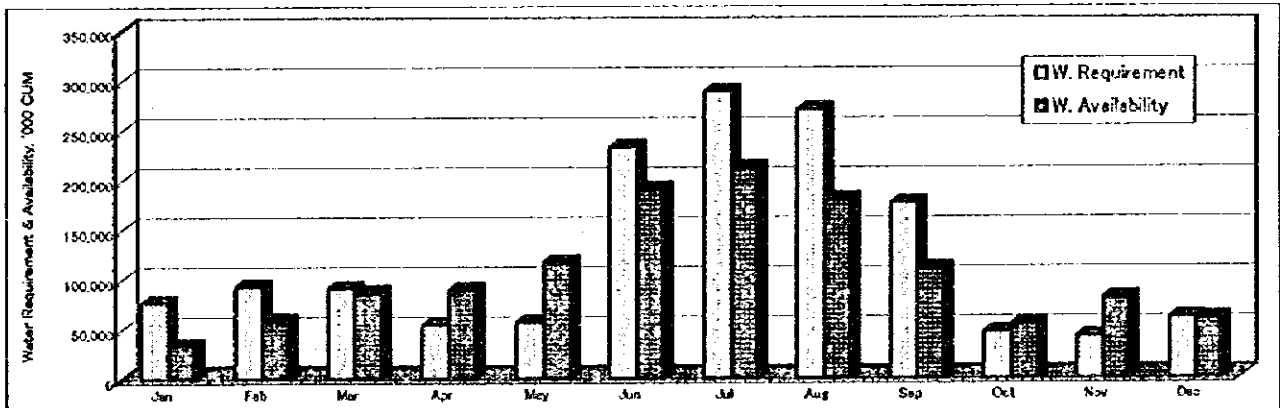


Figure F.14.54 Water Requirement and Availability on Raish Bilqas & Basandila (225,869 feddan)

Table F.14.101 Present Cropping Pattern 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	11,604	3,953	4,739	4,741	2,923	2,974	10,969	13,892	13,039	8,218	2,181	2,238	3,231	73,087	
Downstream'	29,066	9,925	11,779	11,785	7,265	7,391	27,263	34,529	32,410	20,425	5,420	5,562	8,032	181,688	
Midstream	18,377	7,363	9,082	8,767	5,054	5,422	23,908	29,242	27,340	18,147	4,675	3,993	5,733	148,607	
Total (Drainage)	11,604	3,953	4,739	4,741	2,923	2,974	10,969	13,892	13,039	8,218	2,181	2,238	3,231	73,087	
Total (Ex. Drainage)	47,443	17,188	20,842	20,551	12,319	12,813	63,771	83,771	69,750	38,572	10,098	9,554	13,765	330,292	
Total (+0.7 or 0.5*D)	53,290	19,955	24,159	23,870	14,365	14,894	56,558	70,717	66,269	42,681	11,198	11,121	16,027	371,801	
Total	59,137	21,141	25,581	25,292	15,242	15,786	62,040	77,863	72,789	46,790	12,276	11,792	16,997	403,389	

Table F.14.102 Present Cropping Pattern 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	6,008	2,234	2,678	2,679	1,652	1,680	6,198	7,850	7,363	4,844	1,232	1,264	1,826	41,305	
Balamoun	8,611	2,911	3,490	3,491	2,152	2,190	8,077	10,229	9,602	6,051	1,606	1,648	2,390	53,828	
Downstream'															
Fr. Damieta	5,400	1,825	2,188	2,189	1,350	1,373	5,065	6,415	6,021	3,795	1,007	1,033	1,492	33,754	
After K. Saad PS	29,381	9,891	11,907	11,912	7,343	7,471	27,559	34,903	32,761	20,647	5,478	5,622	8,119	183,655	
Before K. Saad PS	14,695	4,967	5,955	5,958	3,673	3,737	13,784	17,457	16,385	10,327	2,740	2,812	4,081	91,858	
Midstream															
Before K. Saad PS	8,165	3,272	4,026	3,895	2,246	2,408	10,578	12,992	12,147	8,083	2,077	1,774	2,547	66,027	
Total (Fr. Damieta)	12,008	4,059	4,866	4,869	3,001	3,054	11,263	14,265	13,389	8,438	2,239	2,298	3,318	75,060	
Total (Fr. Balamoun)	60,852	21,081	25,378	25,257	15,414	15,807	59,997	75,582	70,895	45,087	11,902	11,856	17,107	395,363	
Total (+0.7 or 0.5*D)	66,856	23,922	28,785	28,665	17,515	17,944	65,629	82,715	77,590	49,306	13,022	13,464	19,430	437,986	
Total	72,860	25,140	30,245	30,125	18,415	18,860	71,281	89,847	84,285	53,528	14,141	14,153	20,425	470,422	

Table F.14.103 Present Cropping Pattern 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. Damieta)	12,008	4,059	4,866	4,869	3,001	3,054	11,263	14,265	13,389	8,438	2,239	2,298	3,318	75,060	
Balamoun (Fr. Balamoun)	60,852	21,081	25,378	25,257	15,414	15,807	59,997	75,582	70,895	45,087	11,902	11,856	17,107	395,363	
Balamoun (+0.7 or 0.5*D)	66,856	23,922	28,785	28,665	17,515	17,944	65,629	82,715	77,590	49,306	13,022	13,464	19,430	437,986	
Balamoun (Total)	72,860	25,140	30,245	30,125	18,415	18,860	71,281	89,847	84,285	53,528	14,141	14,153	20,425	470,422	
Downstream'															
After B. PS	13,004	4,396	5,270	5,272	3,250	3,307	12,197	15,448	14,500	9,138	2,425	2,488	3,594	81,285	
Before B. PS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total of DS'	13,004	4,396	5,270	5,272	3,250	3,307	12,197	15,448	14,500	9,138	2,425	2,488	3,594	81,285	
Midstream															
Total at B'ndry (Fr. Damieta)	26,878	10,770	13,255	12,822	7,392	7,929	34,822	42,769	39,887	26,542	6,838	5,840	8,386	217,350	
Total at B'ndry (Fr. Balamoun)	12,008	4,059	4,866	4,869	3,001	3,054	11,263	14,265	13,389	8,438	2,239	2,298	3,318	75,060	
Total at B'ndry (+0.7 or 0.5*D)	100,734	36,246	43,903	43,351	26,056	27,043	107,017	133,798	125,382	80,767	21,165	20,184	29,086	693,989	
Total at B'ndry	106,738	39,087	47,309	46,759	28,157	28,180	112,848	140,931	132,077	84,986	22,285	21,792	31,409	736,621	
Total at B'ndry	112,742	40,305	48,769	48,219	29,058	30,096	118,290	148,064	138,772	89,205	23,405	22,481	32,404	769,058	
Upstream															
Total (Fr. Damieta)	8,020	3,489	4,448	4,639	2,714	2,535	9,308	12,082	11,706	7,712	2,231	1,960	2,710	65,535	
Total (Fr. Balamoun)	12,008	4,059	4,866	4,869	3,001	3,054	11,263	14,265	13,389	8,438	2,239	2,298	3,318	75,060	
Total (Ex. Damieta)	108,754	39,735	48,361	47,990	28,770	29,577	116,325	145,881	137,089	88,478	23,396	22,143	31,796	759,533	
Total (+0.5 or 0.7*D)	114,758	42,576	51,757	51,398	30,871	31,715	121,957	153,013	143,784	92,698	24,516	23,752	34,119	802,158	
Total	120,762	43,794	53,217	52,853	31,772	32,631	127,588	160,148	150,472	96,918	25,638	24,441	35,115	834,593	

Table F.14.104 Present Cropping Pattern Water Requirement in '000 CUM based on Modified Penman Method (Canal: Bahr El Malleh, Upstream) 1/1

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Upstream	67,080	29,183	37,200	38,789	22,701	21,200	77,855	101,955	97,914	84,506	18,680	16,393	22,870	548,139	

Table F.14.105 Present Cropping Pattern 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>Basandila (Drainage)</i>	11,684	3,953	4,732	4,741	2,923	2,974	10,999	13,892	13,032	9,219	2,181	2,238	3,221	73,087	
<i>Basandila (Ex. Drainage)</i>	47,443	17,188	20,842	20,551	12,319	12,813	51,072	63,771	59,750	38,572	10,096	9,554	13,765	330,292	
<i>Bahr Shebin (MS)</i>	5,025	2,013	2,478	2,397	1,382	1,482	6,510	7,996	7,476	4,982	1,278	1,092	1,583	40,635	
<i>Rajah Bilqas (Drainage)</i>	35,400	11,968	14,346	14,353	8,849	9,002	33,204	42,054	39,472	24,876	6,601	6,774	9,782	221,278	
<i>Rajah Bilqas (Ex. Drainage)</i>	114,309	42,328	51,498	50,559	30,047	31,464	128,281	159,524	149,390	97,084	25,314	23,388	33,686	822,549	
<i>Bahr Shebin (MS)</i>	35,545	14,242	17,529	16,956	9,776	10,496	48,050	56,560	52,881	35,100	9,043	7,723	11,089	287,436	
<i>Bahr Tera (Drainage)</i>	14,530	5,213	6,310	6,238	3,754	3,891	15,328	19,180	17,875	11,563	3,033	2,808	4,189	99,577	
<i>Bahr Tera (Ex. Drainage)</i>	149,115	54,437	68,088	65,085	38,884	40,540	162,880	203,098	190,255	123,114	32,179	30,291	43,500	1,050,237	
<i>Bahr Shebin (MS)</i>	1,978	793	978	944	544	584	2,564	3,149	2,944	1,954	502	430	617	16,003	
<i>Total of Above (Drainage)</i>	67,644	21,131	25,395	25,330	15,928	16,887	59,501	75,128	70,497	44,657	11,815	11,917	17,202	394,953	
<i>Total of Above (Ex. Drainage)</i>	353,416	131,000	159,407	156,473	92,952	97,369	397,337	494,085	462,697	300,787	78,414	72,397	104,226	2,547,154	
<i>Total of Above</i>	415,060	152,131	184,802	181,803	108,477	113,238	456,839	569,220	533,184	345,444	90,228	84,315	121,428	2,941,106	
<i>Bahr Shebin (US)</i>	18,470	8,035	10,243	10,983	6,251	5,837	21,437	27,825	29,960	17,781	5,132	4,514	6,242	150,928	
<i>Bahr Sahel (Fr. Damietta)</i>	12,008	4,059	4,866	4,869	3,001	3,054	11,263	14,265	13,389	8,438	2,239	2,298	3,318	75,060	
<i>Bahr Sahel (Ex. Damietta)</i>	108,754	39,735	48,351	47,980	28,770	29,577	116,325	145,881	137,089	88,479	23,396	22,143	31,796	759,533	
<i>Bahr El Malleh</i>	67,080	29,183	37,200	38,789	22,701	21,200	77,855	101,955	97,914	84,506	18,680	16,393	22,870	548,139	
<i>Bahr Shebin (US)</i>	20,025	8,712	11,105	11,582	6,777	6,329	23,242	30,167	29,230	19,257	5,571	4,984	6,768	163,633	
<i>Total (Fr. Damietta)</i>	12,008	4,059	4,866	4,869	3,001	3,054	11,263	14,265	13,389	8,438	2,239	2,298	3,318	75,060	
<i>Total (Drainage)</i>	67,644	21,131	25,395	25,330	15,928	16,887	59,501	75,128	70,497	44,657	11,815	11,917	17,202	394,953	
<i>Total (Ex. Above both)</i>	567,745	216,866	286,306	285,527	157,452	160,312	636,196	799,023	753,889	490,790	131,179	120,342	171,703	4,169,385	
<i>Total (Ex. Damietta)</i>	629,389	237,797	291,701	290,856	172,876	176,179	695,698	874,149	824,376	535,447	142,994	132,259	183,905	4,563,337	
<i>Total of Bahr Shebin</i>	641,397	241,856	296,587	295,725	175,978	178,232	706,961	888,414	837,788	543,886	145,233	134,557	192,223	4,638,397	
+0.7 or 0.5 * Drainage															
<i>Basandila</i>	50,290	19,955	24,159	23,870	14,365	14,894	58,556	70,717	66,269	42,681	11,186	11,121	16,027	371,901	
<i>Bahr Shebin (MS)</i>	5,025	2,013	2,478	2,397	1,382	1,482	6,510	7,996	7,476	4,982	1,278	1,092	1,583	40,635	
<i>Rajah Bilqas</i>	132,009	50,702	61,539	60,806	36,240	37,766	144,363	180,551	169,126	109,523	28,615	28,140	40,533	948,203	
<i>Bahr Shebin (MS)</i>	35,545	14,242	17,529	16,956	9,776	10,496	48,050	56,560	52,881	35,100	9,043	7,723	11,089	287,436	
<i>Bahr Tera</i>	154,765	57,317	69,581	68,508	40,844	42,685	169,020	210,755	197,431	127,793	33,392	31,800	45,803	1,105,721	
<i>Bahr Shebin (MS)</i>	1,979	793	978	944	544	584	2,564	3,149	2,944	1,954	503	430	617	16,003	
<i>Total of Above</i>	382,813	145,923	178,261	173,281	103,251	107,897	425,564	529,727	496,128	321,973	84,018	80,304	115,839	2,769,789	
<i>Bahr Shebin (US)</i>	18,470	8,035	10,243	10,983	6,251	5,837	21,437	27,825	29,960	17,781	5,138	4,514	6,242	150,928	
<i>Bahr El Sahel</i>	114,758	42,576	51,757	51,398	30,871	31,715	121,957	153,013	143,784	92,699	24,516	23,752	34,119	802,156	
<i>Bahr El Malleh</i>	67,080	29,183	37,200	38,789	22,701	21,200	77,855	101,955	97,914	84,506	18,680	16,393	22,870	548,139	
<i>Bahr Shebin (US)</i>	20,025	8,712	11,105	11,582	6,777	6,329	23,242	30,167	29,230	19,257	5,571	4,984	6,768	163,633	
<i>Total of Bahr Shebin</i>	602,946	233,530	286,587	285,743	169,851	172,978	670,055	841,788	794,016	516,196	137,903	129,857	185,438	4,434,652	

Table F.14.106 Comparison between Present Cropping Pattern Water Requirement based on Modified Penman Method and Availability, '000 CUM Irriga. Efficiency= 0.56

Location	Area, f	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Remarks
Bahr Tera (Required)	154,765	57,317	69,581	88,508	40,944	42,685	169,020	210,755	197,431	127,753	33,392	31,800	45,803	1,105,721	
Bahr Tera (Available)	28%	32,127	41,973	78,222	86,432	104,322	151,922	165,280	153,839	120,257	71,372	74,712	52,990	1,133,458	
Surplus or Deficit, %		-78	-66	12	53	59	-11	-28	-28	-6	53	57	14	2	
Rahbeen (Required)	382,613	145,023	176,261	173,281	103,251	107,897	425,564	529,727	496,128	321,973	84,018	80,304	115,839	2,789,799	
Rahbeen (Available)	63%	65,958	100,550	165,846	175,730	221,416	344,977	379,982	336,172	232,179	125,132	155,318	112,741	2,415,802	
Surplus or Deficit, %		-120	-75	-5	41	51	-23	-39	-48	-39	33	48	-3	-15	
Bahr El Sahel (Required)	114,758	42,576	51,757	51,398	30,871	31,715	121,957	153,013	143,784	92,898	24,516	23,752	34,119	802,156	
Bahr El Sahel (Available)	19%	21,386	27,318	47,985	52,629	62,617	93,264	98,448	89,747	69,368	36,356	41,932	26,150	667,199	
Surplus or Deficit, %		-99	-89	-7	41	49	-31	-55	-60	-34	33	43	-30	-20	
Bahr Shebin (Required)	602,948	233,530	286,567	285,743	168,851	172,978	670,055	841,788	794,016	516,196	137,903	129,857	185,438	4,434,652	
Bahr Shebin (Available)	100%	135,169	168,264	274,616	289,145	356,904	568,640	621,467	547,233	381,532	223,846	260,253	181,803	4,026,117	
Surplus or Deficit, %		-73	-70	-6	41	52	-18	-35	-45	-32	38	50	-2	-10	
After Bahr Tera (Raiah Bilqas & Basandila)															
Required	225,869	86,013	105,704	103,829	61,763	64,629	253,980	315,823	295,753	192,288	50,122	48,075	69,219	1,848,075	
Available	37%	33,038	57,601	86,480	88,753	116,510	190,492	211,543	179,390	109,968	53,256	80,176	59,133	1,266,340	
Surplus or Deficit, %		-183	-84	-29	30	45	-33	-49	-65	-75	6	40	-17	-30	
Before Sahel-Rahbeen (Upstream of Bahr Shebin)															
Required	105,575	45,931	58,549	61,064	35,729	33,365	122,534	159,047	154,104	101,524	29,369	25,801	35,680	862,697	
Available	18%	47,825	40,396	60,985	60,767	72,871	130,399	143,039	121,314	89,885	62,357	63,003	42,911	943,117	
Surplus or Deficit, %		4	-45	-0	41	54	6	-11	-27	-13	53	59	17	9	
Irrigation Efficiency=	0.56														
Total of Bahr Shebin DS															
Total of Bahr Shebin DS	303,927														
Total of Bahr Shebin MS	228,875														
Total of Bahr Shebin UP	113,595														
Total of Bahr Shebin	641,397														
Total of Other US															
Total of Other US	53,826														
Total	695,223	Excluding New Reclamation Area of 56,000 feddan													
Total of Upstream															
Total of Upstream	167,421														
Total of Midstream															
Total of Midstream	303,927														
Total of Downstream															
Total of Downstream	56,000														
New Reclamation area	751,223	695,223 (excluding New Reclamation Area of 56,000 feddan)													
Total															

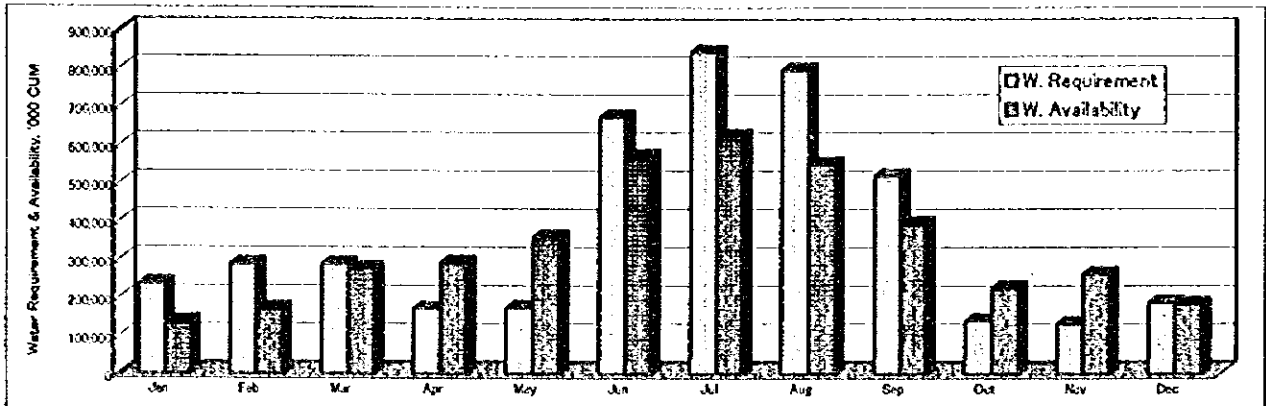


Figure F.14.55 Water Requirement and Availability on Whole Bahr Shebin Command Area (602,964 feddan)

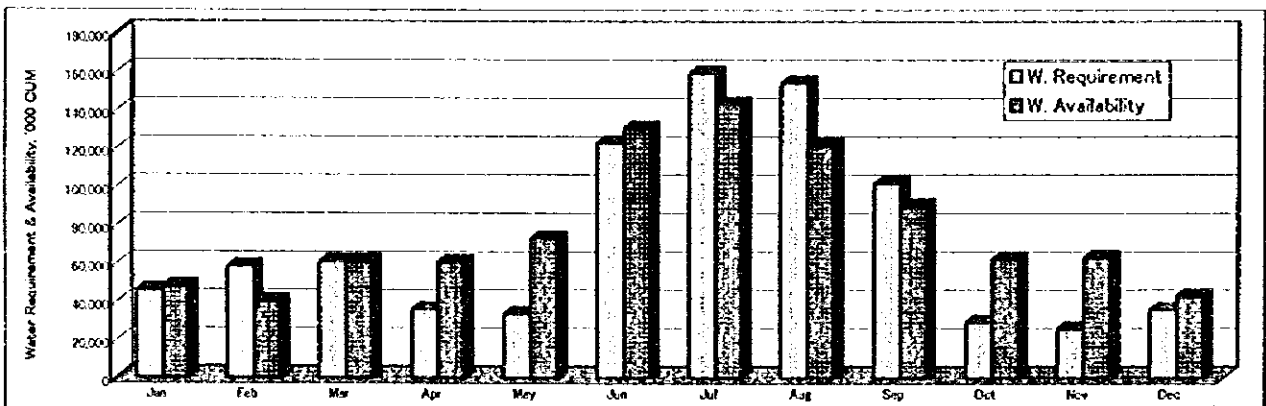


Figure F.14.56 Water Requirement and Availability on Upstream of Bahr Shebin (105,575 feddan)

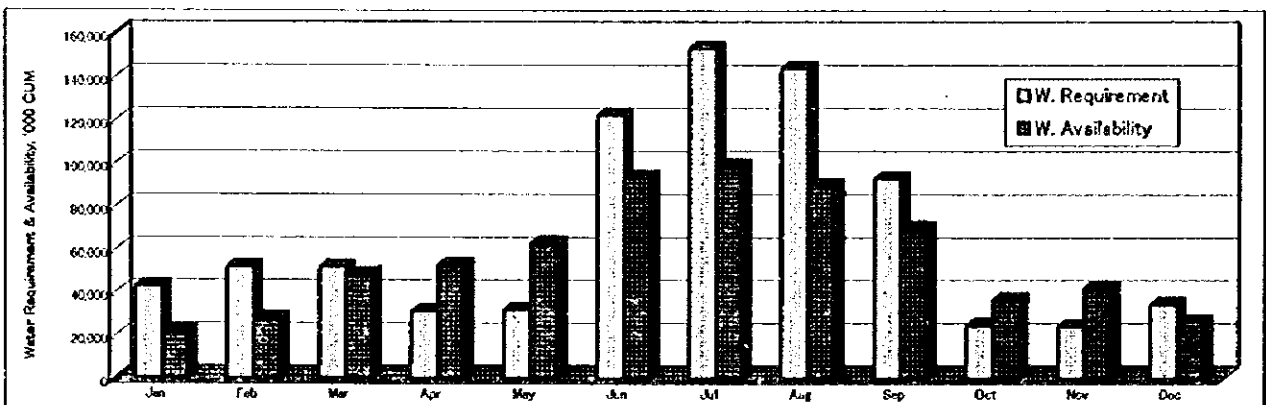


Figure F.14.57 Water Requirement and Availability on Bahr El Sahel (114,758 feddan)

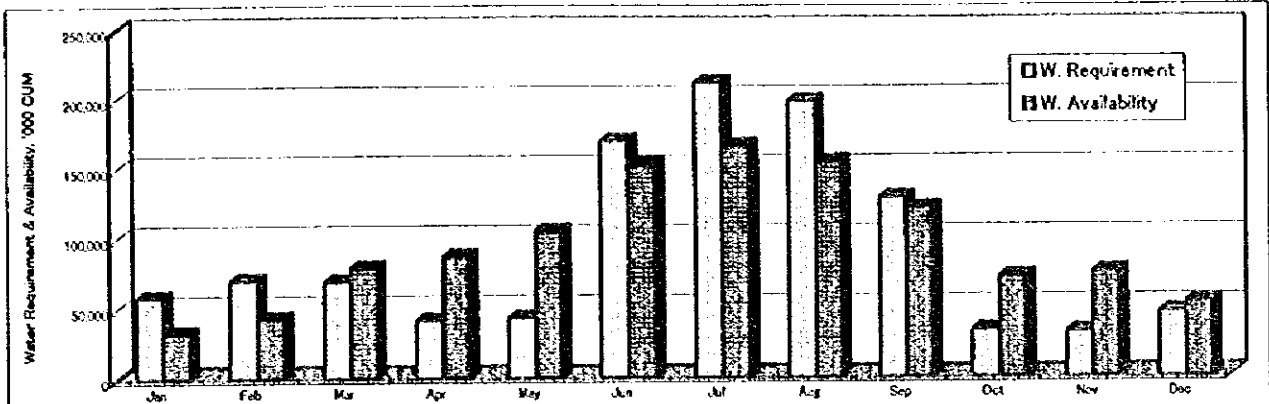


Figure F.14.58 Water Requirement and Availability on Bahr Tera (154,765 feddan)

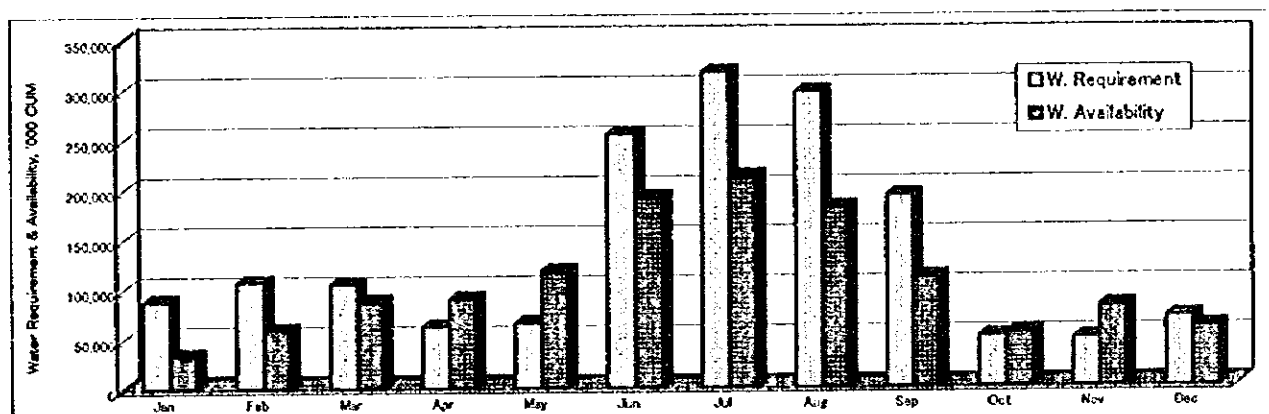


Figure F.14.59 Water Requirement and Availability on Raiah Bilqas & Basandifa (225,869 feddan)