

## K-4 Operation and Maintenance Cost

Table K-4-1 Summary of Annual Operation and Maintenance Cost

Unit : 1,000 L.E.

<u>Description</u>	<u>Phase-I</u>	<u>Phase-II</u>	<u>Phase-III</u>
1. Improvement of Bahr Yusef Canal	3,968	4,727	3,196
1.1 Remodelling & Trimming of Canal	360	960	1,120
1.2 Improvement of Barrage/Regulator	2,450	3,200	1,800
1.3 Improvement of Canal Structures	1,158	567	276
2. Improvement of Branch Canals	2,128	2,128	2,872
Branch Canals covering 670,000fed	2,128	2,128	2,872
3. Improvement of Pump Stations	780	1,125	915
3.1 Drainage Pump Station	420	75	75
3.2 Irrigation Pump Station	360	1,050	840
4. Operation & Maintenance of Bahr Yusef C.	2,210	2,480	2,150
4.1 O/M Facilities	150	240	150
4.2 Enhancement of O/M	60	-	-
4.3 Water Management	1,000	1,000	1,000
4.4 Training & Education	1,000	1,000	1,000
Grand Total of Project Cost	<u>9,086</u>	<u>10,460</u>	<u>9,133</u>

Table K-4-2 Breakdown of Annual Operation and Maintenance Cost

(Unit: 1,000 L.E.)

Description	Phase-I Project O/M		Phase-II Project O/M		Phase-III Project O/M	
	PJ Cost	Rate	PJ Cost	Rate	PJ Cost	Rate
1. Improvement of Bahr Yusef Canal	3,988		4,727		3,196	
1.1 Remodelling & Trimming of Canal	360		960		1,120	
1.1.1 Improvement of Canal Sections	360	0.02	960	0.02	29,000	0.02
1.1.2 Improvement of Course by Shortcut	-		-		27,000	0.02
1.2 Improvement of Barrage/Regulator	2,450		3,200		1,800	
1.2.1 Preparatory Works for Constn.	-		-		-	
1.2.2 Dairout Barrage	-		-		36,000	0.05
1.2.3 Manshat El Dahab Regulator	31,000	0.05	1,750	0.05	-	
1.2.4 Sakoula Regulator	18,000	0.05	1,450	0.05	-	
1.2.5 Hazoura Regulator	900		-		-	
1.2.6 Lahoun Regulator	1,158		567		276	
1.3 Improvement of Canal Structures	-		-		-	
1.3.1 Intake of Manshat El Dahab C.	3,200	0.03	7,200	0.03	-	
1.3.2 Intake of Harika C.	3,200	0.03	-		-	
1.3.3 Intake of Saab C.	11,000	0.03	-		-	
1.3.4 Intake of Hasan Vasef Branch C	14,000	0.03	-		-	
1.3.5 Intake of Giza Branch C	4,000	0.03	-		-	
1.3.6 Reconstruction of I.S. (3.0mX3)	-		2,000	0.03	60	
1.3.7 Reconstruction of I.S. (2.5mX3)	-		6,000	0.03	180	
1.3.8 Reconstruction of I.S. (2.8mX3)	400	0.03	900	0.03	27	
1.3.9 Rehabilitation of I.S. (1.5mX8)	2,800	0.03	400	0.03	12	
1.3.10 Rehabilitation of I.S. (1.2X21)	-		2,400	0.03	72	
2. Improvement of Branch Canals	2,128		2,128		2,872	
Improvement of Total 670,000 fed	106,400	0.02	106,400	0.02	143,600	0.02
3. Improvement of Pump Stations (P.S)	780		1,125		915	
3.1 Drainage Pump Station	420		75		75	
3.1.1 El Badman Drainage P.S.	420	0.03	-		-	
3.1.2 Other 8 Drainage P.S.	-		75	0.03	75	0.03
3.2 Irrigation Pump Station (P.S.)	360		1,050		840	
3.2.1 Arab Beni Khalid Irrigation P.	180	0.03	-		-	
3.2.2 Beni Khalid Irrigation P.S.	180	0.03	-		-	
3.2.3 Kamadir Irrigation P.S.	-		420	0.03	420	0.03
3.2.4 Terfa Irrigation P.S.	-		630	0.03	630	0.03
3.2.5 Sakoula Irrigation P.S.	-		-		14,000	0.03
3.2.6 Hazoura Irrigation P.S.	-		-		14,000	0.03
4. Operation & Maintenance of Bahy.	2,210		2,480		2,150	
4.1 O/M Facilities	150		240		150	
4.1.1 Hydraulic Observation Faciliti	75	0.03	120	0.03	75	0.03
4.1.2 Communication Data Processing	75	0.03	120	0.03	75	0.03
4.2 Enhancement of O/M	60	0.03	-		-	
4.3 Water Management	1,000		1,000		1,000	
4.4 Training & Education	1,000		1,000		1,000	
Grand Total of Project Cost	9,088		10,460		9,133	



**APPENDIX L      FARM ECONOMY**



Table L-1 Net Agricultural Income by Governorate (1985)

(Unit : 1,000 LE)

Governorate	Crop Production	Animal * Production	Gross Production Value	Production Cost	Net Production Value	Income per Farm H.hold
North Egypt (LE)						
Cairo	20 7,563	5 254,475	15 262,041	13,922	15 248,119	
Alexandria	18 108,540	16 104,806	17 213,346	35,061	17 178,285	
Port Said	-	21 32,832	21 32,832	414	21 32,418	
Suez	19 11,653	22 1,294	22 12,947	3,248	22 9,699	
Damietta	16 122,557	20 45,763	19 168,320	58,537	19 109,783	
Dakhalia	3 639,573	1 355,966	3 995,539	284,696	3 710,843	
Sharkia	2 827,351	3 290,441	2 1,117,792	294,668	2 823,124	
Kalyubia	13 316,347	12 150,062	12 466,409	88,465	11 377,944	
Kafr El Sheikh	6 444,935	9 168,762	7 613,697	202,669	8 411,028	
Gharbia	4 500,006	4 285,294	4 785,300	200,063	4 585,237	
Menuofia	8 418,911	6 253,490	5 672,401	185,828	5 486,573	
Behera	1 852,602	2 335,376	1 1,187,978	302,057	1 885,921	
Ismailia	15 150,635	19 66,912	16 217,547	35,925	16 181,622	
Sub-Total	4,400,673	2,345,476	6,746,149	1,705,553	5,040,596	
Middle Egypt						
Giza	10 382,374	7 185,978	8 568,352	82,264	6 486,088	4,484
Beni Suef	14 307,924	14 105,314	14 413,238	96,842	14 316,396	2,110
Faiyum	7 437,236	17 102,687	10 539,923	138,143	9 401,780	3,190
Minia	5 475,992	10 161,712	6 637,704	162,347	7 475,357	1,790
Sub-Total	1,603,526	555,691	2,159,217	479,596	1,679,621	
Upper Egypt						
Asyut	9 391,857	11 156,914	9 548,771	153,734	10 395,037	
Suhag	11 343,418	8 185,028	11 528,446	152,698	12 375,748	
Qena	12 341,056	13 118,091	13 459,147	95,945	13 363,202	
Aswan	17 111,444	18 91,508	18 202,951	26,904	18 176,047	
Sub-Total	1,187,775	551,540	1,739,315	429,261	1,310,034	
Frontier Govern.	-	15 105,069	20 105,069	12,158	20 92,911	
Wood Trees and Nursery Plant	1 39,731	-	39,731	2,357	37,374	
Total	7,231,705	3,557,776	10,789,481	2,628,945	8,160,536	

Source : Estimation of income in agricultural sector in 1985, 1988 CAPMAS

Note : \* including fish and honey bee production

1 Impossible to distribute to each governorate

Crop production includes upland crops, fruits and vegetables

Small figures in the column are ranking in Egypt

Figure L-1

Distribution of Land Tenure

(Unit: Number of Farm Household)

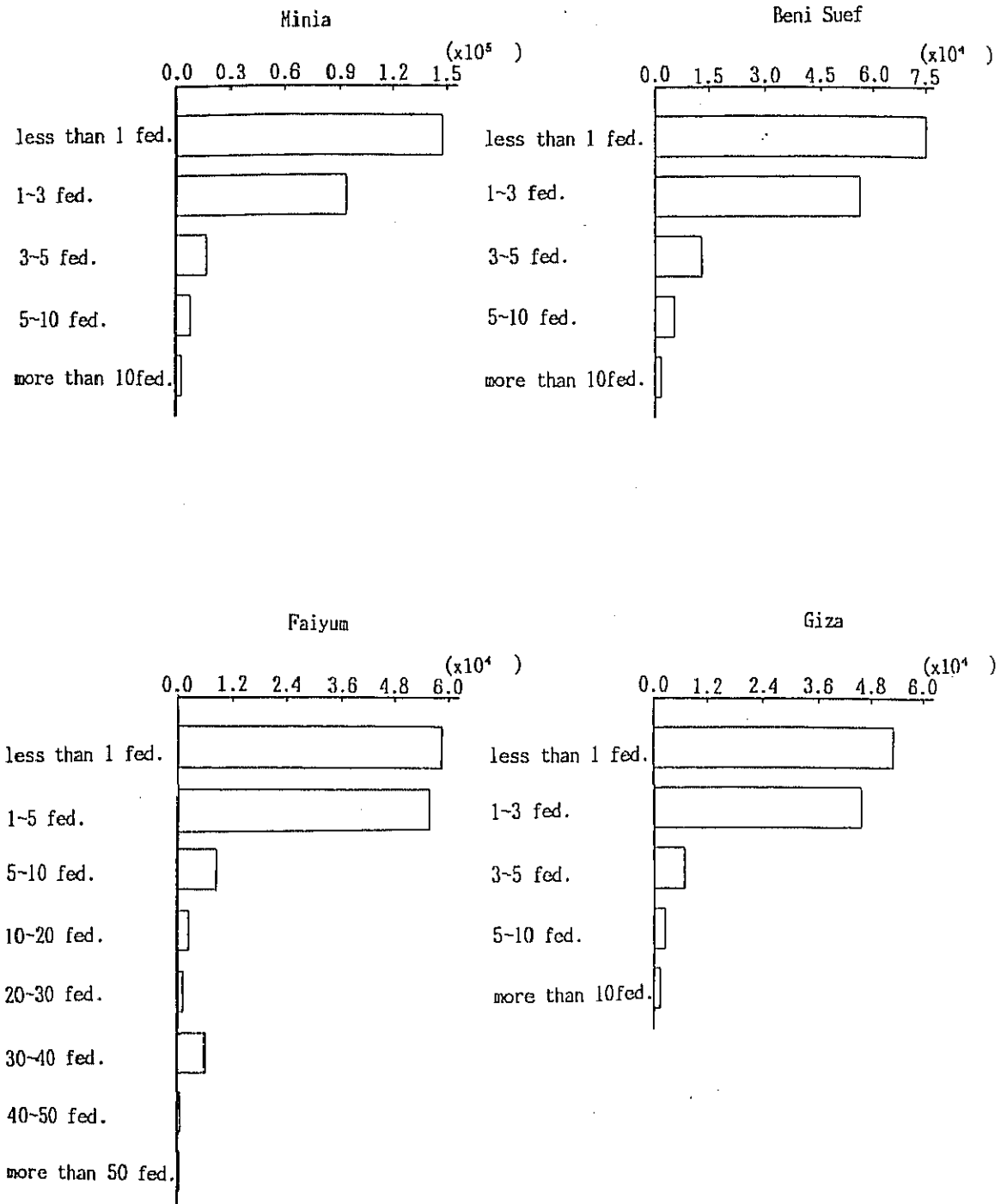


Table L-2 Land Tenure - Minia (1990)

(Unit: Area-feddan, No.- Number of farm household)

			Edwa	Maghagha	Beni Mazar	Matal	Samalut	Minfa	Abu Qurqas	Mallawi	Deir Mawas	Total	
less than 1 feddan	Owner	No. Area	6,019 3,715	8,105 4,355	7,730 7,375	7,261 3,162	12,434 7,316	7,469 3,055	7,320 5,216	14,031 7,545	7,580 3,962	77,890 45,804	
	Tenant	No. Area	1,791 1,171	5,769 3,235	9,399 5,659	5,503 2,642	8,234 4,684	7,160 1,982	14,636 6,289	11,424 8,262	4,627 2,791	68,533 34,685	
	Total	No. Area	7,810 4,886	13,865 7,890	17,129 13,034	12,764 5,804	20,668 11,900	14,629 5,040	21,956 11,475	25,465 13,907	12,207 6,753	146,423 80,389	
1 ~ 3 feddan	Owner	No. Area	4,897 8,215	5,956 9,655	11,585 13,515	4,033 6,652	9,344 13,742	2,844 4,954	3,973 7,823	7,244 12,258	4,055 6,312	53,931 83,160	
	Tenant	No. Area	1,538 2,298	3,513 5,268	8,490 9,894	2,385 3,971	4,944 8,716	2,604 3,854	7,946 10,000	5,956 9,058	2,428 4,887	39,804 57,946	
	Total	No. Area	6,435 10,513	9,469 14,953	20,075 23,410	6,418 10,623	14,288 22,458	5,448 8,808	11,919 17,823	13,200 21,316	6,483 11,199	93,735 141,106	
3 ~ 5 feddan	Owner	No. Area	866 2,602	1,033 3,424	787 3,077	619 1,874	1,841 5,972	1,278 4,811	515 2,100	1,514 5,137	1,081 3,946	9,524 32,943	
	Tenant	No. Area	228 686	398 1,199	446 1,598	412 1,344	1,045 3,387	1,163 3,982	1,100 4,070	1,111 3,704	445 1,987	6,344 21,936	
	Total	No. Area	1,082 3,288	1,429 4,623	1,233 4,675	1,031 3,218	2,886 9,359	2,441 8,793	1,615 6,170	2,625 8,841	1,528 5,913	15,868 54,879	
5 ~ 10 feddan	Owner	No. Area	256 1,717	511 2,742	391 2,579	397 2,625	803 5,276	790 5,448	380 2,300	764 4,869	493 3,410	4,775 30,966	
	Tenant	No. Area	43 269	108 835	129 796	118 834	545 3,689	780 4,810	509 4,360	350 2,136	184 1,323	2,766 18,981	
	Total	No. Area	299 2,016	619 3,577	520 3,375	515 3,459	1,348 8,865	1,670 10,258	889 6,660	1,104 7,004	677 4,733	7,541 49,947	
more than 10 feddan	Owner	No. Area	130 2,065	152 2,391	151 2,360	115 2,044	535 7,631	105 2,671	89 2,360	279 4,892	166 2,984	1,712 29,098	
	Tenant	No. Area	26 302	46 528	29 421	37 569	91 1,183	233 2,467	109 3,005	142 1,029	37 602	750 10,936	
	Total	No. Area	156 2,307	198 2,919	180 2,781	152 2,643	626 8,814	338 5,138	198 5,365	421 6,521	193 3,486	2,462 40,034	
Total			No. Area	15,782 23,072	25,580 33,662	39,137 47,276	20,820 25,747	39,816 61,398	24,426 38,037	36,577 47,493	42,805 57,589	21,086 32,084	266,029 366,355

Source: Agricultural office, Minia

Table L-3 Land Tenure - Beni Suef (1990)

(Unit: Area-feddan, No.- Number of farm household)

			Wasta	Bush	Beni Suef	Ibnasha	Riba	Sumusta	Fashn	Total	
less than 1 feddan	Owner	No. Area	8,477 6,401	4,277 2,954	6,183 3,749	5,553 3,284	5,724 3,256	5,167 3,022	6,073 2,806	41,454 26,672	
	Tenant	No. Area	4,608 2,568	4,038 2,604	6,810 4,165	3,287 1,887	5,643 3,436	3,998 2,519	5,057 3,181	33,439 20,350	
	Total	No. Area	13,085 8,969	8,315 5,558	12,993 7,904	8,840 5,171	11,367 6,692	9,163 6,141	11,130 5,987	74,893 46,422	
1 ~ 3 feddan	Owner	No. Area	3,145 7,131	4,379 7,195	3,679 5,385	6,002 9,842	4,449 7,619	2,921 5,186	3,185 5,381	27,760 47,739	
	Tenant	No. Area	2,518 5,584	3,407 7,136	4,228 7,445	3,843 6,649	4,834 6,528	2,869 5,047	6,661 5,783	28,360 47,082	
	Total	No. Area	5,663 12,715	7,786 14,331	7,907 12,830	9,845 16,391	9,283 14,147	5,790 10,233	9,846 14,174	56,120 94,821	
3 ~ 5 feddan	Owner	No. Area	1,239 4,511	1,122 4,122	691 2,220	1,547 5,664	627 2,099	691 2,179	1,060 4,900	6,777 25,695	
	Tenant	No. Area	1,051 3,976	609 1,852	524 2,046	788 2,893	604 2,161	565 1,989	1,798 3,064	5,739 17,981	
	Total	No. Area	2,290 8,487	1,631 5,974	1,115 4,266	2,335 8,557	1,131 4,260	1,156 4,168	2,858 7,904	12,516 43,676	
5 ~ 10 feddan	Owner	No. Area	535 3,519	567 3,685	276 1,830	718 4,786	268 1,765	311 2,060	555 2,796	3,228 20,431	
	Tenant	No. Area	256 1,305	212 1,382	184 1,174	307 2,044	175 1,255	267 1,772	562 2,805	1,962 11,737	
	Total	No. Area	790 4,824	779 5,067	460 3,004	1,025 6,830	441 3,010	578 3,832	1,117 5,601	5,190 32,168	
more than 10 feddan	Owner	No. Area	108 1,295	178 3,291	92 1,430	288 4,822	82 1,260	81 1,233	197 2,170	1,026 15,501	
	Tenant	No. Area	- -	35 571	43 697	53 796	26 440	37 587	151 1,612	345 4,703	
	Total	No. Area	108 1,295	213 3,862	135 2,127	341 5,618	108 1,700	118 1,820	348 3,782	1,371 20,204	
Total			No. Area	21,936 36,290	18,724 34,792	22,610 30,131	22,386 42,667	22,330 29,809	16,805 26,194	25,299 37,508	150,090 237,291

Source: Agricultural office, Beni Suef



Table L-4

## Land Tenure - Giza (1990)

(Unit: Area- feddan, No.- Number of farm household)

		Owner	Tenant	Total	Remarks
less than 1 feddan	No.	33,461	19,332	52,793	
	Area	19,902	12,663	32,565	
1~ 3 feddan	No.	29,729	15,634	45,363	
	Area	41,438	24,243	65,681	
3~ 5 feddan	No.	4,222	2,335	6,557	
	Area	14,545	6,426	20,971	
5~ 10 feddan	No.	1,843	667	2,510	
	Area	11,790	4,091	15,881	
more than 10 feddan	No.	943	237	1,180	
	Area	17,023	3,180	20,203	
Total	No.	70,198	38,205	108,403	
	Area	104,698	50,603	155,301	

Source: Agricultural office, Giza

Table L-5

## Land Tenure - Faiyum (1990)

(Unit: Area feddan, No.- Number of farm household)

		Faiyum	Sinnuris	Tamiya	Itsa	Ibshawai	Total
less than 1 feddan	No.	10,818	13,781	4,329	13,389	15,937	58,254
	Area	7,640	9,646	2,806	7,253	10,350	37,695
1~ 5 feddan	No.	8,417	12,978	8,494	16,419	9,288	55,326
	Area	21,188	27,990	17,220	39,015	35,212	140,625
5~ 10 feddan	No.	2,307	881	1,425	2,022	1,735	8,370
	Area	14,191	6,440	9,475	14,831	11,427	56,364
10~ 20 feddan	No.	804	215	583	492	398	2,492
	Area	9,629	3,306	7,118	7,345	5,547	32,945
20~30 feddan	No.	287	45	177	177	142	828
	Area	6,027	940	4,016	4,374	3,514	18,871
20~30 feddan	No.	187	35	88	68	4	5,790
	Area	3,568	1,175	2,915	2,407	1,402	11,467
20~30 feddan	No.	43	4	82	22	34	185
	Area	2,119	168	3,721	968	1,565	8,541
more than 50 feddan	No.	4	-	-	2	5	11
	Area	200	-	-	129	343	672
Total	No.	22,867	27,939	15,178	32,321	27,543	125,848
	Area	64,562	50,312	42,271	15,178	69,360	307,837

Source: Agricultural office, Faiyum

Table L-6 Distributed Agrarian Reform Lands up to 1989

Governorate	Area Distributed (feddan)	No. of Benefited Families	Averaged Farm Size Distributed per Family
Minia	66,353 (9.3)	40,945 (11.8)	1.62 feddan
Beni Suef	27,409 (3.8)	17,873 (5.1)	1.55
Faiyum	37,097 (5.2)	15,937 (4.6)	2.33
Giza	8,796 (1.2)	5,832 (1.7)	1.50
<b>Sub-total</b>	<b>139,655 (19.6)</b>	<b>80,437 (23.2)</b>	<b>1.73</b>
Alexandria	15,700 (2.2)	5,308 (1.5)	2.96
Aswan	13,932 (2.0)	7,876 (2.3)	1.77
Asyut	14,862 (2.1)	11,436 (3.3)	1.30
Behera	155,004 (21.7)	60,820 (17.5)	3.85
Dakahlia	104,512 (14.6)	43,602 (12.5)	2.40
Damietta	16,224 (2.3)	7,058 (2.0)	2.30
Gharbia	37,467 (5.2)	16,504 (4.8)	2.27
Ismailia	7,196 (1.0)	2,669 (0.8)	2.70
Kafr El Sheikh	65,460 (9.2)	27,215 (7.9)	2.41
Kalyubia	10,567 (1.5)	6,069 (1.8)	1.74
Menoufia	13,069 (1.8)	6,545 (1.9)	2.00
Qena	40,990 (5.7)	23,652 (6.8)	1.73
Sharkia	69,790 (9.8)	38,946 (11.2)	1.79
Suhag	9,779 (1.4)	8,333 (2.4)	1.17
<b>Sub-total</b>	<b>574,553 (80.4)</b>	<b>266,032 (76.8)</b>	<b>2.15</b>
<b>Total</b>	<b>714,208 (100.0)</b>	<b>346,469 (100.0)</b>	<b>2.06</b>

Source : MALR

Table L-7 Value of Winter Crops (1985)

Governorate	(Unit: 1,000 LE)										Total	Ranking*
	Wheat	Barley	Herbs	Onion	Flax & Straw	Aromatic Plant	Berseem	Green Fodder	Sugarbeet	Chopped/Wood		
<b>North Egypt</b>												
Cairo	64	24	36	-	-	-	1,843	3	-	80	2,050	20
Alexandria	425	1,196	2,320	98	2	17	16,261	-	-	2,110	22,429	17
Port Said	-	-	-	-	-	-	-	-	-	-	-	-
Suez	158	132	147	109	-	-	1,835	-	-	313	2,694	19
Damietta	2,527	120	599	64	362	-	43,645	-	3	2,447	49,767	15
Dakhalia	37,154	620	7,206	2,630	2,007	2	177,007	-	2,074	41,916	270,616	2
Sharkia	38,450	5,595	12,127	1,278	3,943	1	177,497	3	2	39,489	278,385	1
Kalyubia	6,070	68	1,878	2,547	260	154	51,252	1	-	6,417	68,647	13
Kafr El Sheikh	20,371	637	3,204	2,232	6,024	-	141,827	1	19,744	19,245	213,285	4
Gharbia	21,558	151	5,746	19,163	1,095	-	121,606	4	1,338	17,743	193,404	5
Menuofia	18,969	88	2,919	278	232	6	113,387	-	-	18,332	154,211	9
Behera	26,649	5,978	10,161	1,332	3,264	2	168,073	1	35	34,266	249,761	3
Ismailia	1,538	2,689	1,456	224	-	1	18,726	22	-	3,346	28,002	16
<b>Sub-total</b>	<b>173,933</b>	<b>17,298</b>	<b>47,799</b>	<b>29,955</b>	<b>17,189</b>	<b>183</b>	<b>1,032,959</b>	<b>35</b>	<b>23,196</b>	<b>195,704</b>	<b>1,538,251</b>	
<b>Middle Egypt</b>												
Giza	2,923	259	2,187	1,098	-	73	41,929	4	-	2,586	51,059	14
Beni Suef	14,742	919	17,455	4,763	84	46	56,629	144	-	13,851	108,633	11
Faiyum	13,952	3,256	11,605	6,573	356	4	88,895	10	-	16,303	140,954	10
Minia	25,227	546	35,691	512	-	83	90,053	2	-	22,824	174,938	6
<b>Sub-total</b>	<b>56,844</b>	<b>4,980</b>	<b>66,938</b>	<b>12,946</b>	<b>440</b>	<b>206</b>	<b>227,506</b>	<b>160</b>	<b>-</b>	<b>55,564</b>	<b>475,584</b>	
<b>Upper Egypt</b>												
Asyut	31,096	1,500	32,917	992	193	9	68,294	29	-	35,825	170,855	7
Suhag	30,535	2,755	8,690	3,239	-	-	80,154	15	-	30,751	156,139	8
Qena	22,816	918	5,985	714	-	-	28,381	28	-	16,870	75,712	12
Aswan	2,051	1,060	550	991	-	-	10,087	16	-	2,327	17,092	18
<b>Sub-total</b>	<b>86,498</b>	<b>6,233</b>	<b>48,142</b>	<b>5,936</b>	<b>193</b>	<b>9</b>	<b>186,916</b>	<b>88</b>	<b>-</b>	<b>85,783</b>	<b>419,798</b>	
<b>Frontier Govern.</b>												
<b>Total</b>	<b>317,275</b>	<b>28,511</b>	<b>162,879</b>	<b>48,837</b>	<b>17,822</b>	<b>398</b>	<b>1,497,381</b>	<b>283</b>	<b>23,196</b>	<b>337,051</b>	<b>2,433,633</b>	

Source : Estimation of income from agricultural sector in 1985, CAPMAS, 1988

Note : \* Ranking

Table L-8 Value of Summer Crops (1985)

(Unit : 1,000 LE)

Governorate	Cotton	Sugarcane	Paddy	Maize	Sorghum	Ground-nuts	Sesame	Onion	Sun-flower	Beans	Green Fodders	Chopped Wood etc	Other Crops	Total	Ranking
<b>North Egypt</b>															
Cairo	-	46	6	719	-	-	1	10	-	-	9	152	-	943	19
Alexandria	240	85	989	1,817	-	-	-	-	7	-	535	461	-	4,134	18
Port Said	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Suez	-	45	-	383	-	23	64	-	-	-	33	67	-	615	20
Damietta	7,516	311	13,250	908	-	-	-	329	-	279	369	2,173	-	25,135	16
Dakhalia	119,499	1,217	70,541	16,093	-	-	-	11,410	22	1,025	594	17,266	153	237,820	3
Sharkia	89,538	943	44,679	88,404	-	2,603	81	3,091	241	711	1,666	18,140	563	250,660	2
Kalyubia	11,751	2,420	903	38,854	-	248	-	4,362	-	1,044	630	7,361	-	67,563	12
Kafr El Sheikh	68,569	794	61,796	27,796	-	-	21	-	1	283	883	8,661	2	168,796	6
Gharbia	77,587	848	29,841	42,682	-	6	-	-	-	4,488	590	19,285	72	175,399	4
Menuofia	36,077	508	97	64,742	-	68	-	4,672	-	5,001	241	13,249	-	124,955	10
Behera	99,987	990	56,156	72,378	-	522	9	3,078	21	4,764	1,051	16,608	141	255,705	1
Ismailia	-	32	751	7,568	27	5,372	795	-	-	-	430	1,545	106	16,626	17
Sub-total	610,764	8,230	279,009	362,344	27	8,842	971	27,252	292	17,595	7,031	104,948	1,037	1,328,351	
<b>Middle Egypt</b>															
Giza	8	806	-	29,825	382	2,531	147	5,087	160	3	2,603	4,275	-	45,826	15
Beni Suef	35,586	646	-	28,863	493	132	245	-	1,109	3,729	10	7,591	-	78,403	11
Faiyum	22,156	271	2,848	17,405	12,184	75	782	-	1,943	5	1,059	6,598	204	65,530	13
Minia	52,114	24,098	-	61,153	1,746	2,209	805	-	530	14,593	612	10,573	-	168,333	7
Sub-total	109,864	26,819	2,848	137,246	14,805	4,947	1,979	5,087	3,742	18,330	4,284	29,037	204	358,192	
<b>Upper Egypt</b>															
Asyut	53,367	1,668	-	22,171	43,463	346	429	-	293	2,280	296	12,845	3	137,151	9
Suhag	37,584	3,136	-	28,588	56,975	1,034	986	-	4	1,564	481	10,717	119	141,187	8
Qena	8	139,887	-	15,496	7,786	601	4,180	-	-	69	694	3,638	3	172,362	5
Aswan	2	55,603	-	2,218	1,800	92	733	-	-	-	896	1,154	1	62,499	14
Sub-total	90,951	200,293	-	68,473	110,024	2,073	6,328	-	297	3,913	2,367	28,354	126	513,199	
<b>Frontier Govern.</b>															
Total	711,579	234,351	281,857	568,063	124,856	15,862	9,178	32,339	4,331	39,838	13,682	162,339	1,367	2,199,642	

Source : Estimation of income from agricultural sector in 1985, CAPMAS, 1988

Table L-9 Value of Nili Crops (1985)

(Unit : 1,000 LE)

Governorate	Maize	Sorghum	Paddy	Onion	Green Fodder	Wood & Straw	Total	Ranking
<b>North Egypt</b>								
Cairo	38	-	-	-	4	10	51	19
Alexandria	709	-	-	-	272	214	1,195	16
Port Said	-	-	-	-	-	-	-	-
Suez	320	-	-	-	7	59	386	18
Damietta	3,381	-	-	-	78	496	3,955	11
Dakhalia	22,844	-	-	-	175	2,480	25,499	2
Sharkia	11,315	-	-	128	323	1,232	12,998	8
Kalyubia	-	-	-	-	-	-	-	-
Kafr El Sheikh	852	-	-	-	159	140	1,151	17
Gharbia	15,517	-	-	-	366	3,801	19,684	4
Menuofia	1,067	-	-	-	664	225	1,956	15
Behera	5,389	-	-	26	911	1,190	7,516	9
Ismailia	2,102	-	-	-	-	491	2,593	14
Sub-total	63,533	-	-	154	2,959	10,338	76,984	
<b>Middle Egypt</b>								
Giza	9,933	549	-	-	1,045	1,974	13,501	7
Beni Suef	28,358	233	1	958	18	5,529	35,097	1
Faiyum	10,492	960	120	-	1,532	3,281	16,385	6
Minia	22,653	669	-	2,070	1	4,058	29,451	3
Sub-total	71,436	2,411	121	3,028	2,596	14,842	94,434	
<b>Upper Egypt</b>								
Asyut	965	-	-	4,326	25	188	5,504	10
Suhag	2,118	-	-	485	205	241	3,049	13
Qena	14,114	-	-	-	500	2,218	16,832	5
Aswan	2,727	-	-	-	181	679	3,587	12
Sub-total	19,924	-	-	4,811	911	3,326	28,972	
<b>Frontier Govern.</b>								
Total	154,893	2,411	121	7,993	6,466	28,506	200,390	

Source : Estimation of income from agricultural sector in 1985, CAPMAS, 1988

Table L-10 Value of Vegetables (1985)

(Unit : 1,000 LE)

Governorate	Winter Vegetables	Summer Vegetables	Nilii Vegetables	Total	Ranking	Tomato	Potato	Water Melon	Cucumber	Cabbage	Marrow	Others
North Egypt												
Cairo	663	523	201	1,387	20	375	25	6	6	49	99	827
Alexandria	14,272	35,073	9,981	59,326	9	20,138	6,002	6,551	2,253	1,413	6,853	16,116
Port Said	-	-	-	-	-	-	-	-	-	-	-	-
Suez	2,408	2,115	1,628	6,151	19	3,201	-	143	298	102	556	1,851
Damietta	4,566	15,129	10,469	30,164	15	14,551	2,137	3,546	1,836	101	431	7,562
Dakhalia	12,596	39,854	23,092	75,542	6	29,048	11,543	17,116	6,818	1,168	871	8,978
Sharkia	38,630	76,202	24,830	139,662	4	59,366	3,868	11,780	10,326	3,913	11,971	38,438
Kalyubia	32,956	48,034	22,911	103,901	5	18,178	12,829	67	1,683	8,742	16,112	46,290
Kafr El Sheikh	12,763	27,178	6,492	46,433	12	24,918	583	7,039	2,564	600	1,197	9,532
Gharbia	6,901	23,960	16,776	47,637	11	13,754	22,593	494	3,825	942	997	5,032
Menuofia	6,796	37,898	26,768	71,462	8	9,203	43,774	1,419	4,895	1,757	869	9,545
Behera	35,212	132,263	65,461	232,936	1	60,056	45,689	46,068	9,861	3,883	14,542	52,837
Ismailia	26,097	41,157	5,154	72,408	7	26,597	626	13,590	5,835	310	2,601	22,849
Sub-total	196,860	479,386	213,763	887,009	-	279,385	149,669	107,819	50,200	22,980	57,099	219,857
Middle Egypt												
Giza	69,440	68,993	42,388	180,821	2	63,407	28,732	7,638	10,925	4,285	5,300	60,534
Beni Suef	7,711	38,125	13,169	59,005	10	14,367	1,892	33,062	1,629	661	1,304	6,090
Faiyum	58,099	31,685	50,403	140,187	3	101,706	13	15,715	2,237	2,556	13,275	4,685
Minia	12,916	12,694	9,086	34,696	14	13,092	9,815	3,132	1,607	282	1,274	5,494
Sub-total	148,166	151,497	115,046	414,709	-	192,572	40,452	59,547	16,398	7,784	21,153	76,803
Upper Egypt												
Asyut	9,320	9,195	806	19,321	17	11,063	27	2,500	481	357	347	4,546
Suhag	8,888	9,226	3,230	21,144	16	7,850	2,026	5,969	808	686	548	3,257
Qena	13,170	9,042	14,413	36,625	13	15,184	-	9,243	1,195	307	219	10,477
Aswan	5,439	7,278	995	13,712	18	3,709	1	4,501	950	163	265	4,123
Sub-total	36,617	34,741	19,444	90,802	-	37,806	2,054	22,213	3,434	1,513	1,379	22,403
Frontier Govern.												
Total	378,643	665,624	348,253	1,392,520	-	509,763	192,175	189,579	70,032	32,277	79,631	319,063

Source : Estimation of income from agricultural sector in 1985, CAPMAS, 1988

Table L-11 Value of Fruits Production (1985)

(Unit : 1,000 LE)

Governorate	Orange	Mandarin, Lemon etc.	Apricot, Plum etc.	Dates	Mango	Grapes	Banana	Other Fruits	Total	Ranking
North Egypt										
Cairo	343	84	-	1,441	1,128	30	-	106	3,132	19
Alexandria	1,790	69	1,506	816	-	7,161	43	10,071	21,456	15
Port Said	-	-	-	-	-	-	-	-	-	-
Suez	54	27	771	443	462	19	-	31	1,807	20
Damietta	32	406	192	7,704	80	698	217	4,207	13,536	18
Dakhalia	6,236	265	5,132	1,240	819	11,485	4,024	895	30,096	12
Sharkia	23,894	24,978	344	23,316	69,836	1,828	5	1,445	145,646	1
Kalyubia	30,950	4,417	8,729	2,803	3,161	1,665	13,976	10,535	76,236	4
Kafr El Sheikh	2,944	274	1,405	7,877	52	625	308	1,785	15,270	16
Gharbia	12,172	1,657	10,950	657	2,472	22,452	6,502	2,020	58,882	9
Menuofia	27,939	3,494	8,194	581	2,793	9,103	13,630	593	66,327	7
Behera	36,966	5,265	7,484	26,275	8,980	5,568	4,051	12,095	106,684	2
Ismailia	3,504	694	77	1,719	24,476	202	-	334	31,006	11
Sub-total	146,824	41,630	44,784	74,872	114,259	60,836	42,756	44,117	570,078	-
Middle Egypt										
Giza	3,825	3,104	10,851	16,599	42,443	6,975	5,996	1,374	91,167	3
Beni Suef	3,004	817	134	12,912	1,199	7,627	393	450	26,786	13
Faiyum	2,169	14,033	10,659	21,568	11,808	10,234	74	3,635	74,180	5
Minia	988	872	52	22,440	545	41,286	1,026	1,365	68,574	6
Sub-total	9,986	18,826	21,696	73,519	55,995	66,422	7,489	6,774	260,707	-
Upper Egypt										
Asyut	8,187	1,315	1,168	15,724	3,884	15,045	8,890	4,813	59,026	8
Suhag	1,770	1,721	131	8,327	1,085	2,858	4,049	1,958	21,899	14
Qena	994	1,888	107	4,950	7,374	2,073	20,657	1,482	39,525	10
Aswan	497	880	55	11,509	913	218	316	166	14,554	17
Sub-total	11,448	5,804	1,461	40,510	13,256	20,194	33,912	8,419	135,004	-
Frontier Govern.										
Total	168,258	66,260	67,941	188,901	183,510	147,452	84,157	69,310	965,789	-

Source : Estimation of income from agricultural sector in 1985, CAPMAS, 1988

Table L-12

Summary of the Farm Economic Survey

Items	Minia	Beni Suef	Faiyum	Giza
1. No. of Farm Household Surveyed	23	3	3	2
2. Land Tenure Status				
Owner:	21	2	2	2
Tenant:	5	3	3	-
Landless:	1	-	-	-
3. Farm Size				
Average:	4.6 fed.	3.3 fed.	2.3 fed.	7.5 fed.
Max.:	29 fed.	6	2.5	10
Min.:	10 Kirat	1.7 fed.	2	2
4. Land Use				
2-year rotation	20	-	-	-
3-year rotation	3	3	3	2
5. Owner of Tractor	7	-	-	-
6. Owner of Water Pump	6	1	-	-
7. Major Crops				
Winter:	wheat, berseem, broadbean,	wheat, berseem, broadbean,	wheat, berseem broadbean,	cabbage, spinach cauliflower,
Summer:	maize, cotton	maize, cotton	maize, cotton, sunflower	squash, tomato, leafy vegetables
Nill:	garlic	-	-	Note: crop intensity 300%
Fruits:	orange, grape	-	-	
8. Marketing				
Field Crops;	mainly, to society	mainly, to society	mainly, to society	mainly, to society
Vegetables:	to merchant	to merchant	to merchant	to merchant
Fruits:	to merchant	to merchant	to merchant	to merchant
9. Input Supply				
Seed:	mainly, from society from society	mainly, from society from society	mainly, from society from society	mainly, from society from society
Fertilizer;	from society	from society	from society	from society
Agri-chemical				
10. Farm Labour for Planting, Weeding, Harvesting	4~5 LE/man.day 2.5 LE/child.day	4 LE/man.day	3~5 LE/man/day	7~8 LE/man.day
11. Machinery				
Cultivation/Harrowing:	20~50 LE/fed average 30 LE/fed	40 LE/fed.	40~50 LE/fed.	50 LE/fed.
Threshing:	15 LE/hour	15 LE/hour	12 LE/hour	20 LE/hour
Water Pump:	10~15 LE/fed	8 LE/fed	4 LE/fed	-
Spraying:	Cotton by governt.	Cotton by governt.	Cotton by governt.	-
12. Agricultural Income				
Max.:	30,000 LE/year	3,000 LE/year	3,000 LE/year	15,000 LE/year
Min.:	1,250	2,500	2,000	6,500
13. Living Expense				
Max.:	19,330 LE/year	3,000 LE/year	4,150 LE/year	15,000 LE/year
Min.:	2,820	2,100	2,300	12,000
14. Is Irrigation Water Enough?				
Winter:	yes - 19	yes - 3	yes - 1	yes - 0
Summer:	No - 4	no - 0	no - 2	no - 2
	yes - 17	yes - 3	yes - 2	yes - 2
	no - 6	no - 0	no - 1	no - 0
15. Livestock Holder				
Buffalo	13	3	3	1
Baladi Cow	15	-	2	1
Sheep	4	-	1	-
Goat	8	1	1	-
Chicken	15	1	3	2
Donkey	popularly used	popularly used	popularly used	popularly used
16. Animal Feed				
Winter:	berseem	berseem	berseem	berseem
Summer:	wheat straw broadbean straw wild grass	wheat straw broadbean straw wild grass	wheat straw broadbean straw wild grass	wheat straw broadbean straw

Items	Minia	Beni Suef	Faiyum	Giza
17. Off-farm Income	very rare	very rare	very rare	very rare
18. Land Tax	20 ~ 40 LE/fed, & 35 LE/fed fr underdrain	20 LE/fed.	40 LE/fed.	30 ~ 40 LE/fed.
19. Family Size				
Max.:	11 persons	22 persons	11 persons	5 persons
Min.:	4	6	4	5
Average:	8.1	9	7.5	5
20. Canal (meska) Cleaning				
1 time/year:	1	1	1	-
2 times/year:	22	1	2	2
3 times/year:	-	1	-	-
21. Irrigation Hour		refer to Table		
22. Diameter of Water Pump				
3 inches:	-	-	-	-
4.5 :	1	-	1	-
5 :	16	3	1	2
6 :	5	-	-	-
8 :	1	-	-	-
23. Irrigation based on their own experience	23	3	3	2
24. Present Irrigation Rotation	5 day-on 10 day-off	5 day-on 10 day-off	gravity	5 day-on 10 day-off
25. Expected Irrigation Rotation	7 day-on 7 day-off	7 day-on 7 day-off		



**APPENDIX M    PROJECT EVALUATION**





Table M-1                      Representative Crops  
(Based on the Computer's Output by MOA)

1. Field Crops (average from 1986~1989)

(Unit : feddan)

Ranking	Crops	Minia	Beni Suef	Faiyum	Giza	Total
1	Long Berseem	99,792	67,569	124,797	57,360	349,518
2	Summer Maize	159,610	63,255	42,603	59,239	324,707
3	Wheat	106,558	59,353	71,952	11,182	249,045
4	Nili Maize	47,796	90,562	60,027	49,645	248,030
5	Cotton	77,967	55,522	40,578	25	174,092
6	Beans	77,993	33,443	21,492	365	133,293
7	Short Berseem	20,449	28,731	22,184	13,131	84,495
8	Soybeans	49,345	12,503	211	26	62,085
9	Summer Sorghum	3,907	310	38,478	1,032	43,727
10	Sugarcane	29,207	832	339	1,338	31,716
11	Barley	1,475	2,963	11,186	747	16,371
12	Fenugreek	7,328	1,722	3,703	658	13,411
13	Paddy	-	-	12,554	-	12,554

2. Vegetable (average from 1986~1990)

Ranking	Crops	Minia	Beni Suef	Faiyum	Giza	Total
1	Tomato	9,534	14,466	58,445	38,088	120,533
2	Potato	9,833	1,437	236	22,252	33,758
3	American Water Melon	17,520	2,805	4,355	773	24,453
4	Sweet Water Melon	2,067	12,927	3,063	1,549	19,606
5	Cucumber	1,263	1,823	1,467	8,306	12,859
6	Green Kidney Beans	53	119	-	12,258	12,430
7	Green Pepper	319	306	566	9,695	10,886
8	Eggplant	309	2,299	379	6,187	9,174
9	Cabbage	401	576	2,183	4,945	8,105
10	Squash	334	341	1,325	5,788	7,788

3. Fruits (1989)

Ranking	Crops	Minia	Beni Suef	Faiyum	Giza	Total
1	Grape	22,068	2,764	2,456	6,037	33,325
2	Orange	1,248	3,033	1,346	5,360	10,987
3	Lime	297	114	7,051	1,335	8,767
4	Mandarin	922	911	287	4,345	6,465
5	Mango	226	120	1,005	5,112	6,463
6	Banana	716	480	21	3,233	4,450
7	Plum	22	33	159	3,611	3,825
8	Apricot	-	-	2,994	27	3,021
9	Guava	531	184	191	1,263	2,169
10	Olive	-	3	1,789	48	1,840

Table M-2 Irrigation Hour

Crops	Irrigation Hour by Pump		Water Supply (m <sup>3</sup> /feddan)		Net Water Requirement	Gross Water Requirement
	w/o	w/	w/o	w/		
Alfalfa	30	31	2,700	2,802	2,242	2,802
Barley	30	30	2,700	2,690	2,152	2,690
Broadbean	25	17	2,250	1,501	1,201	1,501
Cantaloup	32	35	2,880	3,134	2,508	3,134
Citrus	72	66	6,480	5,946	4,747	5,946
Cotton	50	61	4,500	5,455	4,364	5,455
Fenugreek	12	24	1,080	2,144	1,716	2,144
Flax	25	24	2,250	2,144	1,716	2,144
Groundnut	45	31	4,050	2,792	2,234	2,792
Garlic	30	24	2,700	2,144	1,716	2,144
Gourd	32	35	2,880	3,134	2,508	3,134
Grape	72	66	6,480	5,946	4,757	5,946
L. Berseem	50	31	4,500	2,802	2,242	2,802
Lentil	6	24	540	2,144	1,716	2,144
Lupin	6	24	540	2,144	1,716	2,144
Maize	30	41	2,700	3,683	2,946	3,683
Medic. Crops	25	35	2,250	3,134	2,508	3,134
Moghat	30	24	2,700	2,144	1,716	2,144
N. Onion	30	36	2,700	3,211	2,569	3,211
N. Tomato	30	36	2,700	3,211	2,569	3,211
N. Fodder	20	13	1,800	1,171	937	1,171
N. Potato	25	36	2,250	3,211	2,569	3,211
N. Maize	20	27	1,800	2,394	1,915	2,394
N. Sorghum	20	13	1,800	1,171	937	1,171
N. Squash	18	33	1,620	2,959	2,367	2,959
Olive	72	66	6,480	5,946	4,757	5,946
Rice	45	75	4,050	6,730	5,384	6,730
Sugarbeet	20	24	1,800	2,144	1,716	2,144
S. berssem	16	27	1,440	2,147	1,933	2,417
S. Tomato	60	34	5,400	3,068	2,455	3,068
Sugarcane	70	66	6,300	5,946	4,757	5,946
Sesame	55	41	4,950	3,711	2,969	3,711
Sordan	20	13	1,800	1,171	937	1,171
Sorghum	25	33	2,250	2,999	2,399	2,999
Soybean	30	32	2,700	2,835	2,268	2,835
Sunflower	32	39	2,880	3,494	2,795	3,494
W. Tomato	30	18	2,700	1,637	1,310	1,637
W. Potato	30	18	2,700	1,637	1,310	1,637
Watermelon	60	35	5,400	3,134	2,508	3,134
W. Onion	15	18	1,350	1,637	1,310	1,637
Wheat	30	30	2,700	2,690	2,152	2,690

Note: \* Modified Penman method

Table M-3 Calculation of SCF

	1985	1986	1987	1988	1989	1990	Average
(1) Total amount of import (CIF)	6,973,061	8,051,432	11,357,837	16,308,572	16,623,623	24,823,240	14,022,961
(2) Total amount of export (FOB)	2,599,941	2,053,959	3,046,010	3,994,436	5,734,726	6,953,762	4,063,806
(3) Total amount of import duty	1,464,530	1,560,155	1,770,099	2,896,963	2,900,955	4,696,355	2,548,176
(4) Total amount of export duty	1,944	1,536	2,278	3,872	3,940	4,098	2,945
(5) Total amount of export subsidy	-	-	-	-	-	-	-
(6) (1)+(2)	9,573,002	10,105,391	14,403,847	20,303,008	22,358,349	31,777,002	18,086,767
(7) (1)+(2)+(3)-(4)+(5)	11,035,588	11,664,010	16,171,668	23,196,099	25,255,364	36,469,259	20,031,998
(8) Standard conversion factor (6)/(7)	0.867	0.866	0.891	0.875	0.885	0.871	0.877

Source: Foreign trade computer center, CAPMAS

Note: CIF: Cost, Insurance, and Freight

FOB: Free on Board

Table M-4 Economic Farm-Gate Price of Trade Crops

	Unit	Wheat (imported)	Maize (imported)	Cotton (exported)	Sugarcane (exported)	Rice (exported)	Orange (exported)
Forecasted prices in 2000, 1985 constant dollars	US\$/ton	134	80	1170	223	190	300
Prices forecast in 1991 constant dollars	US\$/ton	215	128	1878	358	305	481
Freight and insurance (freight 20\$ and 2 % of FOB price)	US\$/ton	24	23	-58	-27	-26	-30
CIF price at Port Said	US\$/ton	239	151	1820	331	279	451
CIF price at Port Said in LE (1\$=3.3LE)	LE/ton	789	498	6006	1092	921	1488
Fees overheads (5%)	LE/ton	39	25	-300	-55	-46	-74
Shadow rate of 20 LE/ton for port duties, storage (SCF=0.877)	LE/ton	18	18	-18	-18	-18	-18
Wastage (5%)	LE/ton	39	25	-	-55	-46	-74
Shadow rate of 10 LE for transport to market or factory (SCF=0.877)	LE/ton	9	9	-9	-9	-9	-9
Value at market/factory	LE/ton	894	575	5679	955	802	1313
Shadow rate of 60 LE/ton for processing (SCF=0.877)	LE/ton	-	-	-53	-53	-53	-
Value net of processing cost	LE/ton	894	575	5626	902	749	1313
Conversion coefficient	%	-	-	35	10	60	-
Commodity value	LE/ton	-	-	1969	90	449	-
Shadow rate of 10 LE for transportation from project area to market/factory (SCF=0.877)	LE/ton	9	9	-9	-9	-9	-9
Storage (SCF=0.877)	LE/ton	3	3	-3	-3	-3	-3
Farm-gate price	LE/ton	906	587	1957	78	437	1301

Table M-5 Economic Farm-Gate Price of Fertilizers

	Unit	Urta (imported)	TSP (exported)	Potassium Chloride (imported)
Forecasted price in 2000, 1985 constant dollars	US\$/ton	120	114	72
Price forecast in 1991 constant price	US\$/ton	193	183	116
Freight 30\$/ton and insurance (2% of FOB price)	US\$/ton	34	-33	32
CIF price at Port Said	US\$/ton	227	150	148
CIF price at Port Said in LE (1US\$=3.3LE)	LE/ton	749	495	488
Shadow rate of 23 LE/ton for port handling, packing, storage (SCF=0.877)	LE/ton	20	-20	20
Shadow rate of 15 LE/ton for handling, transportation to project area	LE/ton	13	-13	13
Value at store in the project area	LE/ton	782	462	521
Shadow rate of 15 LE/ton for distribution from store (SCF=0.877)	LE/ton	13	-13	13
Farm-gate price	LE/ton	795	449	534
Percent of constituent	%	(N) 46	(P) 37	(K) 48
Farm-gate price of N, P2O5, K2O	LE/ton	1728	1214	1113

Table M-6

## Economic Farm-Gate Price of Non-Trade Crops

(unit:LE/ton)

Crops	Minia	Beni Suef	Faiyum	Giza	New Land
Winter Crop					
Wheat	906	906	906	906	906
Broadbean	677	697	645	708	677
Barley	-	906	906	906	906
Fenugreek	936	1013	993	993	-
L. Berseem	35	35	35	40	35
S. Berseem	35	-	35	40	-
Alfalfa	-	35	-	-	40
Sugarbeet	-	-	70	-	-
Onion	227	243	247	255	227
Garlic	317	317	297	354	317
Lentil	-	2400	2400	-	-
Lupin	-	1438	-	1478	1431
Potato	577	-	-	-	-
Seed onion	-	-	-	-	456
Berseem seed	-	-	-	3000	-
Medicinal crops	2900	2900	-	-	-
Tomato	237	250	256	218	237
Squash	336	-	-	-	-
Summer Crop					
Cotton	1957	1957	1957	-	-
Maize	587	587	587	587	587
Sugarcane	78	78	78	78	-
Sesame	1674	1671	1615	1615	1654
Soybean	781	-	710	-	781
Groundnut	1178	1137	1137	1175	1178
Flax	-	-	202	-	-
Cantaloup	-	480	-	-	480
Sunflower	806	806	806	806	806
Melon	-	-	-	-	528
Sorghum	-	468	427	420	468
Tomato	-	-	-	218	237
Watermelon	696	-	654	-	696
Onion	-	-	-	255	-
Fodder	-	-	30	30	30
Snake gourd	-	-	300	300	-
Cucumber	550	-	-	-	550
Rice	-	-	437	-	-
Nili Crop					
Maize	587	587	587	587	-
Tomato	-	250	256	-	-
Potato	577	-	-	515	-
Rice	-	-	437	-	-
Sorghum	468	468	427	420	-
Fodder	30	30	30	30	-
Onion	-	243	-	255	-
Orchard					
Grape	484	-	-	-	-
Orange	-	-	-	1301	-
Mandarin	-	457	-	-	-
Lime	-	-	508	-	-
Olive	-	-	-	-	1341

Table M-7 Incremental NPV (Minia)

Crops	without Project			with Project		
	Planted Area	NPV/fed	Total NPV	Planted Area	NPV/fed	Total NPV
Winter	(fed)	(LE/fed)	(1000 LE)	(fed)	(LE/fed)	(1000 LE)
Wheat	18964	1481	28086	23391	1357	31742
Broadbean	13435	173	2324	13435	229	3077
Fenugreek	1144	591	676	1144	667	763
L. Berseem	10065	559	5626	8065	588	4742
S. Berseem	3292	2	7	3292	6	20
Onion	24	1699	41	24	1869	45
Garlic	735	2181	1603	735	2674	1965
Potato	16	2422	39	16	2986	48
Medicinal crops	11	1764	19	11	1840	20
Tomato	1967	1307	2571	1967	1651	3248
Squash	1717	787	1351	1717	992	1703
	51370		42343	53797		47372
Summer						
Cotton	16716	533	8910	16716	427	7138
Maize	23391	786	18385	25391	811	20592
Sugarcane	395	1615	638	395	1948	769
Sesame	1000	335	335	1000	483	483
Soybean	1610	178	287	1610	234	377
Groundnut	763	37	28	763	48	37
Sunflower	36	127	5	36	213	8
Watermelon	1042	2544	2651	1042	3313	3452
Cucumber	4081	3084	12586	4081	3469	14157
	49034		43824	51034		47012
Nili						
Maize	7052	655	4619	7052	600	4231
Potato	597	3221	1923	597	3567	2129
Sorghum	38	449	17	38	485	18
Fodder	0	0	0	25391	388	9852
	7687		6559	33078		16231
Sub-Total	108091		92726	137909		110616
Incremental NPV from crops (1000 LE)						17890
Orchard						
Grape	3476	1833	6372	3476	1883	6545
Total	111567		99098	141385		117161
Total Incremental NPV (1000 LE)						18063

Table M-8 Crop Budget - Grape  
Grape (without)

	Unit	Unit Prices	Year 1		Year (2~4)		Year (5~10)		Year over 11	
			Quant	Cost	Quant	Cost	Quant	Cost	Quant	Cost
Yield	ton/fed		0		0	-	1.9	-	5.5	-
Farm-gate Price	LE/ton	484	0		0	-	0	-	0	-
GPV	LE/fed		0	0	0	0		920	-	2662
Production Cost										
Seedling	LE/No	10	1200	12000	0	0	0	0	0	0
Fertilizer										
N	kg/fed	1.73	70	121	23	40	23	40	23	40
P205	kg/fed	1.21	0	0	0	0	0	0	0	0
K20	kg/fed	1.11	0	0	0	0	0	0	0	0
Manure	M3	2.6	0	0	0	0	0	0	5	13
Agri-chemicals										
Marathion	kg/fed	20	1	20	1	20	1	20	1	20
Actelic	kg/fed	53	1	53	1	53	1	53	1	53
Biladix	kg/fed	6	1	6	1	6	1	6	1	6
Karacin	kg/fed	20	0	0	0	0	0	0	0	0
Tractor	hr/fed	34.4	5	172	2	69	2	69	2	69
Pump	hr/fed	3.4	72	245	72	245	72	245	72	245
Draught animal	hr/fed	0.4	10	4	10	4	12	5	12	5
Transportation	hr/fed	0.4	12	5	12	5	18	7	18	7
Labour	hr/fed	0.8	280	224	210	168	300	240	464	371
Total				12850		530		684		829
NPV	LE/fed			-12850		-530		235		1833

Grape (with)

	Unit	Unit Prices	Year 1		Year (2~4)		Year (5~10)		Year over 11	
			Quant	Cost	Quant	Cost	Quant	Cost	Quant	Cost
Yield	ton/fed		0		0	-	2.3	-	5.9	-
Farm-gate Price	LE/ton	484	0		0	-	0	-	0	-
GPV	LE/fed		0	0	0	0		1113	-	2856
Production Cost										
Seedling	LE/No	10	1200	12000	0	0	0	0	0	0
Fertilizer										
N	kg/fed	1.73	100	173	31	54	31	54	31	54
P205	kg/fed	1.21	15	18	15	18	15	18	15	18
K20	kg/fed	1.11	24	27	24	27	24	27	24	27
Manure	M3	2.6	10	26	10	26	10	26	10	26
Agri-chemicals										
Marathion	kg/fed	20	2	40	2	40	2	40	2	40
Actelic	kg/fed	53	1	53	1	53	1	53	1.5	80
Biladix	kg/fed	6	1	6	1	6	1	6	1	6
Karacin	kg/fed	20	0	0	0	0	0	0	0.1	2
Tractor	hr/fed	34.4	7	241	2	69	3	103	3	103
Pump	hr/fed	3.4	66	224	66	224	66	224	66	224
Draught animal	hr/fed	0.4	16	6	16	6	16	6	24	10
Transportation	hr/fed	0.4	10	4	25	10	30	12	30	12
Labour	hr/fed	0.8	300	240	230	184	350	280	464	371
Total				13058		717		849		972
NPV	LE/fed			-13058		-717		264		1883

Table M-9 Incremental NPV (Beni Suef)

Crops	without Project			with Project		
	Planted Area	NPV/fed	Total NPV	Planted Area	NPV/fed	Total NPV
Winter	(fed)	(LE/fed)	(1000 LE)	(fed)	(LE/fed)	(1000 LE)
Wheat	15585	1778	27710	18235	1888	34428
Broadbean	10427	212	2211	10427	219	2284
Barley	1205	951	1146	1205	1116	1345
Fenugreek	714	511	365	714	573	409
Lupin	64	813	52	64	916	59
L. Berseem	11310	463	5237	11310	519	5870
Alfalfa	0	0	0	2106	482	1015
Onion	2452	1339	3283	2452	1562	3830
Garlic	446	1003	447	446	1375	613
Medicinal crops	427	1939	828	427	2363	1009
Tomato	1781	1185	2110	1781	1293	2303
Lentil	36	623	22	36	702	25
	44447		43411	49203		53189
Summer						
Cotton	13216	494	6529	13216	707	9344
Maize	11980	715	8566	11980	814	9752
Sugarcane	60	822	49	60	900	54
Sesame	617	233	144	617	400	247
Groundnut	383	198	76	383	231	88
Sunflower	1499	254	381	1499	450	675
Cantaloup	4176	351	1466	4176	404	1687
Sorghum	362	549	199	362	625	226
	32293		17409	32293		22073
Nili						
Maize	14121	573	8091	14121	675	9532
Sorghum	2220	538	1194	2220	607	1348
Tomato	2026	1525	3090	2026	1562	3165
Fodder	40	418	17	40	442	18
Onion	20	1239	25	20	1289	26
	18427		12417	18427		14087
Sub-total	95167		73237	99923		89349
Incremental NPV from crops (1000 LE)						16112
Orchard						
Mandarin	953	1373	1308	953	1481	1411
Total	96120		74545	100876		90760
Total Incremental NPV (1000 LE)						16215



Table M-10 Crop Budget - Mandarin  
Mandarin (without)

	Unit	Unit Prices	Year 1		Year (2~4)		Year (5~8)		Year over 9	
			Quant	Cost	Quant	Cost	Quant	Cost	Quant	Cost
Yield	ton/fed		0		0	-	3.44	-	6.37	-
Farm-gate Price	LE/ton	457	0		0	-	0	-	0	-
GPV	LE/fed		0	0	0	0		1572	-	2911
Production Cost										
Seedling	No/fed	1.5	3000	4500	0	0	0	0	0	0
Fertilizer										
N	kg/fed	1.73	15	26	15	26	20	35	31	54
P205	kg/fed	1.21	10	12	10	12	10	12	15	18
K20	kg/fed	1.11	20	22	20	22	20	22	24	27
Manure	M3	2.6	10	26	10	26	10	26	10	26
Agri-chemicals										
Actelic	kg/fed	53	1.5	80	1.5	80	1.5	80	2	106
Faidet	kg/fed	6	10	60	15	90	15	90	15	90
Diacin	kg/fed	2	5	10	5	10	5	10	5	10
Rubigan	kg/fed	186	0.5	93	0.5	93	0.5	93	0.5	93
Tractor	hr/fed	34.4	6	206	6	206	6	206	6	206
Pump	hr/fed	3.4	72	245	72	245	72	245	72	245
Draught animal	hr/fed	0.4	20	8	25	10	30	12	32	13
Transportation	hr/fed	0.4	15	6	20	8	25	10	30	12
Labour	hr/fed	0.8	470	376	360	288	600	480	798	638
Total				5670		1116		1321		1538
NPV	LE/fed			-5670		-1116		251		1373

Mandarin (with)

	Unit	Unit Prices	Year 1		Year (2~4)		Year (5~8)		Year over 9	
			Quant	Cost	Quant	Cost	Quant	Cost	Quant	Cost
Yield	ton/fed		0		0	-	3.6	-	6.66	-
Farm-gate Price	LE/ton	457	0		0	-	0	-	0	-
GPV	LE/fed		0	0	0	0		1645	-	3044
Production Cost										
Seedling	No/fed	1.5	3000	4500	0	0	0	0	0	0
Fertilizer										
N	kg/fed	1.73	30	52	30	52	35	61	39	67
P205	kg/fed	1.21	20	24	20	24	20	24	23	28
K20	kg/fed	1.11	25	28	25	28	25	28	36	40
Manure	M3	2.6	10	26	10	26	10	26	10	26
Agri-chemicals										
Actelic	kg/fed	53	2	106	2	106	2	106	2	106
Faidet	kg/fed	6	15	90	15	90	15	90	15	90
Diacin	kg/fed	2	5	10	5	10	5	10	5	10
Rubigan	kg/fed	186	0.5	93	0.5	93	0.5	93	0.5	93
Tractor	hr/fed	34.4	6	206	6	206	6	206	6	206
Pump	hr/fed	3.4	66	224	66	224	66	224	66	224
Draught animal	hr/fed	0.4	20	8	20	8	25	10	32	13
Transportation	hr/fed	0.4	30	12	30	12	30	12	30	12
Labour	hr/fed	0.8	530	424	460	368	610	488	808	646
Total				5804		1248		1378		1562
NPV	LE/fed			-5804		-1248		267		1481

Table M-11 Incremental NPV (Faiyum)

Crops	without Project			with Project		
	Planted Area	NPV/fed	Total NPV	Planted Area	NPV/fed	Total NPV
Winter	(fed)	(LE/fed)	(1000 LE)	(fed)	(LE/fed)	(1000 LE)
Wheat	77549	1798	139433	77549	1841	142768
Broadbean	21525	259	5575	31395	275	8634
Barley	10393	948	9853	10393	1176	12222
Fenugreek	3392	628	2130	3392	696	2361
Lentil	150	1430	215	150	1555	233
L. Berseem	98704	336	33165	88834	459	40775
S. Berseem	25723	3	77	25723	35	900
Onion	2912	2689	7830	2912	3110	9056
Garlic	231	588	136	231	828	191
Tomato	6627	2721	18032	6627	3075	20378
Flax	667	92	61	667	115	77
Sugarbeet	11278	456	5143	11278	539	6079
	259151		221649	259151		243674
Summer						
Cotton	39689	645	25599	39689	972	38578
Maize	43857	827	36270	48243	1004	48436
Sorghum	37190	459	17070	20259	515	10433
Sugarcane	220	1251	275	220	1415	311
Sesame	1425	558	795	1425	613	874
Groundnut	119	93	11	119	127	15
Sunflower	12429	139	1728	12429	267	3319
Watermelon	29313	6234	182737	29313	6530	191414
Fodder	0	0	0	49578	209	10362
Gourd	2079	71	148	2079	165	343
Rice	12545	448	5620	12545	469	5884
Soybean	139	148	21	139	186	26
	179005		270274	216038		309994
Nili						
Maize	51817	272	14094	51817	327	16944
Sorghum	3246	368	1195	3246	406	1318
Rice	1264	159	201	1264	175	221
Tomato	37033	2647	98026	49578	2888	143181
Fodder	8882	204	1812	8882	261	2318
	102242		115328	114787		163983
Sub-Total	540398		607251	589976		717650
Incremental NPV from crops (1000 LE)						110399
Orchard						
Lime	19332	1442	27877	19332	1479	28592
Total	559730		635128	609308		746242
Incremental NPV (1000 LE)						111114

Table M-12 Crop Budget - Lime  
Lime (without)

	Unit	Unit Prices	Year 1		Year (2~4)		Year (5~8)		Year over 9	
			Quant	Cost	Quant	Cost	Quant	Cost	Quant	Cost
Yield	ton/fed		0	-	0	-	3	-	5.54	-
Farm-gate Price	LE/ton	508	0	-	0	-	0	-	0	-
GPV	LE/fed		0	0	0	0	1524	-	-	2814
Production Cost										
Seedling	No/fed	1.25	2500	3125	0	0	0	0	0	0
Fertilizer										
N	kg/fed	1.73	40	69	40	69	60	104	85	147
P205	kg/fed	1.21	15	18	15	18	15	18	15	18
K20	kg/fed	1.11	12	13	12	13	12	13	12	13
Manure	M3	2.6	10	26	10	26	10	26	10	26
Agri-chemicals										
Actelic	kg/fed	53	1.5	80	1.5	80	1.5	80	2	106
Faidet	kg/fed	6	20	120	20	120	20	120	20	120
Diacin	kg/fed	2	5	10	5	10	5	10	5	10
Rubigan	kg/fed	186	0.5	93	0.5	93	0.5	93	0.5	93
Tractor	hr/fed	34.4	5	172	5	172	5	172	5	172
Draught animal	hr/fed	0.4	25	10	25	10	30	12	32	13
Transportation	hr/fed	0.4	10	4	10	4	16	6	18	7
Labour	hr/fed	0.8	480	384	360	288	560	448	808	646
Total				4124		903		1102		1372
NPV	LE/fed			-4124		-903		422		1442

Lime (with)

	Unit	Unit Prices	Year 1		Year (2~4)		Year (5~8)		Year over 9	
			Quant	Cost	Quant	Cost	Quant	Cost	Quant	Cost
Yield	ton/fed		0	-	0	-	3.3	-	5.98	-
Farm-gate Price	LE/ton	508	0	-	0	-	0	-	0	-
GPV	LE/fed		0	0	0	0	1676	-	-	3038
Production Cost										
Seedling	No/fed	1.25	2500	3125	0	0	0	0	0	0
Fertilizer										
N	kg/fed	1.73	70	121	50	87	70	121	101	175
P205	kg/fed	1.21	18	22	18	22	20	24	23	28
K20	kg/fed	1.11	12	13	15	17	24	27	24	27
Manure	M3	2.6	10	26	10	26	15	39	15	39
Agri-chemicals										
Actelic	kg/fed	53	1.5	80	1.5	80	1.5	80	1.5	80
Faidet	kg/fed	6	20	120	20	120	25	150	25	150
Diacin	kg/fed	2	5	10	5	10	5	10	5	10
Rubigan	kg/fed	186	0.6	112	0.6	112	0.6	112	0.6	112
Tractor	hr/fed	34.4	5	172	5	172	5	172	5	172
Draught animal	hr/fed	0.4	25	10	35	14	48	19	48	19
Transportation	hr/fed	0.4	30	12	30	12	30	12	30	12
Labour	hr/fed	0.8	530	424	400	320	580	464	920	736
Total				4246		990		1229		1559
NPV	LE/fed			-4246		-990		447		1479

Table M-13 Incremental NPV (Giza)

Crops	without Project			with Project		
	Planted Area	NPV/fed	Total NPV	Planted Area	NPV/fed	Total NPV
Winter	(fed)	(LE/fed)	(1000 LE)	(fed)	(LE/fed)	(1000 LE)
Wheat	7608	1477	11237	7608	1585	12059
Broadbean	1399	45	63	1399	224	313
Barley	459	1010	464	459	1329	610
Fenugreek	479	524	251	479	538	258
Lupin	438	955	418	438	969	424
L. Berseem	35934	722	25944	35934	745	26771
S. Berseem	6886	53	365	6886	62	427
Onion	1145	1228	1406	1145	1441	1650
Garlic	306	34	10	306	272	83
Beseem seed	917	89	82	917	184	169
Tomato	24929	1883	46941	24929	2131	53124
	80500		87182	80500		95888
Summer						
Maize	38082	738	28105	38082	960	36559
Sorghum	775	128	99	775	324	251
Sugarcane	866	1252	1084	866	1494	1294
Sesame	315	320	101	315	380	120
Groundnut	2241	225	504	2241	249	558
Sunflower	219	351	77	219	530	116
Onion	3374	1193	4025	3374	1288	4346
Tomato	28146	2580	72617	28146	3015	84860
Fodder	17142	26	446	17142	48	823
Gourd	27	45	1	27	136	4
	91187		107059	91187		128930
Nili						
Maize	27336	714	19518	27336	803	21951
Sorghum	769	359	276	769	423	325
Potato	23222	3420	79419	23222	4037	93747
Fodder	4286	232	994	4286	274	1174
Onion	4	845	3	4	924	4
	55617		100211	55617		117201
Sub-Total	227304		294451	227304		342019
Incremental NPV from crops (1000 LE)						47568
Orchard						
Orange	17020	5875	99993	17020	6796	115668
Total	244324		394444	244324		457687
Incremental NPV (1000 LE)						63243

Table M-14 Crop Budget - Orange

Orange (without)

	Unit	Unit Prices	Year 1		Year (2~4)		Year (5~8)		Year over 9	
			Quant	Cost	Quant	Cost	Quant	Cost	Quant	Cost
Yield	ton/fed		0	-	0	-	3.22	-	6	-
Farm-gate Price	LE/ton	1301	0	-	0	-	0	-	0	-
GPV	LE/fed		0	0	0	0	4189			7715
Production Cost										
Seedling	No/fed	2.5	1800	4500	0	0	0	0	0	0
Fertilizer										
N	kg/fed	1.73	60	104	60	104	100	173	120	208
P205	kg/fed	1.21	18	22	18	22	20	24	20	24
K20	kg/fed	1.11	10	11	10	11	14	16	14	16
Manure	M3	2.6	0	0	0	0	0	0	0	0
Agri-chemicals										
Actelic	kg/fed	53	1.5	80	1.5	80	1.5	80	2	80
Faidet	kg/fed	6	20	120	20	120	20	120	20	120
Diacin	kg/fed	2	5	10	5	10	5	10	5	10
Rubigan	kg/fed	186	2	372	2	372	2	372	2	372
Tractor	hr/fed	34.4	6	206	6	206	6	206	6	206
Pump	hr/fed	3.4	72	245	72	245	72	245	72	245
Draught animal	hr/fed	0.4	0	0	0	0	0	0	0	0
Transportation	hr/fed	0.4	10	4	15	6	20	8	24	10
Labour	hr/fed	0.8	530	424	530	424	650	520	688	550
Total				6097		1599		1773		1840
NPV	LE/fed			-6097		-1599		2416		5875

Orange (with)

	Unit	Unit Prices	Year 1		Year (2~4)		Year (5~8)		Year over 9	
			Quant	Cost	Quant	Cost	Quant	Cost	Quant	Cost
Yield	ton/fed		0	-	0	-	3.78	-	7	-
Farm-gate Price	LE/ton	1301	0	-	0	-	0	-	0	-
GPV	LE/fed		0	0	0	0	4918			9003
Production Cost										
Seedling	No/fed	2.5	1800	4500	0	0	0	0	0	0
Fertilizer										
N	kg/fed	1.73	70	121	70	121	120	208	140	242
P205	kg/fed	1.21	20	24	25	30	30	36	30	36
K20	kg/fed	1.11	20	22	24	27	24	27	24	27
Manure	M3	2.6	5	13	5	13	5	13	5	13
Agri-chemicals										
Actelic	kg/fed	53	1.5	80	1.5	80	1.5	80	2	80
Faidet	kg/fed	6	35	210	35	210	35	210	35	210
Diacin	kg/fed	2	5	10	5	10	5	10	5	10
Rubigan	kg/fed	186	3	558	3	558	3	558	3	558
Tractor	hr/fed	34.4	6	206	6	206	6	206	6	206
Pump	hr/fed	3.4	66	224	66	224	66	224	66	224
Draught animal	hr/fed	0.4	16	6	18	7	16	6	18	7
Transportation	hr/fed	0.4	20	8	25	10	30	12	28	11
Labour	hr/fed	0.8	530	424	550	440	690	552	728	582
Total				6407		1936		2142		2207
NPV	LE/fed			-6407		-1936		2776		6796

Table M-15 Incremental NPV (New Land)

Crops	without Project			with Project		
	Planted Area	NPV/fed	Total NPV	Planted Area	NPV/fed	Total NPV
Winter	(fed)	(LE/fed)	(1000 LE)	(fed)	(LE/fed)	(1000 LE)
Wheat	5008	902	4517	7459	975	7273
Broadbean	1121	8	9	1589	61	97
Barley	627	547	343	2145	758	1626
L. Berseem	3028	28	85	3461	72	249
Alfalfa/Berseem	2041	120	245	4051	231	936
Onion	839	1811	1519	3038	2029	6164
Garlic	2042	615	1256	2334	620	1447
Lupin	77	377	29	77	408	31
Tomato	3155	2890	9118	3809	3009	11461
Seed onion	94	748	70	94	782	74
	18032		17191	28057		29358
Summer						
Maize	1681	364	612	2256	517	1166
Sorghum	1496	347	519	1641	434	712
Sesame	2307	180	415	2925	332	971
Soybean	30	33	1	30	72	2
Groundnut	2237	70	157	2559	100	256
Sunflower	121	17	2	442	79	35
Watermelon	3226	2298	7413	4883	3006	14678
Cantaloup	100	3954	395	110	4167	458
Cucumber	548	2226	1220	971	2714	2635
Melon	0	0	0	356	2114	753
Tomato	650	2082	1353	1670	2157	3602
Fodder	5100	4	20	6080	48	292
	17496		12108	23923		25561
Sub-Total	35528		29300	51980		54919
Incremental NPV from crops (1000 LE)						25619
Orchard						
Olive	1317	3637	4790	2116	6312	13356
Total	36845		34090	54096		68275
Total Incremental NPV (1000 LE)						34186

Table M-16 Crop Budget - Olive

## Olive (without)

	Unit	Unit Prices	Year 1		Year (2~4)		Year (5~10)		Year over 11	
			Quant	Cost	Quant	Cost	Quant	Cost	Quant	Cost
Yield	ton/fed		0		0	-	1.5	-	3.5	-
Farm-gate Price	LE/ton	1341	0		0	-	0	-	0	-
GPV	LE/fed		0	0	0	0		2012	-	4694
Production Cost										
Seedling	No/fed	3	4000	12000	0	0	0	0	0	0
Fertilizer										
N	kg/fed	1.73	120	208	0	0	40	69	40	69
P205	kg/fed	1.21	10	12	0	0	10	12	10	12
K20	kg/fed	1.11	15	17	0	0	15	17	15	17
Manure	M3	2.6	5	13	0	0	5	13	5	13
Agri-chemicals										
Basodin	kg/fed	40	1.5	60	1.5	60	1.5	60	1.5	60
Furadan	kg/fed	20	5	100	5	100	5	100	5	100
Tractor	hr/fed	34.4	4	138	4	138	4	138	4	138
Pump	hr/fed	3.4	72	245	72	245	72	245	72	245
Draught animal	hr/fed	0.4	15	6	15	6	18	7	18	7
Transportation	hr/fed	0.4	10	4	10	4	12	5	12	5
Labour	hr/fed	0.8	150	120	200	160	370	296	489	391
Total				12922		712		961		1057
NPV	LE/fed			-12922		-712		1050		3637

## Olive (with)

	Unit	Unit Prices	Year 1		Year (2~4)		Year (5~10)		Year over 11	
			Quant	Cost	Quant	Cost	Quant	Cost	Quant	Cost
Yield	ton/fed		0	-	0	-	2.4	-	5.6	-
Farm-gate Price	LE/ton	1341	0	-	0	-	0	-	0	-
GPV	LE/fed		0	0	0	0		3218	-	7510
Production Cost										
Seedling	No/fed	3	4000	12000	0	0	0	0	0	0
Fertilizer										
N	kg/fed	1.73	135	234	0	0	54	93	54	93
P205	kg/fed	1.21	15	18	0	0	15	18	15	18
K20	kg/fed	1.11	24	27	0	0	24	27	24	27
Manure	M3	2.6	5	13	0	0	5	13	5	13
Agri-chemicals										
Basodin	kg/fed	40	2	80	2	80	2	80	2	80
Furadan	kg/fed	20	4.5	90	4	80	4.5	90	4.5	90
Tractor	hr/fed	34.4	4	138	4	138	4	138	4	138
Pump	hr/fed	3.4	66	224	66	224	66	224	66	224
Draught animal	hr/fed	0.4	15	6	15	6	18	7	18	7
Transportation	hr/fed	0.4	20	8	20	8	20	8	20	8
Labour	hr/fed	0.8	180	144	260	208	480	384	624	499
Total				12981		744		1082		1198
NPV	LE/fed			-12981		-744		2136		6312

Table M-17 Project Cost and Cost Disbursement

	Financial Cost			Total	(1000 LE)
	Phase I	Phase II	Phase II		
FC	175800	175900	162700	514400	
LC	98700	115400	121600	335700	
<b>Total</b>	<b>274500</b>	<b>291300</b>	<b>284300</b>	<b>850100</b>	

	Economic Cost			Total	(1000 LE)
	Phase I	Phase II	Phase II		
FC	175800	175900	162700	514400	
LC	86560	101206	106643	294409	
<b>Total</b>	<b>262360</b>	<b>277106</b>	<b>269343</b>	<b>808809</b>	

Cost Disbursement (Economic Cost)

Year	Improvement of facilities	On-farm facility		Total	(1000 LE)
		FC	LC		
		1	65590		
2	65590	0	0	65590	
3	65590	4000	3508	73098	
4	65590	4000	3508	73098	
5	69277	4000	7016	80293	
6	69277	4000	7016	80293	
7	69277	4000	7016	80293	
8	69275	11000	12278	92553	
9	67336	11000	12278	90614	
10	67336	11000	12278	90614	
11	67336	11000	12278	90614	
12	67335	11000	12278	90613	
13	0	11000	12278	23278	
14	0	11000	12278	23278	
15	0	11000	12278	23278	
16	0	11000	12278	23278	
<b>Total</b>	<b>808809</b>	<b>119000</b>	<b>138566</b>	<b>1066375</b>	



Table M-18 Calculation of EIRR

( UNIT : 000 LE )

YEAR	PROJECT COST		TOTAL	BENEFITS	RETURN	12 %		PRESENT		14 %		20 %	
	CAPITAL	O & M				(COST)	(BENEFITS)	(COST)	(BENEFITS)	(COST)	(BENEFITS)	(COST)	(BENEFITS)
1	65590.00	0.00	65590.00	0.00	-65590.00	65590.00	0.00	0.00	65590.00	0.00	65590.00	0.00	0.00
2	65590.00	0.00	65590.00	0.00	-65590.00	52287.98	0.00	0.00	50469.43	0.00	45548.62	0.00	0.00
3	73098.00	0.00	73098.00	0.00	-73098.00	52029.74	0.00	0.00	49339.18	0.00	42302.14	0.00	0.00
4	73098.00	0.00	73098.00	0.00	-73098.00	46455.15	0.00	0.00	43280.03	0.00	35251.80	0.00	0.00
5	80293.00	7963.00	88256.00	-5990.00	-94246.00	50078.91	-3398.89	-3398.89	45857.62	-3111.03	35468.18	-2407.23	-2407.23
6	80293.00	7963.00	88256.00	-2273.00	-90529.00	44713.35	-1151.58	-1151.58	40208.48	-1035.55	29556.83	-761.23	-761.23
7	80293.00	7963.00	88256.00	676.00	-81780.00	39922.63	2929.42	1818.47	35270.62	2588.07	24630.70	1807.34	1807.34
8	92553.00	7963.00	100516.00	29262.00	-71254.00	40596.86	11818.47	11818.47	35237.07	10258.14	23376.90	6805.43	6805.43
9	90614.00	17137.00	107751.00	72017.00	-35734.00	38856.22	25970.14	25970.14	33134.58	22146.00	20882.95	13957.43	13957.43
10	90614.00	17137.00	107751.00	151883.00	93.00	34693.08	34723.02	34723.02	29065.46	29090.55	17402.47	17417.49	17417.49
11	90614.00	17137.00	107751.00	179588.00	44132.00	30975.97	43662.93	43662.93	25496.05	33938.56	14502.07	20441.73	20441.73
12	23278.00	25146.00	48424.00	216711.00	168287.00	27656.88	46095.99	46095.99	22364.77	37275.58	12084.95	20142.11	20142.11
13	23278.00	25146.00	48424.00	224789.00	176365.00	11097.59	49664.82	49664.82	8816.64	39456.95	4525.92	20254.77	20254.77
14	23278.00	25146.00	48424.00	230914.00	182490.00	9908.57	45996.55	45996.55	7733.91	35901.56	3771.61	17508.16	17508.16
15	23278.00	25146.00	48424.00	239907.00	185483.00	8846.94	42187.40	42187.40	6784.14	32350.74	3143.01	14987.69	14987.69
16	25146.00	25146.00	50292.00	239242.00	214116.00	3662.40	34847.39	34847.39	2710.78	25792.81	1133.42	10784.41	10784.41
17	25146.00	25146.00	50292.00	239935.00	214807.00	3279.00	31203.61	31203.61	2377.88	22690.64	944.52	9012.97	9012.97
18	25146.00	25146.00	50292.00	242821.00	217675.00	2919.64	28011.33	28011.33	2085.86	20011.93	787.10	7551.50	7551.50
19	41970.00	25146.00	67116.00	242821.00	217675.00	6937.76	25172.68	25172.68	4883.58	17668.44	1750.68	6333.82	6333.82
20	25146.00	25146.00	50292.00	242821.00	217675.00	2327.52	22475.61	22475.61	1605.00	15498.64	546.60	5278.19	5278.19
21	25146.00	25146.00	50292.00	242821.00	217675.00	2078.15	20067.52	20067.52	1407.90	13595.31	455.50	4398.49	4398.49
22	25146.00	25146.00	50292.00	242821.00	217675.00	1855.49	17917.44	17917.44	1235.00	11925.73	379.58	3665.41	3665.41
23	25146.00	25146.00	50292.00	242821.00	217675.00	1556.69	15997.72	15997.72	1083.34	10461.18	316.32	3054.51	3054.51
24	25146.00	25146.00	50292.00	242821.00	217675.00	1479.19	14285.68	14285.68	950.30	9176.48	263.60	2545.43	2545.43
25	25146.00	25146.00	50292.00	242821.00	217675.00	1320.70	12753.29	12753.29	833.59	8049.55	219.67	2121.19	2121.19
26	25146.00	25146.00	50292.00	242821.00	217675.00	1179.20	11386.87	11386.87	731.22	7061.02	183.05	1767.66	1767.66
27	25146.00	25146.00	50292.00	242821.00	217675.00	1052.86	10166.85	10166.85	641.42	6193.88	152.55	1473.05	1473.05
28	25146.00	25146.00	50292.00	242821.00	217675.00	940.05	9077.55	9077.55	562.65	5433.23	127.12	1227.54	1227.54
29	25146.00	25146.00	50292.00	242821.00	217675.00	839.33	8104.96	8104.96	493.56	4766.00	105.93	1022.95	1022.95
30	25146.00	25146.00	50292.00	242821.00	217675.00	749.40	7236.58	7236.58	432.94	4180.71	88.28	852.46	852.46
31	25146.00	25146.00	50292.00	242821.00	217675.00	669.11	6461.23	6461.23	379.78	3667.29	73.57	710.39	710.39
32	25146.00	25146.00	50292.00	242821.00	217675.00	597.42	5768.96	5768.96	333.14	3216.92	61.30	591.99	591.99
33	25146.00	25146.00	50292.00	242821.00	217675.00	533.41	5150.86	5150.86	292.23	2821.87	51.09	493.32	493.32
34	25146.00	25146.00	50292.00	242821.00	217675.00	476.26	4598.98	4598.98	256.34	2475.32	42.57	411.10	411.10
35	25146.00	25146.00	50292.00	242821.00	217675.00	425.23	4106.24	4106.24	224.86	2171.34	35.48	342.59	342.59
36	25146.00	25146.00	50292.00	242821.00	217675.00	379.67	3666.28	3666.28	197.24	1904.69	29.56	285.49	285.49
37	25146.00	25146.00	50292.00	242821.00	217675.00	338.99	3273.47	3273.47	173.02	1670.78	24.64	237.91	237.91
38	25146.00	25146.00	50292.00	242821.00	217675.00	302.67	2922.74	2922.74	151.77	1465.60	20.53	198.26	198.26
39	41970.00	25146.00	67116.00	242821.00	217675.00	241.29	2329.99	2329.99	128.51	1285.61	165.21	165.21	165.21
40	25146.00	25146.00	50292.00	242821.00	217675.00	215.44	2080.35	2080.35	102.44	989.24	14.26	137.68	137.68
41	25146.00	25146.00	50292.00	242821.00	217675.00	192.35	1857.46	1857.46	89.86	867.75	11.88	114.73	114.73
42	25146.00	25146.00	50292.00	242821.00	217675.00	171.74	1658.45	1658.45	78.83	761.19	9.90	95.61	95.61
43	25146.00	25146.00	50292.00	242821.00	217675.00	153.34	1480.76	1480.76	69.15	667.71	6.88	66.40	66.40
44	25146.00	25146.00	50292.00	242821.00	217675.00	136.91	1322.10	1322.10	60.65	585.71	5.73	55.33	55.33
45	25146.00	25146.00	50292.00	242821.00	217675.00	122.24	1180.45	1180.45	53.21	513.78	4.77	46.11	46.11
46	25146.00	25146.00	50292.00	242821.00	217675.00	109.15	1053.97	1053.97	46.67	450.69	3.98	38.42	38.42
47	25146.00	25146.00	50292.00	242821.00	217675.00	97.45	941.05	941.05	40.94	395.34	3.32	32.02	32.02
48	25146.00	25146.00	50292.00	242821.00	217675.00	87.01	840.22	840.22	35.91	346.79	2.76	26.68	26.68
49	25146.00	25146.00	50292.00	242821.00	217675.00	87.01	840.22	840.22	35.91	346.79	2.76	26.68	26.68
50	1150315.00	1055948.00	2206263.00	9693047.00	7486784.00	599868.29	658660.06	658660.06	529672.18	479496.16	388567.38	208023.83	208023.83
TOTAL													

BENEFIT COST RATIO BY DISCOUNT RATE (B/C) = 1.10 (12%)  
INTERNAL RATE OF RETURN (IRR) = 13.1 %

Table M-19 (1) Financial Analysis

Farm Model (without Project) Minia (1.38 fed/farm household)  
 Cropping intensity:171.4%

	Area (fed)	Yield		Production		Unit Price		Value of Production(LE)		Production Cost (LE)	Net Income (LE)	
		Main Prod. (ton/fed)	by-product (Load/fed)	Main Product (ton)	by-product (load)	Main Product (LE/ton)	by-product (LE/load)	Main Product	by-product			
												Total
Winter												
Long Berseem	0.62	28.72	0.00	17.81	0.00	35.00	0.00	623	0	623	399	224
Wheat	0.25	2.17	5.30	0.34	1.38	467.00	25.00	253	39	293	167	126
Broadbean	0.40	1.12	5.50	0.45	2.20	677.00	15.00	303	33	336	204	132
Sub-total	1.27							1180	72	1252	770	482
Summer												
Cotton	0.30	0.76	7.00	0.23	2.10	1373.00	5.00	313	11	324	183	140
Maize	0.35	2.35	4.50	0.82	1.58	393.00	5.00	323	8	331	132	199
Sub-total	0.65							636	18	655	315	339
Milli												
Maize	0.25	1.76	4.50	0.44	1.13	393.00	5.00	173	6	179	101	78
Potato	0.10	8.08	0.00	0.81	0.00	577.00	0.00	466	0	466	287	179
Sub-total	0.35							639	6	645	388	257
Sugarcane	0.10	41.61	0.00	4.16	0.00	50.00	0.00	208	0	208	108	100
Total	2.37							2663	96	2760	1581	1179

2. Income from Livestock (LE) 25% of Net Income from Crop  
 3. Total Net Income(LE) 295  
 1474

Farm Model (with Project) Minia (1.38 fed/farm household)  
 Cropping intensity:217.4%

	Area (fed)	Yield		Production		Unit Price		Value of Production(LE)		Production Cost (LE)	Net Income (LE)	
		Main Prod. (ton/fed)	by-product (Load/fed)	Main Product (ton)	by-product (load)	Main Product (LE/ton)	by-product (LE/load)	Main Product	by-product			
												Total
Winter												
Long Berseem	0.35	29.15	0.00	10.20	0.00	35.00	0.00	357	0	357	234	124
Short Berseem	0.30	7.83	0.00	2.35	0.00	35.00	0.00	82	0	82	49	33
Wheat	0.75	2.38	7.00	1.79	5.25	467.00	25.00	834	131	965	551	414
Broadbean	0.10	1.23	6.00	0.12	0.60	677.00	15.00	83	9	92	56	36
Sub-total	1.50							1356	140	1496	890	607
Summer												
Cotton	0.30	0.85	8.50	0.26	2.55	1373.00	5.00	350	13	363	206	157
Maize	0.35	2.95	5.50	1.04	1.93	393.00	5.00	407	10	417	166	251
Sub-total	0.65							757	22	780	372	408
Milli												
Maize	0.30	2.11	5.50	0.63	1.65	393.00	5.00	249	8	257	145	112
Fodder	0.35	25.00	0.00	8.75	0.00	30.00	0.00	263	0	263	124	139
Potato	0.10	8.97	0.00	0.90	0.00	577.00	0.00	518	0	518	318	199
Sub-total	0.75							1029	8	1037	587	450
Sugarcane	0.10	46.19	0.00	4.62	0.00	50.00	0.00	231	0	231	119	112
Total	3.00							3373	171	3544	1968	1576

2. Income from Livestock (LE) 25% of Net Income from Crop  
 3. Total Net Income(LE) 394  
 1970

**Table M-19 (2) Financial Analysis**

Farm Model (without Project) Beni Suef (1.58 fed/farm household)  
 Cropping intensity:186.7%

	Yield			Production		Unit Price		Value of Production (LE)		Production Cost (LE)	Net Income (LE)	
	Area (fed)	Main Prod. (ton/fed)	by-product (Load/fed)	Main Product (ton)	by-product (Load)	Main Product (LE/ton)	by-product (LE/load)	Main Product	by-product			
												Total
<b>1. Crop Production</b>												
Winter												
Long, Berseem	0.70	27.16	0.00	19.01	0.00	35.00	0.00	665	0	665	373	292
Wheat	0.35	2.57	6.30	0.90	2.20	473.00	25.00	425	55	481	194	286
Broadbean	0.40	1.14	5.50	0.46	2.20	697.00	15.00	318	33	351	178	173
Sub-total	1.45							1409	88	1497	745	752
Summer												
Cotton	0.50	0.66	7.00	0.33	3.50	1305.00	5.00	431	18	448	282	166
Maize	0.45	2.08	4.50	0.94	2.03	393.00	5.00	368	10	378	197	181
Sorghum	0.00	1.74	0.00	0.00	0.00	468.00	0.00	0	0	0	0	0
Sub-total	0.95							798	28	826	479	347
Nilii												
Maize	0.30	1.67	4.50	0.50	1.35	393.00	5.00	197	7	204	70	133
Onion	0.15	6.96	0.00	1.04	0.00	243.00	0.00	254	0	254	150	104
Sub-total	0.45							451	7	457	220	237
Sugarcane	0.10	28.97	0.00	2.50	0.00	50.00	0.00	145	0	145	75	70
Total	2.95							2803	123	2925	1519	1406

2. Income from Livestock (LE) 25% of Net Income from Crop

3. Total Net Income (LE)

352  
1758

Farm Model (with Project) Beni Suef (1.58 fed/farm household)  
 Cropping intensity:195.9%

	Yield			Production		Unit Price		Value of Production (LE)		Production Cost (LE)	Net Income (LE)	
	Area (fed)	Main Prod. (ton/fed)	by-product (Load/fed)	Main Product (ton)	by-product (Load)	Main Product (LE/ton)	by-product (LE/load)	Main Product	by-product			
												Total
<b>1. Crop Production</b>												
Winter												
Long, Berseem	0.45	27.70	0.00	12.47	0.00	35.00	0.00	436	0	436	288	148
Wheat	0.65	2.82	7.00	1.83	4.55	473.00	25.00	867	114	981	396	585
Broadbean	0.40	1.25	6.00	0.50	2.40	697.00	15.00	349	36	385	195	190
Sub-total	1.50							1652	150	1802	879	922
Summer												
Cotton	0.50	0.83	8.50	0.42	4.25	1305.00	5.00	542	21	563	411	152
Maize	0.45	2.62	5.50	1.18	2.48	393.00	5.00	463	12	475	295	181
Sorghum	0.10	2.09	0.00	0.21	0.00	468.00	0.00	98	0	98	46	52
Sub-total	1.05							1103	34	1136	752	384
Nilii												
Maize	0.30	2.12	5.50	0.64	1.65	393.00	5.00	250	8	258	89	169
Onion	0.15	7.50	0.00	1.13	0.00	243.00	0.00	273	0	273	161	112
Sub-total	0.45							523	8	532	250	281
Sugarcane	0.10	35.14	0.00	3.51	0.00	50.00	0.00	176	0	176	91	85
Total	3.10							3454	192	3645	1972	1673

2. Income from Livestock (LE) 25% of Net Income from Crop

3. Total Net Income (LE)

418  
2091

**Table M-19 (3) Financial Analysis**

Farm Model (without Project) Faiyum (2.45 fed/farm household)  
Cropping intensity:178.9%

	Area (fed)	Yield		Production		Unit Price		Value of Production (LE)			Production Cost (LE)	Net Income (LE)
		Main Prod. by-product		Main Product by-product		Main Product by-product		Main Product	by-product	Total		
		(ton/fed)	(load/fed)	(ton)	(load)	(LE/ton)	(LE/load)					
Winter												
Long Berseem	0.83	19.20	0.00	15.94	0.00	35.00	5.00	22	0	22	12	10
Short Berseem	0.40	5.00	0.00	2.00	0.00	35.00	5.00	22	0	22	15	7
Wheat	0.65	2.49	6.30	1.62	4.10	447.00	25.00	723	102	826	356	470
Broadbean	0.30	1.31	5.50	0.89	1.65	645.00	15.00	253	25	278	141	137
Sub-total	2.18							1021	127	1148	525	623
Summer												
Cotton	0.50	0.77	7.00	0.39	3.50	1338.00	5.00	515	18	533	330	202
Maize	0.50	2.12	4.50	1.06	2.25	393.00	5.00	417	11	428	202	225
Sorghum	0.30	1.67	0.00	0.50	0.00	427.00	0.00	214	0	214	102	112
Watermelon	0.30	10.63	0.00	3.19	0.00	654.00	0.00	2086	0	2086	951	1135
Sub-total	1.60							3231	.29	3260	1585	1675
Nil												
Maize	0.20	1.05	4.50	0.21	0.90	393.00	5.00	83	5	87	50	27
Tomato	0.20	15.15	0.00	3.03	0.00	256.00	0.00	776	0	776	538	237
Sub-total	0.40							858	5	863	589	264
Sugarcane	0.20	32.23	0.00	6.45	0.00	50.00	0.00	322	0	322	188	134
Total	4.38							5433	160	5593	2897	2686

M-19

2. Income from Livestock (LE) 20% of Net Income from Crop  
3. Total Net Income (LE)

539  
3236

Farm Model (with Project) Faiyum (2.45 fed/farm household)  
Cropping intensity:194.8%

	Area (fed)	Yield		Production		Unit Price		Value of Production (LE)			Production Cost (LE)	Net Income (LE)
		Main Prod. by-product		Main Product by-product		Main Product by-product		Main Product	by-product	Total		
		(ton/fed)	(load/fed)	(ton)	(load)	(LE/ton)	(LE/load)					
Winter												
Long Berseem	0.83	24.00	0.00	19.92	0.00	35.00	0.00	697	0	697	404	293
Short Berseem	0.20	6.25	0.00	1.25	0.00	35.00	0.00	44	0	44	31	13
Wheat	0.65	2.62	7.00	1.70	4.55	447.00	25.00	761	114	875	377	498
Broadbean	0.59	1.50	6.00	0.89	3.34	645.00	15.00	571	53	624	317	307
Sub-total	2.27							2073	167	2240	1129	1111
Summer												
Cotton	0.50	1.01	8.50	0.51	4.25	1338.00	5.00	676	21	697	432	265
Maize	0.45	2.56	5.50	1.15	2.48	393.00	5.00	453	12	465	267	198
Sorghum	0.30	1.93	0.00	0.58	0.00	427.00	0.00	247	0	247	142	105
Fodder	0.20	25.00	0.00	5.00	0.00	30.00	0.00	150	0	150	86	64
Watermelon	0.30	11.22	0.00	3.37	0.00	654.00	0.00	2201	0	2201	1224	977
Sub-total	1.75							3727	34	3761	2151	1609
Nil												
Maize	0.20	1.17	1.00	0.23	0.20	393.00	5.00	92	1	93	63	29
Tomato	0.35	17.42	0.00	6.10	0.00	256.00	0.00	1561	0	1561	852	709
Sub-total	0.55							1653	1	1654	916	738
Sugarcane	0.20	35.00	0.00	7.00	0.00	50.00	0.00	350	0	350	239	111
Total	4.77							7803	201	8004	4435	3559

2. Income from Livestock (LE) 20% of Net Income from Crop  
3. Total Net Income (LE)

714  
4283

**Table M-19 (4) Financial Analysis**

Farm Model (without Project) Giza (1.43 fed/farm household)  
 Cropping intensity: 225.3%

**1. Crop Production**

	Area (fed)	Yield		Production		Unit Price		Value of Production (LE)		Production Cost (LE)	Net Income (LE)	
		Main Prod (ton/fed)	by-product (load/fed)	Main Product (ton)	by-product (load)	Main Product (LE/ton)	by-product (LE/load)	Main Product	by-product			
Winter												
Wheat	0.20	2.41	5.30	0.48	1.25	467.00	25.00	457	32	499	245	252
Long Berseem	0.36	31.72	0.00	11.42	0.00	40.00	0.00	457	0	457	187	269
Short Berseem	0.25	5.99	0.00	1.75	0.00	40.00	0.00	70	0	70	42	28
Tomato	0.50	16.00	0.00	8.00	0.00	218.00	0.00	1744	0	1744	872	872
Sub-total	1.31							2738	32	2769	1347	1422
Summer												
Maize	0.41	2.42	4.50	0.99	1.85	414.00	5.00	411	9	420	150	260
Tomato	0.45	19.17	0.00	8.63	0.00	218.00	0.00	1881	0	1881	827	1053
Fodder	0.25	15.80	0.00	4.20	0.00	30.00	0.00	126	0	126	60	66
Sub-total	1.11							2417	9	2427	1047	1380
Nil												
Maize	0.45	2.13	4.50	0.96	2.03	414.00	5.00	397	10	407	208	199
Potato	0.25	9.82	0.00	2.46	0.00	515.00	0.00	1264	0	1264	771	493
Sub-total	0.70							1661	10	1671	979	692
Perennial crop	0.10	35.00	0.00	3.50	0.00	50.00	0.00	175	0	175	102	73
Total	3.22							6991	51	7042	3475	3567

2. Income from Livestock (LE) 33% of Net Income from Crop  
 3. Total Net Income (LE)

1177  
 4744

Farm Model (with Project) Giza (1.43 fed/farm household)  
 Cropping intensity: 225.3%

**1. Crop Production**

	Area (fed)	Yield		Production		Unit Price		Value of Production (LE)		Production Cost (LE)	Net Income (LE)	
		Main Prod (ton/fed)	by-product (load/fed)	Main Product (ton)	by-product (load)	Main Product (LE/ton)	by-product (LE/load)	Main Product	by-product			
Winter												
Wheat	0.20	2.65	7.00	0.53	1.40	467.00	25.00	248	35	283	116	167
Long Berseem	0.36	32.85	0.00	11.83	0.00	40.00	0.00	473	0	473	194	279
Short Berseem	0.25	8.46	0.00	2.12	0.00	40.00	0.00	85	0	85	59	25
Tomato	0.50	19.00	0.00	9.50	0.00	218.00	0.00	2071	0	2071	924	1147
Sub-total	1.31							2876	35	2911	1293	1618
Summer												
Maize	0.41	3.05	5.50	1.25	2.26	414.00	5.00	519	11	531	255	276
Tomato	0.45	22.05	0.00	9.92	0.00	218.00	0.00	2153	0	2153	1181	982
Fodder	0.25	21.00	0.00	5.25	0.00	30.00	0.00	158	0	158	91	67
Sub-total	1.11							2840	11	2851	1527	1325
Nil												
Maize	0.45	2.44	5.50	1.10	2.48	414.00	5.00	455	12	467	285	182
Potato	0.25	11.39	0.00	2.85	0.00	515.00	0.00	1466	0	1466	801	666
Sub-total	0.70							1921	12	1933	1086	848
Perennial crop	0.10	43.70	0.00	4.37	0.00	50.00	0.00	219	0	219	149	69
Total	3.22							7856	59	7914	4054	3860

2. Income from Livestock (LE) 33% of Net Income from Crop  
 3. Total Net Income (LE)

1274  
 5134

**Table M-19 (5) Financial Analysis**

Farm Model (without Project) New Land (3.0 fed/farm household)  
 Cropping Intensity: Cropping Intensity: 136.5%

1. Crop Production	Area (fed)	Yield		Production		Unit Price		Value of Production (LE)		Production Cost (LE)	Net Income (LE)
		Main Prod. (ton/fed)	by-product (load/fed)	Main Product (ton)	by-product (load)	Main Product (LE/ton)	by-product (LE/load)	Main Product	by-product		
		(ton/fed)	(load/fed)	(ton)	(load)	(LE/ton)	(LE/load)	Total	Total		
Winter											
Long Berseem	0.33	12.60	0.00	4.16	0.00	35.00	0.00	146	0	110	36
Short Berseem	0.22	5.00	0.00	1.10	0.00	35.00	0.00	39	0	27	12
Wheat	0.56	1.47	6.30	0.82	3.53	457.00	25.00	384	88	317	155
Tomato	0.77	18.30	0.00	14.09	0.00	237.00	0.00	3340	0	2388	952
Broadbean	0.13	0.58	5.50	0.08	0.72	577.00	15.00	51	11	44	18
Sub-total	2.01							3959	99	4058	1173
Summer											
Maize	0.18	1.50	4.50	0.27	0.81	393.00	5.00	106	4	110	55
Fodder	0.55	14.10	0.00	7.76	0.00	30.00	0.00	233	0	133	100
Watermelon	1.00	4.43	0.00	4.43	0.00	696.00	0.00	3083	0	2205	879
Sorghum	0.17	1.37	0.00	0.23	0.00	488.00	0.00	109	0	62	47
Sub-total	1.90							3531	4	3555	1080
Olive	0.19	3.50	0.00	0.67	0.00	1341.00	0.00	892	0	669	223
Total	4.10							8382	103	8485	2476

2. Income from Livestock (LE) 25% of Net Income from Crop  
 3. Total Net Income (LE)

619  
3095

Farm Model (with Project) New Land (3.0 fed/farm household)  
 Cropping Intensity: 145.2%

1. Crop Production	Area (fed)	Yield		Production		Unit Price		Value of Production (LE)		Production Cost (LE)	Net Income (LE)
		Main Prod. (ton/fed)	by-product (load/fed)	Main Product (ton)	by-product (load)	Main Product (LE/ton)	by-product (LE/load)	Main Product	by-product		
		(ton/fed)	(load/fed)	(ton)	(load)	(LE/ton)	(LE/load)	Total	Total		
Winter											
Long Berseem	0.35	13.70	0.00	4.79	0.00	35.00	0.00	168	0	127	41
Short Berseem	0.22	6.20	0.00	1.36	0.00	35.00	0.00	48	0	33	14
Wheat	0.62	1.60	7.00	0.99	4.34	457.00	25.00	453	109	384	188
Tomato	0.81	19.00	0.00	15.39	0.00	237.00	0.00	3547	0	2608	1040
Broadbean	0.14	0.80	6.00	0.11	0.84	577.00	15.00	76	13	88	26
Sub-total	2.14							4402	121	4523	1309
Summer											
Maize	0.20	1.91	5.50	0.38	1.10	393.00	5.00	150	6	78	78
Fodder	0.60	15.35	0.00	9.21	0.00	30.00	0.00	276	0	158	118
Watermelon	1.09	5.53	0.00	6.03	0.00	696.00	0.00	4195	0	3000	1196
Sorghum	0.18	1.67	0.00	0.30	0.00	488.00	0.00	141	0	80	60
Sub-total	2.07							4762	6	4768	1452
Olive	0.15	5.60	0.00	0.84	0.00	1341.00	0.00	1126	0	845	282
Total	4.36							10291	127	10418	3043

2. Income from Livestock (LE) 25% of Net Income from Crop  
 3. Total Net Income (LE)

761  
3804



**APPENDIX N      PRIORITY PROJECT**

**N - 1      Ranking of Project Components**

**N - 2      Priority Project Components**





# N-1 Ranking of Project Components

## Table N-1-1 Priority Ranking of Project Components

CRITERIA / INDICATOR	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
A. Existing Facilities	Canal Impr.	Canal Sect. by Shortcut	Dairout Barrage	ManshatDa Regulator	Sakoula Regulator	Mazoura Regulator	Lahoun Regulator	Intake Hasan Was.	Intake Giza	Intake Large	Intake Small	Branch Canals	Drain. PumpS.	Irrig. PumpS.
50%	10	2	29	29	29	29	29	21	21	17	13	12	28	24
50%	5.00	1.00	14.50	14.50	14.50	14.50	14.50	10.50	10.50	8.50	6.50	6.00	14.00	12.00
1. Durability														
Level of deterioration	0	0	5	5	5	5	5	5	5	3	3	0	5	5
Damages by abraision	0	0	5	5	5	5	5	5	5	3	3	0	3	3
2. Function														
Original function	1	1	5	5	5	5	5	3	3	3	3	3	3	3
Modern function	1	1	0	0	0	0	0	0	0	0	0	1	1	1
3. Operation														
Easiness of operation	3	0	3	3	3	3	3	1	1	1	1	3	3	3
Accuracy of operation	3	0	1	1	1	1	1	1	1	1	1	3	3	3
4. Risk on failure														
Probability of risk	1	0	5	5	5	5	5	3	3	3	1	1	5	5
Influentiar range	1	0	5	5	5	5	5	3	3	3	1	1	5	5
Beneficiary	2	2	6	4	6	4	10	6	6	2	2	2	1	1
Sub-total	0.50	0.50	1.50	1.00	1.50	1.50	2.50	1.50	1.50	0.50	0.50	0.50	0.25	0.25
B. Beneficiary														
25%														
1. Command Area	1	1	1	1	3	3	5	3	3	1	1	1	3	3
Controlled	1	1	5	3	3	3	5	3	3	1	1	1	3	3
Influenced														
2. Water Resources														
Availability in Summer														
Availability in Winter														
3. Efficiency														
Increase / Decrease														
Potentiality														
C. Implementation	21	5.25	29	41	41	41	41	35	35	27	27	23	41	41
Sub-total	5.25	5.25	7.25	10.25	10.25	10.25	10.25	8.75	8.75	6.75	6.75	5.75	10.25	10.25
25%														
1. Convenience of Constr.	3	3	1	5	5	5	3	3	3	3	3	3	5	5
Business Preparatory W.	3	3	1	5	5	5	3	3	3	3	3	3	5	5
Availability Const.Site														
2. Access														
Construction Site	3	3	5	3	3	3	5	5	5	3	3	3	5	5
Grade Access Road	1	1	5	3	3	3	5	5	5	3	3	3	5	5
3. Right-of-way														
Easiness on acquisition	3	3	1	5	5	5	5	5	5	5	5	3	5	5
Consensus of villager	3	3	1	5	5	5	5	5	5	5	5	3	5	5
4. Impact														
Agriculture	3	3	5	5	5	5	5	3	3	3	3	3	5	5
Socio-economy	1	1	5	5	5	5	5	3	3	1	1	1	3	3
Environment	1	1	5	5	5	5	5	3	3	1	1	1	3	3
TOTAL OF WEIGHTED VALUES	10.75	6.75	23.25	25.75	26.25	25.75	27.25	20.75	20.75	15.75	13.75	12.25	25.75	23.75
GROUPED CLASSIFICATION	D	D	A	A	A	A	A	B	B	B	C	C	A	A

Table 4-4 Priority Ranking of Pump Stations

Table N-1-2 Priority Ranking of Pump Stations

No.	Name of Pump Station	Building			Facilities			Pump/Motors			Appurtenant Structures					
		Pump House	Civil Works	Sub-Total	Electric Facility etc.	Mechanical Tools etc.	Sub-Total	Weighted Points (10%)	Pump	Motor	Sub-Total	Weighted Points (40%)	By-pass Drain	Screen	Sub-Total	Weighted Points (10%)
1	Drainage Pump Station															
1	El Badraan D.P.S	5	5	10	5	5	10	1.0	5	5	10	5.0	5	5	10	1.0
2	Kabkab D.P.S	1	1	2	1	1	2	0.2	1	1	2	1.0	5	1	6	0.6
3	Tona El Gabel D.P.S	3	3	6	5	3	8	0.8	5	5	10	5.0	5	5	10	1.0
4	Monshat el Daheb D.P.S	1	1	2	1	1	2	0.2	1	1	2	1.0	5	1	6	0.6
5	Beni Mazar D.P.S	1	1	2	1	1	2	0.2	1	1	2	1.0	5	1	6	0.6
6	Dier el Sankoria D.P.S	1	1	2	1	1	2	0.2	1	1	2	1.0	5	1	6	0.6
7	Abu Raheb D.P.S	1	1	2	3	3	6	0.6	3	3	6	3.0	0	5	5	0.5
8	Sakoula D.P.S	3	3	6	3	3	6	0.6	3	3	6	3.0	5	5	10	1.0
9	Mazoura D.P.S	3	3	6	3	3	6	0.6	3	3	6	3.0	5	5	10	1.0
10	Mazoura #0 I.P.S	1	1	2	1	1	2	0.2	1	1	2	1.0	0	0	0	0
11	Arab Beni Khalid I.P.S	5	5	10	5	5	10	1.0	5	5	10	5.0	0	5	5	0.5
12	Beni Khalid I.P.S	5	5	10	5	5	10	1.0	5	5	10	5.0	0	5	5	0.5
13	Kanadler I.P.S	3	3	6	3	3	6	0.6	3	3	6	3.0	0	5	5	0.5
14	Terfa #1 I.P.S	3	3	6	3	3	6	0.6	3	3	6	3.0	0	5	5	0.5
15	Terfa #1 New I.P.S	1	1	2	1	1	2	0.2	1	1	2	1.0	0	1	1	0.1
16	Sakoula #4 I.P.S	5	5	10	5	5	10	1.0	5	5	10	5.0	0	5	5	0.5
17	Mazoura #0 I.P.S	5	5	10	5	5	10	1.0	5	5	10	5.0	0	5	5	0.5
18	Mazoura #0 New I.P.S	1	1	2	1	1	2	0.2	1	1	2	1.0	0	1	1	0.1

Note: 5 - In bad conditions, rehabilitation/renovation/improvement is necessary.  
 3 - In poor conditions, partially rehabilitation/renovation/improvement is necessary.  
 1 - In fair conditions due to good maintenance/new facilities

0 - In good conditions, any rehabilitation/renovation/improvement is not necessary at present.

No.	Name of Pump Station	Water Source		Area Served		Total of		Priority Rank
		Point	Weighted Points (20%)	Area Served (feddan)	Weighted Points (10%)	Weighted Point (100%)	Point	
1	Drainage Pump Station	0	0	85,000	5	0.5	8.5	A
2	El Badraan D.P.S	0	0	63,000	5	0.5	2.5	D
3	Kabkab D.P.S	0	0	12,000	1	0.1	7.5	B
4	Monshat el Daheb D.P.S	0	0	2,000	1	0.1	2.1	D
5	Beni Mazar D.P.S	0	0	53,000	3	0.3	2.3	D
6	Dier el Sankoria D.P.S	0	0	50,000	3	0.3	2.3	D
7	Abu Raheb D.P.S	0	0	67,000	5	0.5	4.8	C
8	Sakoula D.P.S	0	0	40,000	3	0.3	5.5	C
9	Mazoura D.P.S	0	0	32,000	3	0.3	5.5	C
10	Arab Beni Khalid I.P.S	0	0.0	3,500	1	0.1	7.6	A
11	Beni Khalid I.P.S	0	0.0	3,500	1	0.1	7.6	A
12	Kanadler I.P.S	5	1.0	8,720	1	0.1	6.0	B
13	Terfa #1 I.P.S	5	1.0	14,640	3	0.3	6.2	B
14	Terfa #1 New I.P.S	5	1.0	14,640	3	0.3	2.8	D
15	Sakoula #4 I.P.S	0	0.0	11,900	3	0.3	6.6	B
16	Mazoura #0 I.P.S	0	0.0	22,000	3	0.3	6.6	B
17	Mazoura #0 New I.P.S	0	0.0	50,000	5	0.5	2.0	D

Note A - 1st priority, rehabilitation/renovation/improvement will be urgently done.  
 B - 2nd priority, rehabilitation/renovation/improvement will be done.  
 C - 3rd priority, rehabilitation/renovation will be planned.  
 D - 4th priority, rehabilitation etc. will not be necessary.

N-2 Priority Project Components

Table N-2-1 Breakdown of Priority Project Cost (1)

Description	Unit	Qty	Unit Cost (L.E.)	Amount (1,000 L.E.)		Remarks F.C. L.C.
				F.C.	L.C.	
				Total		
I. Preparatory Works for Construction				19,000	1,000	20,000
1.1 Procurement of Construction Equipment				13,300	700	14,000
Bulldozer, 23 ton class	unit	2	945,000	1,800	90	900,000 45,000
Backhoe Excavator, Crawler 1.2 m <sup>3</sup>	unit	2	651,000	1,240	62	620,000 31,000
Dragline, w/ Bucket 1.5 m <sup>3</sup> , 55 ton class	unit	2	1,470,000	2,800	140	1,400,000 70,000
Crawler Crane, 45 ton class	unit	2	1,050,000	2,000	100	1,000,000 50,000
Truck Crane, 16 ton class	unit	2	798,000	1,520	76	760,000 38,000
Vibrohammer, 60 KW	unit	2	347,000	660	34	330,000 17,000
Water Jet Cutter, 45 KW	unit	2	242,000	460	24	230,000 12,000
Diesel Generator, 200 KVA	unit	2	242,000	460	24	230,000 12,000
Welder	unit	2	46,000	88	4	44,000 2,000
Gas Cutter	unit	2	13,000	24	2	12,000 1,000
Spare Parts & Others		LS		2,248	144	2,392
1.2 Procurement of Construction Materials				5,700	300	6,000
Steel Sheet pile III-Type 12 m	pcs	500	2,880	1,370	70	2,740 140
Steel Sheet Pile IV-Type 12 m	pcs	200	4,560	868	44	4,340 220
H-Shape Steel H-300 X 300 X 10 X 15, 12 m	pcs	80	3,100	236	12	248
H-Shape Steel H-350 X 350 X 12 X 19, 12 m	pcs	150	4,620	660	33	4,400 220
H-Shape Steel H-400 X 400 X 12 X 21, 12 m	pcs	30	5,790	165	9	5,510 280
Channel Steel C-200 X 90 X 8 X 13.5, 12 m	pcs	20	1,090	21	1	1,040 50
L Steel L-100 X 100 X 10, 12 m	pcs	50	560	26	2	530 30
Steel Foot Plate 2,00 m X 1,00 m	pcs	100	2,140	204	10	2,040 100
Steel Foot Plate 3,00 m X 1,00 m	pcs	100	3,180	303	15	3,030 150
Steel Sheet Pile Driving Cap	pcs	20	10,500	200	10	10,000 500
Steel Staging	m <sup>3</sup>	500	1,050	500	25	1,000 50
Tie-rod $\phi$ 55 X 10 m	pcs	200	2,100	400	20	2,000 100
Others				747	49	796

**Table N-2-2 Breakdown of Priority Project Cost (2)**

Description	Unit	Q'ty	Unit Cost(L.E.)	Amount ( 1,000 L.E. )		Total	Remarks	
				F.C.	L.C.		F.C.	L.C.
2. Lahoun Regulator				11,900	6,100	18,000		
2.1 Civil Works				3,800	4,200	8,000		
Excavation	m <sup>3</sup>	48,000	7	192	144	336	4	3
Excavation for Structure	m <sup>3</sup>	3,200	13	26	16	42	8	5
Filling canal	m <sup>3</sup>	2,000	6	6	6	12	3	3
Apron & pier concrete	m <sup>3</sup>	2,800	730	980	1,064	2,044	350	380
Wall concrete	m <sup>3</sup>	3,000	730	1,050	1,140	2,190	350	380
Pier superstructures concrete	m <sup>3</sup>	200	730	70	76	146	350	380
Concrete block riprap w/ stone	m <sup>2</sup>	2,000	210	200	220	420	100	110
Revetment of stone w/ mortar	m <sup>2</sup>	3,000	150	180	270	450	60	90
Demolition of Structures	m <sup>3</sup>	800	60	20	28	48	25	35
Access Roads	Km	2	6,000	5	7	12	2,400	3,600
Miscellaneous Works				540	600	1,140		
Other Works & Mobilization				531	629	1,160		
2.2 Gates				4,500	500	5,000		
Gate Leaves: Rack Wheel Type 5.5 X 3.15m X 2	sets	2	2,200,000	3,960	440	4,400	90%	10%
Appurtenant Works & Mobilization				540	60	600		
2.3 Others				3,600	1,400	5,000		
Engineering & Administration				1,500	600	2,100		
Technical Assistance				1,200	500	1,700		
Physical Contingency				900	300	1,200		

**Table N-2-3 Breakdown of Priority Project Cost (3)**

Description	Unit	Q'ty	Unit Cost(L.E.)	F.C.		Amount (1,000 L.E.)		Total		Remarks	
						L.C.	L.E.			F.C.	L.C.
3. Intake of Hassan Wasef Branch Canal					8,000	3,000		11,000			
3.1 Civil Works					1,200	1,400		2,600			
Excavation	m <sup>3</sup>	10,000	7		40	30		70	4	3	
Excavation for structure	m <sup>3</sup>	500	13		4	3		7	8	5	
Apron & pier concretewe	m <sup>3</sup>	1,500	730		525	570		1,095	350	380	
Wall concrete	m <sup>3</sup>	400	730		140	152		292	350	380	
Pier superstructure concrete	m <sup>3</sup>	150	730		53	57		110	350	380	
Concrete block riprap w/ stone	m <sup>2</sup>	300	210		30	33		63	100	110	
Revetment of stone w/ mortar	m <sup>2</sup>	800	150		48	72		120	60	90	
Demolition of structures	m <sup>3</sup>	1,300	60		32	46		78	25	35	
Access Roads	Km	1	6,000		3	3		6	2,400	3,600	
Miscellaneous Works					180	220		360			
Other Works & Mobilization					165	214		379			
3.2 Gates					4,800	600		5,400			
Gate Leaves: Rack Wheel Type, 4.0 X 2.65m X 2	sets	3	1,600,000		4,320	480		4,800	90%	10%	
Appurtenant Works & Mobilization					480	120		600			
3.3 Others					2,000	1,000		3,000			
Engineering & Administration					700	500		1,200			
Technical Assistance					700	400		1,100			
Physical Contingency					600	100		700			

**Table N-2-4 Breakdown of Priority Project Cost (4)**

Description	Unit	Q'ty	Unit Cost (L.E.)	Amount (L.E.)		Total	Remarks	
				F.C.	L.C.		F.C.	L.C.
4. Intake of Giza Branch Canal				10,700	3,300	14,000		
4.1 Civil Works				1,500	1,700	3,200		
Excavation	m <sup>3</sup>	10,000	7	40	30	70	4	3
Excavation for structure	m <sup>3</sup>	500	13	4	3	7	8	5
Apron & pier concrete	m <sup>3</sup>	2,000	730	700	780	1,480	350	380
Wall concrete	m <sup>3</sup>	400	730	140	152	292	350	380
Pier superstructure concrete	m <sup>3</sup>	160	730	56	61	117	350	380
Concrete block riprap w/ stone	m <sup>2</sup>	350	210	35	39	74	100	110
Revetment of stone w/ mortar	m <sup>2</sup>	900	150	54	81	135	60	90
Demolition of structure	m <sup>3</sup>	1,400	60	35	49	84	25	35
Access Roads	Km	1	6,000	3	3	6	2,400	3,600
Miscellaneous Works				220	260	480		
Other Works & Mobilization				213	262	475		
4.2 Gates				6,100	700	6,800		
Gate leaves: Rack Wheel Type 4.0 X 2.4m X 2	sets	4	1,500,000	5,400	600	6,000	90%	10%
Appurtenant Works & Mobilization				700	100	800		
4.3 Others				3,100	900	4,000		
Engineering & Administration				1,200	400	1,600		
Technical Assistance				1,000	300	1,300		
Physical Contingency				900	200	1,100		





JICA