conditions of UAE. Technical and financial assistance for farmland reclamation and water saving irrigation systems is also to be maintained and expanded. From the results of the inventory survey, as financial support on the farm such as provision of fertilizer is insufficient, it is necessary to increase the amount of financial support for the farmers.

3.5.7. Establishment of a Marketing System and Organization

(1) Requirements of the Marketing System

Large quantities of vegetables, fruit and food are imported to UAE tax-free from all over the world. Vegetables and fruits produced in UAE are forced to compete with these imported foods in price and quality. Regarding the price, present financial support from MAF should be continued. Concerning the quality, it is necessary to improve the marketing system to keep the freshness.

In the present traditional agriculture in the Study Area, agricultural production is mainly for personal consumption and the establishment of a marketing system and organization are therefore indispensable to agricultural development. In the production plan, as 50 ton/day of each vegetable is expected to be produced and up to a maximum of 6 kinds of vegetables are harvested at same period (Table 3.5.8.), a maximum of around 300 tons/day of vegetables will be shipped (80% of production will be shipped). Consequently, an organization, facilities and, equipment such as trucks for collecting and shipping will be required. As a maximum of 150 kg/day of vegetables is expected to be shipped by each farmer, group shipping with 1 truck per 4 or 5 farmers would seem to be the ideal solution.

Under present conditions, the average farm gate price is 70% of the wholesale price. It will be more profitable for vegetable production to ship directly to market even after paying the necessary 10% commission. On the other hand, Alfalfa is sold on a contract production basis and present practices are expected to continue in the near future. From comments arising in the farmers inventory survey, some farmers indicate an unjust benefit is enjoyed by brokers and the there is a necessity for establishing a fair marketing system.

(2) Establishment of a Vegetable Center

Considering the secured advantage on selling price, it is necessary to install marketing facilities. The construction of a vegetable center with collecting, selecting, cooling, storage and shipping facilities is planned at Al Dhaid. This center will be constructed by MAF and maintained by farmers as cooperative organization under supervision from

MAF. The operation fee will be collected from the farmers in the form of a shipping commission.

(3) Agricultural Products Manufacturing

Agricultural product processing is promoted with the intention of raising incomes and preventing over-production. Among the anticipated developments, Cucumber is, after melon, the second most profitable crop. As farmers will most likely want to plant and harvest Cucumber, it is necessary to consider some Cucumber products which can be made in agricultural products manufacturing. The technology required to pickle Cucumbers is not difficult, and the costs are not high. Cucumber pickles are one of the main processed foods in UAE and are very popular from June to September which is an off-season for the crop. For Tomato (juice, purée) and Dates (drying, packing), it is possible to add value without high technology and high facilities cost. Agricultural product processing should be promoted.

(4) Farmers' Organization

For the smooth and effective production and sale of large quantities of agricultural produce, it is necessary to establish a farmers' organization under the supervision of MAF and with the support of extension officers. The main activities of such an organization would include the collaborative purchasing of agricultural equipment and its installation (garden tractors, equipment for disease and pest control, materials for greenhouses and irrigation, fertilizers, pesticides, etc.), the installation of collecting and shipping facilities, group shipping, construction and operation of agricultural processing facilities, adjustment of cultivation plans, supplying information on marketing and agricultural technology, etc.

Table 3.1.1. Annual Budget of Ministry of Agriculture and Fishery (1990-95)

Year	Item	Budget		Expenditure		Compariosn with previous year
1990	Personel Expenditure	8,362,800	15.6%	81,290,932	77.7%	
	Current Expenditure	23,713,000	44.1%	14,356,544	13.7%	
	Project Expenses	21,640,000	40.3%	8,931,543	8.5%	
	Total	53,715,800		104,579,019		
1991	Personel Expenditure	84,028,000	62.2%	79,952,360	71.3%	98.35%
	Current Expenditure	29,848,000	22.1%	19,930,633	17.8%	138.83%
	Project Expenses	21,280,000	15.7%	12,253,508	10.9%	137.19%
	Total	135,156,000		112,136,501		107.23%
1992	Personel Expenditure	85,622,000	64.5%	82,153,095	68.0%	102.75%
	Current Expenditure	28,778,000	21.7%	25,588,061	21.2%	128.39%
	Project Expenses	18,355,000	13.8%	13,032,955	10.8%	106.36%
	Total	132,755,000		120,774,111		107.70%
1993	Personel Expenditure	82,215,000	61.2%	83,522,167	67.4%	101.67%
	Current Expenditure	31,145,000	23.2%	27,518,203	22.2%	107.54%
	Project Expenses	20,950,000	15.6%	12,932,053	10.4%	99.23%
	Total	134,310,000		123,972,423		102.65%
1994	Personel Expenditure	87,405,000	65.0%	83,627,830	70.7%	100.13%
	Current Expenditure	32,486,000	24.2%	24,895,912	21.0%	90.47%
	Project Expenses	14,529,000	10.8%	9,812,122	8.3%	75.87%
	Total	134,420,000		118,335,864		95.45%
1995	Personel Expenditure	86,919,000	73.4%			
	Current Expenditure	30,613,000	25.8%			
	Project Expenses	955,000	0.8%			
	Total	118,487,000				

Source : MAF

Table 3.1.2. Agricultural Land Use and Number of Holdings by Regions, 1993/94

Items		Regions	Abu Dhabi	Central	Northern	Eastern	Total	% in Sub Total	% in Total
Agricultural Land Usage in ha	Cultivated Area	Shifting Cultivation	3,641.9	4,130.8	2,310.4	1,012.5	11,095.6	16.6	15.3
		Greenhouses	96.8	27.9	37.7	11.0	173.4	0.3	0.2
		Crops and Vegetables	12,313.5	4,779.5	4,094.2	1,396.7	22,583.9	33.9	31.2
		Fruits	21,893.3	5,214.6	2,543.0	3,178.0	32,828.9	49.2	45.4
		Total	37,945.5	14,152.8	8,985.3	5,598.2	66,681.8	100.0	92.1
	Uncultivated Area	Wasteland	3,493.7	294.9	172.5	69.8	4,030.9	70.8	5.6
		Buildings	915.4	568.9	78.7	98.1	1,661.1	29.2	2.3
		Total	4,409.1	863.8	251.2	167.9	5,692.0	100.0	7.9
	Total Agricultural Land		42,354.6	-15,016.6	9,236.5	5,766.1	72,373.8		100.0
Number of Holdings		(Number)	7,612	5,124	2,957	5,501	21,194		
		(%)	35.9	24.2	14.0	26.0	100.0		
Cultivated Area / Holdings		(ha / holding)	4.98	2.76	3.04	1.02	3.15		
Greenhouse / Holdings		(Dm/holding)	0.1270	0.0540	0.1270	0.0200	0.0820		

Source : Ministry of Agriculture and Fisheries
Note : Dm = Donum = 10 a = 0.1 ha

Table 3.1.3. Number of Holdings, Agricultural Land and Cropped Area (1987-1994)

		1987	1988	1989	1990	1991	1992	1993	1994
Number of Holdings	No.	17,862	18,330	18,692	19,512	19,942	20,413	20,760	21,194
	(%)	100.0	102.6	104.6	109.2	111.6	114.3	116.2	118.7
Agricultural Land	ha	40,816	41,620	42,835	45,406	63,638	68,877	71,109	72,374
	(%)	100.0	102.0	104.9	111.2	155.9	168.7	174.2	177.3
Area Cropped	ha	23,356	39,615	41,267	42,327	44,056	52,448	56,073	54,512
	(%)	100.0	169.6	176.7	181.2	188.6	224.6	240.1	233.4

Source : Ministry of Agriculture and Fisheries

Table 3.1.4. Number of Holdings Classified by Size of Farm by Region, 1993/94

Regions		<0.1ha	0.1ha - 1ha	1ha - 2ha	2ha - 3ha	3ha - 5ha	>5ha	Total
Abu Dabi	No. of Holdings	75	1,886	2,319	1,166	1,533	633	7,612
	(%)	1.0	24.8	30.5	15.3	20.1	8.3	100.0
Central	No. of Holdings	36	1,058	839	1,682	920	589	5,124
	(%)	0.7	20.6	16.4	32.8	18.0	11.5	100.0
Northern	No. of Holdings	81	1,509	476	241	231	419	2,957
	(%)	2.7	51.0	16.1	8.2	7.8	14.2	100.0
Eastern	No. of Holdings	649	3,438	859	257	187	111	5,501
	(%)	11.8	62.5	15.6	4.7	3.4	2.0	100.0
Total	No. of Holdings	841	7,891	4,493	3,346	2,871	1,752	21,194
	(%)	4.0	37.2	21.2	15.8	13.5	8.3	100.0

Source : Ministry of Agriculture and Fisheries

Table 3.1.5. Area, Yield, and Production by Crops in UAE, 1993/94

Crop	Area Cultivated (ha)	Yield (ton/ha)	Production (ton)	Average Unit Price (Dh./ton)	Value (Dh. X 10³)	Value/ha (Dh.)	Share in Total(%) Area	Share in Total(%) Value
I. VEGETABLES								
Tomato	4,131	58.77	242,753	1,650	400,542	96,962	7.58	16.58
Eggplant	1,061	63.30	67,147	1,100	73,862	69,635	1.95	3.06
Okra	133	16.22	2,149	3,100	6,662	50,279	0.24	0.28
Bean	70	11.02	766	3,751	2,873	41,338	0.13	0.12
Cowpea	67	12.31	820	2,800	2,296	34,474	0.12	0.10
Jews mallow	540	34.85	18,804	1,700	31,967	59,253	0.99	1.32
Chard	315	91.05	28,652	750	21,489	68,284	0.58	0.89
Squash	770	21.81	16,787	1,700	28,538	37,082	1.41	1.18
Cucumber	198	66.77	13,193	3,350	44,197	223,669	0.36	1.83
Cabbage	2,068	51.59	106,708	1,100	117,379	56,749	3.79	4.86
Cauliflower	387	23.28	9,002	1,350	12,153	31,427	0.71	0.50
Potato	174	20.33	3,545	2,150	7,622	43,704	0.32	0.32
Onion	636	12.55	7,976	1,150	9,172	14,430	1.17	0.38
Watermelon	236	17.18	4,058	1,400	5,681	24,052	0.43	0.24
Sweet melon	647	16.14	10,437	2,100	21,918	33,903	1.19	0.91
Lettuce	147	36.01	5,294	1,500	7,941	54,020	0.27	0.33
Radish	119	28.53	3,381	600	2,029	17,122	0.22	0.08
Parsley	152	12.45	1,892	1,500	2,838	18,671	0.28	0.12
Carrot	105	23.19	2,426	1,400	3,396	32,467	0.19	0.14
Pepper	325	19.22	6,242	1,975	12,328	37,967	0.60	0.51
Others	825	23.03	19,005	2,000	38,010	46,067	1.51	1.57
Sub-total	13,101	43.59	571,037	1,494	852,893	65,100	24.03	35.30
II. FRUIT TREES								
Dates	28,860	8.18	236,135	3,500	826,473	28,638	52.94	34.20
Lime	934	20.85	19,485	2,500	48,713	52,133	1.71	2.02
Lemon (Adalia)	48	13.86	664	2,200	1,461	30,501	0.09	0.06
Grapefruit	39	30.30	1,194	2,200	2,627	66,675	0.07	0.11
Other Citrus	374	13.05	4,884	2,500	12,210	32,630	0.69	0.51
Guava	183	9.18	1,681	3,050	5,127	28,001	0.34	0.21
Mango	583	15.15	8,829	4,700	41,496	71,226	1.07	1.72
Indian Almond	38	7.65	289	799	231	6,111	0.07	0.01
Pomegrate	43	10.86	466	3,800	1,771	41,282	0.08	0.07
Fig	97	5.01	486	1,650	802	8,260	0.18	0.03
Grapes	24	2.64	64	4,000	256	10,579	0.04	0.01
Banana	17	8.26	138	2,297	317	18,982	0.03	0.01
Other	1,589	1.43	2,270	2,500	5,675	3,571	2.91	0.23
Sub-total	32,829	8.43	276,585	3,424	947,159	28,851	60.22	39.20
III. FIELD CROPS								
Alfalfa	3,527	80.03	282,240	1,400	395,136	112,038	6.47	16.35
Green Fodder	4,281	45.19	193,462	1,100	212,808	49,712	7.85	8.81
Tobacco	61	9.74	592	1,801	1,066	17,533	0.11	0.04
Wheat	567	1.86	1,052	1,000	1,052	1,857	1.04	0.04
Other	147	42.16	6,177	1,000	6,177	42,164	0.27	0.26
Sub-total	8,582	56.34	483,523	1,274	616,239	71,810	15.74	25.50
Total	**54,512**	**24.42**	**1,331,145**	**6,193**	**2,416,291**	**44,326**	**100.00**	**100.00**

Source : Ministry of Agriculture and Fisheries

Table 3.1.6. Area and Production of Crop by Regions, 1993/94

Region	Vegetables		Fruit trees		Field crops		Total	
	Area	Production	Area	Production	Area	Production	Area	Production
	(ha)	(ton)	(ha)	(ton)	(ha)	(ton)	(ha)	(ton)
Abu Dhabi	8,607	462,077	218,933	106,082	2,906	97,820	230,446	665,979
(%)	65.7	80.9	95.2	38.4	33.9	20.2	91.6	50.0
Central	1,860	39,463	5,215	71,871	3,297	263,036	10,372	374,370
(%)	14.2	6.9	2.3	26.0	38.4	54.4	4.1	28.1
Northern	2,079	60,271	2,543	40,097	1,965	104,725	6,588	205,093
(%)	15.9	10.6	1.1	14.5	22.9	21.7	2.6	15.4
Eastern	555	9,226	3,178	58,535	413	17,942	4,146	85,703
(%)	4.2	1.6	1.4	21.2	4.8	3.7	1.6	6.4
Total	13,101	571,037	229,869	276,585	8,582	483,523	251,552	1,331,145
(%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source : Ministry of Agriculture and Fisheries

Table 3.1.7. Vegetable Cultivation Area in UAE, 1987-1994

		1987	1988	1989	1990	1991	1992	1993	1994
Tomato	ha	1,015	1,015	1,055	1,252	1,733	3,268	3,593	4,131
	(%)	100	100	104	123	171	322	354	407
Egg plant	ha	336	257	459	434	579	1,250	1,180	1,061
	(%)	100	76	136	129	172	372	351	316
Okra	ha	277	262	269	282	263	406	226	133
	(%)	100	95	97	102	95	147	82	48
Bean	ha	49	111	107	121	115	67	117	70
	(%)	100	227	219	247	237	138	241	143
Cowpea	ha	199	211	161	145	138	134	98	67
	(%)	100	106	81	73	69	67	49	34
Jews Mallow	ha	116	194	155	220	241	3,902	455	540
	(%)	100	167	133	189	207	3,355	391	464
Chard	ha	159	135	155	200	216	271	440	315
	(%)	100	85	98	126	136	171	278	199
Squash	ha	720	526	733	668	746	787	889	770
	(%)	100	73	102	93	104	109	123	107
Cucumber	ha	323	176	172	159	217	285	223	198
	(%)	100	54	53	49	67	88	69	61
Cabbage	ha	469	344	665	694	891	2,134	2,095	2,068
	(%)	100	73	142	148	190	455	446	441
Cauliflower	ha	387	339	586	400	451	568	459	387
	(%)	100	87	151	103	116	147	118	100
Potato	ha	245	261	244	182	204	308	333	174
	(%)	100	106	99	74	83	125	136	71
Onion	ha	445	418	460	416	447	462	614	636
	(%)	100	94	103	94	100	104	138	143
Water melon	ha	1,086	714	484	307	299	242	353	236
	(%)	100	66	45	28	28	22	32	22
Sweet melon	ha	610	392	280	192	253	272	464	647
	(%)	100	64	46	31	41	45	76	106
Lettuce	ha	93	131	164	176	205	237	178	147
	(%)	100	141	176	189	220	254	190	158
Radish	ha	164	145	261	309	396	343	307	119
	(%)	100	89	159	188	242	209	187	72
Parsley	ha	168	85	96	81	80	78	131	152
	(%)	100	51	57	48	47	46	78	90
Carrot	ha	132	201	168	164	103	116	76	105
	(%)	100	152	127	124	77	88	57	79
Pepper	ha	194	151	222	21	216	306	262	325
	(%)	100	78	115	11	111	158	135	167
Other	ha	1,127	1,099	1,156	1,100	1,198	882	1,355	825
	(%)	100	98	103	98	106	78	120	73
Total	**ha**	**8,313**	**7,168**	**8,060**	**7,710**	**8,690**	**12,805**	**13,848**	**13,101**
	(%)	**100**	**86**	**97**	**93**	**107**	**154**	**167**	**158**

Source : Ministry of Agriculture and Fisheries

Table 3.1.8. Fruit Tree Cultivation Area in UAE, 1987-1994

		1987*	1988	1989	1990	1991	1992	1993	1994
Palm Tree	ha	6,649	22,156	22,156	22,156	22,368	27,926	28,860	28,860
	(%)	-	100	100	100	101	126	130	130
Lime	ha	587	966	988	975	1,273	937	929	934
	(%)	-	100	102	101	132	97	96	97
Lemon(Adalia)	ha	37	74	76	74	72	70	58	48
	(%)	-	100	103	100	97	95	78	65
Grape Fruit	ha	4	35	35	38	39	39	39	39
	(%)	-	100	100	109	112	110	110	112
Other Citrus	ha	751	408	429	433	490	371	361	374
	(%)	-	100	105	106	120	91	89	92
Guava	ha	162	172	175	210	199	196	183	183
	(%)	-	100	102	122	116	114	106	107
Mango	ha	620	583	578	587	621	626	572	583
	(%)	-	100	99	101	106	107	98	100
Indian Almond	ha	48	51	52	51	46	39	38	38
	(%)	-	100	102	99	90	75	74	74
Pomegranate	ha	52	70	56	51	50	46	42	43
	(%)	-	100	80	72	70	65	60	61
Fig	ha	99	105	106	100	105	103	97	97
	(%)	-	100	101	96	100	99	93	93
Grape	ha	36	36	37	34	33	27	28	24
	(%)	-	100	102	92	91	73	77	66
Banana	ha	90	90	17	16	18	16	17	17
	(%)	-	100	19	18	20	18	19	18
Other	ha	349	398	366	401	206	178	1,796	1,589
	(%)	-	100	92	101	52	45	451	399
Fruit Trees Total	**ha**	**9,481***	**25,146**	**25,070**	**25,127**	**25,520**	**30,573**	**33,020**	**32,829**
	(%)	-	**100**	**100**	**100**	**101**	**122**	**131**	**131**
Alfalfa	ha	2,062	3,207	3,436	3,758	3,293	3,675	3,746	3,527
	(%)	100	156	167	182	160	178	182	171
Green Fodder	ha	2,646	3,360	3,986	4,163	4,031	3,771	4,464	4,281
	(%)	100	127	151	157	152	143	169	162
Field Crops Total	**ha**	**4,708**	**6,567**	**7,422**	**7,921**	**7,324**	**7,446**	**8,210**	**7,808**
	(%)	**100**	**139**	**158**	**168**	**156**	**158**	**174**	**166**

Source : Ministry of Agriculture and Fisheries

* : Bearing orchards only

Table 3.1.9. Costs of Plant Production Paid by Holders in UAE, 1977-1993

Type of Inputs	1977	1991	1992	1993
Seeds	1,379	15,632	19,327	21,055
Seedlings	702	7,958	9,839	10,719
Chemical Fertilizers	3,585	40,641	50,249	54,741
Organic Manure	8,659	98,204	121,420	132,275
Pesticides	1,679	19,031	2,530	25,634
Others	2,239	25,383	31,384	34,190
Fuel and Oil	9,665	109,570	135,473	147,584
Electricity and Water	1,827	20,712	25,608	27,897
Land Preparation	929	10,533	12,023	14,187
Total	30,664	347,664	407,853	468,282

Source : Annual Statistical Bulletin od Agriculture and Fisheries, 1993

Table 3.1.10. Estimated Number of Livestock by Regions, 1993

Kind	Abu Dhabi		Central		Northern		Eastern		Total	
	Number	Share(%)	Number	Share(%)	Number	Share(%)	Number	Share(%)	Number	Share(%)
Sheep	65,068	19	181,264	32	51,944	19	13,089	9	246,368	25
Goats	175,613	52	295,799	53	205,775	75	127,189	88	628,943	64
Cows	8,224	2	39,935	7	8,046	3	4,223	3	52,217	5
Camels	89,106	26	41,635	7	7,180	3	314	0	49,165	5
Total	338,011	100	558,633	100	272,945	100	144,815	100	976,693	100
Share(%)	35	-	57	-	28	-	15	-	100	-

Source : Ministry of Agriculture and Fisheries

Table 3.1.11. Estimated Livestock Production by Regions, 1993

Kind	Production of Meat		Production of Milk		Meat Value	Milk Value	Number of Heads				
	(ton)	Share(%)	(ton)	Share(%)	(Dh. X10^3)	(Dh. X10^3)	Milking	Newborn(F)	Newborn(M)	Other	Total
Sheep	1,635	11	6,177	7	57,096	21,618	128,294	48,933	25,923	108,215	311,365
Goats	3,664	24	18,617	22	127,336	65,163	383,112	132,345	61,454	227,465	804,376
Cows	2,026	13	40,265 6,138*	47	32,417	36,837	29,272	6,637	5,417	19,102	60,428
Camels	8,222	53	20,972	24	57,556	62,918	98,593	-	-	-	138,235
Total	15,547	100	86,031	100	274,405	186,536	639,271	187,915	92,794	354,782	1,314,404

Source : Ministry of Agriculture and Fisheries
* : Not including milk production in big farms

Table 3.1.12. Number of Livestock and Poultry Treated in UAE, 1978-1993

(Unit: x10³ heads)

		1978	1991	1992	1993
Goats	Abu Dhabi	-	39	67	74
	Central	28	208	233	222
	Northern	45	116	174	205
	Eastern	20	60	71	96
	Total	93	423	545	597
	Increase rate	100%	455%	586%	642%
Sheep	Abu Dhabi	-	22	37	41
	Central	11	89	105	121
	Northern	9	37	48	47
	Eastern	3	10	10	8
	Total	23	158	200	217
	Increase rate	100%	687%	870%	943%
Cows	Abu Dhabi	-	2	6	11
	Central	2	14	33	28
	Northern	2	4	5	4
	Eastern	1	1	3	5
	Total	5	21	47	48
	Increase rate	100%	420%	940%	960%
Camels	Abu Dhabi	-	17	28	24
	Central	7	22	22	21
	Northern	4	12	13	7
	Eastern	-	-	-	-
	Total	11	51	63	52
	Increase rate	100%	464%	573%	473%
Poultry	Abu Dhabi	-	11	19	16
	Central	170	85	130	115
	Northern	2	13	19	40
	Eastern	-	4	8	9
	Total	172	113	176	180
	Increase rate	100%	66%	102%	105%
Other animals	Abu Dhabi	-	-	-	1
	Central	1	1	1	3
	Northern	-	-	1	-
	Eastern	-	-	-	-
	Total	1	1	2	4
	Increase rate	100%	100%	200%	400%
Total		305	767	1,033	1,098
Increase rate		100%	251%	339%	360%

Source; Ministry of Agriculture

Table 3.1.13. Number of poultry Farms and Production in UAE, 1987-1993

	Emirate	1987	1990	1991	1992	1993
Number of Farms	Abu Dhabi	-	2	2	2	2
	Dubai	2	4	2	3	3
	Sharjah	2	4	4	4	1
	Ajman	-	3	3	4	5
	Umm Al Quwain	1	1	1	1	2
	Ras Al Khaimah	-	2	2	2	4
	Al Fujairah	-	2	2	2	2
Total		5	18	16	18	19
Production of Chicken in ton	Abu Dhabi	-	2,300	2,100	2,529	2,880
	Dubai	135	2,020	1,315	2,030	2,070
	Sharjah	64	907	902	764	168
	Ajman	-	598	718	886	1,504
	Umm Al Quwain	537	2,200	1,700	1,500	2,220
	Ras Al Khaimah	-	3,830	4,080	4,050	5,904
	Al Fujairah	-	3,560	7,660	3,930	3,950
Total		736	15,415	18,475	15,689	18,696

Source: Ministry of Agriculture

Table 3.1.14. Quantity of Agricultural Requirement Disbursed to Holders in UAE, 1990- 1993

Type	Quantity				Increase/Decrease		
	1990	1991	1992	1993	1990/91	1991/92	1992/93
Seeds (ton)	30	34	41	23	13%	21%	-44%
Pesticides (Kg.)	112,417	117,565	56,578	53,696	5%	-52%	-5%
Pesticides (lt.)	142,515	139,735	108,469	94,782	-2%	-22%	-13%
Chemical fertilizer (50 kg. bags)	256,156	248,558	431,038	624,495	-3%	73%	45%
Organic fertilizer (25 kg. bags)	114,448	75,960	110,720	168,640	-34%	46%	52%
Seedlings for fruits (X10³bags)	93	82	138	80	-12%	68%	-42%
Seedlings for forestry (X10³bags)	163	183	124	87	12%	-32%	-30%
Seedlings for vegetable (X10³bags)	80,326	78,740	83,708	81,284	-2%	6%	-3%

Source : Ministry of Agriculture and Fisheries

Table 3.1.15. Seeds and Pesticide Distributed by Region, 1993

Region	Pesticides		Seeds	Share in Total		
				Pesticides		Seeds
	litre	kg	kg	litre	kg	kg
Abu Dhabi	63,434	37,129	21,068	67%	69%	92%
Central	11,083	6,894	614	12%	13%	3%
Northern	13,702	5,789	1,062	14%	11%	5%
Eastern	6,563	3,884	117	7%	7%	1%
Total	94,782	53,696	22,861	100%	100%	100%

Source : Ministry of Agriculture and Fisheries

Table 3.1.16. Fertilizer Distributed by Regions, 1993

Region	Quantity(bag)		Share in Regional Total		Share in Region	
	Organic	Chemical	Organic	Chemical	Organic	Chemical
Abu Dhabi	168,640	504,277	100%	81%	25%	75%
Central	0	40,883	0%	7%	0%	100%
Northern	0	53,431	0%	9%	0%	100%
Eastern	0	25,904	0%	4%	0%	100%
Total	168,640	624,495	100%	100%	21%	79%

Source : Ministry of Agriculture and Fisheries

Table 3.1.17 Number and Type of Seedlings distributed by Regions, 1993

Region	Quantity (bags)			Share in Regional Total			Share in Region		
	Vegetables	Forestries	Fruits	Vegetables	Forestries	Fruits	Vegetables	Forestries	Fruits
Abu Dhabi	80,973,100	82,483	58,780	99.6%	94.7%	87.6%	99.8%	0.1%	0.1%
Central	310,750	2,798	3,963	0.4%	3.2%	5.9%	97.9%	0.9%	1.2%
Northern	0	1,628	2,909	0.0%	1.9%	4.3%	0.0%	35.9%	64.1%
Eastern	0	153	1,457	0.0%	0.2%	2.2%	0.0%	9.5%	90.5%
Total	81,283,850	87,062	67,109	100.0%	100.0%	100.0%	99.8%	0.1%	0.1%

Source : Ministry of Agriculture and Fisheries

Table 3.1.18. Agricultural Extension Visits by Regions, 1993

		Number of Visit				
		Eastern	Northern	Central	Abu Dhabi	Total
Subject	Veg. & Field Crop	1,481	3,633	2,374	1,317	8,805
	Productive trees	1,327	5,806	2,387	1,095	10,615
	Pest control	1,719	3,796	2,814	1,240	9,569
	Soil irrigation and fertilization	1,532	5,330	2,446	1,215	10,523
	Agri. equipment	0	0	374	17	391
	Animal husbandry	0	0	0	196	196
	Agri. loans	25	0	0	15	40
	Statistics	149	0	0	721	870
	Nurseries	0	214	33	512	759
	Other	591	8,735	599	922	10,847
	Total (E)	6,824	27,514	11,027	7,250	52,615
Number of Farms (A)		5,461	2,915	5,056	7,328	20,760
Number of Extension Officer (B)		6	12	11	4	33
Number of Visited Farm (C)		1,973	4,653	2,911	1,319	10,856
Total Number of Visits (D)		2,143	5,735	3,104	1,343	12,325
Number of Farm per Extension Officer (A/B)		910	243	460	1,832	629
Percentage of Visited Farms (C/A)		36.1%	159.6%	57.6%	18.0%	52.3%
Number of Visit per Extension Officer (D/B)		357	478	282	336	373
Number of Subjects per Visit (E/D)		3.2	4.8	3.6	5.4	4.3

Source : Ministry of Agriculture and Fisheries

Table 3.1.19. Recommended Vegetable Crops in Open Field

Crop	Sowing Time	Nursery period (days)	Harvesting Time (days after sowing)	Variety Recommended	Average Yield (ton/Dm)	Amount of Seeds/Seedlings per Donum
Tomato	M-L/8	30-45	85-105	Ice 55, Special Pack Monte Cario, Medi, Early Mitch	2-4	40-60 gs/ 2,500 seedlings
Eggplant	L/8-12	30-45	80-120	Unica, Balk Beauty, Lobge Berbil, Black Night	4-6	40-60 gs/ 2,500 seedlings
Paprika	9-10	30-45	70-80	California Wonder 300, David College 64	1-1.5	80-100 gs/ 4,500-5,000 seedlings
Hot Pepper	8-10	30-45	70-80	Long Ten Cayeen, Inhale, Shelly	1.5-2.5	80-100 gs/ 4,500-5,000 seedlings
Potato	L/10-L/11		90-100	Gloster, Lola, Suhail, Qancet	1.5-2.5	250-300 kg
Vegetable Marrow	8-L/3		40-70	Claretta, New, Latha, Majda Ghadah	2-3	1-1.5 kg
Water melon	2-3		80-90	Super Top, Top Build, Charleston Grey	1-3	300-500 gs
Melon	2-3		80-90	Pineapple, Emkosweet	1-2	150-200 gs
Cucumber	9-3		45-60	Wamsks, Zainah, Jad, Sweet Crisin, Beta Alpha M	1.5-2	400-500 gs
Squash	9-3		40-60	White Syrian, Green Syrian	2-3	300-500 gs
Cabbage	9-1	30-45	60-100	Copenhagen Market 86 Yeedon Princess, K.K. Cross	2.5-3.5	80-100 gs/ 3,500-5,000 seedlings
Cauliflower	9-10	30-45	60-90	Snowball, White Baron, White Contissa, Early White	1.5-2	80-100 gs/ 3,500-5,000 seedlings
Kidney Beabs	3-4, 9-10		60-70	Akka 31/ Califomia	1.5-2	4-5 kg
Beans	9-3		60-70	Strike, Astro	0.8-1.0	6-7 kg
Okra	2-4, 8-9		60-75	Bandy 5, Bandy Boza Swany A'n Oakli	1.0-2.0	2-3 kg
Radish	9-3		40-60	Japanese Tropical, Red Angle White Ascle	1.0-2.5	1-2 kg
Turnip	9-3		40-50	Perbil Top, White Globe Super Top	2.0-3.0	1-2 kg
Spinach	10-11		60-90	Pacific, Orient	1.0-1.5	2.5-3 kg
Chard	10-1		60-70	Indigenus	3.0-4.0	0.5-1 kg
Jews Mallow	2-4		40-60	Egyptian, Syrian	1.5-2.5	1-1.5 kg
Carrots	10-11		60-90	Nants, Emperor	2.5-3.0	1.5-2 kg
Parsley	9-11		60-70	Beleen, Indigenous	1.0	0.5-1 kg
Onion	10-11	30-45	30-45	Texas Irlha Grano Bonard, Red Kriol	2.0-3.0	350-500 g/ 26,000-30,000 seedlings

Table 3.1.20. Recommended Vegetable Crops in Greenhouse

Kind of Vegetable	Sowing Time	Nursery period (Crop days)	Harvesting Time (days after sowing)	Variety Recommended	Average Yield (ton/Dm)	Amount of Seeds/Seedlings per Donum
Tomato	10		80-100	Monte Cayo, Carmlo, Dombito, Dombilo, Arino	7.0-12.0	15-30 gs
Paprika	10-E/11		65-80	David, California Wonder 300	3.0-4.0	20-50 gs
Short/Long Cucumber	10-1		35-40	Farol, Awa, Tom, Shaheen Jad, Zainah, Market King, Koska	7.0-10.0	120-200 gs/ 2500-3500 Seedlings
Yellow Melon	10, 1		70-90	Rijalia, Amour	4.0-5.0	120-200 gs
Beans	10, 1		45-50	Dymont	2.5	6-7 kg
Jewa Mallow	10-3		40-50	Egyptian, Syrian	1.5-2.5, One Cut	1-2 kg

Table 3.1.21. Recommended Tree Crop Cultivation

Kind of Fruit Tree	Spacing Between Trees (No. of Trees/ha)	Varieties recommended	Reproduction Ways	Yield
Mango	(Seedlings) Sandy Soil: 7 m(200 trees) Yellow Soil: 8 m(150 trees) (Grafted) Sandy Soil: 5 m(400 trees) Yellow Soil: 7 m(200 trees)	(Seedlings) Unknown (Grafted) Indian, Owais, Cylon, Armans, Taymour, Butter, Langra, Gilor	1) Seeds: Feb.-April 2) Cutting. 3) Grafting	(Seedling trees) 500-800 fruits (Grafted adult trees) 250-400 fruits
Fig	(Seedlings) Sandy Soil: 3 m(1,000 trees) Yellow Soil: 4 m(625 trees)	Adriatic, Bronzic, Cadoita, Genoa, Mish, Barshoumi, Bayadh, Soday	1) Cutting: Commonest way 2) Grafting 3) Layering	15-20 kg/ tree
Orange	5 m(400 trees)	Valencia, Khlili, Hamily, Pineapple, Saccharine	1) Grafting on Seville Orange /Cleopatra Mandarin seedlings	50-60 kg/tree
Mandarin	5 m(400 trees)	Calamondin, Mandarin	Grafting on Seville Orange/Cleopatra Mandarin seedlings	50-60 kg/tree
Grapefruit	6-7m(200 trees)	Dankin, March Cerls, Thomson, Roby King	Grafting on Seville Orange/Cleopatra Mandarin	50-60 kg/tree
Lemon	6-7 m(200 trees)	Indigenous	Seedlings	3,000 fruits/tree
Lemon (La dahlia)	6-7 m(200 trees)	Urika, Lisbon	Grafting on Seville orange Cleopatra Mandarin seedlings	1,500-2,000 fruits/tree
Guava	(Seedlings) Sandy Soil: 4 m(625 trees) Yellow Soil: 5 m(400 trees) (Grafted) Sandy Soil: 3 m(1,000 trees) Yellow Soil: 4 m(625 trees)	Allah, Abadi,L-49, Mamoura, Pyramid	1) Seeds 2)Vegetative reproduction: a) Adhesive Grafting b) Root cutting c) Aerobic layering d) Stalk and cancroid cutting	25-30 kg/tree in non-seedling
Sapota	Sandy Soil: 4 m(625 trees) Yellow Soil: 5 m(400 trees)	No classes have been experimented yet in UAE. Most of the varieties are unknown Indian varieties. Karakeen Ball, Kalibati	1) Seed: Soak seeds in water before sowing 2) Grafting: Feb.-Oct. but needs skill	1,000-1,500 fruits or more /tree throughout the year
Pomegranate	Sandy Soil: 3-4m (625 - 1000 trees) Yellow Soil: 5-6 m (300 - 400 trees)	Rose water, Jordan Rose Red, Jordan Mule Leash, Jordan Salma, Iraq Taify, Saudi Arabia Local Varieties, Oman	1) Cutting: commonest ways 2) Layering 3) Cancroid cuttings 4) Grafting 5) Seeds	150-200 fruits or more/adult tree

Table 3.1.22. Recommended Date Palm Cultivation

Month	Irrigation	Fertilizer Application	Plant Protection	Other Important Farm Works
January	Once every 15 days	Urea: 1 kg / Mature plant	Mildew, Scale, Licorice	
February	Once every 15 days		Licorice, Weeding seedling bed	Cleaning male trees(Start blooming)
March	Once every 10 days	Urea:1 kg, Potassium Sulphate:0.75kg/Mature plant	Licorice	
April	Once every 10 days	Urea: 1 kg/ Mature plant	Ommatiesus Binotatus, Hamoera insect, Licorice	Uprooting shoots, Preparing modern groves
May	Once every 7 days		Ommatiesus Binotatus, Hamoera insect, Licorice, Dust spiders	Uprooting shoots, Preparing modern groves
June	Once every 7 days		Dust spiders	Bending and removing bunches
July	Once every 5 days			Bending bunches, Harvesting start
August	Once every 5 days			Harvesting
September	Once every 5 days			Harvesting(Late varieties), Uprooting shoots, Preparing modern groves
October	Once every 10 days		Ommatiesus Binotatus, Licorice	Ploughing land
November	Once every 10 days	Organic fertilizer: 25-50 kg/Plant, Superphosphate: 1-2 kg/Plant	Ommatiesus Binotatus, Licorice	Ploughing land
December	Once every 15 days		Palm spadix stain, Scale, Microscopic bug, Licorice	Ploughing

Subjct	Instructions
Shoot Planting	Spacing: 8m x 8m (156 Plants/ha) - 9m x 9m (124 Plants/ha) Male tree planting: 8% of total number of trees.
Irrigation Frequency	(For Shoots) First month after planting: Once every 2-3 days, Second month after planting: Once every 4-5 days, Winter season: Once every week (Fruit trees) Spring: Once a month, Summer: Once every 15 - 20 days, Autumn: Once a month, Winter: Refrain from irrigation for 3 months(Nov., Dec., Jan.) *Over irrigation results in deterioration of soil and increase in amount of salts, especially in the heavy calcareous lands.
Irrigation Ways	Common Way: Basin flood irrigation. In advanced farmers, the size of basins is increased with the increase in the growth of trees Best way: Bublars irrigation combined with above the increasing size of irrigation basins. *Drip irrigation and Spray irrigation rsult in an apparent lack of vegetative growth and fruit products, more over spray irrigation leads washing out of nutritious elements, especially potassium and spreading fungoid diseases
Fruits thinning	To obtain high quality fruits and to prevent yearly fluctuations of yield 1)Bunch thinning: 20-25 bunches/tree->10-20 bunches/tree (Matured trees), 4-7 bunches-> 3-5/tree(Trees started fruiting) 2)Fruit thinning: Removing 50-60% of the number of set fruits per bunch
Varieties recommended	Khlas (Best quarity, Yield: 9.4-12.5 t/ha, Ripenning: Early August) Barhi (Best quarity, Yield: 14.8-22.2 t/ha, Ripenning: Middle/Sep) She shi (Best quarity, Yield: 9.4-12.5 t/ha, Ripenning: Late/July-Early/Aug) Naghal (Medium quarity, Yield: 9.4-12.5 t/ha, Ripenning: Middle/June)

Table 3.2.1. Number of Farm Holdings and Cultivation Area in the Study Area by Towns/Villages, 1994

Emirate	Agricultural Region	District*	Town / Village	Number of Farm Holdings	Cultivated Area (ha)	Cultivated Area per Holding (ha)
Ajiman	Central Region	Dhaid-1	Al Nasim	22	73	3.3
Sharjah			Suhelah	20	46	2.3
			Dhaid	570	1,601	2.8
		Dhaid-2	Dhaid	292	1,148	3.9
			Wishah	577	1,728	3.0
			Hamdah	4	15	3.8
		Meleiha	Meleiha	91	321	3.5
			Bahayis	141	427	3.0
			Ikhedir	17	35	2.1
			Al Ghili	53	99	1.9
		Khadrah	Melaiha Al Saqeera	38	92	2.4
Ras Al Khaimah			Khadrah	14	20	1.4
			Khudera	15	25	1.7
Umm Al Quwain		Falaj Al Mualla	Rashidiah	41	92	2.2
			Falaj Al Mualla	77	267	3.5
			Al Zarqa	25	104	4.2
			Al Nabkha	21	88	4.2
Total / Average				2,018	6,181	3.1

Source: Statistics Section, MAF
Note : * same as Extension Unit of MAF

Table 3.2.2. Share of Farm Holder Number and Cultivation Area in the Study Area under Five Districts Concerned, 1994

District*	Number of Farme Holders			Cultivated area (ha)		
	District Total	the Study Area Total	Share of the Study Area	District Tota	Study Area Total	Share of the Study Area
Dhaid**	1,700	1,485	87%	5,024	4,611	92%
Meleiha	730	302	41%	2,456	882	36%
Khadrah	426	67	16%	440	137	31%
Falaj Al Mualla	378	164	43%	1,209	551	46%
Total	3,234	2,018	62%	9,129	6,181	68%

Source; Statistics Section, MAF
Notes : * same as Extension Unit of MAF
** including Dhaid-1 & Dhaid-2

Table 3.2.3. Crop Cultivation Area, Yield and Production in Five Districts Concerned

Crops	Cultivated Area (ha)						Yield (ton / ha)						Production (ton)					
	Dhaid-1	Dhaid-2	Meleiha	Khadrah	Falaj Al Mualla	Total	Dhaid-1	Dhaid-2	Meleiha	Khadrah	Falaj Al Mualla	Average	Dhaid-1	Dhaid-2	Meleiha	Khadrah	Falaj Al Mualla	Total
[Vegetables]																		
Tomato	43.9	188.5	11.7	13.3	19.2	276.5	42.1	24.8	34.0	14.9	19.0	27.0	1,849	4,670	396	198	363	7,476
Cauliflower	11.6	19.9	0.3	3.7	0.8	36.3	21.6	24.3	30.0	12.5	20.0	22.2	250	488	9	46	16	806
Cabbage	18.4	16.2	0.3	1.9	0.7	37.6	24.2	29.8	34.0	20.5	15.7	26.4	445	483	10	38	11	993
Squash	116.5	126.8	33.0	5.3	18.1	299.7	28.6	32.2	20.3	30.0	19.2	28.6	3,329	4,079	670	159	348	8,585
Cucumber	18.5	4.0	2.5	2.0	0.2	27.2	29.5	27.5	15.6	40.0	25.0	28.6	545	110	39	78	5	777
Water melon	3.8	19.0	12.9	-	5.3	40.9	22.7	19.0	23.4	-	22.6	21.2	85	361	301	-	120	867
Sweet melon	7.0	32.4	10.9	-	4.5	54.8	28.7	20.8	17.0	-	15.6	20.6	200	673	185	-	70	1,128
Lettuce	2.2	1.4	0.9	0.2	0.1	4.7	15.3	18.6	29.9	13.3	4.5	18.7	33	26	26	2	0	87
Carrot	2.7	1.4	-	2.7	0.2	6.9	25.3	27.1	-	24.5	11.3	25.1	67	38	-	65	2	172
Eggplant	33.7	33.8	3.5	7.7	0.3	78.9	32.9	43.1	35.7	39.5	24.2	38.0	1,106	1,454	125	302	8	2,995
Pepper	3.5	1.0	0.2	11.8	0.3	16.6	19.1	2.0	13.3	8.6	8.0	10.4	66	2	2	101	2	173
Sweet Pepper	3.1	86.7	0.4	1.1	0.0	91.2	29.5	0.3	17.5	15.2	14.0	1.5	90	27	7	16	0	140
Okra	11.8	22.1	1.2	0.9	-	35.9	24.9	2.6	11.3	20.0	-	10.6	293	57	13	17	-	380
Jews mallow	2.7	2.5	0.5	0.1	-	5.7	24.3	32.8	14.0	20.0	-	27.1	65	82	7	1	-	155
Potato	1.4	3.4	2.4	0.5	2.8	10.4	23.6	32.1	14.8	28.9	20.0	23.6	33	109	35	13	56	246
Turnip(Leaf)	1.5	0.5	-	7.0	-	9.0	30.0	34.0	-	30.3	-	30.4	45	17	-	212	-	274
Onion	104.1	9.0	0.5	11.4	1.3	126.3	5.0	30.9	14.0	15.0	18.5	7.9	518	278	7	171	24	998
Radish	6.2	3.7	0.0	1.7	1.2	12.7	22.0	21.4	20.0	15.1	8.2	19.6	135	78	1	26	9	249
Parsley	79.3	3.0	0.3	1.4	0.7	84.6	1.0	13.3	25.9	10.2	12.1	1.8	83	40	7	14	9	153
Bean	15.3	2.2	5.7	0.6	-	23.8	16.8	16.8	9.8	14.5	-	15.1	257	37	56	8	-	358
Cowpea	11.1	3.8	0.5	0.5	-	15.8	21.4	26.3	6.7	20.0	-	22.1	237	100	3	9	-	349
Other	31.2	57.9	7.3	8.6	1.9	106.9	27.5	49.8	16.4	14.5	13.8	37.6	859	2,883	121	124	27	4,013
Sub-total	529.0	639.1	94.9	81.7	57.5	1,402.1	20.0	25.2	21.3	19.6	18.6	22.4	10,590	16,092	2,022	1,600	1,070	31,373
[Fruit Trees]																		
Date Trees	373.7	493.8	442.5	156.0	201.0	1,667.0	21.6	21.1	13.2	25.1	18.7	19.2	8,071	10,441	5,859	3,917	3,763	32,051
Lemon	121.8	144.9	31.1	7.2	27.1	332.0	19.6	17.2	4.9	6.3	4.9	15.7	2,385	2,498	153	45	134	5,215
Lime	7.2	15.4	1.6	5.0	0.5	29.7	17.4	15.7	2.6	0.8	6.0	12.7	125	242	4	4	3	378
Grape fruit	4.9	10.7	-	-	0.1	15.7	11.7	11.6	-	-	10.0	11.6	57	124	-	-	1	182
Other Citrus	66.0	42.5	8.2	1.3	6.1	124.0	13.7	12.0	2.9	5.4	3.5	11.8	903	509	24	7	21	1,466
Mango	98.7	58.2	4.6	2.7	2.9	137.1	6.9	6.6	1.1	5.2	0.7	6.4	475	382	5	14	2	878
Guava	30.3	33.4	8.3	1.2	2.4	75.6	14.7	12.3	2.9	5.2	3.3	11.9	446	412	24	6	8	896
Fig	16.2	23.4	5.9	-	1.3	46.7	5.7	4.9	2.4	-	0.8	4.8	93	115	14	-	1	223
Grapes	3.1	6.4	0.8	-	-	10.3	2.9	2.5	1.3	-	-	2.5	9	16	1	-	-	26
Pomegranate	6.1	6.2	3.8	-	0.2	16.2	2.3	50.8	2.4	-	1.0	20.9	14	315	9	-	0	338
Banana	1.5	2.1	0.8	-	-	4.4	4.3	3.3	1.3	-	-	3.3	7	7	1	-	-	15
Almond	2.9	3.3	2.1	-	1.6	9.8	1.4	3.9	4.4	-	1.9	3.0	41	13	9	-	3	29
Other	38.9	25.8	5.3	-	0.9	70.9	7.1	17.8	5.3	-	11.7	10.9	277	458	28	-	11	774
Sub-total	741.2	866.0	514.7	173.3	244.0	2,539.2	17.4	17.9	11.9	23.0	16.2	16.7	12,868	15,532	6,131	3,993	3,947	42,471
[Field Crops]																		
Alfalfa	249.4	488.4	490.8	94.4	196.5	1,519.5	99.6	98.3	76.8	92.0	95.7	90.9	24,844	48,027	37,691	8,689	18,809	138,060
Green fodder	176.2	322.8	187.3	27.3	201.7	915.3	78.6	78.9	59.4	78.8	88.5	77.0	13,846	25,481	11,124	2,151	17,849	70,451
Tobacco	0.2	-	-	5.2	0.5	5.8	80.0	-	-	6.2	13.3	8.7	12	-	-	32	0	50
Other	-	1.0	-	-	-	1.0	-	20.0	-	-	-	20.0	-	20	-	-	-	20
Sub-total	425.7	812.2	678.1	126.9	398.7	2,441.5	90.9	90.5	72.0	85.7	92.0	85.4	38,702	73,528	48,815	10,872	36,664	208,581
Total	1,695.9	2,317.2	1,287.7	381.9	700.2	6,382.9	36.7	45.4	44.2	43.1	59.5	44.2	62,160	105,152	56,969	16,465	41,681	282,425

Source; Statistics Section, MAF

Table 3.2.4. Estimated Crop Cultivation Area, Yield and Production in the Study Area, 1994

Crops	Cultivated Area (ha)						Yield (ton / ha)						Production (ton)					
	Dhaid-1	Dhaid-2	Meleiha	Khadrah	Falaj Al Mualla	Total	Dhaid-1	Dhaid-2	Meleiha	Khadrah	Falaj Al Mualla	Average	Dhaid-1	Dhaid-2	Meleiha	Khadrah	Falaj Al Mualla	Total
[Vegetables]																		
Tomato	40.3	173.0	4.2	4.1	8.7	230.3	42.1	24.8	34.0	14.9	19.0	27.0	1,697	4,286	142	62	165	6,353
Cauliflower	10.6	18.3	0.1	1.1	0.4	30.5	21.6	24.5	20.0	12.5	20.0	22.2	229	448	2	14	7	701
Cabbage	16.9	14.9	0.2	0.6	0.3	32.8	24.2	29.8	34.0	20.5	15.7	26.4	408	443	6	12	5	874
Squash	106.9	116.4	11.9	1.7	8.2	245.1	28.6	32.2	20.3	30.0	19.2	28.6	3,055	3,744	241	50	159	7,248
Cucumber	17.0	3.7	0.9	0.6	0.1	22.2	29.5	27.5	15.6	40.0	25.0	28.6	500	101	14	24	2	642
Water melon	3.4	17.4	4.6		2.4	27.9	22.7	19.0	23.4	-	22.6	21.2	78	331	108		55	572
Sweet melon	6.4	29.7	3.9		2.1	42.1	28.7	20.8	17.0	-	15.6	20.6	184	618	67		32	900
Lettuce	2.0	1.3	0.3	0.0	0.0	3.7	15.3	18.6	29.9	13.3	4.5	18.7	30	24		1	0	55
Carrot	2.4	1.3		0.8	0.1	4.6	25.3	27.1	-	24.5	11.3	25.1	61	35		20	1	117
Eggplant	30.9	31.0	1.3	2.4	0.1	65.6	32.9	43.1	35.7	39.5	24.2	38.0	1,015	1,334	45	94	3	2,492
Pepper	3.2	0.9	0.1	3.7	0.1	7.9	19.1	2.0	13.3	8.6	8.0	10.4	61	2	1	31	1	95
Sweet Pepper	2.8	79.6	0.1	0.3	0.0	82.9	29.5	0.3	17.5	15.2	14.0	1.5	83	25	3	5	0	115
Okra	10.8	20.3	0.4	0.3		31.7	24.9	2.6	11.3	20.0	-	10.6	269	52	5	5		331
Jews mallow	2.5	2.3	0.2	0.0		4.9	24.3	32.8	14.0	20.0	-	27.1	60	75	3	0		138
Potato	1.3	3.1	0.9	0.1	1.3	6.7	23.6	32.1	14.8	28.9	20.0	23.6	30	100	13	4	26	172
Turnip(Leaf)	1.4	0.5		2.2		4.0	30.0	34.0	-	30.3	-	30.4	41	16		66		123
Onion	95.5	8.3	0.2	3.6	0.6	108.1	5.0	30.9	14.0	15.0	18.5	7.9	475	255	3	53	11	797
Radish	5.6	3.3	0.0	0.5	0.5	10.1	22.0	21.4	20.0	15.1	8.2	19.6	124	72	0	8	4	208
Parsley	72.8	2.8	0.1	0.4	0.3	76.4	1.0	13.3	25.9	10.2	12.1	1.8	76	37	3	4	4	124
Bean	14.0	2.0	2.0	0.2		18.3	16.8	16.8	9.8	14.5	-	15.1	236	34	20	2		292
Cowpea	10.2	3.5	0.2	0.1		14.0	21.4	26.3	6.7	20.0	-	22.1	218	92	1	3		313
Other	28.6	53.1	2.6	2.7	0.9	87.9	27.5	49.8	16.4	14.5	13.8	37.6	788	2,646	43	38	12	3,529
Sub-total	489.5	586.5	34.1	25.4	26.2	1,157.8	20.0	25.2	21.3	19.6	18.6	22.4	9,720	14,769	727	498	487	26,201
[Fruit Trees]																		
Date Trees	343.0	453.2	159.1	48.6	91.6	1,095.4	21.6	21.1	13.2	25.1	18.7	19.2	7,408	9,583	2,106	1,220	1,715	22,031
Lemon	111.8	133.0	11.2	2.2	12.3	270.5	19.6	17.2	4.9	6.3	4.9	15.7	2,189	2,293	55	14	61	4,612
Lime	6.6	14.1	0.6	1.6	0.2	23.1	17.4	15.7	2.6	0.8	6.0	12.7	115	222	1	1	1	341
Grape fruit	4.5	9.8			0.0	14.3	11.7	11.6	-	-	10.0	11.6	52	114			0	167
Other Citrus	60.6	39.0	2.9	0.4	2.8	105.7	13.7	12.0	2.9	5.4	3.5	11.8	831	467	9	2	10	1,318
Mango	63.1	53.4	1.6	0.8	1.3	120.3	6.9	6.6	1.1	5.2	0.7	6.4	436	351	2	4	1	794
Guava	27.8	30.7	3.0	0.4	1.1	62.9	14.7	12.3	2.9	5.2	3.3	11.9	409	378	9	2	4	802
Fig	14.9	21.5	2.1		0.6	39.0	5.7	4.9	2.4	-	0.8	4.8	85	106	5		0	196
Grapes	2.8	5.9	0.3			9.0	2.9	2.5	1.3	-	-	2.5	8	15	0			23
Pomegranate	5.6	5.7	1.3		0.1	12.7	2.3	50.8	2.4	-	1.0	20.9	13	289	3		0	305
Banana	1.4	1.9	0.3			3.6	4.3	3.3	1.3	-	-	3.3	6	6	0			13
Almond	2.7	3.0	0.7		0.7	7.1	1.4	3.9	4.4	-	1.9	3.0	4	12	3		1	20
Other	35.7	23.6	1.9		0.4	61.7	7.1	17.8	5.3	-	11.7	10.9	254	420	10		5	689
Sub-total	680.3	794.8	185.0	54.0	111.2	1,825.3	17.4	17.9	11.9	23.0	16.2	16.7	11,810	14,255	2,204	1,243	1,799	31,311
[Field Crops]																		
Alfalfa	228.9	448.3	176.4	29.4	89.5	972.5	99.6	98.3	76.8	92.0	95.7	90.9	22,802	44,079	13,550	2,706	8,571	91,708
Green fodder	161.7	290.3	67.3	8.5	91.9	625.7	78.6	78.9	59.4	78.8	88.5	77.0	12,708	23,386	3,999	670	8,134	48,897
Tobacco	0.1			1.6	0.2	1.9	80.0	-	-	6.2	13.3	8.7	11			10	3	24
Other		0.9				0.9	-	20.0	-	-	-	20.0		18				18
Sub-total	390.7	739.4	243.8	39.5	181.7	1,601.1	90.9	90.5	72.0	85.7	92.0	85.4	35,521	67,484	17,549	3,386	16,708	140,647
Total	1,560.5	2,120.8	462.9	118.9	319.1	4,584.2	36.7	45.4	44.2	43.1	59.5	44.2	57,050	96,508	20,480	5,127	18,994	198,159

Source; Statistics Section, MAF

Table 3.2.5. Greenhouse Cultivation in Five Districts Concerned, 1994

	Dhaid		Meleiha		Khadrah		Falaj Al Mualla		Total	
	Area (m^2)	Production (ton)	Area (m^2)	Production (ton)	Area (m^2)	Production (ton)	Area (m^2)	Production (ton)	Area (m^2)	Production (ton)
[Winter Season]										
Tomato	25	1.50	0	0	0	0	2,000	4.00	2,025	5.50
Squash	3,000	1.30	0	0	0	0	0	0	3,000	1.30
Cucumber	28,000	84.00	0	0	0	0	2,000	4.50	30,000	88.50
Sweet melon	25	0.50	0	0	0	0	0	0	25	0.50
Sweet pepper	50	1.25	0	0	0	0	0	0	50	1.25
Potato	3,000	7.00	0	0	0	0	0	0	3,000	7.00
Sub-total	34,100	95.55	0	0	0	0	4,000	8.50	38,100	104.05
[Summer Season]										
Squash	14,000	71.00	0	0	0	0	0	0	14,000	71.00
Cucumber	43,000	197.00	0	0	0	0	0	0	43,000	197.00
Water melon	4,000	10.00	0	0	0	0	0	0	4,000	10.00
Sweet melon	12,050	39.50	0	0	0	0	2,000	5.00	14,050	44.50
Sub-total	73,050	317.50	0	0	0	0	2,000	5.00	75,050	322.50
Total	107,150	413.05	0	0	0	0	6,000	13.50	113,150	426.55

Source; Statistics Section, MAF

Table 3.2.6. Greenhouse Area in Five Districts Concerned, 1992-1994

(Unit: ha)

Distnct	1992	1993	1994
Dhaid			
Dhaid-1	11.15	11.15	12.95
Dhaid-2	12.48	12.48	12.75
Meleiha	-	-	-
Khadrah	-	-	-
Falaj Al Mualla	0.80	0.80	1.10
Total	24.43	24.43	26.80
(%)	(100)	(100)	(110)

Source; Statistics Section, MAF

Table 3.3.1. List of Location of Farms Surveyed

No.	Ref.No.	Grid Reference
	KADRA	
1	2/1	N 25 10.115 ,E 56 0.851
2	57/1	N 25 13.361 ,E 55 59.101
3	28/1	N 25 10.006 ,E 56 0.828
4	24/2	- - - -
5	12/3	N 25 13.700 ,E 55 58.886
6	69/1	N 25 14.145 ,E 55 59.566
7	7/1	- - - -
8	62/1	N 25 13.858 ,E 55 58.858
9	58/1	N 25 13.310 ,E 55 58.796
10	51/1	N 25 14.111 ,E 55 59.183
11	65/1	N 25 13.128 ,E 55 58.893
12	1/1	N 25 11.670 ,E 55 0.305
13	3/1	- - - -
14	68/1	N 25 13.673 ,E 55 59.271
15	53/1	N 25 13.610 ,E 55 58.876
	DHAID I	
16	387/1	N 25 19.243 ,E 55 54.435
17	341/1	N 25 18.325 ,E 55 55.026
18	416/1	N 25 18.506 ,E 55 51.225
19	349/1	N 25 18.790 ,E 55 54.691
20	502/1	N 25 19.270 ,E 55 46.700
21	357/1	N 25 18.685 ,E 55 55.171
22	353/1	N 25 18.866 ,E 55 54.995
23	432/1	N 25 16.943 ,E 55 52.106
24	342/1	N 25 17.930 ,E 55 54.688
25	351/1	N 25 17.468 ,E 55 54.731
26	369/1	N 25 18.658 ,E 55 55.183
27	366/1	N 25 18.631 ,E 55 55.193
28	372/1	N 25 17.746 ,E 55 54.306
29	340/1	N 25 17.263 ,E 55 54.286
30	297/1	N 25 17.368 ,E 55 54.858
31	301/1	N 25 17.350 ,E 55 54.023
32	327/1	N 25 17.295 ,E 55 54.440
33	281/1	N 25 18.805 ,E 55 54.634
34	406/1	N 25 18.951 ,E 55 55.180
35	534/1	N 25 19.460 ,E 55 46.675
36	69/1	N 25 17.098 ,E 55 57.096
37	98/1	N 25 17.435 ,E 55 56.643
38	175/1	N 25 18.373 ,E 55 55.610
39	53/1	N 25 17.256 ,E 55 56.505
40	154/1	N 25 18.000 ,E 55 55.563
41	183/1	N 25 18.441 ,E 55 55.580
42	67/1	N 25 17.560 ,E 55 55.858
43	142/1	N 25 17.750 ,E 55 56.348
44	622/2	N 25 17.040 ,E 55 56.893
45	96/1	N 25 17.566 ,E 55 56.430
46	47/1	N 25 17.273 ,E 55 56.133
47	56/1	N 25 17.360 ,E 55 56.691
48	55/1	N 25 17.083 ,E 55 56.566
49	157/1	N 25 17.991 ,E 55 55.701
50	33/1	N 25 17.075 ,E 55 56.708
51	311/1	N 25 17.158 ,E 55 55.620
52	638/1	N 25 17.945 ,E 55 56.801
53	27/1	N 25 17.143 ,E 55 55.761
54	113/1	N 25 17.858 ,E 55 56.298
55	9/1	N 25 16.868 ,E 55 56.451
56	59/1	N 25 17.525 ,E 55 56.040
57	19/1	N 25 18.448 ,E 55 56.378
58	50/1	N 25 17.270 ,E 55 56.415
59	48/1	N 25 17.380 ,E 55 56.298
60	5/1	N 25 17.373 ,E 55 58.915
61	7/1	N 25 16.583 ,E 55 56.993
62	365/1	N 25 18.716 ,E 55 56.238
63	21/1	N 25 17.195 ,E 55 55.523
64	68/1	?
65	54/1	?
	DHAID II	
66	701/1	N 25 12.768 ,E 55 55.173
67	691/1	N 25 11.641 ,E 55 55.088
68	222/1	N 25 11.805 ,E 55 55.128
69	425/1	N 25 11.930 ,E 55 55.191
70	401/1	N 25 12.700 ,E 55 56.160
71	284/1	N 25 13.003 ,E 55 55.095
72	343/1	N 25 15.041 ,E 55 54.120
73	367/1	N 25 14.470 ,E 55 55.411
74	370/1	N 25 14.040 ,E 55 54.561
75	533/1	N 25 15.621 ,E 55 54.215
76	378/2	N 25 14.418 ,E 55 53.716
77	313/2	N 25 14.461 ,E 55 54.505
78	89/1	N 25 14.960 ,E 55 53.964
79	81/1	N 25 13.596 ,E 55 55.035
80	139/1	N 25 17.808 ,E 55 55.828
81	24/1	N 25 17.546 ,E 55 55.410
82	98/1	N 25 15.823 ,E 55 55.710
83	29/1	N 25 16.386 ,E 55 56.191
84	104/1	N 25 16.155 ,E 55 56.858
85	199/1	N 25 16.198 ,E 55 56.510
86	204/1	N 25 17.168 ,E 55 58.006
87	103/1	N 25 16.563 ,E 55 56.600
88	191/1	N 25 17.643 ,E 55 56.856
89	45/1	N 25 16.723 ,E 55 54.665
90	49/1	N 25 16.463 ,E 55 54.871
91	87/1	N 25 16.080 ,E 55 55.525
92	48/1	N 25 16.255 ,E 55 54.493
93	25/1	N 25 17.485 ,E 55 55.206
94	12/1	N 25 16.400 ,E 55 55.543
95	62/1	N 25 16.620 ,E 55 56.938
96	361/1	N 25 15.273 ,E 55 53.853
97	36/1	N 25 16.103 ,E 55 57.141
98	131/1	N 25 16.125 ,E 55 57.321
99	4/1	N 25 16.285 ,E 55 56.950
100	11/1	N 25 16.178 ,E 55 57.918
101	109/1	N 25 15.856 ,E 55 58.103
102	122/1	N 25 16.706 ,E 55 56.278
103	150/1	N 25 16.663 ,E 55 56.286
104	61/1	N 25 17.135 ,E 55 54.116
105	84/1	N 25 16.588 ,E 55 57.211
106	85/1	N 25 16.513 ,E 55 57.476
107	2/1	N 25 16.575 ,E 55 57.165
108	218/1	N 25 16.711 ,E 55 56.770
109	216/1	N 25 16.648 ,E 55 56.635
110	212/1	N 25 16.576 ,E 55 57.568
111	725/1	N 25 16.138 ,E 55 57.885
112	74/1	N 25 15.363 ,E 55 57.950
113	220/1	N 25 16.110 ,E 55 57.491
114	866/1	?
115	428/1	?

No.	Ref.No.	Grid Reference
	FALAJAL MUALLA	
116	9/2	N 25 19.375 ,E 55 51.933
117	147/1	N 25 20.733 ,E 55 50.846
118	289/1	N 25 20.111 ,E 55 51.668
119	286/1	N 25 20.348 ,E 55 49.786
120	167/1	N 25 19.576 ,E 55 51.375
121	99/1	N 25 19.938 ,E 55 51.620
122	99/2	Now combined with 99/1
123	34/1	N 25 20.658 ,E 55 50.925
124	7/2	N 25 21.961 ,E 55 52.440
125	39/1	N 25 22.286 ,E 55 52.678
126	80/1	N 25 20.020 ,E 55 51.973
127	11/1	N 25 21.658 ,E 55 52.613
128	25/1	N 25 21.636 ,E 55 52.803
129	194/1	N 25 21.810 ,E 55 52.483
130	6/1	N 25 21.423 ,E 55 52.565
131	187/1	N 25 21.476 ,E 55 52.151
132	5/1	N 25 20.138 ,E 55 51.531
133	23/1	N 25 20.338 ,E 55 51.251
134	113/1	N 25 26.085 ,E 55 42.336
135	134/1	N 25 20.891 ,E 55 51.485
136	109/1	N 25 20.096 ,E 55 51.860
137	120/1	N 25 22.741 ,E 55 51.171
138	2/1	N 25 22.280 ,E 55 52.930
139	178/1	?
140	94/4	?
	MELAHA	
141	499/1	N 25 7.301 ,E 55 52.523
142	711/1	N 25 0.586 ,E 55 49.466
143	301/1	N 25 59.990 ,E 55 48.148
144	498/1	N 25 5.980 ,E 55 52.208
145	554/1	N 25 8.145 ,E 55 52.975
146	572/1	N 25 10.408 ,E 55 51.195
147	48/1	N 25 0.198 ,E 55 49.103
148	562/1	N 25 9.659 ,E 55 52.266
149	415/1	N 25 1.491 ,E 55 49.173
150	307/1	N 25 0.148 ,E 55 48.320
151	510/1	N 25 7.150 ,E 55 52.191
152	535/1	N 25 7.013 ,E 55 51.751
153	567/1	N 25 9.958 ,E 55 52.113
154	302/1	N 25 0.601 ,E 55 50.261
155	418/1	N 25 0.480 ,E 55 48.110
156	582/1	N 25 10.081 ,E 55 52.065
157	427/1	N 25 0.320 ,E 55 49.585
158	496/1	N 25 6.395 ,E 55 52.555
159	3/1	N 25 59.683 ,E 55 48.408
160	512/1	N 25 7.775 ,E 55 51.476
161	11/1	N 25 58.630 ,E 55 48.288
162	691/1	N 25 8.138 ,E 55 51.943
163	516/1	N 25 6.185 ,E 55 52.158
164	399/1	N 25 1.066 ,E 55 49.753
165	571/1	N 25 10.701 ,E 55 51.028
166	584/1	N 25 7.956 ,E 55 52.856
167	379	N 25 0.970 ,E 55 49.971
168	699/1	N 25 0.298 ,E 55 48.810
169	385/1	N 25 0.756 ,E 55 48.476
170	400/1	N 25 0.855 ,E 55 49.210
171	414/1	N 25 0.496 ,E 55 48.951
172	392/1	N 25 1.123 ,E 55 49.581
173	361/1	N 25 0.725 ,E 55 48.648
174	494/1	N 25 7.066 ,E 55 52.035
175	41/2	N 25 6.930 ,E 55 51.928
176	534/1	N 25 6.761 ,E 55 52.090
177	299/1	N 25 0.415 ,E 55 49.573
178	509/1	N 25 9.831 ,E 55 52.125
179	234/1	N 25 0.545 ,E 55 53.491
180	497/1	- - - -
181	506/1	N 25 6.171 ,E 55 51.976
182	525/1	- - - -
183	533/1	N 25 8.451 ,E 55 53.145
184	580/1	N 25 8.530 ,E 55 52.721
185	161/1	N 25 1.596 ,E 55 49.313
186	403/1	N 25 1.198 ,E 55 49.416
187	607/1	N 25 7.813 ,E 55 51.960
188	22/1	N 25 0.596 ,E 55 48.873
189	503/1	N 25 7.936 ,E 55 52.553
190	686/1	N 25 7.400 ,E 55 52.615
191	58/1	N 25 0.391 ,E 55 48.540
192	187/1	N 25 0.403 ,E 55 48.343
193	290/1	N 25 0.400 ,E 55 49.048
194	530/1	N 25 6.170 ,E 55 51.766
195	45/1	N 25 0.480 ,E 55 48.810
196	288/1	N 25 0.238 ,E 55 48.916
197	514/1	N 25 7.666 ,E 55 51.561
198	366/1	?
199	341/1	?
200	353/1	?

Table 3.3.2. Summary of Farm Conditions of Farm Inventory Survey

Source Of Data	Crop	Cultivated Area		Net Income		Water Consumption		N.I/W.C.
		(ha)	(%)	(1,000 Dh.)	(%)	(m^3)	(%)	(Dhs/m^3)
JICA Inventory Survey (196 Farms)	Vegetables	53.3	10.3	604	8.8	137,607	2.1	4.4
	Tree Crops	311.3	60.0	32	0.5	4,021,389	61.6	0.0
	Field Crops	154.1	29.7	6,208	90.7	2,370,376	36.3	2.6
	Total	518.6	100.0	6,844	100.0	6,529,372	100.0	1.0
Statistic Data* (2,018 Farms)	Vegetables	1,157.8	25.3	22,622	10.5	3,095,715	7.2	7.3
	Tree Crops	1,825.3	39.8	24,830	11.5	23,622,695	55.0	1.1
	Field Crops	1,601.1	34.9	168,554	78.0	16,221,601	37.8	10.4
	Total	4,584.2	100.0	216,006	100.0	42,940,011	100.0	5.0

Note : * MAF Statistic Section 1994

Table 3.3.3. Cultivation Area, Number of Farms Cultivated and Consumption of Products by Crops in the Study Area (By Farm Inventory Survey)

Crop	Area Cultivated		No. of Farms Cultivated		Consumption of Products				
					Number of Farms(%)			Amount of Consumption (%)	
	(ha)	(%)	No.	%*	Home Use	H.Use+Sale	Sale	Home Use	Sale
[Vegetable]									
Squash	15.07	2.9	17	8.5	12.5	50	37.5	9.2	90.8
Tomato	11.86	2.3	15	7.5	26.7	46.7	26.7	12.4	87.6
Egg Plant	7.62	1.5	19	9.5	31.3	37.5	31.3	14	86
Sweet melon	3.17	0.6	7	3.5	25	50	25	15.9	84.1
Cauliflower	3.05	0.6	8	4.0	40	20	40	21.8	78.2
Beans	2.07	0.4	6	3.0	40	0	60	7.3	92.7
Green beans	1.60	0.3	4	2.0	0	25	75	0.1	99.9
Cucumber	1.28	0.2	5	2.5	0	75	25	0.9	99.1
Cabbage	1.05	0.2	7	3.5	60	0	40	25.2	74.8
Okra	1.00	0.2	5	2.5	33.3	33.3	33.3	34.4	65.6
Onion	1.00	0.2	5	2.5	66.7	0	33.3	46.2	53.8
Potato	0.85	0.2	2	1.0	0	0	100	0	100
Bottle gourd	0.80	0.2	3	1.5	0	0	100	0	100
Radish	0.73	0.1	3	1.5	50	0	50	14.6	85.4
Courgette	0.70	0.1	2	1.0	50	50	0	50	50
Pumpkin	0.50	0.1	1	0.5	0	100	0	6.3	93.8
Pepper chili	0.50	0.1	3	1.5	0	0	100	0	100
Water melon	0.43	0.1	3	1.5	33.3	33.3	33.3	8.6	91.4
Parsley	0.30	0.1	5	2.5	66.7	0	33.3	60.6	39.4
Carrot	0.20	0.0	2	1.0	0	0	100	0	100
Jews mallow	0.05	0.0	1	0.5	100	0	0	100	0
Total/Average	53.83	10.4	123	61.5	30.26	24.80	44.94	20.36	79.65
[Fruit Tree]									
Dates	190.95	36.8	146	73.0	93.6	4.6	1.8	98.4	1.6
Lemon	43.00	8.3	82	41.0	95.7	0.0	4.3	96.6	3.4
Mango	28.92	5.6	74	37.0	100.0	0.0	0.0	100.0	0.0
Orange	14.84	2.9	35	17.5	100.0	0.0	0.0	100.0	0.0
Lime	11.15	2.1	34	17.0	100.0	0.0	0.0	100.0	0.0
Guava	8.07	1.6	52	26.0	100.0	0.0	0.0	100.0	0.0
Citrus	5.52	1.1	14	7.0	90.9	0.0	9.1	89.0	11.0
Chico	4.62	0.9	30	15.0	100.0	0.0	0.0	100.0	0.0
Fig	2.36	0.5	22	11.0	100.0	0.0	0.0	100.0	0.0
Pomegranate	1.22	0.2	7	3.5	100.0	0.0	0.0	100.0	0.0
Grape fruit	0.36	0.1	4	2.0	100.0	0.0	0.0	100.0	0.0
Grapes	0.25	0.0	3	1.5	100.0	0.0	0.0	100.0	0.0
Total/Average	311.25	60.0	503	251.5	98.35	0.38	1.27	98.67	1.33
[Pasture Crop]									
Alfalfa	85.18	16.4	76	38.0	60.3	22.2	17.5	62.4	37.6
Rhodes grass	48.50	9.3	50	25.0	92.0	6.0	2.0	78.2	21.8
Methapleon	20.37	3.9	89	44.5	94.4	4.2	1.4	94.8	5.2
Total/Average	154.05	29.7	215	107.5	82.23	10.80	6.97	78.47	21.53
Total/Average	519.12	100.0	841	420.5	57.29	15.49	27.22	51.30	48.70

* Share in 200 farms

Table 3.3.4. Crop Production Costs in the Study Area, 1994 (by Farm Inventory Survey

Crop	Sample Number	Production Cost (Dhs/ha)											
		Seeds	Murakkab	Urea	Manure	Herbicide	Pesticide	Electricity	Machinery	Family Labour	Employees	TOTAL	%
[Vegetable]													
Squash	14	1,757	1,248	1,411	4,470	0	4,552	2,069	101	0	13,750	29,359	136.6
Tomato	14	3,240	1,103	519	4,298	0	1,954	2,409	0	0	9,496	23,020	107.1
Egg Plant	15	1,110	1,361	911	6,689	0	13,700	2,274	95	0	17,287	43,427	202.1
Sweet Melon	2	18,261	20,208	9,891	28,216	0	12,581	7,946	0	0	23,324	120,425	560.3
Cauliflower	5	940	1,574	717	1,982	0	575	2,570	0	0	10,973	19,331	89.9
Beans	5	2,202	1,491	1,627	2,948	0	4,322	2,045	0	0	5,724	20,414	95.0
Green Beans	4	2,209	625	470	3,964	0	1,449	958	0	0	12,174	22,490	104.6
Cucumber	3	11,098	648	375	2,841	0	2,095	684	0	0	4,645	22,385	104.2
Cabbage	5	1,122	1,547	692	1,752	0	546	2,753	0	0	9,461	17,873	83.2
Okra	3	909	2,155	906	2,173	0	313	1,794	0	0	9,926	18,175	84.6
Onion	5	270	206	143	954	0	372	2,942	0	0	9,262	14,150	65.8
Potato	2	200	346	2,456	3,128	0	8,885	1,203	0	0	3,640	20,060	93.3
Bottle Gourd	3	1,105	251	1,796	3,582	0	6,915	1,486	0	0	3,385	18,519	86.2
Radish	2	1,363	3,233	1,358	3,259	0	469	1,939	0	0	9,728	21,349	99.3
Courgette	2	3,794	3,870	1,589	4,958	0	2,492	4,532	0	0	11,649	32,884	153.0
Pepper Chili	1	401	419	217	3,029	0	241	529	0	0	3,753	8,589	40.0
Water Melon	3	4,419	1,086	3,513	322	0	2,993	2,361	0	0	8,782	23,475	109.2
Parsley	3	1,469	2,374	987	2,341	0	369	2,099	0	0	7,406	17,045	79.3
Carrot	1	401	419	217	3,029	0	241	529	0	0	3,753	8,589	40.0
Jews mallow	1	4,000	650	215	1,200	0	10,000	3,614	0	0	14,458	34,137	158.8
Average		3,014	2,241	1,501	4,257	0	3,753	2,337	10	0	9,629	26,785	124.6
%		11.3	8.4	5.6	15.9	0.0	14.0	8.7	0.0	0.0	35.9	100.0	-
[Fruit Tree]													
Mango	34	0	642	231	1,559	0	1,170	3,087	0	0	5,065	11,754	54.7
Dates	93	0	77	149	468	1,104	198	1,599	1,310	0	7,139	12,046	56.0
Guava	19	0	1,404	532	1,632	0	1,367	2,957	0	0	7,451	15,343	71.4
Chico	30	0	395	119	1,071	0	808	3,137	0	0	7,519	13,048	60.7
Lemon	43	0	581	231	1,678	0	684	3,075	0	0	4,895	11,144	51.9
Fig	11	0	2,544	1,032	1,824	0	1,325	3,227	0	0	8,876	18,828	87.6
Orange	12	0	885	298	2,393	0	1,681	3,375	0	0	6,528	15,160	70.5
Pomegranate	6	0	450	177	2,365	0	174	3,013	0	0	4,022	10,201	47.5
Lime	21	0	294	115	2,079	0	627	2,518	0	0	5,651	11,284	52.5
Citrus	6	0	132	59	958	0	327	2,067	0	0	4,967	8,510	39.6
Grapefruit	1	0	2,091	856	1,321	0	434	3,332	0	0	6,006	14,040	65.3
Average		0	863	345	1,577	100	800	2,853	119	0	6,193	12,851	59.8
%		0	6.7	2.7	12.3	0.8	6.2	22.2	0.9	0.0	48.2	100.0	-
[Pasture Crop]													
Alfalfa	66	1,380	332	38	3,148	4	2,961	2,086	0	0	9,310	19,259	89.6
Rhodes grass	35	834	1,954	2,502	1,434	0	47	2,730	0	4,569	38	17,768	82.7
Methapteon	66	364	1,224	1,504	2,587	0	259	1,894	0	0	8,745	16,642	77.4
Average		859	1,170	1,348	2,390	1	1,089	2,237	0	1,523	6,031	17,890	83.2
%		4.8	6.5	7.5	13.4	0.0	6.1	12.5	0.0	8.5	33.7	100.0	-
Whole Average		1,848	1,701	1,113	3,225	33	2,563	2,495	44	134	8,200	21,492	100.0
%		8.6	7.9	5.2	15.0	0.2	11.9	11.6	0.2	0.6	38.2	100.0	

* Adopted number of samples in the parenthesis.

Table 3.3.5. Labour Requirement for Production by Crop in the Study Area, 1994 (by Farm Inventory Survey)

Crop	Sample Number	Labor Requirement(Hours/ha)								
		Land Prep.	Weeding	Pest Control	Fertilizer Applied.	Watering	Harvesting	Post-Harvesting	TOTAL	%
[Vegetable]										
Squash	13	551.0	308.0	128.0	93.0	605.8	546.2	219.2	2,451.2	45.8
Tomato	13	459.7	848.0	93.4	93.4	678.9	707.4	284.9	3,165.7	59.1
Egg Plant	14	686.0	322.0	100.0	33.0	442.0	155.0	43.0	1,781.0	33.2
Sweet melon	4	1,147.6	237.5	267.4	223.7	3,488.2	345.5	181.8	5,891.7	110.0
Cauliflower	4	324.4	649.7	65.0	52.7	739.0	130.3	147.0	2,008.1	37.5
Beans	5	447.5	195.7	77.4	4.2	178.5	85.6	17.4	1,006.3	18.8
Green beans	4	862.3	402.6	121.8	95.1	725.4	288.4	213.8	2,709.4	50.6
Cucumber	3	788.0	0.0	432.1	0.0	287.0	1,356.1	81.6	2,944.8	55.0
Cabbage	5	257.7	584.6	57.2	46.5	671.2	114.8	128.8	1,860.8	34.7
Okra	2	125.0	472.0	22.0	9.0	438.0	57.0	22.0	1,145.0	21.4
Onion	3	322.9	640.5	77.1	80.9	1,006.5	118.5	213.8	2,460.2	45.9
Potato	2	773.6	181.4	118.8	4.5	55.2	51.0	20.4	1,204.9	22.5
Bottle gourd	3	719.1	191.7	125.4	4.8	58.3	97.5	26.3	1,223.1	22.8
Radish	2	224.0	733.8	62.2	17.8	283.6	192.9	76.9	1,591.2	29.7
Courgette	2	114.0	454.1	5.1	5.7	690.6	6.1	1,276.6	2,552.2	47.6
Chili	1	239.0	770.0	69.5	19.0	234.0	216.5	86.5	1,634.5	30.5
Water melon	2	129.8	39.1	182.6	182.6	3,008.0	183.8	182.1	3,908.0	73.0
Parsley	3	192.0	448.8	30.4	10.4	308.0	90.4	35.2	1,115.2	20.8
Carrot	1	239.0	770.0	69.0	19.0	234.0	217.0	87.0	1,635.0	30.5
Jews mallow	1	6,000.0	4,800.0	160.0	270.0	7,300.0	100.0	8.0	18,638.0	347.9
Average		725.1	652.5	113.2	63.3	1,071.6	253.0	167.6	3,046.3	56.9
%		22.4	20.1	3.5	2.0	33.1	7.8	5.2	94.0	
[Fruit Tree]										
Dates	93	71.8	208.9	204.5	23.8	213.3	443.9	179.2	1,345.3	25.1
Citrus	14	68.6	41.3	28.5	51.9	187.8	52.6	37.7	468.4	8.7
Grape fruit	4	3.8	17.5	0.9	1.5	26.7	4.1	1.4	55.9	1.0
Lemon	82(67*)	63.9	77.7	14.8	17.0	157.5	149.8	48.2*	528.9	9.9
Lime	34	27.9	25.7	9.2	7.6	54.2	23.2	23.3	171.1	3.2
Orange	35	45.0	55.8	17.1	8.8	92.1	79.8	10.8	309.4	5.8
Chico	31(30*)	38.3	23.1	6.4	6.8	70.6	37.5*	6.3	189.0	3.5
Fig	22	12.7	16.5	4.5	6.8	37.2	15.3	4.6	97.6	1.8
Grape	3	0.1	1.8	0.0	0.0	2.7	0.1	0.1	4.8	0.1
Guava	52	13.1	16.8	3.8	3.9	39.8	19.6	11.1	108.0	2.0
Mango	74(73*)	45.9	64.1	12.8	11.5	99.5	80.4*	12.3	326.4	6.1
Pomegranate	2	101.0	12.5	4.2	89.6	199.8	55.3	19.0	481.4	9.0
Average		41.0	46.8	25.6	19.1	98.4	80.1	29.5	340.5	6.4
%		12.0	13.7	7.5	5.6	28.9	23.5	8.7	100.0	
[Pasture Crop]										
Alfalfa	66	131.8	226.0	57.3	66.4	668.2	923.3	85.4	2,158.4	40.3
Methapleon	66	147.1	211.3	20.6	117.5	941.1	1,180.7	219.7	2,838.0	53.0
Rhodes grass	35	94.8	6.5	3.7	14.8	371.8	401.9	19.4	912.8	17.0
Average		124.6	147.9	27.2	66.2	660.4	835.3	108.2	1,969.7	36.8
%		6.3	7.5	1.4	3.4	33.5	42.4	5.5	100.0	
Whole Average		890.7	847.2	166.0	148.6	1,830.4	1,168.4	305.3	5,356.6	100.0
%		16.6	15.8	3.1	2.8	34.2	21.8	5.7	100.0	

* Adopted number of samples in the parenthesis.

Table 3.3.6. Production and Incomes by Crop in the Study Area, 1994
(by Farm Inventory Survey)

Crop	Area Cultivated (ha)	Yield (kg/ha)	Production (ton)	Unit Price (Dhs/kg)	Gross Income (Dhs)	Production Cost (Dhs)	Net Income (Dhs)
[Vegetable]							
Tomato	11.86	48,908	580.0	1.51	875,874	276,480	599,393
Cucumber	1.28	91,981	117.7	0.99	116,558	28,653	87,906
Cauliflower	3.05	20,222	61.7	1.90	117,186	58,960	58,227
Okra	1.00	12,667	12.7	6.02	76,255	18,175	58,080
Squash	15.07	46,496	700.7	0.64	448,445	399,099	49,346
Onion	1.00	32,500	32.5	1.14*	37,050	13,790	23,260
Chili	0.50	15,000	7.5	2.27*	17,025	4,295	12,731
Jews mallow	0.05	86,400	4.3	2.50	10,800	1,707	9,093
Carrot	0.20	24,000	4.8	2.06	9,888	1,718	8,170
Radish	0.73	26,000	19.0	1.15*	21,827	15,585	6,242
Potato	0.85	20,093	17.1	1.33	22,715	17,051	5,664
Bottle gourd	0.80	25,573	20.5	1.00	20,458	14,815	5,643
Parsley	0.30	15,667	4.7	2.09	9,823	5,114	4,710
Green beans	1.60	10,488	16.8	1.84	30,877	35,984	-5,107
Courgette	0.70	25,500	17.9	1.00	17,850	23,019	-5,169
Water melon	0.43	13,913	6.0	0.80	4,786	10,094	-5,308
Pumpkin	0.50	1,600	0.8	1.00	800	8,308	-7,508
Cabbage	1.05	25,666	26.9	0.30	8,085	18,767	-10,682
Beans	2.07	14,237	29.5	1.08	31,829	42,811	-10,982
Sweet melon	3.17	14,891	47.2	0.88	41,540	120,368	-78,828
Egg Plant	7.62	24,433	186.2	0.89	165,701	301,113	-135,412
Total	53.83	-	1,914	-	2,085,372	1,415,904	669,468
[Fruit Tree]							
Dates	190.95	6,231	1,189.9	3.30	3,928,810	2,573,515	1,355,295
Mango	28.92	4,614	133.4	7.50	1,000,713	417,417	583,296
Lime	11.15	7,150	79.7	5.76*	458,996	106,591	352,405
Guava	8.07	4,830	39.0	4.00	155,874	123,818	155,874
Citrus	5.52	12,848	71.0	2.02*	143,336	71,893	71,443
Fig	2.36	4,260	10.0	5*	50,235	29,753	20,482
Lemon	43.00	6,356	273.3	2.42*	661,405	643,727	17,678
Grapes	0.25	1,250	0.3	4.29*	1,330	399	931
Grape Fruit	0.36	2,563	0.9	2.50*	2,281	7,570	-5,290
Pomegranate	1.22	1,371	1.7	4.27*	7,125	14,387	-7,261
Chico	4.62	2,055	9.5	4.00	37,993	73,139	-35,146
Orange	14.84	3,081	45.7	1.76*	80,467	264,793	-184,327
Total	311.25	-	1,854	-	6,528,564	4,327,002	2,325,381
[Pasture]							
Alfalfa	85.18	91,551	7,797.8	1.06	8,271,570	2,438,925	5,832,645
Rhodes Grass	48.50	100,915	4,894.4	0.42	2,078,021	1,215,927	862,094
Methapleon	20.37	154,028	3,137.5	0.48	1,508,842	710,167	798,675
Total	154.05	-	15,830	-	11,858,433	4,365,019	7,493,414
Whole Total	519.12	-	19,599	-	20,472,370	10,107,925	10,488,263

*: Average wholesale price in Dubai during the harvesting months of the crops in 1994

Table 3.3.7. Jews Mallow Cultivation in Greenhouse, Dhaid

1)Crop Cultivated		Moloheya	
2).Area Cultivated		216 m2	6m x 36m
3)Sowing		Direct sowing	
4)Sowing Time		Oct-May	Once every 45 days(5croppings season)
7)Harvesting Period		45 days after sowing	
8)Yield		9,259 kg ha Cropping	200 kg House
9)Sale Unit price		5.0 Dhs kg	3-7 Dhs kg Season
10)Gross Income		46,296 Dhs ha Cropping	46,296kg ha x 5 Dhs kg
11)Shipping Way: Packing by:		2-3kg Bundle	
Sale to:		Wholesale market	
Transport by:		Rent pick up with driver	100 Dhs House Cropping
12)Production Cost(Dhs ha Cropping)		33,091	
(1)Materials Cost	Construction pipes	2,037	2,200 Dhs House 10 years x 5 croppings Year
	Plastic	2,778	600 Dhs House 2 Years x 5 croppings Year
	Iri Pipe	741	200 Dhs House 2.5 years x 5 croppings Year
(2)Seed Cost		694	15 Dhs(750g) House
(3)Fertilizers	Urea	694	15 Dhs(25kg) House
	Phpsphorus	0	
	Compound	1,852	40 Dhs(25kg) House
(4)Manure		9,259	200 Dhs(200kg) House
(5)Pesticide		2,083	45 Dhs House
(6)Herbicide		0	
(7)Water Cost		302	Electricity Cost: 0.16 Dhs m3 water
		150	Maintenance Cost: 50% of electricity cost
* Water requirement		1,890 m3 ha Cropping	Once a week flooding at 3 cm in depth x 7 times
			Irrigation area: 90 % of total area
(8)Transportation with Driver		4,630	100 Dhs Time House
(9)Labour Cost		3,241	70 Dhs House Cropping
(10)Market Charge		4,630	10% of the amount sold
13)Net Income(Dhs ha Cropping)		13,205 Dh ha Cropping*	

* Net income per season: 66,025 Dhs ha(13,205 Dhs x 5 times)

Table 3.3.8. Cucumber Cultivation in Greenhouse, Dhaid

1)Crop Cultivated		Cucumber	
2)Area Cultivated(m2/House)		216 m2	6m x 36 m
3)Planting Density(Plants/House)		360 plants	60 plants/low x 6 lows
4)Sowing Time(Day/month)		18-Nov	Growing period: 87days
7)Harvesting Period(From 1,2,3/mon to1,2,3/mon)		1/Jan-12/Feb	
8)Yield		69,444 kg/ha	5kg/Box x 300 boxes/House
9)Sale Unit price		3.0 Dhs/kg	12-18 Dhs/5kg during the season
10)Gross Income(Dhs/ha)		208,332	3 Dhs/kg x 1,500 kg/House
11)Shipping Way: Packing by:		Carton box	Cost of carton box: 0.6 Dhs/Box
Sale to:		Wholesale market	
Transport by:		Own pick up	
12)Production Cost(Dhs/ha)		114,807	
(1)Materials Cost :	Frame pipe etc.	10,185	2,200 Dhs/House/10 Croppings
	Plastic film	13,889	600 Dhs/House/2 Croppings
	Irri.Pipe	3,704	200 House/2.5 Croppings
(2)Seed Cost(Dhs/ha)		10,417	200-250 Dhs/House
(3)Fertilizers Urea(Dhs/ha)		1,389	30 Dhs(50kg)/House
Phpsphorus(kg/ha)		926	20 Dhs(25 kg)/House
Compound(kg/ha)		6,944	150 Dhs(100kg)/House
(4)Manure(Dhs/ha)		7,407	160 Dhs(160kg)/House
(5)Pesticide(Dhs/ha)		9,259	200 Dhs/House
(6)Herbicide		0	
(7)Water Cost(Dhs/ha Season)		456	Electricity Cost: 0.16 Dhs/m3 of water Maintenance Cost: 50% of electricity cost
* Water requirement	1st one month	333 m3/ha	10 min/day/plant x 30days, 4 L/Hour
(m3/ha/cropping)	2nd one month	667 m3/ha	20 min/day/plant x 30days, 4 L/Hour
	After 2nd month	900 m3/ha	30 min/day/plant x 27days, 4L/Hour
	Total	1,900 m3/ha	For 87days
(8)Labour Cost(Dhs/ha)		21,065	13 Man day/House,35Dhs/Man Day
(9)Shipping Cost(dhs/ha)		8,333	Carton box:13,889 Boxes x 0.6 Dhs
(10)Market Charge(Dhs/ha)		20,833	10% of the amount sold
13)Net Income(Dhs/ha)		93,525	

Table 3.3.9. Sweet Melon Cultivation in Greenhouse, Dhaid

1)Crop Cultivated		Sweet Melon	
2)Area Cultivated(m2)		216 m2	6m x 36 m
3)Planting Density (Plants/House)		360 plants	60 plants/low x 6 lows
4)Sowing Time(Date/Month)		14-Nov	Growing period: 140days
7)Harvesting Period(Date/Month-Date/Month)		20/Jan-2/April	
8)Yield		50,000 pces	3 pces/plant x 16,667plants ha
9)Sale Unit price		3.5 Dhs/pce	3-4 Dhs/Pce/Season
10)Gross Income		175,000 Dhs/House	50,000 pces x 3.5 Dhs Pce
11)Shipping Way: Packing by:		Carton Bos	Cost of carton box: 0.6Dhs/Box
Sale to:		Wholesale market	
Transport by:		Own pick up	
12)Production Cost(Dhs/ha)		95,444	
(1)Materials Cost :	Frame pipe etc.	10,185	2,200 Dhs/House/10 Croppings
	Plastic film	13,889	600 Dhs/House/2 Croppings
	Irri.Pipe	3,704	200 Dhs/House/2.5 Croppings
(2)Seed Cost(Dhs/ha)		4,630	100 Dhs/House
(3)Fertilizers Urea(Dhs/ha)		1,389	30 Dhs(50 kg)/House
Phpsphorus(kg/ha)		926	20 Dhs(25 kg)/House
Compound(kg/ha)		6,944	150 Dhs(100 kg)/House
(4)Manure(Dhs/ha)		7,407	160 Dhs(160 kg)/House
(5)Pesticide(Dhs/ha)		5,787	125 Dhs/House
(6)Herbicide(Dhs/ha)		0	
(7)Water Cost(Dhs/ha)		880	Electricity Cost: 0.16 Dhs/m3 water
			Maintenance Cost: 50% of electricity cos
* Water requirement(m3/ha)	1st one month	333 m3/ha	10 min/day/plant x 30days, 4 L/Hour
	2nd one month	667 m3/ha	20 min/day/plant x 30days, 4 L/Hour
	After 2nd month	2,667 m3/ha	30 min/day/plant x 80days, 4L/Hour
	Total	3,667 m3/ha	For 140days
(8)Labour Cost(Dhs/ha)		16,203	10 Man day/House,35Dhs/Man Day
(9)Shipping Cost(dhs/ha)		6,000	Carton box: 10,000 Boxes x 0.6 Dhs
(10)Market Charge(Dhs/ha)		17,500	10% of the amount sold
13)Net Income(Dhs)		79,556	

Table 3.3.10. Cucumber Cultivation in Greenhouse, Al Ain

1)Crop Cultivated		Cucumber	
2)Area Cultivated		256 m2	8m x 32 m
3)Planting Density		24,688 plants	79 plants/low x 8 lows
4)Sowing Time		1/Sep.	Growing period: 112days
7)Harvesting Period		15/Oct-21/Dec	From 45 days after sowing for 67 days
8)Production		113,280 kg/ha	2,900 kg/House
9)Sale Unit price		2.75 Dhs/kg	
10)Gross Income(Dhs/ha)		311,520	
11)Shipping Way: Packing by:		Carton box	9kg/Box
Sale to:		Government	
Transport by:		Own pick up	
12)Production Cost(Dhs/ha)		136,367	
(1)Materials Cost :	Frame pipe etc.	10,185	2,200Dhs/House/10 years(Durable year)
	Plastic film	13,889	600/House/2 years
	Irri.Pipe	3,704	200/House/2.5 years
(2)Seed Cost		10,417	200-250 Dhs/House
(3)Fertilizers	Urea	1,389	30Dhs(50kg)/House
	Phpsphorus	926	20Dhs(25 kg)/House
	Compound	6,944	150Dhs(100kg)/House
(4)Manure		7,407	160Dhs(160kg)/House
(5)Pesticide		9,259	200 Dhs/House
(6)Herbicide		0	
(7)Water Cost		1,150	Electricity Cost: 0.16 Dhs/m3 of water Maintenance Cost: 50% of electricity cost
* Water requirement	1st 45 days	1,481 m3/ha	10min x 2 times/day/plant x 45days, 4 L/Hour
(m3/ha cropping)	After 45 days	3,308 m3/ha	15 min x 2 times/day/plant x 67days, 4 L/Hour
	Total	4,789 m3/ha	For 112days
(8)Labour Cost		21,065	13 Man day/House,35Dhs/Man Day
(9)Shipping Cost		18,880	12,587 boxes x 1.5 Dhs/box
(10)Market Charge		31,152	As 10% of amount sold
13)Net Income(Dhs/ha)		175,153	

Note: Material cost, seed cost, fertilizer cost, manure cost, pesticide cost, labor cost and marketing charge were adopted those of Dhaid farmer.

Table 3.4.1. Production and Net Income per Unit Area by Crop
(by Farm Inventory Survey)

Crop	No. of Samples used	Production (kg/ha)	Unit Price (Dhs/kg)	Gross Income (Dhs/ha)	Production Cost (Dhs/ha)	Net Income (Dhs/ha)
Cucumber	4(*3)	91,981	0.99	91,061	22,385*	68,676*
Tomato	12	48,908	1.51	73,851	23,312	50,539
Carrot	1	24,000	2.06	49,440	8,589	40,851
Okra	3	12,667	4.27**	54,088	18,175	35,913
Chilli	1	15,000	2.27**	34,050	8,589	25,461
Cauliflower	6(*5)	20,222	1.90	38,422	19,331*	19,089*
Parsley	3	15,667	2.09	32,744	17,045	15,699
Radish	2	26,000	1.15**	29,900	21,349	8,551
Bottle gourd	3	25,573	1.00	25,573	18,519	7,054
Potato	2	20,093	1.33	26,724	20,060	6,664
Squash	15	46,496	0.64	29,757	26,483	3,274
Green beans	4	10,488	1.84	19,298	22,490	-3,192
Beans	5	14,237	1.08	15,376	20,682	-5,306
Courgette	2	25,500	1.00	25,500	32,884	-7,384
Cabbage	5	25,666	0.30	7,700	17,873	-10,173
Water melon	3	13,913	0.80	11,130	23,475	-12,345
Egg Plant	17	24,433	0.89	21,745	39,516	-17,771
Sweet melon	4(*1)	14,891	0.88	13,104	37,971*	-24,867*
[Fruit]						
Lime	21	7,150	5.76**	41,184	9,564	31,620
Mango	38(*34)	4,614	7.50	34,603	14,434	20,169
Citrus	9(*6)	12,848	2.02**	25,953	13,017*	12,936
Fig	11(*13)	4,260	5.00**	21,301	12,616	8,685
Dates	93	6,231	3.30	20,575	13,477	7,098
Guava	19	4,830	4.00**	19,320	14,978	4,342
Grape	1	1,250	4.29**	5,363	1,609	3,754
Lemon	43(*46)	6,356*	2.42**	15,382	14,970	411
Pomegranate	6	1,371	4.27**	5,855	11,821	-5,966
Chico	7	1,989	4.00**	7,956	15,220	-7,264
Orenge	13(*12)	3,081	1.76**	5,422	17,842*	-12,420
Grape Fruit	2	2,563	2.50**	6,406	21,265	-14,859
[Pasture]						
Alfalfa	64	91,551	1.06	97,113	28,634	68,478
Methapleon(Missiblo)	67	154,028	0.48	74,072	34,863	39,208
Rodes Grass	35	100,915	0.42	42,846	25,071	17,775

* Adopted number of samples in the parenthesis.
**: Average wholesale price in Dubai during the harvesting months of the crops in 1994

Table 3.4.2. Production and Net Income per Unit Area by Crop
(by MAF Statistic 1994)

Crops	Production (ton / ha)	Unit Price (Dhs/kg)	Gross Income (Dhs/ha)	Production Cost (Dhs/ha)	Net Income (Dhs/ha)
[Vegetables]					
Cucumber	28.62	3.35	95,873	33,500	62,373
Cowpea	22.09	2.80	61,848	28,000	33,848
Squash	28.65	1.70	48,697	17,000	31,697
Eggplant	37.97	1.10	41,770	11,000	30,770
Turnip(Laft)	30.44	1.45	44,144	14,500	29,644
Potato	23.61	2.15	50,758	21,500	29,258
Jews mallow	27.10	1.70	46,066	17,000	29,066
Tomato	27.04	1.65	44,617	16,500	28,117
Sweet melon	20.60	2.10	43,250	21,000	22,250
Carrot	25.07	1.40	35,092	14,000	21,092
Bean	15.07	3.75	56,541	37,500	19,041
Cabbage	26.40	1.10	29,035	11,000	18,035
Cauliflower	22.22	1.35	30,000	13,500	16,500
Water melon	21.20	1.40	29,677	14,000	15,677
Lettuce	18.73	1.50	28,089	15,000	13,089
Radish	19.61	0.60	11,764	6,000	5,764
Okra	10.59	3.10	32,842	31,000	1,842
Pepper	10.42	1.98	20,583	20,500	83
Onion	7.90	1.15	9,088	11,500	-2,412
Parsley	1.80	1.50	2,703	15,000	-12,297
Sweet Pepper	1.54	1.90	2,923	19,000	-16,077
[Fruit Trees]					
Pomegranate	20.91	3.80	79,469	38,000	41,469
Date Trees	19.23	3.50	67,293	35,000	32,293
Lemon	15.71	2.20	34,554	22,000	12,554
Lime	12.75	2.50	31,872	25,000	6,872
Guava	11.86	3.05	36,172	30,500	5,672
Other Citrus	11.82	2.50	29,558	25,000	4,558
Grape fruit	11.62	2.20	25,568	22,000	3,568
Fig	4.78	1.65	7,881	16,500	-8,619
Banana	3.33	2.30	7,657	23,000	-15,343
Mango	6.41	4.70	30,104	47,000	-16,896
Grapes	2.53	4.00	10,117	40,000	-29,883
Almond	2.95	0.80	2,357	8,000	-5,643
[Field Crops]					
Alfalfa	90.86	1.40	127,203	14,000	113,203
Green fodder	76.97	1.10	84,667	11,000	73,667
Tobacco	8.70	1.80	15,661	18,000	-2,339

Source; Statistics Section, MAF

Table 3.4.3. Comparison of Production and Net Income by Vegetable Crop between the Farm Inventory Survey Results and MAF Statistic 1994

Crops	Source of Data	Production (ton / ha)	FS/MAF (%)	Unit Price (Dhs/kg)	FS/MAF (%)	Gross Income (Dhs/ha)	Production Cost (Dhs/ha)	FS/MAF (%)	Net Income (Dhs/ha)	FS/MAF (%)
[Vegetables]										
Tomato	F.S	48.91	1.81	1.51	0.92	73,851	23,312	1.41	50,539	1.80
	MAF	27.04		1.65		44,617	16,500		28,117	
Cauliflower	F.S	20.22	0.91	1.90	1.41	38,422	19,331	1.43	19,091	1.16
	MAF	22.22		1.35		30,000	13,500		16,500	
Cabbage	F.S	25.67	0.97	0.30	0.27	7,700	17,873	1.62	-10,173	-0.56
	MAF	26.40		1.10		29,035	11,000		18,035	
Squash	F.S	46.50	1.62	0.64	0.38	29,757	26,483	1.56	3,274	0.10
	MAF	28.65		1.70		48,697	17,000		31,697	
Cucumber	F.S	91.98	3.21	0.99	0.30	91,061	22,385	0.67	68,676	1.10
	MAF	28.62		3.35		95,873	33,500		62,373	
Water melon	F.S	13.91	0.66	0.80	0.57	11,128	23,475	1.68	-12,347	-0.79
	MAF	21.20		1.40		29,677	14,000		15,677	
Sweet melon	F.S	14.89	0.72	0.88	0.42	13,104	37,971	1.81	-24,867	-1.12
	MAF	20.60		2.10		43,250	21,000		22,250	
Lettuce	F.S									
	MAF	18.73		1.50		28,089	15,000		13,089	
Carrot	F.S	24.00	0.96	2.06	1.47	49,440	8,589	0.61	40,851	1.94
	MAF	25.07		1.40		35,092	14,000		21,092	
Eggplant	F.S	24.43	0.64	0.89	0.81	21,745	39,516	3.59	-17,771	-0.58
	MAF	37.97		1.10		41,770	11,000		30,770	
Pepper	F.S	15.00	1.44	2.27*	1.15	34,050	8,589	0.42	25,461	0.03
	MAF	10.42		1.98		20,583	20,500		83	
Sweet Pepper	F.S									
	MAF	1.54		1.90		2,923	19,000		-16,077	
Okra	F.S	12.67	1.20	4.27*	1.38	54,088	18,175	0.59	35,913	19.50
	MAF	10.59		3.10		32,842	31,000		1,842	
Jews mallow	F.S	86.40	3.19	2.50	1.47	216,000	34,140	2.01	181,860	6.26
	MAF	27.10		1.70		46,066	17,000		29,066	
Potato	F.S	20.09	0.85	1.33	0.62	26,724	20,060	0.93	6,664	0.23
	MAF	23.61		2.15		50,758	21,500		29,258	
Turnip(Lafi)	F.S									
	MAF	30.44		1.45		44,144	14,500		29,644	
Onion	F.S	32.50	4.11	1.14	0.99	37,050	13,790	1.20	23,260	-9.64
	MAF	7.90		1.15		9,088	11,500		-2,412	
Radish	F.S	26.00	1.33	1.15*	1.92	29,900	21,349	3.56	8,551	1.48
	MAF	19.61		0.60		11,764	6,000		5,764	
Parsley	F.S	15.67	8.70	2.09	1.39	32,744	17,045	1.14	15,699	-1.28
	MAF	1.80		1.50		2,703	15,000		-12,297	
Bean	F.S	14.24	0.94	1.08	0.29	15,376	20,682	0.55	-5,306	-0.28
	MAF	15.07		3.75		56,541	37,500		19,041	
Green beans	F.S	10.49		1.84		19,298	22,490		-3,192	
Cowpea	MAF	22.09		2.80		61,848	28,000		33,848	
Bottle gourd	F.S	25.57		1.00		25,573	18,519		7,054	
Courgette	F.S	25.50		1.00		25,500	32,884		-7,384	
Average			1.96		0.93			1.46		1.14

Note: F.S: Farmers Survey. MAF: Ministry of Agriculture and Fisheries

*: Adopted average wholesale price in Dubai during the harvesting months of the crops in 1994

Table 3.4.4. Comparison of Production and Net Income by Tree crops and Field Crops between the Farm Inventory Survey Results and MAF Statistic 1994

Crops	Source of Data	Production (ton / ha)	FS/MAF (%)	Unit Price (Dhs/kg)	FS/MAF (%)	Gross Income (Dhs/ha)	Production Cost (Dhs/ha)	FS/MAF (%)	Net Income (Dhs/ha)	FS/MAF (%)
[Fruit Trees]										
Date Trees	F.S	6.23	0.32	3.30	0.94	20,575	13,477	0.39	7,098	0.22
	MAF	19.23		3.50		67,293	35,000		32,293	
Lemon	F.S	6.36	0.40	2.42*	1.10	15,381	14,970	0.68	410	0.03
	MAF	15.71		2.20		34,554	22,000		12,554	
Lime	F.S.	7.15	0.56	5.76*	2.30	41,184	9,564	0.38	31,620	4.60
	MAF	12.75		2.50		31,872	25,000		6,872	
Grape fruit	F.S	2.56	0.22	2.50*	1.14	6,406	21,265	0.97	-14,859	-4.16
	MAF	11.62		2.20		25,568	22,000		3,568	
Orenge	F.S	3.08		1.76*		5,422	17,842		-12,420	
	MAF									
Other Citrus	F.S	12.85	1.09	2.02*	0.81	25,953	13,017	0.52	12,936	2.84
	MAF	11.82		2.50		29,558	25,000		4,558	
Mango	F.S	4.61	0.72	7.50*	1.60	34,603	14,434	0.31	20,169	-1.19
	MAF	6.41		4.70		30,104	47,000		-16,896	
Guava	F.S	4.83	0.41	4.00*	1.31	19,320	14,978	0.49	4,342	0.77
	MAF	11.86		3.05		36,172	30,500		5,672	
Fig	F.S	4.26	0.89	5.00*	3.03	21,301	12,616	0.76	8,685	-1.01
	MAF	4.78		1.65		7,881	16,500		-8,619	
Grapes	F.S	1.25	0.49	4.29*	1.07	5,363	1,609	0.04	3,754	-0.13
	MAF	2.53		4.00		10,117	40,000		-29,883	
Pomegranate	F.S	1.37	0.07	4.27*	1.12	5,855	11,821	0.31	-5,966	-0.14
	MAF	20.91		3.80		79,469	38,000		41,469	
Chico	F.S	1.98		4.00		7,956	15,220		-7,264	
	MAF									
Banana	F.S									
	MAF	3.33		2.30		7,657	23,000		-15,343	
Almond	F.S									
	MAF	2.95		0.80		2,357	8,000		-5,643	
[Field Crops]										
Alfalfa	F.S	91.55	1.01	1.06	0.76	97,113	28,634	2.05	68,478	0.60
	MAF	90.86		1.40		127,203	14,000		113,203	
Methapleon (Missiblo)	F.S	154.03		0.48		74,072	34,863		39,208	
	MAF									
Rodes Grass	F.S	100.92		0.42		42,846	25,071		17,775	
	MAF									
Green fodder	F.S									
	MAF	76.97		1.10		84,667	11,000		73,667	
Tobacco	F.S									
	MAF	8.70		1.80		15,661	18,000		-2,339	
Average			0.56		1.38			0.63		0.22

Note: F.S: Farmers Survey. MAF: Ministry of Agriculture and Fisheries

*: Adopted average wholesale price in Dubai during the harvesting months in 1994

Table 3.4.5. Livestock Production Balance Sheet estimated by Farm Inventory Survey Results

Kind of Animal	No. of Head Raised	Products in 1994		Unit Price (Dh.)		Value of Products (Dh.)			Raising Cost Paid (Dh.)	Net Income (Dh.)
		Livestock Born(Head)	Milk/Egg (Lit./pcs.)	Livestock Per Head	Milk/Egg per Lit./pcs.	Livestock Born	Milk & Egg	Total		
Goat	6,675	1,447	12,059	249	3.76	360,303	45,342	405,645	624,935	-219,290
Sheep	5,720	1,094		295		322,730	0	322,730	665,413	-342,683
Camel	757	26		6,053		157,368	0	157,368	243,060	-85,692
Cattle	1,191	146		1,067		155,797	0	155,797	472,347	-316,550
Chicken	2,144	126	215,898	25	6.68	3,150	1,442,195	1,445,345	54,282	1,391,063
Horse	21	5							19,655	
Geese	76	0							7,260	
Pigeon	315	65							7,511	
Duck	24	0							1,475	
Falcons	6	0							200	
Antelopes	7	1		1,000		1,000	0	1,000	200	800
Donkey	1	0							492	
Doves	40								1,200	
Peacock	6	0							33	

Note: 1) Number of farms surveyed: 184 Farms
2) Production Cost consists of feed cost purchased, health cost and labor cost

Table 3.4.6. Monthly Average Wholesale Prices of Agricultural Products in Dubai, 1993

(Unit : Dh)

Crops	Unit	Month												Mean	C.V
		1	2	3	4	5	6	7	8	9	10	11	12		(%)
[VEGETABLES]															
Tomato(L)	kg	1.17	0.92	0.95	1.30	1.00	1.50	-	-	-	-	-	1.62	1.21	22.9
Tomato	kg	1.00	0.75	1.00	1.12	1.50	1.32	1.12	1.07	1.25	1.13	2.37	1.90	1.29	34.4
Green Onion(L)	kg	2.00	2.75	2.66	3.00	3.25	5.00	4.16	-	5.00	3.00	3.25	3.60	3.42	27.7
Green Onion	kg	-	-	-	-	4.00	5.50	4.62	3.00	5.33	3.50	-	-	4.33	23.2
Dry Garlic	kg	2.50	2.25	4.12	4.00	3.87	4.25	3.12	2.50	2.20	2.37	2.25	3.20	3.05	26.6
Red Dry Onion	kg	0.90	0.82	0.75	0.66	0.65	0.90	0.75	0.85	0.88	0.81	1.31	1.40	0.89	26.2
Marrows(L)	kg	2.00	2.00	2.00	1.75	2.25	3.00	-	-	-	2.00	2.00	1.40	2.04	20.9
Marrows	kg	-	-	1.00	1.25	2.25	3.25	2.62	1.94	2.30	2.62	2.00	1.50	2.07	33.1
Eggplant(L)	kg	1.00	1.25	1.12	1.00	1.00	1.60	1.00	1.62	1.00	1.00	1.00	1.00	1.13	20.8
Eggplant	kg	-	-	-	-	1.00	1.50	1.00	1.75	1.20	1.00	1.00	1.00	1.18	24.6
Okra(L)	kg	3.33	5.50	4.75	4.88	4.50	4.00	3.50	4.00	4.37	3.50	4.00	3.40	4.14	16.3
Okra	kg	3.66	5.00	4.83	5.00	4.50	4.00	4.00	4.00	4.80	3.56	4.00	3.10	4.20	14.7
Green Beans(L)	kg	3.33	6.00	5.00	4.75	4.25	5.00	4.25	-	-	4.00	4.50	4.00	4.51	16.2
Green beans	kg	-	-	5.00	5.00	4.50	4.75	4.00	4.25	4.60	4.00	4.00	4.50	4.46	8.7
Green peas	kg	5.33	6.66	4.33	6.00	5.00	5.00	5.00	4.50	5.00	6	4.50	4.80	5.18	13.6
Jews mallow(L)	kg	3.00	-	-	4.50	3.33	3.00	4.00	2.00	3.00	3.00	2.75	2.10	3.07	24.7
Spinach(L)	kg	2.66	2.83	2.00	3.33	2.50	3.00	4.00		3.00	3.25	2.75	2.00	2.85	20.4
Coriander(L)	kg	3.00	2.75	2.12	2.25	2.50	3.00	3.25	4.00	4.50	3.12	3.00	3.00	3.04	22.1
Coriander	kg	-	-	-	2.00	-	-	-	-	4.25	3.12	-	-	3.12	36.0
Parsley(L)	kg	2.66	2.50	2.15	2.25	2.50	2.75	3.37	3.75	4.75	3.25	3.25	3.00	3.02	24.2
Parsley	kg	-	-	-	-	-	-	-	-	5.00	3.25	-	-	4.13	30.0
Chili	kg	2.00	2.25	2.37	2.12	2.66	3.00	2.37	2.88	2.12	2.00	3.00	2.00	2.40	16.3
Sweet pepper(L)	kg	1.66	2.25	2.37	2.25	3.00	2.75	2.37	3.00	2.66	-	-	1.90	2.42	18.2
Sweet pepper	kg	1.50	-	3.00	2.00	3.00	3.00	2.50	3.00	2.00	2.50	3.00	-	2.55	21.6
Radish(L)	kg	1.85	1.75	2.00	1.62	2.00	1.75	2.00	1.50	2.00	1.75	1.37	1.25	1.74	14.9
Rocket	kg	2.00	1.75	2.00	1.62	2.00	2.00	2.00	1.88	2.50	2.00	1.50	1.00	1.85	19.7
Lettuce(L)	kg	2.33	1.75	2.50	2.12	2.00	-	-	-	-	-	-	2.00	2.12	12.6
Lettuce	kg	2.50	1.75	2.66	2.00	2.50	4.00	3.00	3.75	4.00	3.75	3.12	2.20	2.94	27.0
Purslane(L)	kg	2.55	-	1.50	2.00	1.75	2.00	1.37	1.50	2.25	2.00	1.50	2.00	1.86	19.8
Cabbage(L)	kg	1.17	-	2.12	1.00	2.00	2.00	-	-	-	-	-	2.00	1.72	28.8
Cabbage	kg	1.00	-	-	-	2.00	1.88	2.37	1.75	1.60	1.63	1.62	2.33	1.80	23.2
Cauliflower(L)	kg	3.00	3.25	2.50	2.25	4.00	-	-	-	-	-	3.00	3.00	3.00	18.6
Cauliflower	kg	2.66	2.00	2.50	2.88	4.00	4.75	4.50	3.00	3.40	2.87	3.00	3.33	3.24	25.1
Long cucumber(L)	kg	-	-	2.00	1.50	2.00	2.50	2.00	-	3.00	-	1.50	2.00	2.06	24.0
Long cucumber	kg	-	-	2.00	-	-	-	-	-	-	-	-	-	2.00	-
Short cucumber(L)	kg	2.17	2.25	2.00	1.50	2.25	2.25	2.25	3.00	3.00	2.00	2.00	2.10	2.23	18.6
Short cucumber	kg	2.00	1.83	1.62	1.25	2.25	2.00	2.25	2.37	2.12	2.00	1.50	2.50	1.97	18.7
Pumpkin(L)	kg	1.00	1.83	1.56	2.33	2.00	2.25	2.00	-	2.33	1.00	1.75	2.10	1.83	26.0
Pumpkin	kg	-	2.38	1.50	2.00	2.00	2.00	2.12	3.66	2.70	1.43	1.50	2.00	2.12	30.2
Tomatoer paste(L)	70g	0.32	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.0
Tomatoes paste	198g	0.83	0.82	0.82	0.80	0.83	0.83	0.80	0.83	0.81	0.83	0.93	0.83	0.83	4.0
Frozen peas	900g	8.00	8.00	8.00	8.00	8.00	8.75	8.00	8.00	8.50	8.50	8.50	8.50	8.23	3.5
Frozen green beans	kg	7.00	7.00	7.50	7.50	7.50	8.75	7.50	7.50	8.00	8.50	8.00	8.50	7.77	7.4
Fro.Mixed Vegetab	990g	8.00	8.00	8.00	8.00	8.00	8.75	8.00	8.00	9.00	8.75	8.50	9.00	8.33	5.2
Frozn okra	450g	4.00	2.00	4.00	4.00	4.00	4.00	4.00	3.00	4.25	4.00	3.75	4.00	3.75	16.8
Dry board beans	kg	3.00	3.00	3.00	3.00	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.33	7.4

(Unit : Dh)

Crops	Unit	Month												Mean	C.V
		1	2	3	4	5	6	7	8	9	10	11	12		(%)
Potatoes(L)	kg	1.50	-	1.50	1.25	1.25	1.50	-	-	-	-	-	-	1.40	9.8
Potatoes	kg	1.00	-	1.25	1.25	1.25	1.50	1.25	1.25	1.50	1.25	1.50	1.50	1.32	12.3
Carrot(L)	kg	-	-	2.00	-	-	-	-	-	-	-	-	-	2.00	-
Carrot	kg	2.00	-	2.00	2.50	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.05	7.4
[FRUITES]															
Abu Surrah Orange	Doz	5.33	4.00	5.00	5.50	8.00	5.88	6.62	7.25	7.00	-	6.00	5.20	5.98	19.3
Balancia Orange	Doz	5.00	4.00	4.26	5.00	5.06	5.25	5.25	6.75	5.60	5.00	5.75	4.80	5.14	13.7
Orange(Shmoti)	Doz	-	4.00	5.00	5.00	-	-	5.00	-	-	-	-	-	4.75	10.5
Small lemon(L)	Doz	2.17	2.66	2.33	-	2.62	2.50	1.12	1.12	1.90	1.50	2.25	2.00	2.02	27.5
Big lemon	kg	2.00	2.25	2.07	2.75	3.00	3.00	3.00	2.62	2.30	2.38	2.37	2.10	2.49	15.1
Grape fruit	kg	2.66	2	3	2.62	2.25	2.25	3	2.62	3	2.83	2.5	2	2.56	14.4
Bananas	Doz	4	5	5.25	5.25	4	4	3.81	3.75	4.1	4.88	4.5	4.3	4.40	12.6
Red apples	Doz	6.33	7	6.25	6.5	6.25	6.5	6.12	8	6.3	5.25	6	6.2	6.39	10.1
apples(Iran)	Doz	5	4.5	4.25	-	4	-	-	5.5	3.5	4.75	5.5	4.4	4.60	14.5
Yellow apples(Iran	Doz	4.33	4.25	4.12	-	4	-	-	5	4	4.25	5.5	6.2	4.63	16.7
Green apples	Doz	6	6.62	6.37	6.5	6.25	6.25	5.87	7.75	5.9	5.25	6	6	6.23	9.6
Yellow grapes	kg	5	-	4.75	4.25	4	6.5	5	4.5	3.4	3.75	4	4.6	4.52	18.4
Red grapes	kg	4.33	4	5.66	-	7.25	6.33	4	4.75	4.25	3.75	3.87	4.6	4.80	23.7
Water mellon(L)	4kg	-	-	-	4	4	4	4	-	-	-	-	-	4.00	0.0
Water mellon	4kg	4.66	5	5	4.5	2.62	2	2	2.25	2.8	3	3	2.8	3.30	35.0
Mellon(L)	4kg	-	-	-	-	14.3	9	8.5	-	-	-	-	12	10.94	24.6
Mellon	4kg	20	16.3	15	18	11.7	8	8.5	10	6.6	4	5	5	10.67	51.3
Dates(L)	kg	-	-	-	-	-	5.25	4.25	3	-	3.5	4	-	4.00	21.2
Pears	kg	6	4.75	7.5	6.37	8	5.75	4.5	3.25	3.5	4	4.25	3.8	5.14	30.5
Fig	kg	-	-	-	-	-	-	15	-	3.6	5.75	-	-	8.12	74.6
Peaches	kg	-	15	14.5	15	9.5	6.25	4.5	3	4.75	5.25	6	20	9.43	60.6
Apricots	kg	15	15	-	-	10	5	5.25	5.25	-	-	-	-	9.25	52.2
Cherries	kg	20	20	-	-	7.7	7.75	6.5	7	-	-	-	30	14.14	65.3
Pomegranate	kg	5	5	4.25	5	5	8	-	5	3.4	3.25	3	3.4	4.57	30.7
Mangoes	kg	-	-	-	-	8.5	6	6.75	7.5	9.4	-	-	-	7.63	17.8
Canned pine apples	453g	1.37	1.37	1.37	1.37	1.37	1.35	1.37	1.37	1.35	1.37	1.37	1.35	1.37	0.7
Dry grapes	kg	3.5	3.5	3.5	3.5	3.5	4	4	4.5	4	3.5	4	4.5	3.83	10.2
Compressed dates	kg	4	4	4	4	4	4	4	4	4	4	4	4	4.00	0.0
Pistachios unshelle	kg	17	16	16.5	17	16	16	16	15	16	14	15	14	15.71	6.4
Walouts shelled	kg	16	17	16	16	16	17	16	16	17	16	16	16	16.25	2.8
Almonds shelled	kg	17	17	17	17	17	17	17	17	18	17	17	17	17.08	1.7
Pine-nuts	kg	65	62	60	60	60	60	60	-	60	60	55	60	60.18	3.8

Source: Ministry of Planning, Central Statistical Dept.

Table 3.4.7. Indicator of Net Income per Unit Water Consumption (NI/WC) of Vegetables

Crops	Data Source	Yield (ton/ha)	Unit Price (Dhs/kg)	Gross Income (Dhs/ha)	Production Cost (Dhs/ha)	Net income (Dhs/ha)	Water Consumption (m^3/ha)	Net Income per W.C. (Dhs/m^3)	Growing Period In Main Field	
									Days	Period
Musk Melon	(E)	22.00	18.12	398,640	72,330	326,310	2,300	141.9	113	15/Oct-5/Feb
Sweet melon	S	20.6	18.00	370,714	22,722	347,992	3,100	112.3	90	16/Jan-15/Apr
Jews mallow	P	86.40	2.50	216,000	35,112	180,888	1,800	100.5	50	16/Feb-6/Apr
Musk Melon	(E)	11.65	20.00	233,000	72,060	160,940	1,800	89.4	92	15/Oct-15/Jan
Cucumber	(E)	69.40	3.33	231,102	86,259	144,843	1,900	76.2	87	18/Nov-12/Feb
Sweet melon	P	14.89	18.00	268,038	39,693	228,345	3,100	73.7	90	16/Jan-15/Apr
Cucumber	P	91.98	2.03	186,721	23,711	163,011	2,500	65.2	100	23/Sep-31/Dec
Jews mallow	S	27.1	4.50	121,941	17,942	103,999	1,700	61.2	50	16/Feb-6/Apr
Sweet Papper	(E)	153.95	2.62	403,349	50,924	352,425	7,500	47.0	207	12/Oct-11/June
Spinach	E	48.40	2.83	136,972	15,988	120,984	2,800	43.2	120	1/Nov-1/Mar
Cabbage	E	32.40	2.17	70,308	11,798	58,510	1,500	39.0	62	27/Oct-28/Dec
Cabbage	E	46.23	2.17	100,308	12,434	87,874	2,700	32.5	89	18/Sep-16/Dec
Spinach	E	45.47	2.75	125,032	16,312	108,720	3,400	32.0	136	3/Oct-16/Feb
Cauliflower	S	22.2	3.17	70,444	14,448	55,996	1,800	31.1	55	10/Oct-3/Dec
Cabbage	S	26.4	2.17	57,278	11,840	45,438	1,600	28.4	65	19/Oct-27/Dec
Sweet Melon	(E)	50.00	3.50	175,000	73,000	102,000	3,667	27.8	140	14/Nov-2/Apr
Cabbage	E	36.30	2.17	78,771	12,260	66,511	2,400	27.7	74	18/Sep-1/Dec
Cowpea	S	22.1	4.25	93,877	28,720	65,157	2,400	27.1	70	16/Sep-24/Nov
Sweet Papper	(E)	77.90	2.77	215,783	50,276	165,507	6,300	26.3	114	15/Feb-27/July
Cucumber	(E)	84.83	2.05	173,908	87,069	86,839	3,400	25.5	136	12/Sep-26/Jan
Squash	P	46.50	1.84	85,553	27,701	57,851	2,300	25.2	100	23/Sep-31/Dec
Cauliflower	P	20.22	3.14	63,497	20,279	43,218	1,800	24.0	55	10/Oct-3/Dec
Sweet Papper	(E)	105.50	2.29	241,595	51,218	190,377	8,000	23.8	232	3/Sep-1/June
Cauliflower	E	24.50	3.00	73,500	14,814	58,686	2,500	23.5	71	19/Sep-29/Nov
Cucumber	(E)	109.00	1.79	195,110	87,717	107,393	4,600	23.3	109	12/Jan-28/May
Cabbage	P	25.67	2.17	55,695	18,713	36,982	1,600	23.1	65	19/Oct-27/Dec
Cucumber	(E)	102.60	1.79	183,654	87,501	96,153	4,200	22.9	111	6/Feb-19/May
Cauliflower	E	14.60	3.17	46,282	14,256	32,026	1,400	22.9	57	29/Oct-25/Dec
Cabbage	E	52.70	1.08	56,916	12,056	44,860	2,000	22.4	84	27/Oct-19/Jan
Cucumber	(E)	104.20	1.94	202,148	88,065	114,083	5,200	21.9	119	12/Jan-11/June
Musk melon	E	15.60	8.50	132,600	23,682	108,918	5,100	21.4	106	27/Mar-11/July
Sweet Papper	(E)	90.10	2.29	206,329	50,978	155,351	7,600	20.4	217	16/Sep-5/June
Bean	S	15.1	4.67	70,394	38,388	32,006	1,600	20.0	70	1/Nov-11/Feb
Spinach	E	16.90	2.75	46,475	15,364	31,111	1,600	19.4	79	30/Nov-17/Feb
Dwarf Bean	(E)	34.20	4.73	161,766	59,779	101,987	5,300	19.2	177	16/Nov-12/May
Tomato	E	142.59	1.07	152,571	20,142	132,429	7,100	18.7	200	23/Oct-11/May
Cucumber	(E)	87.20	1.79	156,088	87,231	68,857	3,700	18.6	96	12/Jan-19/May
Bean	P	14.24	4.67	66,487	21,977	44,509	2,400	18.5	103	1/Nov-11/Feb
Musk melon	E	21.18	9.00	190,575	25,710	164,865	8,900	18.5	172	15/Feb-6/Aug
Sweet Papper	(E)	85.40	2.29	195,566	51,218	144,348	8,000	18.0	232	3/Sep-1/June
Musk melon	E	12.08	8.50	102,638	23,382	79,256	4,500	17.6	95	26/Mar-29/June
Parsley	P	15.67	3.25	50,918	18,095	32,823	1,900	17.3	70	16/Sep-24/Nov
Carrot	E	27.24	2.00	54,480	15,218	39,262	2,300	17.1	92	27/Nov-27/Feb
Turnip(Laft)	S	30.4	1.45	44,144	15,418	28,726	1,700	16.9	50	1/Sep-20/Oct
Cucumber	(E)	70.40	1.95	137,280	86,853	50,427	3,000	16.8	115	14/Sep-7/Jan
Radish	E	14.50	1.37	19,865	6,456	13,409	800	16.8	31	27/Oct-27/Nov
Tomato	E	107.37	1.15	123,471	20,184	103,287	6,200	16.7	160	2/Dec-11/May
Carrot	P	24.00	2.00	48,000	9,807	38,193	2,300	16.6	90	1/Oct-29/Dec
Cauliflower	E	22.30	3.17	70,691	15,288	55,403	3,400	16.3	99	9/Sep-17/Dec
Carrot	E	26.81	2.00	53,618	15,248	38,370	2,400	16.0	104	15/Nov-27/Feb
Cucumber	(E)	82.60	1.79	147,854	87,285	60,569	3,800	15.9	99	9/Feb-19/May
Water Melon	E	24.10	3.31	79,771	16,112	63,659	4,000	15.9	91	1/Mar-31/May
Spinach	E	29.45	2.00	58,900	15,934	42,966	2,700	15.9	111	30/Nov-21/Mar
Cauliflower	E	16.10	3.17	51,037	14,730	36,307	2,300	15.8	78	1/Oct-18/Dec
Carrot	S	25.1	2.00	50,131	15,218	34,913	2,300	15.2	90	1/Oct-29/Dec
Dwarf Bean	(E)	23.60	5.15	121,540	59,185	62,355	4,200	14.8	155	15/Nov-19/Apr
Tomato	E	104.55	1.07	111,869	19,902	91,967	6,300	14.6	197	23/Oct-8/Mar
Pepper	P	15.00	2.50	37,500	9,621	27,879	2,000	13.9	110	5/Sep-23/Dec
Cucumber	(E)	53.32	2.15	114,629	86,343	28,286	2,100	13.5	96	4/Oct-8/Jan
Tomato	E	94.10	1.07	100,687	19,680	81,007	6,200	13.1	162	30/Nov-11/May
Dwarf Bean	(E)	22.20	5.15	114,330	59,239	55,091	4,300	12.8	130	4/Jan-14/May
Lettuce	S	18.7	2.42	45,317	16,218	29,099	2,300	12.7	97	27/Oct-31/Jan
Dwarf Bean	(E)	24.00	4.75	114,000	59,401	54,599	4,600	11.9	147	16/Dec-12/May
Pepper(L.C)	E	52.60	2.29	120,454	24,760	95,694	8,200	11.7	231	20/Sep-9/May
Squash	S	28.6	1.84	52,707	18,596	34,111	3,000	11.4	110	6/Sep-24/Dec
Cucumber	S	28.6	2.00	57,238	34,604	22,634	2,000	11.3	(Oct)	60(1/Sep-30/Oct)

Crops	Data Source	Yield (ton/ha)	Unit Price (Dhs/kg)	Gross Income (Dhs/ha)	Production Cost (Dhs/ha)	Net income (Dhs/ha)	Water Consumption (m^3/ha)	Net Income per W.C. (Dhs/m^3)	Growing Period In Main Field	
									Days	Period
Tomato	E	91.27	1.07	97,659	20,142	77,517	7,100	10.9	199	23/Oct-10/May
Eggplant	S	38.0	1.00	37,972	12,248	25,724	2,400	10.7	85	30/Sep-23/Dec
Dwarf Bean	(E)	20.40	4.64	94,656	58,729	35,927	3,400	10.6	146	15/Oct-10/Mar
Radish	S	19.6	1.37	26,860	7,002	19,858	1,900	10.5	60	16/Sep-14/Nov
Tomato	(E)	96.70	1.31	126,677	51,656	75,021	7,400	10.1	129	14/Feb-27/July
Tomato	F	48.91	1.09	53,310	24,909	28,401	3,100	9.2	115	8/Oct-30/Jan
Water melon	S	21.2	3.00	63,594	17,066	46,528	5,500	8.5	150	16/Jan-14/June
Radish	E	15.24	1.25	19,050	6,834	12,216	1,500	8.1	58	4/Oct-1/Dec
Dwarf Bean	(E)	20.80	4.85	100,880	59,671	41,209	5,100	8.1	187	16/Oct-21/April
Cucumber	(E)	46.72	2.15	100,448	86,181	14,267	1,800	7.9	92	19/Oct-19/Jan
Water Melon	E	18.58	3.00	55,740	16,682	39,058	5,100	7.7	103	1/Mar-12/June
Radish	F	26.00	1.37	35,620	22,351	13,269	1,900	7.0	60	16/Sep-14/Nov
Okra	F	12.67	3.53	44,715	20,119	24,595	3,600	6.8	75	1/Aug-14/Oct
Tomato	S	27.0	1.42	38,398	18,102	20,296	3,100	6.5	115	8/Oct-30/Jan
Cabbage	E	31.60	1.08	34,128	12,920	21,208	3,600	5.9	123	18/Sep-19/Jan
Musk melon	E	5.55	10.73	59,552	24,384	35,168	6,400	5.5	119	15/Feb-14/June
Tomato	(E)	63.88	1.31	83,676	51,146	32,530	6,500	5.0	114	17/Jan-1/July
Onion	F	32.50	0.82	26,650	15,092	11,558	2,500	4.6	110	9/Nov-26/Feb
Jews Mallow	(F)	9.30	3.33	30,969	24,367	6,602	1,890	3.5	110	9/Nov-26/Feb
Okra	S	10.6	4.06	43,012	32,944	10,068	3,600	2.8	75	1/Aug-14/Oct
Cucumber	(E)	48.30	1.97	95,151	86,853	8,298	3,000	2.8	118	12/Sep-8/Jan
Water melon	F	13.91	3.00	41,739	26,541	15,198	5,500	2.8	150	16/Jan-14/June
Pepper(L.C)	E	20.47	2.29	46,876	24,760	22,116	8,200	2.7	231	20/Sep-9/May
Potato	S	23.6	1.25	29,511	22,802	6,709	2,500	2.7	100	21/Oct-28/Jan
Okra	E	15.90	3.88	61,692	36,346	25,346	9,900	2.6	172	15/Feb-6/Aug
Potato	F	20.09	1.33	26,724	21,362	5,362	2,500	2.1	100	21/Oct-28/Jan
Okra	E	11.70	4.25	49,725	34,942	14,783	7,300	2.0	123	15/Mar-16/July
Okra	E	11.50	4.25	48,875	35,482	13,393	8,300	1.6	143	23/Feb-16/July
Okra	E	11.10	4.25	47,175	35,104	12,071	7,600	1.6	136	1/Mar-16/July
Onion	E	34.43	0.65	22,376	14,350	8,026	5,500	1.5	135	3/Jan-18/May
Okra	E	12.20	3.88	47,336	35,860	11,476	9,000	1.3	144	15/Mar-6/Aug
Okra	E	11.90	3.88	46,172	35,968	10,204	9,200	1.1	158	1/Mar-6/Aug
Onion	E	25.70	0.66	16,962	13,372	3,590	3,600	1.0	106	3/Jan-19/Apr
Onion	E	24.88	0.90	22,392	15,868	6,524	8,400	0.8	178	3/Jan-30/June
Okra	E	10.35	3.88	40,158	35,482	4,676	8,300	0.6	143	23/Feb-16/July
Onion(L.C)	E	29.30	0.65	19,045	15,190	3,855	7,100	0.5	195	3/Nov-17/May
Sweet Papper	(E)	24.80	2.02	50,096	48,824	1,272	3,700	0.3	146	16/Aug-9/Feb
Green beans	F	10.49	2.33	24,437	23,786	651	2,400	0.3	103	1/Nov-11/Feb
Onion	E	18.76	0.90	16,884	15,868	1,016	8,400	0.1	177	4/Jan-30/June
Tomato(L.C)	E	19.61	1.07	20,983	20,874	109	8,500	0.0	223	13/Oct-24/May
Sweet Papper	(E)	23.70	2.02	47,874	48,824	-950	3,700	-0.3	146	16/Aug-9/Feb
Pepper	S	10.4	2.00	20,843	21,532	-689	2,000	-0.3	50	5/Sep-23/Dec
Sweet Papper	(E)	24.80	1.80	44,640	48,230	-3,590	2,600	-1.4	123	3/Sep-9/Feb
Onion	S	7.9	0.82	6,480	12,802	-6,322	2,500	-2.5	110	9/Nov-26/Feb
Radish	E	1.83	1.37	2,511	6,618	-4,107	1,100	-3.7	42	4/Oct-15/Nov
Parsley	S	1.8	3.25	5,856	16,050	-10,194	1,900	-5.4	70	16/Sep-24/Nov
Eggplant	F	24.43	1.00	24,433	40,764	-16,331	2,400	-6.8	85	30/Sep-23/Dec
Sweet Pepper	S	1.5	3.00	4,616	20,032	-15,416	2,000	-7.7	50	15/Sep-3/Nov
Cucumber	(E)	32.28	2.15	69,402	86,229	-16,827	1,800	-9.3	84	27/Oct-19/Jan

Notes :

1) Unit price was adopted the average unit price in Dubai wholesale market during the harvesting months of each vegetables in 1993

2) Production cost was estimated as the total of open field costs(statistic data) and green house material cost

3) Unit price and production cost of musk melon were adopted those of sweet melon

4) F: farm household invery survey, AF: Al Ain farm data, S: statistic data of MAF, E: experimental data of UNDP/FAO in UAE,
( ) : greenhouse cultivation

Table 3.4.8. Indicator of Net Income per Unit Water Consumption (NI/WC) of Tree Crops and Field Crops

Crops	Data Sources	Yield (ton/ha)	Unit Price (Dh./kg)	Gross Income (Dh./ha)	Production Cost (Dh./ha)	Net income (Dh./ha)	Water Consumption (m^3/ha)	Net Income per W.C. (Dhs/m^3)
[Fruit Tree]								
Improved Date Palm	(S)	19.2	7.00	134,586	42,992	91,594	14,800	6.2
Pomegranate	S	20.9	4.57	95,572	43,130	52,442	9,500	5.5
Lime	S	12.7	5.76	73,433	30,508	42,925	10,200	4.2
Lime	F	7.15	5.76	41,184	15,072	26,112	10,200	2.6
Date Palm	S	19.2	4.00	76,906	42,992	33,914	14,800	2.3
Almond	S	3.0	17.08	50,389	16,640	33,749	16,000	2.1
Fig	S	4.8	8.12	38,783	21,630	17,153	9,500	1.8
Fig	F	4.26	8.12	34,592	17,746	16,846	9,500	1.8
Mango	F	4.61	7.63	35,203	19,564	15,639	9,500	1.6
Other Citrus	F	12.85	2.26	29,036	18,525	10,511	10,200	1.0
Guava	S	11.9	3.53	41,865	35,630	6,235	9,500	0.7
Lemon	S	15.7	2.02	31,727	27,508	4,219	10,200	0.4
Date Palm	F	6.23	4.00	24,925	21,470	3,455	14,800	0.2
Grapes	F	1.25	4.29	5,363	6,685	-1,322	9,400	-0.1
Grape fruit	S	11.6	2.20	25,568	27,508	-1,940	10,200	-0.2
Guava	F	4.83	3.53	17,050	20,108	-3,058	9,500	-0.3
Mango	S	6.4	7.63	48,870	52,130	-3,260	9,500	-0.3
Other Citrus	S	11.8	2.26	26,720	30,508	-3,788	10,200	-0.4
Lemon	F	6.36	2.02	12,838	20,478	-7,640	10,200	-0.7
Orange	F	3.08	4.75	14,633	23,350	-8,717	10,200	-0.9
Banana	S	3.3	4.40	14,667	32,288	-17,621	17,200	-1.0
Pomegranate	F	1.37	4.57	6,266	16,952	-10,685	9,500	-1.1
Chico	F	1.98	4.00	7,920	20,350	-12,430	9,500	-1.3
Grape fruit	F	2.56	2.56	6,560	26,773	-20,213	10,200	-2.0
Grapes	S	2.5	4.25	10,749	45,076	-34,327	9,400	-3.7
[Field Crops]								
Alfalfa	S	90.9	1.40	127,203	18,710	108,493	15,700	6.9
Green fodder	S	77.0	1.10	84,667	15,500	69,167	15,000	4.6
Green fodder	F/S	77.0	1.10	84,667	20,190	64,477	17,300	3.7
Alfalfa	F	91.55	1.06	97,044	37,113	59,931	15,700	3.8
Methapleon (Missiblo)	F	154.03	0.48	74,072	42,964	31,108	15,000	2.1
Rhodes Grass	F	100.92	0.42	42,846	33,170	9,675	15,000	0.6
Tobacco	S	8.7	1.80	15,661	19,134	-3,473	5,000	-0.7

Notes:
1) Unit price was adopted the average unit price in Dubai wholesale market during the harvesting months of each fruits in 1993
2) Unit prices of field crops except Alfalfa are applied the data of farm household survey.
3) Unit price of Alfalfa of the statical data of MAF in 1993 is applied.
4) F: farm household inventory survey, S: statistic data of MAF

Table 3.5.1. Recommended Variety of Date Palm in UAE

Name Of Variety	Planting Density (Plant/ha)	Yield (ton/ha)	Quarity	Middle Ripening Stage
Khlas	156	9.4-12.5	Best	5/Aug
Barhi	124	14.8-22.2	Best	15/Sep
She Shi	156	9.4-12.5	Best	30/Jul
Lulu	156	15.6-18.8	Medium	15 /Sep
Khina Zei	156	12.5-15.6	Medium	30/Jul
Khosab	156	18.8-21.9	Medium	15/Oct
Naghal	156	9.4-12.5	Medium	15/Jun
Hilali	156	9.4-12.5	Best	1/Nov
Nabtat	156	7.8-10.9	Best	1/Aug
Jabri	156	9.4-12.5	Medium	15/Sep
Maktoumi	156	10.9-14.1	Medium	15/Aug
Fardh	156	12.5-15.6	Medium	15/Sep
Male	156	-	-	-

Source: Dr. Hassan, MAF

Table 3.5.2. Crop Cultivation Plan of Option-1

Crop	Type Of Culti-vation	Area to be Cultivated (ha)	Unit Yield (ton/ha)	Production (ton)	Unit Price (Dhs/kg)	Gross Income (1000Dhs)	Production Cost (1000Dhs/ha)	Production Cost (1000Dhs)	Net Income (1000Dhs)	Unit Water Consump-tion(m^3/ha)	Water Consump-tion(m^3)	Gross Irrigation Amount(m^3)	Net Income Per W.C. (Dhs/m^3)	Net Income Per I.W.* (Dhs/m^3)	Growing Period In Main Field	
															Days	Period
[Vegetables]																
Bean	D	53	14.2	750	4.67	3,503	22.0	1,158	2,345	2,400	157,046	73,904	14.9	31.7	103	1/Nov-11/Feb
Cabbage	42	15	32.4	500	2.17	1,085	11.8	182	903	1,500	28,644	13,480	31.5	67.0	62	27/Oct-28/Dec
Cabbage	31	18	46.2	850	2.17	1,845	12.4	229	1,616	2,700	54,096	25,457	29.9	63.5	89	18/Sep-16/Dec
Cauliflower	40	23	22.2	500	3.17	1,585	14.4	325	1,260	1,800	45,675	21,494	27.6	58.6	55	10/Oct-3/Dec
Cucumber	(27)	33	109.0	3,600	1.79	6,444	87.7	2,897	3,547	4,600	187,110	88,052	19.0	40.3	110	8/Feb-28/May
Cucumber	(35)	32	69.4	2,250	3.33	7,493	86.2	2,793	4,699	1,900	71,928	33,848	65.3	138.8	87	18/Nov-12/Feb
Dwarf Bean	(D)	171	34.2	5,850	4.73	27,671	59.8	10,225	17,445	5,300	1,177,168	553,961	14.8	31.5	177	16/Nov-12/May
Eggplant	45	53	38.0	2,000	1.00	2,000	12.2	645	1,355	2,400	155,992	73,408	8.7	18.5	85	30/Sep-23/Dec
Green beans	D	57	22.1	1,250	4.25	5,313	29.3	1,657	3,656	2,400	167,536	78,840	21.8	46.4	70	16/Sep-24/Nov
Lettuce	25	53	18.7	1,000	2.42	2,420	16.2	866	1,554	2,300	139,374	65,588	11.1	23.7	97	27/Oct-31/Jan
Musk Melon	(D)	48	22.0	1,050	18.12	19,026	72.3	3,452	15,574	2,300	145,962	68,688	106.7	226.7	113	15/Oct-5/Feb
Musk melon	D	260	21.2	5,500	9.00	49,500	25.7	6,678	42,822	8,900	2,841,118	1,336,997	15.1	32.0	172	15/Feb-6/Aug
Parsley	45	96	15.7	1,500	3.25	4,875	18.1	1,732	3,143	1,900	232,551	109,436	13.5	28.7	70	16/Sep-24/Nov
Pepper	35	200	15.0	3,000	2.50	7,500	9.6	1,924	5,576	2,000	874,000	411,294	6.4	13.6	110	5/Sep-23/Dec
Pepper(L.C)	35	173	52.6	9,100	2.29	20,839	24.8	4,284	16,555	8,200	1,773,250	834,471	9.3	19.8	231	20/Sep-9/May
Radish	D	3	14.5	50	1.37	69	6.5	22	46	800	3,536	1,664	13.1	27.8	31	27/Oct-27/Nov
Spinach	D	76	48.4	3,700	2.83	10,471	16.0	1,222	9,249	2,800	271,974	127,988	34.0	72.3	120	1/Nov-1/Mar
Squash	D	32	46.5	1,500	1.84	2,760	27.7	894	1,866	2,300	95,608	44,992	19.5	41.5	100	23/Sep-31/Dec
Squash	D	32	46.5	1,500	1.84	2,760	27.7	894	1,866	2,300	195,738	92,112	9.5	20.3	100	1/May-8/Aug
Sweet melon	D	49	20.6	1,000	18.00	18,000	22.7	1,103	16,897	3,100	167,670	78,904	100.8	214.1	90	16/Jan-15/Apr
Sweet Papper	(35)	45	154.0	6,950	2.62	18,209	50.9	2,299	15,910	7,500	421,234	198,228	37.8	80.3	207	16/Nov-11/Jun
Sweet Papper	(48)	49	77.9	3,850	2.77	10,665	50.3	2,485	8,180	6,300	392,236	184,582	20.9	44.3	114	4/Apr-27/Jul
Tomato	31	33	142.6	4,750	1.07	5,083	20.1	671	4,412	7,100	295,038	138,841	15.0	31.8	200	23/Oct-11/May
Tomato	(34)	41	96.7	4,000	1.31	5,240	51.7	2,137	3,103	7,400	409,860	192,875	7.6	16.1	130	20/Mar-27/Jul
Turnip(Laft)	D	33	30.4	1,000	1.45	1,450	15.4	506	944	1,700	69,864	32,877	13.5	28.7	50	1/Sep-20/Oct
Water Melon	D	33	24.1	800	3.31	2,648	16.1	535	2,113	4,000	166,332	78,274	12.7	27.0	91	1/Mar-31/May
Sub-total	-	1,713		67,800	139.23	238,450			186,635	6,155	10,540,540	4,960,254	17.7		-	-
[Fruit Trees]																
Date Trees	-	363	19.2	6,985	7.00	48,897	43.0	15,620	33,277	14,800	6,688,592	2,675,437	5.0	12.4	-	-
[Field Crops]																
Alfalfa	-	486	90.9	44,194	1.40	61,872	18.7	9,101	52,771	15,700	9,562,624	11,475,149	5.5	4.6		-
Total	-	2,562		118,979	3.08	349,218		68,666	272,683	10,456	26,791,756	19,110,840	10.2		-	-

Note: 1) ( ) : Green house cultivation
2) D : Direct sowing
3) Figures in type of cultivation show nursery period.

Table 3.5.3. Comparison of Option-1 Agriculture Development Plan with the Present

Crop	Cultivation Area (ha)			Production (ton)			Net Income (1,000 Dhs)			Gross Irrigation Amount (1,000 m³)		
	Present (A)	Plan (B)	B/A (%)	Present (A)	Plan (B)	B/A (%)	Present (A)	Plan (B)	B/A (%)	Present (A)	Plan (B)	B/A (%)
Vegetables	1,158	1,713	148%	25,600	67,800	265%	22,622	186,635	825%	1,980	4,960	251%
Fruit Trees	1,825	363	20%	29,716	6,985	24%	24,830	33,277	134%	14,764	2,675	18%
Field Crops	1,601	486	30%	136,561	44,194	32%	168,554	52,771	31%	35,976	11,475	32%
Total	4,584	2,562	56%	191,877	118,979	62%	216,006	272,683	126%	52,720	19,111	36%

Table 3.5.4. Agriculture at the Average Farm in the Study Area, Option-1

Crop	Type of Cultiva-tion	Area to be Cultivated (m²)	Unit Yield (ton/ha)	Production (kg)	Net Income (Dhs)	Water Consump-tion(m³)	Gross Irrigation Water (m³)
[Vegetables]							
Bean	D	261	14.2	372	1,162	63	37
Cabbage	42	76	32.4	248	447	11	7
Cabbage	31	91	46.2	421	801	25	13
Cauliflower	40	111	22.2	248	624	20	11
Cucumber	(27)	164	109.0	1,784	1,758	75	44
Cucumber	(35)	161	69.4	1,115	2,329	31	17
Dwarf Bean	(D)	848	34.2	2,899	8,645	449	275
Eggplant	45	261	38.0	991	671	63	36
Green beans	D	280	22.1	619	1,812	67	39
Lettuce	25	265	18.7	496	770	61	33
Musk Melon	(D)	237	22.0	520	7,717	54	34
Musk melon	D	1287	21.2	2,725	21,220	1,146	663
Parsley	45	474	15.7	743	1,557	90	54
Pepper	35	991	15.0	1,487	2,763	198	204
Pepper(L.C)	35	857	52.6	4,509	8,204	703	414
Radish	D	17	14.5	25	23	1	1
Spinach	D	379	48.4	1,833	4,583	106	63
Squash	D	160	46.5	743	925	37	22
Squash	D	160	46.5	743	925	37	46
Sweet melon	D	241	20.6	496	8,373	75	39
Sweet Papper	(35)	224	154.0	3,444	7,884	168	98
Sweet Papper	(48)	245	77.9	1,908	4,053	154	91
Tomato	31	165	142.6	2,354	2,186	117	69
Tomato	(34)	205	96.7	1,982	1,538	152	96
Turnip(Laft)	D	163	30.4	496	468	28	16
Water Melon	D	164	24.1	396	1,047	66	39
Sub-total	-	8,487		33,598	92,485	3,996	2,458
[Fruit Trees]							
Date Trees	-	1,800	19	3,461	16,490	2,665	3,331
[Field Crops]							
Alfalfa	-	2,410	91	21,900	26,150	3,784	4,730
Total	-	12,697		58,959	135,126	10,445	10,519

Note: 1) ( ): Green house cultivation
2) D: Direct sowing
3) Figures in type of cultivation show nursery period.

Table 3.5.5. Crop Cultivation Plan of Option-2

Crop	Type Of Culti-vation	Area to be Cultivated (ha)	Unit Yield (ton/ha)	Production (ton)	Unit Price (Dhs/kg)	Gross Income (1000Dhs)	Production Cost (1000Dhs/ha)	Production Cost (1000Dhs)	Net Income (1000Dhs)	Unit Water Consump-tion(m^3/ha)	Water Consump-tion(m^3)	Gross Irrigation Amount(m^3)	Net Income Per W.C. (Dhs/m^3)	Net Income Per I.W.* (Dhs/m^3)	Growing Period In Main Field	
															Days	Period
[Vegetables]																
Bean	D	35.6	14.2	507	4.67	2,368	22.0	783	1,585	2,400	106,129	49,943	14.9	31.7	103	1/Nov-11/Feb
Cabbage	42	10.4	32.4	338	2.17	734	11.8	123	610	1,500	19,405	9,132	31.5	66.8	62	27/Oct-28/Dec
Cabbage	31	12.4	46.2	575	2.17	1,247	12.4	155	1,092	2,700	36,548	17,199	29.9	63.5	89	18/Sep-16/Dec
Cauliflower	40	15.2	22.2	338	3.17	1,072	14.4	220	852	1,800	30,878	14,531	27.6	58.6	55	10/Oct-3/Dec
Cucumber	(27)	22.3	109.0	2,434	1.79	4,356	87.7	1,959	2,398	4,600	126,600	59,576	18.9	40.2	110	8/Feb-28/May
Cucumber	(35)	21.9	69.4	1,521	3.33	5,065	86.2	1,888	3,177	1,900	48,627	22,883	65.3	138.8	87	18/Nov-12/Feb
Dwarf Bean	(D)	115.6	34.2	3,955	4.73	18,706	59.8	6,913	11,794	5,300	795,597	374,398	14.8	31.5	177	16/Nov-12/May
Eggplant	45	35.6	38.0	1,352	1.00	1,352	12.2	436	916	2,400	105,397	49,599	8.7	18.5	85	30/Sep-23/Dec
Green beans	D	38.3	22.1	845	4.25	3,591	29.3	1,120	2,472	2,400	113,242	53,290	21.8	46.4	70	16/Sep-24/Nov
Lettuce	25	36.1	18.7	676	2.42	1,636	16.2	586	1,051	2,300	94,226	44,342	11.1	23.7	97	27/Oct-31/Jan
Musk Melon	(D)	32.3	22.0	710	18.12	12,862	72.3	2,334	10,529	2,300	98,733	46,463	106.6	226.6	113	15/Oct-5/Feb
Musk melon	D	175.6	21.2	3,718	9.00	33,464	25.7	4,515	28,950	8,900	1,921,018	904,008	15.1	32.0	172	15/Feb-6/Aug
Parsley	45	64.7	15.7	1,014	3.25	3,296	18.1	1,171	2,124	1,900	157,285	74,016	13.5	28.7	70	16/Sep-24/Nov
Pepper	35	135.2	15.0	2,028	2.50	5,070	9.6	1,301	3,769	2,000	590,862	278,053	6.4	13.6	110	5/Sep-23/Dec
Pepper(L.C)	35	117.0	52.6	6,152	2.29	14,088	24.8	2,896	11,192	8,200	1,198,821	564,151	9.3	19.8	231	20/Sep-9/May
Radish	D	2.3	14.5	34	1.37	46	6.5	15	31	800	2,424	1,141	12.9	27.4	31	27/Oct-27/Nov
Spinach	D	51.7	48.4	2,501	2.83	7,079	16.0	826	6,253	2,800	183,984	86,581	34.0	72.2	120	1/Nov-1/Mar
Squash	D	21.8	46.5	1,014	1.84	1,866	27.7	604	1,262	2,300	132,167	62,196	9.5	20.3	100	23/Sep-31/Dec
Squash	D	21.8	46.5	1,014	1.84	1,866	27.7	604	1,262	2,300	64,551	30,377	19.5	41.5	100	1/May-8/Aug
Sweet melon	D	32.8	20.6	676	18.00	12,169	22.7	746	11,423	3,100	113,247	53,293	100.9	214.3	90	16/Jan-15/Apr
Sweet Papper	(35)	30.5	154.0	4,699	2.62	12,310	50.9	1,554	10,756	7,500	285,054	134,143	37.7	80.2	207	16/Nov-11/Jun
Sweet Papper	(48)	33.4	77.9	2,603	2.77	7,210	50.3	1,680	5,530	6,300	265,289	124,842	20.8	44.3	114	4/Apr-27/Jul
Tomato	31	22.5	142.6	3,211	1.07	3,436	20.1	454	2,982	7,100	199,532	93,898	14.9	31.8	200	23/Oct-11/May
Tomato	(34)	28.0	96.7	2,704	1.31	3,542	51.7	1,445	2,098	7,400	276,849	130,282	7.6	16.1	130	20/Mar-27/Jul
Turnip(Laft)	D	22.2	30.4	676	1.45	980	15.4	342	638	1,700	47,298	22,258	13.5	28.7	50	1/Sep-20/Oct
Water Melon	D	22.4	24.1	541	3.31	1,790	16.1	362	1,429	4,000	112,431	52,909	12.7	27.0	91	1/Mar-31/May
Sub-total	-	1,157.8		45,836	139.23	161,203	1.8		126,174	6,155	7,126,197	3,353,504	17.7		-	-
[Fruit Trees]																
Date Trees	-	1,825.3	19.2	35,094	7.00	245,659	43.0	78,473	167,186	14,800	33,603,773	13,441,509	5.0	12.4	-	-
[Field Crops]																
Alfalfa	-	1,601.1	90.9	145,475	1.40	203,665	18.7	29,957	173,708	15,700	31,477,626	33,576,134	5.5	5.2		-
Total	-	4,584.2		226,405	3.08	610,527		68,666	467,068	15,751	72,207,596	50,371,148	6.5		-	-

Note: 1) ( ) : Green house cultivation

2) D : Direct sowing

3) Figures in type of cultivation show nursery period.

Table 3.5.6. Comparison of Option-2 Agriculture Development Plan with the Present

Crop	Cultivation Area (ha)			Production (ton)			Net Income (1,000 Dhs)			Gross Irrigation Amount (1,000 m³)		
	Present (A)	Plan (B)	B/A (%)	Present (A)	Plan (B)	B/A (%)	Present (A)	Plan (B)	B/A (%)	Present (A)	Plan (B)	B/A (%)
Vegetables	1,158	1,158	100%	25,600	45,836	179%	22,622	126,174	558%	1,980	3,354	169%
Fruit Trees	1,825	1,825	100%	29,716	35,094	118%	24,830	167,186	673%	14,764	13,442	91%
Field Crops	1,601	1,601	100%	136,561	145,475	107%	176,737	173,708	98%	35,976	33,576	93%
Total	4,584	4,584	100%	191,877	226,405	118%	224,189	467,068	208%	52,720	50,371	96%

Table 3.5.7. Agriculture at the Average Farm in the Study Area, Option-2

Crop	Type of Cultiva-tion	Area to be Cultivated (m²)	Unit Yield (ton/ha)	Production (kg)	Net Income (Dhs)	Water Consump-tion(m³)	Gross Irrigation Water (m³)
[Vegetables]							
Bean	D	176	14.2	251	785	42	25
Cabbage	42	52	32.4	168	302	8	5
Cabbage	31	62	46.2	285	541	17	9
Cauliflower	40	75	22.2	168	422	14	7
Cucumber	(27)	111	109.0	1,206	1,188	51	30
Cucumber	(35)	109	69.4	754	1,574	21	11
Dwarf Bean	(D)	573	34.2	1,960	5,844	304	186
Eggplant	45	176	38.0	670	454	42	25
Green beans	D	190	22.1	419	1,225	45	26
Lettuce	25	179	18.7	335	521	41	22
Musk Melon	(D)	160	22.0	352	5,217	37	23
Musk melon	D	870	21.2	1,843	14,346	774	448
Parsley	45	321	15.7	503	1,053	61	37
Pepper	35	670	15.0	1,005	1,868	134	138
Pepper(L.C)	35	580	52.6	3,049	5,546	475	280
Radish	D	12	14.5	17	15	1	1
Spinach	D	256	48.4	1,240	3,098	72	43
Squash	D	108	46.5	503	625	25	31
Squash	D	108	46.5	503	625	25	15
Sweet melon	D	163	20.6	335	5,661	50	26
Sweet Papper	(35)	151	154.0	2,328	5,330	113	66
Sweet Papper	(48)	166	77.9	1,290	2,740	104	62
Tomato	31	112	142.6	1,591	1,478	79	47
Tomato	(34)	139	96.7	1,340	1,040	103	65
Turnip(Laft)	D	110	30.4	335	316	19	11
Water Melon	D	111	24.1	268	708	44	26
Sub-total	-	5,737		22,713	62,524	2,701	1,662
[Fruit Trees]							
Date Trees	-	9,015	19	17,391	82,847	13,387	16,733
[Field Crops]							
Alfalfa	-	7,934	91	72,089	86,080	12,457	15,571
Total	-	22,717		112,193	231,451	28,545	33,966

Note: 1) ( ): Green house cultivation
2) D: Direct sowing
3) Figures in type of cultivation show nursery period.

Table 3.5.8. Vegetable Production under Option-1

Crop	Total Production (ton)	Vegetable Yield of Each 10 Days (X10 ton)																																			
		Aug			Sep			Oct			Nov			Dec			Jan			Feb			Mar			Apr			May			Jun			Jul		
Bean	750																			45	30																
Cabbage	500															50																					
Cabbage	850													50	35																						
Cauliflower	500												50																								
Cucumber	3,600																							30	50	50	50	50	50	50	30						
Cucumber	2,250															15	50	50	50	50	10																
Dwarf Bean	5,850																	35	50	50	50	50	50	50	50	50	50	50	50								
Eggplant	2,000											35	50	50	50	15																					
Green beans	1,250										50	50	25																								
Lettuce	1,000																	50	50																		
Musk Melon	1,050																5	50	50																		
Musk melon	5,500	30																									20	50	50	50	50	50	50	50	50	50	50
Parsley	1,500									30	50	50	20																								
Pepper	3,000									50	50	50	50	50	50																						
Pepper(L.C)	9,100										10	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50								
Radish	50												5																								
Spinach	3,700														20	50	50	50	50	50	50	50															
Squash	1,500	40																																	10	50	50
Squash	1,500													50	50	50																					
Sweet melon	1,000																								25	50	25										
Sweet Pepper	6,950																			50	50	50	50	50	50	50	50	50	50	50	50	50	45				
Sweet Pepper	3,850																													50	50	50	50	50	50	50	35
Tomato	4,750																			5	50	50	50	50	50	50	50	50	50	20							
Tomato	4,000																													50	50	50	50	50	50	50	50
Turnip(Laft)	1,000							50	50																												
Water Melon	800																													30	50						
Total	67,800	70						50	50	80	160	235	250	250	255	230	155	285	300	300	290	250	200	230	275	300	295	300	300	300	280	200	195	150	160	200	185

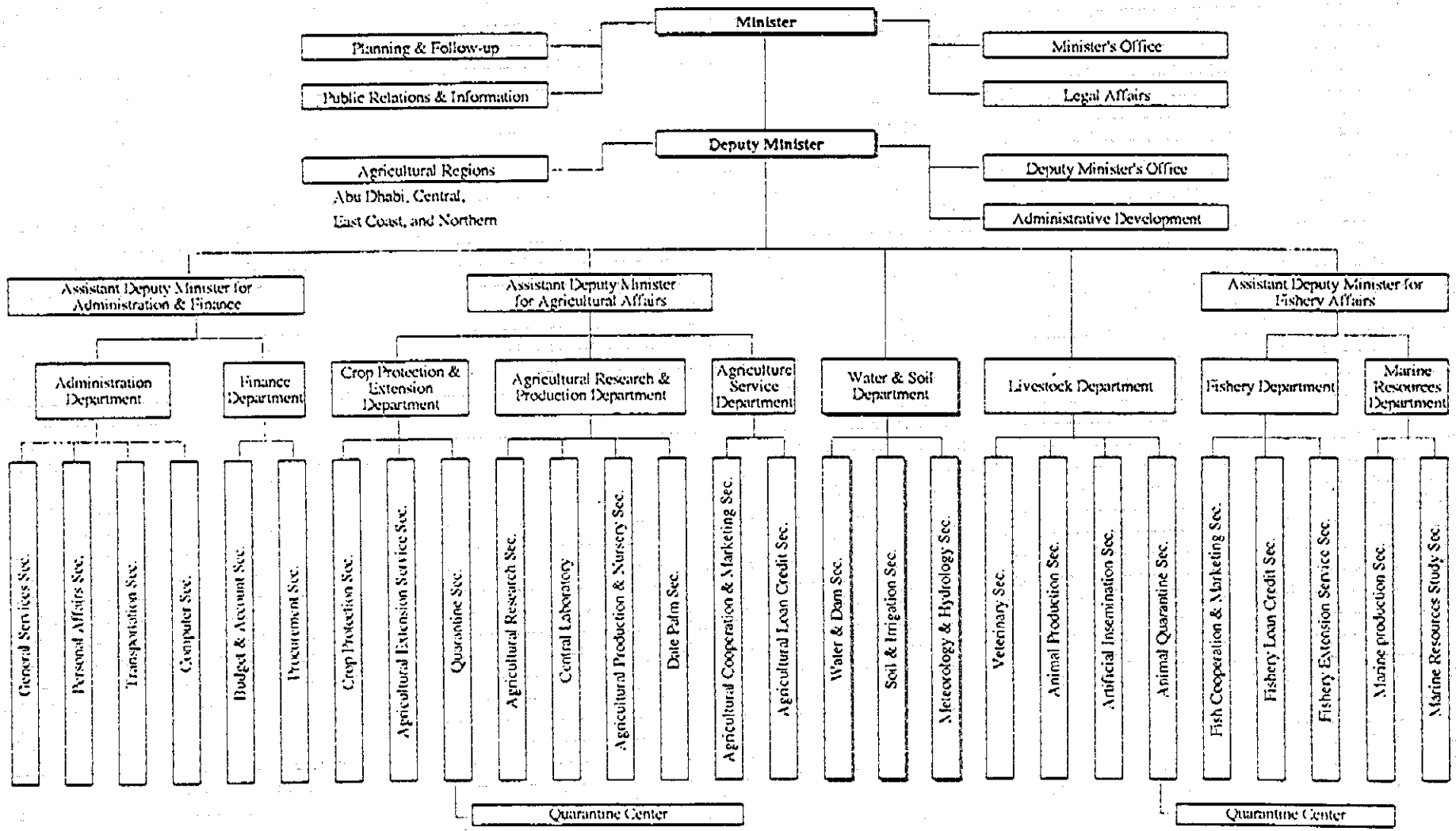


Figure 3.1.1. Organization Chart of Ministry of Agriculture and Fisheries

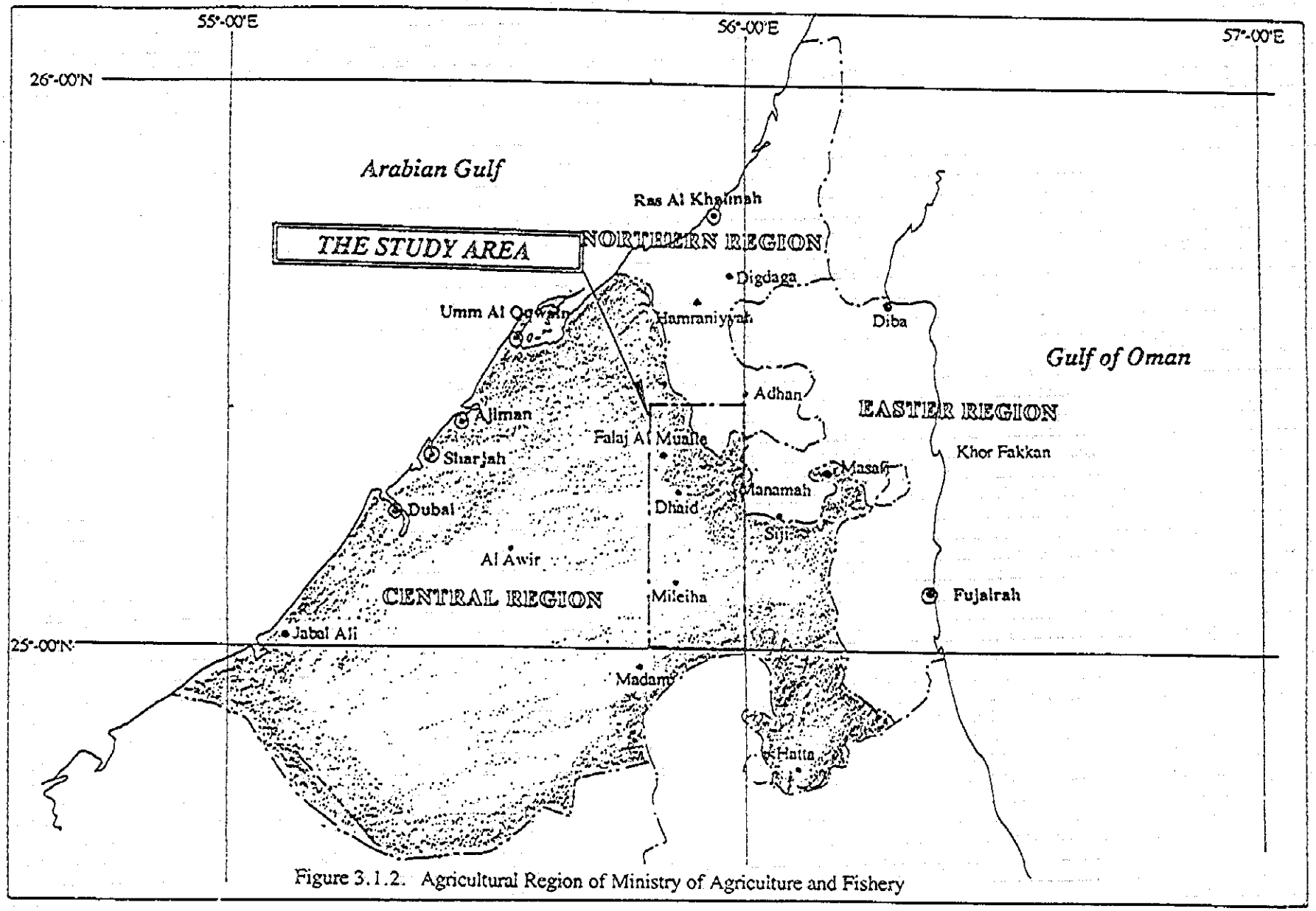


Figure 3.1.2. Agricultural Region of Ministry of Agriculture and Fishery

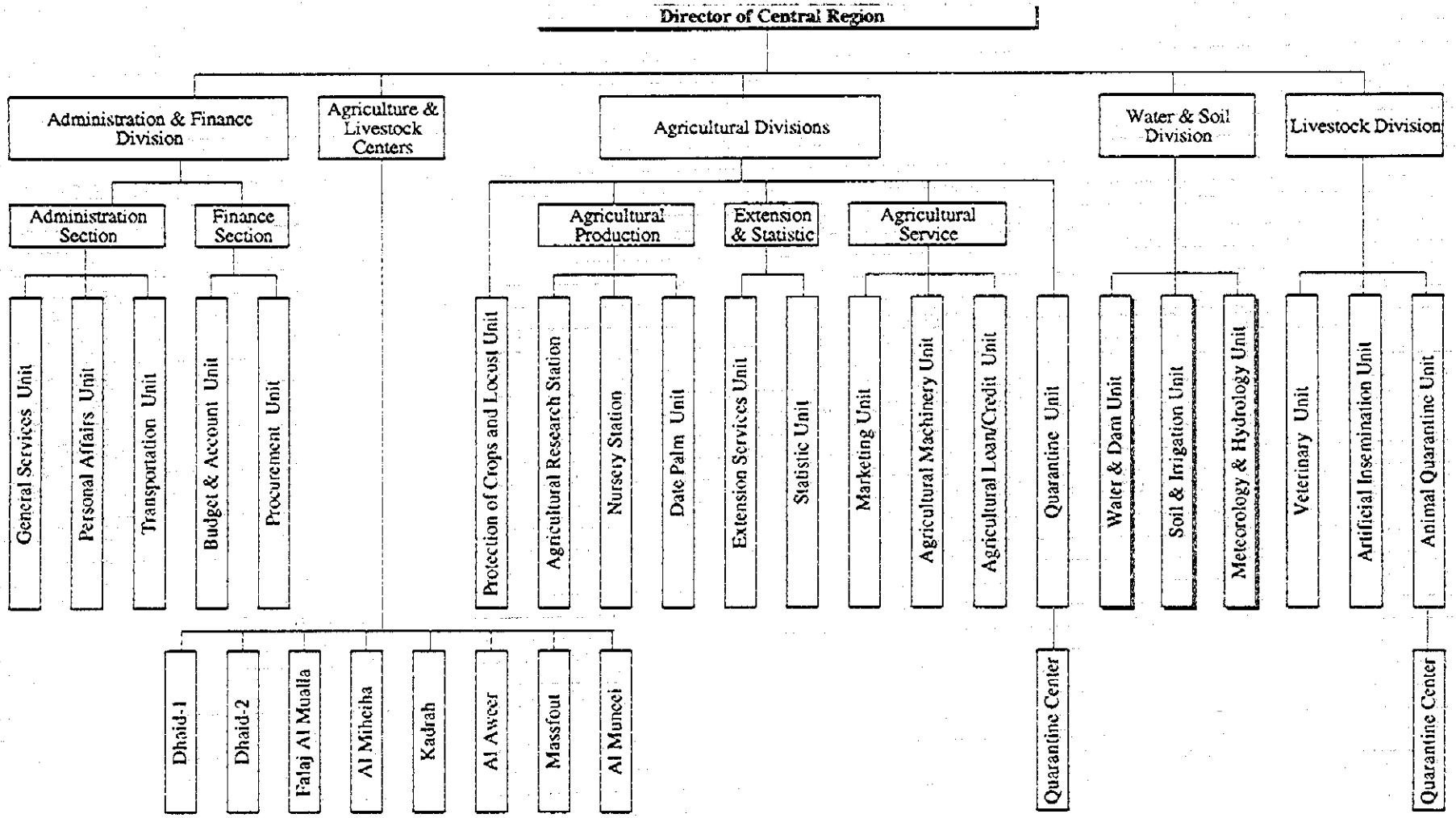
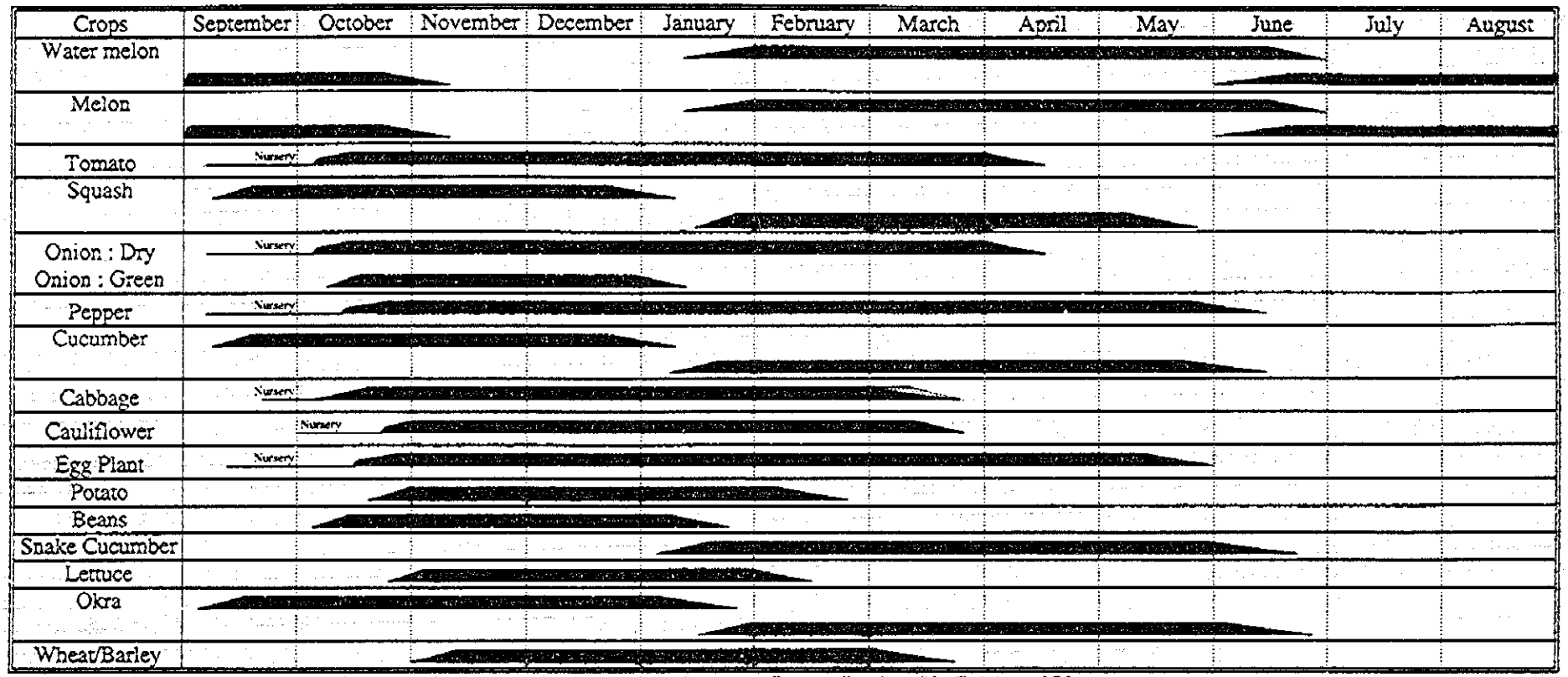


Figure 3.2.1. Organization Chart of Central Agriculture Region of MAF



Source : FAO Technical Report 3. Cropping Pattern and Irrigation Requirements Central Region, UAE. May 1978

Figure 3.2.2. Main Crop Cultivation Calendar in the Central Agricultural Region

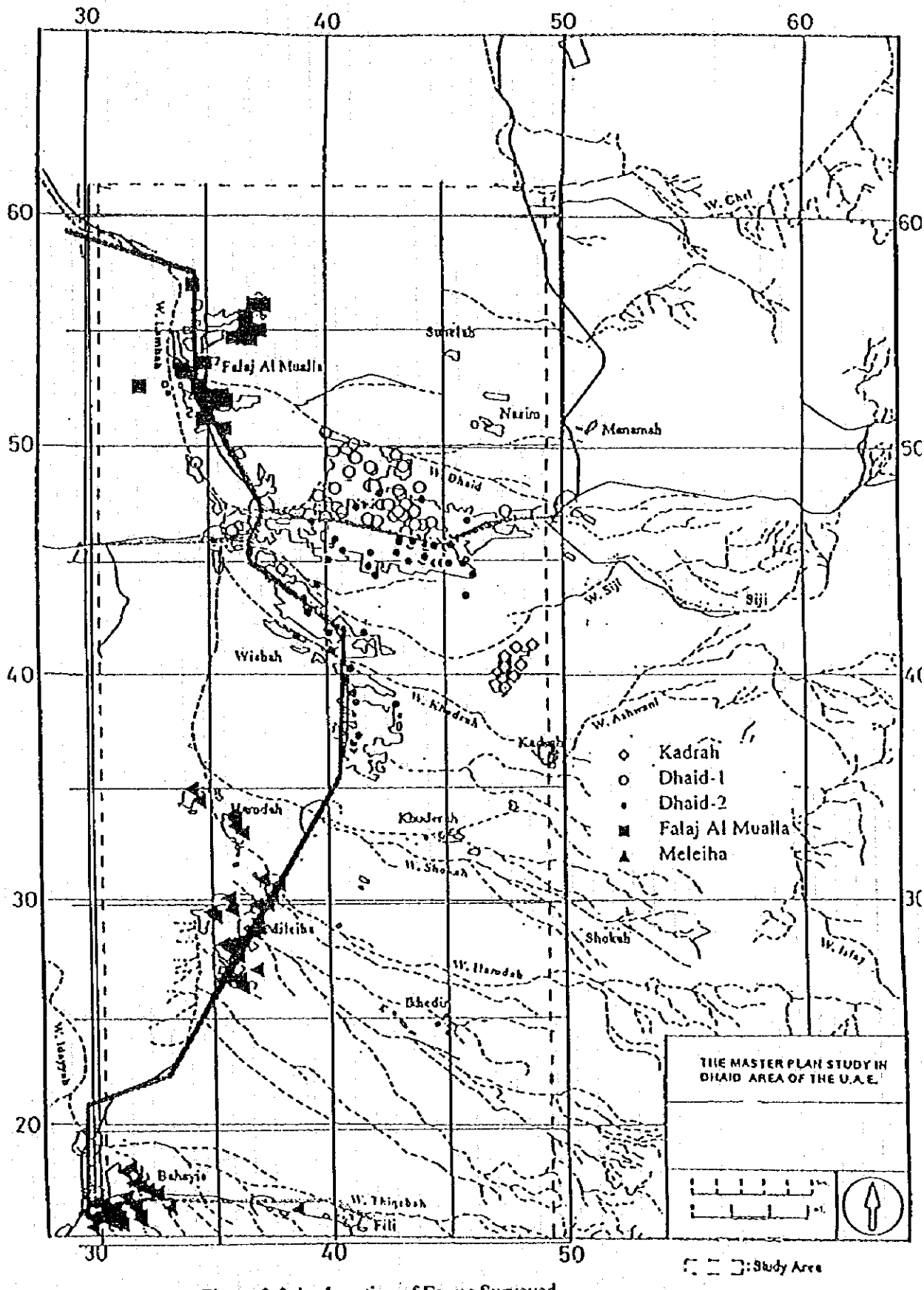


Figure 3.3.1. Location of Farms Surveyed

Crop	Nursery Period (Days)	Main Field Period(Days)			Growing Period In Main Field											
		Before Harvest	Harvesting	Total (Date)	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
(Vegetables)																
Bean	D	88	15	1/Nov-11/Feb												
Cabbage	42	52	10	27/Oct-28/Dec												
Cabbage	31	72	17	18/Sep-16/Dec												
Cauliflower	40	45	10	10/Oct-3/Dec												
Cucumber	-27	38	72	8/Feb-28/May												
Cucumber	-35	42	45	18/Nov-12/Feb												
Dwarf Bean	(D)	60	117	16/Nov-12/May												
Eggplant	45	45	40	30/Sep-23/Dec												
Green beans	D	45	25	16/Sep-24/Nov												
Lettuce	25	77	20	27/Oct-31/Jan												
Musk Melon	(D)	92	21	15/Oct-5/Feb												
Musk melon	D	62	110	15/Feb-6/Aug												
Parsley	45	40	30	16/Sep-24/Nov												
Pepper	35	50	60	5/Sep-23/Dec												
Pepper(L.C)	35	49	182	20/Sep-9/May												
Radish	D	30	1	27/Oct-27/Nov												
Spinach	D	46	74	1/Nov-1/Mar												
Squash	D	70	30	1/May-8/Aug												
Squash	D	70	30	23/Sep-31/Dec												
Sweet melon	D	70	20	16/Jan-15/Apr												
Sweet Pepper	-35	68	139	16/Nov-11/Jun												
Sweet Pepper	-48	37	77	4/Apr-27/Jul												
Tomato	31	105	95	23/Oct-11/May												
Tomato	-34	50	80	20/Mar-27/Jul												
Turnip(Laft)	D	30	20	1/Sep-20/Oct												
Water Melon	D	75	16	1/Mar-31/May												

Remarks : Before Harvesting period
: Harvesting period

Figure 3.5.1. Vegetable Cultivation Plan in Option-1

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CHAPTER FOUR : SOCIO-ECONOMY

4.1. Socio-economy of UAE

4.1.1. General Social Development Indicators

The table below gives some social development indicators in 1975 and 1993.

Item	1975	1993
Life expectancy (years)	63.0	72.0
General fertility rate	5.9	5.4
Crude birth rate (000)	27.5	27.4
Crude death rate (000)	8.6	2.1
Infant mortality rate (000)	32.0	16.6
Urban population (%)	77.7	83.9
Access to public health (%)	82.0	100.0
Access to safe water (%)	84.0	100.0
Access to sewerage system (%)	50.0	88.0
Birth attended by health personnel (%)	90.0	98.0
Adult literacy (10 years and over)	56.1	83.3
Average years of schooling (years)	4.1	7.1

Source : Ministry of Planning

The table indicates that progress has been achieved in the areas of life expectancy, health care, and education; it also shows that the urban sector, measured by percentage of urban population has increased.

4.1.2. Social Infrastructure

(1) Education

Primary school in UAE starts at the age of six years, is compulsory and lasts for a total of six years. Secondary school is not compulsory and consists of six years schooling divided into two cycles of three years. Until 1977 there were no university level facilities in UAE; now, there is UAE University which, together with other educational institutes, provide the required facilities for higher level education.

As far as government school is concerned, in 1993, the number of students was 278,836 compared with 139,840 in 1982; the number of teachers and education administrators was 11,751 in 1982 and increased to 23,421 in 1993; there were 347 schools in 1982 while in 1993, the number was 560. The ratio of male students and teachers to female students and teachers is around 2:1 and has been constant throughout the period 1975-93.

The figures show an impressive growth in the education system. Other indicators in the table above shows that as a result of the improvement in the education system and facilities, the adult literacy rate has increased from 56.1% in 1975 to 83.3%, and the average years of

schooling has gone up from 4.1 years in 1975 to 7.1 years in 1993.

(2) Health

Since 1971, health policies in UAE have sought to provide medical care for everyone living in UAE. These policies include the establishment of specialized hospitals, clinics, centers for primary medical care, medical and nursing schools, the recruitment of qualified medical personnel from abroad, vaccination campaigns, a free-of-charge medical service for UAE nationals and government employees, and the establishment of an effective registration system covering all aspects of health services.

The improvement of living and health conditions and facilities has made it possible to raise the life expectancy from 63 years in 1975 to 72 years in 1993; bring down the crude death rate from 8.6 per thousand in 1975 to 2.1 per thousand in 1993; and the infant mortality rate has gone down from 32 per thousand in 1975 to 16.6 per thousand in 1993. While in 1972 only 82% of the population had access to public health, in 1993 100% had it.

Improvement in sanitary conditions is shown by the percentage of the population which had access to safe water (82%) and sewerage systems (84%) in 1972; in 1993 the percentages were 100%.

(3) Electricity and Water Supply

a) Electricity Supply

The electricity industry is owned and operated by the government who entrust its running to the Ministry of Water and Electricity and emirate owned organizations such as the Dubai Electricity Company.

At present, there are more than 2,150 km of overhead transmission lines and 584 km of underground cables. There are 48 power stations throughout UAE; over 50% of these are fueled by diesel and the rest by gas or steam. The main load distribution center is located on the outskirts of Dubai.

In 1992, 191,117 million KWH were generated as against 136,657 million KWH in 1987.

b) Water Supply

Water supply faces problems due to the ever-increasing demands for water by the urban and rural sectors. During the mid-70's domestic demand in the Emirate of Abu Dhabi increased at a rate of between 20% and 50% annually; on the other hand, groundwater levels dropped. Thus, desalination plants had to be built in order to satisfy the increasing demand.

At present there are over 30 desalination plants. Desalination plants serve mostly coastal areas, but by means of pipelines some inland areas are also served. For remote areas where

piping is not available, desalinated water is transported by tankers to dispersion points. The largest desalination plant is in Dubai and produces 22,730 m^3/day; the smallest one, located at Al Esh desalinates 68 m^3/day. Desalinated water accounted for 82% of total water production in UAE in 1989. In 1992 total water production was 463.7 million m^3.

(4) Transportation

At present there are more than 3,170 km of main roads together with many other paved roads and roads classified as minor roads. Abu Dhabi, Dubai, and Sharjah are the major points between which most domestic traffic flows. The Gulf route between Ras Al Khaiman and these towns, and the main routes between Al Ain and Abu Dhabi and Dubai, also experience large volumes of traffic.

Public bus services operate in urban areas, but private cars are the most frequently used form of passenger transport, followed by taxis.

UAE is an important maritime trading point and has the following four major international ports: Port Rashid and Port Jabal Ali (Dubai Emirate), Port Zayed (Abu Dhabi Emirate), and Port Khalid (Sharjah Emirate). Other ports handling international trade are: Port Fujairah (Fujairah Emirate), Port Saqr (Ras Al Khaiman Emirate), and Port Khor Fakkan (Sharjah Emirate).

4.1.3. Economic Policies

(1) Economic Development Plan

The UAE economy is easily influenced by external factors and this problem is compounded by inter-emirate rivalries and the failure of the rulers to agree on a coordinated industrial development plan for the federation as a whole. In the mid-70s and in 1981, the federal Planning Ministry elaborated two five-year development plans under which most state industrial investment and infrastructure improvement projects were to be coordinated by the federal authorities and the emirates.

In the last five year plan an annual growth rate in GDP of 9.6% was planned. With a targeted annual increase of 4.8% per capita income, the plan was focused on the manufacturing sector, in order to attain a balance in growth with other industries and the diversification of sources of income, and the expected annual growth rate in manufacturing was 27%. This was followed by water and electricity at about 13.3%, agriculture, livestock and fisheries at 10.3%, and government services including health, education, security, etc. at about 15%. Investments contemplated under the plan were as follows: 29% of total investments for the manufacturing sector; 17% for the transport, storage, and communication sector: 14% for government services; 14% for crude oil and other quarrying

industries; 10% for water and electricity; 8% for real estate; and 2% for agriculture. As shown by these figures , the plan clearly aimed to develop mainly the manufacturing sector as the base for economic development. Agriculture, however, played a minor role. The plan emphasized the role of the government as the main promoter of economic activities, as is shown by the fact that the investments planned to be made by the government represented 82% of total investment. The plans were quickly overtaken by world oil-price trends, however, such as the sharp price rises of 1978-79 and price falls in the mid-1980's, and have never been implemented.

Development planning at the federal level was abandoned and replaced by a system in which each emirate follows an independent development strategy. The result has been a costly duplication of facilities in some emirates and lack of infrastructure in others.

So far, the federal government has been the driving force behind the economy through huge public spending; due to falling oil revenues, however, the public sector cannot continue playing this role. Thus, the private sector must be encouraged to take a more active role in financing and participating in long-term investments in non-oil, manufacturing and trade/construction projects. In order to do this it will be necessary for the federal government to take a more dynamic role at federal planning level. In practical terms, UAE authorities will need to rationalize and restructure many sectors of the economy, coordinate infrastructure improvements across emirates and allocate more resources to fostering local small- to medium-sized businesses, in addition to continued efforts to attract multinational companies.

(2) Foreign Trade and Exchange Policies

Because of the limited development of non-oil industry and the heavy dependence on imports, the authorities have opened up the economy to foreign competition. There are few restrictions on imports and access to the market is free. In 1985 the Jebel Ali Free Zone was established by the Dubai government in order to encourage the manufacturing and trade sectors.

Tariffs are not imposed on imports of foodstuffs and some medicines, and raw materials originating from other members of the GCC. High import duties are levied on alcohol (average 28%) and cigarettes (30%). In Dubai and Sharjah ports all transit goods are exempted from duty.

The UAE Dirham is pegged at a fixed rate to the American dollar. The parity of US$ 1.00 = Dh. 3.65 has been maintained for a long time. There is no restriction on the exchange of foreign currencies and foreign firms do not need to declare their foreign exchange transactions to the government.

(3) Taxes

Corporate taxes (20%), even though written in the statute books of all the emirates, tax laws are rarely enforced and are limited to foreign banks and oil companies.

Indirect taxes are levied on a number of goods and services, including annual rents, medical services used by expatriates, hotel services and entertainment activities. Municipal taxes on annual rents are usually 5% on private homes and 10% on commercial properties.

4.1.4. Brief Overview of the Recent UAE Economy

(1) Gross Domestic Product (GDP)

Tables 4.1.1, 4.1.2 and 4.1..3. give information about some economic variables and the GDP. From Table 4.1.1. it is clear that 1993 was not a good year for the economy as variables like the GDP, national income, national savings, and total exports had negative growth. All other variables experienced positive growth but were significantly lower than those achieved in 1992.

Nevertheless, the GDP per capita is one of the highest among the Gulf countries (Dh. 60.5 thousand, equivalent to US$ 16.6 thousand) as is the disposable income (Dh. 48.6 thousand, equivalent to US$ 13.3 thousand). At this level, UAE cannot be considered to have the status of a developing country, and since for three years in a row UAE has kept per capita income above US$ 8,600, from 1996 it has been adjudged one of the developed countries by the OECD.

The GDP for 1994 was Dh. 134.813 billion (equivalent to US$ 36.9 billion) at current prices. The contribution of the non-oil sectors in the GDP has grown from 54% in 1990 to 67% in 1994, reflecting the intention of the government to develop other productive sectors rather than to depend heavily on oil production.

Even so, the oil sector contributes 33.4% to the GDP, followed by the public sector (12.1%), wholesale and retail trade, restaurants and hotels, construction, and manufacturing.

(2) Investment and Consumption

Total investments in 1994 came to Dh. 33.76 billion, a mere of 2% up on the 1993 level. Of this, private investment was Dh. 21.06 billion (62% of total investment) and government investment, Dh. 12.7 billion (37%). It is clear from these facts that the private sector is the leading investor in the economy. This role is recognized by the government which has tried to maintain an environment conducive to the encouragement of private investment.

Private investment projects include quarrying, manufacturing, and transportation.

The average growth rate of investment for the period 1990-94 was 9% .

Final consumption figures for 1994 were Dh. 95.793 billion, 10% up on the 1993 level.

Government consumption figures were Dh. 24.52 billion (26% of total consumption) while private sector consumption was Dh. 71.273 billion (84% of total consumption). Consumption has been growing at an average rate of 9% for the period 1990-94. The Government has been decreasing its consumption in line with its policy of rationalizing expenditures (its consumption growth rate has been reducing for the last 4 years).

(3) Public Finance and Foreign Trade

As can be seen from Table 4.1.4, main public revenues come from crude oil-related sources, which amounted to Dh. 31.314 billion (80% of total revenues) in 1993. Expenditure for the same year was Dh. 45.206 billion. This produced a public deficit of Dh. 6.036 billion. The fall in revenues from Dh. 47.402 billion in 1992 was due to falling oil prices.

Current expenditure was 61% of total expenditure in 1993 while capital expenditure was 39%.

The trade balance achieved a surplus of Dh. 13.8 billion in 1993; this is a fall of Dh. 9.2 billion from the surplus attained in 1992. The drop can be explained, on the one hand, by an increase in import prices and, on the other, by a decrease in exports of crude oil, gas, and petroleum products. While the percentage of crude oil exports represented only 53% of total exports in 1993 compared to 74% in 1985, the percentage of re-export goods has increased.

Main import items are manufactured goods (24.8% of total imports), machinery and transport equipment (38.4%), and food and livestock (9.7%). Food and livestock imports have decreased as a proportion of total import from 13% in 1990 to 9.7% in 1993; conversely, machinery and transport equipment increased its share from 31.9% in 1990 to 38.4% in 1993 (Table 4.1.5.).

It must be noted that as development continues and the population grows, imports will tend to increase, thus putting a lot of pressure on the trade balance unless exports also increase.

(4) Employment

The table below shows that the percentage of the labor force relative to the total population has decreased from 52.7% in 1975 to 47.5% in 1993, while the share of the female labor force has increased from 3.3% to 18.5% and the proportion of scientists and technicians from 7.5% to 11.2% over the same period.

The above mentioned figures show that women are taking a more active role in the economy. In an Islamic society where women have traditionally played a passive role, this increased participation is an encouraging sign for the role of women in the development process. The increased participation of scientists and technicians in the labor force shows an improvement in the quality of the labor force which is directly related to progress in education and is an

answer to the increasing need for skilled labor in the economic development of the country. The federal government has also launched a campaign to increase the employment of UAE nationals.

Labor Participation Indicators	1975	1993
Labor force to total population (%)	52.7	47.5
Female labor force (%)	3.3	18.5
Scientists and technicians (%)	7.5	11.2
Labor force (%)		
In agriculture	4.6	6.5
In industry	10.0	10.1
In services	29.6	39.5
In other industries	55.8	43.9
Unemployment rate	2.0	1.3

Source : Ministry of Planning

While industry sector share of the labor force has been steady at around 10% throughout the period 1975-93, the agriculture sector has increased its share from 4.6% to 6.5%, and services sector has increased its share 29.6% to 39.5% over the same period.

The unemployment rate has dropped from 2% in 1975 to 1.3% in 1993.

In 1994, there were 906,580 workers in UAE. 86% of them worked in the Abu Dhabi, Dubai, and Sharjah emirates. The manufacturing, construction, wholesale, retail, restaurant, hotel, transport, and government sectors accounts for more than 60% of the total number of workers; the agriculture, livestock and fishery sector accounts only 7.7% of the total. One striking feature is the small number of workers in the crude oil sector (1.0%), the mainstay of the economy.

The above mentioned shares have remained constant over the period 1990-94 (Table 4.1.6 and 4.1.7.).