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## **SECTION A**

### **AGRARIAN SECTOR PERFORMANCE**

#### **I. CURRENT STATE AND DEVELOPMENT OF THE NATIONAL ECONOMY. MICROECONOMIC FRAMEWORK. SHARE OF AGRARIAN SECTOR IN THE NATIONAL ECONOMY.**

The trend for a relatively strong growth of the national economy seen over the last few years continued in 2003.

The Gross Domestic Product (GDP), in market 2003 prices, amounted to 34 410 million BGN in 2003 whilst in 2002 it was BGN 32 335 million and in 2001 - 29 709 million BGN. The physical GDP volume for 2003 has grown by 4.3% compared to 2002.

*4 398 BGN or 2 538 USD is the 2003 GDP per head of the population, at an average exchange rate of BGN 1.733 to the USD. In comparison, in 2002 GDP per head of the population was 4 109 BGN, or 1 978 USD, at an average exchange rate of BGN 2.077 to the USD.*

Gross value added (GVA) amounted to 30 089 million BGN for the economy as a whole in 2003. In the agricultural and forestry sector GVA was 3 435 million BGN. The GVA physical volume in the sector in 2003 was down by 1.3 % from the previous year.

The share of the agrarian sector in GVA has retained its downward trend: from 13.4% in 2001, through 12.1 % in 2002, down to 11.4% in 2003. The service sector has had the largest contribution to GVA growth. 2003 had also seen an increase in the GVA share of the processing sector (from 17.4% in 2002 up to 18.3% in 2003). This is likely to stimulate a growth in agricultural output in the future by offering a stronger outlet for farm commodities – a factor of outstanding importance for the development of any kind of farm production.

Bulgaria's foreign trade balance, a significant aspect of the GDP structure in 2003, was negative at 3 356 million BGN, an increase of 1 215 million BGN against 2002. *Foreign*

*trade in farm commodities ended up with a positive balance for 2003, at a value of 185 171 000 USD. (320 901 000 BGN, at an average exchange rate of BGN 1.733 to the USD).*

Investments in acquiring and acquired fixed assets amounted to 13 520.9 million BGN for 2003, with 351.7 million BGN of them in the agricultural sector.

Economic growth in 2003 has resulted in more jobs and less unemployment. In 2003, the average annual number of registered unemployed was 528 041 people, a decrease of 19.5 % compared to the previous year. According to the Employment Agency data, unemployment in the country stands at 14.25 %, which was 3.5 points less than in 2002. The improvement of the employment figures has had an effect on final consumer spending as well as on the actual growth of the elements of final GDP utilization. These developments have influenced positively the inflation dynamics: the average annual inflation for 2003 was 2.3 %, which is dramatically less than the previous years.

**Table I.1.**  
**Key macroeconomic indicators for the period 2001-2003**

	Indicators	2001	2002	2003*
1.	Gross Domestic Product (GDP) – current prices in million BGN	29 709	32 335	34 410
	Including: Gross Value Added (GVA) – million BGN	26 356	28 526	30 089
	Gross Value Added – million BGN			
	- agriculture, forestry and hunting	3 533	3 557	3 422
	- fishing	13	14	14
	Trends in physical GVA volume compared to the previous year			
	- agriculture, forestry and hunting	+0.3 %	+5.5 %	-1.3%
	- fishing	+1.9%	+4.8%	+8.3%
	Share of gross value added of agriculture, forestry and hunting together in GVA for the whole economy	13.4 %	12.1%	11.4%
2.	GDP growth (compared to the previous year)	+4.1%	+4.9%	+4.3%
3.	GDP per head			
	- BGN	3 754	4 109	4398
	- USD	1 718	1 978	2538
4.	Foreign trade balance – million BGN	-2 250	-2 141	-3 356

	Including:** Agriculture – million BGN	+222.1	+498.46	+321.0
5.	Investment in acquiring and acquisition of fixed assets – million BGN	12 663.9	14 379.5	13 520.9
	Including: Investments in the agricultural sector (farming, forestry, hunting and fishing) – million BGN	271.2	380.9	351.7
6.	Inflation:			
	- annual average	7.4 %	5.8%	2.3%
	- year end	4.8%	3.8%	
7.	Exchange rate BGN/USD	2.185	2.077	1.733
8.	Unemployment –average ***	18.08%	17.71%	14.24%
	Registered jobless – total	662 260	602 524	500 664
9.	Average annual wage for the employed in the country - BGN	2 880	3091	3 408
	- arming, forestry and hunting - BGN	2 227	2 307	2530
	- fishing - BGN	1 295	1 347	1 538

Source: NSI:

\* Projected

\*\* Foreign trade balance in BGN is estimated by using the exchange rate in point 7.

\*\*\* As per Employment Agency data

## II. DEVELOPMENT OF AGRICULTURE IN 2003 AND PROJECTIONS FOR 2004

### 1. Utilization of farm land, farm structures, work force and land ownership.

#### 1.1. Agricultural land and utilization.

**Total agricultural land (TAL)**<sup>1</sup> in 2003 was 5 782 000 ha constituting 52.1% of the national territory (11 099 000 ha). In 2002 TAL was 5 796 000 ha showing an unaltered share over the two years.

**Utilized Agricultural Area (UAA)**<sup>2</sup> in 2003 was 5 326 000 ha or 48.0% of the national territory. In 2002 UAA amounted to 5 324 000 ha – 48.0%. As a whole the share of UAA in the overall national territory remained stable.

<sup>1</sup> **Total agricultural land** is a compound of utilized agricultural area and temporary not cultivated land.

<sup>2</sup> **Utilised Agricultural Area (UAA)** comprises:

- Arable land,
- permanent crops,
- permanent grassland,
- kitchen gardens,
- area under glass.

**Arable land**<sup>3</sup> in Bulgaria amounted to 3 239 000 ha in 2003 which made up a share of 60.8% UAA. In 2002 arable land was at 3 277 000 ha – 61.5% UAA for the whole country. This is an insignificant decrease compared to the previous year.

In 2003 **fallow land**<sup>4</sup> occupied 456 000 ha or 14.1% of the arable land. In 2002 fallow land took 274 000 ha or 8.4% of the arable land.

**Temporary not cultivated land**<sup>5</sup> in 2003 amounted to 456 000 ha which was 7.89 % from TAL. In 2002 temporary not cultivated land was 472 000 ha occupying 8.13% of TAL.

**Table II.1.**  
**Arable land, utilized agricultural area and total agricultural land for the period 1998 – 2003 (ha)**

CODE*	CROP	1998	1999	2000	2001	2002	2003
		Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)	Area (ha)
23	Wheat	1 354 743	1 109 702	1 121 838	1 366 594	1 382 890	903 345
24	Barley	255 403	243 375	226 808	293 128	392 765	285 372
25	Rye and triticale	23 229	27 387	26 501	23 843	24 065	23 252
26	Oats	47 320	56 469	40 605	52 726	46 218	47 392
27	Maize	599 756	585 636	626 961	444 955	360 116	488 488
28	Rice	4 004	1 417	3 571	3 897	5 232	5 644
29	Other cereals	7 196	7 796	7 934	7 831	6 274	19 141
30	Sugar beet	1 694	499	1 940	1 343	2 188	400
31	Industrial fibre crops	9 791	13 094	10 231	14 689	6 436	3 293
32	Sunflower	596 110	682 465	591 979	398 478	477 276	674 883
33	Tobacco	68 772	52 991	48 247	52 165	42 016	41 875
34	Industrial oleaginous crops	7 756	9 011	9 541	20 748	12 871	20 308
35	Other industrial crops	52 427	40 089	25 010	40 002	55 873	71 295
36	Potatoes	26 834	27 811	25 585	21 377	22 889	22 781
37	Beans, peas, broad beans	21 919	18 174	10 351	6 800	6 223	6 091
38	Lentils, chick peas and other pulses	3 985	1 738	4 067	3 427	6 023	8 111
39	Fresh vegetables	73 195	57 112	44 678	52 400	50 772	46 381

<sup>3</sup> **Arable land** is land under crops in the monitored year, temporary meadows under cereals and legume grass as well as fallow land.

<sup>4</sup> **Fallow land** is either cultivated or stranded land which have not yield in the monitored year. Cultivated or otherwise, such areas may only stay in this item 3 years at the most.

<sup>5</sup> **Temporary not-cultivated land** comprises perennials and fallow land stranded for more than 3 years and requiring very small investment to be reintroduced to crop rotation.

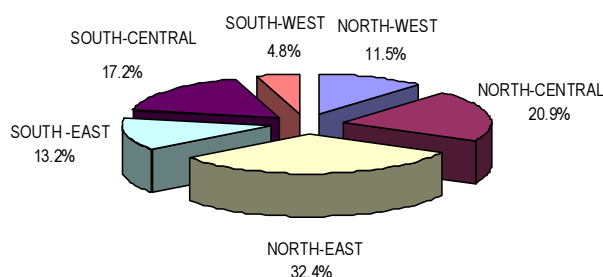
40	Nurseries	4 289	4 514	4 271	4 527	4 299	3 901
41	Fodder crops, earthed-up crops	1 075	2 319	695	311	508	194
42	Other fodder annual crops	2 796	6 241	8 913	7 680	7 985	9 820
43	Grassland under legumes	89 684	90 521	86 561	89 277	86 474	97 469
44	Grassland under cereals	12 195	9 938	6 264	5 523	3 999	3 548
49	Fallow land	127 953	377 438	467 573	438 757	273 911	455 798
	<b>ARABLE LAND:</b>	<b>3 392 126</b>	<b>3 425 737</b>	<b>3 400 124</b>	<b>3 350 478</b>	<b>3 277 303</b>	<b>3 238 782</b>
63	Kitchen gardens	141 585	148 781	123 667	118 956	75 417	82 426
50-58	Orchards	117 041	116 131	98 820	92 330	81 045	80 285
59	Vineyards – pure culture	150 867	152 113	143 047	139 087	122 299	122 080
60-62	Mixed permanent crops	12 122	12 900	10 420	9 363	9 312	9 026
45-48	Permanent grassland and meadows/orchards	1 829 128	1 820 740	1 803 752	1 785 908	1 757 305	1 791 718
82	Greenhouses, shelters and high-roof glass houses	2 220	2 220	2 220	2 220	2 020	2 011
	<b>UTILIZED AGRICULTURAL AREA:</b>	<b>5 645 089</b>	<b>5 678 622</b>	<b>5 582 050</b>	<b>5 498 342</b>	<b>5 324 701</b>	<b>5 326 328</b>
	<b>TOTAL AGRICULTURAL LAND:</b>	<b>5 923 603</b>	<b>5 921 266</b>	<b>5 874 560</b>	<b>5 854 242</b>	<b>5 796 208</b>	<b>5 782 461</b>

Source: MAF, Agrostistics Directorate

\* A code in the physical nomenclature of the Land Cover and Land Use of the territory of Bulgaria (BANSIK)

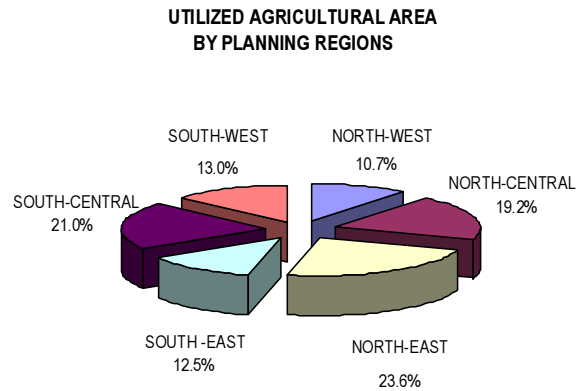
**Figure II.1.**

**ARABLE LAND  
BY PLANNING REGIONS**



The North-Eastern Region is the one having the largest share of **arable land** – 1 049 000 ha (32.4% of the arable land in the country), trailed by the North-Central Region – 677 000 ha (20.9%) and the South-Central Region – 557 000 ha (17.2%).

**Figure II.2.**



The greatest share of utilized agricultural area of Bulgaria belongs to North-Eastern Region – 23.6% of the national UAA (1 259 000 ha), then come the South-Central – 21.0%, and the North-Central Region – 19.2%.

**Table II.2.**

**Size, structure and fluctuation in the total agricultural land in 2002 and 2003.**

Key types	2002		2003		2003 versus 2002 %
	ha	share -%	ha	share -%	
Cereals (including. fodder):	2 217 560	38.26	1 772 634	30.66	- 20.06
Oleaginous:	490 147	8.46	695 191	12.02	+ 41.83
Fiber non-oleaginous crops:	106 513	1.84	116 863	2.02	+ 9.72
Vegetables and flowers:	167 643	2.89	171 702	2.97	+ 2.42
Grassland and annual fodder(excl. maize):	98 966	1.71	111 031	1.92	+ 12.19
Permanent grassland and meadows - orchards:	1 757 305	30.32	1 791 718	30.99	+ 1.96
Permanent crops:	212 656	3.67	211 391	3.66	- 0.59
Fallow land	273 911	4.73	455 798	7.88	+ 66.40
<b>UTILIZED AGRICULTURAL AREA:</b>	<b>5 324 701</b>	<b>91.87</b>	<b>5 326 328</b>	<b>92.11</b>	<b>+ 0.03</b>
Temporary not cultivated land	471 507	8.13	456 133	7.89	- 3.26

<b>TAL:</b>	<b>5 796 208</b>	100.00	<b>5 782 461</b>	100.00	- 0.24
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*Source: MAF, Agrostistics Directorate*

## **1.2. Agricultural holdings. Results of the 2003 Farm Census in Bulgaria**

### **1.2.1. Preparation and implementation**

In the second half of 2003 the Ministry of Agriculture and Forestry (MAF) carried out the first of its kind nationwide Farm Census in Bulgaria based on Council Regulation (EEC) No 571/88 of 29 February 1988 on the organization of Community surveys on the structure of agricultural holdings and its subsequent amendments. Information was captured across farm from the 1 July until 30 November 2003 pursuant to a special law published in the State Gazette (SG) N 17 / 21.02.2003.

Counting Bulgarian farms was a nationwide enterprise comprising three related and equally important stages – preparation, data capture and processing, and publishing of the results. The survey itself was preceded by a profound and long-lasting preparation work, which started in early 2002 by drafting the Census Act and drawing up the list of holdings to be interviewed. The national list of surveyed holdings was based on various administrative or statistical sources. It includes production units which meet certain statistical requirements in respect of acreage under tillage, animal numbers and output. During the period 17 March - 31 May 2003, 3 782 commissions across the country were updating the initial geographic location-based list of statistical units.

Special training was provided to roughly 4 000 interviewers and 400 controllers on how to fill out farm details in the census questionnaire. The interviewers were assigned with the task of finding and interviewing farmers meeting the conditions for a census holding yet not placed on the census list. Filling out details was followed by conformity checks and controls designed to provide quality assurance.



### 1.2.2. Census approaches

**For the purposes of this Census the following will apply:**

**An agricultural holding** is an independent business manufacturing farm products having an independent management and meeting at least one of the following criteria:

- manages 0.5 ha of utilized agricultural land, or
- 0.3 ha of arable land, or
- 0.2 of natural grassland, or
- 0.1 ha of crops (vegetables, berries, orchards, vineyards, nurseries, tobacco, hops, seed and seedlings, flowers, essential oil crops and medicinal crops, mushrooms, etc.), or
- 0.05 ha crops under glass, or
- 1 cow, or 1 buffalo-cow, or 2 cattle, or 2 buffalos, or 1 breeding sire (a bull, a stallion, a boar), or 1 sow, or 5 pigs, or 5 ewes, or 2 she-goats, or 2 beasts of burden, or 50 laying hens, or 100 chicks for fattening, or 30 other poultry species (turkeys, geese, ducks, etc.), or 10 she-rabbits, or 10 bee families, or 1 000 quails or other species (silk-worms, ostriches, angora goats, angora rabbits).

**Utilized Agricultural Area (UAA)** is the land worked by the farm regardless of the form of property – rented, leased or any other. UAA comprises the arable land, perennials, nurseries, kitchen gardens, meadows and permanent grassland used by **this holding alone**.

The census-covered UAA **does not include** highland meadows, commons and other permanent grassland used by a number of farmers and therefore not included in the UAA

of interviewed farms. Fallow land not cultivated more than a year also remains outside the census-covered UAA.

**The arable (cultivated) land** is farm land placed in crop rotation every year. These are the areas under 1-year crops, like cereals, industrial forage crops, vegetables and flowers. Arable land also includes areas under berries, vegetables and flowers under glass, hops, artificial meadows with cereal or legume grasses (alfalfa, rye-grass, etc.), the oil rose, lavender, fallow land (farm land lying fallow during the Census year) as well as land producing seed and seedlings.

Arable land does not include areas under 0.1 ha under a variety of crops (vegetables and fruit species), where the area of each individual species is too small to be attributed to a Crop Code. Therefore, such patches fall under the kitchen garden type.

**The Monitoring Period** is the economic 2002/2003 lasting from 1 October 2002 until 30 September 2003. Animal numbers are counted on the day of interviewing.

**Annual Work Unit (AWU)** – an indicator used to estimate the amount of labour vested in agriculture. This indicator is not tantamount to the number of those employed in the sector. According to the European Commission definition 1 AWU is equivalent to the hours worked by a single fulltime worker within one year. The assumption for Bulgaria is that 1 AWU is equal to 1 856 hours of work within one year, or 232 man-days.

**The standard margin** is an indicator used in EU agricultural statistics for the purposes of farm classification.

The standard margin is the variance between the value of output and some of the variable cost by crop or animal type. It is not equivalent to production cost by crop or animal type.

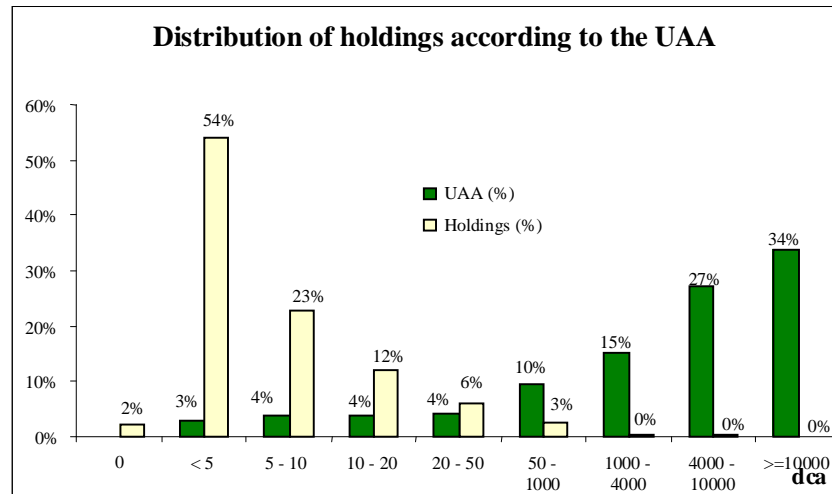
The standard margin is applied to individual surveyed holdings (where area under crops or animal numbers are taken), with the holding's specialty and economic strength, i.e. the holdings typology, being determined by the share of each type of production within the overall standard margin.

### 1.2.3. Preliminary results and analysis of the Agricultural Census`2003

The Agricultural Census 2003 data given below are preliminary and therefore there is a probability for certain discrepancies between them and the final results. Despite their projected nature, these initial outcomes of the 2003 Survey of Bulgarian agricultural holdings present a snap picture of the structure and the means of production in Bulgarian agriculture.

Roundabout 680 000 of the interviewed holdings operate some kind of farming business, with roughly 668 000 of them using some utilized Agricultural Area (UAA). The average UAA size per farm is 44 decares<sup>\*</sup>, there are however large deviations in the size of surveyed holdings – there is a large number of small holdings and a small number of very large ones. 77 % of holdings use AA up to 1 ha, which is less than 7% of the overall UAA of the holdings surveyed. About 3 900 farms use AA of over 100 ha constituting 76% of UAA covered by the survey.

**Figure II.3.**



*Source: MAF, Agrostistics Directorate, Agricultural Census in Bulgaria`2003*

**Table II.3.**

**Classification of holdings based on UAA and according to their legal personality**

<sup>\*</sup> The decare (dca) is the unit commonly used in Bulgaria – it is equivalent to 0.1 hectares.

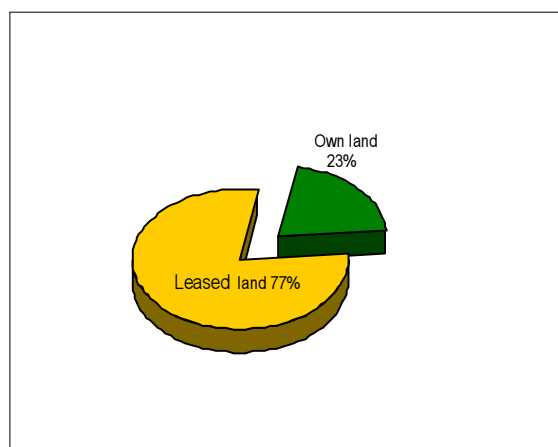
<b>Holding type</b>	<b>Number of holdings</b>	<b>AA (dca)</b>	<b>Average AA (dca)</b>
Holdings with UAA	668 000	29 018 000	43.6
<i>Of which:</i>			
Belonging to physical persons	661 340	8 770 000	13.2
Belonging to sole traders	2 976	3 405 000	1 144.2
Agricultural co-ops	1 992	11 684 000	5 865.5
Farming companies	1 339	4 699 000	3 509.4
Partnerships, etc.	353	460 000	1 303.1
Holdings without UAA	12 000	-	-
<b>Overall number of surveyed holdings operating an agricultural business</b>	<b>680 000</b>	<b>///</b>	<b>///</b>

*Source: MAF, Agrostatistics Directorate, Agricultural Census in Bulgaria 2003*

There are substantial variances in the size of farms belonging to physical and legal entities (cooperatives, limited companies, sole traders, partnerships). Average UAA used by physical entities is a mere 1.3 ha whereas legal entities use substantially larger plots having UAA of 350 ha on the average and co-ops expand on an average of almost 590 ha. These two holding types also operate in profoundly different ways – part of the output of the small holdings belonging to individuals goes to subsistence whereas the legal entities produce is meant for the market. Agricultural co-ops, farming companies and sole traders constitute just 1% of the overall number of surveyed units yet they till 40%, 16% and 12% respectively of the overall UAA while individuals (physical entities) only cultivate 30% of it. Only 2.4% of holdings managed by physical persons (16 400 farms) use AA of over 5 ha which constitutes more than the half (52%) of AA used by surveyed physical entities. On the other hand, 2% of all interviewed holdings (with 97% of them having a physical entity legal status) have no UAA but breed animals: 38% of poultry, 27% of pigs and approximately 3% of cattle, sheep and goat in the survey are reared by such holdings.

77% of UAA is leased. Again, there are substantial variances in terms of the leased land share in UAA, with 50% of the land being leased in the farms belonging to physical entities and 90% land leased in farms operated by legal entities.

**Figure II.4.**

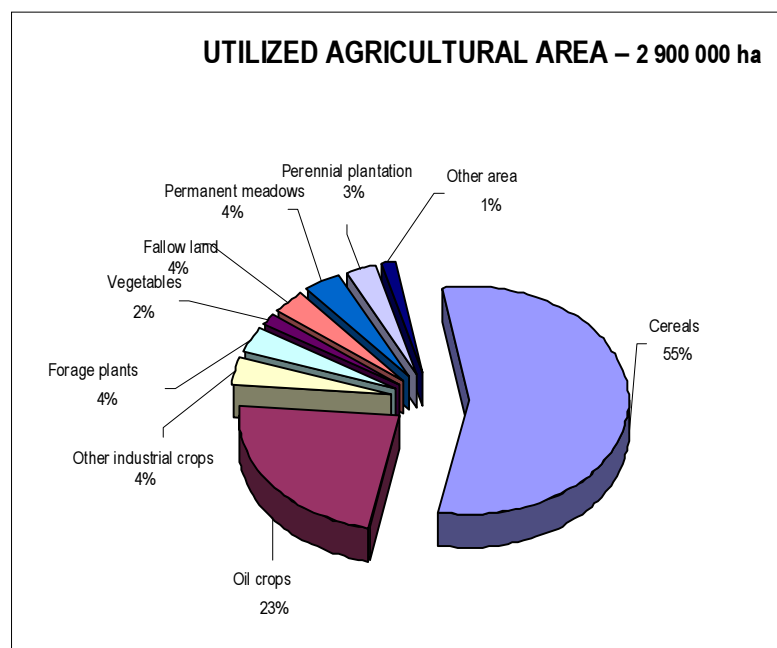


*Source: MAF, Agrostistics Directorate, Agricultural Census in Bulgaria`2003*

Holdings of the “assorted animal husbandry” type have the biggest share (27%), followed by farms growing crops other than fodder crops and simultaneously breeding animals (18%) and holdings growing a combination of various types of crops (10%). There are about 2% of holdings specialised in growing cereals (excluding rice), oil and protein crops with the latter constituting almost 29% of the overall standard margin for all holdings.

The overall UAA of the surveyed holdings works out at roughly 2.9 million ha. More than 75% of this land is occupied by cereals and oil crops, 7% by meadows and fodder crops and 3.5% by fallow land (farmland laid to rest during the economic year in question). Apart from the kitchen gardens present across holding types, the most widely spread crops, in most cases on very small areas, are maize (in 41% of farms), potatoes (31%), wine-growing vineyards (31%), natural and artificial grassland.

**Figure II.5.**

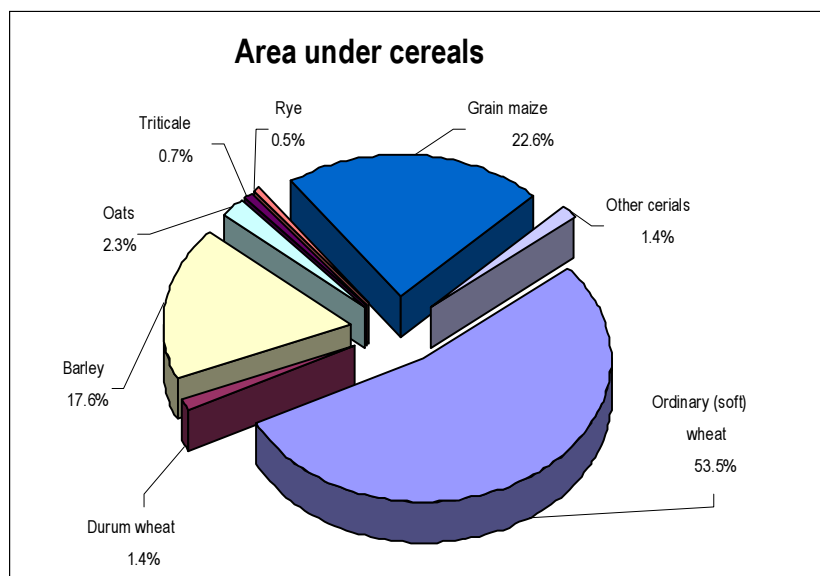


*Source: MAF, Agrostistics Directorate, Agricultural Census in Bulgaria 2003*

Agricultural co-ops grow almost 50% of cereals (with the exception of maize – only 30% of it are grown by cooperatives) and oil crops. Farming companies grow 15 to 20% of these crops, sole trader holdings grow another 10 to 15%, with remaining areas under cereals and oil crops in the hands of individuals (physical entities). However, the best part of crops like vegetables (87%), tobacco (73%), flowers (62%), as well as 83% of the surveyed natural meadows and 50% of vineyards, are grown by physical entities. Ordinary (soft) wheat occupies 54% of the overall area under cereals followed by maize (23%) and barley (18%). The areas under oil crops occupy a substantial part of the overall UAA (22%), with areas under sunflower (657 700 ha) and rape occupying the biggest share and grown by the largest holdings.

1 600 holdings keep 1 750 ha under oil rose, with 87% of them growing less than 0.5 ha of oil roses each. 58 900 ha coriander and 4 090 ha of lavender are grown mostly by larger holdings.

**Figure II.6.**



*Source: MAF, Agrostistics Directorate, Agricultural Census in Bulgaria`2003*

### **The “personal use” phenomenon**

Just about any farm co-op and lease holder in the country outsource growing or harvesting of various crops to third persons. This type of operation is given different names throughout the country e.g. “personal use”, “operation servicing”, etc.

The crops most often outsourced for further husbandry are maize (51% of the areas being “personally used”), artificial grassland (mostly alfalfa), wheat and sunflower. Fields having undergone pre-sawing are outsourced to individuals who carry out the sawing by themselves (melons, vegetable gardens), with such land constituting 23% of the area “under personal use”.

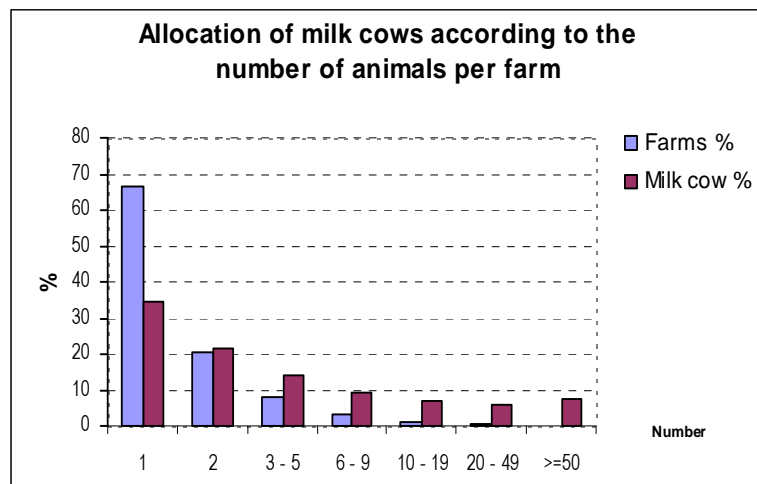
The average area of outsourced land is 0.1 ha per individual even though they may reach over 1 ha in size in some regions (e.g. around Dobrich). 92 000 ha were outsourced in 2003 to small holdings or households. The overall “personal use” area in the country is substantial and constitutes about 3% of UAA.

### Cattle breeding holdings

Approximately 60% of the cattle in the country are bred in herds of less than 10 animals. Over 680 000 cattle are kept by 212 100 holdings, which is 3 heads per farm on the average, whereas for milk cows the average number of animals per farm is 2. Every third holding in the country has at least 1 head of cattle whereas the number of large scale cattle breeders is relatively small, with most of the animals being kept in rather small holdings of less than 10 animals. As it is with sheep and goats, over 90% of cattle are bred in farms belonging to physical entities.

The most widely spread bovine breed is Friesland Holstein, which is the choice of more than 50% in the cow holdings and constitutes 58% of the cows nationwide. 15% of the cows are of the Rhodope and 12% - of the Brown breed.

**Figure II.7.**

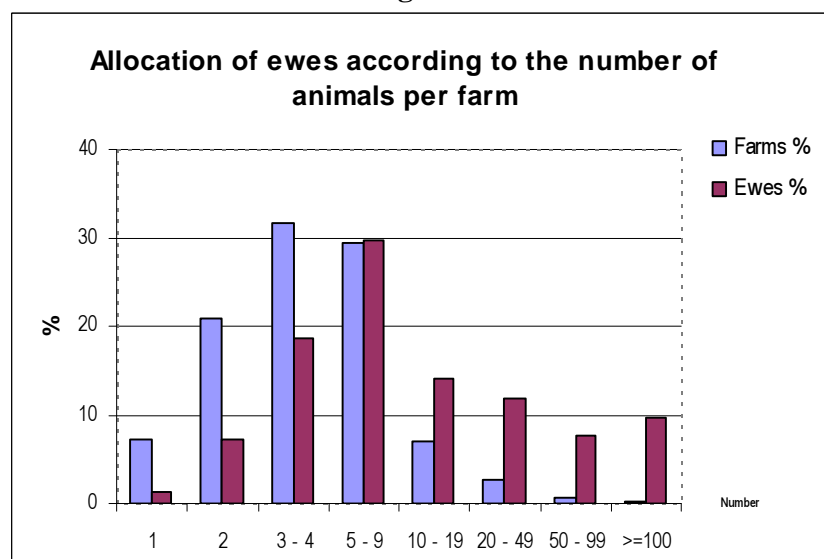


Source: MAF, Agrostistics Directorate, Agricultural Census in Bulgaria 2003

### Sheep and Goat Holdings

Sheep are among the most prevalent animals in Bulgarian farms amounting to 1.370 million ewes and ewe-lambs for reproduction. The average number of animals per farm is very small: 57% of sheep are bred in farms that keep less than 10 animals and only 17% belong to holdings having more than 50 animals. However, during spring and summer it is a widely spread practice for small owners to implement joint husbandry by herding larger groups of animals on grassland.

**Figure II.8.**



Source: MAF, Agrostistics Directorate, Agricultural Census in Bulgaria 2003



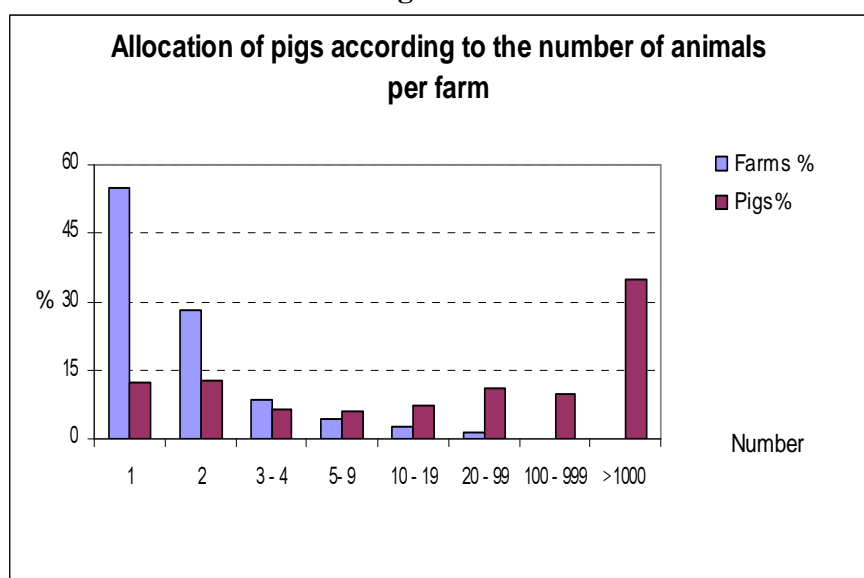
Most of the ewes are either used for milk alone (36%), or for a combination for milk and meat (62%), with a mere 2% being bred for meat alone.

Bulgarian farms seem to prefer goats to sheep. 40 % of surveyed holdings keep 1 goat at least. 99% of goat-herding farms belong to physical entities. 75% of she-goat are kept in farms having less than 5 animals. Holdings of over 50 she-goats are extremely few (less than 300), with only 3% of the overall number of she-goats in the country being bred by them.

### Pig breeders

The traditional Bulgarian pig breeding in households and small farms and the commercial sector seem to blend into one another. 42% of census holdings keep pigs, with 8 out of every 10 holdings having less than 2 pigs, usually for household consumption. There are also 650 large livestock farms with more than 100 pigs in each operating entirely commercially and breeding 45% of the overall number of pigs in the country. It is worth noting that 27% of the pigs are bred in farms having no AA.

**Figure II.9.**



Source: MAF, Agrostistics Directorate, Agricultural Census in Bulgaria`2003

### 1.3. Workforce in Agriculture

One of the objectives of the 2003 Census was to capture details on the workforce and labour input in agriculture. Table II.4. presents projected data for 2003.

**Table II.4.**

**Workforce in Bulgarian agriculture for 2003**

Family work force, including the farmer			Non-family work force				Workforce	Labour input
Total	Out for which		Permanently employed			Seasonal workers and outsourced services		
	Fulltime	Part-time	Total	Out for which				
				Fulltime	Part-time			
'000 people	'000 people	'000 people	'000 people	'000 people	'000 people	'000 AWU	'000 people	'000 AWU
1 283	292	991	50	43	7	28	1 333	770

*Source: MAF, Agrostistics Directorate, Agricultural Holdings Census in Bulgaria`2003*

About 1 333 000 (roughly 1.3 million individuals) have worked in agriculture according to Census 2003 data, out of which:

- **Family work force** - an overall of 1 283 000 people with family farm owners included. 292 000 people (23% of the family hands) were employed full time in farming, and 991 000 people (77 % of the family workers) worked part-time.
- **Non-family work force – the permanently employed workers in agriculture<sup>6</sup>** are about 50 000 individuals. 30% of them are women. 43 000 people (86% of the non-family work force) worked fulltime whereas 7 000 were only partially employed.

335 000 individuals or 25% of those employed in agriculture (both family and non-family work force) work full-time.

**The labour used in agriculture invested by all employed individuals, approximately 1.3 m, is equivalent to 770 000 AWU<sup>7</sup>.** Out of this number, the share of full-time workers (both family and non-family) is 45%. The labour contributed by part-time farm hands (roughly 1 m family members or hired hands) equals 407 000 AWU (or 53%). Non-family workers' labour includes the contribution of seasonal workers<sup>8</sup> as well as the external services used by the farm<sup>9</sup>. Seasonal workers contributed 25 000 AWU in 2003.

Agricultural labour in Bulgaria mainly consists of work put in by physical entity holdings. 90% of the AWU are contributed by family work force.

Almost 150 000 AWU (19.5% of the overall AWU) have been provided by individuals who identified themselves as unemployed in the survey.

Only 15% of farm managers are 45 years old, whereas 40% of them are older than 65 years of age. In the group of managers under 25 years old, every forth manager is a woman.

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<sup>6</sup> Permanently employed workers are those working regularly on farm throughout the year regardless of the number of working hours.

<sup>7</sup> One AWU equals 232 man-days times 8 hours or 1 856 man-hours in a year. The labor put in by 1 individual may not exceed one AWU. In case an individual has put in 1 856 man-hours or more annually, then an individual's labor is equivalent to 1 AWU. Where an individual has worked less then 1856 man-hours his/her labor is estimated as a fraction of 1 AWU.

<sup>8</sup> Seasonal workers work temporarily within a seasonal campaign: pruning, pickings, etc.

<sup>9</sup> Outside services are accounted for in AWU. In order to avoid double counting services provided by the farm to third parties are not posted as a labor input of the farm.

#### 1.4. Registered agricultural producers.

According to the provisions of the Agricultural Producers Support Act (APSA), the register of agricultural producers was established to be run by the MAF. The number of registered producers is growing incrementally year on year: there were 29 059 of them in 2001, 33 925 in 2002 and 43 930 in 2003, both physical and legal entities. The reason behind the growing interest in having a registration is the latter being an eligibility condition in obtaining funding from the State Fund Agriculture under SAPARD lines.

**Table II.5.**  
**Registered agricultural producers pursuant to APSA**

№	Region	2003.			2004 (up to 15.09.2004)		
		Physical entities	Legal entities	Total	Physical entities	Legal entities	Total
1	Blagoevgrad	913	189	1102	1721	218	1939
2	Burgas	1604	404	2008	2544	457	3001
3	Varna	1320	315	1635	1668	330	1998
4	Veliko Tarnovo	1825	285	2110	2533	318	2851
5	Vidin	1290	50	1340	1583	46	1629
6	Vratsa	1394	113	1507	1751	101	1852
7	Gabrovo	359	80	439	651	91	742
8	Dobrich	2133	373	2506	2695	382	3077
9	Kardjali	1834	26	1860	2688	27	2715
10	Kustendil	543	33	576	1231	43	1274
11	Lovech	450	120	570	430	31	461
12	Montana	833	99	932	1172	87	1259
13	Pazardjik	1943	133	2076	2005	166	2171
14	Pernik	144	47	191	324	46	370
15	Pleven	1681	222	1903	2457	239	2696
16	Plovdiv	6520	432	6952	7175	422	7597
17	Razgrad	845	174	1019	1387	160	1547
18	Ruse	1395	272	1667	1921	266	2187
19	Silistra	962	222	1184	606	55	661
20	Sliven	976	165	1141	1665	174	1839
21	Smolian	1455	85	1540	2506	105	2611
22	Sofia - city	923	390	1313	1191	450	1641
23	Sofia	785	121	906	849	125	974
24	Stara Zagora	1846	307	2153	2302	329	2631

<b>25</b>	<b>Targovishte</b>	577	124	701	887	132	1019
<b>26</b>	<b>Haskovo</b>	1889	166	2055	217	10	227
<b>27</b>	<b>Shumen</b>	1257	197	1454	2127	194	2321
<b>28</b>	<b>Yambol</b>	875	215	1090	1501	225	1726
<b>Total</b>		<b>38571</b>	<b>5359</b>	<b>43930</b>	<b>49787</b>	<b>5229</b>	<b>55016</b>

Source: MAF

During the survey period, the smallest number of agricultural producers were registered in the Pernik region whereas the highest number was recorded in the Plovdiv region.

The regions of Lovech, Silistra and Haskovo are an exception to the overall trend of growing numbers of producer registrations.

A national register of tobacco producers and areas under tobacco in Bulgaria has been set up by the Tobacco Fund, pursuant to the Tobacco and Tobacco Products Act (TTPA). Table II.6 shows the number of raw tobacco producers registered over the period 2002-2004.

**Table II.6.**  
**Tobacco producers registered pursuant to the TTPA**

No	Total	2002	2003	2004
1.	Blagoevgrad	15 587	14 985	14 095
2.	Burgas	3 095	2 884	3 448
3.	Varna	15	19	5
4.	Veliko Tarnovo	0	0	0
5.	Vidin	0	4	0
6.	Vratsa	13	15	24
7.	Gabrovo	0	0	0
8.	Dobrich	908	915	979
9.	Kardjali	17 871	21 075	20 019
10.	Kustendil	898	923	852
11.	Lovech	2	11	1
12.	Montana	17	24	18
13.	Pazardjik	2 457	1 438	1 599
14.	Pernik	0	0	0
15.	Pleven	39	38	31
16.	Plovdiv	1 067	1 469	1 538
17.	Razgrad	1 319	1 297	1 266
18.	Ruse	127	111	146
19.	Silistra	3 501	3 456	4 234
20.	Sliven	142	172	210

21.	Smolian	2 752	3 024	3 462
22.	Sofia – city	0	0	0
23.	Sofia	0	0	0
24.	Stara Zagora	685	649	539
25.	Targovishte	212	185	212
26.	Haskovo	7 138	7 395	7 562
27.	Shumen	2 048	2 553	1 555
28.	Yambol	183	147	122
	<b>Total:</b>	<b>60 076</b>	<b>62 789</b>	<b>61 917</b>

*Source: Tobacco Fund*

Tobacco producers registrations show that the families of roundabout 60 000 producers are permanently involved in tobacco growing. The latter is the bread earner for a large portion of the highland area population across the country. The Kardjali, Blagoevgrad and Haskovo regions have the largest share of people working in tobacco production. E.g. for 2004 Kardjali is the home region for 33 %, Blagoevgrad – for 24 % and Haskovo – for 12 % of the overall number of national tobacco growers.

The sustained numbers of tobacco producers may be attributed to the deeply routed traditional culture of tobacco growing, which is the mainstay of several local economies as well as to the regulation and support policy pursued by the government.

### **1.3. Land ownership**

The fragmentation of Bulgarian farm land, which is the outcome of the land ownership restoration process, stands in the way of developing a modern and effective farming sector in Bulgaria. Market orientation and economic viability in agriculture demand consolidated land use and ownership.

A draft has been prepared for a law underpinning the creation and functioning of a National Land Company designed to operate enlarged farm holdings using market leverage.

### **The land market**

Since 1998 the System for Agri-Market Information (SAMI) has been investigating the **farm land market** as well as providing annually updated information. The latest updates

were based on information captured until November 2003. The data show that 35 458 ha of farm land have changed hands in 2002, with an average price of 1 410 BGN/ha. Another 34 572 ha of farm land were sold in 2003, with average prices growing up to 1430 BGN/ha. This development manifests a trend of stabilising and intensifying the land market.

### **Land consolidation in Bulgaria**

The latest piece of legislation to do with the enlargement of the farm land plots in Bulgaria was the Cadaster and Land Consolidation Act adopted in 1941.

Currently there is no land consolidation in force in the country which makes the enlargement of farm holdings a matter of their owners' willingness.

Two pilot voluntary land consolidation projects are currently under way covering 5 TBS's\* selected under various indicators and scattered around various regions, each one having its own local farming specifics.

**Figure II.10.**

**Pilot villages for land consolidation projects**



The pilot projects are designed to:

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\*TBS - territory belonging to a settlement – an administrative term used to designate agricultural land which is administratively attached to a town or village.

- Gather practical experience;
- Identify the technology and procedures, which best accommodate local conditions;
- Elaborate proper regulations / legislative framework for land consolidation;
- Raise awareness about land consolidation and studying public attitudes;
- Present up-to-date ways to exploit and conserve farm land and the environment as well as effective and modern farming technologies;
- Invigorate the land market;
- Attract investments;
- Set up of a proper framework for effective land use.

The key rules in drawing up land consolidation plans are:

- Keep the existing field design;
- Try to not adversely affect estate prices throughout the process of consolidation;
- The task of bringing together several land plots belonging to a single owner overrides the task of shifting another owner's single plot;
- The first wish of an owner requesting his/her plots to be brought together into a single estate where he or she has a property overrides the first wish of an owner who would like to consolidate his/her properties into a new estate (without having property in it).

Land consolidation projects comprise the following stages:

- Capturing, updating and studying materials and data;
- Drawing up of an owners list and evaluating the involved estates;
- Carrying out a survey;
- Making a design (first, second and final version of the consolidation plan);
- Carrying out land survey works;
- Carrying out property registration.

Regardless of the fact that land consolidation traditions in Bulgaria date back to the beginning of the last century, international technical assistance underpinning the current projects is extremely valuable.

### **Project - “Voluntary Land Consolidation in Bulgaria”**

Work on this initial project kicked off in September 2002 and should have lasted 2 years. It is carried out by the MAF and receives funding under the MATRA programme supported by the Dutch Land Register and the Cadastre Agency through the International Cadastre. Staff members of the Ministry of Justice and the Cadastre Agency also contribute to the project.

Raising awareness about the advantages of enlarging land ownership is a crucial task of the working groups on the projects. By enlisting the support of local media, local people are made aware of the benefits of land consolidation as well as of the action they need to undertake in order to obtain better results.

Based on preliminary research of local attitudes and other circumstances, it was decided to pilot the consolidation of the farm land around the village of Lomtsi, municipality of Popovo, region (oblast) Targovishte and village of Golesh, municipality of Kainardja, region (oblast) Silistra. These consolidation projects only involve agricultural land which is permanently used as crop fields and has been restored within the so called “new real borders”. The following selection criteria have been applied:

- expressed consent on behalf of the owners (including city councils / municipalities or the state) and land users / tenants;
- flat surface fields, if possible;
- coherence of soil categories if possible;
- absence of partially constructed irrigation facilities or inclusion of all arable land of the TBS in one irrigation scheme;
- absence of plans for installing linear infrastructure over the following 5 years.

In April and June 2003 the land owners in pilot TBSs were interviewed to sound them out on their willingness to take part in the land consolidation process. 68% of the owners in



the village of Lomtsi were interviewed with 86% expressing willingness to participate. In Golesh 32% of the owners were interviewed, with 94% agreeing to participate.

	Lomtsi		Golesh	
	Number of owners	Area (decare)	Number of owners	Area (decare)
Interviewd owners	496	16 690	151	11523
Owners not interviewed	233	5 425	337	9 182
<b>Total:</b>	<b>729</b>	<b>22 115</b>	<b>488</b>	<b>20 705</b>

Table II.7. shows the mutations of plots following the implementation of the initial plans for the two TBSs.

**Table II.7.**  
**Plot mutations resulting from land consolidation carried out under the project**

	Village of Golesh		Village of Lomtsi	
	Prior to first draft plan	After first draft plan	Prior to first draft plan	After first draft plan
Number of owners with 1 plot	65	127	113	335
Number of owners with 2 plots	39	8	146	78
Number of owners with 3 plots	31	0	98	13
Number of owners with more than 3 plots	0	0	73	4
Average area - decares	15.3	26.6	12.7	22.0

*Source: MAF*

In the village of Golesh, the owners of 1 estate prior to implementing the draft owned 48 % of all owners, owners having 2 estates constituted 29 % of the number of owners, and the owners having 3 estates were 23 % of all owners. After the completion of the first draft consolidation plan the share of 1 estate owners went up to 94 %, while the 2 estate owners fell to 6 %. The plans completion left no owners of 3 or more estate owners on

the ground. The average estate area grew from 15.3 decares before the consolidation to 26.6 decares post-consolidation.

In Lomtsi, 1-estate owners were 26 % of the overall number of owners, owners of 2 estates were 34 % of all owners, 3 plots were possessed by 23 % of the owners, whereas those having 3 or more estates were 17 % of all owners. The completion of the first draft plan brought a dramatically different situation. 1-estate owners increased to 78 %, owners of 2 estates fell down to 18 %, owners of 3 were 3 % of all owners, and a mere 1% owned more than 3 estates. The average area of estates before the plan was 12.7 decares going to 22.0 decares as a result of consolidating.

The final land consolidation plan for Golesh is being worked out at the moment by pooling together and processing all information and documents needed: objections, declarations for consent, letters of attorney, documents for land exchanges with other TBSs as well as records of land deals. The new estate borders will be laid out on the ground by late 2004.

In July 2004 the Lomtsi project was suspended for the following reasons:

- Acting lease contracts – a substantial part of the local owners do not till their land on their own, and the tenants had already shaped larger fields;
- Insufficient acreage in the State Land Domain.

It was therefore decided to resume consolidation by selected fields, with the most promising fields having already being chosen.

### **The project, “Consultancy for Implementing a Farmland Consolidation Pilot Project”**

There is another land consolidation project underway comprising pilot projects funded through a trust fund donated by the Dutch government in support of a loan by the IBRD, through the Cadastre Agency.

In September 2003 the Cadastre Agency and CMS Bruno Morel, France / Geoconsult OOD, Bulgaria (as a consulting partnership) entered into a contract to implement a project, “Consultancy for Implementing a Farmland Consolidation Pilot Project”. The CMS Bruno Morel is the partner of Consortium Geo-expert, a land consolidation authority backed by the French Ministry of Agriculture. The consultant was selected by tender carried out in accordance with the rules and procedures of the World Bank. The beneficiary of project funding is MAF.

The project covers the TBSs of the village of Abrit (in the Krushari municipality, the Dobrich region), the village of Hurlets (Kozladui municipality, Vratsa region), the village of Botevo (Tundja municipality, Yambol region).

The following project stages have already completed:

1. Information capture and processing;
2. Drawing up a definitive list of owners;
3. Carrying out a survey;
4. Defining the areas subject to consolidation;
5. Elaborating an initial consolidation draft;

For the village of Abrit – the overall number of interviewed owners was 40 – which is 80 % of those eligible for interviews, owning an overall area of 6 291 decares, which is 84 % of the area under consolidation.

For the village of Botevo - the overall number of interviewed owners was 920 – which is 68 % of those eligible for interviews, owning an overall area of 18 400 decares, which is 65 % of the area under consolidation.

For the village of Hurlets - the overall number of interviewed owners was 722 – which is 59 % of those eligible for interviews, owning an overall area of 18 096 decares, which is 58 % of the area under consolidation.

**Table II.8.**  
**Progress indicators for land consolidation in the villages on the project**

<b>Indicators:</b>	<b>Abrit</b>	<b>Botevo</b>	<b>Hurlets</b>
Overall number of participating land owners	40	920	722
Consolidated area in decares	6 367.9	26 961.3	18 096.3
Consolidated area as percentage of overall TBS area	45.00	65.00	58.64
Average number of plots per owner pre-consolidation	5.65	7.00	3.15
Average number of plots per owner post-consolidation	2.00	4.00	2.06

*Source: MAF*

It is interesting to monitor the alteration of the average number of estates per owner brought about by the consolidation process. The table shows an abrupt decline in the number of estates owned for all three TBSs. Abrit experienced a slump in the number of estates by 65 %, Botevo – by 43 %, and Hurlets – by 35 %.

### **The role of the State Land Domain in managing land ownership in Bulgaria**

In 2003 farm land belonging to the State Land Domain (under MAF) was subject to the following transactions:

- Farm land exchanges between SLD and private owners - 1343 deals. The exchanges have resulted in 6 420 ha given up by SLD and another 7 194 ha of which SLD took possession;
- 1 680 ha were tendered out to holders of personal compensation vouchers and 580 ha were handed out as compensations;
- SLD has leased and rented out 35 350 ha;
- SLD has released 11 886 ha free of charge to landless farmers;

- SLD discharged 19 048 ha to research units, schools, etc.

### **Maintaining the information database of land ownership and deals in Bulgaria**

As a result of experience from the last few years the database created on the basis of the digital models of the restored properties' map for farmland, the work related to the creation of a Geographic Information System (GIS) and other specialized software packages and hardware set the foundations of a modern system for data capture and processing for land ownership and land deals in Bulgaria. The maintenance and the upgrading of the system demands the joint work of the Municipal Agriculture and Forests Offices, the Regional Agriculture and Forestry Directorates and the MAF headquarters. Such cooperation will allow the ministry to manage updated information on land ownership and monitor the dynamics in terms of farm land ownership, tenure and land use.

The major part of the work towards a GIS was completed in 2003. The adoption of a GIS was related to the need of introducing state-of-the-art information technologies across government offices in charge of property registration and cadastre. The GIS build up was underpinned by funding and technical assistance along the lines of the PHARE Programme, project BG 9812-01 "Technical Assistance for the Development of the Land Market in Bulgaria".

As a result of applying the project, MAF HQ and 28 Regional Agriculture and Forestry Directorates received basic GIS-related hard- and software. The ALIS system was set up based on GIS. The project was designed to convert the whole database currently on MAF-maintained digital models of restored agricultural and forest land into a unified geographic database.

The system was rolled out in August 2003 and currently the Regional Agriculture and Forestry Directorates have completed the initial data loads from the digital modules of restituted farm land containing the key details related to location, ownership, real rights and encumbrances on farm and forestry land use. Geometrical property data can be presented visually and access has been secured to specific details related to property

features, owners and accompanying documents. The system is capable of feeding data into other information systems based on GIS.

The data will be periodically updated by transferring data generated by land transactions from the Municipal Agriculture and Forests Offices to the Regional Agriculture and Forestry Directorates.

In line with the strategy for creating an integrated system for administrative control (ISAC), the GIS-based unified database will provide the foundation for building up a LPIS /land property identification system/ aimed at the management and control of subsidy allocations to farmers.

### **Soils and soil studies in Bulgaria in 2003**

Information about the soils and land use in Bulgaria is collected by the units of the MAF to be managed by the Executive Agency for Soil Resources.

As a result of funding through the SAPARD programme and the State Agricultural Fund (SAF), a growing interest has been created among land owners and tenants in obtaining detailed information about soil qualities, especially in cases of making plans for perennial plantations. Detailed soil and weather records for over 200 fields in 43 TBSs were prepared in 2003.

The demand for information about the suitability of soils for various crops is on a constant increase. In contrast with past years, it was found that, apart from the traditional vineyards and orchards, the attention is turned to crops like strawberries, raspberries, black chokeberry, roses, various herbs, almonds, walnuts, rape seed, etc.

Under a request by the Vine & Wine Executive Agency detailed information has been prepared about the soils in various regions of the country in view of creating nurseries and starting vineyards.

2003 saw an increased number of the so called “expert checks” for farm land comprising examinations of soil categories by the existing soil maps and matching soil data with land

reallocation plans. These checks have been demanded by Municipal Agriculture Offices, by the Regional Offices or by members of the public.

The growing demand for such services manifests a changing culture among land tenants and owners and a drive towards more effective use of land and soil.

2003 also marked a decline in the number of services related to alterations of farm land use, which in itself indicated the reduction in agricultural areas subjected to transformation into land serving other purposes.

A major portion of land deteriorated as a result of uranium and coal mining had been recycled, formally given soil categories and rehabilitated into farm usage.

The updating of soil information through the GIS provides opportunities for operating information for each individual land plot as a part of the land reallocation plan. Through the production of “thematic maps”, the GIS provides tools for effective soil use and better implementation of national policies in crop growing, irrigation and land engineering activities.

Making the information compatible with EU soil information processing methods and classifications is currently under way aimed at creating opportunities for foreign investor from EU member states to make use of Bulgarian soil information.

Under a contract with Mini-Maritsa Iztok AD coal mining venture, a humus research was carried out for soil to be deposited, attached with relevant maps.

Consultations provided to members of the public in terms of the productive and environmental quality of their land are provided on a daily basis.

Eight million decares of farm land have been added to the soil GIS by 30 December 2003, with another four million decares earmarked for inclusion in 2004.

By late 2003, the database had been fed with various parameters helping to define the fitness of soil for growing 22 crop varieties, under irrigation or without irrigation, for TBSs with updated soil maps covering 8 million decares of farm land.

## **2. Output for 2003 and forecast for 2004. The system for economic accounts for agriculture.**

### **2.1. Output**

#### **2.1.1. Crop output**

##### **2.1.1.1. Cereals**

According to Agrostistics Directorate data, areas under cereals amounted to 1 773 000 ha, which was 54.7% of the national arable land. The largest area under cereals was in the North-Eastern region amounting to 629 000 ha or 60.1% of the arable land. Cereals have dwindled in 2003 across regions, with an overall area decline of 20.1% mainly replaced by sunflower.

Frequent rainfalls during the autumn of 2002 caused delays in preparing the fields for the sowing of autumn crops. The freeing of the fields from the late precursors (maize, sunflower) was also hampered. Farmers were unable, therefore, to finish sowing their crops in time.

The continuous humid autumn and the quick temperature drops did not allow the autumn crops to go through fair seasoning. Extremely low temperatures in the vicinity of -17° / -20°C, exacerbated by high wind and absence of snow in certain areas affected the autumn crops unfavorably in late December 2002 and early 2003. The greatest percentage of freeze-afflicted areas was in the areas of Dobrich, Varna, Shumen, Burgas, Silistra, Targovishte and Yambol.

Another negative influence of both autumn and spring crops was the drought in certain regions during the spring and summer of 2003. As a result the average yields of key crops were below those in 2002.

Farmers affected by the winter freezes were given the opportunity to apply for dedicated funding to SAF for fertilizing and sowing of afflicted areas with spring crops. Deteriorated and destroyed autumn wheat and barley were replanted with spring crops which tipped the balance between autumn and spring crops.



## Wheat

Despite unfavorable weather for the wheat sowing during the autumn and winter of 2002 areas under wheat occupy the largest share among other cereals. Areas under wheat have declined by 34.7% compared to 2002, at 903 300 ha. 841 000 ha out of them were harvested, with 6.9% of wheat areas irreparably damaged.

**Table II.9.**  
**Wheat output from the 2002 and 2003 harvests**

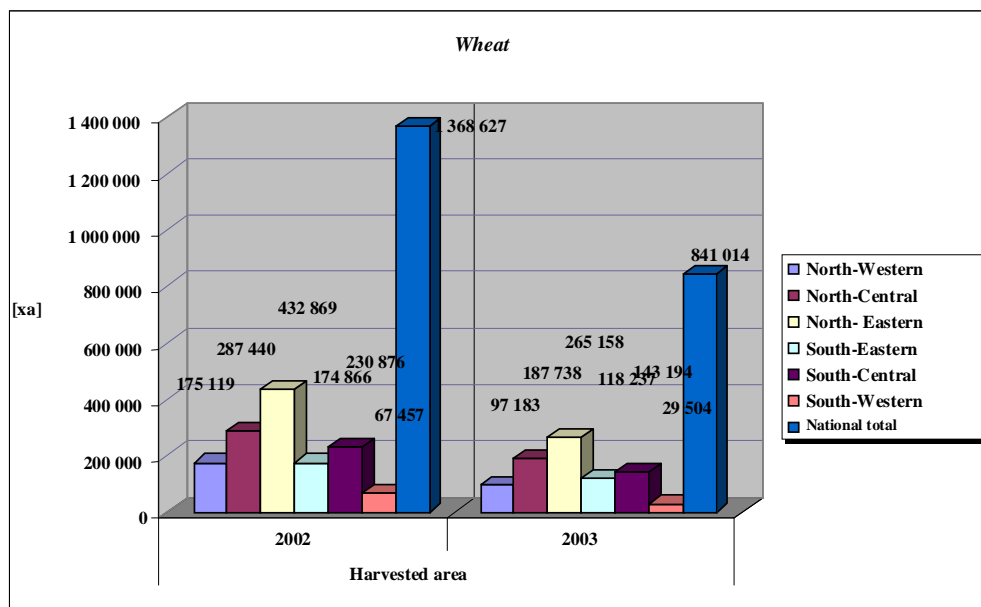
Region	Harvested area [ha]		Average yield [tons/ha]		Output [tons]	
	2002	2003	2002	2003	2002	2003
North-Western	175 119	97 183	2.26	2.35	395 725	228 373
North-Central	287 440	187 738	2.91	2.71	836 149	509 334
North-Eastern	432 869	265 158	3.67	1.95	1 590 558	516 131
South-Eastern	174 866	118 237	3.22	2.32	563 416	274 270
South-Central	230 876	143 194	2.63	2.81	606 675	402 926
South-Western	67 457	29 504	1.93	2.47	130 232	72 903
<b>National total</b>	<b>1 368 627</b>	<b>841 014</b>	<b>3.01</b>	<b>2.38</b>	<b>4 122 765</b>	<b>2 003 937</b>

Source: MAF Agrostistics Directorate

Wheat output was down by 51.4% from the previous year amounting to 2 004 000 tons. The average yield was 2.38 t/ha, which is below 2002 levels by 20.9%. Nevertheless, the 2003 harvest grain was better in quality terms compared to the last several years.

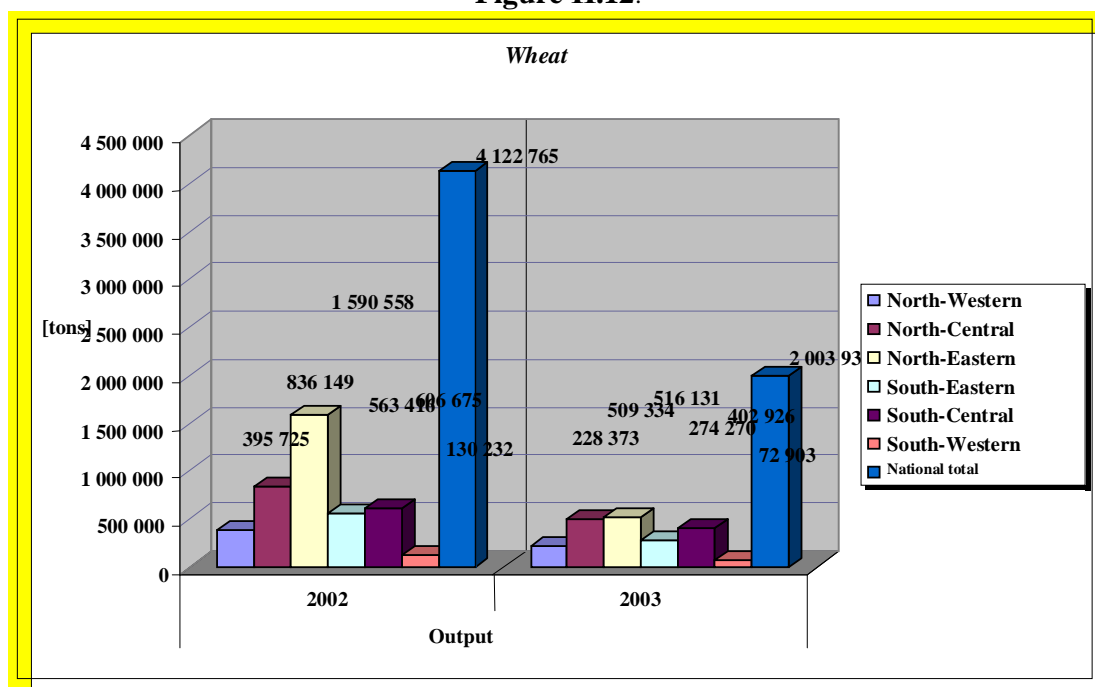
Traditionally, the North-Eastern region has been a leader in the way of wheat areas and output, trailed by the North-Central Region. The strongest losses were suffered by North-Eastern region of the country where crop damages resulting from sub zero temperatures were the greatest.

**Figure II.11.**



The largest areas under wheat were in the North-Eastern region (288 000 ha or 31.8% of areas under wheat in the country) followed by the North-Central region - 202 000 ha (22.3%) and South-Central – 151 000 ha (16.8%).

**Figure II.12.**



The projections of the Agrostistics Directorate show an anticipated harvest for 2004 amounting to 3 960 000 tons from an area of about 1 044 000 ha. Average national yields are expected to be 3.81 t/ha, which is the highest yield for the last ten years.

### **Rye and triticale**

Areas under rye in 2003 were 10 300 ha or 24.3% less than 2002. Rye output was 12 000 tons (a 33.3% decline against 2002), the average yields being 1.210 t/ha.

Areas under triticale have risen to reach 13 000 ha which is 25.0% on top of 2002. Triticale output amounted to 18 000 tons. Regardless of the area enlargement, triticale output was down by 21.7% which can be attributed to lower yields of 1.540 t/ha (a 33.0% decline).

### **Barley**

Areas under harvest 2003 barley were 285 000 ha (including spring barley on roughly 61 000 ha) which was 27.3% reduction compared to 2002. As a result of adverse weather in the autumn and winter, harvested areas came down to 271 000 ha. Coupled with poor yields of 1.94 t/ha, this shrinking acreage accounted for weaker barley output at 525 000 tons - 56.6% less than the previous year.

**Table II.10.**  
**Barley output from the 2002 and 2003 harvests**

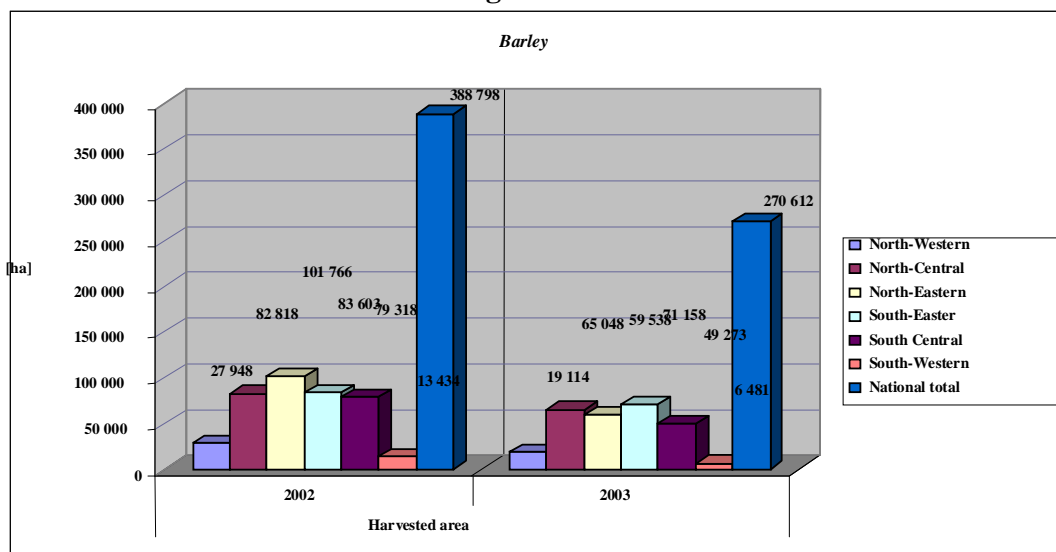
Region	Harvested area [ha]		Average yield [tons/ha]		Output [tons]	
	2002	2003	2002	2003	2002	2003
North-Western	27 948	19 114	2.04	1.99	57 097	37 978
North-Central	82 818	65 048	2.97	2.12	246 154	137 857
North-Eastern	101 766	59 538	3.66	1.73	372 578	103 128
South-Eastern	83 603	71 158	3.36	1.66	281 144	118 181
South-Central	79 318	49 273	2.84	2.33	225 293	144 968
South-Western	13 434	6 481	2.17	1.99	29 169	12 878

<b>National total</b>	<b>388 798</b>	<b>270 612</b>	<b>3.12</b>	<b>1.94</b>	<b>1 211 435</b>	<b>524 990</b>
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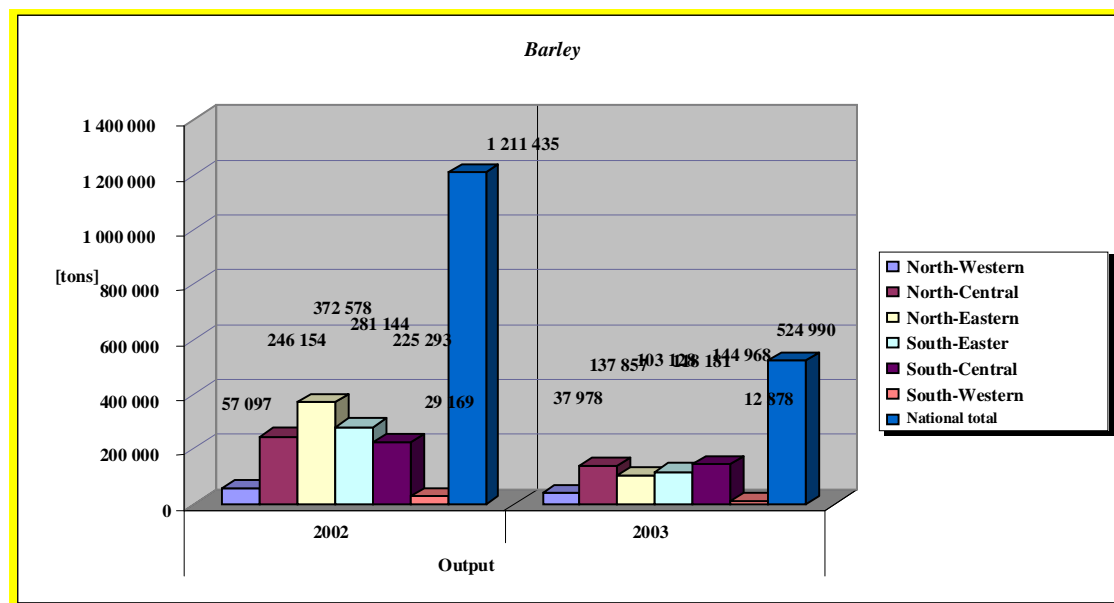
Source: MAF Agrostistics Directorate

The South-Easter region had the biggest area under barley in 2003 of 75 000 ha (26.1% of areas under barley nationwide) followed by the North-Central with 70 000 ha (26.1%) and the North-East region– 63 000 ha (21.9%).

**Figure II.13.**



**Figure II.14.**



Areas under barley in 2004 are projected to 333 484 ha whereas output will amount to 1 180 000 tons at an average yield of about 3.59 t/ha.

## Oats

Areas under oats for the 2003 harvest showed an increase of 2.6% against 2002 and reached 47 390 ha. For a number of reasons (including early harvesting for green forage, late sowing, etc.) some of the areas were dropped off the cycle, with only 37 620 ha going through harvesting. Together with lower average yields (by 9.9%), the 2003 oats output was 16.1% below that of the previous year.

**Table II.11.**  
Oats output from the 2002 and 2003 harvests

Region	Harvested area [ha]		Average yield [tons/ha]		Output [tons]	
	2002	2003	2002	2003	2002	2003
North-Western	9 482	8 357	1.30	1.23	12 327	10 316
North-Central	7 213	7 897	1.58	1.50	11 396	11 860
North-Eastern	4 801	6 883	1.73	1.62	8 305	11 115

<b>South-Eastern</b>	6 403	6 227	1.90	1.08	12 165	6 726
<b>South-Central</b>	4 495	4 584	1.18	1.24	5 304	5 706
<b>South-Western</b>	8 632	3 668	1.50	1.58	12 948	5 810
<b>National total</b>	<b>46 218</b>	<b>37 616</b>	<b>1.52</b>	<b>1.37</b>	<b>62 445</b>	<b>51 533</b>

*Source: MAF Agrostistics Directorate*

The smallest areas (2.4 times less than 2002) were harvested in the South-Western Region. The crop's performance was adversely affected by the 2003 spring drought in certain areas of the country.

## Grain Maize

In the spring of 2003, to make up for the winter chill-damaged autumn crops, 39% larger areas in comparison to 2002 were planted with grain maize (429 800 ha) and 15.3% more acreage than 2002 went under silage maize (58 700 ha). Despite the enlarges areas under grain maize the output went down by 9.9% at 1 161 000 tons. The influence of weather (the warm and dry summer) and insufficient irrigation dragged down average yields to 33.9% below those in 2002 at 2.8 t/ha.

**Table II.12.**  
**Grain maize output from the 2002 and 2003 harvests**

Region	Harvested area [ha]		Average yield [tons/ha]		Output [tons]	
	2002	2003	2002	2003	2002	2003
<b>North-Western</b>	49 329	43 795	2.93	2.19	144 535	95 736
<b>North-Central</b>	81 588	99 140	3.93	2.16	320 642	213 778
<b>North-Eastern</b>	152 904	239 566	4.80	3.16	733 939	755 915
<b>South-Eastern</b>	1 701	9 948	5.04	2.77	8 571	27 552
<b>South-Central</b>	14 092	16 050	4.44	3.30	62 567	53 025
<b>South-Western</b>	4 441	6 181	4.02	2.44	17 851	15 101
<b>National total</b>	<b>304 055</b>	<b>414 680</b>	<b>4.240</b>	<b>2.800</b>	<b>1 288 105</b>	<b>1 161 107</b>

*Source: MAF Agrostistics Directorate*

Figure II.15.

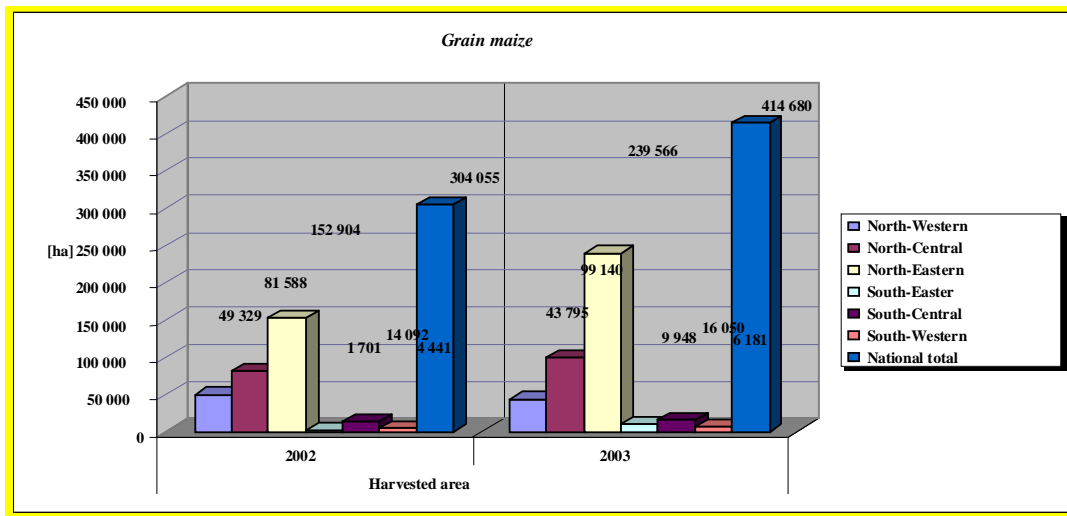
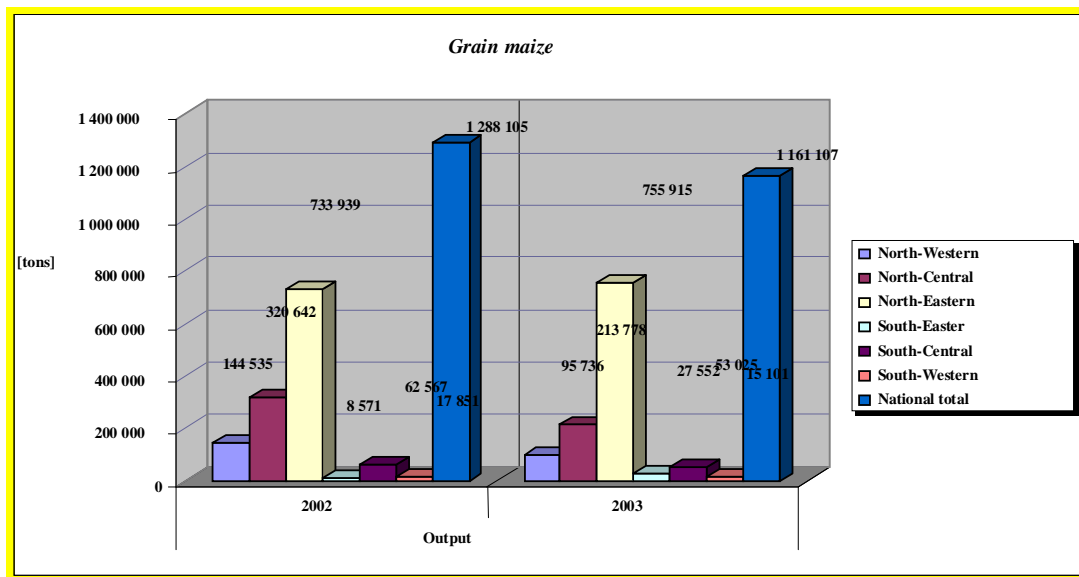


Figure II.16.



Areas under maize in 2004 are projected by the Agrostistics Directorate at about 415 971 ha whereas the forecasted output amounts to 2.1 million tons.

Over the last few years, sorghum has come to the fore as an alternative to maize. Regardless of its resistance to drought as its key advantage, the availability of new hybrid varieties and its capacity to substitute for maize in fodder mixes, sorghum is still underrepresented in Bulgaria. Poor demand on behalf of the feed industry and lower buy-

in prices compared to maize suppressed interest, with the 2003 output being only 5 874 tons. Sorghum output went 34% down compared to 2002 whilst acreage has shrunk .by 19.6% to 3 673 ha.

## **Rice**

Rice is a traditional crop for Bulgarian agriculture and has long being a crucial choice for irrigated growing in the South-Central and South-Western regions. The areas under rice grew by 7.7% in 2003 to reach 5 644 ha, out of which 5 633 ha were harvested. Hull rice output went on the increase with 33.3% compared to the previous year and reached 23 659 tons which is mainly due to the increased acreage in 2003. The average yields of 4.20 t/ha in 2003 were insignificantly down from the 4.31 t/ha in 2002.

Agrostatistics Directorate projections for 2004 show areas under rice equaling 5 700 ha and hull rice output amounting to 28 000 tons.

### **2.1.1.2. Oil crops**

695 000 ha or 21.5% of arable land were under oil crops in 2003. Compared to 2002 (490 000 ha) the acreage has strengthened by 41.8%.

## **Sunflower**

97.8% of oil crop areas in the country were taken by sunflower in 2002. 674 883 ha were under sunflower comprising 638 016 ha under oil sunflower and 36 867 ha under striped sunflower.

659 632 ha of sunflower were harvested in 2003, comprising 624 809 ha of oil sunflower and 34 823 ha of bird seed. The harvested areas were up by 203 869 ha compared to 2002. The 2003 output reached 788 763 tons which was by 143 394 t (22.21%) on top of the 2002 output. The average yield however went below the previous year's one by 12.41% to 1.2t/ha. Reduced yields were mainly brought about by the long lasting drought in 2003 during the vegetation period.

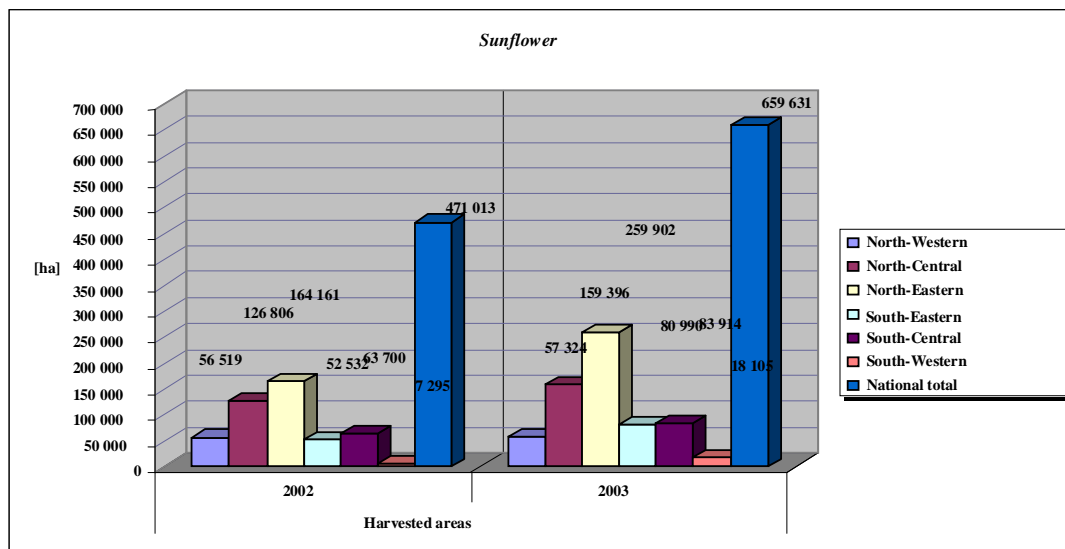


**Table II.13.**  
**Sunflower output from the 2002 and 2003 harvests**

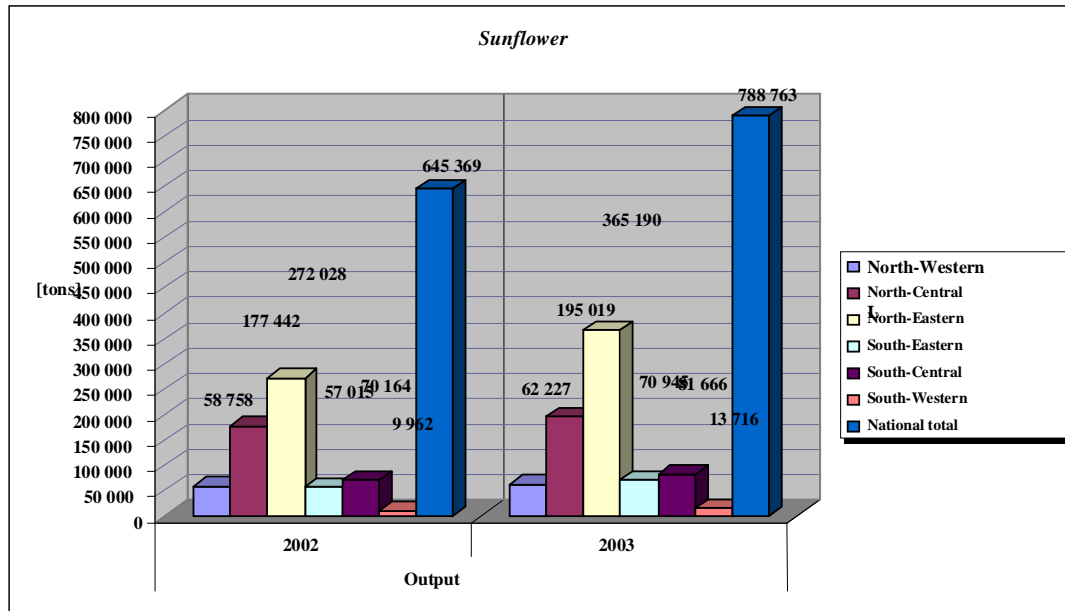
Region	Harvested area [ha]		Average yield [tons/ha]		Output [tons]	
	2002	2003	2002	2003	2002	2003
North-Western	56 519	57 324	1.04	1.09	58 758	62 227
North-Central	126 806	159 396	1.40	1.22	177 442	195 019
North-Eastern	164 161	259 902	1.66	1.41	272 028	365 190
South-Eastern	52 532	80 991	1.09	0.88	57 015	70 945
South-Central	63 700	83 914	1.10	0.97	70 164	81 666
South-Western	7 295	18 105	1.37	0.76	9 962	13 716
<b>National total</b>	<b>471 013</b>	<b>659 632</b>	<b>1.37</b>	<b>1.20</b>	<b>645 369</b>	<b>788 763</b>

*Source: MAF Agrostistics Directorate*

**Figure II.17.**



**Figure II.18.**



The projections for harvest 2004 show areas under sunflower amounting to 598 203 ha and an output of roughly 1 m tons.

### **Rape seed**

Winter oil-giving rape seed comes second after sunflower in importance. 14 300 ha were planted with rape seed in 2003 which exceeded the 2002 acreage by 38.85%. 12 687 ha were harvested in 2003, which was 86.52% above the 6 900 ha of 2002. The overall 2003 output of 11 000 tons was 37.5% larger than the 2002 output. 2003 average yield however stood lower due to the spring drought.

### **Peanuts**

Peanuts, another oleaginous crop, covered 1 053 ha in 2003, which was a reduction by 70.75% compared to 2002. The peanut output amounted to 1 636 tons.

### **Sugar beet**

Sugar operations in the country have been predominantly processing imported cane sugar over the recent years. The major problem in sugar beet production was the withdrawal of government support in the transition period. Key reasons for stifled activities are the low production cost of the refined sugar manufactured by processing raw cane sugar, the shrinking of areas under irrigation, poor buy-in prices for sugar beet and the lack of suitable machinery.

Sugar beet output in 2003 was 9 076 tons which is 82.4% less than the previous year. Areas under sugar beet in 2003 were at a record low at 400 ha or 81.8% less than 2002. 394 ha out of them were harvested, with an average yield of 2.305t/ha.

**Table II.14.**

**Sugar beet output from the 2002 and 2003 harvests**

Region	Harvested area [ha]		Average yield [tons/ha]		Output [tons]	
	2002	2003	2002	2003	2002	2003
North-Western	-	-	-	-	-	-
North-Central	1 787	194	22.57	24.49	40 326	4 747
North-Eastern	277	100	22.97	30.88	6 360	3 088
South-Eastern	-	-	-	-	-	-
South-Central	99	100	47.01	12.41	4 640	1 241
South-Western		-		-		-
<b>National total</b>	<b>2 163</b>	<b>394</b>	<b>23.74</b>	<b>23.05</b>	<b>51 326</b>	<b>9076</b>

*Source: MAF Agrostistics Directorate*

Interest in the sugar beet sector as the provider of input for sugar manufacturing may only be achieved on the basis of modern technologies, high-yield varieties and better organized relations between producers and processors.

**Fibre crops – cotton, flax and hemp**

The downward trend for areas under fibre crops was carried over into 2003. The overall harvested area under fibre crops in 2003 was 3 417 ha against 6 770 ha in 2002. Cotton has the largest share among Bulgarian fibre crops (92.0 % of the total area).

**Table II.15.**  
**Fibre crops structure for the 2002 and 2003 harvests**

<i>Fibre crops structure</i>				
	<b>Overall area/ha/</b>	<b>Area under cotton as % of overall area</b>	<b>Area under flax as % of overall area</b>	<b>Area under hemp as % of overall area</b>
<b>2002</b>	6 770	93.1	6.9	0
<b>2003</b>	3 417	92.0	8.0	0

*Source: MAF Agrostistics Directorate*

Data provided by the Agrostistics Directorate show that areas under cotton in 2003 were 3 196 ha or 50.1 % less than those in 2002 (6 335 ha). The poorer 2003 output (4 162 tons) should be put down to, apart from shrinking acreage, lower average yields of 1.32 t/ha in 2003 in contrast with 1.59 t/ha in 2002. The areas under cotton were mostly within the South-Central Region.

The second important fibre crop in Bulgaria, flax, has also seen a decline in acreage. Only 275 ha were harvested in 2003, down from 470 ha in 2002. Output was 437 tons in 2003.

The declining cotton and flax production and the disappearance of hemp are due to the high labour consumption and the use of old and obsolete and ineffective machinery. Currently there are no hemp plantations in the country to speak of.

Over the last several years the world had experienced a trend of increasing natural fibre demand in everyday life and industry at the expense of synthetic fibre, with the trend probably set to have an influence on the Bulgarian situation as well. The country has advantageous soils and weather for fibre crops and a well developed textile industry.

## **Hops**

There were 280 ha under hops in 2003. The average yield was 0.96 t/ha while the overall output was 268 tons. The hops operations are concentrated around Velingrad, Pazardjik and Rakitovo regions.

#### 2.1.1.2. Industrial crops

##### Tobacco

Data of the Agrostatistics Directorate show 2003 areas under tobacco equivalent of those for 2002, at 41 859 ha. A mere 1% of planted areas were destroyed, with 41 440 ha harvested.

**Table II.16.**  
**Area, yields and output for main tobacco varieties, 2002 – 2003**

	2002	2003
<b>Planted area – ha</b>	<b>42 016</b>	<b>41 859</b>
comprising Oriental	29 412	29 298
Virginia	8 403	8 388
Burley	4 202	4 173
<b>Harvested area - ha</b>	<b>39 366</b>	<b>41 440</b>
comprising Oriental	27 947	29 008
Virginia	7 689	8 288
Burley	3 730	4 144
<b>Output - tons</b>	<b>62 250</b>	<b>61 539</b>
comprising Oriental	46 508	42 062
Virginia	11 687	14 090
Burley	4 055	5 387
<b>Average yields -t/ha</b>		
comprising Oriental	1.66	1.45
Virginia	1.52	1.70
Burley	1.09	1.30

*Source: MAF Agrostatistics Directorate*

The overall 2003 tobacco output was slightly below the 2002 one amounting to 61 539 tons comprising 42 062 tons of Oriental, 14 090 tons Virginia type and 5 387 tons of Burley tobacco. Lower yields have only been suffered by the Oriental crop with average

yields falling to 1.45 t/ha in contrast with the 1.66 tons for the previous year. The yield of broadleaf tobacco have seen a rise compared to 2002, which was 21% for the Virginia and 33% for the Burley tobaccos. The higher output was based on both better yields (by 12% for Virginia and 19% for the Burley tobacco) and larger cultivated areas.

Projected Agrostistics Directorate data show 48 975 ha under tobacco for 2004, which will be a 17% growth from 2003.

The 2004 harvest is expected to equal the 2002 at 62 234 tons. A minor groth is projected for Oriental tobacco (by 621 t) and for Burley (by 466 t). However, the Virginia types are expected to yield 13 689 t or 3% below the 2003 output.

#### **2.1.1.3. Medicinal and aromatic crops**

The areas under the major medicinal and aromatic crops (oil rose, lavender, mint and coriander) were 64 453 ha in 2003. This is an increase of 18 602 ha (41%) since 2002. The output in 2003 was 52 027 tons which was 4 108 tons on top of 2002 (8.57% growth). The slower pace of output growth compared to the area increase in 2003 can be mainly attached to worsened climate conditions.

#### **2.1.1.4. Vegetables**

In 2003 open field vegetable growing occupied about 127 000ha. Compared to 2002 it has decreased in terms of acreage by 6.3 %.

The major part of open field vegetables belonged to potatoes, tomatoes, peppers, water melons and beans. The areas under tomatoes and peppers have grown by 7 % and 5.4 % respectively compared to the previous year while potato planted areas gone down by 43 %.

**Table II.17.**  
**Main area under vegetables from harvest 2003**

Growing types	Unit	Area under vegetables 2003
---------------	------	----------------------------

<b>Open-air</b>	ha	<b>121 360</b>
Under glass	ha	343
Under polyethylene	ha	513
<b>Overall greenhouse:</b>	ha	856
Polyethylene and glass tunnels	ha	54
<b>Overall area:</b>	ha	<b>122 270</b>

Source: MAF Agrostistics Directorate

The overall 2003 vegetable output was 1 835 k tons which was 16 % above 2002 levels, a growth mainly occurring thanks to better average yields. Larger output has been achieved for tomatoes – 428 k tons, peppers – 211 000 tons, cucumbers and gherkins – 85 000 tons, water melons – 214 000 tons and cabbage – 138 000 tons.

**Table II.18.**

**Area, output and average yield of the main vegetable varieties of harvest 2003**

Vegetables	Open-air	Output (tons)		Average yields
	(ha)	Total	Open-air	(t/ha)
<b>I. Fruit vegetables</b>				
Tomatoes	15 579.4	428 165	398 054	25.550
Peppers	13 627.0	210 894	208 629	15.310
Chili peppers	271.6	2 982	2 306	8.490
Aubergines	1 317.6	32 465	32 452	24.630
Cucumbers and gherkins	3 970.8	85 305	56 107	14.130
Pumpkins	1 349.8	15 752	15 752	11.670
Watermelons	10 761.3	214 054	214 042	19.890
Melons	4 348.5	48 099	48 094	11.060
Sweet corn	666.3	2 559	2 559	3.840
<i>Other fruit vegetables (vegetable marrow gumbo )</i>	1 522.3	22 814	22 769	-
<b>II. Legumes</b>				
Green beans	1 966.1	14 234	14 195	7.220
Green peas	760.9	1 537	1 537	2.020
Green broad beans	75.2	407	407	5.410
<b>Dry vegetables</b>				
Dry beans	11 877.6	11 403	11 402	0.960
Lentils	2 061.0	2 679	2 679	1.3
Chick peas	5 810.2	4 939	4 939	0.850
Other dry vegetables	10.1	12	12	
<b>III. Brassicas</b>				
Cabbage	5 315.1	138 318	138 033	25.970

<i>Other brassicas (salads, lettuce, spinach, parsley, celery, savory, parsnip, dill, cauliflower, collards, kale, Brussels sprouts, kohlrabi, broccoli, green onions, green garlic)</i>	37 30.8	45 307	44 760	
<b>IV. Root crops</b>				
Potatoes	29 754.4	450 214	450 186	15.130
Carrots	991.4	19 670	19 669	19.840
Bulb onions	5 351.1	42 274	42 274	7.900
Bulb garlic	804.3	3 885	3 885	4.830
Leeks	910.5	13 273	13 102	14.390
Seed onions	289.2	1 704	1 703	5.890
<i>Other root crops ( turnip, radish, red beet, celery, parsnip)</i>	8210	8 144	8 093	
<b>V. Strawberries</b>	2536.7	11 212	11 212	4.420
<b>VI. Cultivated mushrooms</b>		1 808		
<b>VII. Other vegetables</b>	231.0	550	550	
<b>Total:</b>	<b>126 711.2</b>	<b>1 834 487</b>	<b>1 769 400</b>	

Source: MAF Agrostistics Directorate

\* The total area includes areas under second crops

**Table II.19.**  
**Vegetables output, harvest 2003, by “planning areas”**

Regions	Tomatoes	Peppers	Cucumbers	Potatoes	Pumpkins	Water melons	Melons	Straw-berries
<b>Open field (ha)</b>								
<b>North-Western</b>	330.9	328.9	110.9	900.6	106.1	597.1	336.9	183.6
<b>North-Central</b>	1 445.8	782.8	475.6	2 071.5	162.8	1 686.9	784.8	397
<b>North-Eastern</b>	2 631.6	2 322.4	1 236	2 791.3	246.6	5 207.1	2 087.6	648.8
<b>South-Eastern</b>	1 859.1	1 359.6	614.9	1 752.5	158.6	790.1	290.2	112.4
<b>South-Central</b>	6 835.5	6 913.6	929.4	12 259.9	376.7	2 115.6	696.9	881.7
<b>South-Western</b>	2 476.5	1 919.7	604	9 978.6	299	364.5	152.1	312.7
<b>National total</b>	<b>15 579.4</b>	<b>13 627</b>	<b>3 970.8</b>	<b>29 754.4</b>	<b>1 349.8</b>	<b>10 761.3</b>	<b>4 348.5</b>	<b>2 536.2</b>
<b>Output (tons)</b>								
<b>North-Western</b>	14.059	3 019	2 751	21 641	1 491	5 343	2 417	529
<b>North-Central</b>	27.302	8 296	5 613	22 407	1 756	30 871	12 056	1 429
<b>North-Eastern</b>	36 376	43 568	11 057	43 223	729	79 669	18 564	2 537
<b>South-Eastern</b>	43 735	22 564	9 052	25 660	2 567	14 511	4 219	189
<b>South-Central</b>	220 005	109 001	16 968	184 171	5 324	74 562	8 171	4 470
<b>South-Western</b>	56 577	22 181	10 666	153 082	3 885	9 086	2 667	2 061
<b>National total</b>	<b>398 054</b>	<b>208 629</b>	<b>56 107</b>	<b>450 184</b>	<b>15 752</b>	<b>214 042</b>	<b>48 094</b>	<b>11 212</b>



Average yields (tons/ha)								
North-Western	424.9	91.8	248.1	240.3	140.6	89.5	71.7	28.8
North-Central	188.8	106	118	108.2	107.9	183	153.6	35.9
North-Eastern	138.2	187.6	89.5	154.8	29.6	153	88.9	39.1
South-Eastern	235.2	1 66	147.2	146.4	161.9	183.7	145.4	16.7
South-Central	321.9	157.7	182.6	150.2	141.3	352.4	117.2	50.7
South-Western	228.5	115.5	176.6	153.4	129.9	249.3	175.4	65.9
National total	<b>255.5</b>	<b>153.1</b>	<b>141.3</b>	<b>151.3</b>	<b>116.7</b>	<b>198.9</b>	<b>110.6</b>	<b>44.2</b>

*Continued*

Region	Green beans	Green peas	Green broad beans	Dry beans	Lentils	Cabbage	Bulb onions	Bulb garlic
Open-air (ha)								
North-Western	53.10	24.3	-	498.7	79.7	139.5	271.1	25.3
North-Central	170	107.7	4.4	1 018.7	435.5	388.7	593.7	66.4
North-Eastern	212.10	132	18	4 436.6	1 378.4	1 016.5	1 544.6	349.5
South-Eastern	225.2	76.6	36.1	507.4	97.5	671.5	1 399.6	149.2
South-Central	688.3	290.6	16.7	2 607.1	60.7	2 098	973.4	177.5
South-Western	617.4	129.7	-	2 809.1	9.2	1 000.9	568.7	36.4
National total	<b>1 966.1</b>	<b>760.9</b>	<b>75.2</b>	<b>11 877.6</b>	<b>2 061</b>	<b>5 315.1</b>	<b>5 351.1</b>	<b>804.3</b>
Output (tons)								
North-Western	<b>232</b>	<b>55</b>	<b>-</b>	<b>298</b>	<b>35</b>	<b>5 657</b>	<b>3 840</b>	<b>156</b>
North-Central	1 765	132	46	588	385	11 384	4 697	237
North-Eastern	1 434	521	92	4 104	2 142	21 145	9 587	1 566
South-Eastern	1 310	110	202	221	52	12 260	9 768	904
South-Central	4 846	320	67	4 907	62	57 600	9 656	829
South-Western	4 608	399	-	1 284	3	29 987	4 726	193
National total	<b>14 195</b>	<b>1 537</b>	<b>407</b>	<b>11 402</b>	<b>2 679</b>	<b>138 033</b>	<b>42 274</b>	<b>3 885</b>
Average yields (tons/ha)								
North-Western	43.7	22.6	-	6	4.4	4 05.5	141.6	61.7
North-Central	103.8	12.3	104.5	5.8	8.8	292.9	79.1	35.7
North-Eastern	67.6	39.5	51.1	9.3	15.5	208	62.1	44.8
South-Eastern	58.2	14.4	56	4.4	5.3	182.6	69.8	60.6
South-Central	70.4	11	40.1	18.8	10.2	274.6	99.2	46.7

<b>South-Western</b>	74.6	30.8	-	4.6	3.3	299.6	83.1	53
<b>National total</b>	<b>72.2</b>	<b>20.2</b>	<b>54.1</b>	<b>9.6</b>	<b>13</b>	<b>259.7</b>	<b>79</b>	<b>48.3</b>

*Source: MAF Agrostistics Directorate*

### 2.1.1.5. Fruit

#### Orchards

The major fruit varieties in the country are: plums, cherries, apples, apricots, peaches and walnuts. Together they occupy 87.4 % of the overall area under fruit trees in the country.

The young fruit bearing plantations (0 – 5 years) take a mere 4 % of the overall orchard area whereas the decommissioned ones occupy 20 % of harvested orchards.

In terms of performance and phyto-sanitary condition younger plantations are profitable and healthy whereas older harvested ones vary from satisfactory to well-performing.

In 2003, there was a growing interest in walnut and raspberry plantations ushered in by better performance of these products on both the domestic and the international market.

#### **Area**

Harvested orchards diminished by 26.4 % in the transition from 2002 to 2003. This was mainly the result of uprooting decommissioned orchards.

Among the fruit varieties, the largest area in 2003 was again occupied by plum trees trailed by walnuts, cherries, apples, apricots and peaches.

**Table II.20.**  
**Area of harvested orchards in 2003**

Regions	(hectares)										Total
	Apples	Pears	Apricots	Peaches and nectarines	Plums	Cherries	Morellos	Walnuts	Rasp-berries	Other fruits	
North-Western	184	23	93	79	304	34	67	374	77	61	1 296

North-Central	425	36	264	781	5 496	451	179	432	307	49	8 420
North-Eastern	562	54	3 977	370	1 149	496	467	2 194	356	141	9 766
South-Eastern	772	33	59	1 195	356	1 197	44	448	14	969	5 087
South-Central	2 165	60	92	477	2 947	1 505	627	2 410	276	763	11 322
South-Western	603	152	45	754	660	1 360	95	79	79	46	3 873
<b>National total</b>	<b>4 711</b>	<b>358</b>	<b>4 530</b>	<b>3 656</b>	<b>10 912</b>	<b>5 043</b>	<b>1 479</b>	<b>5 937</b>	<b>1 109</b>	<b>2 029</b>	<b>39 764</b>

Source: MAF, Agrostatistics Directorate

## Output

149 300 tons of fruits were produced in 2003, which is 9.2 % more than 2002 when low atmospheric temperatures in March and April led to blossom and bud freezing and reduced output of apples, apricots, peaches, cherries and walnuts.

Fruit production in 2003 was concentrated in the South-Central region that gave 36.8 % of the fruit output, the North-Eastern occupied a distant second with 22.1 %, followed by the North-Central with 13.5 %, the South-Western with 13.8 % and the South-Eastern region with 11.9 % of the total output.

The foremost producers of plums, apples, cherries, morelloes, peaches and walnuts were the South-Central, North-Eastern, South-Eastern and North-Central regions.

Best average yields in 2003 were achieved for apples, apricots, peaches, plums, cherries and walnuts thanks to good weather. Climatic conditions in terms of blossoming and budding varied widely between 2002 and 2003, which makes the comparison between the two years tricky in economic development terms.

**Table II.21.**  
**Fruit output, harvest 2003**

(tons)											
Regions	Apples	Pears	Apricots	Peaches and nectarines	Plums	Cherries	Morelloes	Walnuts	Raspberries	Other fruits	Total
North-Western	687	85	44	68	1 522	12	96	91	244	29	<b>2 878</b>
North-Central	2 109	87	637	2 117	13 604	635	250	147	664	119	<b>20 369</b>
North-Eastern	3 951	138	17 152	1 850	4 371	667	839	2 387	1 587	313	<b>33 255</b>
South-Eastern	7 167	30	98	7 697	637	2 628	42	282	51	344	<b>18 976</b>
South-Central	21 011	61	406	1 893	21 412	4 907	1 674	3 071	1 377	1 672	<b>57 484</b>
South-Western	3 447	634	190	2 919	4 818	8 394	207	51	160	86	<b>20 906</b>
<b>Total:</b>	<b>38 372</b>	<b>1 035</b>	<b>18 527</b>	<b>16 544</b>	<b>46 364</b>	<b>17 243</b>	<b>3 108</b>	<b>6 029</b>	<b>4 083</b>	<b>2 563</b>	<b>153 868</b>

Source: MAF, Agrostistics Directorate

**Table II.22.**  
**Average yields of fruits for harvest 2003**

(kg/ha)									
Regions	Apples	Pears	Apricots	Peaches and nectarines	Plums	Cherries	Morellos	Walnuts	Raspberries
North-Western	3 728	3 647	469	859	5 006	369	1 447	243	3 181
North-Central	4 961	2 443	2 415	2 712	2 475	1 410	1 397	341	2 162
North-Eastern	7 034	2 565	4 313	5 008	3 805	1 344	1 796	1 088	4 459
South-Eastern	9 285	895	1 658	6 440	1 790	2 195	961	630	3 658
South-Central	9 704	1 015	4 441	3 964	7 267	3 259	2 671	1 274	4 986
South-Western	5 715	4 180	4 179	3 872	7 298	6 172	2 171	643	2 012
<b>Total:</b>	<b>8 145</b>	<b>2 892</b>	<b>4 090</b>	<b>4 525</b>	<b>4 249</b>	<b>3 419</b>	<b>2 102</b>	<b>1 016</b>	<b>3 680</b>

Source: MAF, Agrostistics Directorate

### 2.1.2. Animal breeding

The dynamics of animal breeding in 2003 is characterized by stability and a clear-cut drive towards exporting to the European markets.

There is a trend of increasing the share of professional livestock holdings rearing 20.7% of the overall number of cattle, 35.8% of buffalos, 15.4% of sheep, 4.1% of goats and 39.2% of pigs in the country in 2003.

The total number of bovine animals has grown by 5.4% in 2003, with cow numbers staying at approximately the same level  $\pm 0.6\%$ . There is a growth of 3.6% in pig numbers and 19.6% in poultry. This increase in numbers has led to higher overall yields of cow's and buffalo's milk as well as to a 12.5% growth in red meat output. The number of animals slaughtered in abattoirs and on-farm has also increased by 8.2%.

**Table II.23.**  
**Number of animals by type and year**

Number of animals	01.11.2002	01.11.2003	01.11.2004 (projected)
Bovine - total	691 225	728 336	737 000
including cows	375 977	378 182	384 000
Buffalos - total	7 489	7 875	8 300

including buffalo cows	3 927	4 542	4 700
Sheep - total	1 728 357	1 598 556	1 500 000
including ewes	1 379 061	1 278 759	1 290 000
Goats - total	754 472	725 308	725 000
including she-goats	619 466	592 572	620 000
Pigs - total	996 481	1 032 300	1 065 000
including sows	75 936	78 878	82 000
Poultry - total	18 138 205	21 690 985*	21 700 000
including laying hens	8 162 190	9 550 000*	9 550 000
Equine (horses, donkeys, mules, hinnies )	262 073	242 817*	230 000
Rabbits	252 916	352 193*	430 000
Bee families	310 928	459 178*	450 000

Source: MAF, Agrostatistics Directorate, \*NVS

**Table II.24.**  
**Output of animal origin products, 2002-2004**

Product	2002	2003	2004 projected
<b>milk - total (tons), comprising:</b>	1 508 621	1 504 010	1 566 640
cow's milk	1 305 912	1 308 525	1 350 000
buffalo's	4 410	5 276	5 500
sheep's	93 479	88 679	100 140
goat's	104 820	101 530	111 000
<b>meat - total in carcass weight (tons), comprising:</b>	<b>168 945</b>	<b>171 212</b>	<b>173 015</b>
beef	23 804	28 726	40 000
sheep and goat meat	19 620	19 367	19 000
pork	61 784	70 644	64 000
poultry meat*	63 709	52 462	50 000
rabbit meat*	28	13.3	15
eggs (in thousands)	1 650 000	1 700 000	1 700 000
wool (tons)	6 500	6 500	6 500
bee honey (tons)	5 400	8 500	8 000

Source: MAF, Agrostatistics Directorate

\*commercial output

**Table II.25.**  
**Commercial output of meat, 2002-2003**

(tons)

Type of meat	2002	2003
beef	7 923	9 036
sheep and goat meat	7 464	9 071
pork	41 029	51 706
poultry meat	63 709	52 462
<b>Total</b>	<b>120 125</b>	<b>122 275</b>

Source: MAF, Agrostistics Directorate

### 2.1.2.1. Cattle and buffalos

Cattle breeding provides 87% of the overall national milk output. Over the last few years there has been a trend of stabilising and further enlarging the existing bigger cattle farms yet as a whole the sector still remains predominantly small-scale and fragmented. The overall number of cattle in 2003 was 728 336. Output has increased by 5.4% compared to the previous year. By 1 November 2003, there were 378 182 cows, which is 0.6% on top of the previous year, out of them 361 846 milk cows. In 2003, 57.9% of the milk cows were bred in holdings having 1-2 cows, 28.1% - in holdings having 3-19 cows, and 14% - in holdings of 20 and more cows. The number of cattle reared in farms having more than 50 milk cows was 24 240, which constituted 6.7% of their overall number.

In terms of regional distribution, the greatest percentage of cows are bred in the South-Central region – 33.8%, followed by the North-Eastern region – 21.0% and the North-Central region – 14.7%,

**Table II.26.**  
**Number of cattle by region – 2002-2003**

Region	cattle-total			including cows		
	1.11.2002	1.11.2003	%	1.11.2002	1.11.2003	%
North-Western	55 620	49 686	- 10.7	32 578	26 480	- 19.7
North-Central	77 087	113 104	+ 46.7	38 720	55 709	+ 43.9
North-Eastern	119 072	161 467	+ 35.6	61 974	79 281	+ 27.9
South-Eastern	46 879	76 112	+ 62.3	25 321	39 025	+ 54.1

South-Central	321 677	239 030	- 25.7	177 875	127 891	- 28.1
South-Western	70 892	88 934	+ 25.4	39 500	49 797	+ 26.1
<b>National total</b>	<b>691 226</b>	<b>728 334</b>	<b>+ 5.4</b>	<b>375 977</b>	<b>378 182</b>	<b>+ 0.6</b>

Source: MAF, Agrostistics Directorate

Cow's milk yields over the last few years have shown consistent grow. 1 308 525 tons of milk were produced in 2003, with average annual yields per head of 3 715 litres across professional holdings and 3 510 for smaller household-type breeders.

The positive dynamism in cattle-herding is largely due to activated selection and reproductive activities designed to improve the breed structure of the national heard, to improve average yields as well as raise the fat contents of milk.

**Table II.27.**  
**Milk yields of controlled breeds – 2002-2003**

Breed	Yield kg	Yield kg	Growth %	Fat content %	Fat content %	Growth %
	2002	2003		2002	2003	
Friesland-Holstein	4 574	4 853	+ 6.1	3.4	3.75	+ 0.3
Brown	4 039	4 253	+ 5.3	3.88	3.91	+ 0.8
Red Friesland-Holstein	5 827	5 296	- 9.1	4.06	4.11	+ 1.2
Simmental crosses	3 503	3 924	+ 12.0	3.95	3.95	0.0
Bulgarian Rhodope cattle	3 818	3 795	- 0.6	4.76	4.71	- 1.1

Source: Executive Agency for Livestock Selection and Reproduction

In 2003 the number of cows under controlled selection has grown by 5.2% to reach 24 546, which exceeded 2002 numbers by 1 220 cows and constituted 6.8 % of the total number of cows in the country.

**Table II.28.**  
**Breed structure of controlled herds**

Breed	Share %
-------	---------

Friesland-Holstein	74.0
Brown	17.9
Red Friesland-Holstein	1.0
Simmental and cross-breeds	2.5
Bulgarian Rhodope	3.6
Other	1.0

*Source: Executive Agency for Livestock Selection and Reproduction*

Until late 2003, there were 307 registered dairy operations in Bulgaria, with 20 out of them being approved for exporting to the EU.

The last few years have seen a growing interest in buffalo-breeding in the country. Buffalos' proven productive qualities and the rich genetic potential of the Bulgarian Murra breed offer opportunities for further expansion of the sector.

In 2003 the overall number of buffalos nationwide was 7 875, including 4 542 buffalo cows. The rise in the number of buffalos was 5.2% compared to the same period in 2002. The highest numbers of buffalos were reared in the South-Central region – 29.1%, followed by the North-Central region – 25.3% and the North-Western region – 17.7% of all buffalos in the country.

2003 has seen the following increases in the number of buffalo cows by “planning areas” compared to 2002: North-Central – by 175 %, South-Western – by 200%, North-Eastern – by 33 %.

44.5% of the overall number of buffalo cows are kept in holdings of 1-2 cows.

The buffalo's milk produced during the past year was 5 275 t, which was 19.6% compared to 2002.

45% (2 316 000 litres) of the total milk output was produced in the North-Central region.

Selection in buffalo livestock is based on 767 cows. The average milk yield of the pure-bred buffalo cows was 1 898 kg, with 7.28 % average fat content.



According to data from the Agrostatistics Directorate of the Ministry of Agriculture, 177 600 cattle and buffalos have been slaughtered in 2003 in abattoirs and on-farm, with the total meat output being 28 727 t of carcass weight. The commercial output was 9 036 t - 14.1% more than the output in 2002.

The number of bovine animals slaughtered on-farm has grown to 125 500 in 2003 which is by about 4.5% on top of 2002. As a result, on-farm carcass meat output has grown by 3 810 t.

The bolstered bovine meat output can be attributed to the strengthened share of meat breeds in the herd, with the numbers of cattle belonging to such breeds going up to 16 336 in 2003.

Of the overall number of slaughtered animals, 5.8% were bovine, with the meat amounting to 28 727 t. It constitutes 24.2% of the overall national red meat output.

In comparison with 2002, meat output from bovine animals went up by 20.7%, with the average carcass weight being 173.4 kg in industrial establishments and 162.1 kg for animals slaughtered on-farm.

**Table II.29.**  
**Meat output for 2002 and 2003**

Types of animals	Industrial output – carcass weight (tons)			Meat produced on-farm (tons)		
	2002	2003	%	2002	2003	%
Calves	4 680	5 033	+ 7.5	13 241	12 979	- 2.0
Total cattle	7 866	9 021	+ 14.7	15 783	19 491	+ 24.0
Buffalos	57	15.3	- 72.9	98	200	+ 104.1
Total bovine	7 923	9 036	+ 14.1	15 881	19 691	+ 24.0

*Source: MAF, Agrostatistics Directorate*

#### **2.1.2.2. Sheep and goats**

Sheep and goats breeding provides livelihood to major portions of the population across the country's rural areas.

In 2003, the sheep and goats national flock was distributed the following way:

- 78.1% of ewes and ewe-lambs were reared in holdings of up to 50 animals, 301 900 ewes and ewe-lambs (21.9% of their overall number) were reared in holdings of over 50 animals;
- 96.1% of she-goats were reared in holdings of up to 50 animals whereas the holdings of over 50 animals raised a mere 3.9% of the total number of she-goats, or 24 500 animals.

The figures show that the share of she-goats taken care of at holdings having over 50 animals each was much smaller than the share of ewes kept at such farms.

By early November 2003, the total number of sheep was 7.5% lower against the same period in 2002, which should be put down to the diminishing number of sheep in small holdings (by 8.6%). The same trend was in place in terms of ewe numbers where the decline was 7.3%.

Table II.30 displays the regional distribution of sheep for 2002 and 2003. The South-Central and the North-Eastern regions remained the areas breeding the highest numbers of sheep in the country. Compared to 2001-2002 the decline in sheep numbers across the North-Central region was reversed to a growth by 47.2%,

**Table II.30.**  
**Number of sheep by regions 2002-2003 (in thousands)**

Region	Sheep - total			Out of them, ewes		
	1.11.2002	1.11.2003	%	1.11.2002	1.11.2003	%
North-Western	241.1	174.2	-27.7	204.9	143.2	-30.1
North-Central	106.0	156.0	+47.2	90.8	130.4	+43.6
North-Eastern	431.6	413.7	-4.2	341.6	326.1	-4.5
South-Eastern	266.4	208.3	-21.8	194.8	176.5	-9.4
South-Central	431.3	423.0	-1.9	346.9	326.1	-6.0

South-Western	252.0	223.4	-11.3	200.1	176.5	-11.7
<b>National total</b>	<b>1728.4</b>	<b>1598.6</b>	<b>-7.5</b>	<b>1379.1</b>	<b>1278.8</b>	<b>-7.3</b>

Source: MAF, Agrostatistics Directorate

2003 saw a decline of the overall number of goats by about 4%, of she-goats by 4.3% as well as a number of goat-herding operations diminishing by 2.7%. A closer look into the data reveals the decline is caused by the dwindling number of subsistence farms herding 3.1 goats on the average. Professional farms have significantly increased in number whereas the average number of goats reared in them has gone down to 15.3 on the average.

Goat numbers by regions have also seen some developments. In the North-Central, South-Central and South-Western regions there were more goats in 2003 compared to the same period of 2002. This has been related with stronger local traditions, better infrastructure and availability of locally produced fodder.

**Table II.31.**  
**Number of goats by regions 2002- 2003 (in thousands)**

Region	Goats - total			Out of them, she-goats		
	1.11.2002	1.11.2003	%	1.11.2002	1.11.2003	%
North-Western	150.4	82.3	-45.3	134.6	66.3	-50.7
North-Central	62.1	125.4	+102.2	51.9	102.4	+97.3
North-Eastern	152.8	136.6	-10.6	117.3	112	-4.5
South-Eastern	118.9	100.9	-15.1	87.3	82.4	-5.6
South-Central	152.7	158	+3.5	129.0	129.3	+0.2
South-Western	117.6	122.1	+3.8	99.4	100.2	+0.8
<b>National total</b>	<b>754.5</b>	<b>725.3</b>	<b>-3.9</b>	<b>619.4</b>	<b>592.6</b>	<b>-4.3</b>

Source: MAF, Agrostatistics Directorate

Sheep and goat milk constituted 12.7% of the overall milk output in 2003. Sheep's milk output amounted to 88 679 t - 5.1% below the 2002 output. This has been related to the reduced number of milk-yielding sheep and the relatively high number of small-scale farms, where average yields were far from the best for the breeds.

In terms of breeds under selection control, the foremost among them is the milk breed, followed by fine fleece and the aboriginal breeds.

**Table II. 32.**  
**Breeds of controlled ewes**

<b>№</b>	<b>Breed types</b>	<b>Share %</b>	<b>Number</b>
1.	Fine-fleece	9.7	6 650
2.	Semi fine-fleece	1.6	1 124
3.	Tsigai	4.9	3 381
4.	Dairy	76.3	52 229
5.	Meat	0.9	590
6.	Multiple offspring	0.2	172
7.	Aboriginal	6.4	4 354
	<b>Total</b>	<b>100.0</b>	<b>68 500</b>

*Source: Executive Agency for Livestock Selection and Reproduction*

Compared to 2002, 2003 has seen an increase in the number of ewes /by about 50%/ and improved milk yield across thoroughbred flocks /by 9.9 litters/. The average annual milk yield per control ewe was 65.8 l, the wool yield was 3.7 kg, and fertility 126.1 %.

Sheep and goat meat output from animals slaughtered in abattoirs and on-farm together was 19 367 t carcass weight and constituted 16.3% of the national red meat output. Business operations have slaughtered 22.5% sheep more than last year while livestock farms have produced 2.3% less meat than 2002. This is the reason behind the overall decline in sheep and goat meat output. The lambs, kids, sheep and goats slaughtered on-farm tend to have smaller live weight than those killed in slaughter houses. This is due to the fact that the on-farm produced meat is predominantly used for household subsistence rather than for the market, and the lowest cost is not a crucial objective for such breeders.

### **2.1.2.3. Pigs**

Pig breeding accounts for more than half of the total national meat output. In 2003 the overall number of pigs was 1 032 300 which is a 3.6% rise against 2002. A 4% growth is seen in sow numbers reaching 78 878 in 2003.

Pig numbers are highest in North-Eastern, North-Central and South-Central region. The table below displays a 31% growth in sow numbers in the South-Eastern region, a 25%

growth of sows in the North-Central region and a 7.6% growth in the South-Western region, whereas the South-Central, North-Eastern and North-Western region have undergone falling sow numbers since 2002.

**Table II.33.**  
**Number of pigs by regions in 2002 and 2003**  
**(in thousands)**

Region	Pigs-total			Sows		
	1.11.2002	1.11.2003	%	1.11.2002	1.11.2003	%
North-Western	158.3	84.6	-46.6	6.3	6.2	-1.6
North-Central	143.7	212.7	+48.0	13.4	16.8	+25.4
North-Eastern	334.1	291.1	-12.9	25.2	23.8	-5.6
South-Eastern	110.9	153.8	+38.7	7.3	9.6	+31.5
South-Central	159.7	180.7	+13.1	14.5	12.6	-13.1
South-Western	89.8	109.4	+21.8	9.2	9.9	+7.6
Bulgaria	996.5	1 032.3	+3.6	75.9	78.9	+4.0

*Source: MAF, Agrostistics Directorate*

Professional pig-herders reared 42.3% of the sows with an average sow number per farm at 25 animals. The rest of the sows are kept by smaller holdings having an average number of 2 sows.

2003 has seen a substantial growth in adult and young reproduction sow numbers - from 93 660 in 2002, up to 105 277 in 2003.

The marking and registration of sows and boars across nucleolus and reproduction herds kicked off in 2003. A programme for the marking of the entire national pig herd is under way in 2004.

Selection in pig breeding is based on 14 700 pure-bred sows. The fertility of the reproduction herds has been improved from 9.4 in 2002 to 9.8 live-born piglets in 2003. A total of 12 850 young male and female pigs were tested in 2003.

The following breeds have been placed under selection monitoring:

- ✓ Large White – 42%
- ✓ Landrace - 30%
- ✓ Danubian White – 24%

- ✓ Duroc - 3%
- ✓ East-Balkan – 1%

The key reproduction standards are:

- ✓ average fertility of basic and controlled sows - 9.7 piglets per litter, and 9 piglets at delivery and on the 21 day;
- ✓ infant mortality – 7.6%;
- ✓ subcutaneous fat at 90 kg of weight for:
  - boars 32 mm at 180 days;
  - female pigs 32.8 mm at 189 days.

Selection in the pig sector has been aimed at increasing the share of lean meat in view of successfully adopting the EUROP system for carcass classification.

Pork output in 2003 was 70 644 tons. Out of them 51 706 tons was produced in abattoirs and 18 938 tons in private holdings. Compared to 2002, pork meat production had grown by 14.3%, with slaughtered animal numbers shooting upwards for both slaughter houses and small holdings. The declining amounts of pork produced on-farm has been due to poorer carcass weight of animals slaughtered this way.

#### **2.1.2.4. Poultry breeding**

Poultry breeding and processing of poultry meat in 2003 developed towards meeting the country's commitments to adopt European standards for the quality and safety of consumer products. Large-scale establishments both in breeding and processing rearing approximately 3.5 million of the country's layers as well as some of the processing facilities laid the foundation of the sector's restructuring utilizing both their own funding and assistance from pre-structural SAPARD funds.

In 2003 the trend was carried on to develop poultry production on the basis of the genetic pool maintained by research institutes /for hens and turkeys/ as well as by using 1-day

stock and parent forms aimed at lowering costs and improving the quality of production.

The overall number of poultry by 1 November 2003 was 19.6% higher compared to the same period of 2002, which was based on larger numbers of layers (by 17%) and broilers for fattening. Across the other poultry species- turkeys, geese, ducks, ostriches, quails – numbers remained constant.

Industrially produced eggs accounting for 60% of the overall output have strengthened in 2003, with the average productivity per hen reaching 300 eggs at an average feed input of 140 grams per egg. These results evidence the improving organisation of operations in egg poultry achieved through maintaining appropriate temperatures at breeding facilities, the exploitation of highly productive hybrids and better balanced diets.

Poultry meat occupies the largest share of the overall commercial meat output – 34 %.

A total of 34 834 000 birds were slaughtered in white meat abattoirs in 2003, which is about 25.6 % less than the 2002 numbers. The poultry meat produced out of them amounted to 47 392.2 t of carcass weight, with the meat from broilers, hens and roosters accounting for 88 % of the above overall quantity. A positive development is a higher average live weight of broilers to be slaughtered (1.8 kg) following an average fattening period lasting from 33 to 42 days. This has been the outcome of more effective rationing and the wider introduction of highly productive hybrids.

The meat from waterfowl was 13.8% of the overall poultry meat quantity produced whereas turkey meat constituted a mere 0.3% of the overall output. This low percentage was due to the small number of turkey parent flocks, which are currently incapable of satisfying the demand on behalf of direct consumers and the processing industry, even though turkey meat output in 2003 was 80% on top of the 2002 production.

**Table II.34.**

**Poultry meat output in 2002 and 2003 (tons)**

Type of poultry	Industrial output - carcass weight
-----------------	------------------------------------

	<b>2002</b>	<b>2003</b>	<b>%</b>
Broiler chickens	57 332.10	40 594.1	- 29.2
Hens and roosters	1 443.00	1 037.9	-28.1
Turkeys	87.00	156.1	+79.4
Geese and ducks	4 847.20	5 604.1	+15.6
<b>Total</b>	<b>49 859.30</b>	<b>47 392.2</b>	<b>+4.9</b>

*Source: MAF, Agrostistics Directorate*

Commercial poultry breeding in 2004 is expected to:

- ✓ Carry on the stabilising trend in terms of productive flock numbers and the output thereof for the two major hen output types – of eggs and of broiler meat.
- ✓ Maintain import levels for one-day ducklings and goslings, and
- ✓ Keep up the output levels of fattened goose liver;
- ✓ Increase the ostrich meat output aimed at setting foot on the EU market;
- ✓ Promote demand and increase domestic consumption of eggs and poultry products within the range of 2.5 - 3%.

No decline in poultry output is anticipated for 2004 across subsistence family farms where about 2/3 of laying hens are bred. These birds are extensively reared to good quality organic eggs are produced, mainly for household consumption.



#### **2.1.2.5. Horse breeding**

Horses are domestically used for the following purposes:

- ✓ For farm work – over 98% of horses are used to work across fields and forests;
- ✓ For sports and entertainment - horses are used for the classical racing and hurdle disciplines as well as for less formal events;
- ✓ For amateur riding and hiking;
- ✓ For meat production – this is a new and promising business in view of existing demand for exporting live horses to be slaughtered for meat and the existence of an abattoir in the country licensed for exports of equidae meat to the European union.

By data of the National Veterinary Service, there were 242 817 horses in the country by early November 2003, which constituted 92.7% of the horse herd for the same period in 2002. Over 99% of the horses are bred in the private sector, with only a part of the national gene pool being maintained in public units.

It is expected that in 2004 the downward trend for the number of horses and donkeys will continue due to the ever wider adoption of machinery the relatively large number of animals annually exported. Mules and hinnies are traditionally used as irreplaceable beasts of burden in the rugged terrain of highland areas, which makes their numbers more sustainable in such areas.

In 2003, 5 990 horses were exported outside the country at an overall value of BGN 15 109 768, as well as 2 910 donkeys, mules and hinnies for an overall of BGN 2 958 502. Out of these numbers, there were 265 horses for reproduction, mostly of the Purebred Arab, Shagya Arab and Eastern Bulgarian breeds. The international market for the Purebred Arab and Shagya Arab was flung open following Bulgaria's joining the international associations for maintaining those breeds, like WAHO and ISG. In 2003, the country was given an inspection by a commission of the International Stud Book Committee of the English thoroughbred /ISBC/. The negotiations on Bulgaria's full membership in ISBC are expected to close in 2004,

Horse selection work is based on 1 520 horses of 12 breeds. The National Horse Breeding Association attracts an increasing number of private owners into rearing higher class breed horses in accordance with the adopted selection programmes.

The first project in the area of horse breeding under the SAPARD programme started in 2003 with an overall value of 975 223 BGN.

#### **2.1.2.6. Bee keeping**

In 2003 apiculture has kept its priority status in Bulgarian livestock production.

Heightened interest in beekeeping was based on:

- The export orientation of the sector and good profits in foreign currency;
- Profitability for commercially operating professional apiarists;
- Government support provided to the sector through capital subsidies and preferential loans through State Fund Agriculture;
- Opportunities provided by the sector for improving the livelihoods and gaining additional income to people in disadvantaged rural areas.

According to the National Veterinary Service data, in 2003 the number of bee families was 459 178, which is 47.7 % on top of the 2002 number. This reported growth is due to the larger quantity of families covered by the beehive registration process.

Honey production has strengthened compared to the previous year and was in excess of 8 500 t. as estimated by experts. Good weather brought about a longer blossoming of nectar-giving vegetation and a better foraging for bees, which resulted in higher honey yields.

In 2003, the State Fund Agriculture funded the creation of a reference apiary designed to test the variety of origins belonging to the gene pool. The operation is aimed to close the

cycle of seeking economically profitable origins, putting them to business exploitation and establishing the practice of using thoroughbred queens of proven origin and qualities.

Nine queen-producing hives were approved in 2003, out of which one was approved for the production of “elite” queens, six were approved for “thoroughbred” queens and two for producing swarms. Over 12 000 thoroughbred queens were produced to satisfy the demand of beekeeping operations.

Pursuant to the Apiculture Act, the Ministry of Agriculture issued a number of ordinances in 2003 regulating the production and marketing of elite and thoroughbred queens and swarms, the protection of bees and bee families against poisoning as well as honey sampling and testing methods.

The expectations are that in 2004 bee family numbers will be preserved and incrementally enlarged, beekeeping facilities will be modernised and state-of-the-art technologies introduced to the sector.

#### **2.1.2.7. Sericulture**

The main thrust of activities in the silkworm sector in 2003 was related to silkworm seed production and national gene pool population maintenance.

The main preparers of silkworm seed again were the Regional Centre for Scientific and Applied Service – Vratsa and Svila AD, Haskovo.

The Centre in Vratsa produced an overall of 868 containers of silkworm seed in 2003 to be reared in 2004, comprising 165 containers of race seed /superelite and elite/ and 703 containers of industrial seed /F1 hybrid/.

Svila AD, Haskovo produced an overall of 327 containers of silkworm seed in 2003 comprising 22 containers of elite seed and 305 containers of hybrid seed.

In 2003 no silkworm seed has been handed out for commercial manufacturing of raw cocoons.

Approximately 1 300 000 mulberry trees grow in Bulgaria. More than 95 % of them are single tall trees on roadsides or within residential areas. This tree stock is sufficient for manufacturing about 20 000 containers of silkworm seed for spring feeding and another 5000containers for autumn feeding and for the production of 500 t of raw cocoons.

The absence of functioning processing facilities and the low buy-in price of raw cocoons are the major factors hindering the sector's revival.

#### **2.1.2.8. Rabbit breeding**

The interest in rabbits remained solid in 2003, with a growing number of farmers keen to set up up-to-date facilities and use advanced breeding and selection methods. The interests and opportunities of expanding the sector are based on the following factors:

- suitable climate;
- an advantageous and sustainable demand for alternative types of meat;
- traditions in rabbit husbandry;
- good quality pure breed and hybrid reproduction material.

In 2003, a parent farm for the four-line ZIKA was admitted to the National Rabbit Breeding Gene Pool. ZIKA is a key meat-yielding hybrid, reared in West Europe farms.

The Bulgarian overall rabbit meat output for 2003 was below 2002 levels, at about 2 500-3 000 t. The meat output from rabbits processed in slaughter-houses was 13.3 t for 2003, by data of MAF's Agro- statistics Directorate, which is below the2002 output by 53.2%.

Two specialized rabbit slaughter-houses were functioning in 2003 (in the villages of Gulliantsi and Tsalapitsa) as well as two lines for slaughtering rabbits for the domestic market.

The major stumbling blocks on the road to further growth in the sector are:

- the lack of a licensed slaughter-house meeting EU requirements;
- stagnant domestic demand;
- insufficient nationwide traditions in rabbit meat consumption;
- absence of an EU approved plan for monitoring rabbit meat production.

The developments which should be expected in rabbit husbandry is the transition from being, as it currently is in most cases, a by-operation providing additional income to another major occupation, as well as finding market niches both domestically and abroad.

## **2.2. Prices**

### **2.2.1. Crop prices**

#### **2.2.1.1. Buy-in cereals prices, wholesale and retail prices of flour and bread**

##### **Wheat**

###### Bread wheat (common/soft wheat)

In 2003/04 the buy-in prices of bread wheat started from levels of 160 - 210 BGN/ton, which was higher compared to the previous year by about 63 BGN/ton. An upward trend for prices started shaping earlier in the year, with the average monthly price for July of 195 BGN/ton reaching levels of 348 BGN/ton in January 2004. The growth rate of the average monthly prices over the period July 2003 - January 2004 was from 6 to 23 %, with the most dramatic single increase seen in August against July 2003 (from 195 up to 239 BGN/ton).

The key factors behind the intensive growth of the buy-in prices of wheat over the first two quarters of the marketing year was the poor 2003 harvest and the higher prices across

international markets, especially in Western and Central Europe and the Black Sea region.

Aimed at stabilising the cereals market and securing the domestic wheat consumption, the Bulgarian government has adopted a number of policies:

- Ordinance of the Council of Ministers No 164 of 25.07.2003 increased the charges payable for quality control of exported cereals;
- Ordinance of the Council of Ministers No 193 of 05.09.2003 imposed a temporary ban on wheat and flour exports over the period 30.09.2003 - 31.07.2004;
- Decision of the Council of Ministers No 613 of 05.09.2003 released 100 000 t of wheat from the State Reserve, out of which 30 000 t were fodder and 70 000 t were bread wheat. The grain was traded on the commodity exchange;
- Decision of the Council of Ministers No 801 of 19.11.2003 released another 100 000 t of State Reserve wheat, to be traded on the commodity exchange;
- A duty free flour imports were allowed over the period 01.01.2004 - 30.06.2004.

Government action has affected positively the domestic cereals market, from the consumer point of view. It has led to reducing and stabilising prices at lower levels along the wheat - flour – bread chain.

Over the period February - June 2004 the prices of bread wheat went down from 348 BGN/ton to 320 BGN/ton.

The reduction of wheat buy-in prices is mainly due to the imports of wheat and flour which stirred up supply and competition on the market.

The average price of bread wheat for the marketing 2003/04 was 299 BGN/ton which is 142 BGN/ton higher compared to the average 2002/03 price.

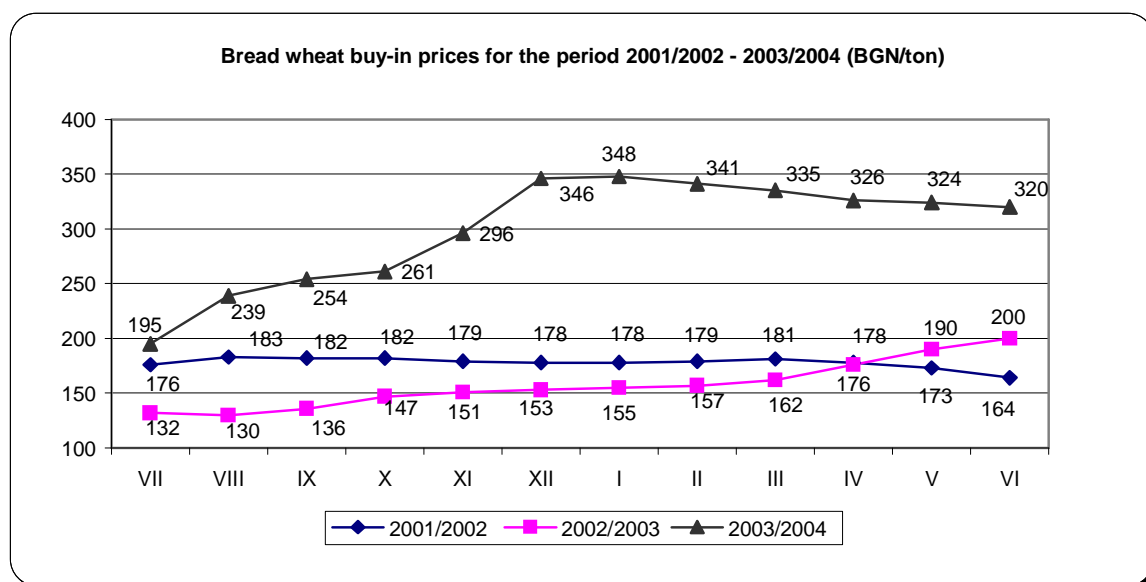
**Table II. 35.**

**Buy-in prices of bread wheat over the period 2001/2002 – 2003/2004**

	Measure unit	VII	VIII	IX	X	XI	XII	I	II	III	IV	V	VI	Average price
<b>2003/2004</b>	BGN/ton	195	239	254	261	296	346	348	341	335	326	324	320	299
	USD/ton	113	136	146	156	177	217	225	220	210	200	199	199	182
<b>2002/2003</b>	BGN/ton	132	130	136	147	151	153	155	157	162	176	190	200	157
	USD/ton	67	65	68	74	77	80	84	86	90	98	113	119	84
<b>2001/2002</b>	BGN/ton	176	183	182	182	179	178	178	179	181	178	173	164	178
	USD/ton	77	84	85	84	81	81	80	80	81	80	81	80	81

Source: SAMI

**Figure II.19.**



An increased wheat production is expected for the new marketing 2003/04 based on weather conditions favourable for the development of autumn crops.

The buy-in campaign for harvest 2004 started with prices of bread wheat within the range of 160 - 180 BGN/ton, with a downward trend. These are the key price suppressing factors:

1. A much better harvest projected for 2004 in comparison with that of the previous year;
2. A relatively low value of the U.S. currency, at about 1.6 BGN to the dollar;
3. The forecasted increase in wheat output worldwide.
4. The strong supply of wheat in the Black Sea region at prices lower than those on other international markets.

#### Fodder wheat

The prices of fodder wheat from harvest 2003 started at levels of about 150-200 BGN/ton, which is by approximately 10 BGN/ton below those of bread wheat. The increased trend for the buy-in prices of bread wheat influenced the dynamics of fodder wheat prices as well. During the first quarter of the marketing year the average monthly price of fodder wheat went up from 167 BGN/ton to 223 BGN/ton. In a situation governed by the poor wheat output, no deals with fodder wheat were reported over the following five months of the marketing year. Wheat stocks were offered mainly as bread wheat at prices substantially higher than those fetched by fodder wheat.

In March 2004, the average monthly price level was at 300 BGN/ton. Unlike bread wheat prices, which were in a depressed state during those months, fodder wheat ones reached 327 BGN/ton by the end of May. In May fodder wheat prices were higher than those of bread wheat by about 3 BGN/ton.

The average price of fodder wheat for the marketing 2003/04 was 257 BGN/ton - 118 BGN/ton on top of that for 2002/03.

#### **Table II. 36.**

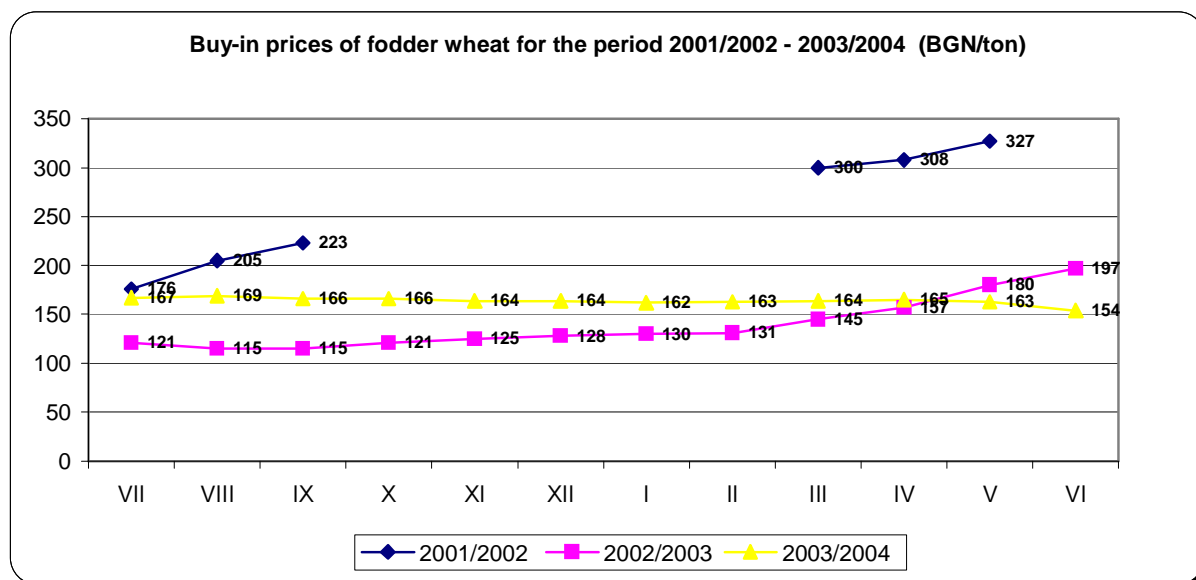
#### **Buy-in prices of fodder wheat over the period 2001/2002 – 2003/2004**



	Measure unit	VII	VIII	IX	X	XI	XII	I	II	III	IV	V	VI	Average price
<b>2003/2004</b>	BGN/ton	176	205	223	-	-	-	-	-	300	308	327	-	257
	USD/ton	102	117	128	-	-	-	-	-	188	189	201	-	154
<b>2002/2003</b>	BGN/ton	121	115	115	121	125	128	130	131	145	157	180	197	139
	USD/ton	61	58	58	61	64	67	71	72	80	87	107	118	74
<b>2001/2002</b>	BGN/ton	167	169	166	166	164	164	162	163	164	165	163	154	164
	USD/ton	73	78	77	77	75	75	73	73	73	74	76	75	75

Source: SAMI

**Figure II.20.**



## Flour and bread

The trend of increasing prices of bread wheat earlier in the marketing 2003/04 put an upward pressure on flour prices.

The average monthly wholesale price of flour „type 500” went up from 374 BGN/ton to 670 BGN/ton over the period July - December 2003.

Following the introduction of duty-free imports of flour at the beginning of 2004, the prices of flour were set on a downward course, with the average monthly wholesale price by the end of the marketing year (June 2004) was 578 BGN/ton, which was by 92 BGN/ton below the December 2003 price. The influx of imported flour at prices substantially lower than those of domestically produced flour was the factor causing the shrinking of wholesale flour prices during the first two quarters of 2004.

The average wholesale price of type 500 flour for the marketing 2003/04 was 555 BGN/ton and was by 215 BGN/ton higher compared to 2002/03. The average monthly price of type 700 flour for July 2003 was 334 BGN/ton, but in December it was up to 643 BGN/ton, an increase of 309 BGN/ton or 92 %. The introduction of duty-free imports sent the wholesale price of flour type 700 tumbling until the end of the marketing year in June 2004 when it was 89 BGN/ton lower at levels about 554 BGN/ton.

The average wholesale price of flour type 700 over the period July 2003 - June 2004 was 526 BGN/ton, which was higher by 219 BGN/ton in comparison with the price for the marketing 2002/03.

A trend was shaping throughout the marketing 2003/04 of reducing price margins down the wheat-flour-bread chain. The average ratio between buy-in wheat prices and 500 type flour wholesale prices for the marketing 2003/04 was down 0.31 times the same ratio in 2002/03 (from 2.17 down to 1.86 times). This comes to show that the buy-in prices of bread wheat have grown faster compared to the wholesale prices of 500 type flour.

By SAMI data, wholesale and retail prices of the basic types of bread, “Stara Zagora White” and “Dobrudja” - have gone up by 22-25 % in the course of the marketing 2003/2004.

“Stara Zagora White”

During the marketing 2003/04 the highest average monthly prices of white bread were reported in December 2003 and January 2004, with the wholesale price of white bread being 0.89 BGN/kg while the retail was 0.98 BGN/kg. The average prices increased by 0.23 BGN/kg wholesale and by 0.25 BGN/kg retail or by about 35 % in comparison with the beginning of marketing year.

Since February 2004, a sustainable trend set in of prices gradually going down as a result of lower prices of flour. The average monthly wholesale and retail prices in June 2004 were below the December 2003 ones by 0.07 BGN/kg or by about 7-8 %.

Contrasting the average wholesale and retail price of white bread over the marketing 2003/04 to these for 2002/03 shows an increase of approximately 33 %.

#### *“Dobrudja”*

The average monthly wholesale price of Dobrudja bread was at its peak in December 2003 - 0.81 BGN/kg, which was a 0.21 BGN/kg increment on top of the July 2003 price. Since the beginning of 2004 a monthly drop of 0.01 – 0.02 BGN/kg was taking place, with the average monthly price for June 2004 was by 0.06 BGN/kg or by 8 % below the average for December 2003.

The retail prices levels for Dobrudja bread take their lead from wholesale prices and trail their dynamics. The average monthly retail price was at its highest in December 2003 – 0.89 BGN/kg. For the sake of contrast, it was an increase of 0.22 BGN/kg or 33 % since the beginning of the marketing year. Over the edge of 2003 and into 2004, as it was with the wholesale prices, the average monthly retail prices slid by 0.01 – 0.02 BGN/kg month on month, with the resulting price in June below that for December 2003 by 0.07 BGN/kg.

The average wholesale and retail prices of Dobrudja bread for the marketing 2003/04 were higher by about 23 % than those for the marketing 2002/03.

In terms of the ratio between the retail price of white bread and the buy-in price of wheat, it has drastically gone down from 4.59 to 2.96 times over the period of transition from the marketing 2002/03 to 2003/04. Such a ratio is critically lower than common price relations down the wheat-flour-bread chain, which typically keep in the vicinity of 1:2:4. It is a reflection of weak demand and fierce competition in bread manufacturing and retail.

**Table II. 37.**  
**Wholesale and retail prices of flour and bread over the period 2002/03 – 2003/04**

2003/2004	Measure	VII	VIII	IX	X	XI	XII	I	II	III	IV	V	VI	Average price
<b>I. Flour</b>														
<i>1. Type 500 flour</i>														
- wholesale price	BGN/ton	374	439	471	495	582	670	649	625	605	589	586	578	555
- retail price	BGN/kg	0.55	0.59	0.62	0.65	0.70	0.85	0.86	0.85	0.82	0.80	0.81	0.81	0.74
<i>1. Flour type 700</i>														
- wholesale price	BGN/ton	334	405	439	458	546	643	620	597	580	568	565	554	526
<b>II. Bread</b>														
<i>1. Stara Zagora White</i>														
- wholesale price	BGN/kg	0.66	0.70	0.72	0.72	0.78	0.89	0.89	0.87	0.85	0.84	0.82	0.82	0.80
- retail price	BGN/kg	0.73	0.78	0.81	0.82	0.87	0.98	0.96	0.95	0.94	0.93	0.92	0.91	0.88
<i>2. Dobrudja</i>														
- wholesale price	BGN/kg	0.60	0.63	0.65	0.65	0.70	0.81	0.80	0.79	0.77	0.76	0.75	0.75	0.72
- retail price	BGN/kg	0.67	0.70	0.73	0.73	0.78	0.89	0.87	0.86	0.85	0.84	0.82	0.82	0.80
<b>2002/2003</b>														
<b>I. Flour</b>														
<i>1. Type 500 flour</i>														
- wholesale price	BGN/ton	367	345	344	338	330	327	328	327	328	335	347	361	340
- retail price	BGN/kg	0.58	0.57	0.55	0.55	0.54	0.53	0.53	0.53	0.53	0.5	0.52	0.53	0.54
<i>2. Flour type 700</i>														
- wholesale price	BGN/ton	336	313	308	304	296	295	297	298	299	303	313	320	307
<b>II. Bread</b>														
<i>1. Stara Zagora White</i>														
- wholesale price	BGN/kg	0.66	0.66	0.66	0.66	0.65	0.64	0.64	0.62	0.64	0.64	0.65	0.66	0.65
- retail price	BGN/kg	0.73	0.73	0.73	0.73	0.72	0.72	0.71	0.69	0.72	0.72	0.72	0.73	0.72
<i>2. Dobrudja</i>														
- wholesale price	BGN/kg	0.60	0.60	0.60	0.60	0.59	0.58	0.58	0.56	0.59	0.59	0.58	0.59	0.59
- retail price	BGN/kg	0.66	0.66	0.66	0.66	0.65	0.65	0.65	0.63	0.66	0.66	0.65	0.66	0.65
- wholesale price	BGN/kg	0.60	0.60	0.60	0.61	0.61	0.60	0.60	0.60	0.61	0.60	0.59	0.60	0.60
- retail price	BGN/kg	0.65	0.65	0.66	0.66	0.67	0.66	0.66	0.66	0.67	0.66	0.65	0.66	0.66

Source: SAMI

## Maize

The buy-in prices of maize of the 2003 harvest started at levels of 190-250 BGN/ton. The marketing 2003/04 unfolded a trend of increasing maize prices, with the average monthly buy-in prices of ascending from 210 BGN/ton in September 2003 to 283 BGN/ton in August 2004, which is an increase of 73 BGN/ton. Over the period 01 September 2003 – 31 August 2004 the buy-in prices of maize were at their peak in June and July 2004, at 310 BGN/ton and 308 BGN/ton respectively.

For the marketing 2003/04 the average buy-in price of maize for grain went up by 84 BGN/ton in comparison with the price for the marketing 2002/03.

The major factor for the swelling of maize prices was the reduced output of other grains and fodder crops of the 2003 harvest and hence the hungrier demand for maize as a substitute for wheat and barley as livestock feed.

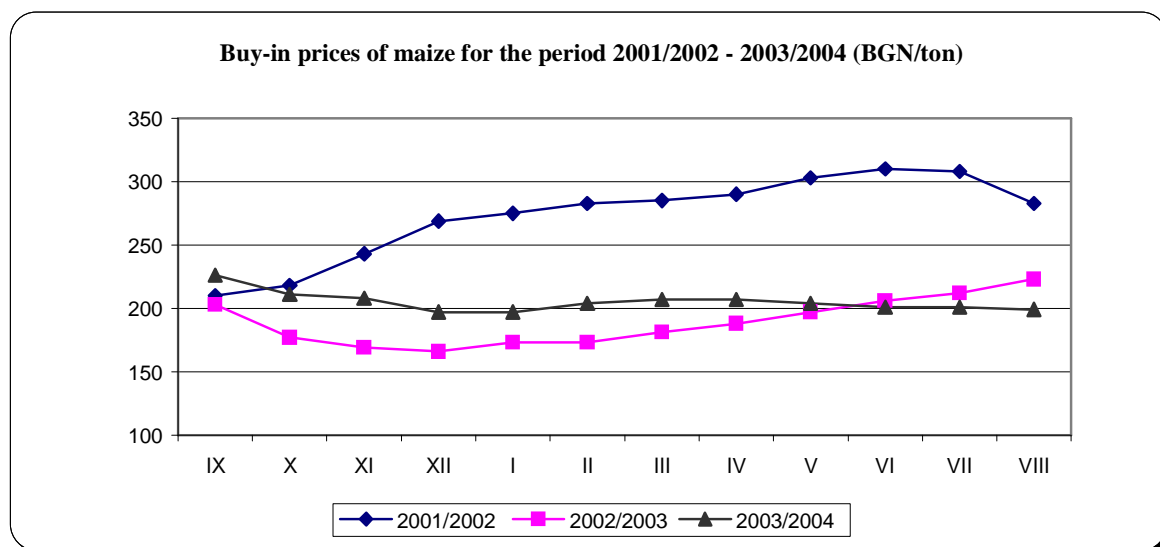
Throughout the marketing 2003/04, regardless of the dramatic increase, maize prices were substantially lower compared to other cereals.

**Table II. 38.**  
**Buy-in price of maize over the period 2001/2002 - 2003/04**

	Measure unit	IX	X	XI	XII	I	II	III	IV	V	VI	VII	VIII	Average price
<b>2003/2004</b>	BGN/ton	210	218	243	269	275	283	285	290	303	310	308	283	273
	USD/ton	120	130	145	169	177	183	179	178	186	192	193	176	169
<b>2002/2003</b>	BGN/ton	203	177	169	166	173	173	181	188	197	206	212	223	189
	USD/ton	102	89	87	86	94	95	100	104	117	123	123	127	104
<b>2001/2002</b>	BGN/ton	226	211	208	197	197	204	207	207	204	201	201	199	205
	USD/ton	106	98	95	90	89	91	93	93	96	98	102	100	96

Source: SAMI

**Figure II.21.**



## Barley

The marketing 2003/04 saw a consistent upward trend for the buy-in prices of fodder barley. Purchasing the harvest 2003 barley started at prices of 135-200 BGN/ton, with the average monthly price for July 2003 being 170 BGN/ton, which exceeded the price for the marketing 2002/03 by 50 BGN/ton. The average monthly prices of barley for the marketing 2003/04 have shot up by 140 BGN/ton, from 170 BGN/ton in July 2003 up to 310 BGN/ton in June 2004.

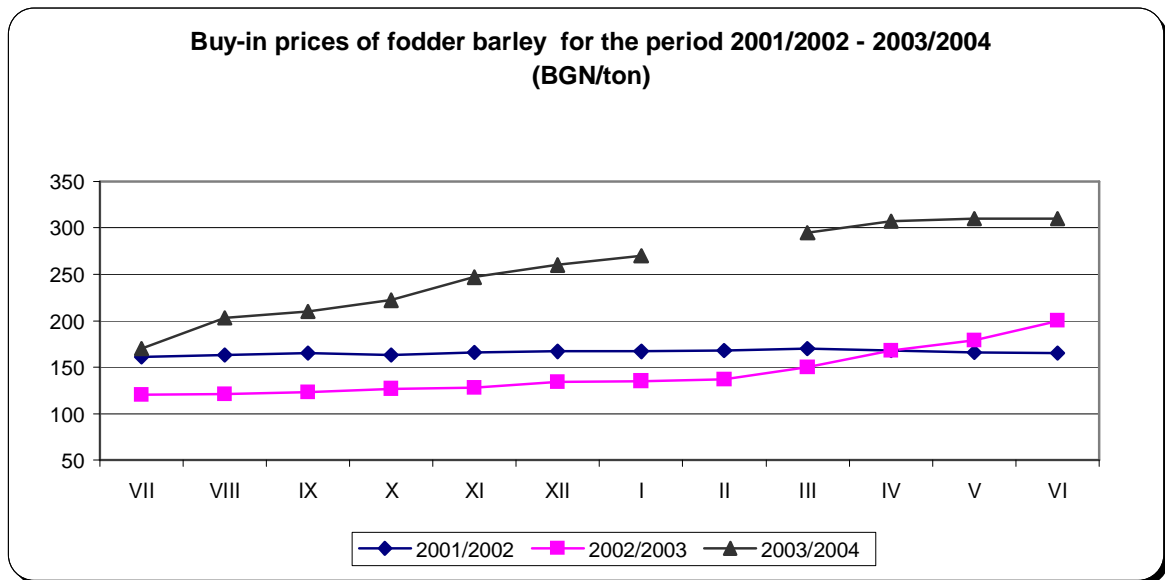
Higher barley prices are the outcome of dwindling supply following a poor crop yield in 2003 and price hikes worldwide.

**Table II. 39.**  
**Buy-in prices of fodder barley over the period 2001/02 – 2003/04**

	Measure unit	VII	VIII	IX	X	XI	XII	I	II	III	IV	V	VI	Average price
<b>2003/2004</b>	BGN/ton	170	203	210	222	247	260	270	-	295	307	310	310	255
	USD/ton	99	116	120	133	148	163	174	-	185	188	190	192	155
<b>2002/2003</b>	BGN/ton	120	121	123	127	128	134	135	137	150	168	179	200	144
	USD/ton	61	61	62	64	66	70	73	75	83	93	106	119	77
<b>2001/2002</b>	BGN/ton	161	163	165	163	166	167	167	168	170	168	166	165	166
	USD/ton	71	75	77	76	75	76	75	75	76	76	78	80	76

Source: SAMI

**Figure II.22.**



### 2.2.1.2. Prices of sunflower and sunflower oil

#### Sunflower

The marketing 2003/2004 started with prices of oil sunflower keeping at levels of 321 BGN/ton, which is 12.5% less than the prices of the previous year. In circumstances of fierce competition among vegetable oil processors and exporters, by late November 2003 the prices of sunflower climbed up to 392 BGN/ton while at the same time almost the entire harvest was bought in.

In December some flower prices hit their highest level of 393 BGN/ton, but the following month saw them going down to 367 BGN/ton. Since dealing was insignificant over the period February - August 2004, the buy-in prices of oil sunflower were not monitored by SAMI.

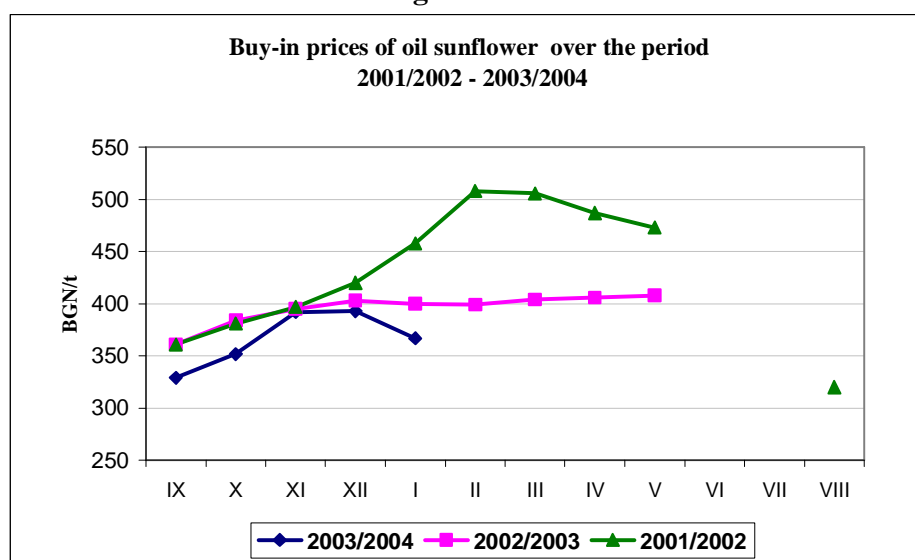
The average buy-in price of black sunflower in the economic 2003/2004 was 367 BGN/ton - 7.9% on top of the price in 2002/2003.

**Table II.40.**  
**Buy-in prices of oil sunflower in 2001/2002 - 2003/2004**

	Measure unit	IX	X	XI	XII	I	II	III	IV	V	VI	VII	VIII	Average
2003/2004	BGN/t	329	352	392	393	367	-	-	-	-	-	-	-	367
	USD/t	188	210	234	246	237	-	-	-	-	-	-	-	223
2002/2003	BGN/t	361	384	395	403	400	399	404	406	408	-	-	-	396
	USD/t	181	193	202	209	217	202	223	225	242	-	-	-	210
2001/2002	BGN/t	361	381	397	420	458	508	506	487	473	-	-	320	431
	USD/t	169	177	180	192	207	226	214	220	222	-	-	160	197

Source: SAMI

**Figure II.23.**



Taking into account the areas under black oil sunflower (projected 5 500 000 decares) sown in the spring of 2004, as well as the expected higher average yields of about 130-140 kg/decare, the harvest 2004 output maybe forecast at levels similar to those of the previous year, with buy-in prices of oil sunflower of the new harvest keeping close to those for the economic 2003/2004.



## Sunflower oil

The economic 2003/04 started with retail prices of sunflower oil at 1.94 BGN/litre which however had already gone down to 1.86 BGN/litre by the beginning of October 2003. After a period (the months from November through February) of certain fluctuations between 1.80 and 1.83 BGN/litre, in March 2004 the retail price of sunflower oil settled at 1.81 BGN/litre and stayed at this level until the end of the marketing 2003/2004

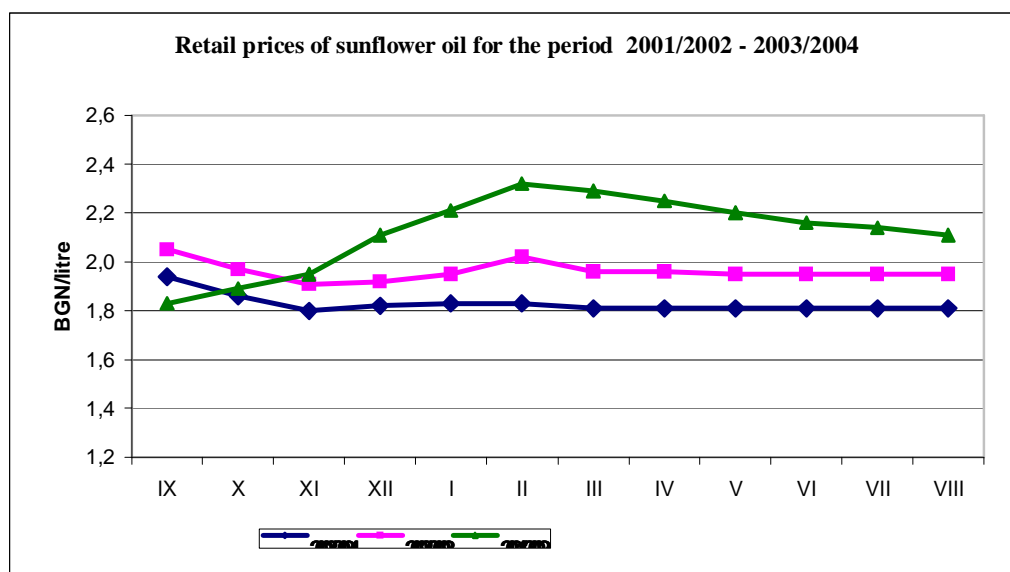
**Table II.41.**  
**Retail prices of sunflower oil in 2000/2001- 2002/2003**

	Measure unit	IX	X	XI	XII	I	II	III	IV	V	VI	VII	VIII	Average
<b>2003/2004</b>	BGN/litre	1.94	1.86	1.80	1.82	1.83	1.83	1.81	1.81	1.81	1.81	1.81	1.81	<b>1.83</b>
<b>2002/2003</b>	BGN/litre	2.05	1.97	1.91	1.92	1.95	2.02	1.96	1.96	1.95	1.95	1.95	1.95	<b>1.96</b>
<b>2001/2002</b>	BGN/litre	1.83	1.89	1.95	2.11	2.21	2.32	2.29	2.25	2.20	2.16	2.14	2.11	<b>2.12</b>

Source: SAMI OOD

The average retail price of sunflower oil in the economic 2003/04 was 1.83 BGN/litre – 7.1% lower than the price of the previous marketing year and 15.8% below the 2001/02 price.

**Figure II.24.**



Retail prices of sunflower oil of the harvest 2004 will be steered by the domestic buy-in prices of sunflower as well as by international vegetable oil prices. Their levels can generally be expected to stay stable into the economic 2004/2005.

### 2.2.1.3. Rice prices

In 2003/2004 the buy-in prices of hull rice kept within the range of 380-400 BGN/ton without VAT maintaining their levels from the previous economic year.

**Table II.42.**

**Buy-in prices of hull rice in 2001/2002 - 2003/2004**

Buy-in prices of hull rice	Measure unit	Average
2003/2004	BGN/ton	400*
2002/2003		400
2001/2002		290

Source: SAMI OOD

\*Projected data

Retail rice prices kept their levels of the past two the economic years which can be attributed to the relatively solid international prices. Bulgaria is a net importer of rice, with domestic output meeting only 30% of internal demand. Hence, both the wholesale and the retail prices in the country are predominantly ruled by the prices of imported rice.

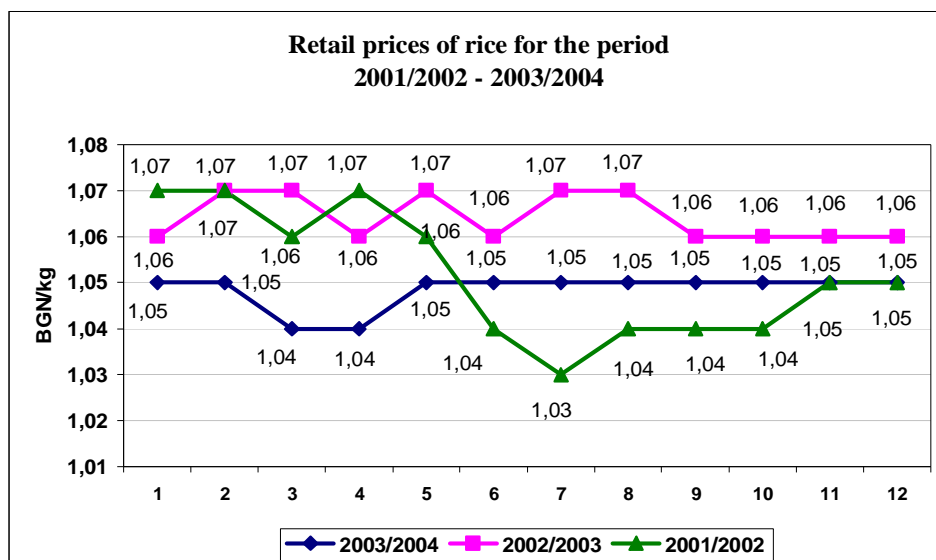
**Table II.43.**

**Retail prices of rice in 2001/2002- 2003/2004**

	Measure unit	IX	X	XI	XII	I	II	III	IV	V	VI	VII	average
2003/2004	BGN/kg	1.05	1.05	1.04	1.04	1.05	1.05	1.05	1.05	1.05	1.05	1.05	<b>1.05</b>
2002/2003	BGN/kg	1.06	1.07	1.07	1.06	1.07	1.06	1.07	1.07	1.06	1.06	1.06	<b>1.06</b>
2001/2002	BGN/kg	1.07	1.07	1.06	1.07	1.06	1.04	1.03	1.04	1.04	1.04	1.05	<b>1.05</b>

Source: SAMI

**Figure II.25.**



#### 2.2.1.4. Prices of tobacco

Raw tobacco is contracted and purchased at minimum buy-in prices by types, origins and classes, which are annually fixed by the Council of Ministers.

**Table II.44.**

**Minimum buy-in prices of tobacco for the year 2003 – 2004**

Tobacco type and place of origin	2003			2004		
	I class BGN/kg	II class BGN/kg	III class BGN/kg	I class BGN/kg	II class BGN/kg	III class BGN/kg
<b>I. Oriental tobacco</b>						
1. Jebel	7.33	5.60	2.28	7.33	5.60	2.28
2. Nevrokop	5.78	4.01	1.77	5.78	4.01	1.77
3. Dupnitsa	5.68	3.69	1.77	5.68	3.69	1.77
4. Melnik	5.47	3.76	1.77	5.47	3.76	1.77
5. Ustina	5.38	3.71	1.77	5.38	3.71	1.77
6. Harmanli	5.51	3.77	1.77	5.51	3.77	1.77
7. Krumovgrad	6.72	4.26	1.77	6.72	4.26	1.77
8. Eastern Balkan Range Area	5.63	3.97	1.77	5.63	3.97	1.77
9. Topolovgrad	5.51	3.77	1.77	5.51	3.77	1.77
10. North Bulgaria	4.12	2.83	1.77	4.12	2.83	1.77
11. Svilengrad	5.69	3.97	1.77	5.69	3.97	1.77

12. Srednogorie Fringe	5.38	3.78	1.77	5.38	3.78	1.77
<b>II. Broadleaf tobacco</b>						
1. Virginia	3.93	2.57	1.10	3.93	2.57	1.10
2. Burley	3.00	1.97	1.22	3.00	1.97	1.22

The average buy-in prices of raw tobacco by type and place of origin are formed on the basis of minimum buy-in prices and the quality of the harvest.

**Table II.45.**

**Average buy-in prices of tobacco over the period 2001 – 2003**

Tobacco type and origin	Average buy-in price - BGN/kg			Chain index for the dynamics of average buy-in prices	
	Harvest 2001	Harvest 2002	Harvest 2003	2002 versus 2001	2003 versus 2002
<b>I. Oriental tobacco</b>					
	<b>3.36</b>	<b>3.12</b>	<b>3.92</b>	<b>-7.14</b>	<b>+25.64</b>
1. Jebel	4.43	4.40	5.18	-0.68	+17.72
2. Nevrokop	3.46	3.26	4.06	-5.78	+24.54
3. Dupnitsa	3.00	2.82	3.42	-6.00	+21.28
4. Melnik	2.92	2.67	3.07	-8.56	+14.98
5. Ustina	2.55	2.41	3.30	-5.49	+36.93
6. Harmanli	2.92	2.54	3.28	-13.01	+29.13
7. Krumovgrad	3.76	3.38	4.22	-10.11	+24.85
8. Eastern Balkan Range Area	3.23	3.30	3.58	+2.17	+8.48
9. Topolovgrad	3.08	2.57	3.16	-16.55	+22.96
10. North Bulgaria	2.19	2.04	2.17	-6.85	+6.37
11. Svilengrad	2.92	2.42	3.18	-17.12	+31.41
12. Srednogorie Fringe	2.90	2.31	3.44	-20.35	+48.92
<b>II. Broadleaf tobacco</b>					
1. Virginia	2.76	2.38	2.68	-13.77	+12.61
2. Burley	1.94	1.90	1.93	-2.06	+1.58

Source: Tobacco Fund

Despite the fact that the 2003 minimum buy-in prices maintained their level of the previous year, the average buy-in prices per 1 kg raw tobacco were higher in comparison with 2002:

- for Oriental tobacco – higher by 25.64% on the average, varying from 6.37 % to 48.92 % across origins;
- for Virginia type tobacco – higher by 12.61 %;

- for Burley type tobacco – higher by 1.58 %.

The average buy-in prices of raw tobacco of the 2003 harvest were pushed upwards by the competitive environment characterizing the buying-in campaign as well as by the better quality achieved by tobacco growers in producing and initial processing of raw tobacco.

With the aim of enhancing the competitiveness of Bulgarian tobacco on international markets, the government has adopted a policy of suppressing the growth of minimum buy-in prices, with the increasing cost of inputs being set off by premiums paid out to producers.

**Table II.46.**

**Subsidised producer price of tobacco, harvest 2003 – BGN/kg**

Tobacco type and origin	I class				II class				III class			
	minimum buy-in price		Premium	Price with premium	minimum buy-in price		Premium	Price with premium	minimum buy-in price		Premium	Price with premium
		Including targeted subsidies				Including targeted subsidies				Including targeted subsidies		
<b>I. Oriental tobacco</b>	<b>6.35</b>	<b>1.73</b>	<b>2.53</b>	<b>8.88</b>	<b>4.08</b>	<b>0.70</b>	<b>2.03</b>	<b>6.11</b>	<b>1.78</b>	<b>0.18</b>	<b>1.53</b>	<b>3.31</b>
1. Jebel	7.33	2.50	2.80	<b>10.13</b>	5.60	1.70	2.20	<b>7.80</b>	2.28		1.70	<b>3.98</b>
2. Nevrokop	5.78	2.00	2.60	<b>8.38</b>	4.01	1.10	2.00	<b>6.01</b>	1.77		1.50	<b>3.27</b>
3. Dupnitsa	5.68	2.00	2.60	<b>8.28</b>	3.69	0.90	2.00	<b>5.69</b>	1.77		1.50	<b>3.27</b>
4. Melnik	5.47	2.00	2.70	<b>8.17</b>	3.76	1.00	2.10	<b>5.86</b>	1.77	0.30	1.60	<b>3.37</b>
5. Ustina	5.38	2.00	2.60	<b>7.98</b>	3.71	1.00	2.00	<b>5.71</b>	1.77		1.50	<b>3.27</b>
6. Harmanli	5.51	2.00	2.60	<b>8.11</b>	3.77	1.00	2.00	<b>5.77</b>	1.77		1.50	<b>3.27</b>
7. Krumovgrad	6.72	1.50	2.60	<b>9.32</b>	4.26	0.40	2.00	<b>6.26</b>	1.77		1.50	<b>3.27</b>
8. Eastern Balkan Range Area	5.63	2.00	2.60	<b>8.23</b>	3.97	0.60	2.00	<b>5.97</b>	1.77		1.50	<b>3.27</b>
9. Topolovgrad	5.51	2.00	2.70	<b>8.21</b>	3.77	1.10	2.10	<b>5.87</b>	1.77	0.50	1.60	<b>3.37</b>
10. North Bulgaria	4.12	2.00	2.85	<b>6.82</b>	2.83	1.20	2.25	<b>5.08</b>	1.77	0.80	1.75	<b>3.52</b>
11. Svilengrad	5.69	2.00	2.70	<b>8.39</b>	3.97	1.10	2.10	<b>6.07</b>	1.77	0.80	1.60	<b>3.37</b>
12. Srednogorie Fringe	5.38	2.00	2.60	<b>7.98</b>	3.78	0.90	2.00	<b>5.78</b>	1.77		1.50	<b>3.27</b>
<b>II. Broadleaf tobacco</b>												
1. Virginia	3.93	0.80	2.41	<b>6.34</b>	2.57	0.30	1.96	<b>4.53</b>	1.10	-	1.41	<b>2.41</b>
2. Burley	3.00	0.70	2.90	<b>5.90</b>	1.97	0.30	2.30	<b>4.27</b>	1.22	0.10	1.80	<b>3.02</b>

Source: Tobacco Fund

While the minimum buy-in prices of tobacco for harvest 2003 have kept at roughly the same level as those for harvest 2002, the share of premium in the subsidised price has developed as follows:

- Oriental tobacco: an average increase: for I class, from 27.42% up to 28.49%; for II class, from 31.20% up to 33.22%; and for III class, from 44.03% up to 46.22 %;
- Burley: an average increase: for I class, from 45.45% up to 49.15%, for II class, from 51.00 % up to 53.86 %; and for III class, from 55.15% up to 59.60% by 19.05%;
- Virginia: a average decrease: for I class, from 43.29% down to 38.01%; for II class, from 43.76% down to 43.27%; and for III class, from 64.52% down to 58.50% (to 1.99 BGN/kg).

**Table II.47.**

**Prices to producer on the basis of the average buy-in price and premiums for 2002 and 2003**

Tobacco type and origin	Resulting price to producer, harvest 2002	Including:		End price to producer, harvest 2003	Including:		2003 versus 2002 %
		Average buy-in price 2002	Premium 2002		Average buy-in price 2003	Premium 2003	
<b>I. Oriental tobacco</b>	<b>4.79</b>	<b>3.12</b>	<b>1.67</b>	<b>5.93</b>	<b>3.92</b>	<b>2.01</b>	<b>23.80</b>
1. Jebel	6.31	4.40	1.91	7.39	5.18	2.21	17.12
2. Nevrokop	4.97	3.26	1.71	6.13	4.06	2.07	23.34
3. Dupnitsa	4.47	2.82	1.65	5.36	3.42	1.94	19.91
4. Melnik	4.28	2.67	1.61	5.01	3.07	1.94	17.06
5. Ustina	3.96	2.41	1.55	5.21	3.30	1.91	31.57
6. Harmanli	4.12	2.54	1.58	5.16	3.28	1.89	25.24
7. Krumovgrad	5.08	3.38	1.70	6.23	4.22	2.01	22.64
8. Eastern Balkan Range Area	5.02	3.30	1.72	5.51	3.58	1.93	9.98
9. Topolovgrad	4.15	2.57	1.58	5.12	3.16	1.96	23.37
10. North Bulgaria	3.56	2.04	1.52	4.11	2.17	1.94	15.45
11. Svilengrad	3.95	2.42	1.53	5.11	3.18	1.93	29.37
12. Srednogorie Fringe	3.84	2.31	1.53	5.39	3.44	1.94	40.36
<b>II. Broadleaf</b>							

<b>tobacco</b>							
1. Virginia	4.55	2.38	2.17	4.67	2.68	1.99	2.64
2. Burley	3.79	1.90	1.89	4.18	1.93	2.25	10.29

Source: Tobacco Fund

The resulting price to producer for harvest 2003 has increased compared to 2002 for all three types of raw tobacco:

- for Oriental - by 23.80 %;
- for Virginia - by 2.64 %;
- for Burley - by 10.29 %.

The resulting price to producer for Oriental and Burley tobacco was due to higher average buy-in prices as well as to the beefed-up premium per kilo of handed-in tobacco. In the case of Virginia type tobacco however, the final price has gone up only based on the higher average buy-in price.

#### **2.2.1.5. Wholesale and retail prices of fruits and vegetables**

##### **POTATOES**

In 2003, the average wholesale price of potatoes was 0.52 BGN/kg, which was a 13% increase on the 2002 price. At the same time, the average annual retail price was by 7% higher and reached 0.61 BGN/kg. Mounting costs for storage during the winter season were the reason behind the incremental price growth in the early months of the year. The highest potato price levels were registered in May and June with the depletion of the old harvest and the advent of early domestically produced potatoes fetching much higher prices. In August the local potatoes are already on the market en force combined with the lack of competition on behalf of imports. As a result potato prices go down to levels of 0.42 BGN/kg wholesale and 0.54 BGN/kg retail. The following months see potato prices gradually increasing to reach 0.55 BGN/kg wholesale and 0.62 BGN/kg retail (Table II.49) by late December.

**Table II.48.****Wholesale and retail prices of potatoes in 2002 and 2003**

	Average price 2002	Average monthly prices in 2003												Average price 2003
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Wholesale prices in BGN/kg	0.46	0.46	0.48	0.49	0.53	0.63	0.80	0.43	0.42	0.46	0.50	0.54	0.55	0.52
Retail prices in BGN/kg	0.57	0.55	0.58	0.58	0.62	0.71	0.78	0.57	0.54	0.58	0.60	0.64	0.62	0.61

Source: SAMI

Over the first two quarters of 2004 the average wholesale price of potatoes was 0.49 BGN/kg, which is 12.5 % below the price in the first half of 2003. Price levels for the first quarter of 2004 stand above those for the same period in 2003, mostly as a result of reduced potato output. Wholesale potato prices during the first six months of 2004 on the domestic market were keeping within the range from 0.44 BGN/kg up to 0.53 BGN/kg.

The average retail price for the first half of 2004 was 0.65 BGN/kg while in the first two quarters of 2003 was 0.64 BGN/kg. Monthly prices over the period fluctuated within the span 0.59 - 0.67 BGN/kg. The top average retail price was reported in January and February 2004 – 0.67 BGN/kg. (see Table II.49).

**Table II.49.****Wholesale and retail prices of potatoes for the first six months of 2004**

	Average price I-VI 2003	Average monthly prices for 2004						Average price I-VI 2004
		I	II	III	IV	V	VI	
Wholesale prices BGN/kg	0.56	0.53	0.52	0.50	0.48	0.50	0.44	0.49
Retail prices BGN/kg	0.64	0.67	0.67	0.66	0.66	0.64	0.59	0.65

Source: SAMI

**Bulb onions**

In 2003, that the average wholesale price of bulb onions was 0.64 BGN/kg or by 36.2% higher than the average price for the previous year. The average annual retail price was 0.79 BGN/kg, a 27% growth compared to the same period a year ago (see Table II.50). In May and June when the local output has almost run out and the market is supplied almost



entirely by imports, both wholesale and retail prices for onions were higher, 0.66 - 0.67 BGN/kg and 0.81 – 0.84 BGN/kg respectively. July 2003 saw decreasing prices resulting from the influx of new harvest onions.

**Table II.50.**  
**Wholesale and retail prices of bulb onions in 2002 and 2003**

	Average price 2002	Average monthly prices for 2003												Average price 2003
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Wholesale prices in BGN/kg	0.47	0.45	0.47	0.49	0.57	0.66	0.67	0.57	0.53	0.63	0.75	0.84	0.99	0.64
Retail prices in BGN/kg	0.62	0.57	0.60	0.64	0.72	0.81	0.84	0.74	0.72	0.79	0.92	0.99	1.15	0.79

Source: SAMI

For the first 6 months of 2004 the average wholesale price for onions was 0.85 BGN/kg – by 54.5 % higher compared to the first half of 2003 based on insufficient marked supply. There was a trend of a gradual wholesale prices increase throughout January, February and March, followed by a small depreciation in April and May and an abrupt slump in June.

Retail prices saw a similar development. The average retail prices of bulb onions was 1.10 BGN/kg in the first half of 2004, which is an increase of 57.1 % compared to the same two quarters of 2003. The highest average retail price of bulb onions was reported in January - 1.19 BGN/kg. (see Table II.51)

**Table II.51.**  
**Wholesale and retail prices of bulb onions in the first six months of 2004**

	Average price for I-VI 2003	Average monthly prices for 2004						Average price for I-VI 2004
		I	II	III	IV	V	VI	
Wholesale prices in BGN/kg	0.55	0.96	0.94	0.90	0.89	0.83	0.60	0.85
Retail prices in BGN/kg	0.70	1.19	1.18	1.12	1.12	1.09	0.92	1.10

Source: SAMI

## Tomatoes

By SAMI data, the 2003 average wholesale price for tomatoes was lower than that of the previous year by 5%. The average annual retail prices were also down by 9%. The highest wholesale price level was registered in May - 2.35 BGN/kg whereas the lowest was in August (0.36 BGN/kg). The retail prices followed the same trend: from 2.70 BGN/kg in May down to 0.51 BGN/kg by September. These are typical seasonal fluctuations resulting from locally produced tomatoes of the medium-early and late varieties hitting the market in July, including those for the processing industry, which is followed by further price decreases in the summer quarter. October is usually the month of an incremental price increase, with December's tomatoes coming mainly through imports and wholesale and retail prices reaching 1.31 BGN/kg.

**Table II.52.**  
**wholesale and retail prices of tomatoes in 2002 and 2003**

	Average price 2002	Average monthly prices for 2003												Average price 2003
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Wholesale prices in BGN/kg	1.37	1.68	1.74	1.91	2.20	2.35	1.48	0.61	0.36	0.38	0.55	1.00	1.31	1.30
Retail prices in BGN/kg	1.68	2.19	2.17	2.33	2.49	2.70	1.82	0.81	0.51	0.49	0.62	1.08	1.31	1.54

Source: SAMI

In the first 6 months of 2004, the average wholesale price of tomatoes was 2.01 BGN/kg, which is 6.3 % on top of the price for the first half of 2003. January, February and March saw a gradual price increase followed by a steep climb in April and May whereas the June prices dramatically declined (by 47 %) in comparison with the average price for May. The main reason behind the plummeting prices is the emergence of the locally produced tomatoes of the medium-early varieties as well as the drop of international tomato prices signalling the beginning of the field tomatoes' active season. The peak in average wholesale tomato prices was recorded in May 2004 – 2.59 BGN/kg, a 28.9 % growth against the same month in 2003. Wholesale prices over the first two quarters of 2004 fluctuates within the range of 1.37 BGN/kg - 2.59 BGN/kg.

The average retail prices in the first half of 2004 were higher by 9.6 % than those for 2003. They were limited between 1.75 BGN/kg as the floor and 3.01 BGN/kg as the ceiling price.

**Table II.53.**  
**Wholesale and retail prices of tomatoes in the first six months of 2004.**

	Average price I-VI 2003	Average monthly prices for 2004						Average price I-VI 2004
		I	II	III	IV	V	VI	
Wholesale prices in BGN/kg	1.89	1.69	1.86	2.02	2.54	2.59	1.37	2.01
Retail prices in BGN/kg	2.28	2.15	2.39	2.72	2.96	3.01	1.75	2.50

Source: SAMI

## Cabbage

In 2003 the average wholesale price of cabbage was 0.53 BGN/kg, which is a growth of 2% from the previous year. The average annual retail price kept at the same level as the previous year (0.68 BGN/kg) (see Table). The top wholesale prices in 2003 were in March (0.91 BGN/kg) and April (1.29 BGN/kg). The cabbage offered on the market during those two months is mainly from imports. The following months see a sustained price drop resulting from the advent of domestically produced cabbage. In November and December, the cabbage prices hit rock bottom at 0.18 BGN/kg. Retail prices followed suit. The highest retail price of 1.59 BGN/kg was recorded in April, and the lowest, at 0.22 BGN/kg - in November.

**Table II.54.**  
**Wholesale and retail prices of cabbage in 2002 and 2003**

	Average price 2002	Average monthly prices for 2003												Average price 2003
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Wholesale prices in BGN/kg	0.52	0.63	0.77	0.91	1.29	0.85	0.31	0.37	0.36	0.31	0.23	0.18	0.18	0.53
Retail prices in BGN/kg	0.68	0.85	1.00	1.22	1.59	0.90	0.41	0.48	0.48	0.44	0.32	0.22	0.23	0.68

Source: SAMI

For the first 6 months of 2004 the average wholesale price of cabbage was 0.33 BGN/kg, which was lower by 58.2 % compared to the 0.79 BGN/kg for the first half of 2003. In

January, February and March the prices were consistently going down followed by a substantial increase of 23.5% in April and May against March prices whereas the average monthly price steeply declined (by 36.6% against May) in June. The major factor triggering the price slump was the marketing of the early cabbage varieties, predominantly from domestic produce. The average wholesale cabbage prices moved within the span from 0.26 BGN/kg to 0.42 BGN/kg. The top average wholesale price of 0.42 BGN/kg was recorded in April 2004.

The average retail prices over the first half of 2004 were 52 % lower than the average retail prices in 2003 and kept within the range of 0.37 BGN/kg - 0.64 BGN/kg. (Table II.55.)

**Table II.55.**  
**Wholesale and retail prices of cabbage for the first half of 2004**

	Average price I-VI 2003	Average monthly prices for 2004						Average price I-VI 2004
		I	II	III	IV	V	VI	
Wholesale prices in BGN/kg	0.79	0.27	0.29	0.34	0.42	0.41	0.26	0.33
Retail prices in BGN/kg	1.00	0.40	0.42	0.48	0.60	0.64	0.37	0.48

Source: SAMI

## **Apples**

In 2003, a 16% (to 1.38 BGN/kg) drop in the average wholesale price of apples was registered. The average annual retail price went down by 18% (to 1.53 BGN/kg) compared to 2002 (Table 9). Imported apples were predominantly sold on the market in the period January-May, with wholesale prices keeping within the range between 1.29 BGN/kg and 1.48 BGN/kg while retail prices had levels between 1.49 BGN/kg and 1.78 BGN/kg. The higher prices observed in the months June and July are related to a supply weakened by the depletion of the previous year's harvest. September and October are the apple-picking months in Bulgaria when the soaring supplies depress both wholesale and retail prices, with the former pegging at 1.47 BGN/kg in October, and the latter - at 1.29 BGN/kg. The following months see prices sticking to relatively stable levels, with December's wholesale price at 1.24 BGN/kg, and the retail one – at 1.00 BGN/kg.

**Table II.56.**  
**wholesale and retail prices of apples in 2002 and 2003**

	Average price 2002	Average monthly prices for 2003												Average price 2003
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Wholesale prices in BGN/kg	1.60	1.39	1.31	1.29	1.32	1.48	1.61	1.61	1.36	1.23	1.47	1.30	1.24	1.38
Retail prices in BGN/kg	1.81	1.62	1.52	1.49	1.61	1.78	1.91	1.80	1.59	1.45	1.29	1.30	1.00	1.53

Source: SAMI

In the first 6 months of 2004 the average wholesale price for apples was 1.38 BGN/kg which is 1.4 % below that for the first half of 2003. The average prices were somewhat unstable as a result of hesitant consumer demand and higher import prices during the second quarter of 2004.

Retail prices throughout the same period stayed within the limits 1.32 BGN/kg - 1.94 BGN/kg., with the average price for the first half of 2004 being lower than the average price for 2003 by 6.7 % (see Table II.57)

**Table II.57.**  
**Wholesale and retail prices of apples in 2004**

	Average price for I-VI 2003	Average monthly prices for 2004						Average price for I-VI 2004
		I	II	III	IV	V	VI	
Wholesale prices in BGN/kg	1.40	1.27	1.26	1.21	1.32	1.54	1.68	1.38
Retail prices in BGN/kg	1.65	1.32	1.40	1.46	1.51	1.61	1.94	1.54

Source: SAMI

## **2.2.2. Prices of animal origin products**

### **2.2.2.1. Beef prices**

Beef prices kept relatively stable in 2003, at a level a little below the 2002 prices.

The average buy-in price for calves was 1.60 BGN/kg live weight, which is 6.4% down since 2002. The average annual wholesale and retail prices of beef were down by 3.5 and 5.4% respectively.

The buy-in, wholesale and retail prices of beef alike showed weaker levels during the first seven months of 2003, to experience a partial recovery between August and the end of the year.

**Table II.58.**  
**Beef prices in Bulgaria for 2003 compared to 2002**

	2003												2003 average	2002 average	2003 versus 2002
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII			
Buy-in price, BGN/kg live weight															
Calves	1.68	1.67	1.62	1.61	1.61	1.58	1.55	1.57	1.57	1.58	1.60	1.60	1.60	1.71	-6.4%
Wholesale prices, BGN/kg															
Carcass beef	4.39	4.35	4.29	4.25	4.23	4.18	4.18	4.20	4.21	4.21	4.29	4.30	4.26	4.46	-4.5%
Deboned beef	6.06	6.01	5.81	5.77	5.79	5.73	5.75	5.85	5.85	5.84	5.84	5.85	5.85	6.06	-3.5%
Retail prices, BGN/kg															
Beef on the bone	5.15	5.16	5.13	5.02	4.97	4.92	4.90	4.91	4.92	4.94	4.96	4.96	5.00	5.25	-4.8%
Deboned beef	6.53	6.44	6.34	6.26	6.24	6.21	6.21	6.33	6.30	6.33	6.38	6.41	6.33	6.69	-5.4%

Source: SAMI

During the first half of 2004 beef prices in the country were relatively stable, with an upward trend toward the year end.

The average buy-in price of calves over the first 6 months of the year was 1.60 BGN/kg live weight, which is below the average price for the same period of the previous year by 2.1%. A certain decrease of the wholesale prices of carcass beef (by 0.1%) and of the retail price of beef on the bone (by 0.5%) was recorded as well. The wholesale and retail prices of deboned beef slightly strengthened compared to the first half of 2003 – by 0.9 and 1.9%, respectively.

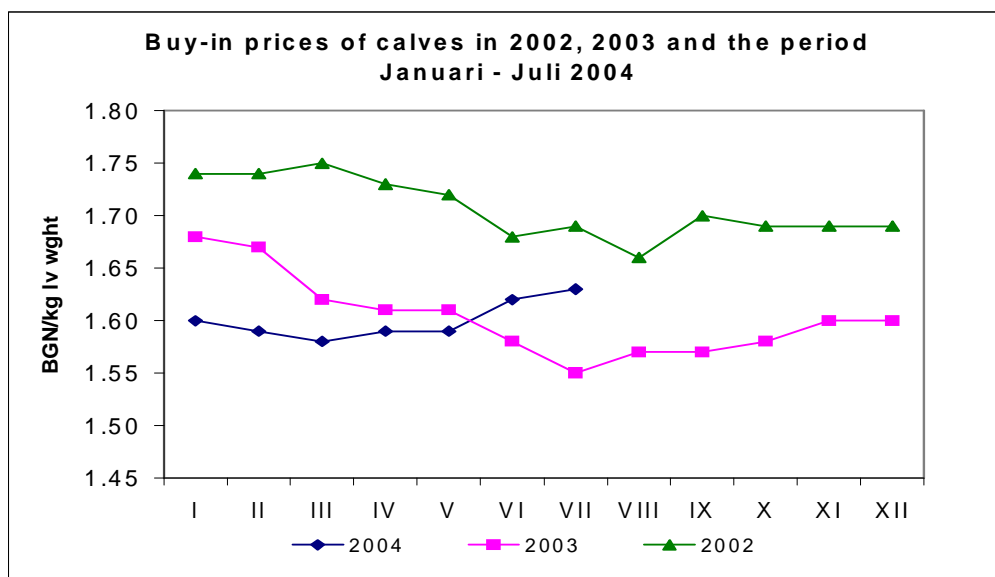
**Table II. 59.**

**Beef prices for the first half of 2004, in comparison with 2003**

	I-VI. 2003 average	2004						I-VI. 2004 average	I-VI. 2004 versus 2003
		I	II	III	IV	V	VI		
<i>Buy-in prices, BGN/kg live weight</i>									
Calves	1.63	1.60	1.59	1.58	1.59	1.59	1.62	1.60	-2.1%
<i>Wholesale prices, BGN/kg</i>									
Carcass beef	4.28	4.28	4.28	4.25	4.24	4.25	4.36	4.28	-0.1%
Deboned beef	5.86	5.84	5.88	5.86	5.92	5.94	6.03	5.91	+0.9%
<i>Retail prices, BGN/kg</i>									
Beef on the bone	5.06	4.99	5.00	5.00	5.04	5.05	5.13	5.04	-0.5%
Deboned beef	6.34	6.44	6.43	6.43	6.45	6.45	6.55	6.46	+1.9%

Source: SAMI

**Figure II.26.**



### 2.2.2.2. Pork prices

In 2003 the prices along the market chain for pork in the country kept below the levels of the previous 2002, with an average decline of between 15 and 23%.

The average buy-in price of fattened pigs for 2003 was 1.58 BGN/kg live weight, a 22.5% drop compared to 2002. The average annual wholesale and retail prices of ham were 5.25 BGN/kg and 5.59 BGN/kg respectively, going down by roughly 15% compared to 2002.

The buy-in, wholesale and retail prices of pork alike have incrementally diminished since the start of the year until June and risen with the start of the second half of July until the year end. Despite this climb, pork prices never reached 2002 levels over the second two quarters of 2003.

During the first 6 months of 2003 pork prices were being depressed by vigorous supply (of both domestic and imported meat) and a withering demand. Price of recovery in the course of the summer months can be mainly attributed to brisk consumption in a strong tourist season. The key factors pushing the prices up over the last quarter of 2003 were the growth of feed cost (accounting for approximately 70% of the overall production cost) as well as the traditional stronger domestic consumption during the winter months.

**Table II. 60.**  
**Pork prices in Bulgaria for 2003, in comparison with 2002**

	2002 average	2003												2003 average	2003 versus 2002
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII		
<i>Buy-in prices, BGN/kg live weight</i>															
Fattened pigs	2.04	1.81	1.74	1.61	1.49	1.41	1.33	1.37	1.61	1.59	1.60	1.65	1.70	1.58	-22.5%
Sows	1.69	1.48	1.41	1.30	1.17	1.11	1.05	1.07	1.23	1.23	1.23	1.25	1.28	1.23	-27.2%
<i>Wholesale prices, BGN/kg</i>															
Skinned pork	4.41	4.02	3.91	3.67	3.52	3.47	3.34	3.36	3.54	3.55	3.56	3.62	3.66	3.60	-18.4%
Ham	6.14	5.86	5.73	5.52	5.31	5.18	4.91	4.90	5.01	5.03	5.07	5.26	5.24	5.25	-14.5%



<i>Retail prices, BGN/kg</i>																
Ham	6.59	6.22	6.08	5.82	5.55	5.38	5.22	5.18	5.43	5.45	5.52	5.59	5.59	5.59	5.59	-15.2%

Source: SAMI

Pork meat prices were relatively stable in Bulgaria from early 2004 until mid-May. They started a gradual increase in the second half of May that went on throughout June.

The average buy-in price for fattened pigs over the first half of 2004 was 1.76 BGN/kg live weight, which exceeded the prices from the same periods of 2003 by 11.9%. The key factor behind this increase were the higher feed prices in 2004. In June, the buy-in price reached an average of 1.96 BGN/kg live weight, which was a hefty 47% on top of the levels a year earlier. This increase was fuelled by the enlivened demand along with the entry into the tourist season.

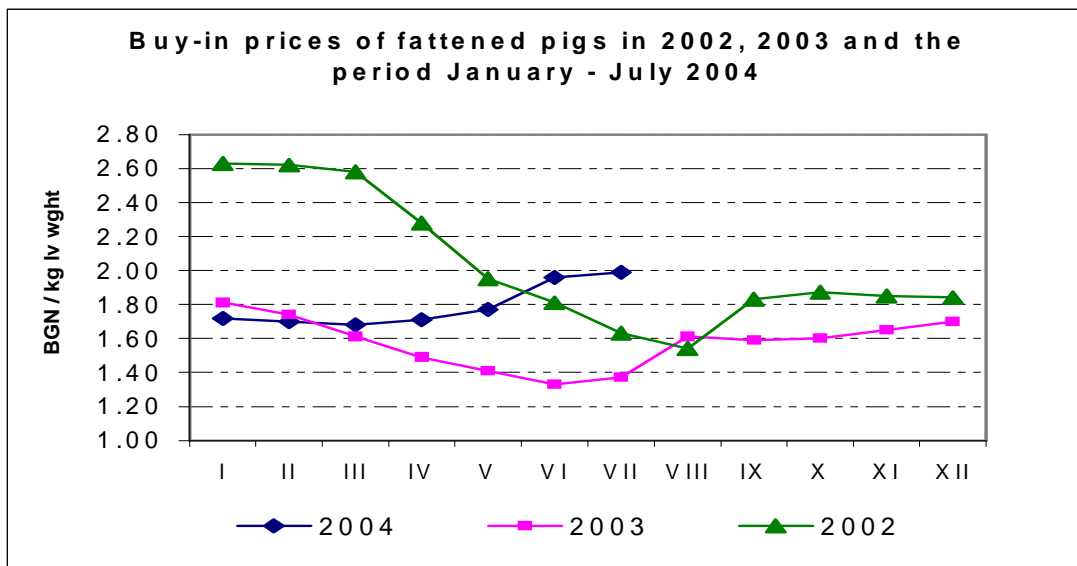
Compared to the first two quarters of the previous year, the average wholesale price of skinned pork grew by 1.7% while the average wholesale and retail prices of ham went down by 1.6 and 1.3%, respectively.

**Table II.61.**  
**Pork prices during the first half of 2004, in comparison with 2003**

	<b>I-VI 2003 average</b>	<b>2004</b>						<b>I-VI 2004 average</b>	<b>I-VI 2004 versus 2003</b>
		<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>	<b>VI</b>		
<i>Buy-in prices, BGN/kg live weight</i>									
Fattened pigs	1.57	1.72	1.70	1.68	1.71	1.77	1.96	1.76	+11.9%
Sows	1.25	1.27	1.25	1.23	1.25	1.30	1.44	1.29	+3.2%
<i>Wholesale prices, BGN/kg</i>									
Skinned pork	3.66	3.67	3.67	3.64	3.63	3.69	4.04	3.72	+1.7%
Ham	5.42	5.25	5.30	5.27	5.26	5.36	5.55	5.33	-1.6%
<i>Retail prices, BGN/kg</i>									
Ham	5.71	5.60	5.61	5.56	5.58	5.62	5.83	5.63	-1.3%

Source: SAMI

**Figure II.27.**



### 2.2.2.3. Chicken meat prices

In 2003 the buy-in price of broilers kept their levels of the previous 2002 whereas the annual average wholesale and retail prices of frozen chickens went slightly down.

The average buy-in price of broilers for 2003 was 1.57 BGN/kg live weight, which is an insignificant (0.6%) rise on top of the average price for 2002.

The average annual wholesale and retail prices of frozen chickens were 2.76 BGN/kg and 3.06 BGN/kg respectively. Compared to 2002, the wholesale price went down by 1.8% while the retail price was down by 5.6%.

Throughout the year a similar trend in the fluctuations of wholesale and retail prices of frozen chickens was in place: an incremental increase started at the beginning of the year and lasted until April to be followed by a downward movement through September, and again an increase over the period from October until the year end.

The key factor behind the rising chicken meat prices in the last quarter of 2003 were the growing prices of feed mixes due to a feeble grain harvest.

**Table II. 62.****Chicken meat prices in 2003, in comparison with 2002**

	2002 average	2003												2003 average	2003 versus 2002
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII		
Buy-in prices of broilers, BGN/kg live weight	1.56	1.52	1.52	1.68	1.62	1.56	1.55	1.55	1.55	1.55	1.55	-	-	1.57	+0.6%
Wholesale prices of frozen chickens, BGN/kg	2.81	2.40	2.46	2.77	2.92	2.88	2.83	2.65	2.59	2.59	2.78	3.08	3.12	2.76	-1.8%
Retail prices of frozen chickens, BGN/kg	3.24	2.74	2.76	3.03	3.17	3.14	3.13	3.03	2.93	2.92	3.07	3.37	3.43	3.06	-5.6%

*Source: SAMI*

The higher chicken meat price levels of the last quarter of 2003 were followed by a slight downward shift starting early in 2004 and going on until April. This was triggered by the opportunities for cheap imports and a weak purchasing power among consumers.

Nevertheless, prices kept higher than those a year earlier, with the main reason being higher feed prices.

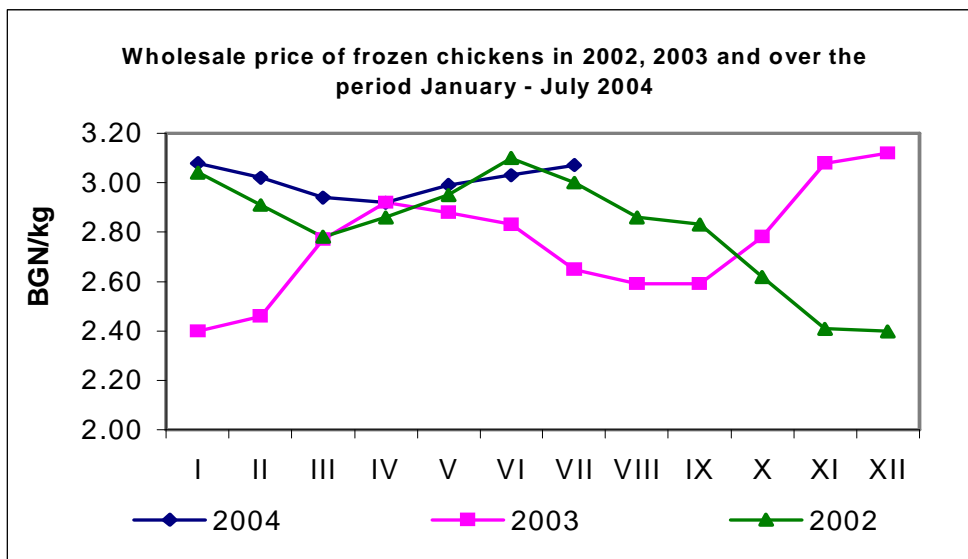
May and June saw a minor increase of chicken meat prices, which can be attributed to the enlivened demand marking the beginning of the tourist season.

**Table II.63.****Chicken meat prices over the first half of 2004, in comparison with 2003**

	I-VI 2003 average	2004						I-VI 2004 average	I-VI 2004 versus 2003
		I	II	III	IV	V	VI		
Wholesale price of frozen chickens, BGN/kg	2.71	3.08	3.02	2.94	2.92	2.99	3.03	3.00	+10.6%
Retail price of frozen chickens, BGN/kg	3.00	3.41	3.35	3.30	3.24	3.29	3.36	3.33	+10.8%

*Source: SAMI*

**Figure II.28.**



#### **2.2.2.4. Prices of cow's milk and dairy products**

The average buy-in price of cow's milk for 2003 (0.31 BGN/litre) was by 6.8% below the 2002 levels, with its earlier fluctuations around substantially lower values than those of the same period in 2002 and last quarter's ones exceeding the prices of the last quarter in 2002. Wholesale and retail prices of cow's milk were relatively stable throughout the year going slightly below the 2002 price line.

2003 saw the following trend in the buy-in price of cow's milk: stability during the first quarter (around 0.30 BGN/litre), a small decrease over the period April – July (up to 0.26 BGN/litre) and an upward creep from August until the yearend (up to 0.42 BGN/litre for December).

The buy-in price troughs during the spring and summer months are related to diminished production cost over the period (by putting the animals on grass). The following lifting of the price lasting until the yearend is again of a seasonal nature, with the autumn and winter putting pressure on producers' expenditures (e.g. higher feed prices).

In 2003 wholesale and retail prices of yoghurt were relatively stable. They kept an annual average of 0.46 BGN/box and 0.52 BGN/box respectively, which is a 3 and a 2.4% reduction compared to 2002 (0.01 BGN/box nominally for both).

The wholesale and retail prices of white brine cow's cheese and "Vitosha" yellow cheese (kashkaval) were slightly down throughout the first six months of the year and up during the second. The most significant hike for Vitosha" yellow cheese prices took place during the last quarter.

The chief factor for the higher prices of cow's cheese and Vitosha kashkaval are the swelling buy-in prices of cow's milk (by the national standard, 1 kg cow's cheese is produced from 6.7 litres of cow's milk while 1 kg of kashkaval "Vitosha" takes in roundabout 10 litres of cow's milk).

Despite higher prices by the yearend, the annual average prices of cow's cheese and Vitosha kashkaval for 2003 remained at slightly lower levels in contrast with 2002.

**Table II. 64.**

**Prices of cow's milk and dairy products in 2003, in comparison with 2002**

	2003												2003 average	2002 average	2003 versus 2002
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII			
<i>Buy-in prices</i>															
Cow's milk, BGN/litre	0.30	0.30	0.30	0.29	0.28	0.27	0.26	0.27	0.29	0.33	0.38	0.42	0.31	0.33	-6.8%
<i>Wholesale prices</i>															
Milk, BGN/litre	0.79	0.78	0.78	0.77	0.76	0.77	0.76	0.77	0.77	0.78	0.79	0.80	0.78	0.79	-1.7%
Yoghurt, BGN/box	0.46	0.46	0.46	0.45	0.45	0.45	0.45	0.45	0.45	0.46	0.46	0.47	0.46	0.47	-3.0%
Cow's cheese, BGN/kg	2.69	2.65	2.65	2.60	2.56	2.52	2.80	3.27	3.20	3.24	3.27	3.32	2.90	2.94	-1.4%
Vitosha kashkaval, BGN/kg	5.29	5.28	5.30	5.24	5.18	5.12	5.11	5.21	5.38	5.88	6.31	6.65	5.50	5.54	-0.8%
<i>Retail prices</i>															
Milk, BGN/litre	0.89	0.89	0.89	0.88	0.88	0.88	0.88	0.88	0.89	0.89	0.89	0.90	0.89	0.90	-1.5%
Yoghurt, BGN/box	0.52	0.52	0.52	0.52	0.51	0.51	0.51	0.51	0.52	0.52	0.52	0.53	0.52	0.53	-2.4%
Cow's cheese,	3.07	3.01	3.00	2.99	2.99	2.93	3.14	3.62	3.58	3.63	3.72	3.76	3.29	3.29	-0.1%

BGN/kg															
Vitosha kashkaval, BGN/kg	6.07	6.03	5.97	5.94	5.85	5.81	5.80	5.93	6.09	6.53	6.94	7.34	6.19	6.32	-2.0%

Source: SAMI

During the first six months of 2004 cow's milk prices and dairy products kept at levels above those of the previous year.

The average buy-in price of cow's milk for the first half of 2004 was 0.40 BGN/litre, a value by 0.11 BGN/litre (37.9%) higher than that for the same period in 2003. This increase occurred as a result of higher feed prices in 2004 as well as of the fact that in early 2003 cow's milk prices stayed at levels, which were too low for the season.

The buy-in price of cow's milk peaked during the first quarter of 2004 (0.44 – 0.45 BGN/litre), with the trough being in June (0.32 BGN/litre) and resulting from the lower production costs during the summer months.

During the first 6 months of 2004 the wholesale and retail prices of cow's milk were relatively calm and kept at a somewhat lower level compared to a year earlier: their average values over the period were 0.80 BGN/litre and 0.90 BGN/litre respectively. Compared to the first half of 2003, the wholesale price was up by 2.1% and the retail price – by 1.1%.

The end of 2003 set off a trend of increasing the prices of cow's cheese and kashkaval "Vitosha", which was carried over to the first two months of 2004. In March however this trend was reversed to a gradual decline.

The first half of 2004 saw wholesale and retail prices of cow's cheese gaining 20% each, and the wholesale and retail prices of kashkaval "Vitosha" – gaining 25 and 23% respectively, compared to prices during the same period in 2003. These higher levels were brought about by the higher buy-in prices of cow's milk in 2004.

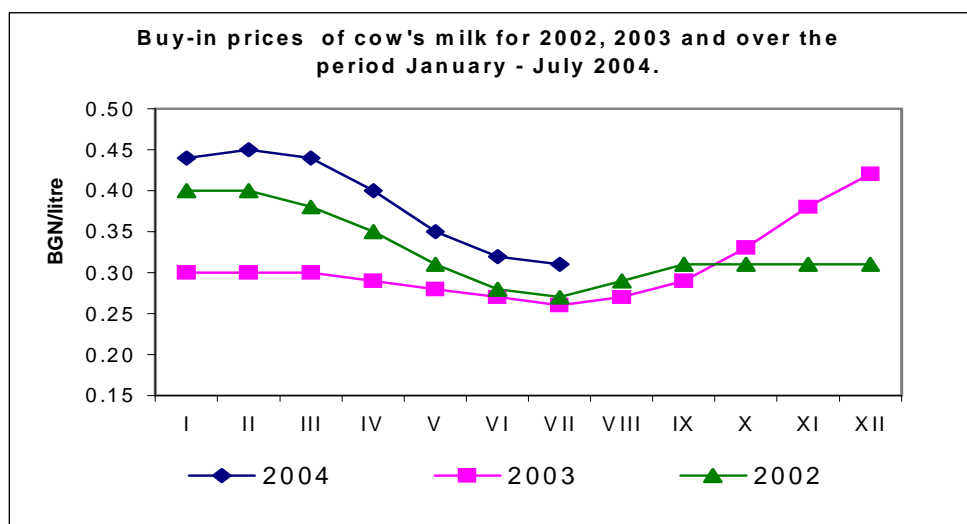
**Table II.65.**

**Prices of cow's milk and dairy products for the first half of 2004, in comparison with 2003**

	I-VI 2003 average	2004						I-VI 2004 average	I-VI 2004 versus 2003
		I	II	III	IV	V	VI		
Buy-in prices									
Cow's milk BGN/litre	0.29	0.44	0.45	0.44	0.40	0.35	0.32	0.40	+37.9%
Wholesale prices									
Milk BGN/litre	0.78	0.80	0.81	0.80	0.80	0.79	0.78	0.80	+2.1%
Yoghurt BGN/box	0.46	0.47	0.47	0.47	0.46	0.46	0.46	0.47	+1.1%
Cow's cheese BGN/kg	2.61	3.37	3.41	3.33	3.13	2.83	2.71	3.13	+19.9%
Kashkaval Vitosha BGN/kg	5.24	6.92	7.08	6.96	6.62	6.15	5.66	6.57	+25.3%
Retail prices									
Milk BGN/litre	0.89	0.90	0.91	0.90	0.90	0.90	0.89	0.90	+1.1%
Yoghurt BGN/box	0.52	0.53	0.53	0.53	0.52	0.52	0.52	0.53	+1.0%
Cow's cheese BGN/kg	3.00	3.85	3.88	3.83	3.59	3.29	3.13	3.60	+19.8%
Kashkaval Vitosha BGN/kg	5.95	7.70	7.82	7.75	7.16	6.91	6.41	7.29	+22.5%

Source: SAMI

**Figure II.29.**



#### 2.2.2.5. Prices of eggs

The average annual wholesale and retail prices of eggs for 2003 were 0.13 BGN/egg and 0.15 BGN/egg respectively, having grown by 7% compared to 2002.

Egg prices were relatively stable in the country throughout the period January - July 2003, staying within the 0.10 – 0.12 BGN/egg range wholesale and within 0.12-0.148

BGN/egg retail. This stability was followed by an incremental growth of the wholesale price up to 0.177 BGN/egg shadowed by a climb of up to 0.19 BGN/egg of the retail price in October. Prices stayed constant in November and slightly fell in December to average values of 0.163 BGN/egg wholesale and 0.188 BGN/egg retail.

Higher egg prices over the period August – October were caused by more expensive feed mixes, typically playing a key role in egg price formation.

**Table II.66.**  
**Prices of eggs in 2003, in comparison with 2002**

	2003												2003 average	2002 average	2003 versus 2002
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII			
Wholesale prices, BGN/egg		0.104	0.111	0.116	0.109	0.102	0.098	0.12	0.141	0.177	0.177	0.163	0.13	0.12	+7.0%
Retail prices, BGN/egg	0.148	0.13	0.13	0.14	0.13	0.12	0.12	0.14	0.16	0.19	0.20	0.188	0.15	0.14	+6.9%
Retail versus wholesale prices	1.20	1.25	1.17	1.21	1.19	1.18	1.22	1.17	1.13	1.07	1.13	1.15	1.165	1.17	-0.1 points

Source: SAMI

In the aftermath of the abrupt rise during the last quarter of 2003, 2004 started with a gradual decline of the prices of eggs for direct consumption. The key factor behind this development were the substantial imports of low-priced eggs. Nevertheless, egg prices remained at levels handsomely above those of an year earlier.

The average wholesale and retail prices of eggs for the first six months of 2004 were 0.14 BGN/egg and 0.16 BGN/egg, respectively. Compared to the same period of 2003, the wholesale price had risen by 27% while the retail price was topped up 24%.

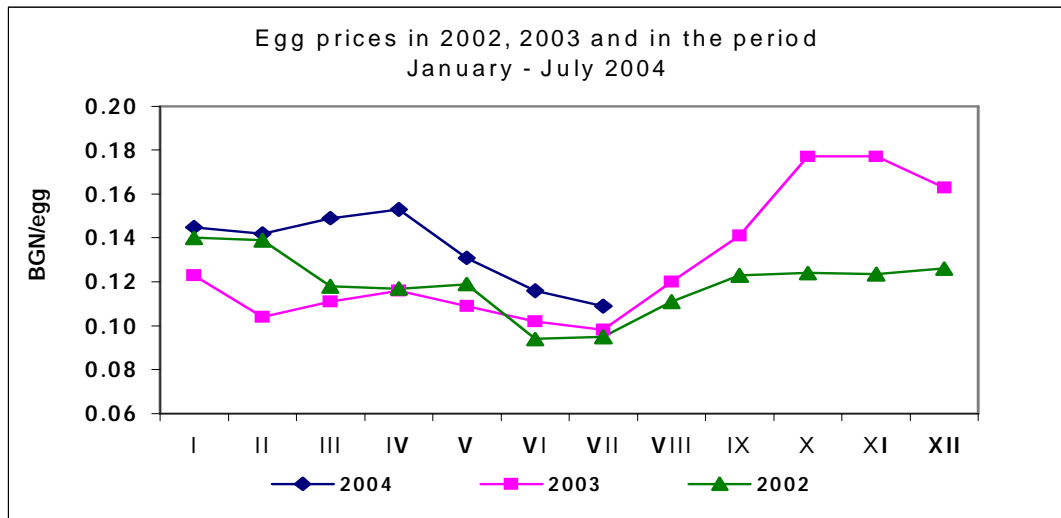
**Table II.67.**  
**Prices of eggs During the first six months of 2004, in comparison with 2003**

	average I-VI. 2003	2004						average I-VI 2004	I-VI 2004 versus 2003
		I	II	III	IV	V	VI		
Wholesale prices, BGN/egg	0.11	0.145	0.142	0.149	0.153	0.131	0.116	0.14	+26.7%
Retail prices, BGN/egg	0.13	0.17	0.163	0.17	0.17	0.15	0.14	0.16	+23.5%
Retail versus wholesale	118.18%	117.24%	114.79%	114.09%	111.11%	114.50%	116.67%	114.73%	points

Source: SAMI



**Figure II.30**



### 2.3. Economic accounts for agriculture - results

#### Value of agricultural production

The gross value of agricultural production for 2003 amounts to 6 700.5 million BGN (Annexes 1 and 4) comprising:

- Crop output – 3 466.1 million BGN;
- Livestock output – 2 065.4 million BGN;
- Output of agricultural services – 354.5 million BGN;
- Output of inseparable secondary activities - 814.4 million BGN

The value of crop output in 2003 stands at 1 % higher compared to 2002, while the value of livestock output has decreased by 13 %, agricultural services went down in value by 7 % and non-agricultural inseparable secondary activities were down by 30 % .

In 2003, the share of the gross crop output value in the gross output value of the agricultural sector was 51.7 %, the share of livestock output – 30.8 %, of agricultural services – 5.3 % and of non-agricultural inseparable secondary activities – 12.2 %.

Vegetables, with a gross output value of 1 151.4 million BGN, have the greatest weight in forming the gross output value of crop-growing for 2003, the value of the cereals output took second place at 971.4 million BGN and the industrial crops were third at 482.3 million BGN.

In the livestock industry of 2003, pig breeding, with a product value of 323.1 million BGN had the greatest share in forming the gross output value of animal breeding, poultry breeding contributed a product value of 321 million BGN while sheep and goat breeding produced 304.1 million BGN. The output of milk had a gross value of 566.2 million BGN thus occupying the first place among animal origin products.

The value of final output in 2003 in the farming sector as a whole amounted to an overall of 6410.9 million BGN by basic prices and had the following structure:

- share of crop growing – 3245.2 million BGN – 50.6 %;
- share of livestock – 1996.8 million BGN – 31.1 %;
- share of agricultural services – 354.5 million BGN – 5.5%;
- share of inseparable secondary activities – 814.4 million BGN – 12.7%.

### **Intermediate consumption**

The intermediate consumption data (Annexes 2 and 3) present the value of all commodities and services, which were processed or used entirely in the course of production, except fixed assets.

In 2003, the intermediate consumption involved in creating the gross output in the farming sector, had the value of 3 732.6 million BGN, which was 12% less than the

previous year. In the structure of intermediate consumption, the largest share belongs to fuel and lubricants cost - 23%, feed – 21% and repair and maintenance - 13%.

The commodities produced and consumed on farm have a 20% share (752.1 million BGN) in the intermediate consumption for 2003. These predominantly were feeds, seeds and seedlings, fertilizers and soil conditioners. The commodities and services purchased by other agricultural holdings to be intermediately consumed amounted to 217.4 m BGN and constituted 6% of intermediate consumption.

The intermediately consumed seeds and seedlings were the only commodity to mark a slight increase in 2003 compared to 2002. The rest of the intermediate consumption items have decreased in value since the previous year.

<b>Gross value added</b>
--------------------------

The gross value added for 2003 amounted to 2 996.2 million BGN going down by 4% compared to 2002. This is a result of the 9% reduction of the overall agricultural product compared to 2002 and a shrinking by 13% of the intermediate consumption.(Annexes 4 and 5)

#### **Fixed capital consumption**

Basic capital consumption in the sector amounted to 183.8 million BGN for 2003. 16% more fixed capital was used than the previous year.

<b>Net value added</b>
------------------------

The net value added in the agricultural sector for 2003 was 2 812.3 million BGN.

<b>Formation of agricultural income - net operating surplus / mixed income</b>
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The value of the mixed income indicator for 2003 is 2 729.2 million BGN.

The details related to compensation paid to the work force, to the levies and subsidies on production as well as to the net operating surplus/mixed income are given in Annex 5.

<b>Entrepreneurial income</b>
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The overall entrepreneurial income of all agricultural households taken together was 2546.8 million BGN for 2003 (Annex 5).

## **2.4. Government support in agriculture**

### **2.4.1. Tobacco seeds handouts**

Registered tobacco producers receive tobacco seed free of charge, with the seed production funded through the Tobacco Fund. BGN 1 173 000 of tobacco seed, variety maintenance and seed transport to the municipalities was handed out in 2003.

### **2.4.2. Premiums to tobacco producers**

Within the Tobacco Fund's budget appropriation, the Fund has discharged direct premiums to 42 517 tobacco producers for raw tobacco of the Oriental, Virginia and Burley varieties of the 2003 harvest.

The trend in government premium dispensation is characterized by growth of the nominal amount of premiums per kilogram of tobacco and an increase of the share of premium awarded for high quality. For the 2003 harvest premiums per kilogram amounted to 2.02 BGN/kg compared to 1.56 BGN/kg in 2001 and 1.77 BGN/kg in 2002. The quality segment of tobacco premiums has expanded from 16.51 % in 2001 to 20.20 % for harvest 2002 and to 25.00 % for harvest 2003.

A total of 93 263 000 BGN was spent for premiums to tobacco producers in 2003.

### **2.4.3. Targeted aid to tobacco producers**

Under a proposal by the Tobacco Fund's management board, the Council of Ministers defined the amounts going into targeted government support in the form of minimum buy-in prices for tobacco from the 2003 harvest. For oriental type tobacco support was provided for I and II class produce of any origin. Unlike the arrangement for the 2002 harvest where targeted government support was provided for tobacco of any origin, in 2003 targeted support for III class tobacco was only dispensed for four origins holding a substantial share within this class. The aim was to stimulate the manufacture of high quality raw tobacco and create more stocks meeting the requirements for export.

The overall funding classified as targeted government support for 2003 was 27 349 000 BGN.