

7. APPENDIX

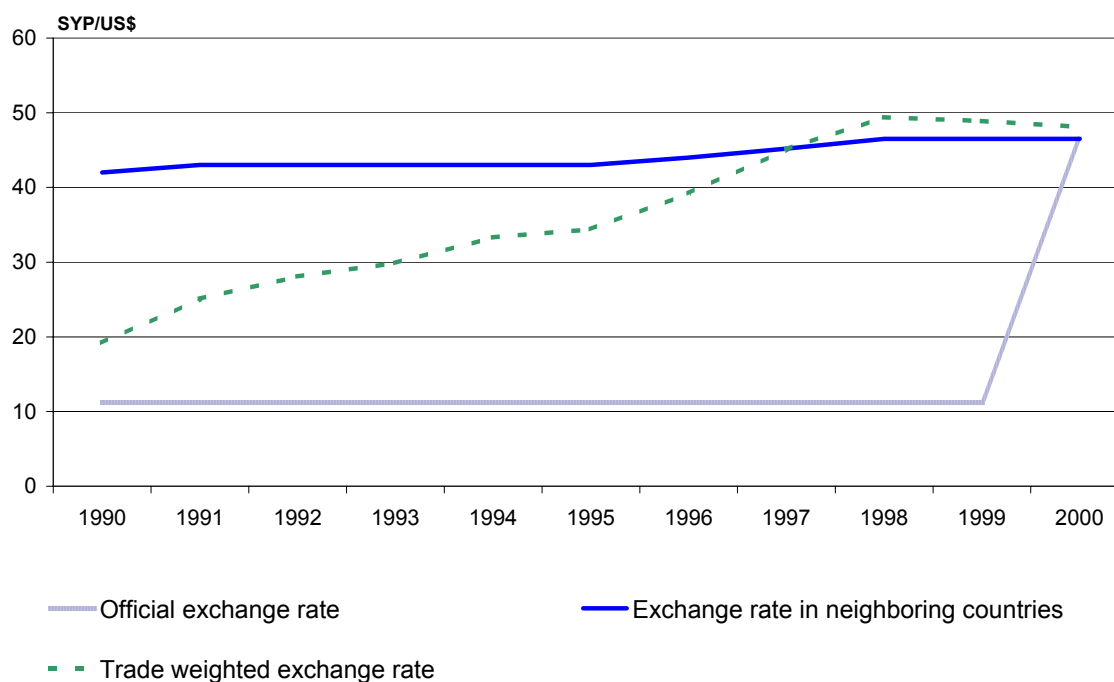
Tables and Figures

STRUCTURED ACCORDING TO THE RESPECTIVE CHAPTERS OF THE REPORT

CHAPTER 3: QUALITATIVE AND DESCRIPTIVE REVIEW OF POLICIES AFFECTING AGRICULTURAL TAXATION

CHAPTER 3.3: EXCHANGE RATE POLICIES

Figure 3.3-1: Exchange rate of the Syrian pound to the Dollar US, 1990-2000



Source: Ministry of Economics and Foreign Trade.

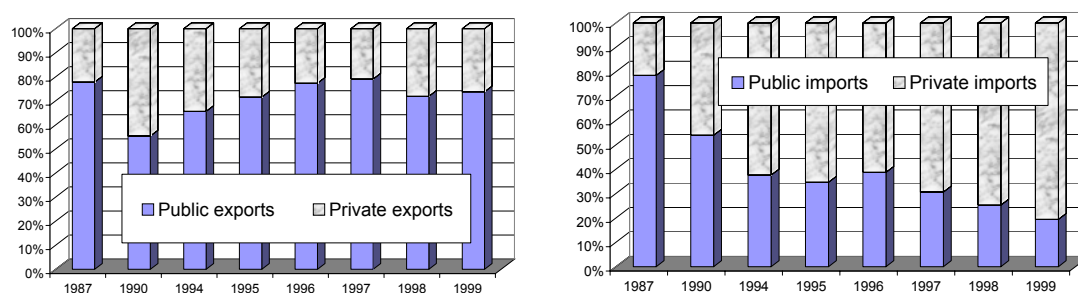
Table 3.3-1: Development of various exchange rates (ER) of the SYP to the US\$, 1990-2000

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Official exchange rate (ER)	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	46.5
ER for agricultural inputs fertilizer	11.25	11.25	11.25	11.25	43	43	43	45	46.5	46.5	46.6
ER for agricultural inputs pesticides	11.25	11.25	40	40	43	43	43	45.5	46.5	46.5	46.7
ER for agricultural exports	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	46.8
ER for agricultural imports	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	11.25	46.9
Black market ER in Damascus	46.45	45.84	50.48	49.67	51.2	50	51	51	51	51	51
ER in Beirut	46.45	45.84	50.48	49.67	51.2	50	51	51	51	51	51
ER in neighboring countries	42	43	43	43	43	43	44	45.2	46.5	46.5	46.5
Promotion ER	22	22	22	22	22	22	22	22	22	22	22
Trade weighted ER	19.2	25.1	28.1	29.9	33.3	34.4	39.2	45.1	49.4	48.9	48.1

Source: Ministry of Economics and Foreign Trade.

CHAPTER 3.4: TARIFF AND NON-TARIFF BARRIERS TO TRADE

Figure 3.4-1: Share of public and private sector in total Syrian exports and imports (in % of total manufacturing trade), 1987-1999



Source: Central Bureau of Statistics, 2000.

Table 3.4-1: Product specific import tariffs for selected agricultural and food commodities

Item No.	Product	Import tariff in %
17/1	Refined sugar	15
11/1/A	Flour of wheat	1
10/6/A/1	Milled paddy rice for seed	1
10/5/A	Maize	1
8/1/B	Bananas	75
9/2	Tea	7
9/1	Coffee	30
4/3/A	shortening	15
12/1/D	Cake of Soya been	1
4/2/A/1/a	Dry milk	7
7/1/G/1	Potato for sowing	1
7/6/B/1	sweet potato	30
12/1/H	Sesame seed	1
8/1/A/1	Dates	30
1/4/A	Sheep	1
2/1	Fresh , frozen meet	7
4/3/B	Ghee	7
15/7/I	Oil of sunflower seed	7
15/10/A/1	fat and industrial acids	1
15/12	Hydrogenated animal oils	7
16/1	Guts	50
3/1	Fresh , frozen, and dried fish	7
9/3/A	Prepared mate	30
9/3/B	Raw mate	7
16/4/A	Conserved fish (salmon, sardine , and tuna)	1
16/4/B	Caviar	100

Source: Ministry of Economics and Foreign Trade.

Table 3.4-2: Tariff schedule for the calculation of the progressive ‘unified import tariff’

Product-specific custom tariffs groups (in %)	‘Unified import tariff’ levied on imports on top of product-specific import tariff
1-6	6
7-14	13

15-29	14
30-49	17
50-74	27
75-99	21
more than 100	32

Source: Ministry of Economics and Foreign Trade.

Table 3.4-3: Agricultural and food products which were subject to an export tax at 9-9.5% until 2001

Nurseries of all varieties	Fennel
Wood	Sugar beet
Chamomile (green and dried) and its products	Graze plants
Berseem and its seeds	Oat
Terebinth	Glue
Vetch	Lentil
Oak	Safflower
Balm and products	Gall oak
Tobacco	Aen jarada
Hay	Coal
Lupine	Alfalfa
Tabacum	Pepper
Bitter vetch	Fuchsia
Rope & cord	Aromatic
Black comin	Hemp husk varieties and its products
Castor- oil plant	Straw mat
Pine	Straw besom, its seeds & products
Wood for fire	Straw sweeper its seeds & products
Fenugreek	Cane(basket and normal) &its products
Chick-peas (green and dried), roasted chick-peas, products thereoff	Tar
Mustard, its seeds and products	Cotton, varieties, seeds, its husk and products
Tulip and its products	Kay and its varieties
Poppy, its seeds and products	Wheat varieties and products
Ammi- visaga, tts seeds and products	Hemp varieties and products
Packthread (core) and its products	Kayaleg and its products
Glue and its products	Linen varieties, its seeds and products
Dakkoka and its products	Caraway and its products
Millet and its products	Vetch varieties, its seeds and products
Maize varieties and its products	Wheat milled with yogurt (kochk)& its products
Sunflower seeds	Ervil and its products
Rice varieties and its products	Kashnin and its products
Lily varieties and its products	Cumin, its seeds and products
Rose mallow and its products	Vigna Nilotic a varieties and its products
Sahlab and its products	Mahaleb

Sumac varieties and its leaves and products	Maras
Sesame- Tahina (sesame paste)	Malesah
Vegetables and fruits nurseries varieties	Noamanah and its products
Cocoon and its products	Orange- flower & rose water varieties, its products and seeds
Barley and its products	Wasak and its products
Barek	Aniseeds and its products

Source: Ministry of Economics and Foreign Trade.

CHAPTER 3.5: AGRICULTURAL INPUT SUBSIDIES

Table 3.5-1: Distribution of irrigated land area in ths. ha and in % of total irrigated land by type of products, 1990-2000

	1990		1991		1992		1993		1994		1995	
	area	%	area	%	area	%	area	%	area	%	area	%
Wheat	267823	39	300000	42	332000	38	431859	49	515203	52	591701	56
Barley	4624	1	6530	1	7000	1	6902	1	5558	1	5762	1
Cotton	174000	25	173000	24	167150	19	194000	22	205000	21	200000	19
Sugur beet	30000	4	30678	4	35200	4	32888	4	33054	3	32000	3
Vegetable	15153	2	12674	2	14030	2	14611	2	17191	2	17114	2
Sum	491600	71	522882	73	555380	63	680260	77	776006	78	846577	80
Other products	202985	29	195868	27	323660	37	198780	23	215742	22	216046	20
Total irrigated	694585	100	718750	100	879040	100	879040	100	991748	100	1062623	100

	1996		1997		1998		1999		2000	
	area	%	area	%	area	%	area	%	area	%
Wheat	607116	55	666560	57	696500	57	714800	57	749253	62
Barley	4859	0	2776	0	3500	0	3932	0	4200	0
Cotton	214766	20	220000	19	230000	19	250000	20	220000	18
Sugur beet	30000	3	27800	2	28000	2	30500	2	54399	5
Vegetable	17541	2	25583	2	30968	3	27960	2	24399	2
Sum	874282	80	942719	81	988968	81	1027192	82	1052251	87
Other products	221579	20	218120	19	236785	19	227121	18	156507	13
Total irrigated	1095861	100	1160839	100	1225753	100	1254313	100	1208758	100

Source: MAAR.

CHAPTER 3.6: CREDIT SUBSIDIES AND INFLATION

Table 3.6-1: Overview of interest rates¹⁾ (in %) for short-, medium-, and long-term loans at which Syria's banks lend money to various types of firms in specific sectors of the economy

	Short-term	Medium-term	Long-term
<i>Agricultural sector</i>			
Public firms		4	4
Cooperatives	4 to 6		4
Private firms	5.5 to 7.5		5.5
<i>Commercial trade operations</i>			
Public firms	2.5 to 7.5		no
Private firms	7.5-9		no
<i>Industrial sector</i>			
Public firms	7.5		8
Cooperatives	7.25		7.5
Private firms	10		9.5
<i>Construction sector</i>			
Public firms	5.5		6
Cooperatives	6		6.5
Private firms	7 to 9		7.5 to 9

Note: 1) Interest rates for various types of loans may vary due to the specific circumstances of the loan, such as the collateral which is offered and the general risk evaluation of the loan.

Source: Central Bank of Syria, 2001.

Table 3.6-2: Overview of agricultural loan disbursement by ACB (in Mill SYP) to various types of firms, 1990-1999

	Public firms	Cooperatives	Private firms	Total
1990	123	3963	4521	8607
1991	130	5393	6158	11681
1992	127	5717	7474	13318
1993	93	5794	7650	13537
1994	109	6552	7719	14380
1995	265	7055	8120	15440
1996	204	6930	7926	15060
1997	283	6065	7050	13398
1998	218	5600	6781	12599
1999	191	4556	5475	10222

Source: Central Bank of Syria.

Table 3.6-3: Overview of agricultural loan disbursement by ACB (in Mill SYP) according to the duration of loans¹⁾, 1990-1999

	Short term	Medium term	Long term	Total
1990	6556	1768	283	8607
1991	8042	3430	209	11681
1992	9632	3541	145	13318

1993	10582	2829	126	13537
1994	11480	2776	124	14380
1995	12523	2671	246	15440
1996	12506	2295	259	15060
1997	11134	2012	252	13398
1998	10552	1869	178	12599
1999	8640	1396	186	10222

Note: 1) Short-term loans are provided for sales of inputs and have to be paid back after the harvest. Medium-term loans range between 1-5 years. Long-term loans are granted for five years and more.

Source: Central Bank of Syria.

Table 3.6-4: Disbursement of short term loans disbursed by ACB in Mill. SYP and in current prices for specific purposes, 1990-1999

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Wheat	2549	2862	4147	5008	5022	4952	5120	4369	3618	2676
Barley	585	306	479	424	288	175	262	194,5	127	120
Lentil& chickpeas	79	73	135	156	108	66	51	52	53	21
Various cereals	332	714	443	306	741	926	933	854	775	567
Fodder crops	71	221	44	242	317	411	361	214	67	254
Cotton	1632	1934	2496	2527	2542	3110	3110	3282,5	3455	3838
Industrial crops	162	231	325	366	428	414	386	373	360	360
Vegetable	348	440	503	411	466	520	329	458	586	400
Olives	304	373	311	374	333	462	453	408,5	364	326
Citrus Fruits	46	50	40	36	46	87	60	47	34	17
Apples	45	37	28	28	41	38	35	21,5	8	4
Grape	41	11	48	32	30	67	24	30	35	7
Various trees	256	225	272	235	392	533	521	545	570	570
Poultry	164	250	202	211	285	419	384	368	353	286
Cows	44	50	61	53	82	142	189	212	236	162
Sheep	118	362	147	49	80	52	70	53	36	46
Various Animals	32	38	25	41	53	60	70	78	87	64
Irrigated projects	1329	2704	2872	2020	1571	1292	1076	803	531	513
Land improvement	86	40	148	147	187	275	302	314	327	181
Other infrastructure	18	32	74	113	152	151	168	133	99	52
Green Houses	301	627	348	510	807	865	742	626	510	475
Tractors	12	4	11	82	299	296	323	313	304	231
Harvestors	6	4	1	0	2	6	9	4	0	0
Agric. machinery	47	93	158	166	108	121	82	73	64	52
Total	8607	11681	13318	13537	14380	15440	15060	13830	12599	11222

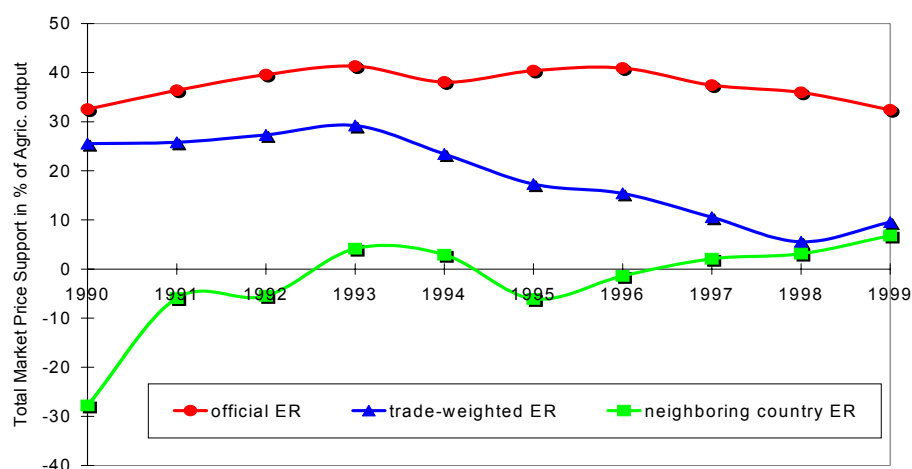
Notes: Data for 1997 are based on an average of 1996 and 1998 because the respective data for 1997 was not available.

Source: Data on loan disbursement from Central Bank of Syria.

CHAPTER 4: QUANTITATIVE ANALYSIS OF TAXATION OF AGRICULTURE IN SYRIA BETWEEN 1990 TO DATE

CHAPTER 4.1: ESTIMATES OF MARKET PRICE SUPPORT

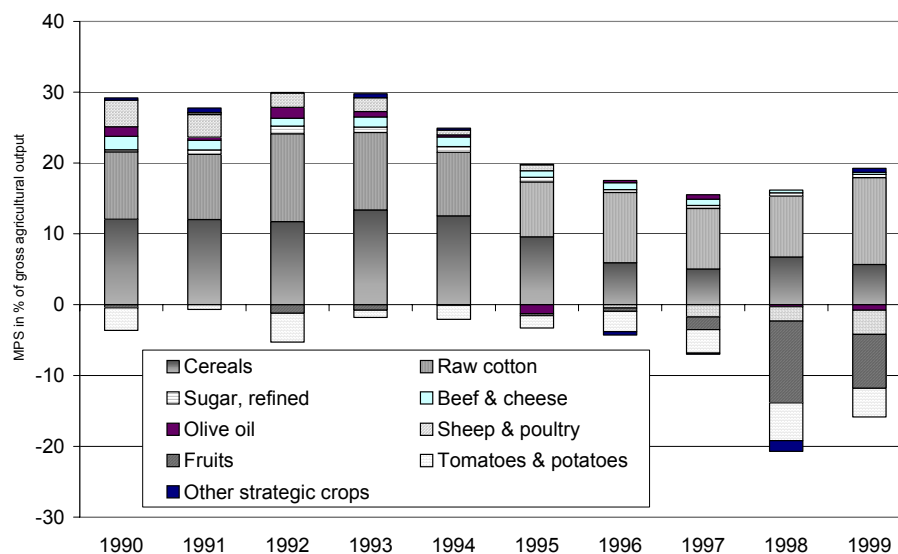
Figure 4.1-1: Syria's total Market Price Support (MPS) associated with indirect agricultural policies and calculated with the official, a trade-weighted, and the neighbouring country exchange rate (Beirut). MPS is presented as a percentage of gross agricultural output (GAO) at constant producer prices, 1990-1999



Notes: Total MPS is based on calculations for all products for which results are reported in Table 4.1-2 to 4.1.4. Due to the lack of data some product-specific calculations for 1999 are either preliminary or not available at all.

Source: own calculations based on data from MAAR and various international sources.

Figure 4.1-2: MPS for various of Syria's agricultural commodities calculated with a trade-weighted exchange rate as a percentage of gross agricultural output at constant producer prices, 1990-1999



Source: own calculations based on data from MAAR and various international sources.

Table 4.1-1: International commodity prices in US\$/t for the calculation of Market Price Support, 1990-1999

	Point of competition ¹⁾	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 ^P	Source
Durum wheat	F.O.B, US Gulf Port	144	136	156	149	159	185	215	166	133	119	120	125	Eurostat; OECD
	F.O.B, US Gulf Port	137	129	152	141	150	177	207	160	126	112	114		USDA
Soft wheat	C.I.F Rotterdam	106	79	92	98	104	136	168	145	116	140	140		Eurostat
	F.O.B, US Gulf Port	120	127	146	138	142	169	188	146	113	98	99		USDA
Flour		250	250	250	250	250	250	250	250	250	250	250		
Barley	C.I.F Rotterdam	95	71	77	73	67	115	148	127	105				Eurostat
Rice	C.I.F Rotterdam	279	304	277	250	292	339	350	314	313	210	242	251	Eurostat; OECD
Raw cotton	F.O.B, US Gulf Port	1224	1194	860	894	1132	1531	1383	1522	1276	1077	950		Eurostat
Sugar, refined	London	235	232	219	268	293	307	270	268	204	250	260		Eurostat
	US Gulf	277	200	201	222	268	297	270	266	214				USDA
Chickpeas	Latakia, unit value	621	747	874	270	389	903	619	746	874	271	389		
Lentils	Latakia	688	278	548	465	440	475							Elamin
Tobacco	Latakia, unit value	580	313	639	549	786	566	147	602	587	442			
Apples	Spain	750	882	221	365	467	403	343	312	428	450	480		Eurostat
Apricots	Spain	575	728	812	566	697	825	783	832	1087				Eurostat
Oranges ²⁾	Greece	327	368	312	409	485	482	324	310	294	281			Eurostat
	fob Latakia	450	589	600	660	647	560							Elamin
Lemons	Greece	500	396	334	289	368	356	381	357	312				Eurostat
Tomatoes ²⁾	Spain	550	420	351	307	433	369	356	458	572	491			Eurostat
Potatoes	Germany	106	121	88	56	134	270	91	71					OECD
Olive oil	Cif Latakia	2301	2008	1899	2067	2443	3592	2765	2012	2412	2605			Eurostat, OECD
	Syria	1650	2400	2400	2700	3000	3000							Elamin
Sheep meat	Latakia	3915	3915	3335	4205	4930	4205							Elamin
Sheep choice	prime US East Coast	2678	2587	2903	3174	3254	3603	3915	3939	3456	3454	3690	3480	USDA; OECD
Beef	Latakia	2300	1980	2100	1566	1957	2222							Elamin
Beef, cow	US Gulf	1259	1236	1129	1245	1064	861	776	813	946	999	1024		USDA
Beef, cow&veal	Hungary	1445	1256	1363	1713	1897								
Cheese	Latakia, unit value	1248	851	378	473	647	695	680	766	575	767			

Milk	New Zealand	122	129	144	138	147	184	191	170					OECD
Poultry	Latakia	1550	1550	1550	1320	1250	1550							Elamin
	EU	1320	1288	1474	1364	1452	1254	1406	1358	1390	1280	1280		OECD
Strawberries	US Gulf	1791	1699	2064	1756	1835	1913	1807	2083	2174	2028	1978		USDA
Rice	Cif Latakia	335	394	348	400	366	412							Elamin

Notes: 1) empty cells indicate that respective prices are not available. 2) Internat. price for 1999 is the minimum and preferential entry price at which Morocco is allowed to export the respective product to the EU (see Coque 2001, p.41).

Source: Data from EUROSTAT, OECD, USDA, Elamin (1997).

Table 4.1-2: Commodity-specific total amount of MPS calculated with a trade-weighted exchange rate, 1990-2000, in Mill SYP

Name of product	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Durum wheat	in Mill. SYP	10460	11542	13723	16025	16751	15407	10267	8711	14107	9583	0
Soft wheat	in Mill. SYP	1358	1698	2164	2560	4024	3811	4455	4296	7253	4258	0
Barley	in Mill. SYP	2999	4290	4572	6416	5975	3926	2463	1521	1854	3077	1523
Raw cotton	in Mill. SYP	11691	13379	21616	20381	19159	18729	28752	24616	29629	36563	50254
Sugar, refined	in Mill. SYP	3256	8364	17070	13148	15594	13992	11165	11242	14215	12759	10898
Chickpeas	in Mill. SYP	57	-103	-631	437	76	-763	-295	-933	-2147	132	-60
Lentils	in Mill. SYP	-147	252	-74	-8	-105	-382	-2582	-519	-4053	182	318
Tobacco	in Mill. SYP	450	780	857	608	606	1270	1433	1038	965	1412	0
Apples	in Mill. SYP	-343	-2161	1933	654	292	863	2283	860	-2064	-1932	-3381
Apricots	in Mill. SYP	-141	110	-580	-428	-49	-128	-215	-548	-2205	-2172	0
Oranges	in Mill. SYP	158	152	405	134	527	-799	969	-931	-2109	-2179	0
Lemons	in Mill. SYP	245	430	448	799	555	568	1302	472	391	0	0
Tomatoes	in Mill. SYP	-2606	-2657	-2757	-1018	-3105	-2560	-2940	-5988	-12478	-11365	0
Potatoes	in Mill. SYP	-1310	1643	-4331	-896	-1107	-1654	-5368	-3592	-5883	-706	0
Olive oil	in Mill. SYP	1681	638	2669	1438	639	-3039	900	1759	-963	-2334	0
Sheep meat	in Mill. SYP	3778	4191	2999	2512	434	2048	-1499	-4788	-6146	-8868	0
Cheese	in Mill. SYP	415	556	820	846	705	706	813	706	81	633	0
Beef	in Mill. SYP	1469	1522	1424	1537	1911	2330	2659	2786	2254	2124	0
Poultry	in Mill. SYP	851	469	530	1117	1010	-44	144	-209	-775	-1704	0
Total sum of MPS	in Mill. SYP	34318	45094	62857	66263	63894	54282	54706	40499	31927	39464	59552
MPS in % of gross ag. output	in %	28	31	36	35	30	22	19	14	9	13	n.a.
Gross agricultural output in current producer prices	in Mill. SYP	122861	145717	174360	186683	213451	241508	290272	288384	344709	298359	n.a.

Notes: 1) Due to the lack of data some product-specific calculations for 1999 and particularly for 2000 are either preliminary or not available at all.

Source: Data from MAAR.

Table 4.1-3: Commodity-specific total amount of MPS calculated with the official exchange rate, 1990-2000, in Mill SYP

Name of product	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Durum wheat	in Mill. SYP	12541	15447	20760	24796	27469	30194	28422	20108	27679	16817	0
Soft wheat	in Mill. SYP	1567	2006	2729	3399	5486	6145	9383	9227	13552	9987	0
Barley	in Mill. SYP	3684	5370	6085	8712	8396	8743	9546	5911	5455	3165	1525
Raw cotton	in Mill. SYP	5434	7457	10475	10275	10799	13289	19350	26109	26330	24662	17019
Sugar, refined	in Mill. SYP	4091	10590	22385	19604	25458	24447	18832	21826	24126	25982	11415
Chickpeas	in Mill. SYP	236	182	455	715	293	355	496	554	674	426	-20
Lentils	in Mill. SYP	459	449	369	828	1043	1265	989	922	981	577	347
Tobacco	in Mill. SYP	510	850	1110	757	854	1577	1524	1506	1483	1823	0
Apples	in Mill. SYP	910	532	3004	2334	2711	3056	5304	4791	4003	3051	-3134
Apricots	in Mill. SYP	195	538	306	400	567	308	1222	309	328	328	0
Oranges	in Mill. SYP	602	939	938	1414	3008	1743	3625	1242	2367	1694	0
Lemons	in Mill. SYP	414	723	667	999	1068	976	2103	1028	1201	0	0
Tomatoes	in Mill. SYP	-726	-163	86	1252	960	1079	1125	328	-366	-78	0
Potatoes	in Mill. SYP	233	2363	-640	1047	1732	1836	385	1839	2737	2160	0
Olive oil	in Mill. SYP	3252	1724	5963	3757	6020	4017	10685	7081	12363	5523	0
Sheep meat	in Mill. SYP	6247	8739	8595	8043	1312	13106	14292	15169	14351	14388	0
Cheese	in Mill. SYP	605	830	949	1041	1028	1122	1350	1517	161	1720	0
Beef	in Mill. SYP	1805	2105	1987	2227	2665	3044	3570	3986	3860	3955	0
Poultry	in Mill. SYP	1587	1783	2704	3010	3086	3019	3360	3988	4263	3633	0
Total sum of MPS	in Mill. SYP	43646	62463	88926	94610	103954	119322	135562	127439	145549	119813	27152
MPS in % of gross ag. output	in % of GDP	36	43	51	51	49	49	47	44	42	40	n.a.
Gross agricultural output in current producer prices	in Mill. SYP	122861	145717	174360	186683	213451	241508	290272	288384	344709	298359	n.a.

Notes: 1) Due to the lack of data some product-specific calculations for 1999 and particularly for 2000 are either preliminary or not available at all.

Source: Data from MAAR.

Table 4.1-4: Commodity-specific total amount of MPS¹⁾ calculated with the neighboring country exchange rate²⁾, 1990-2000, in Mill SYP

Name of product	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Durum wheat	in Mill. SYP	3329	5694	4375	6727	8051	5443	2602	6725	13538	9179	0
Soft wheat	in Mill. SYP	641	1236	1414	1670	2838	2239	2375	3437	6989	3938	0
Barley	in Mill. SYP	650	2672	2563	3983	4010	680	-528	756	1703	3073	1519
Raw cotton	in Mill. SYP	-3024	-995	7574	8274	7549	3482	15130	13426	25817	32890	45430
Sugar, refined	in Mill. SYP	394	5031	10010	6304	7587	6946	7928	9397	13799	12021	9961
Chickpeas	in Mill. SYP	-557	-531	-2073	142	-99	-1517	-629	-1193	-2265	116	-133
Lentils	in Mill. SYP	-2225	-41	-662	-894	-1038	-1492	-4090	-770	-4264	160	267
Tobacco	in Mill. SYP	242	674	520	449	405	1064	1394	957	944	1389	0
Apples	in Mill. SYP	-4639	-6193	512	-1126	-1671	-615	1007	175	-2318	-2210	-3830
Apricots	in Mill. SYP	-1290	-532	-1756	-1306	-548	-422	-821	-697	-2312	-2312	0
Oranges	in Mill. SYP	-1366	-1026	-304	-1222	-1486	-2511	-153	-1310	-2297	-2395	0
Lemons	in Mill. SYP	-333	-7	156	587	138	293	964	375	357	0	0
Tomatoes	in Mill. SYP	-9051	-6392	-6533	-3425	-6405	-5012	-4656	-7089	-12986	-11994	0
Potatoes	in Mill. SYP	-6598	565	-9235	-2954	-3411	-4005	-7797	-4539	-6245	-866	0
Olive oil	in Mill. SYP	-3705	-987	-1705	-1020	-3729	-7794	-3231	832	-1522	-2772	0
Sheep meat	in Mill. SYP	-4687	-2619	-4433	-3351	-278	-5403	-8166	-8266	-7006	-10165	0
Cheese	in Mill. SYP	-237	146	649	640	443	425	586	565	77	573	0
Beef	in Mill. SYP	315	648	677	807	1299	1849	2275	2577	2186	2022	0
Poultry	in Mill. SYP	-1672	-1500	-2358	-889	-675	-2109	-1213	-940	-986	-2002	0
Total sum of MPS	in Mill. SYP	-33813	-4157	-607	13394	12979	-8459	2979	14416	23210	30645	53213
MPS in % of gross ag. output	in % of GDP	-28	-3	0	7	6	-4	1	5	7	10	n.a.
Gross agricultural output in current producer prices	in Mill. SYP	122861	145717	174360	186683	213451	241508	290272	288384	344709	298359	n.a.

Notes: 1) Due to the lack of data some product-specific calculations for 1999 and particularly for 2000 are either preliminary or not available at all. 2) Exchange rate in Beirut.

Source: Data from MAAR.

CHAPTER 4.2: ESTIMATES OF CREDIT SUBSIDIES

Table 4.2-1: Indirect subsidies associated with disbursement of short term loans in Mill. SYP (in current prices) and in percent of agricultural GDP, 1990-1999

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Wheat	102	114	166	200	201	198	205	175	145	107
Barley	23	12	19	17	12	7	10	8	5	5
Lentil& chickpeas	3	3	5	6	4	3	2	2	2	1
cotton	65	77	100	101	102	124	124	131	138	154
Olives	12	15	12	15	13	18	18	16	15	13
Citrus Fruits	2	2	2	1	2	3	2	2	1	1
Apples	2	1	1	1	2	2	1	1	0	0
Poultry	7	10	8	8	11	17	15	15	14	11
Cows	2	2	2	2	3	6	8	9	9	6
Sheep	5	14	6	2	3	2	3	2	1	2
Loans for other purposes	122	215	211	187	222	237	213	193	173	0
Total	344	467	533	541	575	618	602	553	504	449
In % of agricultural GAO	0,28	0,32	0,31	0,29	0,27	0,26	0,21	0,19	0,15	0,10

Notes: Data for 1997 are based on an average of 1996 and 1998 because the respective data for 1997 was not available. Calculation of subsidized credit amount is based on a four percent differential between interest rates farmers pay and the one other private firms have to pay in Syria, for instance, in the industrial sector (see Table 3.6-1).

Source: Data on loan disbursement (see Table 3.6-4) from Central Bank of Syria.

CHAPTER 4.3: ESTIMATES OF INPUT SUBSIDIES

Table 4.3-1: Market Price Support for three types of fertiliser in Mill. SYP (in current prices), 1990-2000

Summary results for three types of fertilizer ¹⁾ :	1990 ²⁾	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total indirect subsidies (trade weighted ER)	0	522	659	2095	1073	705	418	476	498	101
Total indirect subsidies (neighbouring countries ER)	0	-761	-214	806	550	346	216	470	634	168
Total indirect subsidies (official ER)	0	1515	1647	3930	2262	1672	1595	2237	2286	1150

Notes: 1) Fertiliser for which calculations of market price support was possible: Urea (46% N), Triple Super Phosphat, and Potassium Sulphat. 2) Whenever data is not available we use '0' instead of 'not available' for computational reasons. Data was not complete for all three types of fertilisers for the whole period

Source: Data from TAFCO.

CHAPTER 4.4: BUDGETARY EXPENDITURES

Table 4.4-1: General budgetary expenditures by MAAR and of the Ministry of Irrigation for various general support items in Mill. SYP (current expenditures), 1990-2000

	1990	1995	1996	1997	1998	1999	2000	Percent of all non-
Budgetary expenditures by MAAR in Mill.								
Agricultural research	76	237	309	329	335	301	470	8,1
Extension services	56	90	89	90	105	91	158	2,6
Soils classification	12	42	39	39	44	34	43	0,8
Community control	36	95	108	146	143	137	154	3,0
Fruit Seedlings	166	214	290	248	259	251	330	6,1
Reclamation projects	294	570	843	957	1011	879	2158	31,7
Forestation projects	211	398	688	576	769	619	849	15,3
Veterinary care	32	79	76	61	64	53	100	1,6
BADIA (dessert)	239	240	230	256	296	256	433	7,2
Rural roads	0	327	548	792	844	502	750	13,1
Arab horses breeding	0	66	43	45	24	23	21	0,5
Bees and honey	28	29	32	35	37	32	28	0,6
Rain evoking	0	24	23	29	26	26	18	0,5
Fertilizers use	0	0	27	36	40	22	35	0,6
State agricultural	367	354	460	410	302	335	322	6,9
Real estate	57	50	61	63	75	65	75	1,5
Total of non-operating	1574	2815	3866	4112	4374	3626	5944	100,0
Current expenditure	884	1701	1717	1798	1835	1883	n.a.	
Total	2458	4521	5590	5922	6232	5538	5957	
Budgetary expenditures by the Ministry of Irrigation, in million SP								
Central department	2546	5408	5813	6722	6956	6389	5586	
Reclamation	2062	6352	5320	7321	6433	4822	6673	
Total	4608	11761	11343	14065	13389	11346	12413	
Sum of budgetary expenditures of MAAR and Ministry of Irrigation together								
Total	7066	16281	16934	19987	19621	16884	18369	
In percent of all govt.	11,4	10,0	9,0	9,5	8,3	6,6	n.a.	
In percent of GAO	5,8	6,7	5,8	6,9	5,7	5,7		

Source: MAAR, 2001

Table 4.4-2: Budgetary revenues by Ministry of Agriculture and Agrarian Reforms and of the Ministry of Irrigation for various revenue items in Mill. SYP, 1990-1999^{a)}

	1990	1995	1996	1997	1998	1999
Irrigation fees	40	55	60	90	012	012
Excise tax on livestock	25	15	15	15	20	20
Excise tax on sugar	60	75	75	75	90	100
Excise taxes on tobacco	350	650	800	800	650	800
Tax on agricultural production	400	1200	1500	1000	90	900
Duties on cotton exports	130	750	1000	1000	1000	1000
Excise taxes on hunting, fishing & vessels	2	2	2	2	2	2
Revenues of state land	60	346	350	350	400	425
Agricultural budget surplus	205	176	273	212	234	180
Liquidity surplus	75	145	145	162	165	148
Total Agricultural revenues	4013	10599	16964	22280	22717	22978
Agric. Revenues as percent of total public revenues	6,5	6,5	9,0	10,6	9,6	9,0
Agric. Revenues as percent of GAO	3,3	4,4	5,8	7,7	6,6	7,7

Note: a) Data for 2000 was not available yet.

Source: MAAR, 2001

CHAPTER 4.6: ESTIMATES OF TOTAL TRANSFERS TO AGRICULTURE

Table 4.6-2: Estimates of transfers associated with direct and indirect agricultural support policies in Syria in Mill. SYP and in percent of Gross Agricultural Output (GAO), 1990-1999^{a)}

	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Gross agricultural output (GAO) in current in Mill. SYP producer prices											
		122861	145717	174360	186683	213451	241508	290272	288384	344709	298359
Producer Support Estimates (PSE)											
Market price support for Syria's major agricultural commodities calculated with different exchange rates											
Sum of MPS, trade weighted ER	in Mill. SYP	34318	45094	62857	73881	63894	54282	54706	40499	31773	39862
Sum of MPS, official ER	in Mill. SYP	43646	62463	88926	103982	103954	119322	135562	127439	145514	119904
Sum of MPS, neighboring country ER	in Mill. SYP	-33813	-4157	-607	19151	12979	-8459	2979	14416	23052	31060
Other indirect support											
Credit subsidies	in Mill. SYP	344	467	533	541	575	618	602	553	504	449
Input subsidies	in Mill. SYP	0	522	659	2095	1073	705	418	476	498	101
Total PSE, trade weighted ER	in Mill. SYP	34662	46083	64049	76517	65542	55605	55727	41528	32775	40412
Percentage PSE	in % of GAO	28	32	37	41	31	23	19	14	10	14
General Services Support Estimates (GSSE)											
Budgetary expenditures MAAR	in Mill. SYP	1517	1737	1950	2043	2487	2770	3812	4061	4322	3590
Operating expenditures MAAR	in Mill. SYP	884	1275	1667	1288	1367	1701	1717	1798	1835	1883
Ministry of Irrigation	in Mill. SYP	4608	12747	6517	8850	8826	11761	11343	14065	13389	11346
Ministry of Supply	in Mill. SYP	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total GSSE	in Mill. SYP	7009	15759	10134	12181	12681	16232	16872	19924	19546	16819
Percentage GSSE	in % of GAO	6	11	6	7	6	7	6	7	6	6
Consumer Support Estimates (CSE)											
Transfers to consumers from taxpayers	in Mill. SYP										
Percentage CSE	in % of GAO	0	0	0	0	0	0	0	0	0	0
Total Support Estimate (TSE)											
Producer Support Estimates	in Mill. SYP	34662	46083	64049	76517	65542	55605	55727	41528	32775	40412

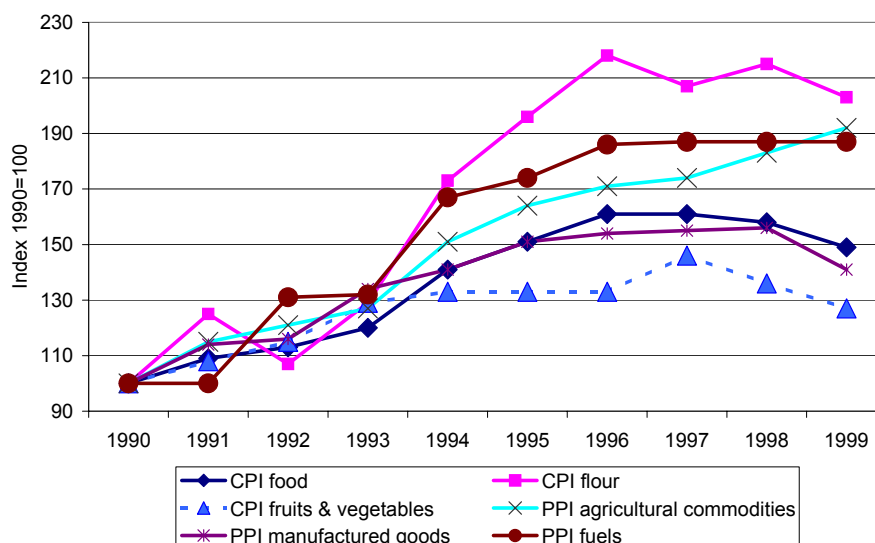
General Services Support Estimates	in Mill. SYP	7009	15759	10134	12181	12681	16232	16872	19924	19546	16819
Consumer Support Estimates	in Mill. SYP	0	0	0	0	0	0	0	0	0	0
Budget revenues from agriculture	in Mill. SYP	4013	4013	6749	7771	9068	10599	16964	22280	22717	22978
TSE	in Mill. SYP	34761	50384	52242	61607	55276	48785	45698	29166	16952	22896
Percentage TSE	in % of GAO	28	35	30	33	26	20	16	10	5	8

Note: a) Data for 2000 was not available yet.

Source: MAAR, 2001, Ministry of Irrigation, 2001; Sources for the data used for the calculations of MPS is reported in respective Tables of this report.

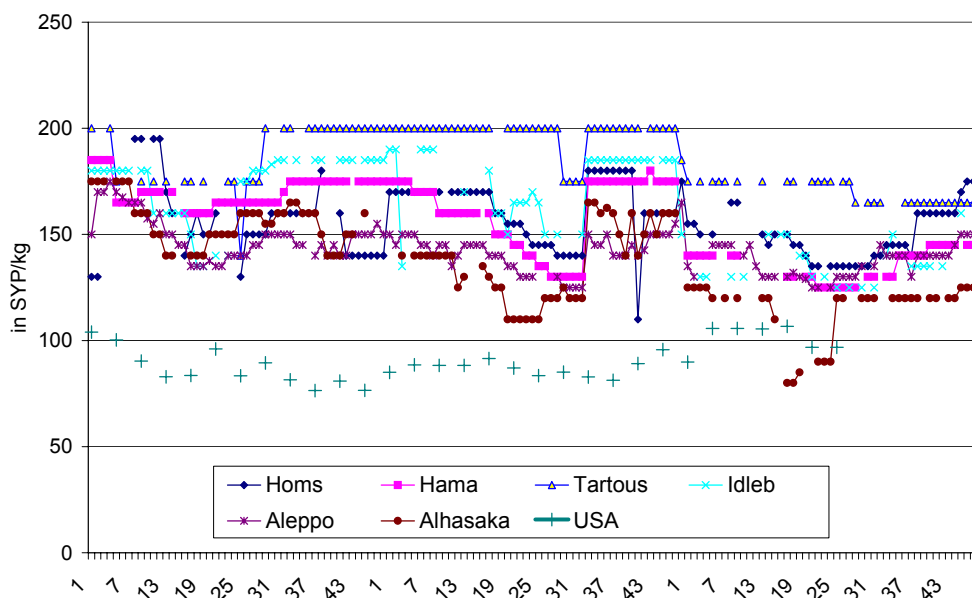
CHAPTER 4.8: PRICE ANALYSIS: TERMS OF TRADE AND MARKET INTEGRATION

Figure 4.8-1: Development of consumer and producer price indices (CPI and PPI) for food, manufacturing goods, agricultural commodities, and agricultural inputs (fuel), 1990=100



Source: Central Bureau of Statistics, 2000.

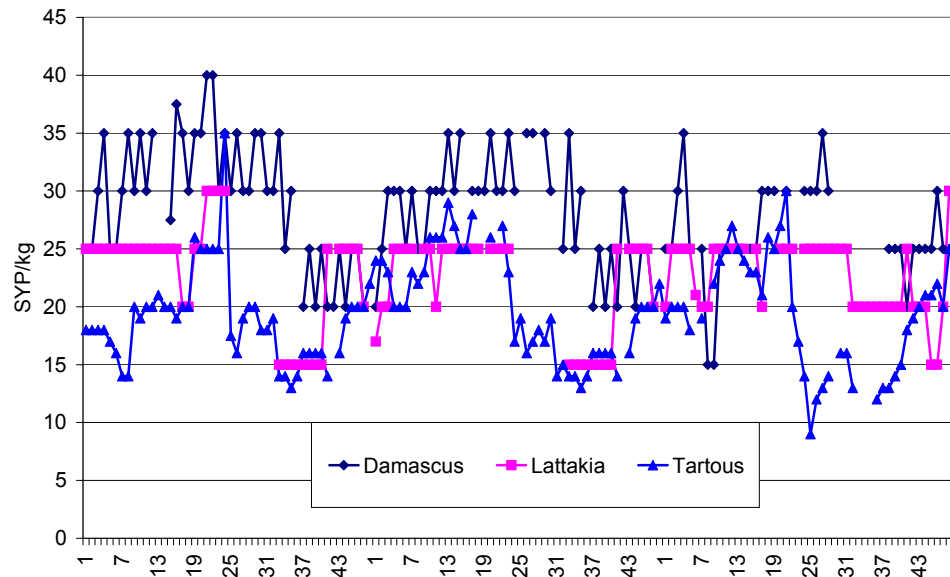
Figure 4.8-2: Weekly wholesale prices for Lamb in SYP/kg for six Syrian governorates between Jan. 98 and Nov. 2000 and for the USA¹⁾



Notes: US prices for feeder lamb (in St. Angelo) were available only on a monthly basis. They were converted into SYP/kg by using the average annual trade weighted exchange rate (see Table ...).

Source: Syrian price data from MAAR; US price data from USDA.

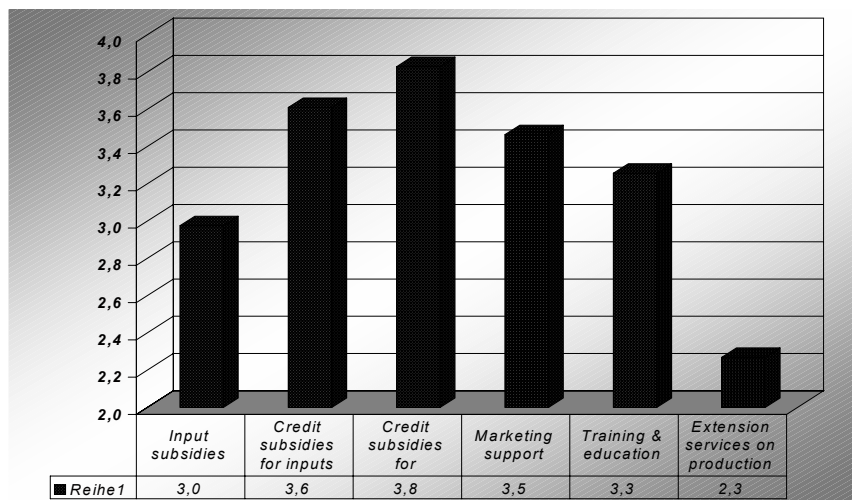
Figure 4.8-3: Weekly retail prices for apples in SYP/kg for three Syrian regions between Jan. 98 and Nov. 2000



Source: MAAR, 2001.

CHAPTER 4.9: FARM-LEVEL SURVEY

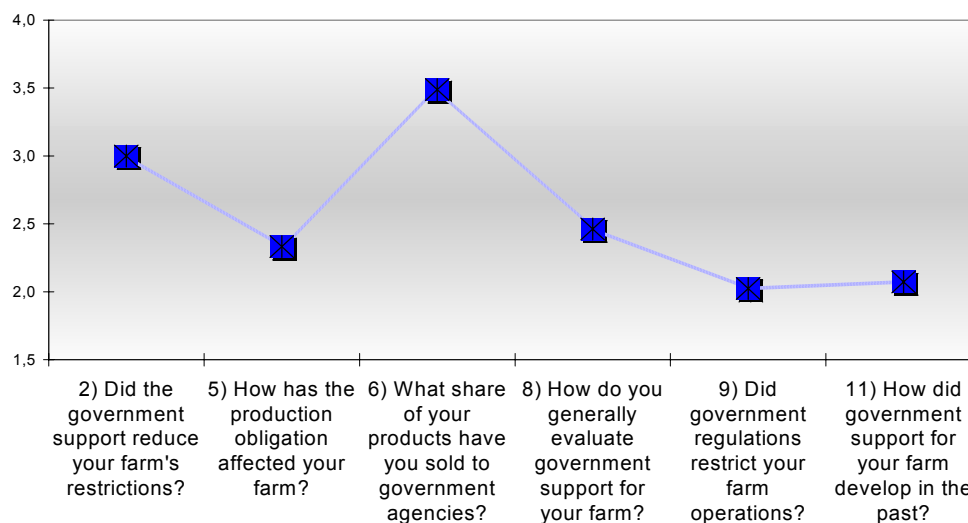
Figure 4.9-1: Answers to question 1: From which type of state support has your farm benefited most during the last few years?¹⁾



Note: 1) 1 for ‘This form of state support has been very important’ and 5 for ‘This form of state support has not been important at all’.

Source: Farm-household survey conducted by Center ”Institutional Strengthening and Policy Reform”, May and June 2001.

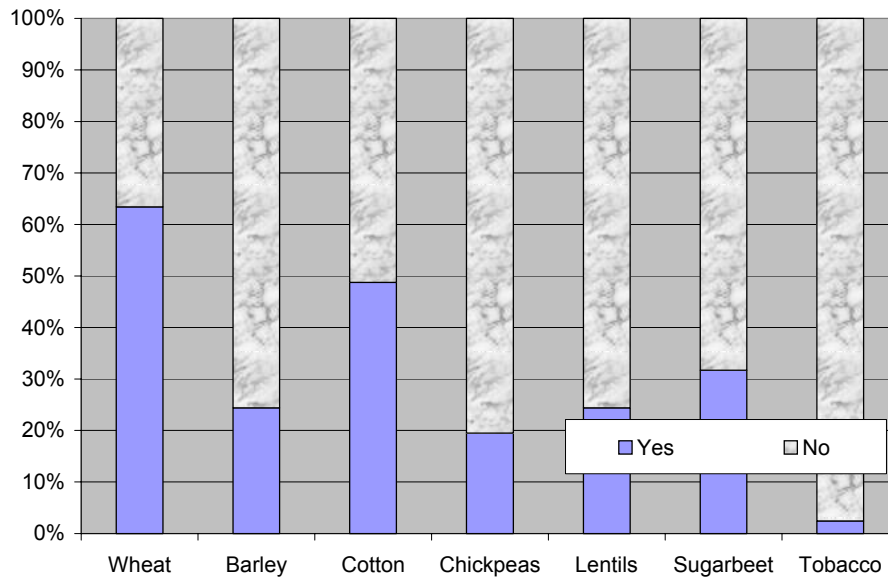
Figure 4.9-2: Answers to questions 2, 5, 6, 8, 9, 11 (see Chart) evaluated on a scale between 1 and 5¹⁾



Note: 1) Answers to all questions were possible on a scale between 1 and 5. The following answers were associated with the answers: In the case of question 1: 1 for ‘very much’ and 5 for ‘not at all’; Question 5: 1 for ‘Production would have been the same’ and 5 for ‘Production would have been completely different’; Question 6: 1 for ‘Share was 0-20%’ and 5 for ‘Share was 80-100%’; Question 8: 1 for ‘was very helpful’ 5 for ‘was not helpful at all’; Question 9: 1 for ‘Government regulations were not restricting farm operations negatively at all’ and 5 for ‘restrictions were very negative’. Question 11) 1 for ‘Government support stayed the same’ and 5 for ‘Government support decreased significantly’.

Source: Farm-household survey conducted by Center "Institutional Strengthening and Policy Reform", May and June 2001.

Table 4-9.1: Answers to question P4: Are you obliged to produce any of the following strategic crops?



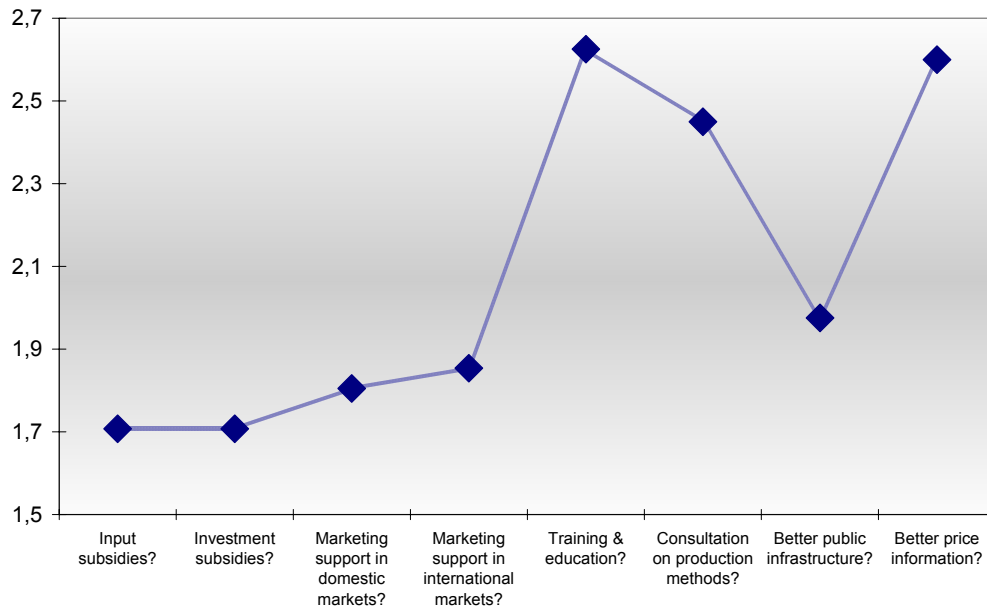
Source: Farm-household survey conducted by Center "Institutional Strengthening and Policy Reform", May and June 2001.

Figure 4-9.3: Answers to question 7: If you sold your products to government agencies, why did you do so?¹⁾ Share of respondents which indicated 'yes, this factor was important' or 'No, this factor was not important'



Source: Farm-household survey conducted by Center "Institutional Strengthening and Policy Reform", May and June 2001.

Figure 4-9.4: Answers to question 12: In which of the following areas would additional government support be beneficial for your farm?¹⁾



Note: The respondent could choose any figure between 1 and 5 to indicate the relevance of the respective factor. 1 for ‘this factor would be very beneficial for my farm’ and 5 for ‘additional support in this area would not be helpful at all’.

Source: Farm-household survey conducted by Center ”Institutional Strengthening and Policy Reform”, May and June 2001.

Questionnaire for Farm Household Survey: Addendum on “Evaluation of Agricultural Policies”

Module P: Assessment of regulations and state support to agriculture in Syria

Interviewees: Please, inform the farmer that the objective of the following module in the questionnaire is to collect **the farmer’s opinion and evaluation of current agricultural policies in Syria** and its effects on his farm.

Instructions for interviewers to code the answers:

- If the respondent has a choice from “1 to 5” please enter the chosen number in the square.
- If the possible answer to one question is “yes” choose 1 if it is “no” choose 2.
- If the farmer refuses to give an answer to the respective question the appropriate code is “777”; if he states “The answer is hard to tell” use “666”; if the question is not applicable please insert “888”.

P1) From which type of state support has your farm benefited most during the last few years?

Coding instructions: Please report the judgement of the farmer for each answer indicated below; assign 1 for ‘this form of state support has been very important’ and 5 for ‘this form of state support has not been important at all’:

- | | |
|---|--|
| <input type="checkbox"/> 4a) Input subsidies | <input type="checkbox"/> 4b) Credit subsidies for inputs |
| <input type="checkbox"/> 4c) Credit subsidies for investments | <input type="checkbox"/> 4d) Marketing support |
| <input type="checkbox"/> 4e) Training and education | <input type="checkbox"/> 4f) Extension service: Consultation on production methods |
| <input type="checkbox"/> 4g) Other, please specify: | |

P2) To which extent did the above mentioned government support provided to your farm reduce the restrictions your farm faced during the last years

Coding instructions: 1 for ‘very much’; 5 for ‘not at all’)?

- 1 2 3 4 5

P3) Do you have to pay any taxes or fees to the government such as income, sales taxes or production fees? If yes, please specify which.

Coding instructions: interviewer please take notes here of the answers:

.....

P4) Are you obliged to produce strategic crops?

Coding instructions: Please ask for an answer for each product and use 1 for ‘yes’ and 2 for ‘No’

- | | | | |
|---|--------------------------------------|---|--------------------------------------|
| <input type="checkbox"/> 1a) Wheat | <input type="checkbox"/> 1b) Barley | <input type="checkbox"/> 1c) Cotton | |
| <input type="checkbox"/> 1d) Chick-peas | <input type="checkbox"/> 1e) Lentils | <input type="checkbox"/> 1f) Sugar-beet | <input type="checkbox"/> 1g) Tobacco |

If the answer to the last question was 'no' please proceed with question P6 (otherwise continue with question P5):

P5) How has the production obligation for specific strategic crops affected your production decision?

Coding instructions: Choose 1 for 'Production would have been the same' and 5 for 'Production would have been completely different'.

- 1 2 3 4 5

P6) What share of your products have you sold during the last year to government agencies? Choose the appropriate answer.

Coding instructions: Choose 1 for '0-20%' and 5 for '80-100%'.

- 0-20% 20-40% 40-60% 60-80% 80-100%

P7) If you sold any products to government institutions, why did you do so?

Coding instructions: Various items can be chosen. Use 1 for 'yes' and 2 for 'No'

- 7a) Price was higher than from private sector 7b) I was obliged to do so
 7c) Because I had to repay credits to the state administration 7d) No other marketing channels were available
 7e) Other reasons:

P8) How do you generally evaluate the government support your farm received during the last years?

Coding instructions: 1 for 'was very helpful', 5 for 'was not helpful at all'

- 1 2 3 4 5

P9) There also might have been administrative or government regulations which restricted the operation of your farm such as production controls, obligatory marketing to the state etc. Please evaluate how such government restrictions have affected your farm operation.

Coding instructions: 1 for 'government regulations were not affecting farm operation negatively at all' 5 for 'restrictions were very negative'.

- 1 2 3 4 5

P10) Please specify which government regulations have restricted your farm operation, if any:

.....

P11) How did government support for your farm develop during the last five years?

Coding instructions: 1 for 'stayed the same'; 5 for 'decreased significantly'

- 1 2 3 4 5

P12) Assume that the government wants to restructure its support to Syrian agriculture! In which of the following areas would additional support from the government be most beneficial for you?

Coding instructions: Please ask the farmer to give a judgement for each item. He can choose 1 for ‘additional government support in the respective policy area would be very beneficial for my farm’ and 5 for ‘additional support would not be helpful for my farm at all’:

- | | |
|--|--|
| <input type="checkbox"/> 12a) Input subsidies | <input type="checkbox"/> 12b) Investment subsidies |
| <input type="checkbox"/> 12c) Marketing support in domestic markets | <input type="checkbox"/> 12d) Marketing support in foreign markets |
| <input type="checkbox"/> 12e) Training and education in farm practices | <input type="checkbox"/> 12f) Consultation on production methods |
| <input type="checkbox"/> 12g) Provision of public infrastructure such as road transportation | |
| <input type="checkbox"/> 12h) Provision of price information for your farm’s products in neighboring markets | |
| <input type="checkbox"/> 12i) Other, please specify: | |

Thank you for taking the time to answer these questions!

End of questionnaire!

Are there any particular observations you made or additional comments of the farmer which might be important for the evaluation of this questionnaire? If yes, please note:

.....

Terms of reference

Explicit and Implicit Taxation of Agriculture in the Syrian Arab Republic, and Implications for Net Transfers to Agriculture

Duration: 1st Mission 3½ weeks

2nd Mission 5½ weeks

E.O.D.: 1st Mission: As soon as possible

2nd Mission: 6 weeks after the conclusion of first mission

Duty Station: Damascus, Syria

Language: English

Rationale:

The Syrian trade in agricultural products is characterised by complex and segmented regulatory and institutional system: product specific tariff and non-tariff measures, product heterogeneous currency regulations linking import and export operations, a system of specialised state trading enterprises acting, in some cases, as legal monopolies. It is important to understand the implications of this system for agricultural explicit and implicit taxation.

Activities:

Under the direct supervision of the FAO Operations Service in the Near East (RNER) and the Technical supervision of the Policy Assistance Branch (RNEP), and the CTA and in close collaboration with the Director of NAPC / National Project Director, Agricultural Economist and the National Task Force, the Consultant will prepare a detailed Policy study on "Explicit and Implicit Taxation of Agriculture in the Syrian Arab Republic, and Implications for Net Transfers to Agriculture".

In particular the consultant will:

1. Provide a systematic account of all the regulatory and institutional elements defining the present setting for agro-food trade, with special reference to exchange rate regime, currency regulations, tariff and non-tariff measures, taxes and subsidies on import and export, and their

interdependence and role in defining the present trade environment. Assess how these have changed over time on a product by product basis.

2. Identify, describe and analyse the interrelations of the existing regulatory system of external transactions with domestic prices' determination mechanisms, both public and private.
3. Assess the differences between domestic producer prices and those at international markets (adjusted to Syrian border and to producer level), at both official as well as market exchange rates.
4. Assess the equilibrium exchange rate to the extent that is different than the market rate and adjust the producer and international prices accordingly.
5. Assess the degree of direct (namely without exchange rate adjustments) and indirect (namely with exchange rate adjustments) taxation of the main traded agricultural products. Such products should include wheat, cotton, sugarbeet, barley, tobacco, lentils, chickpeas, the main fruits and vegetables, olive oil, and some livestock products. The assessment should be made for a set of years spanning the period 1990 to 1999 or if possible 2000.
6. Estimate the direct and indirect aggregate fiscal implication by expanding the estimates of direct and indirect taxation by product to estimate the aggregate magnitudes of the direct and indirect fiscal flows, generated by the various domestic and trade policies.
7. Assess the present amount and evolution over time of public financial outflows towards agriculture, with special attention to
 - public investment projects,
 - agricultural credit administrative system governing the agro-food sector,
 - agricultural taxes, fees and other fiscal revenues from domestic activities,
 - custom proceedings and other revenues from agricultural trade, and
 - net transfer from public enterprises
8. **Estimate the overall net direct financial cost of the present agro-food policy regime as well as the trend of the net financial cost overtime. Assess the indirect cost or transfers based on the implicit exchange rates**
9. Prepare project profiles for provision of technical assistance in key areas of the explicit and implicit taxation of agriculture in the Syrian Arab Republic, and implications for net transfers to agriculture that can be submitted to funding sources.
10. Prepare a Technical report including the results of his/her study.

To accomplish the above tasks, the consultant shall undertake two missions to Syria.

In the first mission of three weeks duration in Syria, the consultant will:

- Undertake field visits and conduct interviews with concerned parties to have a preliminary understanding of the explicit and implicit taxation of agriculture in the Syrian Arab republic, and implications for net transfers to agriculture;
- Prepare a plan of work and develop a detailed scheme of analysis;
- Provide detailed account of the data and information required for the successful completion of the suggested study and appropriate methodologies for its collection and preliminary processing;
- Propose a time schedule for data collection and analysis;
- Train members of the task force on data collection and processing;
- Supervise initial stages of data collection and provide on-time guidance; and
- Prepare a report in English on his preliminary findings and indications on the main areas of concern he / she plans to address in the second mission and an annotated

outline of the final study-report, and submit to the FAO Operation Service in Cairo.

In the second mission of five weeks duration in Syria, the consultant will:

- Review and validate the data collected by the task force, identify gaps and take necessary action for quickly filling these gaps;
- Organize and implement a short training session for the project trainees to illustrate the methodology employed in this study, and highlight its main findings;
- Give a seminar at the end of the assignment for senior Government officials of MAAR, other relevant institutions and parastatals, concerned political and professional organizations, concerned agents in the private sector and representatives of the donor community, to present and discuss the results of the study.
- Prepare while in Syria, a draft technical report in English (with an executive summary) including the main findings, conclusions and policy recommendations on the explicit and implicit taxation of agriculture in the Syrian Arab republic, and implications for net transfers to agriculture and submit it to FAO for clearance; and
- Provide a brief evaluation of the support provided by each member of the task force, excluding the trainees.

The Consultant will finalize the report, including FAO comments and submit it to FAO, both as hard copy and on diskette, within two weeks from receiving those comments.

Qualifications:

Advanced degree in economics/agricultural economics with 10 years experience in macroeconomic policies and the implications of taxation of agriculture for the net transfers to sector in developing countries and countries in transition.

Project profiles for future studies

Profile No. 1: Analysis of agricultural policy reforms in Syria on food consumers

Agricultural policy reforms not only affect producers but also food consumers. These effects are likely to be the more significant the higher the share of food expenditures in total expenditures. According to Engel's Law this share decreases as average incomes increase. Hence, the effects of agricultural policy reforms not only differs between countries with different income levels but also within one country in which various income levels prevail.

Many households in Syria live in poverty with respect to various indicators. Generally, the share households have to spend on food is relatively high. Therefore, the government of Syria implemented food price subsidies in the past. However, these have been very costly particularly as producer prices for major agricultural food products have also been highly subsidized. In the course of liberalizing Syria's agricultural policies, consumer food subsidies have also been phased out. The effects of the respective policy changes are widely unknown. Currently, the only major products that continue to be subsidized for all consumers are flour and bread. Other product-specific consumer subsidies have been widely dismantled already.

Further reductions in consumer subsidies might prove to be rather harmful particularly for the lowest income groups. Targeted food subsidies might be an appropriate tool to reduce the social costs of food consumer subsidies. However, efficient ways of administering such targeted food subsidy schemes have to be identified.

Therefore, a study should be carried out which has the following objectives:

- descriptive assessment of current food consumer subsidy schemes;
- quantitative assessment of current expenditure structure of Syrian households of various income groups;
- analysis of the effects of agricultural policies on food consumers;
- recommendation on organizational design of targeted food subsidy schemes.

Methodologically the study should be based on:

- a systematic account of all consumer food subsidy schemes currently in force in Syria;
- a rather large household survey of urban and rural households on expenditures and incomes;
- a cluster analysis with which various household types can be identified according to socio-economic, regional and other characteristics which will allow to trace the effects of simulated price changes of major food commodities which could be the result of future agricultural policy changes.
- the primary data collected in this survey could also serve as an important data source for the specification of household composition in an economy-wide model of Syria which is proposed in the following project profile.

Profile No. 2: Assessment of the effects of agricultural policies and macro-economic policies on Syrian agriculture with an applied computable general equilibrium (CGE) model

The quantification of the effects of agricultural policies in this study relied by and large on partial equilibrium analysis. However, it was pointed out that macroeconomic policies such as investment, credit, and exchange rate policies etc. do have significant effects on agriculture in general and on agriculture in Syria in particular.

An adequate tool for the analysis of the economy-wide effects of agricultural policies as well as of the effects of macro-policies on agricultural sector development would be a general equilibrium model. Empirical analysis with applied computable general equilibrium (ACGE) models has been done frequently ever since in the late 70s first macro-structuralistic models for developing countries have been developed, for instance, by Lysi and Taylor (for Brasil) and by Adelman and Robinson (for South Korea). Today various so-called micro-structuralistic models exist for developing countries. They incorporate many of the structural rigidities within the respective economies such as capital or labor immobility between sectors, fixed prices or quantitative constraints on production and/or imports/exports between different sectors.

Lately several such micro-structuralist models have been developed for transition economies as well. The international consultant of this study developed and described such a model for the Russian Federation (Wehrheim 2001 and 2001). The model has a specific focus on agriculture and the food industries. Out of a total of 20 sectors into which the Russian economy has been split, 10 belong to the agro-food sectors. The primary farm sectors are differentiated according to various structural characteristics (size, type of products and type of operation, i.e. private farms, subsistence farms, or collective farms).

In order to assess the whole set of national sector-specific and macro-economic policies which currently affect the agricultural sector in Syria, the development of an applied general equilibrium model would be of relevant. Various data components must be available for one year of the recent past:

- An Input-Output-Table (IOT)
- An Social Accounting Matrix (SAM)

The SAM normally can be compiled from the System of National Accounts but the IOT has to be compiled by the National Statistical Office.

If these data components were available the theoretical structure of the model could be linked with this first data base. Thereafter, in consecutive steps, the data base of such a model could be improved by adding micro-economic data from farm and household surveys conducted by the project team.

The terms of reference of such a study should contain at least the following tasks:

- Screening the available data
- Compiling a consistent IOT and SAM for a recent year
- Developing an appropriate theoretical structure of the model for the Syrian economy
- Combining the data base and the theoretical structure of the model in a software which allows to do mathematical programming (e.g. GAMS)
- Instruction and training of national experts on the model
- Processing micro-economic data such that it can be included into the model's data base.

- Carrying out policy simulations on various policies which are relevant for Syria's agricultural sector e.g.: abolition of agricultural export taxes; devaluation of the exchange rate; reducing quantitative production constraints, etc. It should be clear that such a study needs substantial resources. Because of the tedious work involved in developing the data base of such a model, the respective study should be implemented in various consecutive missions and in close cooperation with national experts.

References for this project profile:

WEHRHEIM, P. (2001): Economy-wide Analysis of Russia's Agro-food Sector in Transition. Book manuscript, 225 pp. (forthcoming).

WEHRHEIM, P. (2000): The role of the agro-food sector in the macro-economy: General equilibrium effects. *In: Wehrheim, P., K. Frohberg, E. Serova, and J. von Braun* (eds.): *Russia's Agro-food Sector: Towards Truly Functioning Markets*. Kluwer Academic Publishers, Boston/Dordrecht/London: 155-79.

Profile No. 3: Quantitative assessment of marketing costs which are associated with domestic and international trade operations of agricultural commodities

A quantitative and systematic assessment of marketing costs which are associated with sales of agricultural commodities would be an essential task in order to identify the most important bottlenecks preventing a higher competitiveness of Syria's agricultural products. Hence, the most important reason for a systematic assessment of the marketing costs would be the identification of areas in which institutional change and policy initiatives could bring about a reduction of marketing costs.

Furthermore, a systematic account of the marketing costs for all major agricultural crops would allow comparisons between various crops. It also should be expected that marketing costs for agricultural commodities differ substantially between domestic and international marketing channels and for various commodities. A third reason would be that such estimates could serve as inputs for various other means of quantitative analyses: first, the marketing margins could be used for the adjustment of domestic (international) commodity prices to the same point of competition; second, such marketing margins could be incorporated in an applied general equilibrium model in which various agricultural commodities would be represented.

The assessment should be based on the same methodology for all major commodities and for the most recent five year period. The assessment of marketing costs over time would allow to more exactly estimate the indirect transfers (Market Price Support) which will become a more and more important indicator as Syria will integrate its agricultural sector further into the world economy. Particularly in the framework of possible WTO accession negotiations the calculation of the agricultural support level during the reference period will mandate the availability of more exact estimates of domestic and international marketing margins.