

APPENDIX C

RURAL SOCIOECONOMIC SURVEY

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C-1 Methods of the Survey

The questionnaire has total 93 questions and 9 main blocks according to the fields of agriculture activity. Those are

A. Agricultural Production	24
B. Irrigation	13
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Total	93

400 questionnaires were performed in 80 villages in proportion of 100 in Petrich, 150 in Rositza, 150 in Sredna Tunja and in each village, was selected 5 farmers in accordance with following sampling method.

The sampling method has 2 stages. First stage is to select villages to be interviewed by using electoral sections (the electoral sections are those of the passing municipal elections of October 29, 1995) By using it, 80 villages in the Study areas were chosen based on the number of population. On the second stage, 5 farmers were selected from each village as a interviewee. The selection method is random sampling simply referring their address. This made to avoid the concentration of farmers in the center or in the peripheral of the community.

Interview of the Questionnaire in the Study areas started at 19 July 1996 and lasted 27 July 1996 .

Main data processing frames are following three categories.

First frame is by Region (3 Regions: Petrich, Rositsa, Sredna Tunja)

Second frame is by Irrigation Block

Region	Irrigation Block
Petrich	Petrich
Rositsa	North Main Canal (Irrigation block-5), Main Left Nikyupsky Canal (Irrigation block-6), Main Lower Right Canal (Irrigation block-7)
Sredna Tundja	Nova Zagora (Irrigation block 1), Mlekarvo Padarevo (Irrigation block 2), Kermen Roza (Irrigation block-3), Binkos-Marash (Irrigation block-4)

Cf. Petrich has 3 irrigation blocks. For the rather smaller size of blocks in comparison with other Study areas, those three blocks in Petrich were disposed of as one irrigation block for the convenience of data process.

Third frame is by size of decares. Each Study area was divided into the following 3 subsections based the their farmland size (dca).

Study Area	Small (Farm A)	Medium (Farm B)	Large (Farm C)
Petrich	<10	11-19	<20
Rositsa	<20	21-39	<40
Sredna Tunja	<40	41-79	<80

All collected data were processed in consideration to the aforementioned method used in the survey.

C-2 Results of the Survey
STUDY AREA PROFILE I

Table C-1 SURVEY RESULT BY REGIONS

#	VARIABLE	INDICATOR	MEASURE	ROSITSA	PETRICH	SREDNA TUNDJA
1.		LAND				
	A1B	Number of plots	number	3.5 (147)	4.52 (100)	4.6 (147)
	A4C	Rented land	dca	59.2 (11)	5.6 (36)	196.2 (23)
	LPU	Land for private use	dca	6.7 (145)	8.1 (96)	50.2 (144)
	LCU	Land for commercial use	dca	14.7 (22)	3.3 (58)	56.9 (72)
	TOTL	Total land	dca	19.25 (149)	19.9 (98)	137.3 (147)
2.		CROPS				
2.1		Private use				
	A2A2	Cereals	dca	6.7 (101)	5.8 (64)	45.9 (135)
	A2B2	Grass	dca	3.1 (42)	2.3 (48)	4.9 (44)
	A2C2	Vegetables	dca	1.1 (96)	1.6 (78)	6.5 (18)
	A2D2	Melon field	dca	0.6 (60)	1.1 (41)	2.3 (40)
	A2E2	Orchard	dca	0.9 (17)	1.8 (21)	4.7 (33)
	A2F2	Vineyard	dca	0.5 (29)	2.0 (48)	5.1 (90)
	A2A-F = LPU	Total	dca	6.7 (145)	3.3 (58)	50.2 (144)
2.2		Commercial use				
	A3A2	Cereals	dca	48.5 (6)	0	70.1 (49)
	A3B2	Grass	dca	0	0	11.7 (3)
	A3C2	Vegetables	dca	1.7 (16)	2.0 (46)	13.6 (14)
	A3D2	Melon field	dca	3.0 (2)	2.4 (17)	8.1 (11)
	A3E2	Orchard	dca	0	3.8 (12)	6.6 (18)
	A3F2	Vineyard	dca	0	2.5 (5)	8.2 (28)
	A3A-F = LCU	Total	dca	14.7 (22)	3.3 (58)	56.9 (72)
3.		LIVESTOCK				
3.1		Private use				
	A2H2	Chicken	number	29.2 (137)	8.1 (74)	28.7 (114)
	A2I2	Pigs	head	2.7 (114)	1.7 (92)	5.8 (129)
	A2J2	Cattle	head	3.1 (27)	2.8 (17)	2.6 (103)
	A2K2	Sheep	head	5.3 (86)	4.9 (51)	11.8 (108)
	A2L2	Coats	head	2.1 (63)	2.7 (70)	3.3 (25)
3.2		Commercial use				
	A3H2	Chicken	number	41.3 (3)	0	0
	A3I2	Pigs	head	3.2 (16)	0	11.0 (44)
	A3K2	Sheep	head	3.4 (10)	24 (2)	27.5 (11)
	A3L2	Coats	head	1.7 (7)	4 (1)	3.0 (5)
	A3J2	Cattle	head	8.6 (6)	12 (1)	2.3 (23)
4.		LAND LEASE FEE				
	A6A	1995	Leva	146.8 (10)	611.1 (27)	383.7 (19)
	A6B	1996	Leva	199.8 (8)	698.4 (32)	689.5 (17)
5.		MACHINERY				
5.1		Own machinery				
	A21A	Tractor	% of farms	10.1 (149)	11.0 (100)	59.9 (147)
	A21B	Water pump	% of farms	43.6 (149)	14.0 (100)	18.5 (146)
	A21C	Combine	% of farms	0.0	1.0 (100)	4.1 (146)
	A21D	Horse-cart	% of farms	39.9 (148)	54.5 (99)	56.2 (146)
	A21E	Truck	% of farms	2.0 (149)	3.0 (100)	13.0 (146)

STUDY AREA PROFILE I

#	VARIABLE	INDICATOR	MEASURE	ROSITSA	PETRICH	SREDNA TUNDJA
5.2		Rented machinery				
	A22A	Tractor	% of farms	41.4 (145)	59.4 (96)	19.0 (147)
	A22B	Water pump	% of farms	0.0	3.1 (96)	0.7 (147)
	A22C	Combine	% of farms	36.8 (144)	31.3 (96)	46.9 (147)
	A22E	Horse-cart	% of farms	9.0 (144)	9.5 (95)	0.7 (145)
	A22F	Truck	% of farms	18.2 (143)	10.4 (96)	20.5 (146)
6.		LAND OWNERSHIP				
	ASA = ND	Notary deeds	% of farms	24.8 (149)	2.0 (100)	2.0 (147)
	ASB = TR	Temporary use rights	% of farms	55.0 (149)	61.0 (100)	83.8 (147)
7.		1995 PRODUCTION COST				
	A23A	Electricity	Leva	3516 (81)	2030.8 (13)	12935 (43)
	A23C	Irrigation	Leva	833 (31)	2541.3 (79)	11479 (50)
	A23D	Fuel	Leva	10074 (20)	11000.0 (30)	22701 (85)
	A23E	O&M for machine	Leva	3650 (22)	20646.7 (15)	26810 (70)
	A23B	O&M for water pump	Leva	1264 (50)	21333.3 (6)	3447 (15)
	A23F	Other	Leva	21775 (4)	4429.6 (22)	22519 (27)
8.		IRRIGATION				
	B1	Irrigating the land	% of farms	63.0 (146)	98.0 (100)	54.4 (147)
	B2A	Gravity irrigated land	% of farms	55.7 (88)	84.7 (98)	84.6 (78)
	B2B	Pumping irrigated land	% of farms	62.6 (91)	27.4 (95)	25.7 (74)
	H1A	Membership in water User Association	% of farmers	0.7 (147)	6.1 (99)	4.1 (146)
9.		AGRICULTURAL INPUTS AND OUTPUTS				
9.1		Fertilizers				
		Use of fertilizers in 1995				
	C8A1-D1	First	Kind	Manure	Urea	Urea
			% of farms	78.4 (148)	94.9 (98)	85.2 (142)
	C8A1-D1	Second	Kind	Urea	Manure	Manure
			% of farms	49.3 (148)	59.2 (98)	25.4 (142)
		Use of fertilizers in 1996				
	C8A2-D2	First	Kind	Manure	Urea	Urea
			% of farms	79.7 (148)	96.0 (99)	84.8 (145)
	C8A2-D2	Second	Kind	Urea	Manure	Manure
			% of farms	45.6	62.2 (98)	62.2

STUDY AREA PROFILE I

#	VARIABLE	INDICATOR	MEASURE	ROSITSA	PETRICII	SREDNA TUNDJA
		Fertilizers supply from:				
	C1A	First	Kind	Cooperative in village	Private firms in town	Private firms in town
			% of farms	55.8 (120)	48.5 (99)	45.0 (129)
	(C9A1-L1)*15	Cost per year (1995)	Leva	913.7 (67)	2706.8 (92)	678.4 (112)
	(C9A2-L2)*15	Cost per year (1996)	Leva	801.2 (63)	3349.8 (94)	775.0 (120)
9.2		Chemicals				
		Chemicals supply from:				
	C1B	First	Kind	Cooperative in village	Private firms in town	Private firms in town
			% of farms	41.9 (117)	57.1 (98)	63.1 (111)
	C2B	Chemical cost per year	Leva	1975 (91)	2320 (80)	5920.8 (83)
		Transportation mainly by:				
	C3	First	Kind	Horse-cart	Horse-cart	Tractor
			% of farms	39.5 (147)	51.0 (100)	66.2 (145)
	C3	Second	Kind	Tractor	Own car	Rented car
			% of farms	30.8 (146)	37.4 (99)	40.6 (143)
10.		SEEDS:				
	CSA	Own seeds	% of farms	63.9 (147)	87.8 (98)	67.1 (143)
		Seeds purchased mainly from:				
	C6	First	Kind	State enterprise	Private firm/trader	State enterprise
			% of farms	59.2 (142)	58.7 (92)	56.4 (133)
	C6	Second	Kind	Private firm	State enterprise	Private firm
			% of farms	27.7 (141)	39.6 (91)	13.7 (131)
11.		PROBLEMS FOR FARM MANAGEMENT				
	E3	First	Kind	Low selling prices	Low selling prices	Low selling prices
			% of farms	88.0 (83)	86.4 (86)	96.7 (122)
	E3	Second	Kind	DK trading methods	No access to market	DK trading methods; No access to market
			% of farms	10.8 (83)	13.6	1.6 (122)
12.		LIVESTOCK CONSIGNING FEE				
	D1A	Cattle	Leva	176.2 (21)	239.3 (6)	159.5 (103)
	D1B	Sheep & goats	Leva	74.6 (84)	69.7 (38)	44.7 (107)

STUDY AREA PROFILE I

#	VARIABLE	INDICATOR	MEASURE	ROSITSA	PETRICH	SREDNA TUNDJA
13.		AGRICULTURAL INFORMATION MAINLY FROM:				
	E2	First	Kind	Friends	Friends	Friends
			% of farms	48.8 (125)	38.3 (81)	56.8 (139)
	E2	Second	Kind	Other sources	Television	Television
			% of farms	21.6 (125)	35.8 (81)	18.0 (139)
14.		PARTICIPATION IN DIFFERENT ORGANIZATIONS				
	H1B	APC	% of farmers	79.9 (149)	14.1 (99)	4.1 (146)
	H1C	Private agri cooperative	% of farmers	5.4 (149)	1.0 (99)	4.1 (146)
	H1D	Consumer cooperative	% of farmers	10.7 (149)	14.1 (99)	2.1 (146)
15.		MAJOR TERMINAL EDUCATION				
	N4	First	Kind	Primary	Primary	Secondary
			% of farmers	43.0 (149)	50.0 (100)	44.9 (147)
16.		FUTURE PLANS				
	N7	First	Kind	Continue to run the farm	Continue to run the farm	Continue to run the farm
			% of farmers	74.4 (117)	69.1 (97)	87.2 (141)
	N7	Second	Kind	Join cooperative	Join cooperative	Association with other producers
			% of farmers	16.2 (117)	25.8 (97)	7.1 (141)
17.		AVERAGE NUMBER OF THE FAMILY				
	N1		persons	2.7 (149)	3.9 (100)	4.0 (147)
18.		AVERAGE AGE OF THE FARMERS				
	N2C		years	63.8 (149)	53.4 (100)	56.7 (147)
19.		FARM CREDIT 1995				
	G1A1	Banks	% of farmers	0	1.0 (100)	2.7 (147)
	G1B1	Cooperatives	% of farmers	0	0	0
	G1C1	Merchants	% of farmers	0	0	0
	G1D1	Relatives	% of farmers	0.7 (149)	2.0 (100)	4.8 (147)
	G1E1	Other	% of farmers	0	0	0

STUDY AREA PROFILE I

#	VARIABLE	INDICATOR	MEASURE	ROSITSA	PETRICH	SREDNA TUNDJA
		1996				
	G2A1	Banks	% of farmers	0	0	1.4 (147)
	G2B1	Cooperatives	% of farmers	0	1.0 (100)	0
	G2C1	Merchants	% of farmers	0	0	0
	G2D1	Relatives	% of farmers	2.0 (149)	1.0 (100)	2.7 (147)
	G2E1	Other	% of farmers	0.7 (149)	0	1.4 (147)
20.		LIVING EXPENSES				
	N3A	Food	Leva	5997 (138)	9585.4 (82)	10508 (133)
	N3B	Non-food	Leva	4897 (129)	6635.0 (72)	11820 (123)

*Note: Figures in parentheses notify number of responses.

STUDY AREA PROFILE II

Table C-2 SURVEY RESULT BY SIZE (DECARES)

//	VARIABLE	INDICATOR	MEASURE	ROSITSA			PETRICH			SREDNA TUNDJA		
				Farm A	Farm B	Farm C	Farm A	Farm B	Farm C	Farm A	Farm B	Farm C
1.		LAND										
		Size (decares)	ha	<20	21 < 39	40 <	>10	11-19	20 <	>40	41-79	80 <
		Distribution percentage	%	87.9 (131)	6.7 (10)	5.4 (8)	60 (60)	24 (24)	16 (16)	37.7 (55)	26.0 (38)	36.3 (53)
	A1A	Average size	ha	6.6 (131)	27.6 (10)	87.9 (8)	6.8 (60)	14.3 (24)	26.8 (16)	26.2 (55)	60.6 (38)	158.2 (53)
	A1B	Number of plots	number	3.5 (129)	4.0 (10)	4.1 (8)	3.9 (60)	4.9 (24)	6.2 (16)	3.2 (55)	4.4 (38)	6.1 (53)
	A1C2	Rented land	ha	3.3 (7)	5.0 (1)	207.7 (3)	3.8 (22)	5.7 (10)	15.3 (4)	10.0 (1)	23.1 (7)	216.9 (14)
	1PU	land for private use	ha	4.1 (127)	12.1 (10)	40.9 (8)	4.2 (57)	10.5 (23)	18.7 (16)	22.4 (53)	45.3 (37)	79.9 (53)
	1CU	land for commercial use	ha	1.4 (13)	5.0 (3)	48.5 (6)	1.6 (32)	4.9 (15)	6.0 (11)	12.4 (19)	18.5 (15)	75.4 (37)
	1O11	Total land	ha	11.2 (131)	36.6 (10)	129.0 (8)	10.6 (58)	25.0 (24)	45.8 (16)	52.6 (55)	106.4 (38)	230.4 (53)
2.		CROPS										
2.1		Private use										
	A2A2	Cereals	ha	3.8 (88)	11.3 (7)	42.7 (6)	3.2 (31)	5.3 (20)	12.8 (13)	21.0 (46)	40.2 (37)	71.2 (51)
	A2B2	Grass	ha	1.7 (36)	3.0 (3)	20.0 (3)	1.4 (24)	2.0 (13)	4.3 (11)	3.2 (12)	3.9 (14)	6.7 (18)
	A2C2	Vegetables	ha	1.0 (85)	3.1 (7)	0.4 (4)	1.0 (43)	1.9 (21)	2.7 (14)	2.6 (7)	8.0 (3)	9.3 (8)
	A2D2	Melon field	ha	0.4 (47)	0.9 (9)	1.4 (4)	0.7 (18)	0.8 (14)	2.1 (9)	2.0 (15)	0.9 (8)	3.1 (17)
	A2E2	Orchard	ha	0.8 (14)	1.0 (2)	2.4 (1)	1.3 (9)	3.0 (7)	1.1 (5)	6.1 (10)	2.4 (7)	5.1 (15)
	A2F2	Vineyard	ha	0.5 (25)	0.4 (2)	0.8 (2)	1.5 (23)	2.5 (14)	2.1 (11)	2.4 (29)	3.5 (25)	8.1 (35)
	A2A-1 1PU	Total	ha	4.1 (127)	12.1 (10)	40.9 (8)	4.2 (57)	10.5 (23)	18.7 (16)	22.4 (53)	45.3 (37)	79.9 (53)
2.2		Commercial use										
	A3A2	Cereals	ha	0	0	48.5 (6)	0	0	0	19.6 (6)	19.4 (12)	76.5 (30)
	A3B2	Grass	ha	0	0	0	0	0	0	0	5.0 (1)	15.0 (2)
	A3C2	Vegetables	ha	1.0 (13)	4.7 (3)	0	1.4 (25)	2.8 (11)	2.8 (10)	2.7 (5)	0	19.7 (9)
	A3D2	Melon field	ha	5.0 (1)	1.0 (1)	0	0.8 (7)	3.5 (6)	3.5 (4)	5.2 (5)	10.0 (1)	10.6 (5)
	A3E2	Orchard	ha	0	0	0	2.0 (3)	3.8 (4)	4.8 (5)	8.3 (6)	3.5 (3)	6.6 (9)
	A3F2	Vineyard	ha	0	0	0	1.9 (3)	3.5 (2)	0	3.5 (8)	3.2 (6)	13.6 (13)
	A3A-1 1CU	Total	ha	1.4 (13)	5.0 (3)	48.5 (6)	1.6 (32)	4.9 (15)	6.0 (11)	12.4 (19)	18.5 (15)	75.4 (37)

STUDY AREA PROFILE II

#	VARIABLE	INDICATOR	MEASURE	ROSITSA			PETRICH			SREDNA TUNDJA		
				Farm A	Farm B	Farm C	Farm A	Farm B	Farm C	Farm A	Farm B	Farm C
3.		LIVESTOCK										
3.1		Private use										
A211		Chicken	number	28.3 (120)	30.6 (10)	42.4 (7)	6.8 (42)	8.5 (19)	11.8 (13)	23.8 (44)	27.9 (31)	33.2 (38)
A212		Pigs	head	2.4 (98)	4.2 (10)	4.8 (6)	1.4 (53)	2.0 (23)	2.3 (16)	4.1 (49)	5.6 (35)	7.8 (44)
A212		Cattle	head	3.4 (16)	2.8 (8)	2.7 (3)	2.0 (9)	2.3 (4)	5.3 (4)	2.4 (39)	2.4 (27)	2.9 (36)
A2K2		Sheep	head	4.7 (74)	8.9 (8)	9.5 (4)	4.2 (30)	4.2 (10)	7.5 (11)	7.5 (42)	17.1 (27)	12.7 (39)
A212		Goats	head	2.1 (57)	2.3 (3)	1.0 (3)	2.7 (41)	2.4 (17)	3.3 (12)	2.8 (10)	4.8 (9)	1.8 (6)
3.2		Commercial use										
A312		Chicken	number	12.0 (2)	0	100.0 (1)	0	0	0	0	0	0
A312		Pigs	head	2.7 (10)	3.3 (4)	5.5 (2)	0	0	0	8.7 (12)	7.7 (13)	14.4 (18)
A312		Cattle	head	2.3 (4)	3.0 (1)	40.0 (1)	0	0	12.0 (1)	2.1 (8)	1.3 (6)	3.0 (9)
A3K2		Sheep	head	3.1 (9)	6.0 (1)	0	0	0	24.0 (2)	4.8 (4)	47.3 (4)	31.7 (3)
A312		Goats	head	1.8 (6)	1.0 (1)	0	0	0	4.0 (1)	1.5 (2)	5.5 (2)	1.0 (1)
4.		MACHINERY										
4.1		Own machinery										
A21A		Tractor	% of farms	5.3 (131)	30.0 (10)	62.5 (8)	5.0 (60)	8.3 (24)	37.5 (16)	43.6 (55)	55.3 (38)	79.2 (53)
A21B		Water pump	% of farms	42.7 (131)	40.0 (10)	62.5 (8)	10.0 (60)	20.8 (24)	18.8 (16)	20.0 (55)	15.8 (38)	19.2 (52)
A21C		Combine	% of farms	0	0	0	0	4.2 (24)	0	0	2.6 (38)	7.7 (52)
A21D		Horse cart	% of farms	35.4 (130)	80.0 (10)	62.5 (8)	52.5 (59)	45.8 (24)	75.0 (16)	54.5 (55)	52.6 (38)	59.6 (52)
A211		Truck	% of farms	0.8 (131)	10.0 (10)	12.5 (8)	1.7 (60)	4.2 (24)	6.3 (16)	7.3 (55)	15.8 (38)	17.0 (52)
4.2		Rental machinery										
A22A		Tractor	% of farms	39.4 (127)	70.0 (10)	37.5 (8)	64.9 (57)	60.9 (23)	37.5 (16)	25.5 (55)	26.3 (38)	7.5 (53)
A22B		Water pump	% of farms	0	0	0	3.5 (57)	0	6.3 (16)	0	2.6 (38)	0
A22C		Combine	% of farms	31.7 (126)	70.0 (10)	75.0 (8)	26.3 (57)	34.8 (23)	43.8 (16)	38.2	52.6 (38)	52.8 (53)
A22D		Horse cart	% of farms	9.5 (126)	0	12.5 (8)	7.1 (56)	17.4 (23)	6.3 (16)	1.8 (55)	0	0
A221		Truck	% of farms	15.2 (125)	30.0 (10)	50.0 (8)	8.8 (57)	8.7 (23)	18.8 (16)	20.0 (55)	18.9 (37)	22.6 (53)
5.		LAND OWNERSHIP										
A5A		Notary deeds	% of farms	22.9 (131)	60.0 (10)	25.0 (8)	0	4.2 (24)	6.3 (16)	0	0	5.7 (53)
A5B		Temporary use rights	% of farms	54.2 (131)	40.0 (10)	62.5 (8)	51.7 (60)	83.3 (24)	62.5 (16)	78.2 (55)	92.1 (38)	83.0 (53)

STUDY AREA PROFILE II

//	VARIABLE	INDICATOR	MEASURE	ROSITSA			PETRICH			SREDNA TUNDJA								
				Farm A	Farm B	Farm C	Farm A	Farm B	Farm C	Farm A	Farm B	Farm C						
6.		1995 PRODUCTION COST																
A23A		Electricity	Leva	2834 (72)	6375 (4)	11060 (5)	1633.3 (9)	2233.3 (3)	5000.0 (1)	19753 (13)	5838 (13)	13906 (16)						
A23C		Irrigation	Leva	563 (26)	700 (2)	3267 (3)	2415.3 (49)	2824.4 (17)	2646.2 (13)	6571 (15)	6577 (13)	17720 (22)						
A23D		Fuel	Leva	271 (131)	4600 (10)	15000 (8)	7110.5 (19)	6025.0 (4)	24400.0 (7)	13925 (26)	18159 (22)	28277 (36)						
A23E		OSM fee for machine	Leva	1967 (12)	1900 (5)	9440 (5)	8783.3 (6)	25666.7 (3)	30000.0 (6)	15394 (17)	21067 (15)	34297 (37)						
A23F		OSM fee for water pump	Leva	703 (42)	5000 (4)	3425 (4)	5750.0 (4)	5000.0 (1)	100000 (1)	4240 (5)	2325 (4)	3533 (6)						
A23H		Other	Leva	600 (1)	0	28833 (3)	3430.7 (13)	5407.1 (7)	7500.0 (2)	21500 (12)	25429 (7)	21500 (8)						
7.		IRRIGATION																
A1C		Irrigating the land	ckn	2.6 (75)	16.1 (7)	51.1 (7)	5.6 (60)	11.4 (24)	20.7 (16)	18.0 (36)	42.0 (22)	90.6 (35)						
B2A		Gravity irrigated	% of farms	53.3 (75)	57.1 (7)	83.3 (6)	88.1 (59)	79.2 (24)	80.0 (15)	75.8 (33)	85.7 (14)	93.5 (31)						
B2B		Pumping	% of farms	63.6 (77)	50.0 (8)	66.7 (6)	24.6 (57)	29.2 (24)	35.7 (14)	27.3 (33)	20.0 (15)	26.9 (26)						
H1A		Membership in Water User Association	% of farms	0.8 (130)	0	0	5.1 (59)	4.2 (24)	12.5 (16)	7.3 (55)	0	3.8 (53)						
8.		AGRICULTURAL INPUTS AND OUTPUTS																
8.1		Fertilizers																
C1A1-D1		Use of fertilizers in 1995																
		First	Kind	Manure	Manure	Urea	Urea	Urea	Urea	Urea	Urea	Urea						
		% of farms	78.5 (130)	100.0 (10)	62.5 (8)	91.4 (58)	100.0 (24)	100.0 (16)	77.4 (53)	89.2 (37)	90.2 (51)							
		Second	Kind	Urea	Urea	Manure	Manure	Manure	Manure	Manure	Manure	Manure						
		% of farms	46.9 (130)	70.0 (10)	50.0 (8)	63.8 (58)	33.3 (24)	81.3 (16)	30.2 (53)	24.3 (37)	21.6 (51)							
C1A2-D2		Use of fertilizers in 1996																
		First	Kind	Manure	Manure	Urea	Urea	Urea	Urea	Urea	Urea	Urea						
		% of farms	80.0 (130)	100.0 (10)	62.5 (8)	93.2 (59)	100.0 (24)	100.0 (16)	75.5 (53)	84.2 (38)	94.3 (53)							
		Second	Kind	Urea	Urea	Manure	Manure	Manure	Manure	Manure	Manure	Manure						
		% of farms	42.6 (129)	70.0 (10)	50.0 (8)	64.4 (59)	45.8 (24)	80.0 (15)	34.0 (53)	23.7 (38)	22.6 (53)							
C1A-C1		Fertilizer supply from:																
		First	Kind	Coop. in villages	Coop. in villages	Coop. in villages; Priv. firms in town	Private firms in town	Private firms in town	Private firms in town	Private firms in town	Private firms in town	Other						
		% of farms	56.7 (104)	55.6 (9)	42.9 (7)	44.1 (59)	50.0 (24)	62.5 (16)	51.1 (45)	52.9 (34)	42.9 (49)							

STUDY AREA PROFILE II

#	VARIABLE	INDICATOR	MEASURE	ROSITSA			PETRICH			SREDNA TUNDJA		
				Farm A	Farm B	Farm C	Farm A	Farm B	Farm C	Farm A	Farm B	Farm C
	(C9A1-11)*15	Cost per year (1995)	Leva	862.1 (55)	1392.9 (7)	810.0 (5)	2496.3 (52)	2278.8 (24)	4033.1 (16)	684.6 (39)	580.2 (31)	748.5 (41)
	(C9A2-12)*15	Cost per year (1996)	Leva	726.5 (51)	1382.1 (7)	750.0 (5)	2372.3 (54)	2483.8 (24)	7056.6 (16)	676.8 (42)	643.5 (30)	950.4 (47)
9.2		Chemicals										
		Chemicals supply from:										
	C11B	First	Kind	Cooperatives in village	Priv. firms in town; Others	Coop. in village; Priv. firms	Private firms in town	Private firms in town	Private firms in town	Private firms in town	Private firms in town	Private firms in town
			% of farms	43.1 (102)	37.5 (8)	42.9 (7)	55.9 (59)	56.5 (23)	62.5 (16)	55.3 (28)	62.2 (29)	69.8 (43)
	C2A	Chemical cost per year	Leva	1253.2 (79)	1575.0 (8)	17050 (4)	2450.6 (46)	1714.0 (19)	2687.9 (15)	4842 (28)	5352 (24)	7569 (30)
		Transportation mainly by:										
	C3	First	Kind	House-Cart	House-Cart	Tractor	House-Cart	House-Cart	House-Cart	Tractor	Tractor	Tractor
			% of farms	35.7 (129)	70.0 (10)	87.5 (8)	50.0 (60)	41.7 (24)	68.8 (16)	61.8 (55)	63.2 (38)	72.5 (51)
	C3	Second	Kind	Rented car	Tractor	House-cart	Own car	Own car	Tractor	Rented car	Rented car	House-cart; Rented car
			% of farms	30.5 (128)	40.0 (10)	62.5 (8)	37.3 (59)	41.7 (24)	43.8 (16)	47.3 (55)	36.8 (38)	36.7 (49)
9.		SEEDS										
	C5A	Percentage of own seeds		65.9 (129)	50.0 (10)	50.0 (8)	84.5 (58)	95.8 (24)	87.5 (16)	66.0 (53)	79.7 (38)	62.7 (51)
		Seeds purchased mainly from:										
	C6	First	Kind	State enterprise	State enterprise	State enterprise	Private firm	Private firm	Private firm	State enterprise	State enterprise	State enterprise
			% of farms	54.8 (124)	90.0 (10)	87.5 (8)	46.6 (58)	76.2 (21)	84.6 (13)	38.5 (52)	70.6 (34)	67.4 (46)
	C6	Second	Kind	Consumer coop.	Private firm	Private firm	State enterprise	State enterprise	State enterprise	Private firm	Private firm	Private firm; Consumer coop.
			% of farms	28.5 (123)	30.0 (10)	37.5 (8)	42.1 (57)	42.9 (21)	23.1 (13)	9.6 (52)	21.9 (32)	10.9 (46)
10.		LIVESTOCK GRAZING FEE										
	D1A	Cattle	Leva	172.3 (13)	177.1 (7)	220.0 (1)	286.7 (3)	250.0 (2)	400.0 (1)	156.2 (39)	171.8 (28)	153.7 (35)
	D1B	Sheep & goats	Leva	75.6 (22)	53.1 (8)	108.3 (3)	78.9 (19)	57.7 (13)	66.7 (6)	39.5 (43)	61.6 (27)	38.5 (37)

STUDY AREA PROFILE II

#.	VARIABLE	INDICATOR	MEASURE	ROSITSA			PETRICH			SREDNA TUNDJA		
				Farm A	Farm B	Farm C	Farm A	Farm B	Farm C	Farm A	Farm B	Farm C
11.		PARTICIPATION DIFFERENT ORGANIZATIONS										
	111B	Agri cooperation member	% of farmers	85.5 (131)	60.0 (10)	12.5 (8)	0	0	10.9 (55)	0	0	0
	111C	Private farmers association	% of farmers	4.6 (131)	0	25.0 (8)	0	0	3.6 (55)	0	6.3 (16)	7.5 (53)
	111D	Consumer cooperative	% of farmers	9.9 (131)	0	37.5 (8)	0	0	5.5 (55)	0	0	0
12.		FUTURE PLANS										
	N7	First	Kind	Will continue to run it	Will continue to run it	Will continue to run it	Will continue to run it	Will continue to run it	Will continue to run it	Will continue to run it	Will continue to run it	Will continue to run it
	N7	Second	% of farmers	75.0 (100)	30.0 (10)	14.3 (7)	21.1 (57)	41.7 (24)	78.8 (52)	94.4 (36)	81.3 (16)	90.4 (52)
			Kind	Join a cooperati ve	Join a cooperati ve	Join a cooperati ve	Join coop.	Join coop.	Associatio n with other producers	Associatio n with other producers	Associatio n with other producers	Associatio n with other producers
13.		AVERAGE NUMBER OF THE FAMILY										
	N1		% of farmers	15.0 (100)	3.8 (10)	4.0 (8)	3.8 (60)	3.6 (24)	3.8 (55)	4.0 (38)	4.8 (16)	4.1 (53)
14.		AVERAGE AGE OF THE FARMERS	persons	2.6 (131)								
	N2C		years	64.6 (131)	56.0 (10)	59.9 (8)	53.9 (60)	53.4 (24)	57.7 (55)	55.5 (38)	51.5 (16)	57.0 (53)
15.		FARM CREDIT										
		1995										
	G1A1	Banks	% of farmers	0	0	0	0	0	1.8 (55)	0	6.3 (16)	3.8 (53)
	G1B1	Cooperatives	% of farmers	0	0	0	0	0	0	0	0	0
	G1C1	Merchants	% of farmers	0	0	0	0	0	0	0	0	0
	G1D1	Relatives	% of farmers	0.8 (131)	0	0	3.3 (60)	0	3.6 (55)	7.9 (38)	0	3.8 (53)
	G1E1	Other	% of farmers	0	0	0	0	0	0	0	0	0

STUDY AREA PROFILE II

#	VARIA-BLE	INDICATOR	MEASURE	ROSITSA			PETRICH			SREDNA TUNDJA				
				Farm A	Farm B	Farm C	Farm A	Farm B	Farm C	Farm A	Farm B	Farm C		
		1996												
G2A1		Banks	% of farmers	0	0	0	0	0	0	0	1.8 (55)	0	0	0
G2B1		Cooperatives	% of farmers	0	0	0	1.7 (60)	0	0	0	0	0	0	0
G2C1		Merchants	% of farmers	0	0	0	0	0	0	0	0	0	0	0
G2D1		Relatives	% of farmers	1.5 (131)	0	12.5 (8)	1.7 (60)	0	0	0	0	5.3 (38)	3.8 (53)	0
G2L1		Other	% of farmers	0	0	12.5 (8)	0	0	0	0	0	0	3.8 (53)	0
16.		LIVING-EXPENSES												
N3A		Food	Leva	5865.2 (122)	7170.0 (10)	6716.7 (6)	8565.2 (46)	9227.3 (22)	13500 (14)	10229 (48)	8889 (36)	11802 (48)	13796 (45)	0
N3B		Non-food	Leva	4469.9 (114)	8840.0 (10)	6760.0 (5)	5683.8 (42)	7277.8 (18)	9000 (12)	7445 (43)	14791 (34)	13796 (45)	0	0

IRRIGATION BLOCKS

Table C-3 SURVEY RESULT BY BLOCKS

#	VARIABLE	INDICATOR	MEASURE	SREDNATUNDIA				ROSITZA		
				1rblock-1	1rblock-2	1rblock-3	1rblock-4	1rblock-5	1rblock-6	1rblock-7
		NUMBER OF FARMS	NUMBER	68	40	19	19	50	54	45
		%	%	46.6	27.4	13.0	13.0	33.6	36.2	30.2
1.		LAND								
		FARM TYPES								
		Distribution percentage								
		FARM A < 40 %	%	42.6 (68)	42.5 (40)	10.5 (19)	36.8 (19)	88.0 (50)	90.7 (54)	84.4 (45)
		FARM B 41 < 79 %	%	25.0 (68)	22.5 (40)	36.8 (19)	26.3 (19)	8.0 (50)	7.4 (54)	4.4 (45)
		FARM C > 80 %	%	32.4 (68)	35.0 (40)	52.6 (19)	36.8 (19)	4.0 (50)	1.9 (54)	11.1 (45)
		Average size	dca	59.6 (68)	92.2 (40)	186.2 (20)	109.5 (19)	10.8 (50)	11.2 (54)	15.3 (45)
A1A		Number of plots	number	4.3 (68)	4.7 (40)	6.7 (20)	3.6 (19)	3.5 (49)	3.5 (54)	3.7 (45)
A1B		Rented land	dca	44.5 (10)	214.2 (5)	531.8 (4)	217.5 (4)	3.4 (1)	78.6 (6)	44.0 (4)
A1C2		Land for private use	dca	43.6 (66)	35.1 (39)	75.0 (20)	77.9 (19)	5.7 (50)	5.1 (50)	9.6 (45)
LPU		Land for commercial use	dca	33.4 (32)	53.7 (19)	114.8 (9)	81.2 (12)	4.0 (10)	15.0 (5)	29.8 (7)
TOTL		Total land	dca	110.7 (68)	121.9 (40)	207.3 (20)	191.1 (19)	18.1 (50)	15.0 (54)	25.6 (45)
2.		CROPS								
2.1		Private use								
		Cereals	dca	39.7 (62)	30.1 (39)	66.5 (20)	87.9 (14)	4.6 (34)	6.1 (31)	9.1 (36)
A2A2		Grass	dca	4.0 (19)	6.2 (14)	6.0 (6)	3.0 (5)	3.7 (12)	1.7 (11)	3.4 (19)
A2B2		Vegetables	dca	2.9 (10)	5.4 (7)	0	50.0 (1)	1.3 (40)	0.9 (33)	1.1 (23)
A2C2		Melon field	dca	2.9 (18)	1.7 (17)	2.7 (3)	0.5 (2)	0.8 (21)	0.4 (14)	0.5 (25)
A2D2		Orchard	dca	5.5 (19)	1.5 (2)	1.8 (4)	5.3 (8)	1.3 (8)	0.7 (8)	0.1 (1)
A2E2		Vineyard	dca	4.2 (37)	1.6 (25)	8.5 (14)	10.1 (14)	0.5 (14)	0.5 (10)	0.5 (5)
A2F2		Total	dca	43.6 (66)	35.1 (39)	75.0 (20)	77.9 (19)	5.7 (50)	5.1 (50)	9.6 (45)
A2A-F = LPU		Commercial use								
2.2		Commercial use								
		Cereals	dca	38.6 (18)	57.6 (17)	122.5 (8)	129.8 (6)	18.0 (1)	66.0 (1)	51.8 (4)
A3A2		Grass	dca	28.0 (1)	3.5 (2)	0	0	0	0	0
A3B2		Vegetables	dca	13.9 (9)	3.8 (4)	0	50.0 (1)	1.8 (9)	2.3 (4)	0.5 (3)
A3C2		Melon field	dca	10.8 (6)	4.5 (4)	6.0 (1)	0	3.0 (2)	0	0
A3D2		Orchard	dca	6.8 (12)	0	4.0 (1)	6.7 (5)	0	0	0
A3E2		Vineyard	dca	6.2 (12)	0	7.2 (6)	11.2 (10)	0	0	0
A3F2		Total	dca	33.4 (32)	53.7 (19)	114.8 (9)	81.2 (12)	4.0 (10)	15.0 (5)	29.8 (7)
A3A-F = LCU										

< 20 FARM A
21 < 39 FARM B
40 < FARM C

IRRIGATION BLOCKS

#	VARIABLE	INDICATOR	MEASURE	SRKDNATUNDJA				ROSTIZA				
				Irblock-1	Irblock-2	Irblock-3	Irblock-4	Irblock-5	Irblock-6	Irblock-7		
3.		LIVESTOCK										
3.1		Private use										
A2I1		Chicken	number	29.0 (51)	27.8 (33)	32.4 (16)	25.5 (14)	37.1 (44)	23.6 (52)	27.9 (41)		
A2I2		Pigs	head	5.4 (57)	3.6 (36)	2.9 (18)	14.0 (18)	3.3 (40)	2.3 (43)	2.5 (31)		
A2I2		Cattle	head	2.9 (44)	1.8 (28)	2.2 (18)	3.8 (13)	2.7 (9)	4.2 (10)	2.4 (8)		
A2K2		Sheep	head	15.4 (49)	8.4 (29)	9.5 (17)	8.6 (13)	6.1 (33)	4.4 (22)	5.2 (31)		
A2I2		Goats	head	2.5 (13)	3.3 (6)	3.0 (1)	5.2 (5)	1.6 (19)	2.3 (25)	2.4 (19)		
3.2		Commercial use										
A3I12		Chicken	number	0	0	0	0	0	100.0 (1)	12.0 (2)		
A3I2		Pigs	head	7.4 (21)	12.0 (13)	9.7 (3)	20.4 (7)	3.2 (6)	6.7 (3)	1.7 (7)		
A3I2		Cattle	head	2.6 (9)	1.8 (5)	2.3 (4)	2.2 (5)	4.0 (2)	1.5 (2)	20.5 (2)		
A3K2		Sheep	head	28.3 (10)	0	0	20.0 (1)	4.0 (1)	5.0 (3)	2.5 (6)		
A3I2		Goats	head	2.5 (4)	0	0	5.0 (1)	1.0 (1)	1.0 (1)	2.3 (4)		

Note: "Irblock-1" stands for Novi Zagora block, "Irblock-2" for Mickarevo-Padarevo block, "Irblock-3" for Kermen Roza block, "Irblock-4" for Binkos-Marash block, "Irblock-5" for North Main Canal block, "Irblock-6" for Main Left Nikyupski Canal block, "Irblock-7" for Main Lower Right Canal block.

APPENDIX D
AGRICULTURAL PRODUCTIONS

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Table D-1 (1)

Wheat statistics (1991-96)							
	1990	1991	1992	1993	1994	1995	(1996)
Wheat Production(000 ton)	5,290	4,492	3,440	3,590	3,749	3,433	2,050
Wheat Exports		109	343	60	80	950	
Wheat Available		4,767	3,337	3,622	4,039	2,732	2,666
Wheat imports		299	7	44			870?
Wheat price Lev/ton		1298	1525	2621	3308	5000	15000
Wheat Area (000 hectare)	1,163	1,199	1,108	1,266	1,320	1,181	954
Wheat Yields (kg/ha)	4,550	3,744	3,105	2,836	2,841	2,907	2,050

National Statistical Institute & Ministry of Agriculture

Table D-1 (2)

Barley statistics (1990-1996)							
	1990	1991	1992	1993	1994	1995	(1996)
Barley Production (000 t)	1,387	1,501	1,194	932	1,138	1,168	542
Barley Exports			197		15		
Barley Available		1,797	1,455	1,033	1,218	1,461	
Barley Area (000 hectare)	360	383	391	361	389	394	245
Barley Yields (kg/ha)	3,853	3,920	3,046	2,565	2,923	2,949	2,096

National Statistical Institute & Ministry of Agriculture

Table D-1 (3)

Maize statistics (1990-1996)							
	1990	1991	1992	1993	1994	1995	(1996)
Maize Production(000 t)	1,221	2,756	1,742	983	1,340	1,787	1,099
Maize Exports			196		20		
Maize Available		2,973	2,015	1,067	1,320	1,787	1,099
Maize imports			110	84			415?
Maize Area (000 ha)	4,240	5,600	6,194	5,283	4,947	4,752	4,767
Maize Yields (kg/ha)		492	299	189	272	376	221?

National Statistical Institute & Ministry of Agriculture

Table D-1 (4)

Sunflower statistics (1990-1996)

	1990	1991	1992	1993	1994	1995	1996
Sunflower Production (000 t)	389	434	595	432	602	767	525
Sunflower Exports	16	18	72	112	66	128	-
Sunflower Available	382	432	537	507	559	693	632
Sunflower imports	13	4	0	0	0	0	0
Sunflower Area (000 ha)	280	269	475	469	495	586	420
Sunflower Yields (kg/ha)	1.39	1.61	1.25	0.919	1.21	1.27	1.25

Source: Oilseeds: Situation and Outlook report, June 1996. NSI & MAFI

Table D-1 (5) Bulgarian Agriculture 1990-95

CROP	NATIONAL DATA: Field grown crops										Production in tonnes					Yields in tonnes/ha										
	1990		1991		1992		1993		1994		1995		1990		1991		1992		1993		1994		1995			
	Production	Yield	Production	Yield	Production	Yield	Production	Yield	Production	Yield	Production	Yield	Production	Yield	Production	Yield	Production	Yield	Production	Yield	Production	Yield	Production	Yield		
Wheat	5,290,604	4,492,197	3,440,220	3,590,321	3,749,439	3,433,501	4,550	3,744	3,105	2,836	2,841	2,907	2,949	3,853	3,902	3,046	2,565	2,923	2,949	3,853	3,902	3,046	2,565	2,923	2,949	
Barley	1,386,887	1,496,299	1,191,745	927,503	1,138,719	1,168,426	83,485	46,501	1,415	1,898	1,572	1,302	1,302	0	50,606	81,132	68,389	83,485	46,501	1,415	1,898	1,572	1,302	1,302	1,302	
Oats	1,216,416	2,756,097	1,739,910	980,154	1,340,418	1,787,439	2,866	4,921	2,809	1,855	2,718	3,761	3,761	4,330,610	4,588,978	2,169,440	1,127,058	501,021	686,818	10,206	16,475	8,103	5,228	9,357	10,718	
Fodder Maize	1,561,958	0	1,140,597	656,951	431,882	596,528	3,909	3,909	3,907	2,799	2,441	3,935	3,935	1,561,958	0	1,140,597	656,951	431,882	596,528	3,909	3,907	2,799	2,441	3,935	3,935	
Alfalfa old	0	0	60,240	33,663	22,359	38,214	1,919	1,580	1,919	1,580	1,340	1,914	1,914	0	0	60,240	33,663	22,359	38,214	1,919	1,580	1,340	1,914	1,914	1,914	
Alfalfa new	0	0	534,606	297,017	284,670	507,785	1,838	1,067	1,838	1,067	1,054	1,838	1,838	0	0	534,606	297,017	284,670	507,785	1,838	1,067	1,054	1,838	1,838	1,838	
Pastures	388,357	433,475	594,587	431,420	599,588	744,231	1,386	1,607	1,386	1,607	1,209	1,270	1,270	388,357	433,475	594,587	431,420	599,588	744,231	1,386	1,607	1,209	1,270	1,270	1,270	
Sunflower	583,713	881,216	303,762	94,748	111,089	156,842	16,668	23,359	17,781	9,299	13,862	17,054	17,054	583,713	881,216	303,762	94,748	111,089	156,842	16,668	23,359	17,781	9,299	13,862	17,054	
Sugar Beet	56,555	56,755	52,659	36,184	24,365	11,317	1,337	1,311	1,268	1,141	1,145	1,406	1,406	56,555	56,755	52,659	36,184	24,365	11,317	1,337	1,311	1,268	1,141	1,145	1,406	
Oriental tobacco	15,809	0	10,346	6,968	5,585	5,260	1,959	1,211	1,118	1,211	1,272	1,143	1,143	15,809	0	10,346	6,968	5,585	5,260	1,959	1,211	1,118	1,211	1,272	1,143	
Virginia tobacco	4,180	0	2,799	1,644	1,494	1,857	1,652	1,181	1,181	1,168	1,352	1,158	1,158	4,180	0	2,799	1,644	1,494	1,857	1,652	1,181	1,168	1,352	1,158	1,158	
Burley tobacco	7,884	17,885	8,457	4,990	6,668	13,928	0,877	1,193	0,614	0,684	0,730	1,213	1,213	7,884	17,885	8,457	4,990	6,668	13,928	0,877	1,193	0,614	0,684	0,730	1,213	1,213
Cotton	14,852	19,818	17,022	14,000	8,838	13,662	0,883	1,880	0,807	0,674	0,940	0,904	0,904	14,852	19,818	17,022	14,000	8,838	13,662	0,883	1,880	0,807	0,674	0,940	0,904	0,904
Soy	20,793	34,696	32,163	17,834	28,726	44,414	0,528	0,976	0,916	0,658	0,771	1,039	1,039	20,793	34,696	32,163	17,834	28,726	44,414	0,528	0,976	0,916	0,658	0,771	1,039	1,039
Beans	431,367	495,825	564,978	354,263	475,320	640,411	10,455	11,660	11,800	9,009	10,045	11,512	11,512	431,367	495,825	564,978	354,263	475,320	640,411	10,455	11,660	11,800	9,009	10,045	11,512	11,512
Potato	0	0	62,684	4,846	3,154	13,012	30,040	2,312	17,719	20,466	16,679	16,679	16,679	0	0	62,684	4,846	3,154	13,012	30,040	2,312	17,719	20,466	16,679	16,679	16,679
Tomato - early	757,323	572,889	346,210	27,086	419,640	486,251	29,139	24,825	22,978	1,819	18,401	16,679	16,679	757,323	572,889	346,210	27,086	419,640	486,251	29,139	24,825	22,978	1,819	18,401	16,679	16,679
Tomato	19,471	204,509	198,683	148,127	192,188	239,928	1,436	12,706	12,795	10,889	11,351	11,681	11,681	19,471	204,509	198,683	148,127	192,188	239,928	1,436	12,706	12,795	10,889	11,351	11,681	11,681
Peppers	2,999	29,453	12,074	6,774	5,276	1,110	0,909	7,614	6,900	7,762	5,226	0,611	0,611	2,999	29,453	12,074	6,774	5,276	1,110	0,909	7,614	6,900	7,762	5,226	0,611	0,611
Paprika	7,470	0	103,112	51,678	80,170	173,448	0,802	19,457	19,214	13,272	12,754	11,708	11,708	7,470	0	103,112	51,678	80,170	173,448	0,802	19,457	19,214	13,272	12,754	11,708	11,708
Onion	0	95,014	68,237	60,252	57,258	90,807	0	19,457	19,214	13,272	12,754	11,708	11,708	0	95,014	68,237	60,252	57,258	90,807	0	19,457	19,214	13,272	12,754	11,708	11,708
Cucumber	787,262	901,866	790,999	298,764	757,686	1,004,556	15,388	3,776	7,705	4,151	2,388	4,471	4,471	787,262	901,866	790,999	298,764	757,686	1,004,556	15,388	3,776	7,705	4,151	2,388	4,471	4,471
Total Veggies	330,380	77,713	152,969	79,704	38,865	66,094	4,231	3,765	3,350	2,398	2,203	2,695	2,695	330,380	77,713	152,969	79,704	38,865	66,094	4,231	3,765	3,350	2,398	2,203	2,695	2,695
Apples	43,410	42,040	40,641	29,557	27,248	32,702	7,508	7,508	5,989	4,799	3,547	2,999	2,999	43,410	42,040	40,641	29,557	27,248	32,702	7,508	7,508	5,989	4,799	3,547	2,999	2,999
Pears	58,487	0	55,292	46,798	31,950	25,868	4,909	5,402	5,012	3,804	3,343	6,315	6,315	58,487	0	55,292	46,798	31,950	25,868	4,909	5,402	5,012	3,804	3,343	6,315	6,315
Peaches	67,499	78,774	78,541	45,360	42,604	89,487	4,909	5,402	5,012	3,804	3,343	6,315	6,315	67,499	78,774	78,541	45,360	42,604	89,487	4,909	5,402	5,012	3,804	3,343	6,315	6,315
Grapes	499,776	198,527	327,443	201,419	140,667	214,151	4,415	4,591	4,943	3,674	3,753	5,077	5,077	499,776	198,527	327,443	201,419	140,667	214,151	4,415	4,591	4,943	3,674	3,753	5,077	5,077
Total fruit	558,807	568,536	597,604	386,767	377,310	496,274	4,415	4,591	4,943	3,674	3,753	5,077	5,077	558,807	568,536	597,604	386,767	377,310	496,274	4,415	4,591	4,943	3,674	3,753	5,077	5,077
Wine grapes																										

Table D-1 (6) Bulgarian Agriculture 1990-95

CROP	NATIONAL DATA: Field grown crops											
	1990		1991		1992		1993		1994		1995	
	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%
Wheat	1,162,770	33.32%	1,199,839	34.02%	1,107,961	28.15%	1,265,981	33.55%	1,319,760	36.52%	1,181,115	33.15%
Barley	359,950	10.31%	383,470	10.87%	391,249	9.94%	361,600	9.58%	389,572	10.78%	396,211	11.12%
Oats	8,203	0.24%	35,764	1.01%	42,746	1.09%	51,653	1.37%	53,108	1.47%	35,715	1.00%
Grain Maize	424,430	12.16%	560,069	15.88%	619,406	15.74%	528,385	14.00%	493,163	13.65%	475,256	13.34%
Fodder Maize	424,320	12.16%	278,542	7.90%	267,733	6.80%	215,581	5.71%	53,545	1.48%	64,081	1.80%
Alfalfa old	399,580	11.45%	380,270	10.78%	291,937	7.42%	234,709	6.22%	176,929	4.90%	151,595	4.26%
Alfalfa new					31,392	0.80%	21,306	0.56%	16,686	0.46%	19,965	0.56%
Pastures					290,863	7.39%	278,367	7.38%	270,086	7.47%	276,270	7.75%
Sunflower	280,200	8.03%	269,742	7.65%	475,669	12.08%	469,445	12.44%	495,938	13.72%	586,009	16.45%
Sugar Beet	35,020	1.00%	37,725	1.07%	17,084	0.43%	10,189	0.27%	8,014	0.22%	9,197	0.26%
Oriental tobacco	42,300	1.21%	43,291	1.23%	41,529	1.06%	31,695	0.84%	21,279	0.59%	8,049	0.23%
Virginia tobacco	8,070	0.23%	7,841	0.22%	9,254	0.24%	5,754	0.15%	4,391	0.12%	4,602	0.13%
Burley tobacco	2,530	0.07%			2,370	0.06%	1,407	0.04%	1,105	0.03%	1,604	0.05%
Cotton	8,990	0.26%	14,992	0.43%	13,774	0.35%	7,296	0.19%	9,134	0.25%	11,482	0.32%
Soy	16,820	0.48%	10,542	0.30%	21,093	0.54%	20,771	0.55%	9,402	0.26%	15,113	0.42%
Beans	39,380	1.13%	35,549	1.01%	35,112	0.89%	27,103	0.72%	37,258	1.03%	42,747	1.20%
Potato	41,220	1.18%	42,524	1.21%	47,880	1.22%	39,323	1.04%	47,319	1.31%	55,630	1.56%
Tomato - early					2,087	0.05%	2,096	0.06%	178	0.00%	636	0.02%
Tomato	25,990	0.74%	23,077	0.65%	15,067	0.38%	14,888	0.39%	22,805	0.63%	29,154	0.82%
Peppers	13,560	0.39%	16,096	0.46%	15,528	0.39%	13,603	0.36%	16,931	0.47%	20,540	0.58%
Paprika	3,300	0.09%	3,868	0.11%	1,750	0.04%	873	0.02%	1,010	0.03%	1,815	0.05%
Onion	9,310	0.27%			13,541	0.34%	8,446	0.22%	10,612	0.29%	20,683	0.58%
Cucumber	4,040	0.12%	4,883	0.14%	3,551	0.09%	4,540	0.12%	4,489	0.12%	7,756	0.22%
Total Veggies	56,200	1.61%			51,524	1.31%	44,446	1.18%	56,025	1.55%	80,583	2.26%
Apples	21,470	0.62%	20,581	0.58%	19,853	0.50%	19,201	0.51%	16,275	0.45%	14,783	0.41%
Plums	10,260	0.29%	11,166	0.32%	12,132	0.31%	12,326	0.33%	12,369	0.34%	12,134	0.34%
Peaches	7,790	0.22%	8,471	0.24%	9,232	0.23%	9,752	0.26%	9,008	0.25%	8,626	0.24%
Grapes	13,750	0.39%	14,582	0.41%	15,671	0.40%	11,924	0.32%	12,744	0.35%	14,171	0.40%
Total fruit	53,270	1.53%	54,800	1.55%	56,888	1.45%	53,203	1.41%	50,396	1.39%	49,713	1.40%
Wine grapes	126,570	3.63%	123,837	3.51%	120,899	3.07%	105,271	2.79%	100,536	2.78%	97,749	2.74%
TOTAL	3,489,823	100.00%	3,526,718	100.00%	3,936,361	100.00%	3,773,484	100.00%	3,613,644	100.00%	3,562,687	100.00%

TABLE D-2 (1) PETRICH Study Area Cropping Pattern

	w/o Project Hectares	With Project Hectares	%	Yield kg/dec	Yield kg/dec	Yield kg/dec	w/o Project Production	With Project Production	With Project Production
Wheat (irrigated)	0	0,0	385	3,5	290	360	0	1,386	0
Wheat (non-irrigated)	550	5,0	0	0	270	320	1,485	0	1,386
Wheat (total)	550	5,0	385	3,5			1,485	1,386	1,386
Barley (irrigated)	0	0,0	825	7,5	250	290	0	2,393	0
Barley (non-irrigated)	990	9,0	0	0	235	250	2,327	0	2,393
Barley (total)	990	9,0	825	7,5			2,327	2,393	2,393
Grain Maize (irrigated)	1,320	12,0	825	7,5	275	350	3,630	2,888	2,888
Grain Maize (non-irrigated)	0	0,0	0	0	150	200	0	0	0
Grain Maize (total)	1,320	12,0	825	7,5			3,630	2,888	2,888
Fodder Maize (irrigated)	165	1,5	330	3	650	900	1,073	2,970	2,970
Fodder Maize (non-irrigated)	0	0,0	0	0	350	500	0	0	0
Fodder Maize (total)	165	1,5	330	3			1,073	2,970	2,970
Tobacco	1,320	12,0	2,200	20	125	160	160	0	3,520
Early Vegetables	495	4,5	990	9	1,125	2,125	4,950	22,000	22,000
Main Crop Vegetables	935	8,5	2,145	19,5	875	1,450	7,920	30,278	30,278
Fruit (irrigated)	124	1,1	495	4,5	275	450	337	2,420	2,420
Fruit (non-irrigated)	371	3,4	0	0	110	175	701	0	0
Fruit (total)	495	4,5	495	4,5			1,038	2,420	2,420
Grapes (irrigated)	234	2,1	825	7,5	350	550	870	4,565	4,565
Grapes (non-irrigated)	701	6,4	0	0	175	275	1,403	0	0
Grapes (total)	935	8,5	825	7,5			2,272	4,565	4,565
Melons	330	3,0	330	3	750	900	2,475	2,970	2,970
Other crops	1,375	12,5	1,265	11,5	120	160	3,781	5,041	5,041
Alfalfa (irrigated)	41	0,4	440	4	275	325	113	1,430	1,430
Alfalfa (non-irrigated)	124	1,1	0	0	125	150	155	0	0
Alfalfa (total)	165	1,5	440	4			268	1,430	1,430
Pasture (irrigated)	0	0,0	275	2,5	100	150	0	413	413
Pasture (non-irrigated)	715	6,5	0	0	75	100	536	0	0
Pasture (total)	715	6,5	275	2,5			536	413	413
Unplanted	990	9,0	330	3	0	0	0	0	0
On-Farm Roads	220	2,0	220	2	0	0	0	0	0
GRAND TOTALS	11,000	100,0	11,880	108			31,755	82,272	82,272

TABLE D-2 (2)

ROSITZA Study Area Cropping Pattern									
	w/o Project Hectares %	With Project Hectares %	w/o Project Yield kg/dec	With Project Yield kg/dec	w/o Project Production	With Project Production	w/o Project Production	With Project Production	
Wheat (irrigated)	0	0,0	2,517	5,0	375	0	9,440		
Wheat (non-irrigated)	12,587	25,0	12,587	25,0	300	340	37,761	42,796	
Wheat (total)	12,587	25,0	15,104	30,0			37,761	52,236	
Barley (irrigated)	0	0,0	1,208	2,4	330	0	3,988		
Barley (non-irrigated)	5,538	11,0	4,833	9,6	290	300	16,061	14,500	
Barley (total)	5,538	11,0	6,042	12,0			16,061	18,488	
Grain Maize (irrigated)	6,042	12,0	3,776	7,5	260	420	15,708	15,860	
Grain Maize (non-irrigated)	0	0,0	0	0,0	200	275	0	0	
Grain Maize (total)	6,042	12,0	3,776	7,5			15,708	15,860	
Fodder Maize (irrigated)	818	1,6	1,510	3,0	850	1,000	6,954	15,104	
Fodder Maize (non-irrigated)	2,454	4,9	0	0,0	700	800	17,181	0	
Fodder Maize (total)	3,273	6,5	1,510	3,0			24,135	15,104	
Sunflower (irrigated)	0	0,0	2,517	5,0	135	175	0	4,405	
Sunflower (non-irrigated)	8,307	16,5	5,035	10,0	120	150	9,969	7,552	
Sunflower (total)	8,307	16,5	7,552	15,0			9,969	11,958	
Sugar beet (irrigated)	0	0,0	1,259	2,5	1,600	1,800	0	22,656	
Sugar beet (non-irrigated)	503	1,0	0	0,0	1,500	1,600	7,552	0	
Sugar beet (total)	503	1,0	1,259	2,5			7,552	22,656	
Early Vegetables	0	0,0	0	0,0	0	0	0	0	
Main Crop Vegetables	2,266	4,5	2,266	4,5	800	1,400	23,034	41,033	
Fruit (irrigated)	378	0,7	1,259	2,5	325	600	1,227	7,678	
Fruit (non-irrigated)	1,133	2,2	0	0,0	300	400	3,493	0	
Fruit (total)	1,510	3,0	1,259	2,5			4,720	7,678	
Grapes (irrigated)	315	0,6	3,524	7,0	375	625	1,227	22,656	
Grapes (non-irrigated)	944	1,9	0	0,0	325	400	3,210	0	
Grapes (total)	1,259	2,5	3,524	7,0			4,437	22,656	
Melons	755	1,5	1,007	2,0	650	900	4,909	9,063	
Other crops	1,259	2,5	2,014	4,0	88	115	264	831	
Alfalfa (irrigated)	629	1,2	1,007	2,0	300	340	1,888	3,424	
Alfalfa (non-irrigated)	1,888	3,7	0	0,0	250	300	4,720	0	
Alfalfa (total)	2,517	5,0	1,007	2,0			6,608	3,424	
Pasture (irrigated)	0	0,0	1,510	3,0	100	175	0	2,643	
Pasture (non-irrigated)	1,007	2,0	0	0,0	90	110	906	0	
Pasture (total)	1,007	2,0	1,510	3,0			906	906	
Unplanted	2,517	5,0	1,510	3,0					
On-Farm Roads	1,007	2,0	1,007	2,0					
GRAND TOTALS	50,348	100,0	50,348	100,0	156,065	223,629	156,065	223,629	

Table D-2 (3) SREDNA TUNDJA Study Area Cropping Pattern FULL AREA

	w/o Project Hectares %	With Project Hectares %	w/o Project Yield kg/dec	With Project Yield kg/dec	w/o Project Production	With Project Production
Wheat (irrigated)	0	0,0	0,0	325	0	0
Wheat (non-irrigated)	30,378	32,0	35,0	310	94,173	112,970
Wheat (total)	30,378	32,0	35,0	310	94,173	112,970
Barley (irrigated)	0	0,0	0,0	310	0	0
Barley (non-irrigated)	17,088	18,0	15,0	300	51,263	44,856
Barley (total)	17,088	18,0	15,0	300	51,263	44,856
Grain Maize (irrigated)	4,747	5,0	7,5	385	18,274	30,260
Grain Maize (non-irrigated)	0	0,0	0,0	175	0	0
Grain Maize (total)	4,747	5,0	7,5	175	18,274	30,260
Fodder Maize (irrigated)	1,424	1,5	1,0	750	1,100	10,443
Fodder Maize (non-irrigated)	1,424	1,5	0,0	675	750	0
Fodder Maize (total)	2,848	3,0	1,0	675	20,292	10,443
Sunflower (irrigated)	0	0,0	0,0	125	165	0
Sunflower (non-irrigated)	8,544	9,0	10,0	100	8,544	14,240
Sunflower (total)	8,544	9,0	10,0	100	8,544	14,240
Sugar beet (unirrigated)	0	0,0	1,0	1,500	1,800	0
Early Vegetables	0	0,0	0,5	600	1,375	0
Main Crop Vegetables	3,797	4,0	4,0	775	1,408	33,701
Fruit (irrigated)	1,543	1,6	5,5	350	625	6,052
Fruit (non-irrigated)	4,628	4,9	0,0	350	18,156	33,701
Fruit (total)	6,171	6,5	5,5	350	425	0
Grapes (irrigated)	1,543	1,6	7,0	375	650	33,701
Grapes (non-irrigated)	4,628	4,9	0,0	350	5,933	43,194
Grapes (total)	6,171	6,5	7,0	350	16,643	0
Melons	949	1,0	1,0	650	900	43,194
Other crops	475	0,5	2,5	291	390	6,171
Alfalfa (irrigated)	949	1,0	2,0	300	375	8,544
Alfalfa (non-irrigated)	2,848	3,0	0,0	300	325	7,120
Alfalfa (total)	3,797	4,0	2,0	300	11,392	7,120
Pasture (irrigated)	0	0,0	3,0	100	150	4,272
Pasture (non-irrigated)	949	1,0	0,0	100	949	0
Pasture (total)	949	1,0	3,0	100	949	4,272
Unplanted	7,120	7,5	3,0	3,0	3,0	0
On-Farm Roads	1,899	2,0	1,899	2,0	2,0	4,272
GRAND TOTALS	94,932	100,0	94,932	100,0	291,733	400,235

TABLE D-2 (4) SREDNA TUNDJA Study Area Cropping Pattern REDUCED AREA

	w/o Project Hectares	%	With Project Hectares	%	w/o Project Yield kg/dec	With Project Yield kg/dec	w/o Project Production	With Project Production
Wheat (irrigated)	0	0,0	3.149	5,0	325	375	0	11.807
Wheat (non-irrigated)	30.378	32,0	15.743	25,0	310	340	94.173	53.527
Wheat (total)	30.378	32,0	18.892	30,0			94.173	65.334
Barley (irrigated)	0	0,0	1.511	2,4	310	335	0	5.063
Barley (non-irrigated)	17.088	18,0	6.045	9,6	300	315	51.263	19.043
Barley (total)	17.088	18,0	7.557	12,0			51.263	24.106
Grain Maize (irrigated)	4.747	5,0	4.723	7,5	385	425	18.274	20.073
Grain Maize (non-irrigated)	0	0,0	0	0,0	175	275	0	0
Grain Maize (total)	4.747	5,0	4.723	7,5			18.274	20.073
Fodder Maize (irrigated)	1.424	1,5	1.889	3,0	750	1.100	10.680	20.781
Fodder Maize (non-irrigated)	1.424	1,5	0	0,0	675	750	9.612	0
Fodder Maize (total)	2.848	3,0	1.889	3,0			20.292	20.781
Tobacco	0	0,0	0	0,0	0	0	0	0
Sunflower (non-irrigated)	8.544	9,0	3.149	5,0	100	150	8.544	4.723
Sunflower (total)	8.544	9,0	4.723	7,5			8.544	7.321
Sugar beet (irrigated)	0	0,0	630	1,0	1.500	1.800	0	11.335
Early Vegetables	0	0,0	315	0,5	600	1.375	0	8.659
Main Crop Vegetables	3.797	4,0	4.723	7,5	775	1.408	33.701	65.807
Fruit (irrigated)	1.543	1,6	4.093	6,5	350	625	6.052	26.764
Fruit (non-irrigated)	4.628	4,9	0	0,0	350	425	18.156	0
Fruit (total)	6.171	6,5	4.093	6,5			24.208	26.764
Grapes (irrigated)	1.543	1,6	5.668	9,0	375	650	5.933	36.839
Grapes (non-irrigated)	4.628	4,9	0	0,0	350	400	16.643	0
Grapes (total)	6.171	6,5	5.668	9,0			22.576	36.839
Melons	949	1,0	945	1,5	650	900	6.171	8.501
Other crops	475	0,5	2.519	4,0	291	390	190	11.178
Alfalfa (irrigated)	949	1,0	1.259	2,0	300	375	2.848	4.723
Alfalfa (non-irrigated)	2.848	3,0	0	0,0	300	325	8.544	0
Alfalfa (total)	3.797	4,0	1.259	2,0			11.392	4.723
Pasture (irrigated)	0	0,0	1.889	3,0	100	150	0	2.834
Pasture (non-irrigated)	949	1,0	0	0,0	100	110	949	0
Pasture (total)	949	1,0	1.889	3,0			949	2.834
Unplanted	7.120	7,5	1.889	3,0			949	
On-Farm Roads	1.899	2,0	1.259	2,0				
GRAND TOTALS	94.932	100,0	62.973	100,0			291.733	314.254

Table D-3 (1)

Nova Zagora Study Area With Project

Cropping Pattern: Small-scale farm

15 ha

	Area/farm	%	Total Area hectares
Wheat (Un-irrigated)	5,3	35,1%	700
Barley (Un-irrigated)	2,6	17,3%	344
Maize (Irrigated)	1,7	11,2%	224
Sunflower (Irrigated)	0,0	0,0%	0
Sunflower (Un-irrigated)	1,2	8,3%	165
Millet (Un-irrigated)	0,2	1,1%	22
Vegetables (Irrigated)	1,8	11,8%	235
Melons (Irrigated)	0,2	1,5%	29
Orchards (Irrigated)	0,0	0,0%	0
Vineyards (Irrigated)	1,2	8,2%	164
Other Crops (Irrigated)	0,9	5,9%	117
Alfalfa (Irrigated)	0,3	1,9%	39
Pasture (Un-irrigated)	0,3	2,0%	40
Unplanted	0,1	0,4%	7
On-Farm Roads	0,5	3,0%	60
Total Area	16,1	108%	2147
Irrigated Area	6,1	39%	808

Assumption: 133 farms of average size 15 ha, total area 1995

Nova Zagora Study Area With Project

Cropping Pattern: Medium-scale farm

40 ha

	Area/farm	%	Total Area hectares
Wheat (Un-irrigated)	13,5	33,8%	673
Barley (Un-irrigated)	6,8	17,0%	339
Maize (Irrigated)	5,8	14,4%	287
Sunflower (Irrigated)	1,0	2,5%	50
Sunflower (Un-irrigated)	3,8	9,4%	187
Millet (Un-irrigated)	1,1	2,9%	57
Vegetables (Irrigated)	3,4	8,5%	170
Melons (Irrigated)	0,2	0,6%	11
Orchards (Irrigated)	0,5	1,3%	25
Vineyards (Irrigated)	1,5	3,8%	75
Other Crops (Irrigated)	1,2	3,0%	60
Alfalfa (Irrigated)	1,7	4,1%	82
Pasture (Un-irrigated)	0,3	0,8%	16
Unplanted	0,4	1,0%	19
On-Farm Roads	1,1	2,8%	55
Total Area	42,2	106%	2106
Irrigated Area	15,2	37%	709

Assumption: 100 farms of average size 40 ha, total area 4000

Table D-3 (2)

Nova Zagora Study Area With Project

Cropping Pattern: Partnership Farm

65 ha

	Area/farm	%	Total Area hectares
Wheat (Un-irrigated)	22,8	35,0%	455
Barley (Un-irrigated)	10,9	16,7%	217
Maize (Irrigated)	12,1	18,6%	242
Sunflower (Irrigated)	0,0	0,0%	0
Sunflower (Un-irrigated)	7,0	10,8%	140
Millet (Un-irrigated)	1,5	2,3%	30
Vegetables (Irrigated)	2,0	3,1%	40
Melons (Irrigated)	0,5	0,8%	10
Orchards (Irrigated)	0,4	0,5%	7
Vineyards (Irrigated)	1,3	1,9%	25
Other Crops (Irrigated)	2,3	3,5%	46
Alfalfa (Irrigated)	1,8	2,7%	35
Pasture (Un-irrigated)	0,2	0,3%	4
Unplanted	0,7	1,0%	13
On-Farm Roads	1,3	2,0%	26
Total Area	64,5	99%	1291
Irrigated Area	20,3	32%	405

Assumption: 20 farms of average size 65 ha, total area 1300

Nova Zagora Study Area With Project

Cropping Pattern: Large-scale Farm

300 ha

	Area/farm	%	Total Area hectares
Wheat (Un-irrigated)	100,7	33,6%	437
Barley (Un-irrigated)	44,0	14,7%	191
Maize (Irrigated)	42,3	14,1%	183
Sunflower (Irrigated)	6,0	2,0%	26
Sunflower (Un-irrigated)	28,3	9,4%	123
Millet (Un-irrigated)	11,7	3,9%	51
Vegetables (Irrigated)	6,7	2,2%	29
Melons (Irrigated)	2,0	0,7%	9
Orchards (Irrigated)	6,0	2,0%	26
Vineyards (Irrigated)	15,0	5,0%	65
Other Crops (Irrigated)	11,0	3,7%	48
Alfalfa (Irrigated)	10,3	3,4%	45
Pasture (Un-irrigated)	4,0	1,3%	18
Unplanted	4,3	1,4%	19
On-Farm Roads	6,7	2,2%	29
Total Area	300	100%	1298
Irrigated Area	99,6	35%	406

Assumption: 3 farms of average size 300 ha, total area 900

Table D-3 (3)

Nova Zagora Study Area With Project

Cropping Pattern: Cooperative

1000 ha

	Area/farm	%	Total Area hectares
Wheat (Un-irrigated)	362,6	36,3%	1813
Barley (Un-irrigated)	174,2	17,4%	871
Maize (Irrigated)	109,6	11,0%	548
Sunflower (Irrigated)	29,2	2,9%	146
Sunflower (Un-irrigated)	111,0	11,1%	555
Millet (Un-irrigated)	39,0	3,9%	195
Vegetables (Irrigated)	5,0	0,5%	25
Melons (Irrigated)	1,2	0,1%	6
Orchards (Irrigated)	19,4	1,9%	97
Vineyards (Irrigated)	47,2	4,7%	236
Other Crops (Irrigated)	16,0	1,6%	80
Alfalfa (Irrigated)	51,6	5,2%	258
Pasture (Un-irrigated)	8,6	0,9%	43
Unplanted	12,2	1,2%	61
On-Farm Roads	9,6	1,0%	48
Total Area	996,4	100%	4982
Irrigated Area	279,2	29%	1250

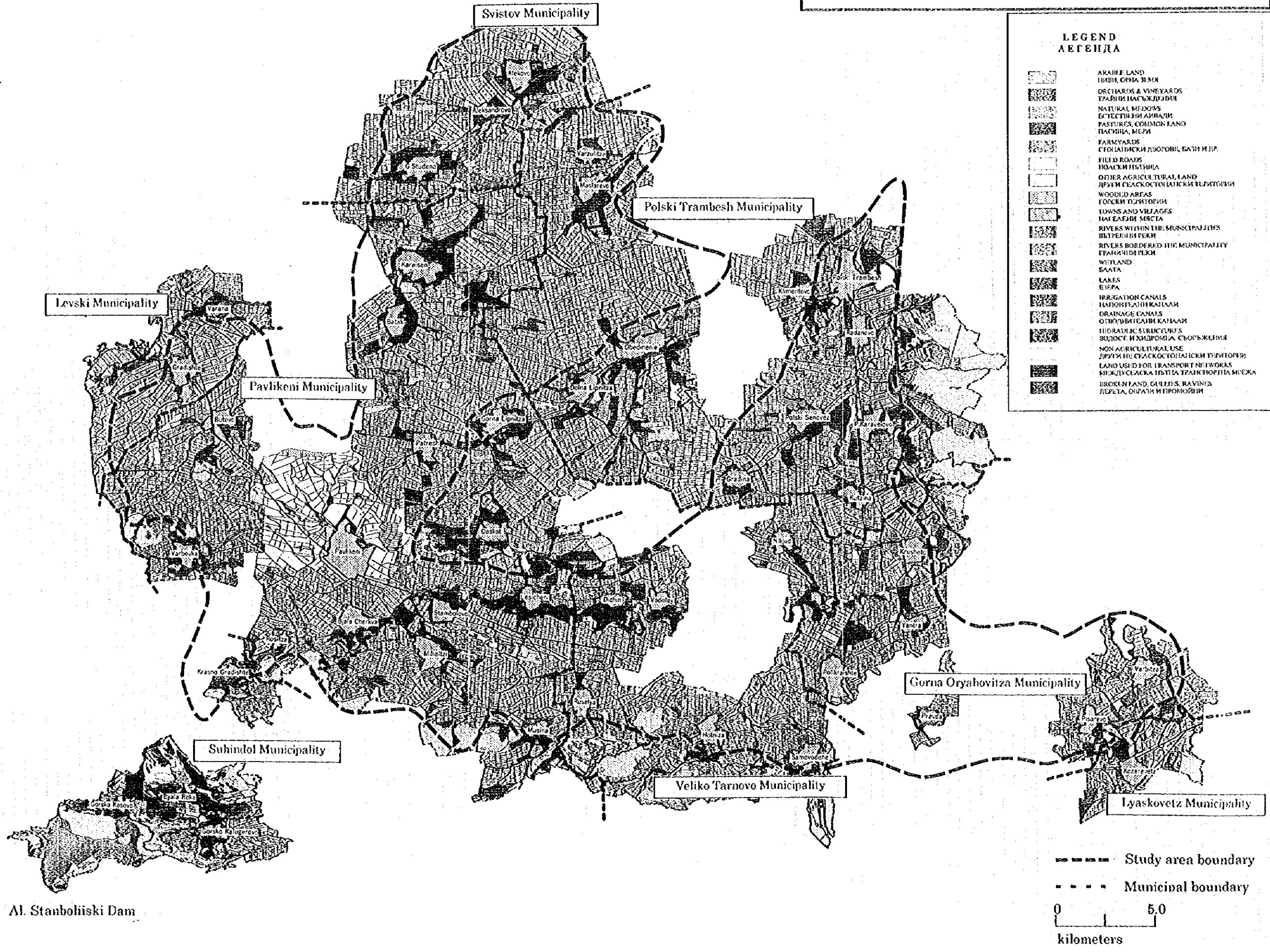
Assumption: 5 farms of average size 1000 ha, total area 5000

TABLE D-3 (4) Nove Zagora Study Area : With and Without Project Cropping Patterns

Crops	Target area w/o Project		Target area With Project		w/o Project Yield kg/ha	With Project Yield kg/ha	w/o Project Production ton	With Project Production ton	Production Increase ton
	Hectares	%	Hectares	%					
Wheat (non-irrigated)	4,434.0	33.6%	4,620.0	35.0%	3,500	3,800	15,519	17,556	2,037
Barley (non-irrigated)	2,444.8	18.5%	2,244.0	17.0%	3,300	3,600	8,068	8,078	11
Grain Maize (irrigated)	1,512.7	11.5%	1,716.0	13.0%	4,000	7,500	6,051	12,870	6,819
Sunflower (irrigated)	0.0	0.0%	264.0	2.0%	1,250	1,650	0	436	436
Sunflower (non-irrigated)	2,155.8	16.3%	1,320.0	10.0%	1,100	1,500	2,371	1,980	-391
Sunflower (total)	2,155.8	16.3%	1,584.0	12.0%			2,371	2,416	44
Millet	396.9	3.0%	396.0	3.0%	800	1,100	318	436	118
Main Crop Vegetables	113.5	0.9%	660.0	5.0%	7,750	14,080	879	9,293	8,414
Melons	21.1	0.2%	66.0	0.5%	6,500	9,000	137	594	457
Other crops	343.2	2.6%	396.0	3.0%	2,910	3,900	999	1,544	545
Fruit (irrigated)	0.0	0.0%	172.0	1.3%	3,500	7,500	0	1,290	1,290
Fruit (non-irrigated)	164.9	1.2%	0.0	0.0%	1,500	2,750	247	0	-247
Fruit (total)	164.9	1.2%	172.0	1.3%			247	1,290	1,043
Grapes (irrigated)	305.1	2.3%	620.4	4.7%	4,500	10,000	1,373	6,204	4,831
Grapes (non-irrigated)	305.1	2.3%	0.0	0.0%	2,100	4,500	641	0	-641
Grapes (total)	610.2	4.6%	620.4	4.7%			2,014	6,204	4,190
Alfalfa (irrigated)	132.0	1.0%	528.0	4.0%	4,500	6,500	594	3,432	2,838
Alfalfa (non-irrigated)	264.0	2.0%	0.0	0.0%	2,750	3,250	726	0	-726
Alfalfa (total)	396.0	3.0%	528.0	4.0%			1,320	3,432	2,112
Pasture (non-irrigated)	191.4	1.5%	132.0	1.0%	1,000	1,500	191	198	7
Unplanted	151.8	1.1%	132.0	1.0%					
On-Farm Roads	264.2	2.0%	264.0	2.0%					
GRAND TOTAL	13,200	100.0%	13,530	102.5%			38,114	63,911	

FIGURE D-1

LAND USE MAP OF ROSITZA STUDY AREA



LEGEND
ЛЕГЕНДА

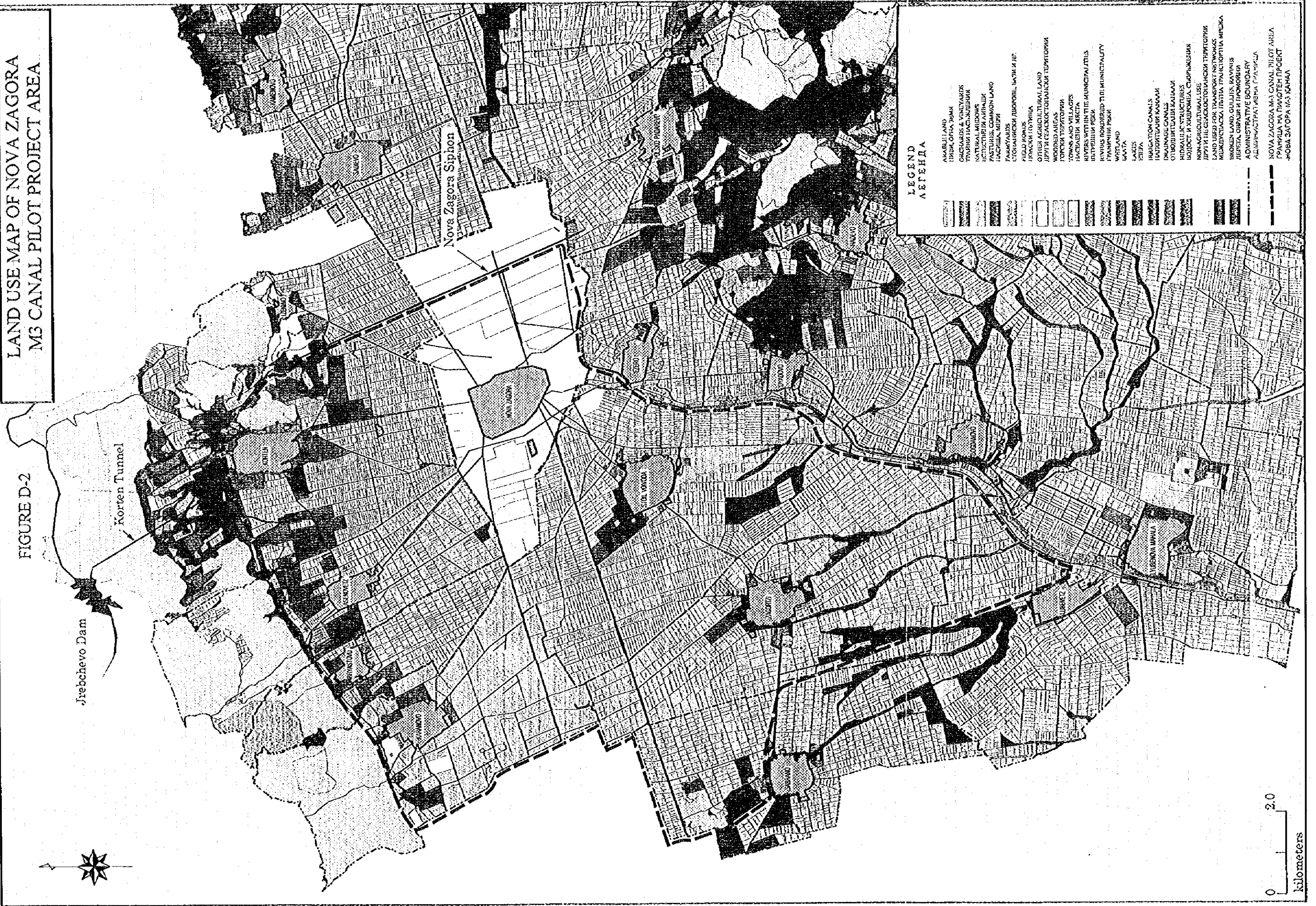
- ARABLE LAND
ПЛИВНИ, ОРНА ЗЕМЯ
- ORCHARDS & VINEYARDS
ГРАДИНИ И ВИШНЯРИ
- NATURAL MEADOWS
ЕСТЕСТВЕНИ АЗВАДИ
- PASTURES, COMMON LAND
ПАСИЩА, МЕРИ
- FARMYARDS
СТОЛАНИСКИ ДВОРОВЕ, БАЗИ И ДР.
- FIELD ROADS
ПОДСКИ ПЪТНИЦА
- OTHER AGRICULTURAL LAND
ДРУГИ СЕЛСКОСТОПАНИСКИ ТЕРИТОРИИ
- WOODLAND AREAS
ГОРСКИ ПРИТОРИИ
- TOWNS AND VILLAGES
НАСЕЛЕНИ МЯСТА
- RIVERS WITHIN THE MUNICIPALITIES
ВЪТРЕШНИ РЕКИ
- RIVERS BORDERED THE MUNICIPALITY
ГРАНИЧНИ РЕКИ
- WETLAND
БАЛАТА
- LAKES
ЕЗЕРА
- IRRIGATION CANALS
НАПОИТЕЛНИ КАНАЛИ
- DRAINAGE CANALS
ОТВОДНИТЕЛНИ КАНАЛИ
- HYDRAULIC STRUCTURES
ВОДОСТ. И ХИДРОМЕЛ. СЪОБЪЖЕНИЯ
- NON AGRICULTURAL USE
ДРУГИ НЕ СЕЛСКОСТОПАНИСКИ ТЕРИТОРИИ
- LAND USED FOR TRANSPORT NETWORKS
МЕЖДУСЛАСКА ПЪТНА ТРАНСПОРТНА МРЕЖА
- BROKEN LAND, GULLIES, RAVINES
ДЕРЕТА, ОПАДИ И ПРОМОДИИ

--- Study area boundary
 - - - Municipal boundary
 0 5.0
 kilometers

Al. Stanboliiski Dam

LAND USE MAP OF NOVA ZAGORA
M3 CANAL PILOT PROJECT AREA

FIGURE D-2



LEGEND
ЛЕГЕНДА

- ARABLE LAND
ПРИП, ОРНА ЗЕМЯ
- ORCHARDS & VINEYARDS
ТРАМНИ НАСЪЖДЕНИЯ
- NATURAL MEADOWS
ЕСТЕСТВЕННИ АРИШИ
- PASTURES, COMMON LAND
ПАСИША, МЕРИ
- BARNS/YARDS
СТОПАЛНИСКИ ДВОРОВИ, ЯТРИ И ЛЕ
- FIELD HOMES
ПОДСКИ ПУТНИЦИ
- OTHER AGRICULTURAL LAND
ДРУГИ СТОКООСТАВНИ ТЕРИТОРИИ
- WOODLANDS
ГОРСКИ ТЕРИТОРИИ
- TOWNS AND VILLAGES
НАСЕЛЕНА МЕСТА
- RIVERS WITH TIE MUNICIPALITIES
ВЪТРЕШНИ РЕКА
- RIVERS BORDERED BY MUNICIPALITY
ГРАНИЧНИ РЕКА
- WATLAND
САЛТА
- LAKES
ЕЗЕРА
- IRRIGATION CANALS
ПОТОПНИ КАНАЛИ
- DRAINAGE CANALS
ОТВОДНИТЕ СИСТЕМИ
- HYDRAULIC STRUCTURES
ИДРОТЕХНИЧЕСКИ СЪОРЪЖЕНИЯ
- NON-AGRICULTURAL USE
ДРУГИ НЕ СТОКООСТАВНИ ТЕРИТОРИИ
- LAND USED FOR TRANSPORT NETWORKS
МЕЖДУНАРОДНА ТРАНСПОРТНА МРЕЖА
- BROKEN LAND, GULLIES, RAVINES
ПОВЕРА, ОБРАЗИ И ПУКОБИНА
- ADMINISTRATIVE BOUNDARY
АДМИНИСТРАТИВНА ГРАНИЦА
- NOVA ZAGORA M3 CANAL PILOT AREA
ГРАНИЦА НА ПИЛОТЕН ПРОЕКТ
НОВА ЗАГОРА М3 КАНАЛ

0 2.0
kilometers

APPENDIX E
DISTRIBUTION AND MARKETING

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E-1 National Background of the Study

Table E-1-1

Quota Utilization for Preferential Customs Treatment in Export of Agricultural Products from Bulgaria into the EU

Description of the Commodity	Quota for the 3rd Year 1.7.94 - 1.7.95	Remains from the Quota for th 3rd Year	Quota for the 5th Year 1.7.95 - 1.7.96	Remains from the Quota for te5th Yer
Bee honey	310.00	293.76	310.00	0.00
Potatoes	2,469.30	2,022.32	2,788.00	2,788.30
Tomatoes	800.60	746.48	860.60	860.60
Onions (fresh)	302.80	267.96	342.80	106.04
Garlic	687.20	687.20	777.20	777.20
Cucumbers (winter)	5,810.00	5,810.00	5,810.00	4,833.22
Cucumbers	871.90	871.90	991.90	628.98
Sweet peppers	1,035.80	380.98	1,176.80	0.00
Frozen peas	372.30	0.00	422.30	0.00
Other frozen vegetables	569.40	0.00	639.40	0.00
Mushrooms	1,463.60	1,454.02	1,583.60	1,538.21
Lentils, etc.	302.80	302.80	342.80	342.80
Nuts	453.90	0.00	513.90	0.00
Watermelons and melons (fresh)	230.00	230.00	230.00	230.00
Grapes	406.40	406.40	466.40	466.10
Apples	872.50	859.24	992.50	992.50
preserved)	850.00	850.00	850.00	831.80
Pears	2,480.00	2,480.00	2,800.00	2,800.00
Quinces	209.20	209.20	229.20	229.20
Cherries (wild, fresh)	110.00	110.00	110.00	110.00
Apricots	151.40	144.49	171.40	171.40
Peaches	550.80	514.79	622.80	605.05
Blue plums	5,812.50	4,216.69	6,572.60	6,336.99
Plums	1,362.50	1,362.50	1,542.60	1,026.32
Strawberries	2,137.50	2,137.50	2,417.50	2,417.50
Raspberries and other soft fruits	400.00	245.85	400.00	196.94
Cherries (temporarily preserved)	913.90	0.00	1,033.90	0.00
Apricots (temporarily preserved)	103.20	0.00	117.20	0.00
Other dried fruits	617.10	203.30	697.10	414.37
Seeds of alfalfa	1,105.60	963.04	1,245.60	0.00
Sterilized cucumbers	2,510.30	2,255.77	2,730.30	2,687.15
Sterilized tomatoes	8,401.80	8,401.80	9,321.80	9,276.01
Processed tomatoes	8,750.30	8,700.65	9,690.30	9,617.07
Mushrooms	300.00	300.00	300.00	260.46
Preserved mushrooms	110.00	105.20	110.00	69.44
Strawberry jam	115.50	115.50	129.50	129.50
Preserved apricots	362.50	362.50	402.50	402.50
Processed cherries	90.80	52.54	104.80	77.72
Processed peaches	545.80	545.80	625.80	656.80
Processed strawberries	523.90	523.90	593.90	593.90
Processed plums	175.20	98.02	195.20	180.92
Apple concentrate	4,511.00	4,511.00	5,231.00	4,643.10
Preserved gherkins	153.00	153.00	153.00	153.00
Mineral water	15.00	15.00	15.00	15.00
Oriental tobacco	7,161.00	4,810.42	7,161.00	6,004.35

Source: European Commission, Brussels

Table E-1-2 Exports of Major Agri-food Products (Volume)

	1992	1993	1994	1995
Live animals	112.3	43.2	50.8	144.1
Meat and Edible meat offal	98.3	10.5	12.9	12.5
Dairy products	40.3	22.8	28.1	19.1
Edible vegetables and certain roots and tubers	112.6	51.0	79.1	60.9
Edible fruits and nuts, citrus fruits and melons	40.5	43.0	157.1	87.7
Coffee, tea, mate and spices	7.6	12.5	17.1	14.9
Cereals	740.4	88.1	59.3	914.5
Oil seed, oleaginous fruits etc.	134.2	126.5	87.6	150.3
Animal/vegetable fats/oils/cleavage products	37.7	71.4	34.9	66.4
Sugar and sugar confectionery	44.3	61.7	76.5	116.8
Cocoa and cocoa products	2.6	2.0	4.2	1.8
Preparations of cereals, flour, starch milk, etc.	3.5	3.4	13.2	25.4
Processed vegetables, fruits, nuts and plants	103.8	111.2	97.0	81.6
Miscellaneous edible preparations	9.8	23.2	41.7	36.6
Beverages, spirits and vinegar	156.5	171.2	269.3	299.2
Prepared animal fodder(residuals from food ind.)	116.0	45.8	106.7	332.6
Tobacco and manufactured tobacco substitutes	68.7	38.4	64.6	89.0
Total	1,829.1	925.9	1,200.1	2,453.4

(1000 tonnes)

Exports of Major Agri-food Products (Ratio)

	1992	1993	1994	1995
Live animals	6.1%	4.7%	4.2%	5.9%
Meat and Edible meat offal	5.4%	1.1%	1.1%	0.5%
Dairy products	2.2%	2.5%	2.3%	0.8%
Edible vegetables and certain roots and tubers	6.2%	5.5%	6.6%	2.5%
Edible fruits and nuts, citrus fruits and melons	2.2%	4.6%	13.1%	3.6%
Coffee, tea, mate and spices	0.4%	1.4%	1.4%	0.6%
Cereals	40.5%	9.5%	4.9%	37.3%
Oil seed, oleaginous fruits etc.	7.3%	13.7%	7.3%	6.1%
Animal/vegetable fats/oils/cleavage products	2.1%	7.7%	2.9%	2.7%
Sugar and sugar confectionery	2.4%	6.7%	6.4%	4.8%
Cocoa and cocoa products	0.1%	0.2%	0.3%	0.1%
Preparations of cereals, flour, starch milk, etc.	0.2%	0.4%	1.1%	1.0%
Processed vegetables, fruits, nuts and plants	5.7%	12.0%	8.1%	3.3%
Miscellaneous edible preparations	0.5%	2.5%	3.5%	1.5%
Beverages, spirits and vinegar	8.6%	18.5%	22.4%	12.2%
Prepared animal fodder(residuals from food ind.)	6.3%	4.9%	8.9%	13.6%
Tobacco and manufactured tobacco substitutes	3.8%	4.1%	5.4%	3.6%
Total	100.0%	100.0%	100.0%	100.0%

(%)

Exports of Major Agri-food Products (Value)

	1992	1993	1994	1995
Live animals	2,373.8	1,158.2	2,237.8	1,486.0
Meat and Edible meat offal	1,617.2	952.8	2,025.4	2,528.3
Dairy products	1,459.9	1,210.2	2,704.9	2,511.9
Edible vegetables and certain roots and tubers	1,169.6	610.1	2,425.6	2,535.2
Edible fruits and nuts, citrus fruits and melons	438.0	562.7	3,931.9	2,369.8
Coffee, tea, mate and spices	183.2	316.9	764.7	907.7
Cereals	1,826.2	399.8	484.9	7,697.1
Oil seed, oleaginous fruits etc.	1,226.2	891.7	2,056.9	3,550.3
Animal/vegetable fats/oils/cleavage products	337.4	859.0	1,042.4	3,062.7
Sugar and sugar confectionery	423.6	631.2	1,426.7	3,452.6
Cocoa and cocoa products	123.5	118.4	387.9	282.5
Preparations of cereals, flour, starch milk, etc.	52.0	93.7	411.0	740.8
Processed vegetables, fruits, nuts and plants	1,267.3	1,655.4	3,213.8	3,529.3
Miscellaneous edible preparations	166.9	470.8	1,618.3	1,794.0
Beverages, spirits and vinegar	2,343.6	3,315.0	8,786.5	12,326.4
Prepared animal fodder(residuals from food ind.)	235.9	218.2	506.2	2,243.3
Tobacco and manufactured tobacco substitutes	7,294.7	6,469.0	11,794.9	19,952.6
Total	22,539.0	19,893.1	45,819.8	70,970.5

(million lev)

Source: NSI

Exports of Major Agri-food Products (Ratio)

	1992	1993	1994	1995
Live animals	10.5%	5.8%	4.9%	2.1%
Meat and Edible meat offal	7.2%	4.8%	4.4%	3.6%
Dairy products	6.5%	6.1%	5.9%	3.5%
Edible vegetables and certain roots and tubers	5.2%	3.1%	5.3%	3.6%
Edible fruits and nuts, citrus fruits and melons	1.9%	2.8%	8.6%	3.3%
Coffee, tea, mate and spices	0.8%	1.6%	1.7%	1.3%
Cereals	8.1%	1.8%	1.1%	10.8%
Oil seed, oleaginous fruits etc.	5.4%	4.5%	4.5%	5.0%
Animal/vegetable fats/oils/cleavage products	1.5%	4.3%	2.3%	4.3%
Sugar and sugar confectionery	1.9%	3.2%	3.1%	4.9%
Cocoa and cocoa products	0.5%	0.6%	0.8%	0.4%
Preparations of cereals, flour, starch milk, etc.	0.2%	0.5%	0.9%	1.0%
Processed vegetables, fruits, nuts and plants	5.6%	8.3%	7.0%	5.0%
Miscellaneous edible preparations	0.7%	2.4%	3.5%	2.5%
Beverages, spirits and vinegar	10.4%	16.7%	19.2%	17.4%
Prepared animal fodder(residuals from food ind.)	1.0%	1.1%	1.1%	3.2%
Tobacco and manufactured tobacco substitutes	32.4%	32.5%	25.7%	28.1%
Total	100.0%	100.0%	100.0%	100.0%

(%)

Table E-1-3 Agricultural Exports by Destinations

1) Vegetables

1992		1993		1994		1995					
	Tonnes	%		Tonnes	%		Tonnes	%			
1 Italy	11,667	10.4	F.R. Yugoslavia	8,847	17.3	Greece	16,527	20.9	Greece	12,332	20.3
2 Austria	13,313	11.8	Austria	8,437	16.5	F.R. Yugoslavia	13,021	16.5	Czech	8,787	14.4
3 Germany	11,708	10.4	Greece	4,557	8.9	Austria	6,718	8.5	Austria	3,071	5.0
4 Greece	11,587	10.3	Turkey	4,511	8.8	Russia	6,490	8.2	Russia	2,640	4.3
5 Switzerland	5,294	4.7	Germany	3,079	6.0	Czech	6,062	7.7	Macedonia	2,590	4.3
Others	59,018	52.4	Others	21,601	42.3	Others	30,245	38.3	Others	31,442	51.7
Total Exports	112,587	100.0	Total Exports	51,032	100.0	Total Exports	79,063	100.0	Total Exports	60,862	100.0

2) Fresh Fruits

1992		1993		1994		1995					
	Tonnes	%		Tonnes	%		Tonnes	%			
1 Greece	6,446	15.9	F.R. Yugoslavia	7,383	14.5	F.R. Yugoslavia	90,292	57.5	F.R. Yugoslavia	33,610	38.3
2 Austria	5,354	13.2	Russia	5,738	11.2	Macedonia	14,987	9.5	Macedonia	15,846	18.1
3 Netherlands	4,506	11.1	Italy	3,869	7.6	Russia	10,877	6.9	Russia	6,516	7.4
4 Poland	4,200	10.4	Greece	3,511	6.9	Poland	5,761	3.7	Poland	4,714	5.4
5 Czech Republic	3,639	9.0	Germany	3,079	6.0	Germany	5,472	3.5	Germany	3,914	4.5
Others	16,061	39.7	Others	27,452	53.8	Others	29,686	18.9	Others	23,103	26.3
Total Exports	40,506	100.0	Total Exports	51,032	100.0	Total Exports	157,075	100.0	Total Exports	87,703	100.0

3) Cereals

1992		1993		1994		1995					
	Tonnes	%		Tonnes	%		Tonnes	%			
1 Russia	218,552	29.5	Russia	21,033	23.9	Macedonia	15,170	25.6	Turkey	258,165	28.2
2 Israel	61,396	8.3	Macedonia	12,059	13.7	Jordan	13,690	23.1	Morocco	149,245	16.3
3 Lebanon	59,043	8.0	Switzerland	11,574	13.1	Romania	9,479	16.0	Israel	115,722	12.7
4 Turkey	53,258	7.2	Cyprus	7,198	8.2	Albania	8,851	14.9	Algeria	79,651	8.7
5 Macedonia	51,372	6.9	F.R. Yugoslavia	6,158	7.0	Turkey	5,643	9.5	Switzerland	46,354	5.1
Others	296,750	40.1	Non Specified	14,987	17.0	Others	6,441	10.9	Others	265,406	29.0
Total Exports	740,371	100.0	Total Exports	88,086	100.0	Total Exports	59,274	100.0	Total Exports	914,543	100.0

4) Mill Products

1992		1993		1994		1995					
	Tonnes	%		Tonnes	%		Tonnes	%			
1 Macedonia	47,732	66.4	Macedonia	10,938	51.9	Albania	21,665	53.9	Albania	56,608	35.0
2 Romania	11,462	16.0	Romania	4,087	19.4	Romania	9,082	22.6	Israel	20,111	12.4
3 Turkey	4,965	6.9	Albania	2,578	12.2	Lebanon	5,600	13.9	Morocco	19,194	11.9
4 F.R. Yugoslavia	2,907	4.0	Jordan	1,332	6.3	Macedonia	3,676	9.1	Romania	16,188	10.0
5 Ukraine	2,139	3.0	Azerbaijan	1,000	4.7	Others	196	0.5	Georgia	13,798	8.5
Others	2,654	3.7	Others	1,160	5.5	Others	196	0.5	Others	35,875	22.2
Total Exports	71,859	100.0	Total Exports	21,095	100.0	Total Exports	40,219	100.0	Total Exports	161,774	100.0

5) Oilseeds

1992		1993		1994		1995					
	Tonnes	%		Tonnes	%		Tonnes	%			
1 Turkey	44,710	33.3	Turkey	34,715	27.5	Germany	20,558	23.5	Spain	57,406	38.2
2 Germany	14,484	10.8	Mexico	20,212	16.0	Turkey	16,142	18.4	Turkey	13,247	8.8
3 Italy	10,116	7.5	Portugal	13,009	10.3	Austria	11,976	13.7	Germany	13,018	8.7
4 Portugal	9,639	7.2	Netherlands	9,747	7.7	Finland	6,515	7.4	Austria	12,394	8.2
5 Netherlands	2,139	1.6	Spain	7,758	6.1	Portugal	3,949	4.5	Portugal	12,162	8.1
Others	53,099	39.6	Others	41,017	32.4	Others	28,487	32.5	Others	42,069	28.0
Total Exports	134,187	100.0	Total Exports	126,458	100.0	Total Exports	87,627	100.0	Total Exports	150,296	100.0

6) Processed Fruits and Vegetables

1992		1993		1994		1995					
	Tonnes	%		Tonnes	%		Tonnes	%			
1 Russia	34,492	33.2	Russia	62,641	56.3	Russia	61,413	63.3	Russia	48,158	59.0
2 Germany	16,554	15.9	Germany	11,620	10.4	Germany	8,696	9.0	Germany	5,829	7.1
3 Jordan	5,884	5.7	Poland	7,434	6.7	Macedonia	4,145	4.3	Macedonia	5,619	6.9
4 Poland	5,634	5.4	Ukraine	4,374	3.9	Ukraine	2,673	2.8	Ukraine	2,265	2.8
5 Turkey	4,267	4.1	Saudi Arabia	3,859	3.5	Croatia	2,303	2.4	Greece	2,047	2.5
Others	36,993	35.6	Others	21,317	19.2	Others	17,728	18.3	Others	17,721	21.7
Total Exports	103,824	100.0	Total Exports	111,245	100.0	Total Exports	96,958	100.0	Total Exports	81,639	100.0

7) Tobacco

1992		1993		1994		1995					
	Tonnes	%		Tonnes	%		Tonnes	%			
1 Russia	41,791	60.8	Russia	12,404	32.3	Russia	28,597	44.3	Russia	36,411	40.9
2 USA	5,936	8.6	USA	8,103	21.1	Ukraine	6,480	10.0	Ukraine	12,198	13.7
3 Germany	2,668	3.9	Romania	4,037	10.5	Romania	3,659	5.7	USA	7,741	8.7
4 France	2,403	3.5	F.R. Yugoslavia	2,468	6.4	USA	3,016	4.7	Uzbekistan	4,904	5.5
5 Ukraine	1,309	1.9	France	2,413	6.3	Germany	2,633	4.1	Germany	3,419	3.8
Others	14,635	21.3	Others	8,985	23.4	Others	20,232	31.3	Others	24,311	27.3
Total Exports	68,742	100.0	Total Exports	38,410	100.0	Total Exports	64,617	100.0	Total Exports	88,984	100.0

8) Beverages, Spirits and Vinegar

	1992			1993			1994			1995		
	Tonnes	%		Tonnes	%		Tonnes	%		Tonnes	%	
1	Russia	55,898	35.7	Russia	60,019	35.1	Russia	116,160	43.1	Russia	104,686	35.0
2	UK	25,723	16.4	UK	34,023	19.9	UK	32,571	12.1	UK	34,150	11.4
3	Germany	12,760	8.2	Germany	15,160	8.9	Ukraine	16,027	6.0	Ukraine	28,735	9.6
4	Poland	11,817	7.6	Poland	11,745	6.9	F.R.Yugoslavia	14,732	5.5	Moldova	28,412	9.5
5	Netherlands	4,464	2.9	Ukraine	7,463	4.4	Germany	10,781	4.0	Germany	13,329	4.5
	Others	45,804	29.3	Others	42,741	25.0	Others	79,035	29.3	Others	89,870	30.0
	Total Exports	156,466	100.0	Total Exports	171,151	100.0	Total Exports	269,306	100.0	Total Exports	299,182	100.0

9) Oil and Fats

	1992			1993			1994			1995		
	Tonnes	%		Tonnes	%		Tonnes	%		Tonnes	%	
1	Turkey	19,420	51.5	Bangladesh	17,996	25.2	Albania	16,924	48.5	Turkey	19,568	30.1
2	Greece	7,536	20.0	Turkey	17,040	23.9	Turkey	4,425	12.7	Albania	15,854	23.9
3	Macedonia	5,393	14.3	Russia	7,650	10.7	Greece	3,636	10.4	Greece	8,639	13.0
4	Italy	1,125	3.1	Greece	6,112	8.6	Russia	2,542	7.3	Russia	8,536	12.9
5	Cuba	1,008	2.7	Albania	6,023	8.4	Israel	1,835	5.3	Egypt	3,056	4.6
	Others	3,169	8.4	Others	16,597	23.2	Others	5,553	15.9	Others	10,345	15.6
	Total Exports	37,701	100.0	Total Exports	71,418	100.0	Total Exports	34,915	100.0	Total Exports	66,418	100.0

Table E-1.4 Agricultural Imports by Destinations

1) Vegetables

1992			1993			1994			1995			
	Tonnes	%		Tonnes	%		Tonnes	%		Tonnes	%	
1	F.R. Yugoslavia	3,334	30.7	Poland	17,670	34.1	Macedonia	12,537	22.8	Macedonia	11,347	42.9
2	Macedonia	2,233	20.6	Turkey	7,498	14.5	Turkey	11,598	21.1	Turkey	5,048	19.1
3	Turkey	2,043	18.9	Macedonia	5,747	11.1	Czech	5,953	10.8	Greece	4,649	17.6
4	Greece	1,373	12.7	Czech	4,545	8.8	Greece	5,788	10.5	Netherlands	645	2.4
5	Iran	704	6.5	Slovak	4,228	8.2	Romania	4,538	8.3	Russia	569	2.2
	Others	1,154	10.6	Others	12,138	23.4	Others	14,571	26.5	Others	4,205	15.9
	Total Imports	10,843	100.0	Total Imports	51,826	100.0	Total Imports	54,985	100.0	Total Imports	26,463	100.0

2) Fresh Fruits

1992			1993			1994			1995			
	Tonnes	%		Tonnes	%		Tonnes	%		Tonnes	%	
1	Greece	27,390	44.4	Greece	66,194	44.9	Greece	106,272	51.9	Greece	89,174	55.5
2	Ecuador	7,986	12.9	Ecuador	21,939	14.9	Ecuador	41,125	20.1	Ecuador	33,713	21.0
3	Turkey	5,678	9.2	Iran	12,326	8.4	Turkey	21,809	10.6	Turkey	17,024	10.6
4	Iran	4,269	6.9	Colombia	12,298	8.3	Colombia	15,453	7.5	Macedonia	6,861	4.3
5	Costa Rica	4,160	6.7	Macedonia	11,793	8.0	Macedonia	11,894	5.8	Italy	2,577	1.6
	Others	12,185	19.8	Others	23,027	15.6	Others	8,337	4.1	Others	11,403	7.1
	Total Imports	61,668	100.0	Total Imports	147,577	100.0	Total Imports	204,890	100.0	Total Imports	160,752	100.0

3) Cereals

1992			1993			1994			1995			
	Tonnes	%		Tonnes	%		Tonnes	%		Tonnes	%	
1	Poland	10,280	48.4	USA	75,874	38.6	China	35,335	60.1	USA	39,391	74.3
2	Hungary	5,531	26.1	Argentina	37,347	19.0	Russia	13,771	23.4	Viet Nam	3,388	6.4
3	Viet Nam	3,869	18.2	China	29,954	15.3	Thailand	3,268	5.6	Ukraine	1,592	3.0
4	Thailand	587	2.8	France	29,544	15.0	Ukraine	3,160	5.4	Greece	1,588	3.0
5	F.R. Yugoslavia	474	2.2	Thailand	14,615	7.4	Slovenia	751	1.3	Turkey	1,171	2.2
	Others	487	2.3	Others	9,065	4.6	Others	2,546	4.3	Others	5,878	11.1
	Total Imports	21,234	100.0	Total Imports	196,399	100.0	Total Imports	58,831	100.0	Total Imports	53,068	100.0

4) Mill Products

1992			1993			1994			1995			
	Tonnes	%		Tonnes	%		Tonnes	%		Tonnes	%	
1	F.R. Yugoslavia	366	33.5	Turkey	8,741	70.4	Germany	13,644	80.4	Greece	1,011	41.2
2	Macedonia	286	26.2	Greece	1,854	14.9	Greece	1,196	7.1	France	423	17.2
3	France	262	24.0	Italy	634	5.1	Ukraine	827	4.9	Macedonia	276	11.2
4	Netherlands	58	5.3	Netherlands	351	2.8	Turkey	578	3.4	Netherlands	255	10.4
5	USA	42	3.8	Macedonia	274	2.2	France	219	1.3	Sri Lanka	128	5.2
	Others	79	7.2	Others	559	4.6	Others	496	2.9	Others	362	14.7
	Total Imports	1,093	100.0	Total Imports	12,423	100.0	Total Imports	16,960	100.0	Total Imports	2,455	100.0

5) Processed Fruits and Vegetables

1992			1993			1994			1995			
	Tonnes	%		Tonnes	%		Tonnes	%		Tonnes	%	
1	Turkey	3,994	22.2	Greece	13,685	31.9	Greece	13,558	44.5	Greece	10,132	41.6
2	Greece	3,506	19.5	Austria	12,044	28.1	Austria	4,503	14.8	Turkey	2,331	9.6
3	Hungary	2,341	13.0	Syria	3,912	9.1	Macedonia	3,040	10.0	Germany	2,145	8.8
4	F.R. Yugoslavia	1,550	8.6	Hungary	2,897	6.8	Turkey	2,139	7.0	Italy	1,842	7.6
5	Austria	1,510	8.4	Turkey	2,787	6.5	Cyprus	1,454	4.8	Hungary	1,489	6.1
	Others	5,054	28.1	Others	7,593	17.7	Others	5,757	18.9	Others	6,440	26.4
	Total Imports	17,955	100.0	Total Imports	42,918	100.0	Total Imports	30,456	100.0	Total Imports	24,379	100.0

6) Beverages, Sprits and Vinegar

1992			1993			1994			1995			
	Tonnes	%		Tonnes	%		Tonnes	%		Tonnes	%	
1	Italy	14,936	15.4	Russia	25,309	20.6	Greece	13,451	19.3	Moldova	25,550	38.1
2	Russia	13,232	13.6	Italy	23,312	18.9	Russia	12,020	17.3	Italy	8,201	12.2
3	Greece	11,826	12.2	Greece	19,815	16.1	Macedonia	10,560	15.2	Macedonia	6,895	10.3
4	F.R. Yugoslavia	9,389	9.7	UK	8,253	6.7	Ukraine	7,679	11.0	Russia	5,962	8.9
5	UK	7,337	7.6	Spain	6,883	5.6	Belgium	5,128	7.4	Belgium	5,544	8.3
	Others	40,224	41.5	Others	39,504	32.1	Others	20,740	29.8	Others	14,838	22.1
	Total Imports	96,544	100.0	Total Imports	123,076	100.0	Total Imports	69,578	100.0	Total Imports	66,990	100.0

7) Sugar and Sugar Confectionery

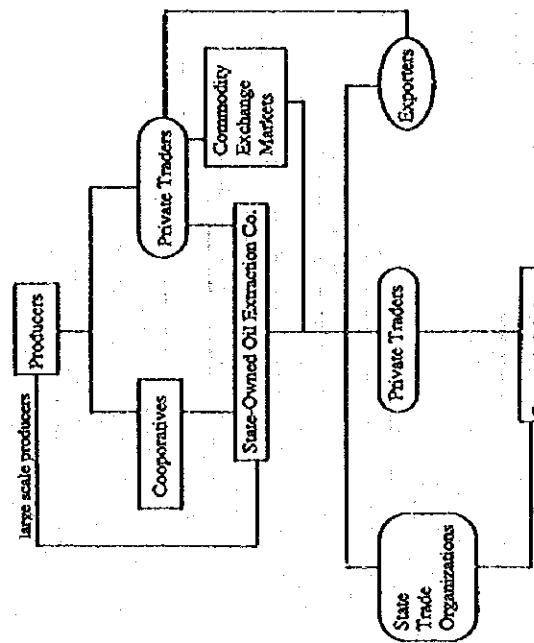
1992			1993			1994			1995			
	Tonnes	%		Tonnes	%		Tonnes	%		Tonnes	%	
1	Cuba	95,177	23.3	Australia	171,885	35.3	Cuba	187,967	39.1	Cuba	137,265	38.8
2	Brazil	80,316	19.7	Brazil	72,839	15.0	Brazil	104,160	21.7	Australia	75,693	21.4
3	Turkey	40,097	9.8	Turkey	40,659	8.4	Sudan	46,633	9.7	Brazil	64,932	18.4
4	El Salvador	38,671	9.3	Cuba	35,222	7.2	Ukraine	41,909	8.7	Gustemala	20,801	5.9
5	Germany	28,529	7.0	Thailand	31,982	6.6	Australia	28,711	6.0	Ukraine	17,340	4.9
	Others	124,897	30.6	Others	134,295	27.6	Others	71,210	14.8	Others	37,646	10.6
	Total Imports	407,687	100.0	Total Imports	486,882	100.0	Total Imports	480,590	100.0	Total Imports	353,677	100.0

8) Prepared Animal Fodder

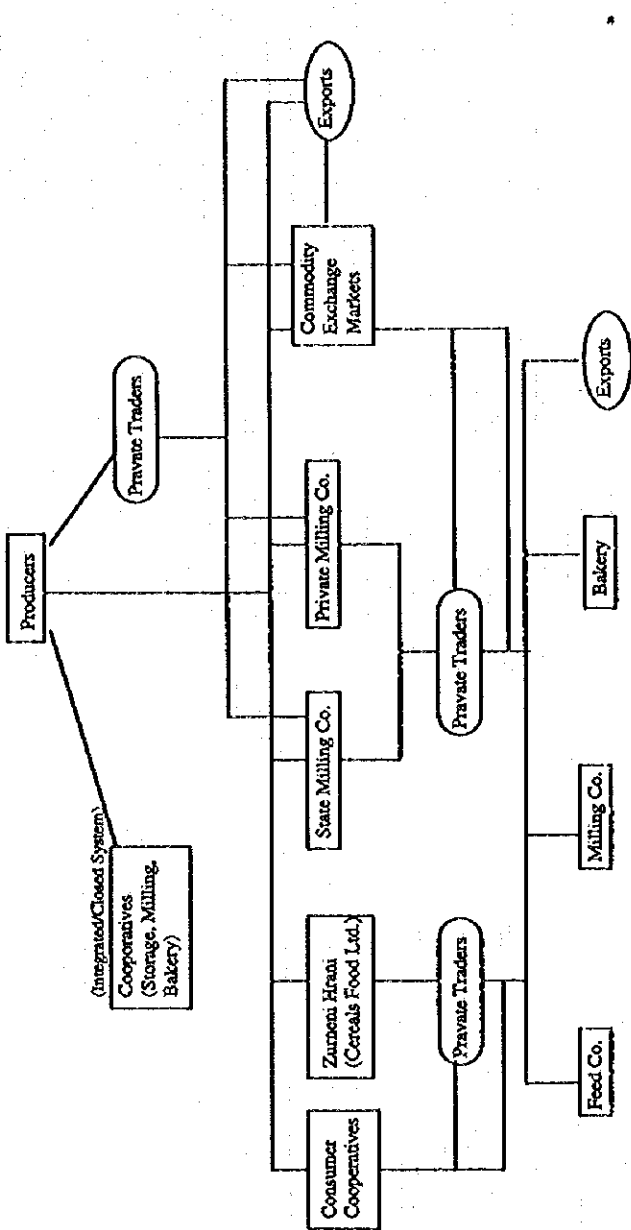
1992			1993			1994			1995			
	Tonnes	%		Tonnes	%		Tonnes	%		Tonnes	%	
1	Argentina	74,575	63.6	Argentina	88,084	63.8	Argentina	42777.0	57.4	Argentina	81,839	64.3
2	Brazil	19,400	16.5	Thailand	30,658	22.2	Brazil	8184.0	11.0	Brazil	13,628	10.7
3	Netherlands	10,281	8.8	Russia	11,638	8.4	Paraguay	4968.0	6.7	Netherlands	12,261	9.6
4	Russia	9,276	7.9	Ukraine	2,325	1.7	Macedonia	3680.0	4.9	Belgium	4,228	3.3
5	Turkey	1,272	1.1	Greece	898	0.7	Greece	3216.0	4.3	Ukraine	3,218	2.5
	Others	2,443	2.1	Others	4,433	3.2	Others	11698.0	15.7	Others	12162.0	9.6
	Total Imports	117,247	100.0	Total Imports	138,036	100.0	Total Imports	74523.0	100.0	Total Imports	127,336	100.0

Figure E-1-1 Flow chart of Major Agricultural Products

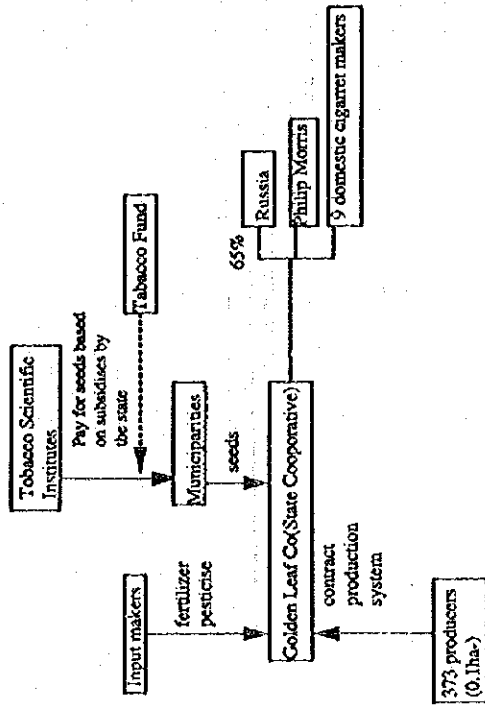
Sunflower



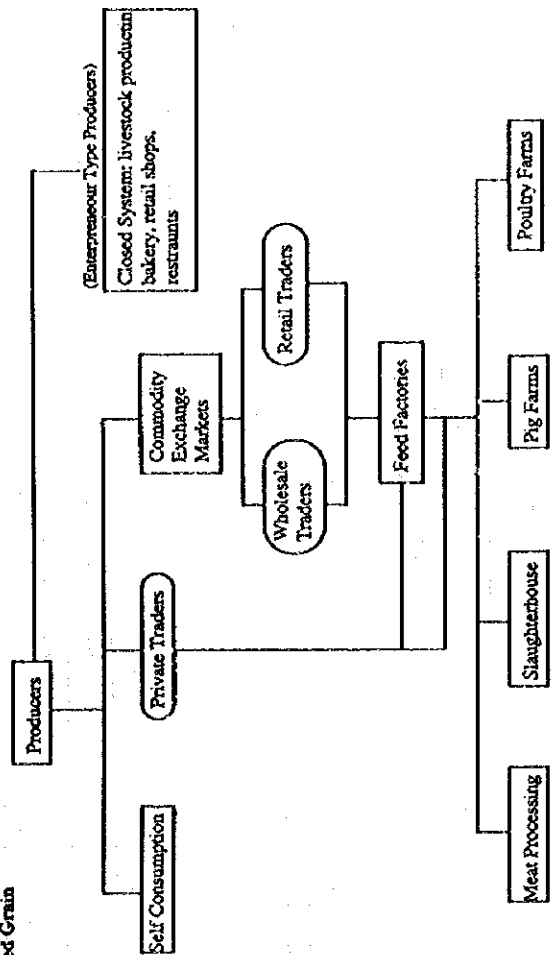
Wheat



Tobacco/Petrich/Golden Leaf Co.)

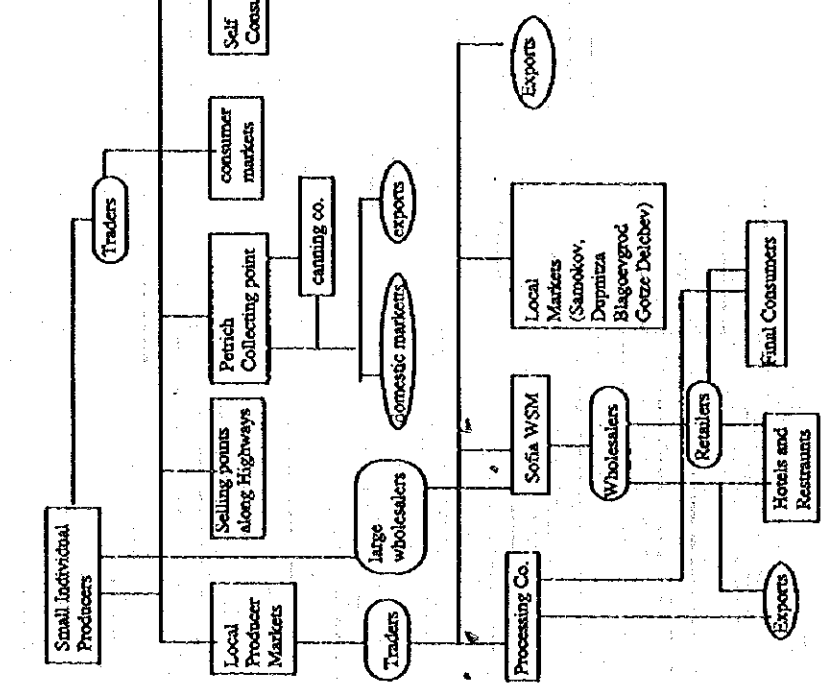


Feed Grain

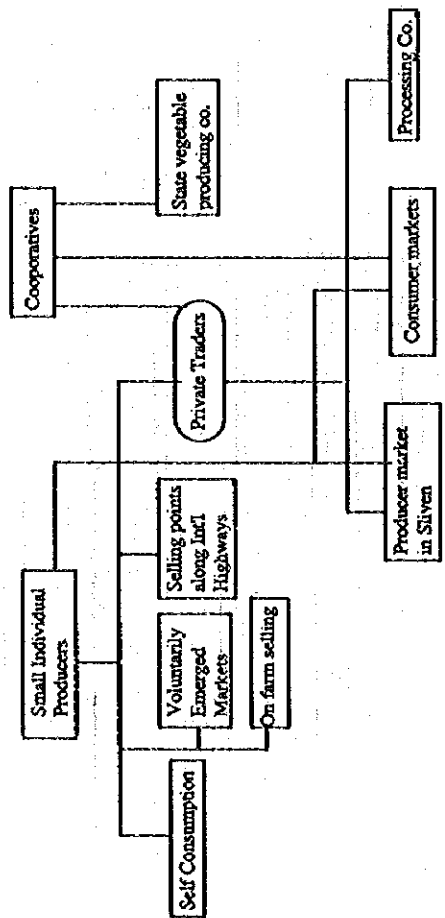


Vegetables and Fruits

(Petrich)



(Suredna Tunajia)



E-2 Trade Regime : State Intervention in Agricultural Exports

i) Cereals

In the case of wheat three types of minimum procurement prices are set according to quality. Simultaneously, procurement prices of flour and retail prices of flour and bread are under the government monitoring and control. The trade regime with respect to grain have been amended several times. Except for brief period in late 1991 and early 1992, grain exports have been controlled through the use of high export taxes, quotas and bans. The trade regime was amended several times and restrictive in particular for wheat. The frequent amendments for wheat are as follows.

1992: Temporary ban on export of wheat and flour was introduced.

Export quotas for wheat with export tax of US\$ 12 (later increased to US\$ 20) per ton of wheat replaced the temporary ban in September.

1993: Export tax was increased to US\$ 25 per ton in January. The export quotas with US\$ 25 export tax system was abolished. Export ban on export of wheat was introduced in March and in effective until December 1994. For most grains an extension of the export ban was introduced in May 1993.

1995: Export of wheat (total 350,000 tonnes) with export tax of US\$ 25 per ton was allowed in the beginning of 1995. The export tax was increased to US\$ 55 in August.

Temporary ban on export of wheat was introduced in October.

1996: Temporary ban on wheat was extended to the end of 1997.

Export of feed grain has been regulated mainly by export ban and export taxes or quotas. In 1995 export of all grain except for hybrid maize was allowed with export tax of US\$ 5 per ton. However, a temporary ban on export of mixed grain feeds was introduced on September 26.

ii) Sunflower

During the last years the state intervened production of sunflower seeds and oil by mainly two directions: price regulations and foreign trade regime regulation.

1990: Fixed prices of sunflower oil

1991: Forecast prices for sunflower oil was introduced instead of fixed prices (June)

1992: Sunflower was excluded from the list of forecast prices (April)

1994: Sunflower oil was again included in the list of monitored goods (April)

1994: Price ceiling was applied to refined sunflower oil

In the Law on the Prices and Regulations for the Application of the Law on the Prices, the refined sunflower oil is included in the list of goods and services monitored by the government.

Domestic trade with sunflower and the related products is regulated by the state.

1993: Export tax of US\$ 90 per ton

1994: Export tax of US\$ 200 per ton of sunflower

Export tax of US\$ 300 per ton of unrefined sunflower oil

Export tax of US\$ 285 per ton of refined sunflower oil

1995: Temporary ban on export of sunflower seeds, sunflower oil was introduced

E-3 Plan for the Pilot Project Area

Table E-3-1 Storage Capacities of Major Wheat Procurement Companies in Nova Zagora in 1996

	Storage Capacity of Procurement Companies(ton)	Actual Procurement Amount(ton)	Excess Storage Facilities(ton)
State Mill A	120,000	35,000	85,000
Private Mill B	150,000	150,000	0
State Procurement Co. C	18,400	8,400	10,000
State Procurement Co. D	200,000	80,000	120,000
Total	488,400	273,400	215,000

Source: Field Survey

Table E-3-2 Estimation of On-farm Storage Facilities

Types of Producers	Produce	Unit	Asmara	Porto	Karara	Kereke	Limbaco	New Tazara	Sabaco	Shiela	Yaguti
Coop	Wheat	Area planted (dka)	1,853	842	842	5,215	4,212	0	6,596	5,560	5,981
		Yield (kg/dka)	380	380	380	380	380	380	380	380	380
		Production (ton)	704	320	320	1,982	1,601	0	2,506	2,113	2,273
		Rent	40%	40%	40%	40%	40%	40%	40%	40%	40%
		Agricultural Fund	185	84	84	522	421	0	660	556	598
		Marketable amount	237	108	108	668	539	0	844	712	766
	Barely	Area planted (dka)	799	666	400	3,231	1,532	0	1,979	2,736	3,731
		Yield (kg/dka)	360	360	360	360	360	360	360	360	360
		Production (ton)	288	240	144	1,163	552	0	712	985	1,343
		Rent	40%	40%	40%	40%	40%	40%	40%	40%	40%
		Agricultural Fund	173	144	86	698	331	0	427	591	806
		Marketable amount	113	144	86	698	331	0	427	591	806
	Maize	Area planted (dka)	1,092	303	608	2,727	1,173	0	1,025	2,560	1,247
		Yield (kg/dka)	750	750	750	750	750	750	750	750	750
		Production (ton)	819	227	456	2,045	880	0	769	1,920	935
		Rent	20%	20%	20%	20%	20%	20%	20%	20%	20%
		Agricultural Fund	655	182	365	1,636	704	0	615	1,536	748
		Marketable amount	173	144	86	698	331	0	427	591	806
	Sunflower	Area planted (dka)	394	281	336	944	2,209	0	1,767	2,375	2,832
		Yield (kg/dka)	150	150	150	150	150	150	150	150	150
Production (ton)		59	42	50	142	331	0	265	356	425	
Rent		20%	20%	20%	20%	20%	20%	20%	20%	20%	
Agricultural Fund		47	34	40	115	265	0	212	285	340	
Marketable Amount		1,112	467	599	3,115	1,839	0	2,099	3,124	2,660	
P.F. Associations (Note*1)	Wheat	Area planted (dka)	421	0	0	0	842	0	0	977	0
		Yield (kg/dka)	380	380	380	380	380	380	380	380	380
		Production (ton)	160	0	0	0	320	0	0	371	0
		Self Consumption	30%	30%	30%	30%	30%	30%	30%	30%	30%
		Agricultural Fund	42	0	0	0	84	0	0	98	0
		Marketable amount	70	0	0	0	140	0	0	162	0
	Barely	Area planted (dka)	167	0	0	0	666	0	0	296	0
		Yield (kg/dka)	360	360	360	360	360	360	360	360	360
		Production (ton)	60	0	0	0	240	0	0	107	0
		Self Consumption	60%	60%	60%	60%	60%	60%	60%	60%	60%
		Agricultural Fund	24	0	0	0	96	0	0	43	0
		Marketable Amount(t)	24	0	0	0	96	0	0	43	0
	Maize	Area planted (dka)	87	0	0	0	426	0	0	126	0
		Yield (kg/dka)	750	750	750	750	750	750	750	750	750
		Production (ton)	65	0	0	0	320	0	0	95	0
		Self Consumption	30%	30%	30%	30%	30%	30%	30%	30%	30%
		Agricultural Fund	46	0	0	0	224	0	0	66	0
		Marketable Amount(t)	46	0	0	0	224	0	0	66	0
	Sunflower	Area planted (dka)	32	0	0	0	803	0	0	116	0
		Yield (kg/dka)	150	150	150	150	150	150	150	150	150
Production (ton)		5	0	0	0	120	0	0	17	0	
Self Consumption		30%	30%	30%	30%	30%	30%	30%	30%	30%	
Agricultural Fund		3	0	0	0	84	0	0	12	0	
Marketable Amount		143	0	0	0	544	0	0	283	0	
Lessee	Wheat	Area planted (dka)	354	374	1,685	0	0	2,527	0	1,611	800
		Yield (kg/dka)	380	380	380	380	380	380	380	380	380
		Production (ton)	135	142	640	0	0	960	0	617	304
		Rent	30%	30%	30%	30%	30%	30%	30%	30%	30%
		Agricultural Fund	35	37	169	0	0	253	0	161	80
		Marketable amount	59	62	280	0	0	419	0	267	133
	Barely	Area planted (dka)	167	161	666	0	0	1,332	0	628	466
		Yield (kg/dka)	360	360	360	360	360	360	360	360	360
		Production (ton)	60	58	240	0	0	480	0	226	168
		Rent	60%	60%	60%	60%	60%	60%	60%	60%	60%
		Agricultural Fund	24	23	96	0	0	192	0	90	67
		Marketable Amount(t)	24	23	96	0	0	192	0	90	67
	Maize	Area planted (dka)	175	123	1,133	0	0	1,698	0	283	109
		Yield (kg/dka)	750	750	750	750	750	750	750	750	750
		Production (ton)	131	92	850	0	0	1,274	0	212	82
		Rent	30%	30%	30%	30%	30%	30%	30%	30%	30%
		Agricultural Fund	92	65	595	0	0	891	0	149	57
		Marketable Amount(t)	92	65	595	0	0	891	0	149	57
	Sunflower	Area planted (dka)	63	114	644	0	0	675	0	198	248
		Yield (kg/dka)	150	150	150	150	150	150	150	150	150
Production (ton)		9	17	97	0	0	101	0	30	37	
Rent		30%	30%	30%	30%	30%	30%	30%	30%	30%	
Agricultural Fund		7	12	68	0	0	71	0	21	26	
Marketable Amount		181	162	1,038	0	0	1,574	0	527	283	

Types of Producers	Produce	Unit	Amoyeta	Erigayo	Karawa	Korten	Ltaleneta	Neza Zazari	Subana	Stoll Yaboda	Zazari
P.Indiv. Farmers (Note*2)	Wheat	Area planted (dka)	0	77	842	446	1,495	1,095	51	615	885
		Yield (kg/dka)	380	380	380	380	380	380	380	380	380
		Production (ton)	0	29	320	169	568	416	19	234	336
		Self Consumption	30%	30%	30%	30%	30%	30%	30%	30%	30%
		Agricultural Fund	0	8	84	45	150	110	5	62	89
		Marketable amount	0	13	140	74	248	182	8	102	147
	Barley	Area planted (dka)	0	47	536	433	38	633	27	269	833
		Yield (kg/dka)	360	360	360	360	360	360	360	360	360
		Production (ton)	0	17	193	156	14	228	10	97	300
		Self Consumption	60%	60%	60%	60%	60%	60%	60%	60%	60%
		Marketable Amount(t)	0	7	77	62	5	91	4	39	120
		Maize	Area planted (dka)	0	33	639	102	292	976	42	33
	Yield (kg/dka)		750	750	750	750	750	750	750	750	750
	Production (ton)		0	25	479	77	219	732	32	25	111
	Self Consumption		30%	30%	30%	30%	30%	30%	30%	30%	30%
	Marketable Amount		0	17	335	54	153	512	22	17	78
	Sunflower		Area planted (dka)	0	30	364	35	590	388	73	31
		Yield (kg/dka)	150	150	150	150	150	150	150	150	150
		Production (ton)	0	5	55	5	83	58	11	5	50
		Self Consumption	30%	30%	30%	30%	30%	30%	30%	30%	30%
		Marketable Amount	0	3	38	4	58	41	8	3	35
Marketable Amount		0	40	591	194	465	826	42	161	380	
Grand Total	Marketable Amount		1,437	669	2,228	3,309	2,847	2,400	2,141	4,065	3,323
	Required Storage Capacity*3		801	337	1,068	1,636	969	962	672	1,190	1,771
	Existing Storage Capacity(ton)		500	400	400	3,000	1,000	3,000	600	800	0
	Designed Storage Capacity(ton)*3		301	-63	668	-1,364	-31	-2,038	72	390	1,771

Note*1: Private farmers Associations

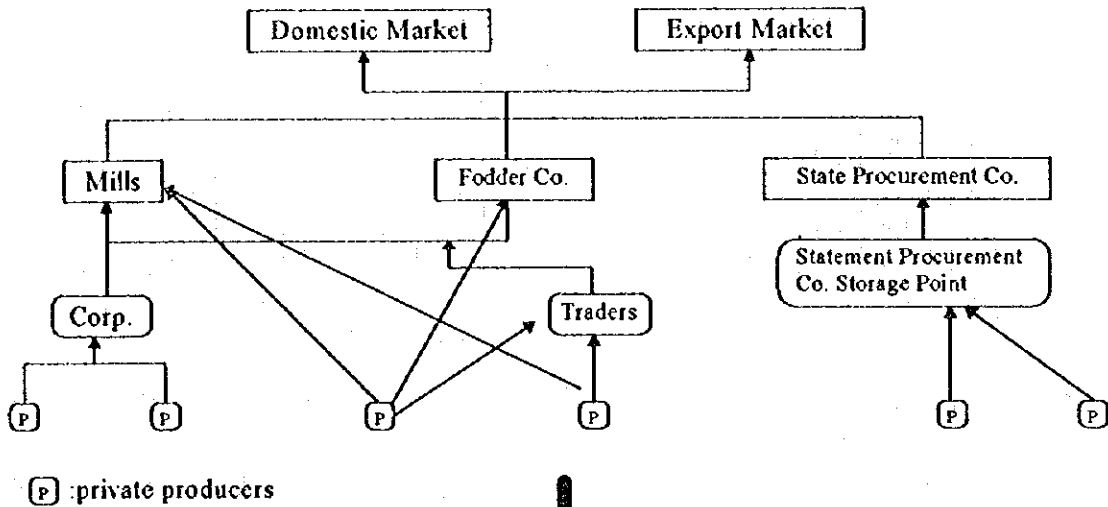
*Note2: Private Individual Farmers

*Note3: Based on an assumption that on-farm storehouses are used both for winter crops and spring crops, greater figure of either marketable winter crops or spring crops is adopted as required storage facilities. Design is made for coop and lessee type producers.

Source: Field Survey

Figure E-3-1 Marketing Channels for Cereals

Present Channels



Future Channels

