

# **2007**

## **ANNUAL AGRICULTURE AND RURAL DEVELOPMENT REPORT**

December 2008



## **PREFACE**

I am deeply honored and privileged to introduce you with the 2007 Annual Agricultural Report, in which The Ministry of Agriculture, Forestry and Water Economy presents the agro-food sector of the Republic of Macedonia and its achievements in 2007.

The report is a result of several reports of individual sectors prepared by the Ministry.

The report is organized in 9 chapters and includes information on the macroeconomic frame in which the agricultural production was realized and the significance of the agro-food sector in the Republic of Macedonia, capacities, achieved production results in individual subsectors, agricultural and alimentary products trade, the Ministry's policies on the creation of an ambient for the sector, services, science, education development in the area of agriculture.

Many sources have been used for the preparation of this report for the purpose of providing the highest data quality as possible. The main source of data is the State Statistical Office (mainly published data from publications), data from individual sectors and administrations of the Ministry, studies of educational and scientific institutions etc. Yet, the insufficiently harmonized statistics that causes inappropriate dynamics still exists as a problem and represents a limiting factor for this report to be complete in all its elements. Due to that, some parts of the analyses refer to a period up to 2006.

I hope that the 2007 Annual Agricultural Report shall be an important document for everyone who shall use it, and especially for students of the agro-food sector, no matter in which segment they are found, as a means which shall contribute to acquiring information in order to intensify development of the entire sector.

Sincerely yours,

**Minister of Agriculture, Forestry  
and Water Economy,**

**Aco Spasenoski**

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# I. SOCIAL AND MACROECONOMICAL SITUATION IN THE REPUBLIC OF MACEDONIA WITH FOCUS OF AGRO-FOOD SECTOR



The Republic of Macedonia is situated in the southern part of the Balkan Peninsula. It has a total surface of 25,713 km<sup>2</sup> and a total population of about 2.04 million. The Republic of Macedonia declared its independence from the former SFRJ on 8<sup>th</sup> September 1991. It is a parliamentary democratic country, with established institutions of legislative (parliament), executive (government) and judicial authority (judicial system) and with a division of the authority between them. Head of the state there is the president who is elected every 5 years.

## 1 The macroeconomic environment

The Republic of Macedonia is a small Western Balkan country which is still considered as a country in transition. In 2007 Gross Domestic Product (GDP) is about 5.4 billion US\$ or 2.6 thousand US\$ per capita. The intention of the Macedonian economy is integrate into the international market. In view of that, the Republic of Macedonia was officially accepted as a member of the World Trade Organization (WTO) in April 2003. In addition, the country has signed a number of free trade agreements with different countries from the region as a step towards strengthening the regional integration and cooperation.

### Macroeconomic indicators

Indicator	Units	2000	2001	2002	2003	2004	2005	2006	2007
Population	'000	2026	2035	2022	2027	2032	2037	2042	2045
Economic growth (change in GDP)	%	4.5	-4.5	0.9	2.8	4.1	4.0	1.6	5.9
Unemployment rate	%	32.2	30.5	31.9	36.7	37.2	36.6	36.0	34.9
Inflation	%	5.8	5.5	1.8	1.2	-0.4	0.5	2.2	2.3
Share of food, beverages and tobacco in total household's expenditures	%	50.9	51.5	47.4	47.0	45.4	43.8	43.4	42.5

In 2001 the Republic of Macedonia signed a Stabilization and Association Agreement with the EU, which provided an opportunity for more intensive access to the EU market. Finally, in December 2005, Macedonia became a candidate country for EU membership. Unfortunately still without date for starting of the negotiations.

There were radical political changes which took place on the territory of former Yugoslavia that affected the economy of the Republic of Macedonia in the last 17 years. Additionally, the Macedonian economy suffered from the UN sanctions to Serbia, and from the Greek economic embargo, related to the bilateral "name problem". In this period (1991-1995), the GDP fell by more than 30%. In 1994, the government embarked a program for stabilization and structural adjustment, with

assistance from the IMF and the World Bank. The privatization process and the banking system reform were a valuable step in creating a free-market economy.

In 2001 there was a conflict, which additionally influenced the economy that had a rapid economic growth decrease (table 1). The Political dialog and “the Ohrid agreement” set up political issues and there was an economic growth which started in 2003 and continued in 2007 (5.9%). However, the high rate of unemployment (34.9%) influenced a more progressive development. The inflation rate declined, and in 2007 it reached the value of 2.3%.

## **2 Agricultural situation**

There are heterogeneous natural conditions and land structure in the Republic of Macedonia. It is situated between 40<sup>0</sup>51' and 42<sup>0</sup>22' northern geographic latitude and eastern geographic longitude of 20<sup>0</sup>27' and 23<sup>0</sup>02'. As to these geographic parameters, the Republic of Macedonia is situated in the southern part of the moderate zone and is bordered by the subtropical zone where almost all the crops can be successfully produced according to their requirements.

The Republic of Macedonia is mainly under the influence of 3 (three) climate types: continental, mountain and the Mediterranean climate. The climate indicators, especially the drought, the early autumn and late spring ice, are also limitation factors in regards to the intensiveness and the range of crops.

Out of the total area of the Republic of Macedonia, the agricultural area takes up 12.370 km<sup>2</sup> or 48.11%. Out of the total agricultural area, 37.83% are arable area (average 2000-2007). There have been great changes, mostly decreasing, of the arable area in the last years in the Republic of Macedonia. Thus, the size of arable land in the period 2000-2007 decreased from nearly 500 thousand ha, to 431 thousand ha in 2007, while the meadows and pastures have increased from 692 up to 727 thousand ha. Nearly half of the arable land is under cereal crops, where wheat is the dominant crop with nearly 108 thousand ha. Vine-growing is present on about 23 thousand ha, orchards on about 13 thousand ha, vegetable production of 52 thousand ha and tobacco on about 24 thousand ha.

The agriculture has been very significant for the national economy of the Republic of Macedonia. Besides the many policies and economic problems, that were previously stated, this sector has indicated an important flexibility, and for this period it has contributed significantly to the social and economic stability. The agriculture has a share of about 11.8% in the GDP (average 2000-2007), two thirds of which are covered by crop production and the remainder by livestock production. The total share of the agro-food sector, coupled with the food industry, accounts for approximately 16% of the GDP.

## Agricultural output

Indicator	Units	2000	2001	2002	2003	2004	2005	2006	2007
Share of agriculture:									
- in GDP	%	12.0	11.8	12.4	13.4	13.2	12.0	11.0	9.4
- in employment	%	/	24.9	23.8	22.0	16.8	19.5	22.1	18.0
Change in volume of GAO									
- Total	%	104.3	100.0	101.0	116.7	106.4	101.5	105.0	/
- Crops	%	104.0	101.9	99.7	120.2	108.9	100.6	103.0	/
- Livestock	%	105.4	94.4	105.2	106.1	97.9	105.1	111.0	/
Share of crop and livestock output in total GAO									
- Crops	%	74.8	76.2	75.2	77.4	79.3	78.5	74.1	/
- Livestock	%	25.2	23.8	24.8	22.6	20.7	21.5	25.9	/

The share of the labour force in agriculture, in relation to the total labour force is noteworthy, representing about 21% (average 2000-2007). This significant share of the labour force in agriculture indicates the agricultural character of the Republic of Macedonia. It should be noted that in many rural areas there is a hidden labour force, such as the agricultural overpopulation, which largely worsens the situation in the sector. On the other side, in some rural areas there is a lack of labour force, especially qualified one, while a large part of the agricultural areas and the other production resources and potentials remain unused i.e. abandoned. The closing down of many industrial facilities contributed to the high number of labour force in agriculture since a large part of the workers returned to agriculture in order for them to provide for existence.

### 3 Major sectors - trends of principal crop and livestock products

- **Crop production**

The crop production is represented by the four principal groups: cereals, industrial (including fodder) crops, fruit (including grapes) and vegetables (including potatoes). After the independence of the Republic of Macedonia, the planted areas were decreased for all crops. In 2000 the declining trend stopped, and in the period of 2000-2007 there were not any large deviations in the share of planted areas per crop groups.

The general production trends in this sub-sector are positive, but at the largest part of the crops, the yields are low and lower than the EU average, especially with regards to the cereals and industrial crops.

The cereal crops do not satisfy the domestic demands, even though they have strategic significance and are the most present crops. Wheat is the dominant cereal that takes up more than half of the total planted area with cereal crops; it is followed by barley with approximately 24% and maize by around 17% of the total arable land. Barley and maize are mostly used as feed, but also a large part of wheat is used as feed, especially in the family farms. There is an average annual production of cereal crops of about 564 thousand tons with an average yield of all cereal crops of about 2.8 tons/ha, which is significantly lower in comparison to the yields in EU (5 tons/ha). This is due to several reasons, among which are the following: usage of uncertified low-yielding seeding material, unsuitable application of agro-technical measures, climatic factors, especially lack of or inadequate usage of irrigation when droughts

occur, outdated machinery, low usage of agro-chemical materials etc. There are slight differences among the achieved yields from farm enterprises and family farms.

The industrial crops (including fodder crops) take up approximately 10% of the arable lands. As the most significant industrial crop, tobacco takes up 1/3 of these areas, and alfalfa, as the most present fodder crop, is present on approximately the same area. Tobacco has a long tradition and is a strategic product for Macedonia, mostly because of its social aspects (engages a significant labor force in the rural areas and in specific production regions). Also, tobacco is one of the main export products. This crop had a significant decrease in the past. There was a significant decrease of sugar beet whose trend is continuing as a result of the inadequate policy, the low prices and import of unrefined sugar, which can also be stated for sunflower.

The vegetable production is located in the southern part of the country around the towns of Strumica, Gevgelija and Valandovo (where there are favorable natural conditions, mostly due to the Mediterranean climate influence), as well as in the surrounding of Kumanovo and Skopje (where there is moderate Mediterranean climate). This sub-sector is one of the most significant in the Macedonian agriculture. The production takes place in the open field; on 260 ha in heated glass-houses; and under plastic tunnels with or without heating. The vegetable production in glass houses is highly profitable because of its early harvest in January (one month before the neighboring countries) and because of its high prices until April/May.

Fruit growing and vine growing are sub-sectors of significant potential, which is not sufficiently used. The main reason is the lack of investments. Also, the domestic fruit processing industry is small and underdeveloped (with outdated technologies) and there are not any markets for its products.

Vine-growing is a significant sub-sector for Macedonia, especially in combination with the wine production which has major export significance. Vine growing is probably the most important and most strategic industry in the field of plant production, since together with the wine production it contributes to about 17%-20% of the agricultural share in GDP. Wine takes lead in the export of beverages, and it is the second most significant product, after tobacco, in relation to the export value of the agricultural products.

- **Livestock production**

There has been a decreasing trend of livestock production in the last decade. The number of livestock has decreased, while the yields, although still comparatively low, are constantly increasing. The Republic of Macedonia greatly depends on the imported feed, maize, proteins and vegetable fats as well as complete fodder mixtures or additions (combination of proteins or proteins, minerals and vitamins).

In the last decade the cattle, sheep and poultry industries show a decline, while the pig industry has grown substantially. The largest decline has been in the sheep and poultry industries. About 90% of the capacities in of livestock belong to the sector of family farms.



#### **4 Main characteristics of the farm structure**

The farm structure in the Republic of Macedonia is represented by the agricultural companies (mostly originating from former state-owned holdings) and the family farms.

The family farms own or lease around 80% of the arable land, whereas the remaining 20% are in the ownership of the state and have been leased by the agricultural companies. The pastures are mostly owned by the state and are run by a public enterprise. The privatization process did not include the state agricultural lands, which were managed by the public enterprises and agro-combines. The reason for this was that the agricultural land has been defined by law as goods of special interest, by which the state keeps the right to this asset.

There has been a reduction in the effective utilization of the agricultural land in the Republic of Macedonia due to the problem of its parceling out and fragmentation, which arise from the previous constraints to the land ownership (land maximum), inheritance rules, as well as the long history of informal relations on the land market. There are 192.378 farming households registered in the agricultural census in 2007. The average size of the family farms is around 2 hectares, with parcels from 0.2-0.5 ha and with a mixed production structure. Certain activities in the past (legal restrictions of the land market), have not contributed to the land consolidation. It is considered that the number of farming households has been growing continuously and has risen from the last census.

However, in spite of such small property and fragmentation, and according to certain researches, it appears that in the past the small family farms realized better production and larger profitability than expected, despite the negative institutional circumstances they were faced with during the transition period. Contrary to this, the large state-owned enterprises (privatized and non-privatized) were less productive and non-profitable despite the institutional privileges they were provided with. This was a result of the significantly high total costs per hectare, higher operational costs, maintenance, insurance and interest payment. The official statistical data on the production and yield per farm structure support these conclusions, provided that one takes into account the fact that almost 80% of the total agricultural production has been produced by the family farms. Nevertheless, recent years reveal that there has been a mild uptrend in the production index of the agricultural companies. This has been a result of the completion of the transformation process, i.e. the privatization and beginning of the market-oriented production strategies and organizational strengthening.

#### **5 Agricultural policies**

The Republic of Macedonia has begun building its own agrarian policy after it became an independent country. Previously, it was a part of the former agrarian policy of SFRY. A starting feature of the Macedonian agrarian policy is that it has inherited the principles and measures of the former policy. In general, it is based on the "market-price" activities, which, basically, treat market interventions through tariff protections and trade limitations and the subsidies for the prices of certain agricultural products. This type of approach, along with the low budget of MAFWE (around 1% of the budget of the Republic of Macedonia), is further increasing the problems of this sector; where discontent, especially on part of the producers, has been growing. The discontent is especially obvious with the family farms; these were

placed in a subordinate position in relation to the large agricultural companies (agro-combinates, agricultural holdings and cooperatives) during the entire period.

Certain starting steps in redefining these conditions have been taken by the preparing the strategy for the agricultural development in 1996, the year when the following goals of the agrarian development were set:

- Complete and enhanced utilization of the existing land and of the present and future irrigation systems;
- More even and thorough utilization of the production resources and of the workforce throughout the year;
- Production structured to meet the market demand;
- Achievement of the best possible turnover of funds engaged in the production process, and of the technological needs of specific crops (rotation of crops, agro-techniques etc.);
- A complete utilization of by-products in farming and livestock production;
- Keeping pace with development trends in the developed countries.

The goals of the agrarian development set in this manner, do not reflect the actual needs of a longer period of time, due to the changes arising during the period of transformation of the property-legal relations (the privatization of the public sector), the beginning of the process of integration of the Republic of Macedonia towards WTO and EU. Thus, in 2001, a new strategy for the agricultural development until 2005 was prepared. This strategy defines the goals of the development, consistently with the goals of the National Strategy for Economic Development of the Republic of Macedonia. In this regard, the following goals for the agricultural development were set:

- Better use of the human and natural resources and their preserving (population density, agricultural lands, waters, etc.), of medium intensity and oriented towards a constant increase of the competitiveness of the agricultural production;
- A complete satisfaction of the domestic demand with a low price but quality food, and the export of fresh agricultural products and their processed and preserved products through the food industry;
- Providing a better and more stable economic and social status of the agricultural producers, a guaranteed parity income for the above-average producers and higher level of employment for the young population.

The goals of the agricultural development set in this manner are approaching the market logic and preparation of the Macedonian agricultural producers towards gradual but complete market liberalization.

The signing of the Association and Stabilization Agreement with the EU and the approaching of the Republic of Macedonia to full membership of WTO, are causing the increase of the competitiveness of the domestic market and the necessity to redefine the goals of the agricultural policy. Thus, MAFWE defined the new goals for the agricultural development in 2002, which is confirmed by the latest strategy of the year 2007:

- Strengthening of the competitive ability of the Macedonian agriculture on the integrated regional markets of the European Union and South-East Europe by introducing measures for increasing the efficiency of the agricultural production, processing and marketing;
- Building appropriate, effective public and private institutions;
- Improving the agricultural income;
- Ensuring that the consumers have access to safe and healthy food;
- Optimum usage of the limited resources of land, forests and water in an ecologically sustainable manner;
- Building sustainable rural communities for rural development.

MAFWE is responsible for: the formulation and implementation of agricultural policy and related strategies, the drafting of legislation, the planning and administration of government-funded programs and investments, including bilateral and international programs, and providing monitoring, inspection and regulatory services.

Further responsibilities for food safety and water resource management are shared with other ministries, although the allocations of responsibility lack clarity and consistency. MAFWE is not directly responsible for agricultural extension, research or agricultural industry. In accordance with the Decision of the Government of the Republic of Macedonia of 2006, MAFWE has been appointed as a Regulatory Body for the rural development, eventhough, the partial programs for the development of the rural areas are carried out via the Ministry of Local Government, the Ministry of Transport and Communications, the Ministry of Environment and Spatial Planning and other state institutions.

In accordance with the data from the budget (Ministry of finance) in 2007, the budget of MAFWE in the total budget shared 2.77%.

#### Budget of the Republic of Macedonia: share of MAFWE budget

-in '000 denars

Indicator	2001	2002	2003	2004	2005	2006	2007
MK budget	68,520,623	66,310,000	67,374,067	66,666,000	66,538,469	88,576,000	88,072,220
MAFWE	805,115	815,113	890,267	1,493,721	1,459,518	1,453,972	2,443,840
Share	1.17%	1.23%	1.32%	2.24%	2.19%	1.64%	2.77%

In relation to the planning of future support funds for agriculture and rural development, the Government is projecting funds totaling 460 million euro for the period 2008-2012. The increased subsidies and the implementation of the national measures for rural development and the co-financing of the IPARD measures, will be facing the gradual implementation of the principles and measures of the Common Agricultural Policy (CAP) of the EU and the harmonization of the Macedonian agricultural policy with EU's CAP.

## 6 Characterization of the rural environments

The available data which are needed for the socioeconomic characterization of the rural areas in Macedonia are limited, and the picture is incomplete.

There is no clear definition for the rural areas as well as for the classification based on the density of the population in the Republic of Macedonia. In 2002 UNDP the State Statistical Office and the Ministry of local self management performed a socio economic mapping of the differences between the municipalities in Macedonia and marked six zones on based concentration of population on the territory of the country: zones with a weak concentration (up to 50 inhabitants per square kilometer), zones with a medium concentration (51-100 inhabitants per square kilometer), overpopulated zones (101 – 150 inhabitants per square kilometer), significantly overpopulated zone (151 – 500 inhabitants per square kilometer), very significantly overpopulated zone (501 – 1,000 inhabitants per square kilometer) and extremely overpopulated zone (above 1,000 inhabitants per square kilometer). In 2002, almost half (61) of the municipalities were in the group with weak concentration, 26 of the municipalities had medium concentration, 7 were overpopulated, 19 significantly overpopulated, 4 very significantly overpopulated, и 6 municipalities had above 1000 inhabitants per square km. <sup>1</sup>

### Development of the population in different regions<sup>2</sup>

Region	Total Population		Change – Increase 1994-2002		Growth Rate	Migration	Population Density		Unemployment Rate %
	1994	2002	No	%			1994	2002	
National Level	1,945,932	2,022,547	76,615	3.94	0.48	-30,992	76.0	79.0	38%
Pelagonija	242,614	238,136	-4,478	-1.85	-0.23	-5,297	49.7	48.8	18%
Vardar	131,035	133,180	2,145	1.64	0.20	-1,670	40.7	41.4	13%
North-East	163,841	172,787	8,946	5.46	0.66	-1,557	70.6	74.4	8%
South-West	211,226	219,741	8,515	4.03	0.49	-6,191	64.2	66.8	4%
Skopje	545,228	578,144	32,916	6.04	0.73	243	314.6	333.6	1%
South-East	168,481	171,416	2,935	1.74	0.22	-4,743	64.8	66	36%
Polog	281,982	305,930	23,948	8.49	1.02	-8,472	116.8	126.7	10%
East	201,525	203,213	1,688	0.84	0.10	-3,305	48.3	48.7	12%

<sup>1</sup> Socioeconomic differences between the municipalities in Macedonia, UNDP, 2002

<sup>2</sup> Socioeconomic differences between the municipalities in Macedonia, UNDP, 2002

## **7 Forests and forest land**

In 2006 the forests in Macedonia covered 947.653 ha, taking up 37% of the total surface of the country. According to the growth form, the tall forests comprise less than 30% of the total forest surface, while the short forests amount to 70%. As a result of this condition only a third of forests are considered to be suitable as a source for raw materials for the wood industry.

## **8 Water resources**

The total resources of water are valued to 6,37 billion m<sup>3</sup> in normal years, and 4,8 billion m<sup>3</sup> in drought years. There is a well developed hydrological network (four river bowls of which three are significant in terms of the flow course, Vardar takes up 79%, Crn Drim 13%, and Strumica 7%) and three natural lakes (Ohrid Lake, Prespa Lake, Dojran Lake). In the Republic of Macedonia there are approximately 110 artificial lakes. Of which only 20 are bigger than 1 million m<sup>3</sup>, which are used for irrigation, water supply, and production of hydro electrical energy.

The problem which arises from the availability of the water resources is their uneven spacious and time allocation through the country. Taking that in to consideration, there are more convenient conditions in the west part. About 85% of the surface water comes from the country, and 15% flows from the neighboring countries.

The largest quantity of water is used by the irrigation systems.

## **9 Structure of the rural areas and rural economy**

### **9.1 Rural demography and education**

According to the Decision for determining the economically insufficiently developed areas<sup>3</sup> from 2006, 64 % of the total number of villages in Macedonia is suitable for support in the frames of the mentioned law. The total number of rural centers is 113 (of which 20 also have the status Specific Regions). The total number of these villages with the status specific Regions is 1,005 divided as follows:

- 51% are hills and mountains, predominantly in the south-east part, then there is Polog and Pelagonija, the north-east and the east part and the smallest number of them is located in the Vardar region and the south-west region and Skopje.
- 33% are extremely undeveloped villages, located mainly in the east part, the Vardar area and the Pelagonija area, and the north-east region.
- 15% are border villages located along the border.

In the frames of the current solution, around 69% of the national territories have been covered and about 17% of the total population. Still the criteria for determining the economically insufficiently developed regions are uncertain, because some Macedonian villages with a high migration rate, the insufficient utility services and the economic infrastructure, have not yet acquired the status of extremely undeveloped villages and vice versa.

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<sup>3</sup> Official Gazette No. 17/2006 and 54/2006

With the last census (2002), the total population in Macedonia is about two million. The density of the population is 79 inhabitants / km<sup>2</sup> which is a small percent (68%) in comparison to the EU average of 115 inhabitants per km<sup>2</sup>.

About 43<sup>4</sup> % of the population lives in the rural areas allocated on a surface of 86.7% from the total surface of the land. The urban population is mainly concentrated in the capital Skopje (23.1%), and the rest is allocated in the other cities.

The average age of the population in Macedonia is approximately 33 years, and almost 68% of the population is capable of working (between 15 and 64 years). The net growth rate of the population is roughly estimated as 0.4% for 2004, while the birth rate is twice as larger than the death rate. Still, Macedonia has a bad average net rate of migration - 1.45/1,000 inhabitants.

From 1981 until 2002, the number of young (0 до 19 години) has reduced from 41 to 32.2%, while the population at the age of 65 and more has increased from 8 to 32%. The unsatisfactory age structure in the rural areas is particularly expressed in the region of Pelagonija (18.8%), the east region (15.5), the Vardar region (12.9) and the North-east region (12.7%)<sup>5</sup>.

In Macedonia 96% of the total population above 10 years of age is literate. There is a gender equality with the literate population, but at least two thirds of the illiterate population is<sup>6</sup>.

If the total condition with the literacy is good, it seems that there is a difference between the urban and rural areas in the educational structure. According to the census from 1994, a large part (37.9%) of the village and agricultural population is at the age of above 15 and they have, either insufficient education or it lacks completely: 10.5% are illiterate and 27.4% did not finish elementary education. The low rate of education in the rural areas is due to: *"migration of young population which is capable of working, ... lack or a small number of educational institutions, insufficient care for the improvement of the education of the young population, isolating the undeveloped villages, etc."*<sup>7</sup>.

The educational problem is obvious between the unemployed, because only 8% of them have higher or university education, the majority (54%) has high school education, and the remaining 38% do not have any skills. The young population (at the age of 15-25) is 23% of the unemployed, still this percent reaches up to 82% between the young population capable of work.<sup>8</sup>

The education is the propellant of the economic and social development. That is also a factor for the readiness for innovations. The educational system plays a very important role in the capability of the young people to value the local products and local tradition. The quality and life long learning can reduce the inequalities between the urban and the rural areas in Macedonia, which are large.

The small size farmers (especially in the areas which are undeveloped) have the lowest educational and professional level between the agricultural producers. In the country, aside from the formal high school and university education, there is a lack of

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<sup>4</sup> According to the last census from 1994, the rural population in the country was 40.2 %.

<sup>5</sup> Submitted document – J. Jakimovski (Institute for Sociological Policy and legal research, Skopje

<sup>6</sup> Source: State Statistical Office, 2002 Census of the population, Book 13

<sup>7</sup> Rural social structure, J. Jakimovski

<sup>8</sup> Statistical year book of the Republic of Macedonia, 2005

additional (informal) education and training of the farmers. The current media programs (radio, TV) connection with the agriculture, are limited in terms of the duration and are very general in the scope of the contents. There are no specialized agricultural magazines. The Macedonian web page on agriculture (all the national web pages which provide useful information to the agricultural institutions) is very scarce and gives out dated information<sup>9</sup>. There is also a limited number of public resources which can encourage and improve the life quality.<sup>10</sup>

## 10 Rural population and employment

The available statistic does not provide adequate details for employment in the rural areas by branches. The larger part of the rural population is engaged in the agricultural department (mainly in the frames of the household) and other activities, if there are any. The agricultural incomes tend to be much lower than the other departments and nearly half of all the agricultural workers are unpaid workers from members of the family. The employment in the agriculture also depend on the season. The report of WB from 2005 on the evaluation of the poverty concludes that the employments in the agricultural department are a social buffer, and help to reduce the poverty and unemployment, specially in a time with a high unemployment rate outside the farm.

The comparison of exceptionally agricultural households, mixed households (engaged in the agriculture of private lands and where one family member at most is employed outside of agriculture) and households without agricultural incomes, indicated that the mixed households have the highest incomes, followed by agricultural households. The un-agricultural rural households are the poorest<sup>11</sup>. The studies have shown a tendency towards diversification of un-agricultural employment as a result of the economic need (a, less significantly, attitudes towards agriculture) and confirm a positive correlation between income and the number of un-agricultural activities that households are engaged in. The farmers with full working hours earn 88% of the net income from agriculture (the remainder is unearned income, such as pensions). The farmers with short working hours earn around 50% of their income by wages or self-employment, and the remaining part from agriculture and from unearned income<sup>12</sup>.

**Employment** : The primary agricultural production (including hunting and forestry) is the largest employed with around 20% of the total work force of the entire population. Around 114.000 people are employed in agriculture plus around 20.000 are regulated as temporary farmers and a large number of seasonal workers (especially in the vegetables and fruit sector) for which there are no accurate data.

Around 40% of the agricultural population falls into the active population category and can be considered as work force organized by farm households. Statistically, the employment in agriculture is monitored through the official data on employment in

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<sup>9</sup> Agricultural knowledge and informational system in RM, master thesis, Rusev Trajce, 2005.

<sup>10</sup> MAFWE – Annual Agricultural Report 2005.

<sup>11</sup> Source: State Statistical Office stated in the document of the World Bank Agriculture and EU accession: Promotion of agricultural potentials in the Republic of Macedonia (November 2006)

<sup>12</sup> Main un-agricultural activities which generate income are trade, transport and repair of vehicles (which take up 17.5% of the un-agricultural activities) followed by catering activities, construction, food processing, sewing and tourism (Buchenrieder, G., J. Mollers and F. Heidhues. 2002). This analysis is based on data from a study which encompasses rural areas households which operate in full working hours in agriculture and households who also have other sources of income.

agricultural enterprises – research of work force i.e. in accordance with the methodological recommendation by ILO and Eurostat – European Statistical Bureau

In 2006, the active population in the Republic of Macedonia amounted to 891679 person and in relation to 2005 it was increased by 2,6%. Out of the total work force 570404 were employed, i.e. 64.0%, and 321274 persons i.e., 36.0% were unemployed. The number of employed people in 2006 in relation to 2005 was increased by 4.6% while the number of unemployed people had a decrease of 0.8%. According to the State Statistical Office of the Republic of Macedonia, out of the total of employed people, in Agriculture, Hunting, and Forestry 114485 people, i.e. 20% are employed. According to the type of ownership of the business entities in 2006, 107841 are privately owned, and under other ownership are 6644 entities. Out of the total number of employed people in Agriculture, Hunting, and Forestry 12106 are employees, 7873 are employers, 37679 are personally employed and 56827 unpaid family workers.

There was a decrease in employment in agriculture (together with hunting and forestry) in 2006 of about 7.3% in comparison to 2005. While in 2005 there was an increase of employment in agriculture of 21.8% in relation to the same year.

The work force use in agriculture by all engaged individuals is equal to 114.485 annual work units. The share unpaid labor i.e. work force from the family is 49%, and the remaining 51% is engaged work force which includes seasonal work or full working hours as well as various services of external entities intended for the farm.

Thus the work force in agriculture in Macedonia mainly consists of labor on the level of individual agricultural economy.

#### **Indicators for agricultural activity' incomes (in millions of denars) 2002-2006**

Indicator	2002	2003	2004	2005	2006
Nominal earnings from the production factors per work unit (in denars)	161.032	188.228	251.083	226.256	266.450
Actual earning from production factors per work unit (Basis: previous year) (in denars)	155.737	187.291	245.894	219.028	258.690

Source: State Statistical Office of the Republic of Macedonia, "Economic Account on Agriculture"

The average paid monthly gross salary per employee in agriculture, hunting and forestry amounts to 17436 denars, while in agriculture, hunting and appropriate service activities it is 16470 den.

### **11 Social welfare infrastructure**

The social welfare infrastructure in rural areas (kindergardens, schools, public facilities in the community – libraries, clubs) was developed in the past, but in the largest number of cases the facilities are in bad conditions, without the possibility of repair or are abandoned.

The largest portion of the population of the rural areas, especially those from mountain villages, has a lack of basic health service, including services for primary healthcare.



## II. AGRICULTURAL PRODUCTION, PROCESSING AND TRADE

The structure of the agricultural production was stable in the last ten years, and in the period of 2000-2005. In 2004, the value of the gross agricultural production (according to the present/current costs), has reached 59 510 million MKD (about 970 million €).

Crop production had the biggest contribution, including wine (79%) whereas balance was reached with the animal origin products (21%). The production of fruit and vegetable (including wine) had the highest gross 'value' in 2004, with a 32 and 18.5% part in the total value of gross products in agriculture, or about 40 and 23% of the total value in the agricultural crops. The biggest part of the cattle breeding gross products in 2004 belonged to the products of cattle production with 52% (whereby the dairy products had biggest share in the total value of the animal origin products with 36%) and cattle breeding with 48%.

### Crop production

Crop production is divided into four main groups, as cereals, industrial crops, forage crops, fruit (including grapes) and vegetables (including potatoes).

#### 1 Cereals

Cereals are strategically very important, and due to this, they are the most cultivated crops group. These crops have the largest presence on the total arable agricultural land. There was a total of 526 477 ha of arable land in 2007, whereby cereals were sowed on 178 520 ha. Wheat was the most present crop with 50, 9%, followed by barley with 26,7%, maize with 17,3%, and then rye with 2, 3%, as well as rice and oats with 1, 4%. Maize, barley and rye are mainly used as feed.

The areas under cereals have been reduced by 5% in 2007, compared to the previous year. The declining trend of areas sowed with cereals in the recent years is mainly a result of the decrease of the market price and direct state support (protected wheat price and a bonus for every kilogram produced cereals).

Wheat producers are under strong pressure from the obligations arising from the Macedonia's WTO accession in relation to the agreed quotas of custom duty exemption of 80 000 tons, abolishing the intervention purchase of state supplies with the coming into force of the Law on Commodity Reserves dated 01.01. 2005, with an exception to keeping safe food reserves as well as the change of the principle for issuing import licenses 'first come – first served'. Not sufficient budget for the support of agricultural production is an additional restrictive factor (in 2003 the support for wheat was abolished, although it has been one of the most cultivated cereals in the country). Still as a result of a reestablished subventions in 2004/2005, the surface under barley, rye and oat has showed increasing trend.

## Area under cereals in the Republic of Macedonia, 2007

Crops	2003	2004	2005	2006	2007
Area under crops (in ha)					
Cereals	195 076	189 337	203 158	187 880	1178 520
Wheat	104 300	101 607	108 881	99 080	90 800
Barley	46 946	44 975	50 654	48 272	47 767
Rye	4 437	4 546	4 752	3 941	4 036
Oat	2 230	2 408	2 687	2 162	2 554
Maize	34 150	32 913	33 578	31 900	30 859
Rice	3 013	2 888	2 606	2 525	2 504
Production (in tons)					
Wheat	225 300	356 825	333 880	293 326	218 076
Barley	83 244	148 892	136 891	135 053	106 635
Rye	6 057	10 273	9 451	8 631	6 735
Oat	2 419	4 091	3 593	3 736	3 449
Maize	136 492	141 875	148 234	147 494	118 378
Rice	12 934	14 676	12 570	13 949	15 355
Yields (tons per ha)					
Wheat	2,16	3,51	3,07	3,01	2,40
Barley	1,77	3,31	2,70	2,82	2,23
Rye	1,37	2,26	1,99	2,19	1,67
Oat	1,08	1,70	1,34	1,74	1,35
Maize	4,00	4,31	4,41	4,64	3,84
Rice	4,29	5,08	4,82	5,52	6,13

As a guaranty for a supply of certain level for own wheat production (at least on current production level) as raw material for production of basic nutritive products for the population in the Republic of Macedonia, it is important to provide a certain budget support for planned objectives and expected effects directed towards the productivity improvement (bigger output in a input unit) and competition as it follows:

- In short terms, maintaining the optimal wheat production level in the domestic production and in the last years beside the significant domestic price reduction and going toward the world market price is still sustainable to 70-90% from the total domestic demand.
- In mid time period, increasing the production and soothing the negative trade balance through a substitution of significant wheat import<sup>13</sup>, throughout improved productivity in the production (i.e. average yields higher than 3 500 kg/ha ) adaptation of systematic measures<sup>14</sup> as well as guiding the application criteria.

According to the analysis of limitations that influence the productivity, small producers who use agricultural surface-land less than 2-3 hectares, and objectively they cannot adjust to the types of technologies required for intensive production, will improve the revenue state of their limited land resources towards gradual orientation in the production (towards production of fruit, vegetable and maslodajni crop, alternative and non-traditional crop, which from 2008 will be state support). In this direction the agricultural producers-farmers are stimulated to replace the crop

<sup>13</sup> With the yield increase and total domestic production for 35% the needs will be satisfied and it won't be necessary to give 11million euros for an import of 60 000 - 80 000 tones per year.

<sup>14</sup> Throughout the use of certified highly yield seed, crop rotation, among crop(inter crop),improving and maintaining the soil fertility, analyze to the pedological combination/content and application of certain agro technical measures cleaning the soil of residuum, and etc.

production with other alternative products, especially in the region where the wheat yield is under 3 000 kg/ha sowed on a surface smaller than 2 hectares.

On the other hand, when it comes to the sector of wheat commercial production, it is important to improve the production technology and significantly to increase the productivity and competition. MAFWE will support this sector by supplying certain consultant services through subvention production of certificated seed, also by support of the mechanical associations; that should improve the situation with use of agricultural mechanization, due to the reduction of losses in the harvest, which fluctuates up to 30% of the output.

Present investments in the wheat production that are sufficient for the existing yield level are 16 000-18 000 denars for a hectare. In order to accomplish better productive results i.e. the wheat yield of 3 500-4 000 kg/ha, additional investments in the inputs are needed (seed material; fertilizer and at least protection of 3 000-4 500 denars per a hectare or additional 1-1, 5 den/kg produced wheat). As a result of the support and higher yield, the cost price in a unit product is expected to be reduced. This means to cover the market price difference of approximately 8-9 denars.

The support per a hectare for produced and delivered wheat in the mill-bakery industry, should represent a base on which accomplished wheat yield will be calculated. Like this, beside the higher productivity and lower cost price per unit product, also stimulates the surface expansion of certain agricultural crops. Additionally, for surfaces bigger than 250 hectares, the support should increase in 50% of the planned support, while for registries surfaces more then 550 hectares, the support increase should be approximately 30%.

#### **Yield of cereals in a period from 2003-2007 (kg/ha)**

	<b>Wheat</b>	<b>Rye</b>	<b>Barley</b>	<b>Oat</b>	<b>Maize</b>	<b>Rice</b>
2003	2 177	1 365	1 789	1 085	4 051	4 293
2004	3 522	2 295	3 328	1 715	4 364	5 168
2005	3 081	2 005	2 719	1 553	4 491	5 270
2006	3 010	2 193	2 821	1 746	4 649	5 526
2007	2 400	1 670	2 230	1 350	3 836	6 130
2007/2006	-20%	-23,7%	-21%	-22,7%	-17,5%	10,9%

Negative climatic conditions followed by a dry period of couple of months, minimal rainfall in the winter period and high temperatures in May, conditioned not even braid and not equal development of the autumn crop, due to the not sufficient quantity of moisture in the soil.

In the east party of the country, from January till May, 80 до 100 l/m<sup>2</sup> rainfalls are measured, which is under minimum for a growth of agricultural plants.

The average yield of all cereals are low regarding the yield, accomplished from the main corn-merchant/ suppliers in the world market , but are still close to the yields accomplished, in the other agricultural economies in the region.

Generally, there are small differences in the accomplished yields of the agricultural companies, and of the individual agricultural producers in the Republic of Macedonia.

The average yields of all cereals (2.8 tones/ha in a period of 2000-2007), are generally low, compared with the EU (5 tons/ha), as a result of unsuitable application of the agro-chemicals (protection of plants and fertilizer), a usage of not certified, low-

gained seeds and/or with not adequate quality, not enough moisture in the soil (not adequate watering) not adequate use of agro technical measures (crop rotation, in time sowing, and etc.) and disused mechanization for soil cultivation, harvest and transport (which causes losses in the harvest and in the post-harvest period)

#### **Average yield of the cereals in the world**

<b>Average yield t/ha</b>	<b>States rated from the highest to the smallest value</b>
8-9	Ireland, Holland, Belgium
7-8	Great Britain, Germany, Danmark, France, New Zeland
5-7	Egypt, Luxemburg, Sweden, Switzerland, Austria, Czeck Republic
4-5	Slovenia, Croatia, Hungary, Slovakia, Norway, China
3-4	Serbia, Bulgaria, Bosnia and Herzegovina, Albania, Romania, Macedonia, Italy, Lithuania
2-3	USA, Canada, Ukraine, Montenegro, Spain, Greece, Israel, Turkey
1-2	Russia, Australia, Portugal, Cyprus

The wheat production in 2007 compared to the average production in a period of 2000-2006, is lower for 24%, due to the soil reduction for about 8 280 ha and because of the accomplished lower average yields per hectare for about 20 % as a result of drought.

The yield in 2007 compared to the production in 2006 is cut down to all cereals, except rice notes a growth of 11%. This reduction fluctuates from 17-23%, and is a main reason of the long term drought.

Factors that influence the wheat yield growth are:

- Use of high -productive sorts of seeds
- Use of high-quality artificial fertilizer (a pre condition for accomplishing about 20 % higher yields)
- Feeding that should be done in a phase of corn and grain formation.
- Soya occurence as a prior crop
- Watering the wheat at the beginning of April, at the end of May and at the beginning of June because of accomplishing higher yield.

The rainfalls in May are most welcomed.

Putting the wheat sorts into regions is an important prerequisite for accomplishing higher production of wheat per year. To cut down the wheat loss during the harvest, which is now about 30%, disused mechanization should be replaced, i.e. new reaping machine should be provided.

Total wheat necessities for the R. Macedonia are about 330 000 tons (32 000 tons seed material + 280 000 tones of mercantile wheat to satisfy the needs for bread and bakery production and about 18 000 tones of the total reserve in the stats` stores and at the mill companies. About 40-50% of requirements are satisfied with import.

To reduce the dependence of wheat import of the R. Macedonia, it is important to increase the domestic wheat production with application of the all above mentioned measures.

	2003		2004		2005		2006		2007
	% of total prod.	Purchase in tons	% of total production	Purchase in tons	% of total prod.	Purchase in tons	% of total prod.	Purchase in tons	% of total prod.
Wheat (including seed material.)	58%	109 069	48,40%	114 258	32,00%	127 356	37,09%	132 323	43,8%
rye	4%	627	10,40%	340	3,30%				
Barley-including brewers	14%	16 875	20,30%	16 327	11,00%	32 265	23,5%	15 965	11,8%
Oat	2%	6	0,20%	340	8,30%				
Maize in corn incl. seed	0%	1 691	1,20%	2 359	1,70%	1 532	1,03%	4 559	3,09%
Rice and apra	1%	412	3,20%	282	1,90%	237	1,88%	768	5,50%

Source: State Statistical Office of the R.M.

## 2 Industrial crop

The industrial crop in 2007 was reaped on a surface of 21 114 ha, which presents about 4% of the total arable land.

The most significant industrial crop is: tobacco, sun flower, white beet, and poppy. 81% of the total surface under industrial crop belongs to the tobacco, while the sunflower is cultivated at about 17% of the surface, and the white beet at about 2% of the reaped surfaces of industrial crop.

The poppy is planted on limited and controlled surfaces, under administrative governmental inspection, whereas the purchase is performed by authorized institution for processing.

	2003	2004	2005	2006	2007
Surface under crops (in ha)					
Industrial crop	55 740	54 465	54 227	49 855	21 114
Tobacco	18 101	17 717	18 490	17 507	17 132
Sun flower	5 561	5 179	5 371	3 724	3 505
White beet	1 267	1 542	1 648	1 446	241
Poppy.	101	116	159	145	236
Production in tons					
Tobacco	23 986	21 630	27 691	25 036	22 056
Sun flower	6 794	7 764	6 711	6 016	3 579
White beet	40 154	47 223	57 836	59 286	7 852
Poppy.	56	62	91	89	161
Yield (tones in ha)					
Tobacco	1,33	1,22	1,5	1,43	1,28
Sun flower	1,22	1,5	1,25	1,62	1,02
White beet	31,69	30,62	35,09	41	32,6
Poppy.	0,55	0,53	0,57	0,61	0,68

The total surface under industrial crop in 2007 records a fall of 7 % regarding 2006, mainly due to the reduced white beet surfaces (for about 83%), and sunflower (approximately 6%)

**The sunflower** is mainly cultivated in the Pelagonia region (50-70%) and afterwards follows the Kumanovo and Ovce Pole region.

Although the climatic conditions could be considered suitable for this type of production, yet the sunflower surfaces and its total production significantly has reduced in the period of the country's independence. As a result of the problems related with the work of former agricultural combine that covered bigger part of the sunflower seed production.

In the last five years the surfaces under this crop has reduced twice, from (9, 8 thousands ha in 1999 to 5, 2 thousands ha in 2004.)

Although the purchased price of the sunflower seed has increased, the yield is still not sufficient to provide positive revenues for the producers. The annual necessities of sunflower oil are about 25 thousand tons of which only 10% are provided by the domestic production.

The shortage of raw material for production of oil, is substituted with the import of raw oil, which is later refined in the private companies in the country.

**Poppy** in 2007 was planted on a surface of 236 ha, which presents an increase in the surface of about 62 %. In the same year the poppy yield is 0.6 tones per ha.

In the R Macedonia, poppy is generally planted as an autumn crop in the central and southern part of the country. As an early crop it evades the summer early drought and they are very common, and it is used for making high-quality opium. As trench crop it's been fertilized enough, well-cultivated and it is early-collected and is good prior crop for other autumn crops.

The surface under poppy varies; it depends on the weather conditions, the purchased price for the seed and the cones from the poppy.

In the ten year period, from 1963-1972, in average the surface that it has been cultivated was 1 693 ha with a production of 884 tons seed.

In a period of 1980-1985, the poppy in the R. Macedonia has been cultivated in 2 134 ha, and the average yield for the same period was 580 kg/ha and 7 kg/ha crude opium. The opium yield is very much variable, as it depends on the weather conditions the time of cutting and collection of the cones.

Our country as one of the oldest producers in opium poppy, according the international agreement has a legal right to cultivate opium poppy for production of crude opium in determined quantities.

AD Alkaloid – Skopje is the only processing capacity that organizes and controls the purchase and transport of the poppy cones, for whose production signs annually 620 contracts with individual poppy producers in the areas of : Vinica, Vaels, Stip, Radovis, Strumica and Skopje.

They provide them free of charge, high quality seed material .Also they completely manage the poppy production, through a constant follow of the production, providing mechanization (for sowing, crossing and swaying poppy seed), on time delivery of a suitable packaging for collecting the poppy cones, as well as on time delivery of purchased quantities of poppy cones for 25 00 den/kg, in a time period of 7-10 days.

According to the data received by Alkaloid Skopje, for the period of 1999-2007, the surfaces and the production of poppy cones record a grow, with an exception of the production years of 2001 and 2002, when there was dramatic reduction in production, due to the unfavorable climatic conditions with long-term droughts.

With increase of the purchased price, per kg a poppy cone for 25% in the productive 2005-2006, is recorded a trend in the raise of the surfaces and the production.

#### Surfaces and poppy production for the needs of AD Alkaloid- Skopje

Year	Sowed area in ha.	Harvested area in ha	Total production in tons	Average yield in kg/ha
2003	461,0	461,0	45,2	98,0
2004	423,7	423,7	62,1	146,6
2005	450,8	450,8	73,6	163,2
2006	533,9	533,9	99,4	186,1
2007	534,0	534,0	95,9	179,6

Database AD Alkaloid- Skopje

**The tobacco** in 2007 has been sown on 17 132 ha or for 375 ha, less then 2006. The tobacco production, especially the production of small-sized oriental aromatic tobacco leaf, has huge economical and social influence. Tobacco is the most important exported agricultural product from the R. Macedonia, with biggest participation in the overall export of the agricultural-nutritive products or in other words with absolute exported value of 63 million euros. About 30 000 households deal with tobacco production.

Due to an intensive hard working character in cultivation of this crop, tobacco growing involves important number of effective working rural population, especially in the defined regions where the tobacco is occurs as mono crop.

Also, the tobacco is the most important product in the Macedonian, foreign trade balance with agricultural products.

The tobacco purchase from the harvest in 2007, were entitled to do 6 registered tobacco firms for purchase.

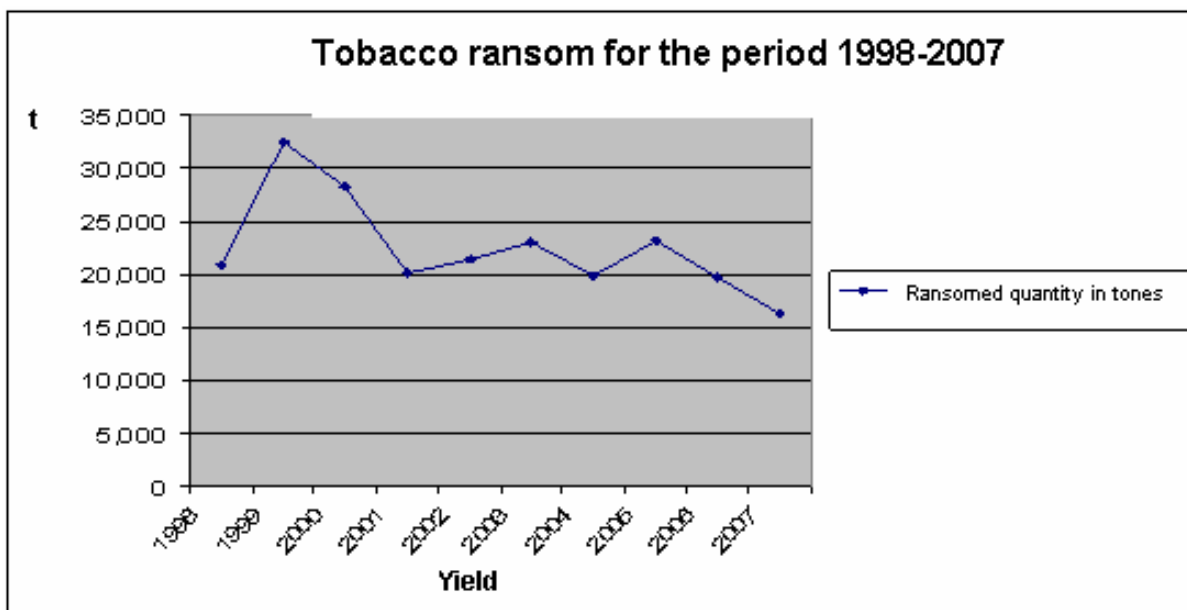
The total purchased tobacco (16 290 tons) form the harvest 2007, 57% or about 9 300 tons ce are II class, 32% or about 5 142 tones are from IIIa class, 7% or about 1 213 tons are I class and 4% or 570, 5 are from IIIb class.

#### Purchase of rude tobacco in leaves in the period 2003-2007

Raw tobacco in leaf from the harvest	Purchased quantity in tons	Value in million dennars	Average purchased price in den/kg
2003	23 000	1 803	78,4
2004	19 839	2 718	137,0
2005	23 206	2 910	125,4
2006	19 681	2 325	118,14
2007	16 290	2 290	140,57

Compared to the performed tobacco purchase, for the harvest 2006, , from the harvest 2007 has been purchased 3 390 tons less tobacco, i.e. about 17%, while the average purchased price regarding the harvest 2006 is higher for about 19%.

Also, the tobacco purchase from the harvest 1998-2006, the quantity from purchased tobacco from the harvest 2007, cuts down for about 17% to 30%, while the average purchased price is higher for 20%, from the average in the period 1998-2006



In June 2006, Macedonia has signed the framework convention for tobacco control with the World Health Organization, and should meet the obligations/requirements that are stipulated here.

In 2006 the Law for tobacco and tobacco products was put into force, by which the primary tobacco production is managed, financing, purchase, processing of purchased raw tobacco in leaves, turnover fermented tobacco, as well as production and sale of tobacco products.

According to the Article 50 and Article 51 from the Law for tobacco and tobacco products, compensation has been determined, which is paid by the producers or importers to tobacco products, of 3denars per a package of cigarette. This money will be used for financing the activities in the primary tobacco production, for additional financing of primary agricultural production and export promotion.

In 2007, according the Law for tobacco and tobacco products (in the' Official Gazette of the R. M.' N. 24/2006), 8 sub-statutory Articles were issued and in details, explain the primary tobacco production and the purchase of raw tobacco in leaves.

### 3 Forage crop

Forage crop are under political measurement, whose mail objective is to increase livestock food. Precisely, the measure is related to the development of artificial meadows, by sowing expertise to the meadows.

The production of livestock food and forage crop satisfies the needs for only 30-35% of the entire initial needs.



	2003	2004	2005	2006	2007
Surface under crops (in ha)					
Forage crops	30 710	29 911	28 559	28 472	29 057
Clover	3 953	3 857	3 784	3 635	2 911
Vetch ling	3 522	2 851	2 643	2 410	2 418
Lucerne	18 238	18 315	17 847	18 218	19 369
Livestock pees	2 234	2 018	1 738	1 521	1 312
Forage maize	2 278	2 425	2 171	2 241	2 627
Livestock beet	485	445	376	447	420
Production (in tons)					
Clover	15 634	16 166	15 901	16 951	11 921
Vetch ling	10 837	9 253	8 680	10 822	9 461
Lucerne	114 718	113 012	121 528	125 832	114 130
Livestock pees	5 454	5 557	5 172	6 624	3 662
Forage maize	57 907	55 694	48 027	48 916	62 701
Livestock beet	5 243	4 728	4 241	5 754	5 453
Yield (tons/ha)					
Clover	3,95	4,19	4,2	4,68	4,09
Vetch ling	3,08	3,25	3,28	4,51	3,9
Lucerne	6,29	6,17	6,81	6,94	5,89
Livestock pees	2,44	2,57	2,98	4,67	2,8
Forage maize	25,42	22,97	22,12	21,82	23,86
Livestock beet	10,81	10,62	11,28	13,22	12,98

The forage production in 2007 is reduced for 22 %, regarding 2006 as a result of low average yield per unit surface.

The forage plants take only 5.5% of the whole arable land in the country, different from the countries with developed stock farming where this part is about 40%. One of the reasons for this, is the shortage of enough farm land per farm, and on the small farms is also not profitable to cultivate forage plants.

Also Macedonia is net importer of wheat for seed and forage crop for half of the domestic needs. The shortage of forage crop and livestock food (from here comes the high price) is one of the major limited factors for stock farming development, and has a negative influence on the cost structure in the meat production (livestock food and forage crop, which could cost up to 50-85% of the production cost) especially by intensive forage.

#### 4 Vegetable crops

The production of vegetable crop, especially ones in the early season, is one of the most important characteristic to the agricultural sector in the R. Macedonia, and is also one of the important sub-sectors that offer solid base for further competitive development of the agriculture.

Though, the production of vegetable crop is a traditional branch in the production, yet it is in a development phase, and the market orientation of its production has increased by the individual producers.

The vegetable crop production is mainly located in the northern parts of the country (in Skopje and Kumanovo) with average continental climate, and in the southern part with Mediterranean climate (Strumica, Gevgelija, Valandovo) with a total harvested area of 35 881 ha, which represents an increase for about 320 ha related to 2006.

Early vegetable crop production is mainly done in closed, protected space under glass and plastic tunnels on a total surface of about 5 000 ha, of which only 260 ha installed capacities under glass and about 4 740 ha under plastic tunnels.

Early vegetable crop production is a controlled production for which there are favorable conditions for soil and good climate, with optimal number of sunny days.

In the R. Macedonia, glass houses from Israel and Holland are installed on total agricultural arable land of 260 ha, but the utilization from the installed capacities is about 70%-80%.

The glass house production is characteristic for Strumica, Valandovo, Gevgelija, Sveti Nikole, Kumanovo, Veles, Stip, Kocani and Vinica.

It begins intensively from 15. 03 and lasts until 30. 06. In this period, i.e. from 01. 06 until 30. 08, parallel to the glass house production is also received the production of vegetable crop from plastic tunnels.

In the productive 2007 the production of early vegetable crop under glass has taken part on a total surface of 195 hectares or for 10 ha bigger surface than in 2006.

The total surface of 120, 78 ha under tomatoes a production is accomplished of about 13 300 tons.

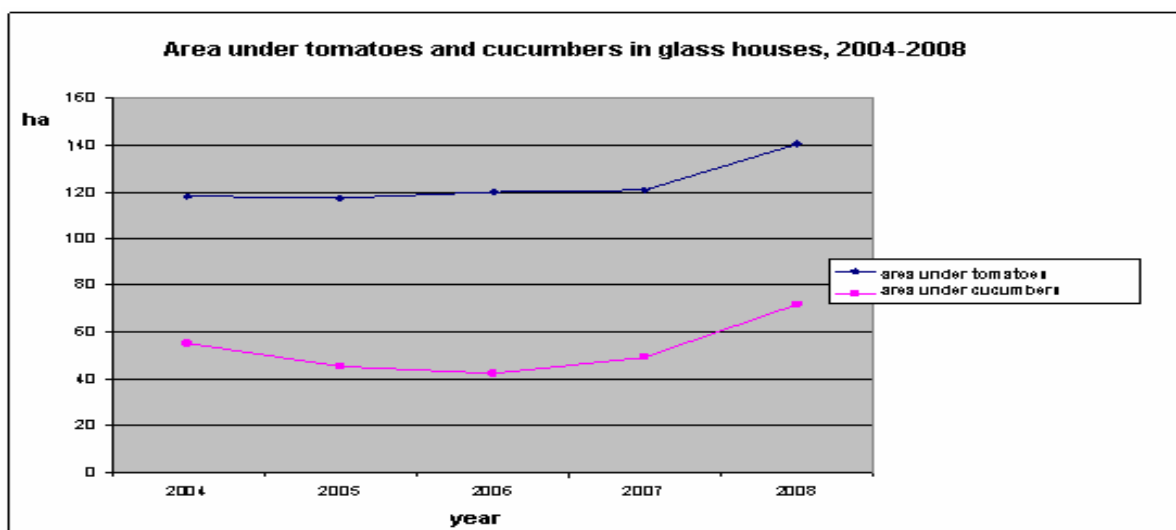
With the glass house cultivated cucumbers, on the surface of about 49, 2 ha, a production of

6 820 tons is accomplished.

Sweet red/green pepper is cultivated in a surface of about 2, 26 ha with a production of about 30 tons.

Chilly red peppers are cultivated on 2,0 ha with accomplished production of about 410 200 thousand numbers.

On a surface of 7,2 ha are flowers cultivated with expected annual production of about 4 700 thousand numbers of different flowers.



The surface under glass house, tomato and cucumber from 2005 record an increasing trend that continues in 2008.

The production of major important vegetable crop under plastic tunnels is carried out on a total surface of about 4 740 ha.

Tomatoes are planted about 1 800 ha with average annual production of about 100 000 tons, with red/green peppers are planted on a surface of about 1 400 ha with total production of about 47 000 tons.

The potato is planted under surface of 210 ha, and averaged accomplished production is about 200 tons, the surface under cucumbers is about 580 ha and accomplished production is about 34 400 tons, with watermelon is about 600 tons and with cabbage the surface is about 420 ha averaged accomplished production is about 6 500 tons.

The climatic conditions in Macedonia provide a successful production of more kinds of vegetable. Mostly occurred are tomato, potato, cucumber, cabbage, onion, green/red pepper and watermelon, and are mainly cultivated on open field. These crops are traditionally produced in Macedonia, along with the other vegetable crop such as: beans, garlic, leek, cauliflower, lettuce, aubergine, carrot, and etc. In the recent years the farmers introduce new not traditional crop as: broccoli, asparagus, Chinese cabbage, and etc.

The production of vegetable in 2007, records a decrease of about 6%, than in 2006, due to accomplished low average yield, which was especially noticed with the low average yield at the potatoes and onion.

#### Surface with crops (in ha)

	2003	2004	2005	2006	2007
Vegetable	49 191	51 119	46 992	35 560	35 881
Tomatoes	6 411	6 267	5 769	5 657	5 368
Peppers	7 578	8 135	8 170	8 332	8 331
Garlic	1 092	1 098	1 105	970	1 013
Pees	6 210	8 135	5 254	907	901
Lens	144	142	103	104	102
Cabbage	3 662	4 025	3 856	3 149	3 236
Onion	3 385	3 203	3 218	3 037	3 131
Potato	13 488	13 445	12 926	13 404	13 799
Production (in tons)					
Tomatoes	129 739	114 490	116 633	142 387	117 981
Peppers	111 494	127 852	127 472	140 905	140 558
Garlic	4 363	3 669	4 077	3 814	3 754
Pees	5 578	5 939	6 325	1 723	1 872
Lens	144	144	169	86	87
Cabbage	75 374	92 319	66 499	65 975	67 138
Onion	30 478	34 334	38 465	33 853	33 524
Potato	170 625	193 523	186 653	188 146	179 729
Yield (tons/ha)					
Peppers	14,71	15,72	15,6	16,9	16,87
Garlic	4	3,34	3,69	3,9	3,7
Pees	0,9	0,73	1,2	1,9	2
Lens	1	1,01	0,69	0,8	0,85
Cabbage	20,58	22,94	17,25	21	20,74
Onion	9	10,72	11,95	11,2	10,7
Potato	12,65	14,39	14,44	14	13

The price for the vegetable characterizes with high seasonal component of the offer. Early seasoned vegetable is most profitable for farmers and has the highest price in the period of gathering /harvest, and sale in a period between January-April. The lowest price are recorded in a period July- September, when actually are sold crop that are cultivated on open field.

The vegetable is bought and sold on the domestic market in retail and wholesale trade. Big part of the domestic production is sold at the green markets in the urban settlements. Markets with a wholesale trade characterizes with limited capacities for storing the vegetable and shortage of capacities for classification and packaging, necessary for meeting the minimal market standards. Further strengthening of these capacities is also needed, in terms of strengthening the domestic market standards according to the EU standards, due to a fact that the big part of the market surplus of vegetable produced in Macedonia is aimed towards these markets.

The seed is produced in own plantations. Fertilizers for vegetable crop are domestically produced, while means for protecting the seed material for an open field production and glass houses, are generally imported from Holland, Israel, Serbia, Montenegro, Bulgaria and Greece, whereas small quantities are produced locally. Generally the plant production comes from different countries. Watering the vegetable is done on the open field with watering channels, while the systems “drop by drop” is used in glass house production.

**Tomatoes.** About 80% is done in the south-eastern part and in the region Pavardarie, i.e. in the region of Strumica, Valandovo, Gevgelija, Dojran, Kavadarci, Demir Kapija, Veles and Sveti Nikole. In the last few years it is recorder a growth in the tomato production, using modern technology, glass houses and plastic tunnels. New types of production technology and new types of industrial tomato, contributed to the revenue increase of this crop and overcoming the seasonal effect to the offer.

In 2007 a surface with planted tomato is 5 368 ha. The surface – acreage cuts down in the last 6 year, because of the pepper and potato orientation, also orientation of the open field toward the glass house production.

The tomatoed yield in 2007 is about 118 000 tons, which represents a decrease of 17% regarding 2006 and for 4% related to 6-year average for period 2001-2006. The total production of tomatoes fluctuates among 120-140 000 tons.

**Peppers.** The pepper production has long tradition in the R. Macedonia, and is mainly met in Strumicki, Radoviski, Poloskiot, Skopskiot and Kumanovskiot region. The total surface with peppers is (8 331 ha) about 5 ha are cultivated in glass houses, about 1 400 ha under plastic tunnels and about 24% were planted with industrial peppers. In the recent years there is an increase in the production of aubergines and glass houses. New techniques and new production of industrial peppers has made higher revenue, overcoming the seasonal character of the production and diseases control.

Except for the fresh consumption, the peppers are also used in processing industry as: half-product (mid-frozen, frozen, dry, peppers in vinegar, chilly peppers in drums) and final product (ajvar, lutenica, pincur, gvech, roasted peppers, fried peppers and chilly peppers in vinegar). At the moment there are 25 processing companies, but there are perspectives for extension and modernization of the industry, as the crop, fresh or processed, shows overall interesting development in the domestic and the foreign markets. Macedonia imports but also produces seed material.

The peppers in 2007 are planted on a surface of 8 331 ha, of which the agricultural companies has planted peppers of 93 ha, while the individual agricultural economies on a surface of 8 238.

The total production of peppers is 140 558 tons which is quite the same as the one in 2006.

**Watermelon.** Watermelon production includes production of melon and watermelons, where in 2006 were planted on a surface of 6 395 ha, while in 2007 it was planted on a surface of 6 152 ha. Declining trend in the planted surface is a result of the low price of the watermelon, and rearranging this surface into ones that are planted with other early season crop. Beside the decrease of the surfaces, the watermelon yield in 2007 was 20.13 tons. The total watermelon production for 2007 was 123 840 tons or for 4% less than 2006.

**Potato.** Potatoes are one of the most spread crops in the R. Macedonia. Potatoes involve big part of work force especially at the hillside and mountainous production region. (Berovo, Kratovo i Kriva Palanka) and in the production region of Skopje and Kumanovo. The production is mainly aimed toward the domestic consumers and processing industry. It is estimated that about 50% are consumed on a level of households, while the rest of it, is sold to the restaurants and processing industry (that is limited in size and limited to chips production). Biggest part is exported from Macedonia and is net importer of seed potato, mainly from Holland, Serbia and Germany, but there is a possibility domestic production for seed potato to strengthen. The average yield potato is under the average EU, which is because of the seed problems (not certified seed with low quality and health) and unsuitable production practice.

In 2007 the potato is planted on a surface of 13 799 ha what is about 24% of the total surface of vegetable crop. The potato production in 2001-2007 fluctuates from 170 000 tones to 194 000 tons a year, and for 2007 is 179 729 tons and different from 2006 it is reduced to 4%, mainly because of the reduced average yield from 14 t/ha to 13 t/ha.

## **5 Fruit and table grape**

Fruit growing in the Republic of Macedonia, is an important branch in the agricultural production and it takes about 2.7% from the whole cultivated agricultural land. Surfaces with other fruit crop take about 16 100 ha or the total number of different fruit kinds is about 9 000 000 trees and these are concentrated in a region of 300-800m altitude sea-level.

Wide assortment and the difference in the altitude sea-level characterizes with microclimatic conditions and specific climate and soil characteristics, for cultivating different fruit types of which we get high-quality fruit products.

The shortage of a whole line of prerequisites for modernizing this branch, for its market orientation, marketing, and producers not being in touch with processors, are major problems that influence the development of this branch.

Compared to a few previous years the total surface under fruit grows decrease or replaced for cultivating other agricultural crops. Generally speaking, the surfaces of about 21 500 ha in 1992, are decreased to 15 800 ha in 2005, or for about 400 ha per year. This trend is a result of companies' transformation with public capital, but also because of the loss of existing ex- Yu markets that have imposed insecurity in sale and payment to agricultural and fruit products. Also the domestic industry for

fruit processing operates relatively with disused technology and with small capacities that do not satisfy the purchase needs and processing of the industrial fruit.

Not adequate financial and technical support of the domestic of fruit on one side, and not being capable for investments in the financial sector of the individual producers on the other side, who participate with about 84% in the fruit growing production, this branch is facing big problems and it contributes to the permanent reduction of surfaces with fruit gloves.

Ministry for Agriculture, Forestry and Water Economy takes activities with objectives, for developing and improving the condition of the fruit growing in the Republic of Macedonia.

Because of this the Ministry for Agriculture, Forestry and Water Economy through the Program for development of the crop production for 2007, for other fruits gloves on a surface of 390,2 ha, from more fruit sorts through the sector for financial support and rural development , will pay financial means of 19 735 432 denars or 50 000,00 den/ha. For registered legal entities for a surface of 288,27 ha are paid means of 14 638 500 denars, while for individuals for a surface of 101,93 ha are paid 5 058 932 den.

This kind of activities taken by the Ministry for Agriculture, Forestry and Water Economy will carry on in the next period with planning and granting financial assets of the Program for the agricultural development in fruit growing, with an aim to improve the condition of this branch.

Contrary to the fall of total surfaces with fruit gloves, favorable climatic conditions and use of modern agro technical machinery, contribute to the rise of total production of fruit products, especially apple, as well as significant contribution to the quality by which a need is dictated for making a special plan for the development of this branch in the next period.

From the fruit sorts, most occurring is the apple with 52%, plum 17%, sour cherry 13%, pear 5%, and other fruit kinds (apricot, peach, almond, walnut and others) with about 13 %, by which fruit types are received about 155 050 tones of different fruit types.

#### **Fruit production (in tons) 2003-2007**

Fruit type	Year of production in tons				
	2003	2004	2005	2006	2007
Apples	61 936	82 414	86 217	87 720	92 629
Pears	598	7 058	8 892	8 730	6 395
Quince	673	904	975	-	-
Plums	15 313	25 815	25 254	25 630	18 828
Cherries	2 782	4 017	4 358	-	-
Sour cherries	369	7 324	5 532	6 730	10 302
Apricots	1 436	4 476	2 964	-	1 560
Peaches	7 264	12 045	11 041	11 650	10 320
Other (almond, hazelnut, walnut, chestnut, Japanese apple, figs, strawberry, quince)				14 500	15 000

## Production and apple sales from the harvest 2007

Apple production is major branch in the fruit sector in the Republic of Macedonia. The most important regions for apple production are the lake regions Resen-Ohrid, that are on the 700m altitude sea-level, and where 90% are produced of total apple quantity in the Republic of Macedonia i.e. 86,400 tons.

Of the assortment, most occurring sorts of apples are Ajderedot with about 63%, Zlaten Delishes - 20%, Red Delishes - 10% and other sorts about 7%.

The total apple production in 2007 is 152 089 tons. It is mainly produced in Ohrid – Prespa region, and in Bitola, Tetovo, Kriva Palanka, Radovis, and etc.

### Total accomplished apple production in 2007

	Apple			
	Trees numbes		Production	
	Total	Genus	Total , t	kg/tree
Republic of Macedonia	4 412 173	3 942 243	152 089	39
Agricultural companies and agricultural cooperatives	287 334	282 164	5 075	18
Individual agricultural economy	4 124 839	3 660 079	147 015	40

Source: SSO, Republic of Macedonia, 2007

According to the yield, the year is estimates as fruitful for the apples, regarding the quantity and quality, or from the total collection of apple quantities, about 70% are from the first class and extra class, while 30% belong to the industrial class and second class.

According to the statistical data, domestic consumption of apple per citizen is 12 kg. It is estimated that about 25% of the total production of apple are sold in the domestic market, while the other part of 75% is sold and processed in the foreign markets.

The price in 2007 related to the harvest in 2006 is higher in average for 30% i.e. during the sale the price was 8 den/kg for industrial apple and for 16-25 denars per apple from first and extra class, while some sorts of extra class the apple reach a price of 28 de/kg (Zlaten Delishes)

The produced surplus of industrial apple is totally bought from processed capacities, while at the apple for consumption of first and extra class during the purchase there was no stagnation.

There was no organized purchase in a harvest period, but the presence of several representatives of trade companies, who purchase apples for export, has rented space at the former A.K. Agropod from Resen, and used it for putting and arranging the purchased quantities, contributed the purchase not to be followed by any big problems.

The total exported apples is about **23 154 922 kg** in more countries.

<b>Country</b>	<b>Consumed</b>	<b>Industrial</b>
Serbia	3 377 125	2 481 840
Austria	407 877	1 118 420
Bosnia and Herzegovina	715 093	/
Bulgaria	4 911 712	2 193 160
Romania	1 797 021	/
Croatia	1 899	/
Montenegro	1 062 905	23 762
Albania	4 700	/
Greece	45 670	162 598
Germany	14 179	/
Kosovo UNMIK	3 301 374	36 335
Hungary	329 770	24 000
Slovakia	687 020	136 740
Slovenia	19 080	/
Poland	44 990	147 620
Norway	1 092	/
Sweden	330	/
Iraq	44 450	/
Turkey	64 160	/
<b>TOTAL</b>	<b>16 830 447</b>	<b>6 324 475</b>

**Comment:** The data from accomplished export is received from the Administration for plant protection.

## **6 Fruit and Vegetable processing**

The companies for fruit and vegetable mainly produce semi-finished products (mashed potatoes, ketchup and home-made juices, apple juices and concentrate, frozen sour cherries- for processing, dry products as prunes, rice, cabbage, parsley, onion, garlic, and etc.) and low quantities of highly processed products (in jars or in tins roasted peppers, ajvar, lutenica, givec, pickles, chilly peppers and sweet pepper, beetroot and fruit products with added sugar as stewed fruit, sour cherries, jams and etc.)

More companies have disused equipment. In more cases, the investments were directed towards machinery supply of one type in the production lines. Compared to similar products in the western countries, the Macedonian ones are from traditional type, with average packaging. Western technologies have slight influence in the texture, taste, and other characteristics of the quality and packaging are inappropriate. Yet, some of the companies have started to adopt the new marketing strategies and renew the production lines.

In the last decade, numerous private companies progressively started environmental-friendly processing of fruit and vegetable. These companies have started with small capacity and expanded the production facilities parallel to the growth in the demand of their products. Some of the entrepreneurs have already had experience in the trade with vegetable products. Private companies usually produce smaller assortment of products, but are mainly focused to products with higher degree of processing (added value) priory focused to the export market. Bigger number of



private companies possess new equipment, but only some have machines and production lines for which is necessary better working intensity.

In the period 2003-2007, the industry records continuous growth in the production, mainly because of the increase demand of the foreign consumers interested in Macedonian processing, and the growth on the domestic market is a result of penetrating into retail, also the changes in the people's lifestyle (purchase of processed food instead of preparing it at home). In 2004 the industrial production was 4, 7 thousands tons, more than in 2003 (+22, 4%) while in 2005 the production was 2, 5 thousands tons, more than 2004 (9, 7%).

The processing industry for fruit and vegetables is highly orientated towards export, exporting about 80% of the total production. Markets in the EU and neighboring markets are the main export destinations for domestically produced and processed products.

Overseas markets (especially Australia) is also a main destination for export because of the big immigrant organizations from Macedonia, but also from the other Balkan countries. The registered value regarding the export quantity shows that, the domestic producers mainly export product with low added value, and are considered as standard products or goods for mass consumption.

Approximately 68% of the companies are located in towns while the other 32% of the processing capacities are in the rural areas (villages that are situated near the cities/towns). The biggest number of fruit and vegetable production companies are classified as micro or small companies (88% in 2007).

There are no big companies in the industry for fruit and vegetable processing. The industry for fruit and vegetable processing is hard working. Still the processing business is extremely seasonal, does not allow bigger number of full time employment. Seasonal workers are mainly hired at the time of the peak processing season for about 4-5 months a year.

According to the fruit and vegetable producers main reasons that prevent larger use of processing capacities are; shortage of raw material, shortage of work force, shortage of work capital, and shortage of markets.

There is a need of authorized industry treatment fruit and vegetable processing related with investment possibilities. The industry is tightly linked with the rural areas and its further growing will require additional workforce in the farm and will also stimulate employment out of the farm. Furthermore, the industry for fruit and vegetable processing has a potential in contribution towards the economic development in the weakly developing regions, especially in openings of more job posts, declining the migration of the younger population and stimulating new businesses.

Yet, the modest results in the recent years should not put into shadow the existing potential for improving the international competition of this sector in the near future: environmentally friendly and favorable conditions for cultivation, especially for fruit and vegetable and some not typical crop as berries, teas, spices and mushrooms.

Main recommendations given from the producers, which should have a positive impact on the productivity in the industry for fruit and vegetable processing in the impending period, are the following:

- Promotion of micro or small companies because they have biggest capacities of full time employment and they also show big flexibility in employment of seasonal workers with part time.
- Better cooperation with the producers in order to provide on time and suitable delivery of the products.
- Development of mechanisms for increasing the current use of capacities which is under level, but will provide fast expansion with a minimal capital.
- Development of privileged designs for grants which will be focused toward the support in the industry
- Providing intensive marketing and a support during the exporters' promotion for early seasoned fruit and vegetable.
- Identification, promotion and model(s) enabling for more quality dialog among interested parties (companies, MAFWE, ME, and etc)

## **7 Vine growing and wine industry**

### **A review in the situation of vine growing and wine production**

The section of vine growing, wine production and fruit growing until the end of December 2007, has registered 56 vaults. The number of vault has increased twice if is compared to 2006 when only 28 vaults were registered. Mainly these vaults are located within the areas where the concentration of grape production is highest. In the last few years the number of wineries (mainly with low or medium capacity) has increased significantly. The installed capacities of wineries in Macedonia in 2007 is about 2 100 000 hl. This demonstrates the evolution of Macedonian wine industry, which is moving towards establishing more small-sized entities.

### **Age structure of the vine gloves**

The total cultivated land in 2006 (537 000 ha), 82% is arable land and gardens, 11% are meadow 5% are vine gloves and 2% are orchards.

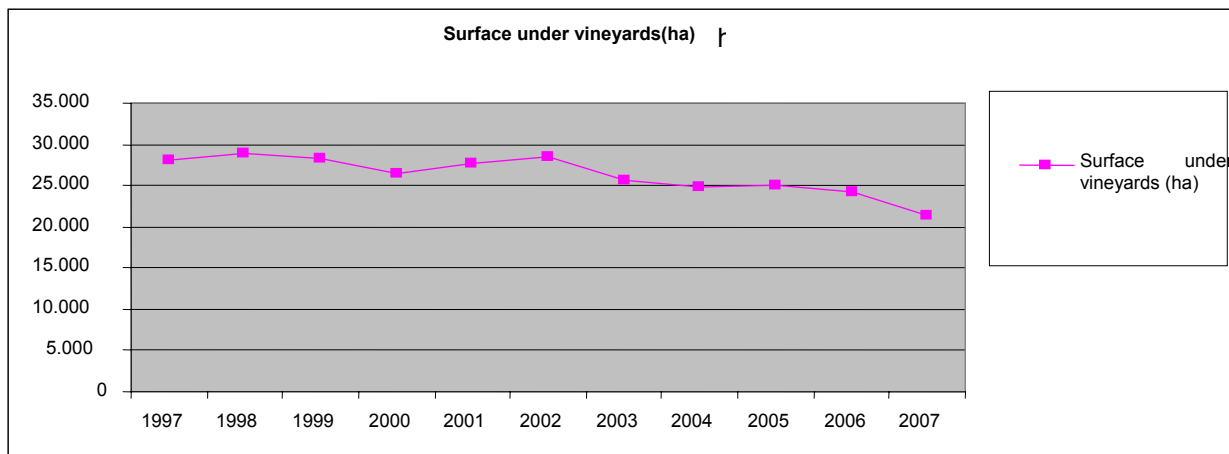
According to its climate conditions, Macedonia has been classified in the vinery zone III-C-b. From geographical aspect, vine growing in Macedonia is focused into three vine regions. The major (central) region, covers 83% of the production and is the Vardar region (so called Povardarie), than Pelagonisko -Polaski region (western) which participates with about 13% of the production, and Pcinsko-Osogovski (eastern) region with 4% participation. The three major regions are divided into 16 sub-regions, so called vineyards.

The production into different regions and vineyards is utterly different. Tikves represent major production area of wine grape and wine. Then follow the Gevgelisko-Valandovsko vinogorje, Skopsko, Velesko, Strumicko=Radovisko and Kumanovsko vinogirje.

Last ten years certain gloves have been renovated as a part of private initiative for the needs of wine production, especially in the Tikves and Gevgelisko-Valandovski region. In this area there is a trend of prevailing the vine gloves on private holdings to the small individual producers.

To improve the age structure of the vine gloves, the agricultural policy of initiating the development of vine growing, grants a support for starting new vine gloves especially aimed for wine production.

Total area of vine gloves in the last 10 years , records a trend of constant fall for 24% of about 28 077 ha in1997 until 21 312 ha in 2007. The table 1 shows a review of the surfaces under vine gloves for a period 1997 -2007.



Source: State Statistical Office

According to the official statistical data and assessments from the MAFWS, this trend will carry on in the following period, partly because of an increase of surfaces under new vine gloves which is not enough to compensate the tempo of ageing the vine gloves, and partly because of structural problems that the sector is facing as well as possibilities for investments. The area under vine gloves in a period 1997-2007 records decreasing for 6 756 ha.

### Types of vine gloves

In the recent years in average about 26 000 ha were cultivated, of which 70% were aimed for wine production and 30% for table grape and raisins.

Due to a favorable climate, the Macedonian table grape is with dominant quality and with significant export potential, with a possible increase of current foreign inflow of funds of €7 million (2005). Assortment for sorts of table grape, includes several classes from many early to very late seasoned sorts of table grape. There is a deficiency of classification and packaging centers for table grape, and refrigerators (for continuing its fresh state after the harvest). Big part of the table grape production is aimed to the domestic market, and the export to the regional markets is limited. Because of the existing problems on the market for table grape and the increased interest for wine export, the quantity of table grape that is processed into wine and wine product is not familiar.

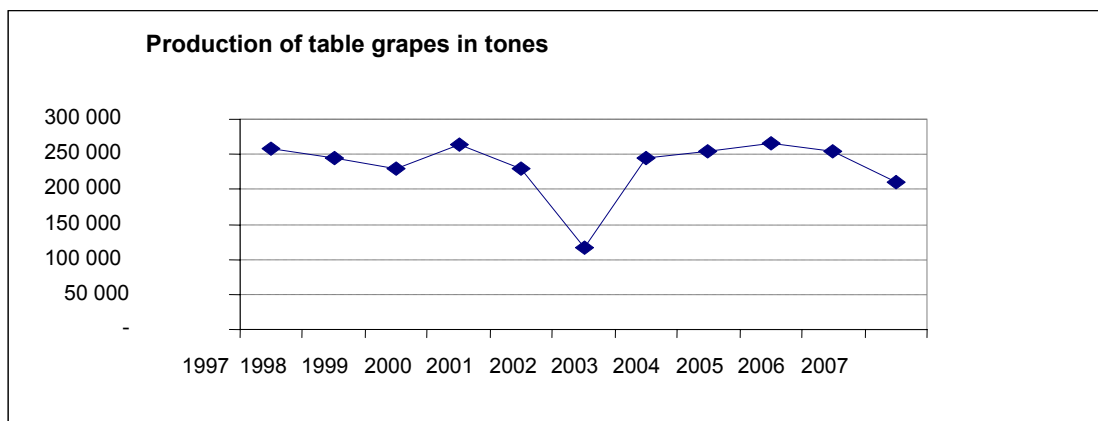
The wine sorts of grape participate with 70% from the total area of vine growing, while 30% belong to the table sorts of grape. The participation of white wine sorts is about 40%, while 60% belong to the colored wine sorts of grape.

Most represented colored wine sorts are Vranec and Kratosija, with a long tradition of cultivation, but also we cannot underrate the occurrence of the sorts Burgundec red, Marlo, Kabarne, Sovinjon, in the wine production of high quality. Most occurring white sorts of wine grape are Smederevka, Zilavka, Sardone, Rizling, Sovinjon white, and

etc. the table sorts of grape that dominate are: Alfus-Ali, Kardinal, Muskat, Italija, Hamburg, Belo Zimsko and etc.

Under vine gloves of the sort Smederevka there are about 11 000 ha, of which at the beginning of its productive life is about 5 000 ha. Also, the occurrence of the sort Vranec is about 7 000 ha, of which 3 000 ha are older that 25 years. They should be replaced with new vine gloves with sorts that will give high quality wines with well-known geographical origin, and at the same time will be competitive on the domestic and foreign market

### Grapes Production (tons)



With the exception of 2002 (because of the freezing), the entire production of grapes (including table and wine grapes) in the past 10 years is relatively stable, with a small reduction in 2007. In 1997 258 360 tones were produced in comparison to 2007 when 209701 tones were produced.

### Production of table grapes in 2007

Table grapes in the individual sector, are mostly produced in the Vardar region, on the entire area of 581,53 ha. After which the Southeast and the Northeast region follow.

The area under table grapes in the individual sector takes 45, 58% of the entire area, while the rest belongs to the legal subjects, such as agricultural companies. From this we can conclude that the table grapes are produced by the legal subjects.

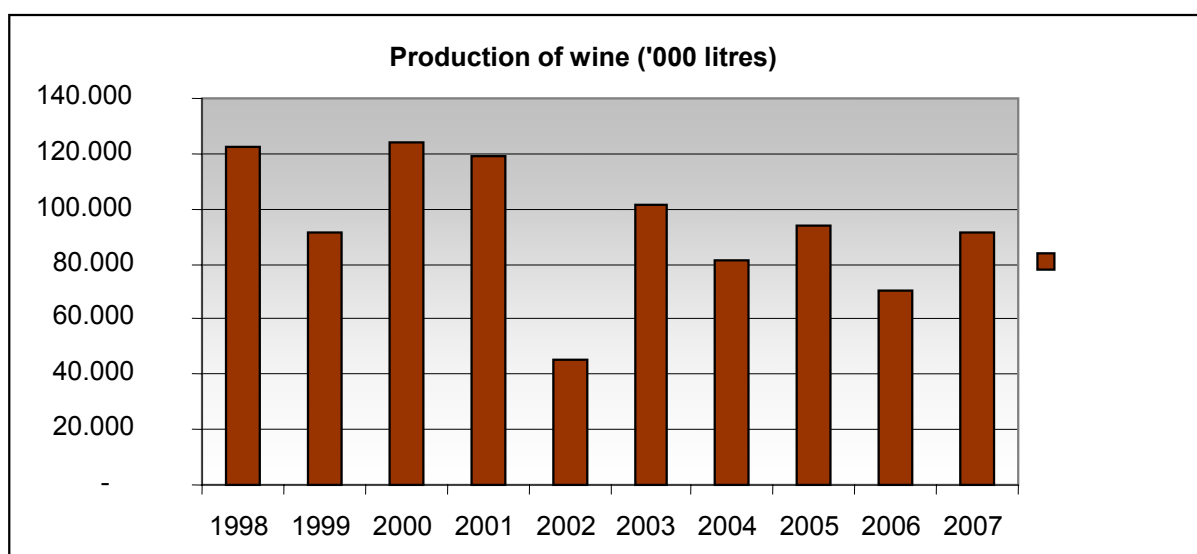
### Structure of the production of table grapes in 2007

	Table grapes	
	Number of stems	The entire area
	Whole	Whole, ha
Republic of Macedonia	<b>9 101 873</b>	<b>3 172 53</b>
Agricultural companies and agricultural cooperatives	4 559 327	1 726 41
Individual agricultural economy	4 542 546	1 446 12

Source : State Statistical Office, Agricultural Inventory, Book I, 2007

### Production of wine in 2007

The annual production is about 900 000hl. The trend of wine production shows constant ups and downs in the production of wine and it defers from year to year. Several wine cellars control the market of wine, referring to capacity, production and export. From 56 registered wine cellars in total, 49 of them have the capacity of 150000-500000 hl. In the last few years, the number of new private wine cellars (mainly with small and medium size) has risen considerably, which represents a very interesting trend if we consider that the entire area of vine groves is in constant decrease. These wine cellars have a tendency to concentrate on wine filled in bottles and high quality wines, through strict control of the selection of different kinds, managing with the grapes and the their collection, the transport and the delivery. They also invest in sophisticated processing, filling the bottles and marketing technology, and are in competition in the local and the foreign market.

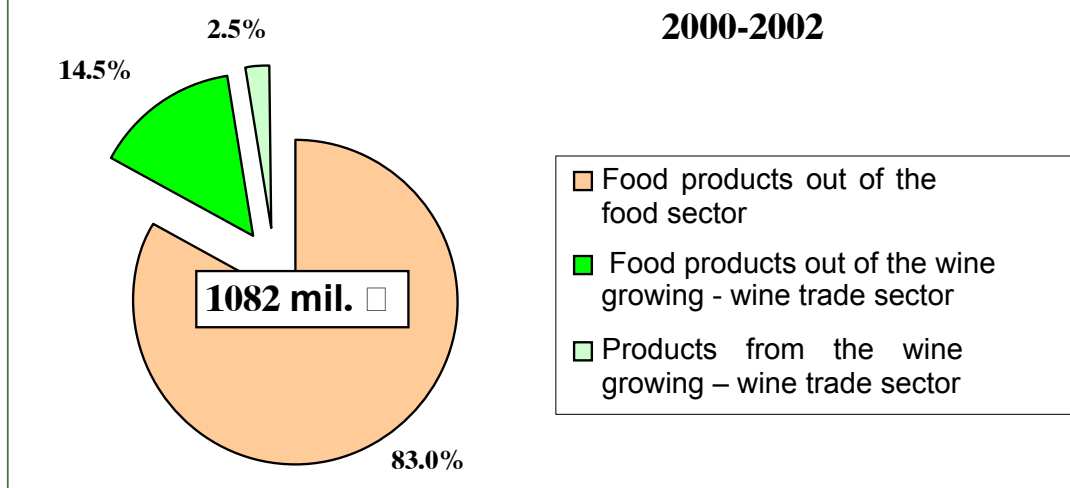


The home consumption of wine in the tourist locations and restaurants, including the consumption of daily produced wine i.e. unofficial production, the consumption of wine by person is estimated at about 15 l per person a year. With this relatively low level of consumption of wine in comparison to the European countries, the Macedonian market for wine is not attractive for the large European producers.

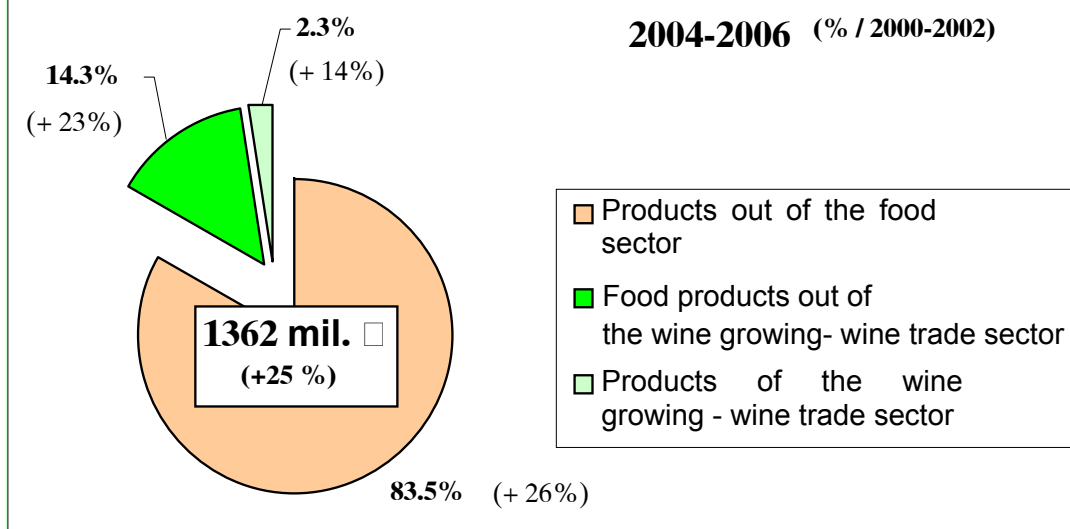
### Wine and grape trade

Macedonia is a net export of wine. The export of wine is in with about 13% of the entire export of agricultural-food products mainly in the EU markets. Generally, the export of wine is a key element in developing balance of the Macedonian wine sector, if you consider the fact that in average from about 40% production of wine (including the production of grapes) is meant for export. Its estimated that from 48 companies in total, only 3 make the total of 50% of the wholesome export of wine, and 8 of them make the 80% of Macedonian wine export.

Macedonian export and its part in the wine growing - wine trade sector



Macedonian export and its part in the wine growing - wine trade sector



**Chart** shows an alarming development of Macedonian export in wine growing and wine trade. If you compare the entire export of Macedonia which have risen up to 25% in the period of 2000-2002 to 2004 – 2006, in this period, in this period the export of food products has risen for 23%, while the export of grapes and wine has risen to 14%. These statistic analyses of grapes and wine show a worrying trend. The enlargement of export of grapes and wine comes from the enlargement of export of fresh grapes (+12,4%) where as the export of wine has decreased up to 1% form 2000- 2002 and from 2004-2006. Enlarged export of fresh grapes (raw).

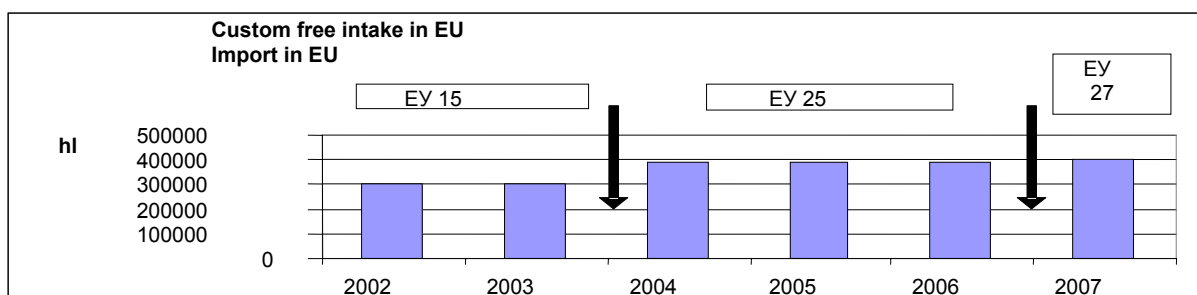
### Wine trade of Macedonia and EU

Wine trade of Macedonia and EU is in accordance with the Supplementary protocol for wine and alcoholic beverages signed on January 1 2002, in accordance with the Agreement for stabilization and association between Macedonia and EU. In accordance with the Supplementary protocol the export of wine in EU goes according to the preferential custom free intake of 300 000 hl of which 285 000 hl goes for

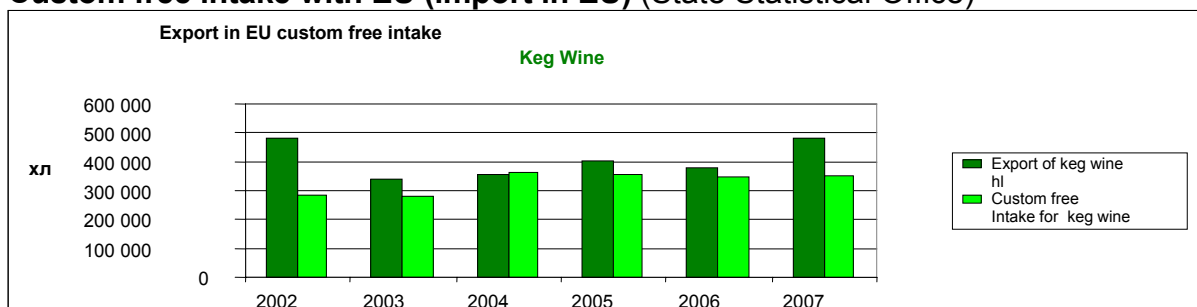
draught wine and 15 000 hl for bottled wine. This intake is dynamic annually, respectively, every year the intake for bottled wine increases for 6000 hl for account of the intake of draught wine for the same quantity.

This arrangement is in accordance to stimulate the Macedonian producers to export wine with the added value and distinction. With the expanding of EU, on May 1 2004, the complete intake for import of wine in EU has risen up to 395 000 hl, from which 362 500 hl went for draught wine and 29 000 hl for bottled wine. On the other hand, the import of wine from EU to Macedonia goes according to plan with the custom free intake of 3000 hl and enlarges 300 hl annually.

In 2007 with the entrée of the new counties members of the EU (Bugarija and Romania), the complete intake has risen up to 399 000 hl, from which 350 000 hl are assigned for draught and 49 000 hl for bottled wine.

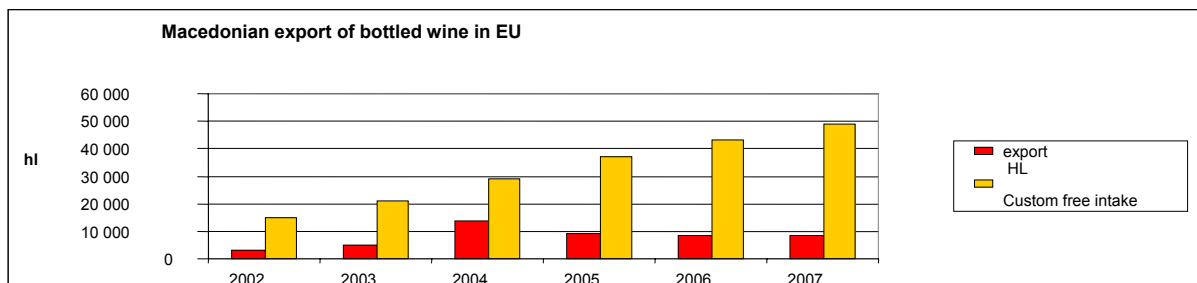


### Custom free intake with EU (import in EU) (State Statistical Office)



### Export of draught wine in EU

According to the Additional protocol for wine and the data of the State Statistical Office, custom free intake in 2007 was topped for 24%, while the intake for draught wine was fulfilled and topped for 38%. Also the intake was fulfilled and topped in 2002, 2003 and 2006.



### Export of bottled wine in EU

As far as the fulfillment of the intake of bottled wine in 2007, only 18% of the intake was used, while in 2002 21% was used, 2005 up to 27% and 2006 22%.

In accordance with the production possibilities of the Macedonian wine industry, Macedonia does not exploit the advantages of the preferential trade agreement with the EU, in total.

### **Domestic support of the wine sector**

The domestic support for the wine sector is awarded in The Annual program for development of agriculture, and the funds are provided by the Budget of MAFWE. The measures in the wine sector according to the program apply only for upbringing of new grapes and support for the production of certified vine coils

The criteria for the financial support for the upbringing of new grape plants refer to planting wine type of grapes at the minimal surface of 0,3 ha. These brands that will be planted must be in accordance with the rulebook for qualification of wine types of grape (only recommended brands will be planted).

The object of this matter is the instigation of grape and wine production, i.e., instigation of the producers to introduce new, high quality types of grapes.

The users of the support can be physical and legal persons who fulfill the general requirements and have reported the plants at the local units of MAFWE. Beside the general requirements, the seeker should file for solution (decree) for basic activity - agricultural production, proof for property of the land or a lease, certificate for the origin of the planting material, phytosanitary certificate and a financial document for supply of the material.

### **Amount of planed and realized funds for financial support in denars**

<b>2007</b>	planed*	realized*	Raised grape plants (ha)	Support according to ha (den./ha)
1. Raising of new grape plants	85 000 000	435 ha	435 ha	
2. Support for certified vine coil	800 000			

Source: MAFWE, Program for instigation of the development of agriculture in 2007

### **Future activities**

Future activities and plans for advancement of the development of the wine sector are in accordance with the process of euro-integration, are disposed in the following areas:

#### **Adjustment of legislation of wine with the legislation of EU from this area**

In the area of wine, Macedonia's obligations to adjust the national legislation with the one from the EU are in accordance with the Agreement for stabilization and association between RM and EU (article.68), concerning the Additional protocol for wine and alcoholic beverages. Macedonia has agreed to obey the laws of EU for enological assets and actions as a necessary condition for export of Macedonian wine to the EU markets. As part of this, in 2004 the Law for wine was brought; adjust to the basic rules of the market of wine in the EU (1493/99).

The main news that the Law for wine establishes are: establishing a national register of grape plants, establishing a mandatory system of declaration for grape harvest, production of wine and reserve, controlled planting of new grapes, national strategy



for vine growing and wine trade, consultative board for vine growing and wine trade, mandatory distillation of the vine sediment etc.

This law represents a functional legal integration of rules for wines with geographic origin, Macedonian sector for wine trade and the sector of wine trade of EU. In accordance with the Law for wine, large numbers of legal acts are foresighted for its realization.

**So far the following regulations are established:**

1. Regulation for method of analysis
2. Regulation for.....
3. Regulation for classification of breeds
4. Regulation for labeling wine;
5. Regulation for premises and equipment of wine cellars;
6. Regulation for premises and equipment of ..... laboratories;

In the next period, by the end of 2008 all the regulations that come from the Law of wine are planed to be arranged.

**Establishing a national register for grape plants**

On account of the advancement of vine growing and wine producing, the Ministry of Agriculture, Forestry and Water Economy with the support of the European agency for reconstruction from 2004- monitoring and managing the grape plants. At this moment faze two, of the project which started on May 25 2007 goes according to plan and is planned to be finished on May 15 2009.

The aim of this Project is:

- to strengthen the capacities of MAFWE for managing vine growing and wine trade
- to establish a national register of grape plants and
- to adapt to the standards of European union for achievement of greater competition of Macedonian wine

The project has a national system for monitoring and management of grape plants and has four main components:

Component number one: Establishing a National system for monitoring and management with grape plants of the entire country.

Component number two: Adjustment of the Macedonian legislative of wine with the European legislative.

Component number three: Strategy for international marketing of Macedonian wine

Component number four: Institutional strengthening.

## **8 Farming and production**

The basic goal of farm production is to supply the population with the basic products: milk and meat. In Macedonia farming, mostly takes part in the mountain areas along the north, west and east border spreading 10-80 km.

This regions border the regions of production of agricultural products which enlarges the interaction from the aspect of taking advantage of the products of agriculture in feeding the livestock.

Our country, largely depends from the import of food for the livestock, such as corn, proteins and vegetable oils (soy and sunflower seed,) also complete mix or additives (combination of proteins or proteins, minerals and vitamins).

Farming at the moment is characterized with a large number of very small agricultural households where the production is assigned mainly for their own needs, further more there is a limited number of commercially oriented family firms whose number is increasing and large (specialized farming companies) whose number is decreasing.

Historically seen, raising livestock (other than pigs and poultry) is performed by smaller agricultural economy.

Taking in consideration the latest conditions on the market model of economy, several goals are fronted for farming:

1. The production of farm products(meat, milk, eggs, skin, wool and their manufacturing) for the home market and for export,
2. Circling the production cycle through all the production phases (reproduction, production and finalization),
3. Self organizing the farming cooperative systems based on international principles: profit in primary production and the complete service infrastructure intended for farming.

In the last few years the farming fond for cows, sheep and poultry is decreasing, while there is a mild increase in the farming fond for pigs. The largest decrease is noticed in sheep breeding, goat breeding and poultry.

Through the numbers of the State Statistical Office it would look like this:

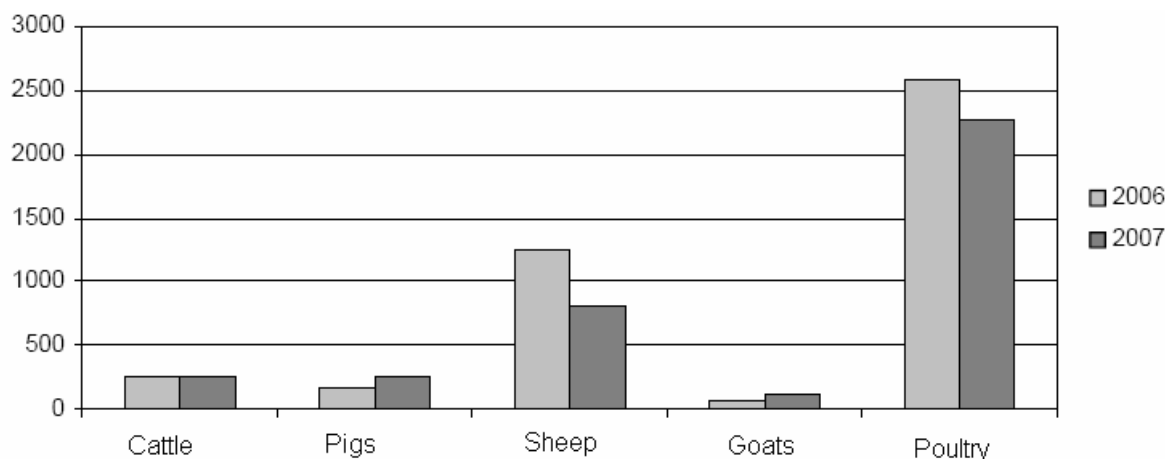
The complete number of livestock in 2007, in comparison to 2006 has increased for 41,1% in pigs, while decrease is noticed at cows for 5,5%, goats for 23,4%, sheep for 46,9%, poultry for 12, 4% and bees for 14,0%. The increase of number of pigs in the agricultural companies and the agricultural cooperatives is 18,9%, and at the individual agricultural companies 75,2 %.

The number of cows in the agricultural companies and the agricultural cooperatives, in comparison to 2006, has increased for 8,1 %, while at the individual agricultural companies has decreased for 5,9%.The decreasing of the number of sheep for 48,8% is noticed at the individual agricultural companies, while at the agricultural companies and the agricultural cooperatives the number is up for 27,5%.

The number of goats and poultry, in both sectors, shows a tendency of decreasing in comparison to the same period of last year.

### Number of animals in the period of 2003-2007

	2003	2004	2005	2006	2007
Cows	259 976	254 803	248 185	255 430	253 766
Sheep	1 239 330	1 432 369	1 244 000	1 248 801	817 536
Goats	71 810	67 786	62 190	63 579	126 452
Pigs	179 050	158 231	155 753	167 116	255 146
Poultry	2 417 362	2 725 298	2 617 012	2 585 327	2 263 894
Bees	71 602	69 036	66 738	67 804	58 307



### Complete number of livestock and poultry in 2007 in (000) herds

Source: State Statistical Office

Macedonia is a net import of raw meat and entrails, sausages and similar products of meat and milk products.

Our manufacturing meet industry depends very much on the import of raw meat. The objects for slaughtering the animals, packing and storage of the products of animal origin are divided into the next categories:

- Objects for slaughtering the animals;
- Objects for slicing the meat;
- Objects for packing and slicing the meat from wild animals;
- Objects for packing meat and preparation of the products of animal origin;
- Objects for cooling, freezing and storage the products of animal origin.

Considering the buildings, the technical equipment, capacity, methods of work and organizing the veterinary inspection, they are classified in the following way:

- Objects with high capacity of production- industrial objects;
- Objects with lower capacity of production – trade objects
- Objects (rooms) in households for the manufacturing and preparing the products of milk, manufacturing and collecting the honey, sorting out and packing the eggs.

Slaughters approved for export in EU of red meat (beside seven slaughters for lambs) don't exist in Republic of Macedonia. The main problem appears in the objects where there is no water purifier, and there is no interest with the manufacturers to fulfill the criteria of the EU.

The system for evaluation the bodies don't follow the SEUROP system for classification and the other standards in conclusion with the inside market of EU.

In Republic of Macedonia a pound for animals that fulfills the standards of EU doesn't exist!

### **Cattle breeding**

Cattle breeding as a basic branch of farming, also because of its proprietor - structural characteristics should be one of the major components of the development of the individual agriculturalists in the farming sector.

In 2007 over 95% of the complete number of cows were in the property of the individual agricultural producers and represent a significant source of income for the family farms.

The general structure of the farmers is estimated in the following way:

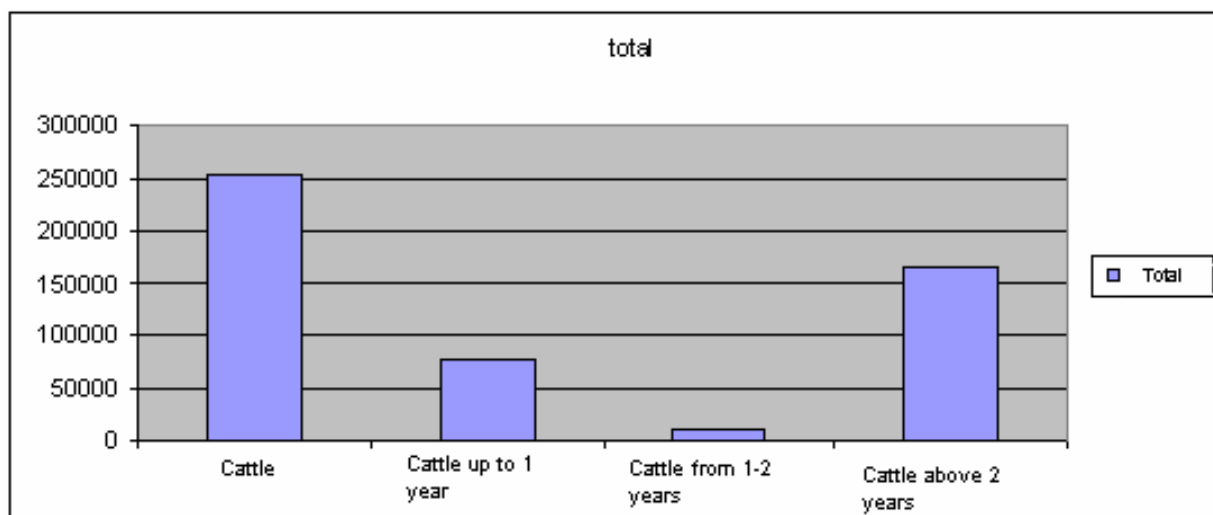
1. Traditional farmers (75% of the total number) who have low productive 1-3 cows with low production of milk of 2-3000 l per cow a year. The productivity is very low because of the unfit conditions under which they are kept, as well as the low quality of food for animals. These types of manufacturers do not make a solid base for the future market production.
2. Family farms with 5-20 cows with annually production of milk of 4-5000 l per cow. Mostly they are mixed farms with several types of production which should represent a future foundation for production of cows.
3. Specialized farms with more than 20 cows, with high productivity, with annually production of milk of above 5000l per cow. The number of these type of farms is small, only 3% of the farms. Only 1% of the farms has more than 50 herds and should be the carriers of the production of high quality genetic material for the rest of the farms (reproductive centers).

Cattle breeding is mostly found in the hills in the north, west and east border of the country. The national structure mainly includes milk and meat sorts, but the one that is most common is the milk sort. The production of milk, generally, is an extra activity and it is based on selected cows and bulls, while the meat sort is very small and it is based on imported types of Serbia which have double assignation. The main sorts include 54% Busa (country, home sort used for milk, meat and in some cases for work in the distant villages), 19% Simentalci (equally used for milk and meat), 13% East-Frisian/Holstein (mostly for milk), 13% Montefon sort (mostly milk) and 1% Oberantal sort (mostly milk).

One of the largest limiting factors in farming production is the high price of the food for the livestock which has a great impact on the production of meat, especially in the lowlands.

### Number of herds in 2007

	Agricultural cooperatives	Individual agricultural companies	total
Cattle	9 028	244 738	253 766
Cattle up to 1 year.	2 732	73 417	76 149
cattle from 1-2 years	1 462	9 848	11 310
cattle above 2 years	4 834	161 473	166 307



Source: State Statistical Office

Raising cattle is supported by MAFWE whose main purpose is to improve the race structure of the Macedonian milk herds (there are three main instruments: support of high quality cows, support of the control of the data of production/main record, support for the registered cows) and financial support for the produced food for the livestock in the barns and the hay for use on the very farm. The measures for support do not show results because the number of cows has not increased, nor their productivity. Official records show that there are 3840 high productive cows on the breeding farms which should serve for improvement the genetic base of the herds in property of the individual farmers. Still it seems that they only substitute the needs of their herds. There is no appropriate instrument, offered by the State for the producers, which will regulate the surplus on the market through the support of storing the dairy products with longer lasting period of time (butter, cheese).

The number of cattle decreases constantly in the last ten years. In the period of 2000-2006 the average number of cattle was 257 000, while in 2007 decreases and it is 253 766 herds.

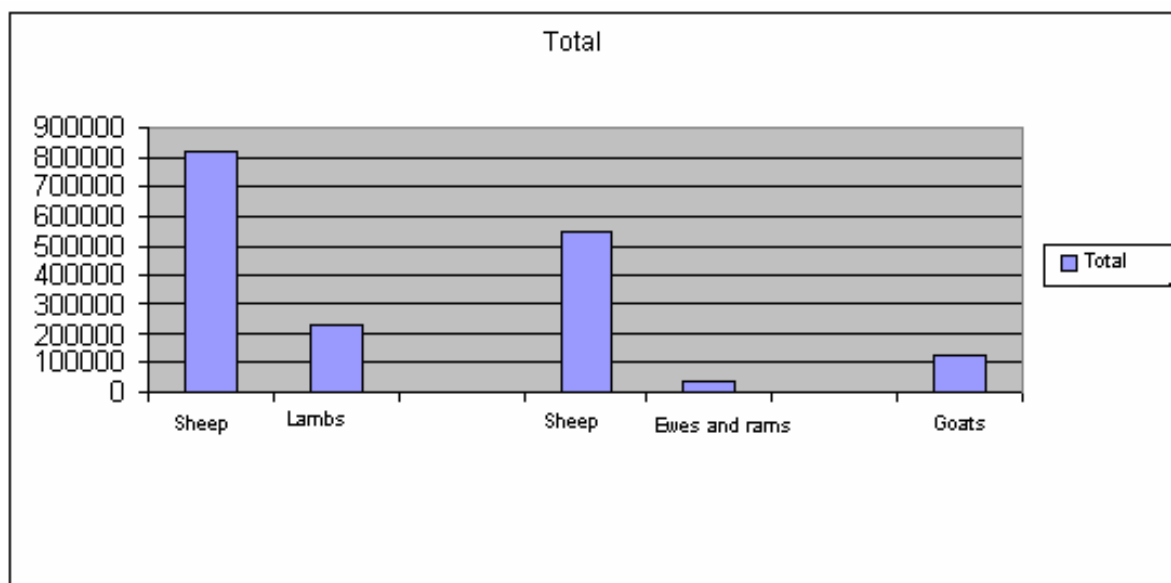
### Sheep and goat breeding

The number of sheep and goats in both sectors shows a tendency of decrease in comparison to the same period of last year. The most noticeable decrease of the number of sheep for 48,8% is noticed in the individual agricultural economy.

The number of sheep in 2007 was 817 536 hers, while of goats it was 126 452 herds.

## Number of herds of sheep and goats in 2007

category	Agricultural cooperatives	Individual agricultural companies	total
sheep	41 306	776 230	817 536
lambs up to 1 year	10 778	218 877	229 655
Sheep for breeding	28 228	523 091	551 379
ram and other barren sheep	2 240	34 262	36 502
goats	1 519	124 933	126 452



## Production of wool

	Number of sheep		Production of wool (tons)
Agricultural cooperatives	36 448	1,8	98,5
Individual agricultural companies	608 251	1,7	51,4
<b>Total</b>	<b>644 699</b>	<b>1,7</b>	<b>52,9</b>

Source: State Statistical Office

The environmental clean zones and the waste fields which take up to half of the agricultural land represent an excellent base for the development of sheep breeding.

Despite all these conditions sheep breeding decreases.

Sheep breeding in our country has always based on small individual and family farms with the size of 20-200 sheep in a herd, rarely 300.

About 96% of the milking sheep are breed by individual agricultural companies.

The racial structure of the population of sheep in Republic of Macedonia contains mainly of the sort Pramenka divided in the Ovcepolka 60% and Sharplaninka 30% while the rest of the Pramenka inbred with Merino and Avasi. Considering the

dominant possibility for export of lamb, traditionally there is no clearly defined productive orientation (meat – wool opposite milk-meat).

The race structure of goats is mainly from the type of Balkan goat with clear presence of mongrel of the sans breed, and there are also goat farms which have at their disposal the improved breed of alpine.

To improve the goat breeding many nurseries have been formed. The production of goat meat is not very meaningful. Large part of the production goes to goat meat.

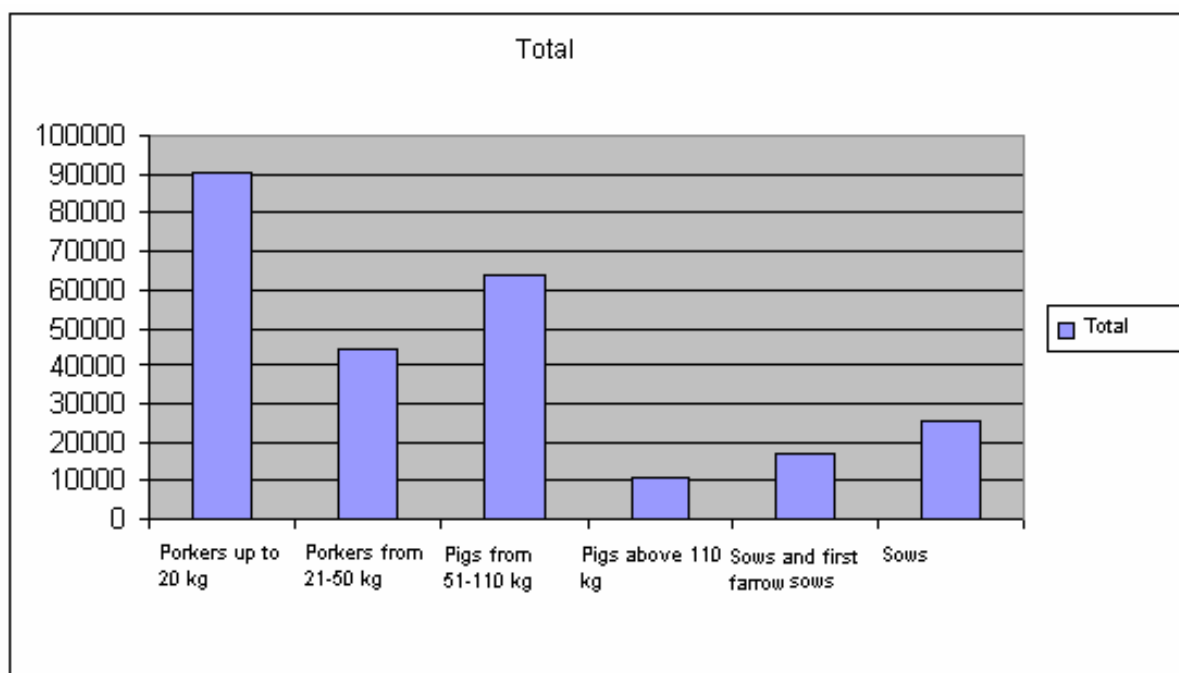
In Macedonia there are about 1200 farms for goats, but if we don't consider the farms with 1-5 herds, in that case the number of farms is 664. The number of goat breeders increases as a result of the demand on the market for goat milk and its profitability. Still the main problems which this branch faces are the lack of technical solutions at the farms, unorganized producers which give small and un standardized quantities on the market, which results in a generally insufficient use of the available **Pig-breeding**

According to the statistical data from 2007, the number of pigs records an increase. In the period 2000-2006 the average pigs` population was about 173 500 heads (167, 1 thousands in 2006), while in 2007 the number was 255 146 heads.

In 2007, the structure of the pigs` herd was the following:

#### **The number of pigs in 2007**

	<b>Agricultural companies (cooperatives)</b>	<b>Individual agricultural holdings</b>	<b>Total</b>
Pigs	80 241	174 905	255 146
Farrow up to 20 kg	27 745	62 370	90 115
Farrow up to 21-50 kg	11 000	33 603	44 603
Pigs 51-110 kg	32 700	31 405	64 105
Pigs more then 110 kg	45	10 775	10 802
Suckling pigs and sows	2 034	15 044	17 078
Sows	6 614	18 841	25 455



Source: State Statistical Office

In the pig- breeding sector, the most occurring population are landras (Danish, German and Belgian) as well as large Yorkshire and Durok. The companies that deal with organized manner of breeding, and pigs` production (closed circle, artificial insemination and etc) are owners of about 40% of the total number of pigs in the country, while the other 60% of the pigs are in private ownership of the individual agricultural economies (low intensity of breeding and selection, with about 1-3 sows and a herd of 15-20 heads). The introduction of the new genetic material is made only with import of boars, in order to evade the breeding of same relationship and to increase the average of production results.

## Poultry

The number of the poultry has constantly been decreasing in the past ten years, although the individual agricultural holdings increase the activity in this section.

According to the State Statistical Office, the total number of the poultry is 2, 3 million, and 76% of them are laying hens.

The production of eggs is a primary activity in the Macedonian industry of poultry. About 37 % of the total laying hens are produced by the big farms which in average have about 80 000-100 000 laying hens per a farm and the average production of above 300 eggs/ hens/ annually. The biggest number of production has the middle farms which are with the average capacity of 2-3 thousands per farm, with annual production of 108 eggs/hens/annually.

The production of the eggs meets the domestic consumption.



### The number of poultry in 2007

	<b>Agricultural companies (co-operative)</b>	<b>Individual Agricultural economies</b>	<b>Total</b>
All breeds of poultry/ domestic fowls of all kinds	874 845	1 389 049	2 263 894

### The production of eggs in 2007

	<b>Number of hens</b>	<b>Average per laying hen (piece)</b>	<b>The production of eggs in ;000</b>
Agricultural Companies (co-operatives)	706 754	253	178 538
Individual Agricultural Holdings	1 012 833	141	142 608
<b>Total</b>	<b>1 719 587</b>	<b>187</b>	<b>321 146</b>

Source: State Statistical Office

The production of chicken is based mainly of slaughtering lying hens whose productivity is decreased. Although a big amount of chicken is imported as frozen meat and at the same time reduces the prize in the home market, there are some attempts for increasing the production of the broilers in domestic capacities. The production is organized in big farms of the industrial type, and about 30 smaller private farms of cooperative type, with a production of 6%(1000 tons/annually) from the market demand of fresh chickens.

There are only two slaughter houses in the country (with a capacity of 2 million birds per year), which limits the development of the production.

An interesting development of the poultry industry is the recent development of new activities, like breeding ostriches. There are more than 45 farmers who are breeding about 800 ostriches at the moment.

With a fairly low value/cost of the established investment (2,000- 4,000 € per family), good income and secured sale of the production of the contractual amount, the farmers' production of these birds, although it is in starting phase, can provide good opportunities as a profitable alternative for diversification of the regular agricultural activities.

## 9 Bee-keeping

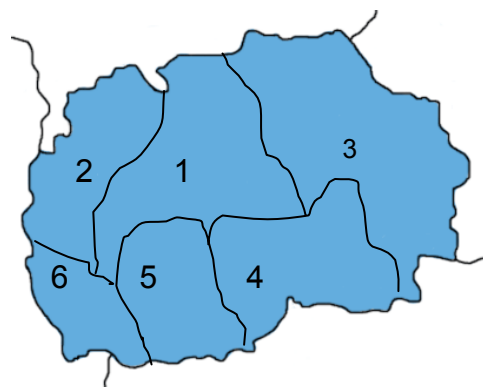
Bee-keeping is very important farming branch in Republic of Macedonia. Firstly, it has a very significant biological importance of honey-bees during the pollination of the entomophile plants (especially fruity crop), but also because of the production of high value bee products (honey, bee wax, pollen, propolis, royal jelly, and venom).

The number of bee families in the Republic of Macedonia, depending on the production year is about 58,000, and they are breed by approximately 10,000 beekeepers.

The annual production of honey is between 800 and 1,200 tones per year. According to the statistical data of the honey production, as well as the analyze of the condition for beekeeping in the Republic of Macedonia, the annual production per bee family in the Republic of Macedonia is between 19 and 21 kg according to the region.(Table 1). This low production in comparison with the production of the other countries is because of the apitechnical, breeding-ecological and genetic factors. Almost the whole production of honey is consumed by the domestic market, and about 8% is exported. The import of honey is less than 1%.

Honey profit per bee family in kilograms

Region	Average	Maximum	Minimum
1	19	50	7
2	23	66	9
3	21	60	8
4	17	38	5
5	19	50	6
6	20	50	8
M	19,8	52,3	7,1



#### Sub-species of honey bees in Macedonia

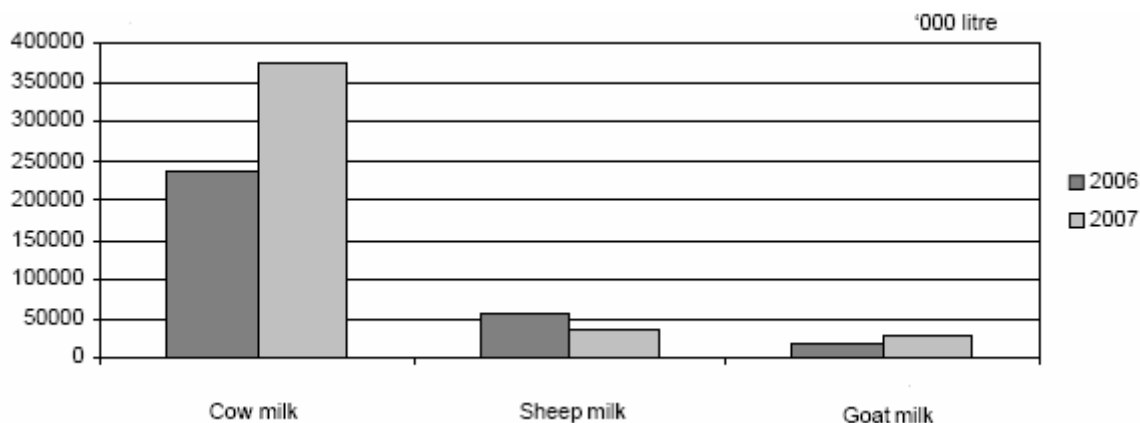
The most common bee worker is **Apis mellifera macedonica** (15, 87%), then **Apis mellifera ligustica** (12,70%), then **Apis mellifera carnica** (10,32%), **Apis mellifera mellifera** (4,76%) and **Apis mellifera caucasica** (4,76%), while (51,59%) belong to the population of new genetic forms (cross-breeds) which are below the breed standards.

#### 10 Snail farming

Breeding snails is profitable business in Macedonia which has developed in the recent 5 years. The production is made with previously concluded contracts with foreign companies. At the moment there are 26 snail breeders who are members of the Association of the snail breeders, situated in Kumanovo.

#### 11 Milk and dairy products

The total production of milk in 2007 in comparison with 2006, is increased for 41, 5%.According to the State Statistical Office in 2007, total 373 706 thousand liters of cow milk are produced which is 59, 2% more than the production in 2006.There is also Increasing of the production of goat milk for 58, 0%, but the production of sheep milk is reduced to 37, 3%.



### The production of milk

Source: State Statistical Office

According to the official statistics, the total production of **cow milk** is increasing. The produced milk produced is used for consumption, fresh or processed/ manufactured in yogurt, sour cream, sour milk, cheese, curd, processed cheese and so on. The average milk yield per cow is about 2,880 liters annually.

### The production of cow milk

	Number of milk cows	Average per milk cow (000 litres)	Production of milk (000 litres)
Agricultural companies (co-operatives)	3 856	5 113	19 717
Individual agricultural Holdings	125 920	2 811	353 989
<b>Total :</b>	<b>129 776</b>	<b>2 880</b>	<b>373 706</b>

Source: State Statistical Office

The purchase price of the sheep milk is approximately twice higher than purchased price of the cow milk. Total production of the sheep milk in 2007 is about 35 thousand liters which means it is reduced, which presents reduction of to the one in 2006 for 37%(56,5 thousand in 2006), with the average yield of 66 liters per sheep (64 liters in 2006) with a trend of the increasing of the production per head.

The sheep in the individual agricultural economies produces 68 l/ annually, while the sheep in the companies just 33 l. Most of the milk is manufactured in white sheep cheese (feta type) which is sold in the home market, but small quantities are exported in the neighboring countries (Greece) in the milking season.

Other milk products are sheep cheese, sour milk and curd. The milk cheese products have good export potential because of the low costs in the production and the high quality. Yet, the low production technology can rise as a major problem, as well as the hygiene and the standards for quality. There is only one dairy plant in the country with a license/permission for export in EU, while two other manufacturers have a license for export in other countries (not- EU) countries. Recently, the producers

show a trend in increasing the production of milk by interbreeding different sheep breeds, which have high potential in the milk production. In order to improve the breeding of the cattle, more centers for breeding with high quality sheep are set up (from the types Eastern-Friesian, Virtembeg and Avasi) under control of authorized institutions.

### The production of the sheep milk

	Number of milk sheep	Average per milk sheep (litres)	Production of milk (000 litres)
Agricultural companies (co-operatives)	26 774	33	883
Individual agricultural holdings	509 066	68	34 590
<b>Total:</b>	<b>535 840</b>	<b>66</b>	<b>35 473</b>

Source: State Statistical Office

Average production features of the **goats'** population are milk yield of 314 liters per milk.

The market of the goat milk is still undeveloped, but the prices are relatively high. As a result more farmers set up facilities for production which are in their company and provide different types of cheese for supermarkets and the shops for cheese.

The cost of the goat milk is half of the price of the sheep milk (i.e. almost same with the price of the cow milk), so a lot of farmers of the sheep mix the goat with sheep milk.

### The production of goat milk

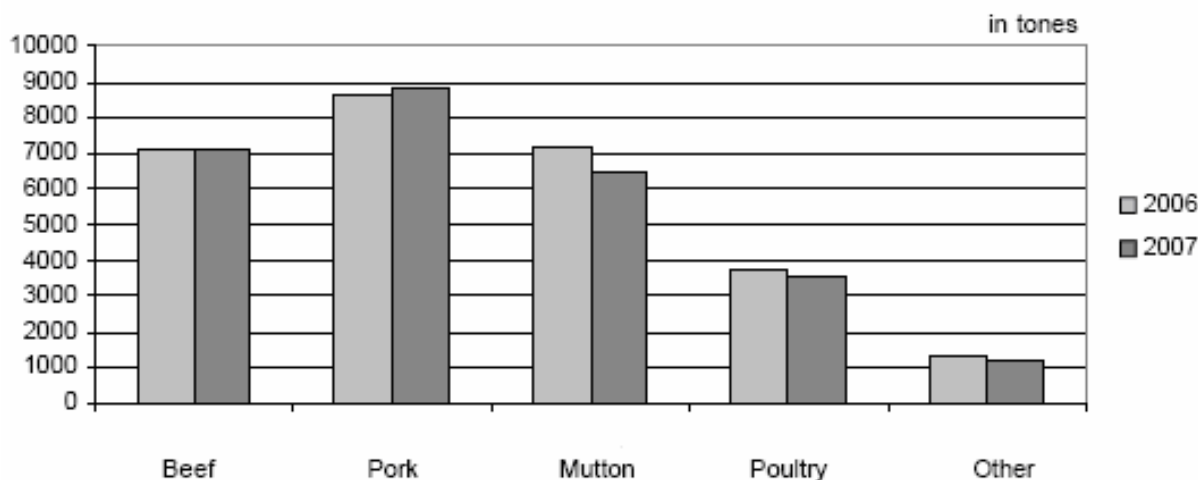
	Number of milk goats	Average of milk goats (litres)	Production of milk (000 litres)
Agricultural companies (co-operatives)	1 074	804	864
Individual agricultural holdings	91 251	308	28 125
<b>Total:</b>	<b>92 325</b>	<b>314</b>	<b>28 989</b>

## 12 Meat production

The total meat production in 2007 was 27 228 tons. The expansion of the production is recorded only with pork regarding 2006, while at the other categories we record a reduction. The production of beef is almost the same as it was last year.

The Republic of Macedonia is a net importer of beef, pork and chicken and net exporter of lamb.

Main suppliers of meat come from EU with about 29 % of the import value, Poland with 13%, Slovenia 11%, USA 10%, Brazil 7%, and Serbia with 6%.



### Comparison of the meat production for the years 2006 and 2007

#### Meat production for 2007

Meat production in tons					
Poultry	Beef	Pork	Mutton	Other	Total
3 524	7 121	8 856	6 495	1 232	27 228

Source: State Statistical Office

For a period 2000-2007 an average annual meat production of beef (heaviness of slaughtered cattle expressed in bodies/carcass) was about 7300 tons, which is not enough in satisfying national needs (consumers and processing industry). According to the State Statistical Office about 14 000 tons per year are imported in 2004-2006 (16 000 tons according the Institute for Veterinary), where one part is with reduced tariff rate for import.

The average of produced mutton from 2000 till 2007 also records a declining trend, from 6 526 tons (7 198 tons in 2006 ) and (6 495 tons in 2007). About 75% of Macedonian lambs are exported into the countries of EU (about 12, 5 million € are realized annually, and this makes it a third agricultural product), mainly in Greece (2 126 tons) and Italy (761 tons) and are focused for the holidays, Christmas and Easter. These markets demand a body of 7-8 kg weight. The lambs are slaughtered in the slaughter-house that has export permission and are exported as fresh chilled meat. The Macedonian export for EU is free of export charges, yet the prominent “Macedonian lamb” at the moment is under treat as a result of introducing and interbreeding different breeds and that’s why it is becoming more difficult to produce uniformed- unchangeable slaughtered lamb with required qualities.

Small quantities are sold in Croatia (which is becoming increasing market), Serbia, Montenegro and Cyprus, generally in the non-customs quota. For the period 2000-2007, the average annual meat production is 9 thousand tons (8 633 tons in 2006) while in 2007 is about 8 856, fattened young pigs are killed at about 100kg live weight. It’s been estimated that about 90% of the domestic needs for raw pork are covered by the domestic production, but the Macedonian meat production industry, for its own needs, entirely imports frozen pork (5 567 tons in 2005).

Major markets from where the pork is imported are EU (62%), Brazil (11%) and Poland (4%).

Imported products of pork (ham, sausages, bacon) are relatively with lower price despite the custom fees for import. In 2006, in the part of the pigs and pork the total agro alimentary import is 3%.

The target of current measures of the policy in the pork industry is improving the breed structure of the Macedonian herds with pigs through providing a support of high-quality interbreeding with well-known genetics and a control over the data for production of high quality animals.

Thought the domestic production of chicken records an increase in the last decade, covers only 20% of the domestic demand. The import of chicken presents the biggest part of the total import of the agro alimentary products.

In 2006, about 25 thousand tons were imported (or 37, 6% from the import value of meat and meat products, with an estimated value of

### **13 Organic production**

#### **What does organic agricultural production represent**

Organic agricultural production is an ecologic system for production management which promotes and supports healthy agro ecosystem, including biodiversity, biological cycles and biological activity of soil. In organic agricultural production, the natural resources are used rationally and the crop rotation is used as a production system, also organic fertilizers, appropriate soil processing and biological plant protection.

Organic agricultural production is part of the maintainable agricultural production, where scientific knowledge about the understanding of natural laws is used for the sake of human health and environment. Therefore, the organic agricultural production is not the return to an old, rural agriculture, but it is based upon a modern way of understanding the ecology and paedology and completely uses appropriate technological solution and mechanization.

#### **Organic agricultural production development in the Republic of Macedonia**

Organic agricultural production development in RM started in 1997, when the biggest pharmaceutical company in Macedonia, "Alkaloid", introduced several organic teas to the domestic market. In 2004, the Parliament adopted the Law on Organic Agricultural Production (Official Gazette No.16/2004), which further required adoption of 12 by-laws. In December 2004, the first by-law was adopted, by which the Advisory coordination commission for Organic Agriculture (OA) was established. The task of this Commission is to support MAFWE in the development and implementation of the organic agricultural policy and related activities.

In 2007, the remaining 9 by-laws were passed, which finalized the passing of all 12 by-laws, also, a public discussion for NAP was held, and in September the National Action Plan (NAP) was adopted by the Government of RM. In October 2007, the first organic day took place, and due to the cooperation with IAMB (Agricultural Institute in Bari, Italy) 10 Organic production guide-books were elaborated for 10 different agricultural crops.

The two certification/inspection bodies, Balkan Biosert and Incebo, were authorized by MAFWE for conducting professional control over the organic production.

### **Professional control and certification**

The professional control and certification is a guarantee for the consumer that the organic product is produced according to all the criteria inscribed in the Law on Organic Agricultural Production.

The authorized person, based on the professional control procedure data, makes a report and decides upon certification of organic production as well as issues a certificate for the claimants.

The issued certificate is valid up to one year, starting from the day it is issued. By receiving the certificate from the authorized person, one has the right to use the national logo for an organic product.

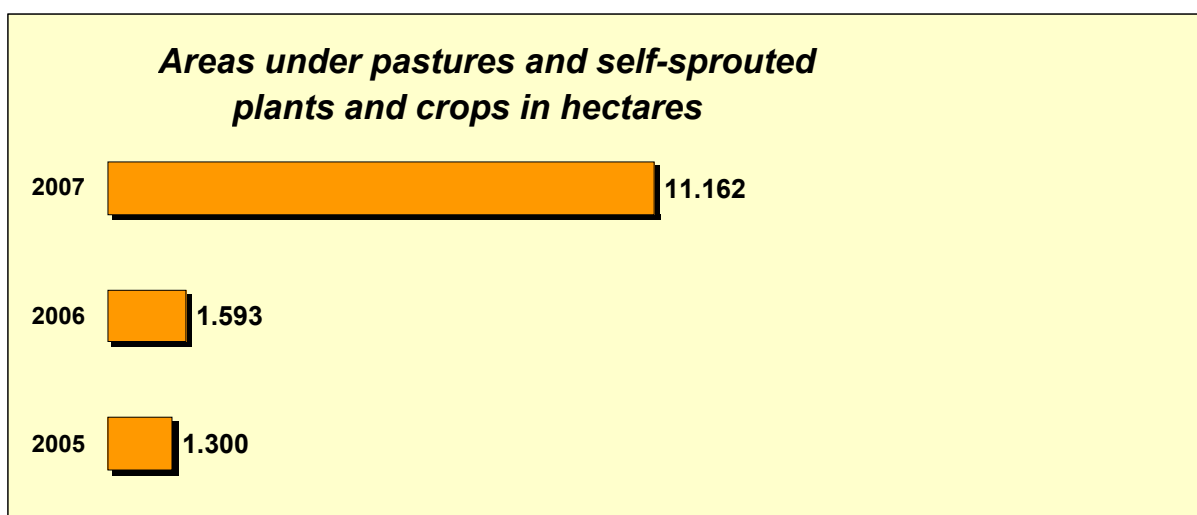
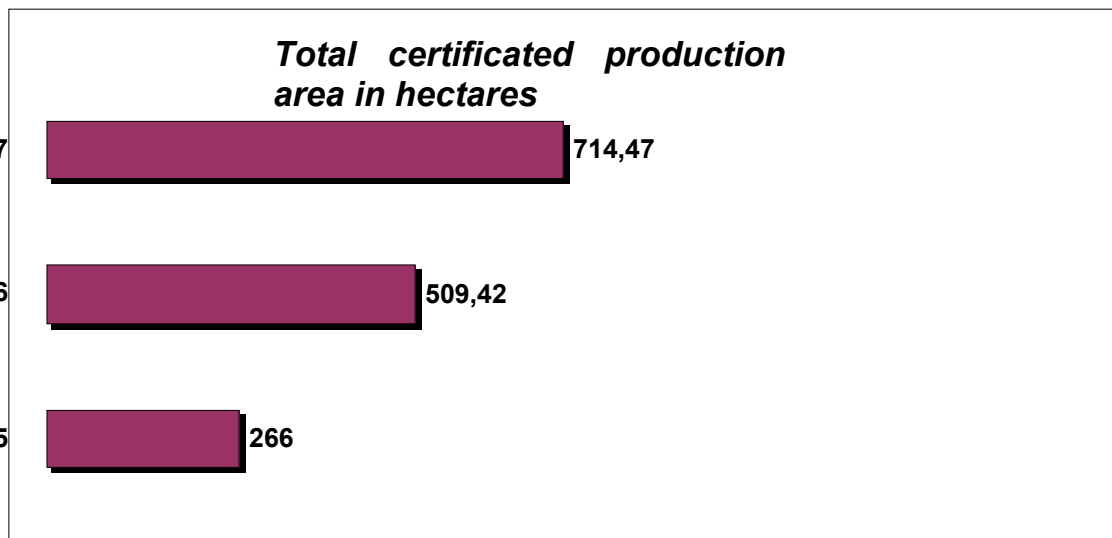
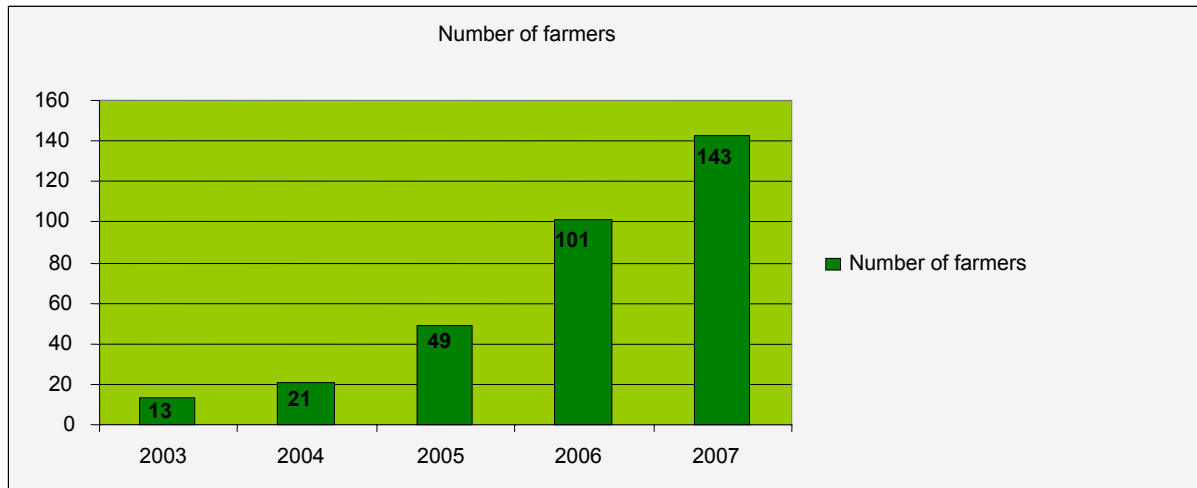
The logo is marked on the product and it indicates and confirms that the product is certified organic, in compliance with certain standards.

MAFWE, in compliance with the EU integration process of the Republic of Macedonia, elaborated a strategic document – National Strategy, with an Action Plan for organic agricultural production for the period 2008-2011, aiming to faster development of organic agricultural production.

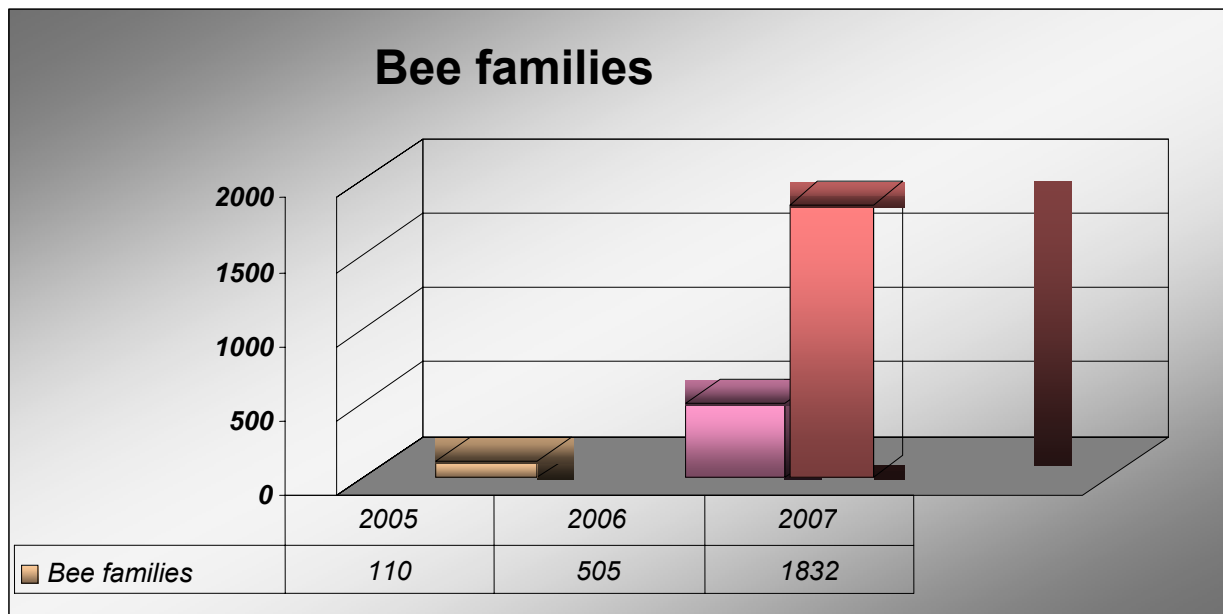
The strategic objectives of the National strategy with Action Plan for organic agriculture are:

- Until 2011, the organic arable land should have a share of 2% in the total arable agricultural land in RM,
- The areas for organic collection of self-sprouted plants and crops should have a share of 5% of the total agricultural areas in RM,
- Until 2011, the majority of consumers in RM should know what organic agricultural production is, and a domestic demand for organic products should be created,
- Until 2011, stable export relations should be established

## Statistical data







During the year 2006, the number of certified crops was 32, but in 2007 it increased up to 49 different crops.

According to the statistical data, each year there is an evident increase of the interest for organic agricultural production, followed by agricultural production development.

MAFWE continues the policy directed towards the organic agricultural production development through:

#### **A Program for Promotion of Organic Production Development**

In 2007, the funds intended for realization of the Program for Promotion of organic production development (Official Gazette of RM no.46/2007) were provided from the Budget of the Republic of Macedonia. In compliance with the program, 11 000 000 denars were planned, under criteria and conditions for funds use, for separate purposes, but only 6 700 000 denars were paid.

#### **14 Sector of Fishing**

The social and political changes in the Republic of Macedonia have lead to negative consequences in the fishing industry, which resulted with minimization of the sector's role in the total economy. However, the sector's importance should not be underestimated, nor its development potential for rural tourism and aquaculture production, not least the social and ecological roles in a balanced and diverse agricultural and rural development policy. In the Republic of Macedonia, the water resources usable for fishing cover around 56 000 ha, from which 46 700 ha are natural lakes (Ohrid, Prespa and Dojran), 6 400 are artificial lakes, 2 200 ha are rivers and 700 ha are fish farms. From the national economy aspect, the fishing industry holds an insignificant share in the GDP of only 0.1%. The employees in the fishing sector perform commercial fishing, production of fish in fish farms, as well as other activities related to the fishing industry.

The issue of affairs management in the fishing industry is established by the Law on Fishery, passed in 1993 and the by-laws of this law. The usage, management and protection of the fish fund in the fishing waters are established by this law. This law

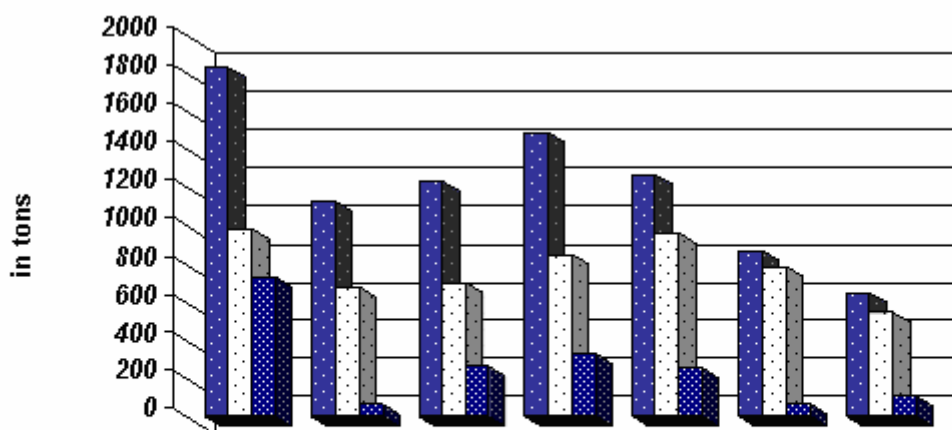
defines the fishing waters and their division into fishing areas, fishing territories and accumulations, the manner of use of the fishing fund, the organization of commercial and sport fishing, the contents of the five-year plans and annual programs, the compensation for fishing fund usage, the fishery in the cross-border waters and specially protected waters, fishing fund protection, domestic reproductive material production for fish stocking, as well as supervision and penalty measures. The by-laws also define the fishing condition of certain fishing waters, contemporary and permanent fishing bans, the measures under which the fish should not be caught, the types of fishing instruments permitted, catching fish in busy regime and water quality, the hours permitted for night-time fishing, as well as fishing for rare and sporadic types of fish.

In Macedonia there are no strict limitations concerning the total amount of fish caught by commercial fishing, but the regime for fish usage from fishing waters is based on five-year plans and annual programs, where total amounts of caught fish are planned on the bases of biological characteristics of the fishing water. Sports fishing is permitted in all fishing waters, but it is only limited regarding the number of fishing days permitted annually, and also regarding the usage of the fishing instruments permitted.

### Fish production

Fish production in the Republic of Macedonia is conducted under commercial quarry in the natural lakes and with production in fish farms. The catch from open waters constantly decreases as a result of the reduction of some more important fish funds, and bans have been brought against their commercial catching in the natural lakes.

In 2006, the fish farm production amounted to 84% of the entire fish production. The most significant is the production of fresh trout (378) tones and fresh carp (167t).



	2000	2001	2002	2003	2004	2005	2006
■ Total catch	1834	1135	1238	1486	1271	868	646
□ Fish ponds	982	677	705	846	959	787	545
■ Other	735	62	265	326	252	61	101

### 2000-2006 fish production

Source: SSO of the Republic of Macedonia

## Consumption

Fish produced in fish farms are sold on the market as fresh and unprocessed. Fresh fish is mainly sold on the local markets.

According to the State Statistical Office, the 2007 average consumption per household amounts to 24, 4 kg of fish and fish products. The households are mainly supplied with fish from the stores or they consume it directly from the restaurants (which results to around 6-8 kg annual consumption per head), which is under the average as compared to EU countries (around 20 kg per head). Macedonia is a net importer of fish and fish products.

## Import and export of fish and fish processing

The total import of fish and fish products in the period 2000-2004 noticed a constant increase, and in the period 2005-2006, it decreased. The main part of fish and fish products imported in 2006 is: frozen sea fish around 50% from the total import value; preserved fish (whole or in pieces) with around 38% and fresh fish with around 6%. The rest 6% are comprised from fish fillet, shells, mollusoids, smoked fish and caviar. The biggest part of the imported fish products come from Argentina (23, 2%), Croatia and Spain (10% each), Greece (5, 5%), then Bulgaria, Serbia and Monte Negro as suppliers of the Macedonian market with fresh-water fish.

## 2000-2006 fish and fish products import, in mil. €

Description	2000	2001	2002	2003	2004	2005	2006
Agricultural-alimentary products import	298,24	283,40	326,18	304,29	338,33	348,1	367,4
Fish and fish products import	7,24	7,17	9,29	8,55	9,12	8,21	7,97
% of fish and fish products import, total	2,4%	2,5%	2,8%	2,8%	2,7%	2,3%	2,1%

Source: State Statistic Office of RM, 220, SMTC classification and trade

## Fish and fish products prices

### Wholesale prices

Production-purchase prices of the trout and carp in the period 2003-2006 noticed price decrease, while the prices of the fresh-water fish vary according to the trade line.

### Fish production-purchase prices, in denars, 2003-2006

	Trout	Carp	Other fresh-water fish	Bleak
2003	303,20	148,54	191,95	34,68
2004	262,81	125,38	181,91	35,60
2005	231,84	110,41	187,82	38,50
2006	226,90	110,41	187,82	38,50

Source: State Statistic Office of RM, 2006,

## **State policy for fishery, production, processing and marketing of fish and fish products**

Financial support of MAFWE for fishery is provided through annual Program for Agricultural Development Support. The main part of the funds are allocated for fish maintenance in fishing waters, through fish stocking of fishing waters with endemic types of fish and with measures related to the fishery development through participation in elaboration of scientific and application projects in the fishery area.

According to the Program for Agricultural Development Support in 2007, funds in the amount of 10 097 500 denars were provided for the fishery industry for the following purposes:

<b>Fishery</b>	<b>10 797 500,00</b>
Financial support for fish stocking of the fishing waters: - fishing areas - fishing territories	1 700 000,00 300 000,00
Activities implementation established by the new Law on Fishery and Aquaculture	5 000 000,00
Physical protection of the Ohrid Lake fishery area	3 097 500,00

Total of 5 717 900 denars were realized from the planned funds, where the main part was intended for fish stocking of the Ohrid Lake with young Ohrid trout.

### **Fish farming and fish stocking material**

In the fish farms in the Republic of Macedonia, the most frequently farmed types of fish are the trout and the carp. Often, the fish stocking material for fish production is obtained through import, as a result of the high price of production cost in the same fishing farms.

Regarding the production of fish stocking material for fish stocking of opened fish waters, in 2007 the main accent is put on the fish stocking of Ohrid Lake with young Ohrid trout. The fish stocking material is provided by the existing raw materials centers, which perform the artificial spawn through fishing the species of Ohrid trout and farming young fish. Also, a fish stocking material is provided for fish stocking of the rest fishing areas and fishing territories.

### **Future activities**

Fishery, as a sector, despite the unfavorable economic situation, is burdened with reduction of the current fish fund, great competition, as well as difficulties carried by the international integration. It is clear that the maintainable development of the fishery industry must include the fishery intensity planning, which will enable balanced and long-term maintainable catch, which implies responsible and rational

access in the fish fund usage. Having this into consideration, it should be expected even stronger aquaculture development trend, where necessity exists for establishment of a system of ecologic standards and measures which will enable better competition of such production.

Aiming to complete establishment of the fishing sector in the Republic of Macedonia, the harmonization of the Directives with other existing laws related to fishing, as well as regulation of problems needed for approaching the legal regulation to the one of EU, a necessity appeared for elaboration of new Law on Fishery and Aquaculture.

Having known that the Republic of Macedonia has no access to sea, the main part of the EU legislation for common fishery policy is inapplicable in the Republic of Macedonia – technical rules, quotas, fleet registry, supervisory system for floating objects etc. It was estimated that a new Law on Fishery and Aquaculture shall harmonize the basic legal regulation in parts applicable for the Republic of Macedonia.

The law should finish the organization of resources management areas, inspection and control, structural and market policies, and information distribution in compliance with the EU policy in this area. The draft text of the law has been elaborated and its publishing is expected for the beginning of 2008.

For the purpose of realizing the fishery directions and objectives, and also enabling permanent fish usage through sustainable development for commercial and recreational sport fishing, as well as for fish farming in the fishing farms, another necessity appeared for elaboration of long-term program for fishery and aquaculture improvement, with assessment of the state and goal-achieving measures.

## **15. Agricultural markets and marketing with agro-food products**

### **15.1 Trade Policy**

The process of regional integration is marked with the sequence Free Trade Agreements (FTA) with the countries from the region. The global integration marked the entrance of the Republic of Macedonia in the World Trade Organization (WTO) in 2003, while the process for the European Integration is defined by the Stabilization and Association Agreement.

Main goals of the regional agreements for free trade are stimulating the growth of the domestic economy through:

- (i) A better approach on the market of national products for export in other countries;
- (ii) Attracting and increasing the foreign direct investments, as well as modern technology as an accompanying element to the investments;
- (iii) Increasing the productivity of the production and the competition, on the domestic as well as the foreign market.

The Free Trade Agreement with the European Union (EU) is the most significant preferential agreement, because of the size of the trade exchange between the Republic of Macedonia and the EU.

Based on the trade agreement, most barriers for the entrance of Macedonian agricultural products were removed, except for wine, baby beef, and sugar, fish and

fish products, for which customs quotas have been reached or a gradual liberalization.

On the other hand, the Republic of Macedonia, for the entrance in the EU of the agro-food products, has:

- i) Suspended the customs rates for the products which have been defined as insensitive,
- ii) Agreed to a gradual liberalization of the medium sensitive products in a transitional period up to the year 2011 and,
- iii) Agreed to an application of a maximum customs protection for the highly sensitive products, and for a part of them non-customs quotas have been agreed.

As a part of the trade integrations connected to the process in which the Republic of Macedonia approaches the EU, is the membership in the Central European Free Trade Agreement-CEFTA, as a means for regional cooperation and evidence for political maturity of the countries aspiring to enter the EU.

The countries from the South-Eastern Europe under the protection of the Stability Pact and the European Commission, in June 2006, began the multilateral negotiations for establishing a legal frame of the new Unique Free Trade Agreement in the region, named as Agreement on amendment of and the accession to the CEFTA (CEFTA-2006)

This Agreement was signed on the 19<sup>th</sup> of December 2006 in Bucharest-Romania. The signatory countries of CEFTA-2006 are: the Republic of Bulgaria, the Republic of Croatia, Romania, the Republic of Macedonia, the Republic of Albania, Bosnia and Herzegovina, the Republic of Moldova, the Republic of Montenegro, the Republic of Serbia and Kosovo. With the entrance in to the European Union, the Republic of Bulgaria and Romania are no longer members of the CEFTA-2006 Agreement. The CEFTA-2006 Agreement was ratified by the signatory countries during the year 2007, and its implementation began in the second half of the year 2007. By its implementing, the current Free Trade Agreements concluded between signatory countries, are no longer valid.

## **15.2 Total trade and trade with agro-food products**

After the decreasing of the relative participation in the export of agro-food products in the total export of the Republic of Macedonia for the period of 2002-2004 (from 19,4% to 16%), in 2005 and 2006, the export of agro-food products has a mild increase with participation of about 17% in total export. But in 2007 the data on agro-food products have shown another decrease of the participation in the total export with 14,2%.

On the other hand, the participation in the import of agro-food products in the total import in the Republic of Macedonia in 2005, notes a decrease when compared to the year 2004, from 14,5% to 13,4%, i.e. in the year 2006 compared to the year 2005, from 13,4% to 12,3% and in 2007 compared to the year 2006 the participation of import of agro-food products in the total import is at a level of 12,2%. (Table 1).

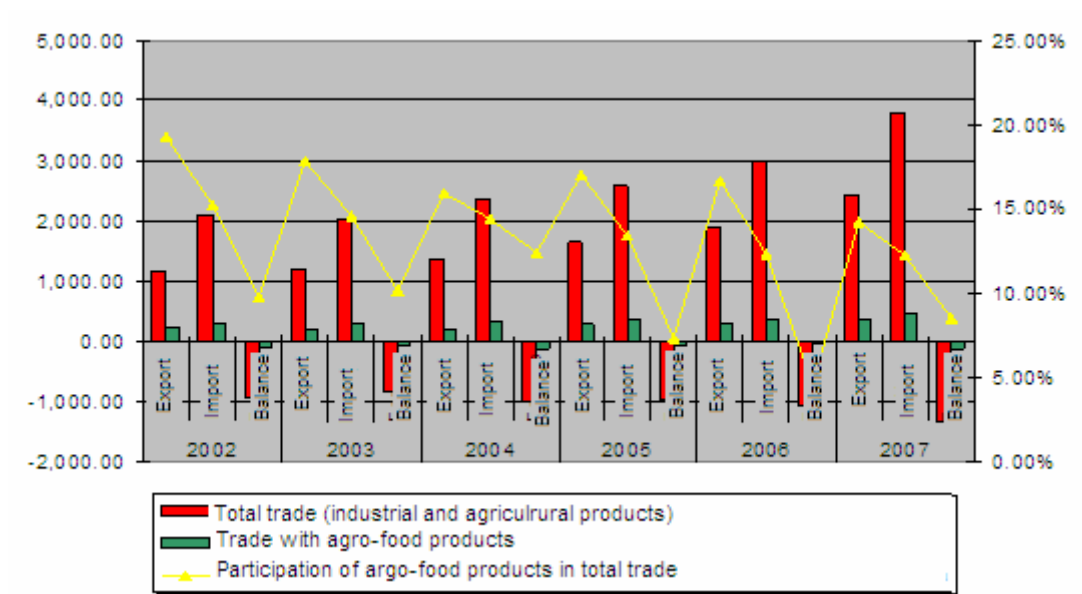
**Total trade and trade with agro-food products for the period of 2002 and 2007 (in millions €)**

Indicator		Total trade, (industry and agriculture)	Trade with agricultural products	Participation of the agriculture in the total trade
2002	Export	1 178,3	228,0	19,3%
	Import	2 106,0	319,3	15,2%
	Balance	-927,6	-91,3	9,8%
2003	Export	1 207,1	214,4	17,8%
	Import	2 038,2	298,4	14,6%
	Balance	-831,1	-84,0	10,1%
2004	Export	1 345,9	213,6	15,9%
	Import	2 354,0	338,3	14,4%
	Balance	-1 008,1	-124,8	12,4%
2005	Export	1 643,5	278,6	17,0%
	Import	2 601,0	348,1	13,4%
	Balance	-957,5	-69,5	7,3%
2006	Export	1 906,2	318,0	16,7%
	Import	2 987,7	367,4	12,3%
	Balance	-1 081,5	-49,4	4,6%
2007	Export	2 446,4	346,6	14,2%
	Import	3 795,0	461,5	12,2%
	Balance	-1 348,6	-114,9	8,5%

Source of information: State Statistical Office

Processing: Ministry of Agriculture, Forestry and Water Economy

### Development of the total trade, and the trade with agro-food products in the Republic of Macedonia (in millions €), in the period of 2002-2007.



### 15.3 Trade exchange with agro-food products with the world for the year 2007

In a parallel line with the total trade trend, the trade with agro-food products in the year 2006, in comparison with the previous year 2005, has shown improvement. The deficit in the trade exchange with agro-food products in the year 2006, had decreased by 29% in comparison with the previous 2005, i.e. from 69,5 million € in 2005, to 49,4 million € in 2006, but the negative trade balance in 2007 in comparison with 2006, has increased by 132,6%, from 49,4 million € in 2006, to 114,9 million € in 2007.

The export of agro-food products in the year 2007, in comparison with 2006, has increased by 9%, i.e. from 318 million € in 2006, to 346,6 million € in 2007. On the other hand, the import of agro-food products in the year 2007 in comparison with 2006 has increased by 25,6%, i.e. from 367,4 million € in 2006 to 461,5 million € in 2007.

The increased export is due mainly to the increased export of wine, by 22% (from 35,6 million € in 2006 to 43,6 million € in 2007), then the increased export of apples by 59,5% (from 8,9 million € in 2006 to 14,2 million € in 2007), the increased export of grapes by 58,6% (from 7 million € in 2006 to 11,1 million € in 2007), the increased export of tomatoes by 18,2% (from 14,3 million € in 2006 to 16,9 million € in 2007), the increased export of biscuits and waffles by 39,2% (from 14,3 million € in 2006 to 19,9 million € in 2007), the increased export carbonated sodas by 10,9% (from 23,9 million € in 2006 to 26,5 million € in 2007). Increased export has also been noticed in some other agro-food products, such as: frozen vegetables, canned fruits and vegetables, cucumbers, cabbage, eggs, sausages, etc.

On the other hand, a decrease has been noticed in the export of tobacco by 14,3% (from 73,6 million € in 2006 to 63,1 million € in 2007), the export of milk has been decreased by 76,9% (from 3,9 million € in 2006 to 0,9 million € in 2007), the export of cigarettes as well as some other products has decreased.

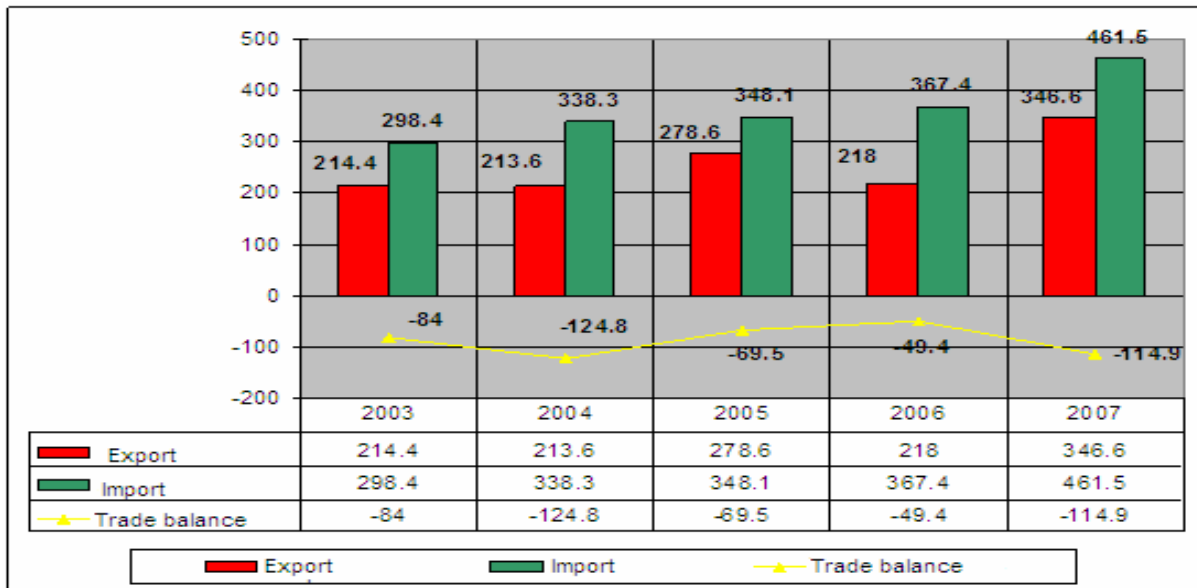
The increased value of the import in the year 2007 is mainly due to: the drastic increase of the import of flour by 1 762,5% (from 0,8 million € in 2006 to 14,9 million € in 2007), then to the increase in the import of wheat by 248,6% (from 3,7 million € in 2006 to 12,9 million € in 2007), the increase in the import of poultry meat by 40,2% (from 16,9 million € in 2006 to 26,7 million € in 2007), the increase in the import of sunflower oil by 31,2% (from 17,3 million € in 2006 to 22,7 million € in 2007), the increase in the import of products which have not been mentioned anywhere else (proteins, enzymes, glucose additives, etc.) by 24,8% (from 16,9 million € in 2006 to 21,1 million € in 2007), increased import of biscuits and waffles by 24,3% (from 14,4 million € in 2006 to 17,9 million € in 2007), increased import of wheat by 38,4% (from 7,3 million € in 2006 to 10,1 million € in 2007), increased import of frozen beef by 39,4% (from 7,1 million € in 2006 to 9,9 million € in 2007), increased import of sodas by 71% (from 3,8 million € in 2006 to 6,5 million € in 2007) and increased import of sugar by 8,5% (from 19,9 million € in 2006 to 21,6 million € in 2007).

Also there has been an increase in the import of coffee, carbonized sodas, southern fruit (bananas, oranges and lemons), milk, forage, ice-cream, different types of oils, and other .

It must be mentioned that, the increased value of the import is not solely due to the increased quantity of import of some products, but also to the **increased import price of these products** (poultry meat, sunflower oil, maize, wheat, flour, and other products).



**Trade exchange of agro-food products with the world, for the period of 2003-2007 (in millions €)**



#### **15.4 The most significant trade partners of the Republic of Macedonia with agro-food products in 2007**

The most significant partner that the Republic of Macedonia has in the trade exchange with agro-food products is the EU-27, with an average participation of about 43% in the total exchange of these products in the period of 2004, 2005, 2006 and 2007. The participation of the export of agro-food products in the EU-27, in the total export in 2007 is 46,7%, while the participation of the import from the EU-27 in the total export of agro-food products in 2007 is 37,4%.

Second significant partner of the Republic of Macedonia in 2007, in the trade exchange with agro-food products, are the countries members of CEFTA-2006, with a participation of 47,5% in the total export of these products and participation of 33,2% in the total export.

The most significant partner from the countries members of CEFTA-2006 is Serbia (including UNMIK-Kosovo), with a participation of 29,5% in the total export of agro-food products and participation of 25,5% in the total import. It should be mentioned that the State Statistical Office does not keep separate records of UNMIK-Kosovo yet, because a code for international use has not yet been determined.

The next partner is Croatia with a participation of 7,5% in the total export of agro-food products, and participation of 5,7% in the total import.

Next is Bosnia and Herzegovina with a participation of 6,1% in the total export of agro-food products, and participation of 1,6% in the total import. The participation in the trade exchange with agro-food products, with the remaining members of CEFTA-2006 (Montenegro, Moldova, and Albania) is insignificant. Also, Turkey should be mentioned as a partner of the Republic of Macedonia in the trade with agro-food products, with a participation of 1,2% in the total export and participation of 3,2% in the total import of these products.

When compared to the import of agro-food products in the Republic of Macedonia, Brazil should be mentioned as a significant partner, with a participation of 10,3% in the total import, taking in consideration that the Republic of Macedonia imports from Brazil great quantities of sugar, poultry meat, beef and coffee.

**A review of the trade exchange with agro-food products by countries for the year 2007 (in millions €)**

Country	Export – 2007		Import – 2007		Trade balance-2007
	Value	Participation %	Value	Participation %	
European Union-27	162,0	46,7%	172,6	37,4%	-10,6
CEFTA Total	164,7	47,5%	153,1	33,2%	11,6
Serbia (including UNMIK-Kosovo)	102,1	29,5%	117,8	25,5%	-15,7
Croatia	25,8	7,5%	26,4	5,7%	-0,6
Bosnia and Herzegovina	21,1	6,1%	7,5	1,6%	13,6
Turkey	4,1	1,2%	14,6	3,2%	-10,5
Brazil	0	0%	47,5	10,3%	-47,5
Other countries	15,8	4,6%	73,7	15,9%	-57,9
<b>Total, the world</b>	<b>346,6</b>	<b>100%</b>	<b>461,5</b>	<b>100%</b>	<b>-114,9</b>

Source of information: State Statistical Office

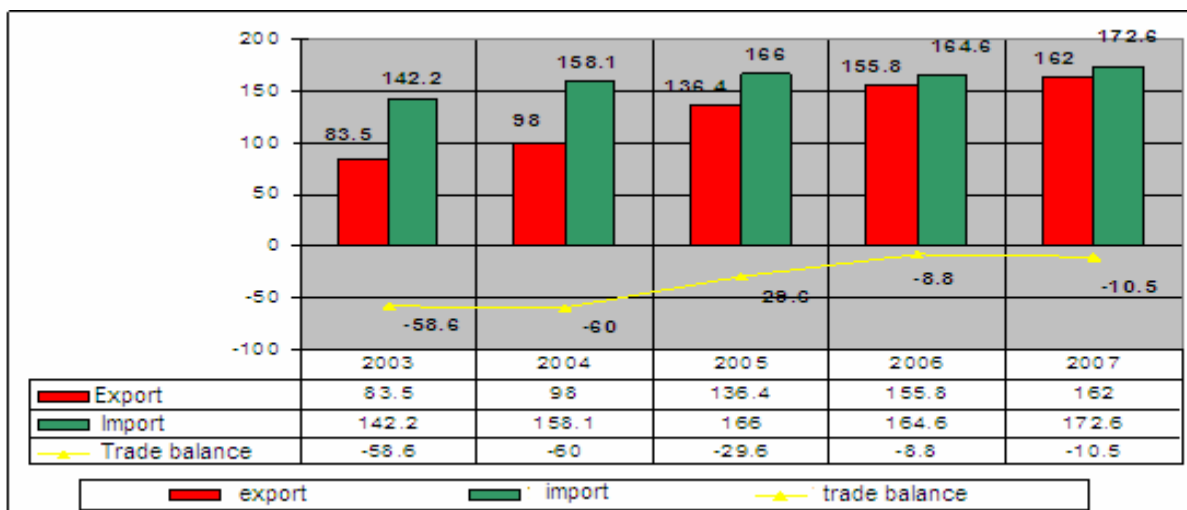
Processing: Ministry of Agriculture, Forestry and Water Economy

#### **Trade exchange with agro-food products with the European Union for 2007**

EU-27 is the most significant trade partner of the Republic of Macedonia in the trade exchange with agro-food products, with an average participation of about 43% in the total trade with these products (export plus import) for the period of 2004, 2005, 2006 and 2007.

In 2007, the EU-27, in the total export of agro-food products participated with 46,7%, and in the total import of these products, participated with 37,4%.

**A review of the data on export, import, and trade balance with the European Union-27, for the period of 2003–2007 (millions €)**



The export of agro-food products from the Republic of Macedonia in the EU-27 in 2007 in comparison to 2006, has increased by 4%, i.e. from 155,8 million € in 2006 to 162 million € in 2007.

The import of agro-food products in the Republic of Macedonia from the EU-27 in 2007 in comparison to 2006, has increased by 4,9%, i.e. from 164,6 million € in 2006, to 172,6 million € in 2007.

In accordance with this, the negative balance in 2007 in comparison to 2006 has increased by 20,7%, i.e. from -8,7 million € in 2006, to -10,5 million € in 2007.

The greatest part of the export of agro-food products, in 2007, from the Republic of Macedonia in the EU-27, is realized in Greece with a participation of 34,20% of the total export in the EU-27. The most significant products exported in to Greece are: tobacco prepared or canned snails, lamb, tomatoes, and other products. Then there is Bulgaria, with a participation of 14,7% in the total export in the EU-27, and most significant exported products are: tobacco, apples, wine, peppers, tomatoes, and other products. Next is Germany with a participation of 12,10% in the total export in the EU-27, and most significant exported products are: wine, partially pre-cooked vegetables, canned vegetables, candy, etc. Then there is Italy and Germany with a participation of 9,81% in the total export in the EU-27, and most significant exported products are: lamb, dried vegetables, mushrooms, partially cooked vegetables, etc. Then there are, Belgium, with a participation of 8,01% in the total export in the EU-27, the Netherlands with a participation of 6,71%, Slovenia with a participation of 3,96% and other countries.

The greatest part of the import of agro-food products in 2007 in the Republic of Macedonia, from the EU-27 was realized from Greece, with a participation of 21,84% from the total import from the EU-27. The most significant imported products from Greece are: canned vegetables, raw cotton, products which have not yet been mentioned, forage, southern fruit, poultry meat, maize, sunflower oil, and other products. Then there is Bulgaria, with a participation of 11,33% from the total import from the EU-27, and the most significant imported products are: sunflower oil, biscuits and waffles, wheat, snails, sugar based products, forage, etc. Slovenia with a

participation of 10,82% from the total import from the EU-27, and the most significant imported products are: poultry meat, sausages, and other meat products, cheese, alimentary products which have not yet been mentioned, chocolates, and other products. Next is Germany with a participation of 10,40% from the total import from the EU-27, and the most significant imported products are: alimentary products which have not yet been mentioned, chocolates, cheese, frozen pork, extracts, pasta, powdered milk, yogurts, butter, and other products. Austria with a participation of 8,12% from the total import from the EU-27, and the most significant imported products are: frozen beef, carbonated sodas, frozen pork, alimentary products which have not yet been mentioned, sugar, etc. Next are: the Netherlands with a participation of 6,91% in the total import from the EU-27, then Italy with a participation of 6,27%, Hungary with a participation of 5,63% and other countries.

### III. POLICIES FOR DEVELOPMENT OF AGRICULTURE AND RURAL REGIONS

#### 1 Introduction

Agriculture and rural development are the key elements of the EU pre-accession strategy of the Republic of Macedonia. After the submission of the Application for EU membership of the Republic of Macedonia in 2004, the European Council granted the Republic of Macedonia the status of a candidate country for EU membership in December 2005.

Due to the evidently untenable state of the rural regions of the Republic of Macedonia, as well as EU's Guidelines towards an increasingly significant financial support of the rural development, in January 2007, the Government of the Republic of Macedonia passed a Law with the following title: "**Law for Agriculture and Rural Development**"<sup>15</sup>.

The passing of the Law for Agriculture and Rural Development, as the highest legal act in agriculture, represents the starting basis for reforms and the foundation for the development, not only of this sector, but also for the Macedonian economy as a whole.

In accordance with the Law, a **National Strategy for Agriculture and Rural Development 2007-2013**<sup>4</sup> was passed as well, with clear, inter-related objectives, thus providing the Macedonian Government (and particularly the Ministry of Agriculture, Forestry and Water Economy - MAFWE) and the institutions / interest groups (rural population, farmers and farmers associations, producer and processor groups) with a multi-annual reference material – strategy and instrument for the development of Macedonian agriculture and rural regions, as well as the establishment of a support base of the hierarchically lower operational draft-plans for agriculture and rural development, in particular, the Instrument for Pre-accession Assistance for Agriculture and Rural Development (IPARD) and the discussion of these by the European Commission.

The Ministry of Agriculture, Forestry and Water Economy has adopted the following strategic objectives as the basis for agricultural and rural development and for Agricultural Policy formulation:

- Strengthening the capability of Macedonian agriculture of being competitive on the integrated regional markets of the European Union and Southeast Europe by means of measures to increase the efficiency of agricultural production, processing and marketing, and
- Building appropriate, efficient public and private institutions;
- Increasing farm income;
- Insuring that consumers have access to safe, healthy food;
- Optimizing land, forest and water use, as insufficient sources, in a sustainable manner for the environment;

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<sup>15</sup> "Law for Agriculture and Rural Development" Official Gazette No. 47/2007

- Building rural municipalities capable of survival via a sustainable rural development.

The goal of the National Strategy for Agriculture and Rural Development is to contribute to achieving the Strategic objective stated in the National Plan for Economic Development 2007-2009, that states the following:

“Increase in international competitiveness of the country, necessary for a sustainable economic growth and increased employment ”

In December 2007, the European Commission adopted the IPARD Plan of the Republic of Macedonia for the period 2007-2013. Thus, the Republic of Macedonia met the established terms for the use of the IPARD Funds that are directly intended for farmers, the processing sector and the development of the rural regions. The measures of the IPARD Programme are focused at improving the competitiveness of farms and the processing food industry in selected sub-sectors, by means of investments in the technologic and market infrastructure, with the purpose of increasing the added value of agricultural products and harmonization with EU Quality Standards, the standards regarding food safety, wellbeing of animals and the environment.

The Ministry of Agriculture, Forestry and Water Economy is the managing body for the rural development in Macedonia; the Ministry plans, monitors and evaluates the activities and programs, coordinates the activities of various institutions within this sector, and supervises the financial functions that relate to rural development. The management institution is a partner, responsible for the entire cooperation with the European Commission in the area managing agriculture and rural development.

During the year 2007, the Ministry of Agriculture, Forestry and Water Economy, as a priority worked on building the institutional capacity of the Sector of Rural Development; guided by the general goal of establishing support systems facilitating the rural development measures according to the EU measures and building administrative systems that can answer the pre-accession IPARD funds of the EU.

As compared to the European Union, agricultural holdings in the Republic of Macedonia are of lower productivity, in the meantime, have insufficient product quality. Via the Rural Development Programme for 2007, the Ministry of Agriculture, Forestry and Water Economy introduced a separate Budget programme of 45 million MKD (around € 0.73 million euro), for an integral financing and implementation of the Rural Development Programme. The Programme was managed by the Sector for Financial Support and Rural Development. The chosen measures are in accordance with the measures and administrative systems of the European Union.

## **2 Rural Development Programme**

In accordance with Article 36, paragraph 5 of the Law for the Government of the Republic of Macedonia (Official Gazette of the Republic of Macedonia No.. 59/00, 12/03, 55/05 and 37/06), the **Rural Development Programme** has been realized, and the enclosed report displays the purpose of the funds intended for agriculture and rural development support.

The Programme represents a collection of measures in accordance with the strategic axes of priority and in accordance with sub-programs, that finance capital

investments and, in certain cases, the operational and material costs of end users. According to what has been realized, it may be established that there is efficient allocation of the funds according to measures and sub-measures.

The funds for the Rural Development Programme in 2007, in the amount of **45.000.000,00 denars**, were provided from the Budget of the Republic of Macedonia (Official Gazette of the Republic of Macedonia No. 47/07). So as to achieve realization of these funds according to their purposes, the Government of the Republic of Macedonia passed a Rural Development Programme for 2007, that established the criteria and conditions for realization of the measures.

Taking into consideration the fact that there was a large interest in use of these funds, the Rural Development Programme was amended and supplemented (Official Gazette of the Republic of Macedonia No.125/2007). The Programme was increased to a total of **74.000.000,00 denars**.

The following measures were provided for in the Programme:

	<b>Title of measure</b>	<b>Funds provided in the Program</b>
1.	Investments in agricultural holdings	60.000.000
2.	Investments in agricultural products processing	13.000.000
3.	Material costs for implementation of the programme	1.000.000
	<b>Total:</b>	<b>74.000.000</b>

After the Programme was published on the Official Gazette (Official Gazette No.46/2007), an announcement was published in the printed media and a campaign for its promotion, by means of organizing regional meetings, distribution of advertising material, pamphlets, brochures, via the regional offices of the Ministry of Agriculture, Forestry and Water Economy, farmers associations, the Federation of Farmers, the Agency for Promotion of Agricultural Development, IFAD advisors.

### **Investments in Agricultural Holdings**

Within the Investments in Agricultural Holdings domain, beneficiaries were legal entities registered in accordance with the Company Law, the Law on Cooperatives, with a number of regularly employed persons not exceeding 10; and natural persons registered under the Law on Performing Agricultural Activity.

	<b>Investments in equipment and mechanization in:</b>	<b>Funds provided from the natural persons programme</b>	<b>Realized</b>	<b>Funds provided from the legal entities programme</b>	<b>Realized</b>
1.1	Plant production	26.500.000	17.005.076	13.000.000	16.307.690
1.2	Cattle Breeding Stock	10.500.000	8.854.691	10.000.000	9.356.634
	<b>Total:</b>	<b>37.000.000</b>	<b>25.859.767</b>	<b>23.000.000</b>	<b>25.664.324</b>



Realization is performed in the following manner:

- **Investments in agricultural products processing**

Within the Investments in agricultural products processing domain, beneficiaries were legal entities registered according to the Company Law and the Law on Cooperatives, with a number of regular not exceeding 10.

	<b>Investments in agricultural products processing</b>	<b>Funds provided from the programme</b>	<b>Realized</b>
2.1	Fruit and vegetable processing	6.200.000	4.412.339
2.2	Grape processing	2.000.000	1.895.127
2.3	Processing of field crops for feed production	3.000.000	3.074.848
2.4	Meat processing	1.000.000	630.000
2.5	Milk processing	800.000	648.920
	<b>Total:</b>	<b>13.000.000</b>	<b>10.661.234</b>

Of the total number of applications filed by natural persons (251), 138 applications have been approved; with these Contracts for Financial Support were signed. Due to incompleteness or inadequacy, 113 applications were rejected. 128 Contracts were realized and financial support was paid for these. 10 Contracts failed to be realized, for these no financial support was paid.

Of the total number of applications filed by legal entities (282), 66 applications were approved; with these Contracts for Financial Support were signed. Due to incompleteness or inadequacy, 196 applications were rejected. 65 Contracts were realized and financial support was paid for these. 1 Contract failed to be realized, no financial support was paid for it.

### **3 AGRICULTURE AND RURAL DEVELOPMENT STRATEGY**

#### **3.1. National Strategic Objective.**

Agriculture and rural development are the key elements of the EU pre-accession strategy of the Republic of Macedonia. After the submission of the Application for EU membership of the Republic of Macedonia in 2004, the European Council granted the Republic of Macedonia the status of a candidate country for EU membership in December 2005. Pre-accession negotiations shall only start when the European Commission finds that the country has reached a sufficient degree of harmonization with the membership criteria.

The Ministry of Agriculture, Forestry and Water Economy has adopted the following strategic objectives as the basis for an agricultural and rural development and for agricultural policy formulation.

**Strengthening the capability of Macedonian agriculture of being competitive on the integrated regional markets of the European Union and Southeast Europe by means of measures to increase the efficiency of agricultural production, processing and marketing, and building appropriate, efficient public and private institutions; increasing farm income; insuring that consumers have access to safe, healthy food; optimizing land, forest and water use, as insufficient sources, in a sustainable manner for the environment; and building rural municipalities capable of survival via a sustainable rural development.**

The goal of the National Strategy for Agriculture and Rural Development is to contribute to achieving the Strategic objective stated in the National Plan for Economic Development 2007-2009, that states the following:

**“Increase in international competitiveness of the country, necessary for a sustainable economic growth and increased employment ”**

This Strategy contributes to the achievement of four of the total of five key sub-objectives of the National Plan for Development, i.e. the following:

- Development of a new, improved existing spatial infrastructure, in particular, the infrastructure related to transport, energetics, ICT, the environment and irrigation, with the purpose of supporting the economic growth and improving the total competitiveness of the country.
- Improving the quality of education and training, with the purpose of efficiently meeting the demands of the labour market, including the demands of the knowledge based economy.
- Creating prerequisites for better utilization of the country’s agricultural potential, via better land management and building an institutional capacity of the sector, by means of intensified rural development, and by establishment of safe food production and trade conditions.
- Creating prerequisites necessary for an efficient development and implementation of a policy of a balanced regional development of the country.

### **3.2. Main Issues of the Strategic Policy**

So as to achieve the stated strategic objective, the Strategic Policy should include six main issues for the period 2007-2013, stated further in the text.

#### **1) Increasing the sector’s competitiveness**

Increased competitiveness of the agricultural sector may be achieved by means of improving the efficiency of the key production factors, i.e., land, labor and capital, horizontal and vertical integration, as well as improvement of the agriculture support policies and modernization of the processing industry. The key policy guidelines that need to be followed, so as to achieve a sustainable competitiveness of producers on the domestic and foreign markets, are the following:

- Increasing the size of sustainable (market oriented) family farms. Efficient land utilization is obstructed by small, fragmented and partialised private farms (that prevail in Macedonia) with obsolete production technologies, wide coverage in rural areas of farms for household needs, informal economy and slow market development. By itself, the existence of a modern, efficient and market-oriented

production cannot compensate for the total state. The increase of the size of sustainable (market oriented) family farms, the reduction of partialization and the parallel prevention of additional fragmenting (reducing the size of parcels) may be achieved by means of appropriately designed and synchronized policies, such as providing land denominations, appropriate taxation regime that encourages consolidation and strengthens the land market, privatization/long-term lease of land in state ownership and programmes for land consolidation etc.). Such policies may include the necessity to revise the legal regulations related to land and taxation.

- Increasing labor productivity by adopting improved techniques for production of crops and cattle raising. This may be achieved by adequately directed agriculture development support (e.g. provision of subsidies for crops and cattle raising only to registered farmers that use certified seeds or improved breeds, that have adopted the good agricultural practices etc.), by investment support (for the purposes of improvement of mechanization – especially aiding mechanical rings, - farm and equipment infrastructure etc.) and education/training of farmers.
- Increasing capital availability. Capital availability may be achieved through improved commercial credit, implementation of target credit lines and public investment support.
  - ⇒ On a short-term basis, the Ministry of Agriculture, Forestry and Water Economy should provide continuance of the IFAD credit scheme, providing sustainability of the established advisors group that mediate between farmers and banks, and favorable credit conditions for short-term (working capital), medium-term (equipment investments) and long-term loans (facilities and property investments).
  - ⇒ Since a large number of farmers and rural entrepreneurs shall face difficulties regarding pre-financing and fair coordination of the IPARD public (EU + national) funds (applications for confiscation), the Ministry of Agriculture, Forestry and Water Economy should, during the IPARD preparations, include commercial banks and saving houses, thus they could be introduced to the procedures and financial mechanisms of IPARD. During the latter phase, the signing of Memorandums of Understanding between the Ministry of Agriculture, Forestry and Water Economy and the financial institutions that are consent to acknowledge the contracts signed between the Payment Agency and the applicant regarding the approved projects, should represent an option to be considered.
  - ⇒ The decreased VAT to 5% should be extended to include all raw materials used in agricultural production, especially raw materials used in cattle breeding (feed and forage crops). The allocation of subsidies for agricultural fuel and oil shall help lower the costs in agricultural production.
- Increasing technology availability. In circumstances of a rapidly changing technological, social and natural environment, reforms are necessary in agricultural educational, research and advisory institutions, with the purpose of meeting the needs of an increasingly larger community of small and medium sized farmers and the industry of agriculture. The Ministry of Agriculture, Forestry and Water Economy should be officially involved (sharing the

responsibilities with the Ministry of Economy) in agricultural education and research orientation. Therefore, an internal capacity for an educational policy, research and advisory services should be formed. The Ministry of Agriculture, Forestry and Water Economy should establish a National Committee that shall create knowledge transfer, covering research / advisory services / training / education (members of the Ministry of Agriculture, Forestry and Water Economy, the Ministry of Economy, Public Scientific Institutions and Universities, the Agency for Promotion of Agricultural Development, private advisors and farmers/processors), to coordinate planning activities and to supervise the implementation of agreed programmes and activities.

- ⇒ Regarding education, a need to provide interdisciplinary studies arises, so as to strengthen the ties between schools and businesses.
- ⇒ As regards to training, the need exists for the development of an informal education, through a system of constant, life-long education, training and qualification of farmers, small primary processors and other participants (tradesmen, managers of micro, small and medium sized enterprises), supporting the training institutions, as well as the educational institutions selected by means of a public call. Technical, economic, market, business management, farm conversion (production change) and non-farm diversification (non-agricultural activities).
- ⇒ Research Institutes need to receive greater support from the State by means of contracts for research activities, with the purpose of increasing their abilities and supporting the reforms of the EU policy, and so as to conduct research relevant for the indicators of the policy of the Ministry of Agriculture, Forestry and Water Economy. The participants, on their part, should prepare a multi-annual research programme, together with the Public Scientific Institutions/Universities, in accordance with the strategic guidelines for agriculture and rural development.
- ⇒ Interdepartmental relations (including feedback mechanisms) between the Ministry of Agriculture, Forestry and Water Economy, research/education and advisory services - the Agency for Promotion of Agricultural Development (*National Advisory Service*) should be practiced intensely.
- ⇒ The Agency for Promotion of Agricultural Development holds an essential role, acting as a transport chain between the policies of the Ministry of Agriculture, Forestry and Water Economy, the research institutions (and their research results) and the community of farmers. The role, vision and long-term strategy of the Agency for Promotion of Agricultural Development, should be considered a priority, whereas the annual operative programmes should be conceived and implemented under the management of the Ministry of Agriculture, Forestry and Water Economy. Adequate professional and financial means should be provided for the organizational restructuring, so as the Agency for Promotion of Agricultural Development may become efficient. Human Resource Development should have the key significance for this institution's reforms. Constant technical training is necessary (on production and post-harvest periods), business and markets to strengthen and renew the advisors' knowledge. Furthermore, advisor certification system should be established.

- Improving agriculture support policies may be achieved by the establishment of a new subsidy regime that must be traceable, carefully directed and monitored, since the current farm subsidy payment mechanism (according to hectare or head) does not provide for the adequate verification, mainly due to the lack of registers. The new subsidy regime should gradually be transferred into an income support mechanism (decoupling-payments according to area or head), in accordance with the Common Agricultural Policy of the EU, and should correspond to the WTO's obligations related to the restrictions in the market approach section (amount of tax protection), the amount of collective support measures and export support.
- Increasing the competitiveness of the processing industry, the food industry and feed production. Industry modernization and increased competitiveness are the prerequisites for the development of agriculture as a whole. On the basis of experiences of new EU member countries, the number of facilities in the Republic of Macedonia shall decrease on a medium-term basis, since part of the industry is facing serious weaknesses in their production technologies and the appointment of the process, hygiene and market/marketing development standards, as well as serious difficulties and expensive undertakings in the implementation of the production according to EU quality and hygiene standards. Progress in this direction could be stimulated by a directed investment support, focusing on the weakest links of the chain (sustainable processing dairies and slaughterhouses), with particular emphasis on milk processing and collecting equipment and issues related to the environment (waste management), and promotion of the adoption of HACCP and ISO standards. Furthermore, since the growth of the Macedonian food industry is related to increased export (since the domestic market is unlikely to grow), and in order to make use of the trade liberalization, the agricultural and food industry must strengthen their international competitiveness by focusing on a range of value added products, increased productivity, quality and safety of products, as well as improved management and marketing.
- Horizontal organization, includes two different levels that need promotion:
  - ⇒ The roles and functions of professional and/or inter-professional organizations (that represent one or more sectors) should be expanded by establishing permanent dialogue forums between the public and private sector (in other words, the Agro-food Cooperation Council, including farmers, processors, customers, suppliers, vendors) and to be financially supported to conduct their delegated technical functions (such as keeping registers of members, provision of services such as (farm registry accounting) accounting services of breeding farms, establishing and maintaining farm books, farmer training, etc.).
  - ⇒ The roles and functions of groups of producers and cooperatives (of economic significance) may be promoted by passing the related legislation (in particular, removing the legal and institutional obstacles to their ability to implement the economic activities, and defining their criteria for acceptance) according to EU requirements, and providing adequate institutional support and digressive financial initiatives so that they could undertake the responsibilities of CAP as Common Market Organizations perspectively.

- Vertical organization, i.e., integration of farmers with the processing industry by means of stable contractual relations, is necessary with the purpose of improving the quality of raw material procurement, as well as their quality and seasonal distribution (certain capacities only operate during a part of the year). This may be achieved by encouraging inter-party discussion, collective agreements on standard models for various products, improved implementation of agreements by means of appropriate arbitration and sanction regime, and appropriate incentives for producers (may represent one of the criteria for support eligibility).

## 2) Achieving food quality and safety

- Increased food safety (at the production level, as well as at the processing level) is a significant prerequisite for increasing the competitive position of food products on the foreign market (in particular, the EU markets) as well as on the domestic market. At the distribution level, this should be achieved by providing financial incentives (support to producers in the implementation of HACCP<sup>16</sup>, DPP, DHP, Eurep GAP, for advisory services, analyses and certification) and by means of:
  - ⇒ Passing primary and secondary legislation and internal acts and preparation of instructions for internationally accepted safety standards (HACCP, ISO 22000, Good Production Practice/Good Hygiene Practice) as a priority,
  - ⇒ Strengthening the technical capacity, training of food inspection services of the Food Directorate (Ministry of Health), as well as the official veterinary and phytosanitary inspectors (Ministry of Agriculture, Forestry and Water Economy) so as to provide efficient controls (including consumer protection from false impression).
  - ⇒ Strengthening the technical capacity of laboratories (State Phytosanitary Laboratory of the Ministry of Agriculture, Forestry and Water Economy, the Faculty of Veterinary Medicine and the Ministry of Health – the Republic Institute for Health Protection, for the purpose of achieving accreditation in accordance with ISO 17025.
  - ⇒ Recognizing the state of the food industry on the plans on implementation of food safety and quality standards for the purpose of their realization within the time limit determined by law (the year 2009).
  - ⇒ Providing traceability of raw materials and food products in all stages of production and trade, by implementing the standards.
- Improved quality of products of vegetable and animal origin is a significant prerequisite for increase of the competitive position of domestic agricultural products on the foreign markets, in particular, the EU markets. This should be achieved by providing financial incentives (for advisory services, bookkeeping, analysis and certification, registration of products in the Industrial Property Protection Office) and by means of:

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<sup>16</sup> This standard becomes binding as of 01.01.2009

- ⇒ Passing primary and secondary legislation and internal acts, and preparation of instructions for EU quality standards (EUREGAP/cross coordination, SEUROP, etc.).
- ⇒ Providing controls (including the increase in controls within the consumer protection from false impression and the controls of the Maximum level of residues) and introducing food products certification by the state bodies.
- ⇒ Introducing protected branding, rules on geographical origin and disciplinary production, harmonized with the EU (*PGI*- Protected Geographical Indication, *PDO*- Protected Designation of Origin, *TSG*- Traditional Speciality Guaranteed etc.).
- ⇒ Incentive measures for the adoption of quality standards are the establishment of associations of farmers-producers and promotion of farmer and processor training.

### 3) Achieving sustainable resource management

In past years, very little attention was paid to agroecology (biodiversity, agriculture and environment), that negatively increased its importance in the EU Common Agricultural Policy over the years (the agroecology measures are the only compulsory part of the rural development aquis).

The objectives of the agroecology policy of the Republic of Macedonia are the protection and improvement of physical, chemical and biological soil conditions, reduction of the environmental problems related to agricultural water, preserving the traditional cattle breeding low input system and the traditional regions, provision of alternative exploitation of low potential regions, preserving ecologic regions and arable land by means of extensive cultivation methods or management of regions of high significance for nature by preserving and protecting the biodiversity, the sensitive types of environments and the special rare species, as well as provision of efficient implementation methods of the Nitrates Directive, Water Systems Directive and the future NATURA 2000 network<sup>17</sup>.

So as to set up an agroecology policy, the following activities must be implemented:

- Legal acts based on EU Regulations must be introduced in the Macedonian legal system. Furthermore, the preparation of a separate regulation/s on a Good Agricultural Practice/cross coordination that shall contain minimum standards for an average agricultural practice (minimum requirements for nutritional ingredients management, pesticide use, avoidance of land abandonment, maintaining permanent pastures and the like). Once these regulations are passed, they shall represent the basis for the agroecology payments, and, at the same time, they shall represent the minimum requirement for direct payments (Agriculture support programme). A Regulation on a (pilot) agroecology support system should be developed, comprised of objectives, measures, adoption, beneficiaries, amount of payment, selection criteria, monitoring, control and sanctioning;

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<sup>17</sup> Natura 2000 includes issues related to protected regions and national parks and is under the jurisdiction of the Ministry of Environment and Physical Planning

- The Ministry of Agriculture, Forestry and Water Economy should form agroecology authority within the Rural Development sector. An interdisciplinary work group should be introduced on agroecology that shall represent the basis for introduction of an agroecology policy and measures. This work group should include officials of the MAFWE, the Ministry of Environment and Physical Planning, the Ministry of Finance, the Ministry of Health, the Agricultural Institute, the Faculty of Agricultural Sciences and Food, the Agency for Promotion of Agricultural Development, farm associations and relevant NGOs. In view of a broader range of objectives, various information materials should be developed;
- Within the Agricultural Information System, MAFWE should develop an agroecology information system. This system should represent (decision-making information support) the source of development of a policy and implementation of collection of basic data on planning an agroecology policy (soil, water, biodiversity), GIS system for agroecologic mapping, development of training materials, support system for advisory activities, monitoring). The agroecology information system shall also hold the compulsory function of notifying the European Commission on the development of agroecology.
- MAFWE (and other relevant Ministries) should prepare instructions on monitoring and standards on soil and water, introduction of a system operational agroecologic programme for monitoring water, ground and underground waters and biodiversity, indication of bodies of water affected by pollution.

#### **4) Improving living conditions in rural regions**

Rural development in EU policy is new to MAFWE. To date, several institutions have conducted, without coordination, a range of public support programmes that may broadly be categorized under the heading “rural development”. Inter-institutional coordination, formation and functioning of new institutions (IICB and the Payment Agency), modification, i.e., introduction of legislation and strengthening human resources represent difficult assignments that must be implemented in the period 2007-2013.

Preparation and implementation of a rural development policy includes the following activities:

- Legislation to define rural regions and, this should be amended and supplemented for underdeveloped regions, so as to include the concept of population density, that represents a pillar in OECD and Eurostat methodologies, adopted by the EU<sup>18</sup>, with the purpose of more efficient provision of public support and investment funds.

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<sup>18</sup> The Organization for Economic Co-operation and Development differentiates between two levels of hierarchy – local and regional level. On the level of local communities (NUTS 5), rural regions represent communities with population density of 150 inhabitants per km<sup>2</sup>. On a regional level, (mostly NUTS 3), OECD differentiates between larger functional and administrative units on the basis of their rural character, and depending on the regional participation of the population living in these rural communities. With the purpose of facilitating analysis principles, the following classification method is applied: (a) Predominantly rural regions (over 50% of the population is living in rural communities), (b) Significantly rural regions (15 - 50% of the population is living in rural communities), and (c) Dominantly rural regions (less than 15% of the population is living in rural communities). Eurostat approach is based on the level of urbanization, thus, each European region may be classified in one of the three classes: (a) Densely populated zones (groups of municipalities, each of these is inhabited with over 500 inhabitants/km<sup>2</sup>, and the total population of this zone is 50,000 inhabitants the least), (b) Intermediate populated zones (groups of municipalities with population density of 100 – 500 inhabitants/km<sup>2</sup>. The total number of population of these zones



- MAFWE should implement a participatory, socio-economic survey research of rural regions (with special emphasis on the underdeveloped regions) so as to collect updated and equal data for defining the state of rural population, development trends and need assessment, that shall accompany the agricultural census (to be implemented during the year 2007). The Census and Survey Research results shall be used by MAFWE as directions in the designing of target measures for rural development and operational indicators.
- Clear definition of roles and participation of other Ministries and State Bodies (such as the Bureau for Economically Underdeveloped Regions and Municipalities) is necessary to be controlled in context of the rural development policy, implementation and monitoring.

Improving the living standard in the rural regions may be achieved by improving the spatial infrastructure, by supporting non-farm employment and income-generating opportunities, and by diversification of agricultural production. The key directions of this policy are the following:

- Improving the spatial infrastructure. The population of the rural regions (including population that lives in the underdeveloped regions), represents a large segment of the total population of the Republic of Macedonia, with significantly high age structure, educational problems, unemployment, poverty and migration trends. The factors that contribute to this social insecurity are the lack or inadequacy of the social and technical infrastructure, especially in the underdeveloped regions, and insufficient market access. This may be improved during in selected underdeveloped regions of priority, in particular, with the purpose to achieve basic infrastructure and environmental infrastructure (roads, water supply and waste management etc.), by means of target investments via a coordinated approach of various Ministries, bodies and the local administration.
- Non-farm employment. Due to the small number and power of enterprises in rural regions, (especially SMEs), an alternative in the form of employment (outside farms) options is lacking, and the rural population is mostly agricultural, often oriented towards production for their personal needs, with low incomes and added value. Improvement in the non-farm rural economy (trades and SMEs) are significant for improvement of productivity of working in rural regions and wages may be simulated by adequate policies and investment support, with the goal of creating and strengthening the non-farm business activities and the rural tourism activities..
- Agricultural production diversification may be achieved through adequate production and marketing support policies and investment support for post-harvest activities.

## 5) Regulatory and Institutional Framework Reforms

The experience acquired of new EU member countries in the process of Euro-integration indicates that agriculture is one of the most difficult chapters for negotiations and that this represents a sector where complex legislation obligations must be undertaken, as well as extensive institutional changes and implementation

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is not less than 50,000 inhabitants, which is close to the number of densely populated zones), and (c) Sparsely populated zones (groups of municipalities that do not belong to any of the above zones, i.e., have less than 100 inhabitants/km<sup>2</sup>).

measures. The main areas and assignments in the legislation field are summarized below.

- Food safety, veterinary medicine, plant protection, seed and seed material and animal nutrition. EU legislation regarding this field has the goal of facilitating internal and foreign trade in the sector of veterinary health, plant protection and animal nutrition. By means of health protection of plants and animals, together with animal wellbeing, the health of the population is protected and thus, consumers' expectations are met. The main prerequisite for expanding the common market with associate countries in this field, such as supplementing legislation coordination, is the appointment of adequate and trained administration. In general, adequate control systems are necessary. The administrative facilities need to be strengthened and national authorized bodies must be established so as to provide appropriate legislation implementation in this field, with adequate number of trained staff and adequate measures and programs.
- Common market organizations. This refers to the legislation that regulates agricultural markets. Implementation, management and control of the development of CAP requirements, modification and strengthening of appropriate administrative facilities. Administration for financial flow of CAP must be established (payment agency), as well as the separate information systems, to supplement the policy, such as the Integrated Administrative and Control System and various registers. Special attention must be applied to the quality policy and classification of various products.
- Rural development. Establishment of authorizing legislation and administrative structures that shall provide rural development planning, defining the structural needs of rural regions, development, implementation and management of rural development programmes; control over the financial flow and measures undertaken; monitoring, reporting, control and assessment of programmes.

**Institutional reforms of the MAFWE** are necessary to provide performance of the new responsibilities and assignments imposed by the regulatory reform. Main areas and assignments are summarized hereinafter.

- Limitation of common responsibilities. The MAFWE shares its responsibilities with other Ministries and Governmental bodies: in the field of food (processing of agricultural products, Common market organizations, marketing and establishment of internal markets, foreign food product trade), it shares its responsibilities with the Ministry of Economy; in the field of food safety – with the Food Directorate (Ministry of Health); in the field of agroecology, protection, marketing and promotion of natural resources (water, soil and forests) – with the Ministry of Environment and Physical Planning; Data Information Systems, statistical research, information interchange, agricultural census etc., - with the State Statistical Bureau; educational policy planning, agriculture research and training – with the Ministry of Education and Science.
- Horizontal and vertical reorganization of MAFWE, on a central and regional level. New systematization of the Ministry has been prepared, however, during the strategy period, additional changes may be provided, in accordance with requirements, during the process of EU legislation harmonization. Furthermore, need for primary legislation amendment is possible.

- ⇒ Improvement of human resources of MAFWE. Overcoming the extremely low capacity (as regards to the number and skills) of human resources, especially in key positions, so as to carry out complex assignments in the approaching period. For this purpose, analysis of the state of existing human resources and skills is necessary, defining an optimum organizational structure (including definition of work assignments) on the basis of defined strategic directions for the implementation of the planned reforms in the sector itself, as well as in MAFWE, assigning staff to necessary work posts in the existing and newly assigned organizational departments: Human Resources, Analysis and Agricultural Information System, project preparation and management, EU integration, Sector of Land Policy, and preparation and implementation of training plan.
- ⇒ Established IPARD Payment Agency. The Payment Agency is established under the Government of the Republic of Macedonia and should be accredited (on a national level first, and later on the level of EU Commission) not later than the middle of 2008, to perform payment, control and audit of the realization of national schemes (agriculture development programme and rural development measures) and the IPARD rural development measures. Activities which are necessary are the following: Establishment of an interdepartmental co-coordinating body for a rural development policy, planning and monitoring (proposed members are MAFWE, the Ministry of Economy, the Ministry of Finance, the Ministry of Local Self-Government, the Ministry of Culture, the Ministry of Labor and Social Policy, the Ministry of Education and Science, the Ministry of Environment and Physical Planning, the Ministry of Transport and Communications, the Secretariat for European Affairs), and passing of the Law on Establishment of the IPARD Agency, Decision on formation of an interdepartmental coordinating body, passing of numerous internal procedures and methodology of payment, control and monitoring.
- ⇒ Adoption of the IPARD Plan. The IPARD Plan should be prepared during the first half of 2007 (including an ex-ante assessment) and further discussed and later approved by the EU Commission services. Furthermore, MAFWE should provide the necessary national co-financing<sup>19</sup> for the period 2007-2010, and to appoint an IPARD Monitoring Committee.
- ⇒ Establishment of an Agricultural Information System (AIS). AIS should include a number of sub-systems: A network of farm accounting data, Agricultural market information system, adequate and reliable agricultural statistics (including the support to the Agricultural Economic Accounts) and establishment of an Integrated Administration and Control System, integrating different registers (Farm Register, Identification and Registration of Animals, Vineyard Monitoring and Management System, direct support beneficiaries, Land Parcel Identification System) and the Agroecology Information System.
- ⇒ Achieving accreditation of reference laboratories (State Phytosanitary Laboratory at the MAFWE, the Faculty of Veterinary Medicine, the Ministry of Health – Republic Institute for Health Protection).

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<sup>19</sup> National co-financing represents 25% of EU financing.

### 3.3. Agriculture Support Policies

The Agriculture Support Policy, that represents the first pillar of the Common Agricultural Policy of the EU is financed by national funds. **The direct payment measures** represent the basic instrument for a national agricultural support policy and consist of direct payments: per hectare in the production of crops, and per head in cattle breeding.

In the past, agriculture support measures were allocated to a determined number of traditional products, without a defined concept for expected effects and targets to be achieved. The measures, of a dominantly social character, were lacking clearly defined criteria for support application, and, were circumstanced by a lack of successful monitoring, control and effect assessment systems. The strategy for the period 2007-2013 sets the new principles of support policies and measures that shall be refined and adjusted to the expected changes in legislation, institutions and control systems. The Government shall grant increased amounts of subsidies for agricultural production support, in the amount up to € 20 million, for the year 2010.

Nevertheless, the following factors should be considered:

- A date for the accession of Macedonia to the European Union has not been determined.
- Macedonia should gradually carry out reforms in its regulatory, institutional and agricultural policies of support, coordinating them with the policies of EU CAP, prior to accession.
- CAP is a changeable objective and significant modifications may arise meanwhile, prior to Macedonia's accession to the EU (larger simplification, decoupling – payment per farm and decreased support).

What is necessary is caution in the introduction of the current CAP, and a pragmatic approach must be followed. The agriculture support policies selected with this Strategy mainly take into account the development and social requirements of Macedonian agriculture, and shall be gradually adapted as soon as the country is ready to cross over to the models of CAP. This is also dependent on the amount of finances available to the Ministry of Agriculture, Forestry and Water Economy (MAFWE) for the future implementation of these policies.

#### **Target product/producer categories**

For the purposes of reaching the defined targets of the new government policy regarding agriculture, the support policy is intended for the following target categories of products or producers:

1. Support for **competitive, export-oriented products** for which demand exists, especially in the European markets, and that have a competitive advantage over foreign production (**tobacco, production of grape and wine of quality, lamb meat, production of fruit and vegetables**).
2. Production of **alternative crops and/or non-traditional products** with an export potential, that generate a higher income with reduced resources, and which represent an alternative solution for traditional products of decreasing competitiveness, with reduction of customs protection (organic and integrated

production, oil crops for production biofuel, production of flowers, small fruits and nuts, asparagus, broccoli, snails, ostriches, aromatic and medicinal herbs).

3. Support for **traditional products, traditional skills and knowledge of social significance** for the rural regions and of significance for **safety in providing basic food** for the population, with insufficient productivity performances, supported during a given short-term or long-term transitional period of adjustment, by means of measures for increasing yields in regions of comparative advantages for production/cultivation, and measures for introduction of alternative production in regions of very low yields and quality, as compared to imported (wheat).
4. Support of products that **have a significant share in the value of import** and have unused potential for a production increase, and are of appropriate comparative value with regards to products of other countries (production of broiler, young beef via the system cow-calf).
5. Production of **highly productive, certified seminal and seed material, at the same time, adjusted to domestic conditions** and its distribution to users to overcome the problem of using commercial products such as cereal crops and improvement of sort quality (tobacco, early vegetables, fruit and vines), as well as measures for **improvement of the structure of cattle breeding races**.
6. Support of the implementation of the EU standards that increase the products' competitiveness (HACCP, EUROGAP, certification of organic production, support of promotional activities of specific national brands of agricultural products and their promotion in the foreign markets).

#### **Direct payments in the plant production sub-sector**

The yield and production of annual and perennial crops indicates large variations due to the combination of climate influences (insufficiently facilitated by the use of modern agricultural technologies, *in primis* irrigation) and due to the former inconsistent agriculture support policies. The vertical relations (stable agreements and cooperative relationships between farmers and the processing industry) and groups of producers in the sub-sectors of fruit and vegetables are weak or nonexistent. The need for modernization of the processing industry exists. This sub-sector requires increased support, with the help of researchers, advisory and training services. The first step towards lowering the costs for raw materials (improved seminal and seed material, agro-chemicals – mineral fertilizers and products for pest control) was the reduction of VAT.

The existing subsidies for integrated crop management and good agricultural practice, as well as for organic production should continue to support and increase the export demand, and to provide adequate control/inspection. Market quality standards, as well as the industry safety standards (*HACCP*), which are increasingly significant, should be defined and adopted for the larger number of agricultural crops. Production of certified seed (all crops, especially potatoes) and seed materials (fruit and vine seedlings) should be expanded and controlled.

The suggested measures are the instruments for realization of specific objectives in all sub-sectors. These measures are intended to support only those producers who:

- are registered in MAFWE and with the relevant associations and national councils (responsibility and part of the control mechanisms shall be awarded to associations and councils).

- Keep regular accounting records.
- May evidence agreements with vendors, processors and distributors.
- May prove the use of certified seed.
- After the passing of the legislation, financial support should possibly be channeled via applicants organized as groups of farmers (groups of producers, organizations and cooperatives) that contribute to the market chain.

Gradual entry into force of the above stated general criteria for eligibility (that may be changed according to necessity), depends on the establishment of relevant registers, control mechanisms and manuals on the implementation of measures.

### **3.4 Rural Development Support Policies (National + IPARD+ Rural Crediting Policy)**

#### ***Rural Development Policies***

The process of Euro-integration, during the period from 2000 to 2006, in Macedonia, was supported by the European Union, by means of financing from the CARDS Programme (Community Assistance for Reconstruction, Development and Stabilization). Since 2007 to date, the European Union has introduced a new financial Instrument for Pre-accession Assistance (IPA)<sup>20</sup>, with funds to the amount of € 11.468 million, that shall cover the period 2007–2013. IPA includes four components, i.e.:

- (a) Transition Assistance, activities for institution building (and related investments) related to acquis, as well as activities to support countries-beneficiaries to comply with the European Council, Copenhagen, dated June 1993.
- (b) Inter-border cooperation.
- (c) Regional development and human resources development, and
- (d) Rural development (IPARD) aimed at assisting candidate-countries prepare their post-accession programmes on rural development, financed by the EU, by implementing pre-accession assistance through systems that are mostly similar to those imposed in the post-accession period. The provisions of this component reflect the provisions on rural development of Member Countries, with the necessary adjustments included. The range of the rural development component includes a number of activities, eligible according to the Regulation on rural development for Member Countries, so as to achieve the operational objective of contributing to a sustainable adjustment of the agricultural sector and rural regions in beneficiary-countries.

The Rural Development Policies in Macedonia (to be financed by national funds or IPARD) should contribute to reaching the following objectives:

#### **AXIS 1 – Improving market efficiency and EU Standards implementation;**

- Measure 1: Farm investments for restructuring and upgrading according to EU Standards;

<sup>20</sup> Council Regulation (EC) 1085/2006, dated 17 July 2006, Establishing Instrument for Pre-accession Assistance

- Measure 2: Support in formation of groups of producers;
- Measure 3: Investments in processing and marketing of agricultural products for restructuring and upgrading according to EU Standards.

**AXIS 2 – Preparatory activities for implementation of agroecology measures and local rural development strategies;**

- Measure 4: Activities for environment and village promotion;

**AXIS 3 – Rural economy development.**

- Measure 5: Development and diversification of rural economic activities.
- Measure 6: Promotion and development of rural infrastructure;

**AXIS 4 – Technical Support.**

- Measure 7: Technical support, informative campaigns and publicity.
- Measure 8: Professional education and training.

The list of measures and sub-measures presented in the following sections, and their designation to a national or IPARD co-financing, is by all means provisional, since their priority and selection, as well as their allocation to different financial sources, should be determined by MAFWE (and the Inter-departmental co-ordinating body) and, finally, to be regulated in the IPARD Plan, which has to be agreed with the EU Commission services, and depends on the availability of national and EU resources.

## **IV. FOOD SAFETY**

### **1 Veterinary Medicine**

#### **Veterinary Directorate, Current Activities**

The Veterinary Directorate, as a body within the Ministry of Agriculture, Forestry and Water Economy, is responsible for the following:

- control over the health protection of animals, protection from infectious diseases that are transmissible from animals to humans,
- veterinary – sanitary inspection and control of products, raw materials and waste materials of animal origin,
- animal reproduction prevention,
- veterinary protection and improving the environment and nature,
- minimum compulsory volume of health protection of animals,
- organization and performance of veterinary–health care activities, veterinary health control of feed and animal nutrition products, production, sale and use of medicines to be used in veterinary medicine,
- animal marking and identification and animal wellbeing.

The Veterinary Directorate performs its competencies in accordance with the Law on Veterinary Health (“Official Gazette of the Republic Macedonia” No. 113/2007), the Law on Identification and Registration of Animals (“Official Gazette of the Republic Macedonia” No. 69/2004 and its amendments and supplements ” Official Gazette of the Republic Macedonia” No. 81/07), the Law on Veterinary Public Health (“Official Gazette of the Republic Macedonia” No.114/2007), the Law on the Protection and Wellbeing of Animals (“Official Gazette of the Republic Macedonia” No.113/2007), the Law on By-products of Animal Origin (“Official Gazette of the Republic Macedonia” No.113/2007).

Furthermore, the Veterinary Directorate performs its competencies in accordance with the Law on Safety of Foodstuffs and Products and Materials in Contact with Foodstuffs (“Official Gazette of the Republic Macedonia” No. 54/2002) as well as its amendments and supplements (“Official Gazette of the Republic Macedonia” No 84/07), however only with regards to foodstuffs of animal origin.

The same refers to the Law on medicaments, remedial medicines and medical devices (“Official Gazette of the Republic Macedonia” No. 21/98), for which the Veterinary Directorate is competent only in relation to the veterinary-medical remedies, the remedial medicines and the medical devices intended to be used in veterinary medicine.

The Veterinary Directorate performs all affairs within its competencies in accordance with international agreements ratified by the Republic of Macedonia, the International Standards of the World Organization for Animal Health (OIE), as well as other acts and standards to which the Republic of Macedonia is obligated to.



## **2 Animal Health Protection**

The Ministry of Agriculture, Forestry and Water Economy, via the Veterinary Directorate, and in accordance with the Law on Veterinary Health (Official Gazette of the Republic of Macedonia No. 113/2007) and the Annual Ordinance for the year 2007 (Official Gazette of the Republic of Macedonia No. 23/2007) and the Programs for prevention and suppression of Brucellosis and Tuberculosis in cattle, has conducted a series of preventive measures and activities for the control and suppression of the following diseases:

### ***a. Preventive Vaccination and Treatments:***

- Rabies and dehelmintization of dogs
- Classic pig plague;
- Newcastle disease in poultry;
- Anthrax.
- Avian Influenza in poultry

### **Classic Pig Plague**

A total of **388.883** heads have been vaccinated against Classic Pig Plague during the year 2007.

### **Anthrax**

So as to control this disease, vaccination of all cattle, sheep, goats and hooved animals has been provided for in places where this disease has been confirmed during the last 20 years. Tests on: 36.471 heads of sheep, 6.435 cattle, 128 goats and 34 horses have been carried out.

### **Newcastle Disease**

A total of **2.180.715** vaccinations of poultry against Newcastle disease have been performed during the year 2007.

### **b. Annual Ordinance for the year 2007 – Total results for diagnostic research in accordance with the methodology of Labis (Laboratory Information System)**

Tests and other research:

- Brucellosis with sheep/goats;
- Brucellosis with cattle;
- Tuberculosis with cattle.

1. Of the total number of 291.536 performed tests for Brucellosis with sheep and goats during the year 2007, 18.978 were positive and 13.040 sheep and goats were slaughtered.

2. During the year 2007, Brucellosis of cattle was tested on a total of **179.593** heads, and a total of 839 seropositive cattle were diagnosed, in 30 epizootiologic areas. 629 cattle heads were forcedly slaughtered. In accordance with the Program for

prevention and suppression of Brucellosis in cattle (“Official Gazette of the Republic of Macedonia” No. 22/2007), all cattle older than 6 months are subjected to serologic examinations.

3. So as to control the disease Tuberculosis of cattle, a total of **158.965** heads of cattle have been tuberculinized, and 319 cattle heads have given positive results. 317 cattle heads have been slaughtered in the Slaughterhouse Prosenikovo, Novo Selo, Strumica. In accordance with the Program for prevention and suppression of Tuberculosis in cattle (“Official Gazette of the Republic of Macedonia” No. 22/2007), all cattle older than 6 weeks undergo an annual diagnostic examination, with a unique intracutan tuberculin test.

4. In accordance with the Program for prevention and suppression of Transmissible spongiform encephalopathies (“Official Gazette of the Republic of Macedonia” No. 22/2007), entire sub-populations – healthy slaughtering animals older than 30 months and dead or necessarily slaughtered animals older than 24 months have been taken and examined for presence of the cause for Transmissible encephalopathies (TSEs), with a total of 1598 samples from slaughtered cattle and 3729 samples from slaughtered sheep/goats in slaughterhouses throughout the Republic of Macedonia. All examined samples show a negative result (absence) of the cause for Transmissible spongiform encephalopathies.

In accordance with the Program for prevention and suppression of Brucellosis in sheep and goats (“Official Gazette of the Republic of Macedonia” No. 59/2008), measures for protection of animal and human health are prescribed, as well as the provision of the basic prerequisites for the permanent trade of live animals and products of animal origin and the export of live sheep and goats.

### **3 Veterinary Public Health**

These following are the activities of the Veterinary Directorate on veterinary public health, for the period from 01 January - 31 December 2007:

- **Creating veterinary-health conditions and preparation of veterinary-sanitary certificates that confirm that no veterinary-sanitary obstacles exist for the import of shipments of animal origin**

At the request of importers, 2690 decisions that confirm that no veterinary-sanitary obstacles for the import of meat and meat product shipments exist, 1132 decisions that establish that no veterinary-sanitary obstacles for import of milk and milk product shipments exist and 327 decisions that establish that no veterinary-sanitary obstacles for the import of fish and fishery product shipments exist. 1720 settled decisions from import of meat and meat product shipments, with a total of imported quantity of 43.227.781 kg, 720 settled decisions from import of milk and milk products, with a total imported quantity of 19.326.655 kg., and 174 settled decisions from import of fish and fishery products, with a total quantity of 3.536.557 kg., have been processed.

- **Monitoring and analysis of the annual plan for the National Monitoring Program for the presence of bio-residues in products of animal origin**

According to the annual plan of the National Monitoring Program for control over certain substance residues, veterinary medicines and contaminants in live animals and foodstuffs of animal origin, during the year 2007, 1095 samples were planned to be taken, of which 87,85% were realized, i.e., 962 samples were taken.

16 invoices with a total number of 877 findings were delivered and processed by the Faculty of Veterinary Medicine Skopje, which conducted the laboratory examination.

The total amount of the conducted examination amounts to 11.029.740 denars.

Of the total number of examined samples, 2 had positive findings, i.e. presence of heavy metals.

- **Veterinary-sanitary certificate to start working on facilities for slaughtering animals and production of animal origin products and delivery of samples for lab examinations**

A total of 62 requests have been filed for the approval to start working on facilities for slaughtering animals and the production of products of animal origin, storage-warehouses for products of animal origin, as well as issuing export control numbers.

75 decisions have been issued to start work on facilities for the production of products of animal origin, of which 10 decisions to determine export facilities for the export of products of animal origin from the Republic of Macedonia.

An application form has been filed with the European Commission with candidacy of one facility – a slaughterhouse, for the approval of export of lamb meat to the EU markets, which has been approved and placed on the list of facilities for import into the EU.

***Data on Facilities for processing of products of animal origin in the Republic of Macedonia that have acquired veterinary-sanitary certificate for operation in the year 2007 by the Veterinary Directorate***

Detailed review of these facilities is provided in the following table.

Type of facility	Total No.	Export facilities
Slaughterhouses	7	2
Repacking and manufacturing	2	/
Cooler - warehouse	41	1
Meat processing	11	3
Dairies	12	2
Honey processing	2	2

Note: Export facilities given in the third column are part of the total No. of facilities.

- **Data on the total number of facilities for processing of products of animal origin in the Republic of Macedonia that have acquired veterinary-sanitary certificate for operation by the Veterinary Directorate**

Detailed review of these facilities is provided in the following table.

Type of facility	Total N <sup>o</sup> .	Export objects
Aquaculture	2	2
Ready meals	6	6
Processing of eggs	1	1
Slaughterhouses	27	11
Sorting and packing of eggs	3	3
Cooler - warehouse	66	5
Processing of honey	5	4
Butcher processing	15	/
Meat cutting	1	/
Meat processing	51	14
Diaries	91	7
Milk - point	1	/
Ice-cream production	1	1
Fish processing	2	2
Repacking, manufacturing	2	/

Note: Export facilities given in the third column are part of the total No. of facilities.

#### **4 System of veterinary-medical remedies**

During the year 2007, in accordance with the Law on medicaments, remedial medicines and medical devices (Official Gazette of the Republic of Macedonia No. 21/98), and the Law on Veterinary Health (Official Gazette of the Republic of Macedonia No. 113/2007), the Veterinary Directorate has prepared and issued 556 certificates i.e., decisions for the import of medicines, feed and feed additives.

In cooperation with the veterinary inspection services, control has been carried out over 22 legal entities that sell medicines that are to be used in the veterinary medicine (Drugstores), as well as registration of three new legal entities that perform this activity. Registration of 74 veterinary-medical remedies has been performed and a list of veterinary-medical remedies has been prepared for these, for which a Certificate for putting into circulation has been issued; this has been periodically published in the Official Gazette of the Republic of Macedonia.

A Rulebook on the manner of keeping files on the circulation of medicines to be used in veterinary medicine has been prepared, as well as a Rulebook on the data that should be contained in the instructions for use of medicines to be used in the veterinary medicine, and these were also published in the Official Gazette of the Republic of Macedonia.

## **5 Animal Nutrition System**

### **During the year 2007, within the animal nutrition system:**

- Correction of the veterinary-sanitary conditions has been performed and preparation of veterinary-sanitary Decisions that confirm that no veterinary-sanitary obstacles for import of feed exist,
- preparation of model certificates that confirm the veterinary-sanitary accuracy of feed,
- a list of legal entities that sell feed has been prepared and according to these records, 77 operators work with imported feed in the Republic of Macedonia,
- Ordinance to prohibit the use of proteins of animal origin in the nutrition of animals has been prepared and published in the Official Gazette of the Republic of Macedonia No. 109/06.

## **6 System of animal identification and registration**

The Ministry of Agriculture, Forestry and Water Economy, via the Veterinary Directorate, carries out a system of identification and registration of animals. Its implementation is supported by the European Union, via the European Agency for Reconstruction (the CARDS and FARE funds).

The system of identification and registration of animals aims to:

- Harmonization of the Macedonian legislation with the legislation of the European Union;
- Control over the movement of animals and thus controlling the health of humans and animals;
- Improving agricultural development programs;
- Protection of consumers' health by providing safe foodstuffs of animal origin;
- Continuous access to the international market for products of animal origin;
- Evidence of ownership, thus prevention of crime.

The task to establish such a system arises from the EU-Macedonia Association and Stabilization Agreement, as well as the Interim Agreement that undertake the obligations of approximation of the Macedonian legislation to the legislation of the European Union.

### ***System of animal identification and registration (I&R)***

The system of farm animal identification and registration is comprised of:

- A Central Register of animal breeding farms;
- Means of individual identification for animals of the following types: cattle, sheep, goats and hooved animals;
- Registers of breeding farms for animals of the following types: cattle, sheep, goats and pigs;
- Documents on the movement of animals of the following types: cattle, sheep, goats and hooved animals and
- Computer database for animals of the following types: cattle, sheep, goats and pigs.

In November 2004, the identification and registration of all categories of cattle in the Republic of Macedonia began. Field activities are carried out by veterinary organizations that have an agreement with the Ministry of Agriculture, Forestry and Water Economy and, by the end of 2007, 415.649 cattle heads were registered in the database. This number includes over 95% of the category of old cattle, thus enabling the full implementation of the Law on I&R, that regulates the deadlines for identification and registration of newborn heads (not more than 42 days as of the birth of the animal). For each marked animal, a passport is prepared and delivered; this follows the animal during its every movement (sale and purchase). The system has been rated by international experts as one of the most contemporary in Europe and the only functional one in Southeast Europe.

### **Identification and registration of sheep and goats**

Due to the success of the project “Establishing a system of identification and registration of cattle”, EAR, in cooperation with the Ministry of Agriculture, Forestry and Water Economy began the realization of the project “Establishing a system of identification and registration of animals –phase 2”, financed by the EU, that started at the beginning of November 2004. The project lasted for 30 months, during which, the following activities were carried out:

- Consolidation of the system of identification and registration of cattle;
- Development of a strategy for the identification and registration of small ruminants and preparation of legal acts and by-laws;
- Integrating the system of identification and registration of animals with the remaining information systems within the Veterinary Directorate and the Ministry of Agriculture, Forestry and Water Economy.

Since 28 August 2007, “System for identification and registration of animals - phase 3” began. The period from 28 August to mid December 2007 is a preparatory one; the activities actually began in December 2007. This phase has been planned to last for 18 months, including the following activities:

- Establishing a development strategy for identification and registration of small ruminants and the final preparation for its commencement;
- Adopting a Rulebook on the identification and registration of animals of the types sheep and goats;
- Preparations for the start if a campaign for first marking of small ruminants (procurement of ear stamps and necessary software for upgrading the existing system).

### **Current state of the system of identification and registration of animals**

The system for **I&R** of animals is in an advanced stage and, as of the beginning of the year 2007 to date, the following activities have been carried out:

- Continuous performance of activities of identification and registration of animals, delivery of documents, registration of movement of animals and administration of the database;
- Tenders for the procurement of 20 additional PDA handheld computers have been announced and 800.000 ear stamps for small ruminants that shall be used for the needs of the I&R system;
- Draft amendments and supplements of the existing Law on I&R of animals (the existing Law on identification and registration of animals was prepared without an existing relevant EU legislation. When Regulation 21/2004 EEC was adopted, that regulates the I&R of small ruminants, the provisions of the existing Law on I&R became incompatible with the provisions of European legislation). The Law was passed and entered into force in June 2007.
- Amendments and supplements to the Rulebook on identification and registration of cattle have been prepared (“Official Gazette of the Republic of Macedonia” No. 47/2005). The new Rulebook entered into force in May 2007.
- A new Rulebook on the identification and registration of animals of the following types: sheep and goats has been prepared, that is expected to enter into force in the year 2008.
- During 2007, control over 2985 breeding farms for cattle has been carried out.
- Strategy for further upgrading of the existing system has been prepared. One of the provided modules is the module on border veterinary inspection, that provides a better control of imported shipments of animal origin;
- Plan for the implementation of the system if I&R of small ruminants has been prepared;
- Training of personnel for administration of the system for small ruminants;
- Inventory of breeding farms for small ruminants has been done, this included over 90% of the breeding farms for sheep and goats;
- Entry of inventory forms in the database has been completed;
- Training of personnel for new veterinary stations for I&R for animals has been carried out, their debiting with material – technical instruments (hardware, software) and identification instruments;
- Continuous visits of livestock markets, education of farmers, livestock vendors and responsible persons that manage the markets in relation to the I&R of animals;
- Preparation and distribution of advertising material;
- Organizing presentations in cooperation with the regional offices of the Ministry of Agriculture, Forestry and Water Economy, Veterinary Stations and cattle raising associations;
- A concept for the use of a Computer database has been suggested, so as to establish an information standard at the level of the Ministry of Agriculture, Forestry and Water Economy, thus performing registration of all types of agricultural holdings in the Republic of Macedonia. This approach shall reduce the costs for maintenance and licensing of the Agricultural information system,

that, according to European standards, has to be established for the purposes of use of subsidies, food safety and agricultural development planning;

### ***Program for use of animal health protection resources for the year 2007***

The Program should make possible that the Veterinary Directorate – the Department for identification and registration of animals fulfills all obligations given to it in accordance with the Law on identification and registration of animals. The activities shall aim at fulfilling the following priorities:

1. Financing the field activities associated with I&R;
2. Maintenance and upgrading the existing database;
3. Procurement of ear stamps;
4. Raising awareness of cattle breeders of their obligations that arise from the Law on I&R of animals.

## **7 Legal Regulations**

During the year 2007, 4 Laws were passed in the area of Veterinary Legislation. These were the following:

- The Law on Veterinary Health (“Official Gazette of the Republic of Macedonia” No. 113/07 dated 20/09/2007)
- Law on Veterinary Public Health (“Official Gazette of the Republic of Macedonia” No. 114/07 dated 21/09/2007)
- Law on the Wellbeing of Animals (“Official Gazette of the Republic of Macedonia” No. 113/07 dated 20/09/2007)
- Law on Waste and By-products of Animal Origin (“Official Gazette of the Republic of Macedonia” No. 113/07 dated 20/09/2007)

Of these the first, i.e. the Law on Veterinary Health is framework – basic law that, further to everything else, defines certain regulations that are defined in more detail in the following three so called separate – special laws.

After the passing of these four laws, during the following three months, i.e. to the end of the year 2007, several by-laws were passed that arise from the Law on Veterinary Health and the Law on Veterinary Public Health. The passing of by-laws is a continuous process and shall go on until full harmonization of the legislation of this area is achieved.

Two more separate laws remain to be passed, i.e., the ***Law on Veterinary-Medical Remedies*** and the ***Law on Animal Nutrition***, whose active versions are already prepared and their passing within the determined deadlines is expected.

The passing of the ***Law on Veterinary-Medical Remedies*** shall repeal the Law on medicaments, remedial medicines and medical devices (“Official Gazette of the Republic of Macedonia” No. 21/98) in relation to the type of veterinary-medical remedies, as well as the remedial medicines and medical devices intended for the purposes of veterinary medicine.



In continuity of the harmonization with the legislation of the European Union, during the year 2008, numerous by-laws are being prepared, that arise from the Law on Veterinary Health, Law on Veterinary Public Health, the Law on the Wellbeing of Animals, the Law on By-products of Animal Origin, that closely regulate certain conditions, criteria or procedures.

By the end of 2009, the passing of by-laws that shall arise from the Law on Veterinary-Medical Remedies and the Law on Animal Nutrition is provided for.

## **8 Veterinary Inspection Services**

By carrying out the veterinary-sanitary control and surveillance, application of the legal provisions is provided, with the purpose of reaching an adequate health protection of animals from diseases, protection from infectious diseases that are transmissible from animals to humans, veterinary – sanitary inspection and control of foodstuffs of animal origin, veterinary protection and improving the environment and nature.

The veterinary sanitary inspection of the domestic sale is carried out by **39 veterinary inspectors in 23 regional organizational units**.

The veterinary – sanitary control of sale outside the borders of the Republic of Macedonia is carried out by **19 veterinary inspectors in 9 border crossing points** determined by the Government of the Republic of Macedonia.

### ***A. Data on the Veterinary-Sanitary Controls***

During the year 2007, the number of issued records has decreased in relation to previous years; however, the number of notices of violation is continuously increasing. During the year 2007, 384 notices of violation have been filed, 137 of these have been settled, whereas 108 natural and legal persons have been fined.

In the table you can find a comparative review of the conducted veterinary-sanitary controls of official veterinarians (veterinary inspectors) in the regional offices of the Ministry of Agriculture, Forestry and Water Economy.

Table of the conducted veterinary-sanitary controls and the number of filed administrative and penal proceedings during the years 2005, 2006 and 2007

Type of legal act	Year/No.		
	2005	2006	2007
<b>Records</b>	5.099	6.081	5.571
<b>Decisions</b>	1.006	1.441	1.741
<b>Notice of violation</b>	133	302	384
<b>Notice of crime</b>	1	1	0

### ***B. Data on the veterinary-sanitary controls of animals to be slaughtered in the domestic sale***

The past years have shown a continuous growth of the number of slaughtered animals, as can be seen in the following table:

Table on the type and No. of inspected animals to be slaughtered, for the years 2005, 2006 and 2007

Type of animal	Year/No. of heads		
	2005	2006	2007
<b>Cattle</b>	6.733	6.203	7.770
<b>Pigs</b>	110.376	105.284	113.954
<b>Sheep</b>	251.218	293.095	316.421
<b>Goats</b>	385	/	169
<b>Poultry</b>	839.886	1.012.546	1.125.671

***C. Data on the veterinary-sanitary inspections of products of animal origin on sale***

A table on the No. of most common veterinary-sanitary inspections of products of animal origin on sale during the years 2005, 2006 and 2007

Type of product	Year/No. of controls		
	2005	2006	2007
<b>Meat and meat products</b>	10.314	9.098	7.803
<b>Milk and milk products</b>	4.963	5.563	4.145
<b>Fish and fishery products</b>	1.338	1.076	755
<b>Eggs and egg products</b>	1.653	2.203	1.063
<b>Honey</b>	24	30	20
<b>Feed</b>	59	25	6

***D. Data on the veterinary-sanitary inspections of products of animal origin, imported, on customs terminals***

During the year 2007, the rise in the inspected shipments is due to the rise in imported shipments of animal origin. In accordance with the regulations in the area of veterinary health, what is also compulsory is the taking of samples for laboratory establishment of the hygienic accuracy of the products. The samples taken for analysis, in accordance with the obtained results, are declared to be safe, i.e. unsafe for human nutrition. The percentage of unsafe shipments in relation to the taken samples amounts to 0.2% for the year 2005, 0.6% for the year 2006 and 0.5% for the year 2007.

**Table of the veterinary-sanitary inspections of shipments and samples taken for analysis at customs terminals, for the years 2005, 2006 and 2007**

Inspections	Year/No.		
	2005	2006	2007
<b>Shipments</b>	4.556	5.491	6.114
<b>Samples</b>	3.526	4.246	3.778
<b>Safe</b>	3.518	4.221	3.757
<b>Unsafe</b>	8	25	21

**E. No. of shipments from import, export and transit, inspected at veterinary inspection points at a border crossing point.**

The number of shipments of animal origin that have been imported during the year 2007 is significantly larger in relation to the previous years. During the year 2007, import has increased by 24% in relation to the year 2006, and by 36% in relation to 2005.

Import was 8 times larger than export during the year 2007.

The number of shipments that are exported is insignificantly increased.

The number of transit shipments has decreased in relation to the previous years.

The most active veterinary inspection points at border crossing points, through which import, export and transit is carried out, are still Tabanovce and Bogorodica.

**Table of the number of shipments of animal origin that have crossed the border crossing points at import, export and transport, for the years 2005, 2006 and 2007**

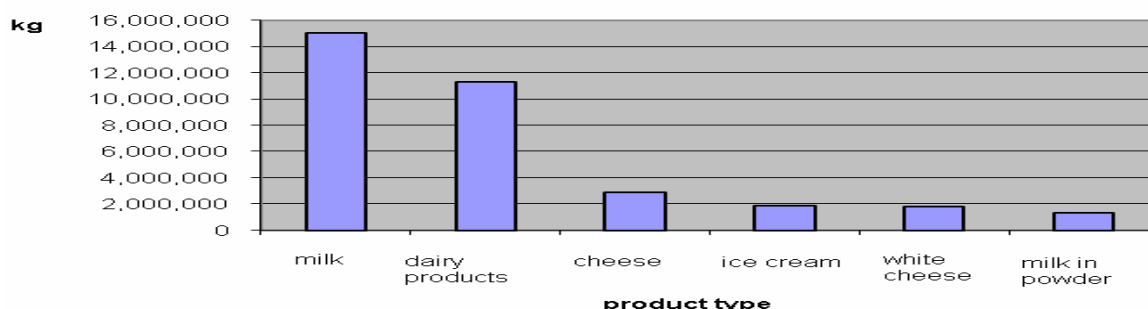
No. of shipments	Years		
	2005	2006	2007
Import	8.258	9.771	12.826
Export	1.418	1.230	1.526
Transport	5.823	6.776	4.693
<b>Total</b>	<b>15.499</b>	<b>17.777</b>	<b>19.045</b>

**F.Import of milk and milk products**

During the year 2007, of the total import of products of animal origin, the largest share falls to the import of milk and milk products. Import of milk amounted to 44%, whereas import of milk products amounted to 33% of the total import. Milk is mostly imported from Bosnia and Herzegovina and Serbia. Milk products are mostly imported from Croatia, Serbia, Germany and Greece.

Chart on the import of milk and milk products for the year 2007

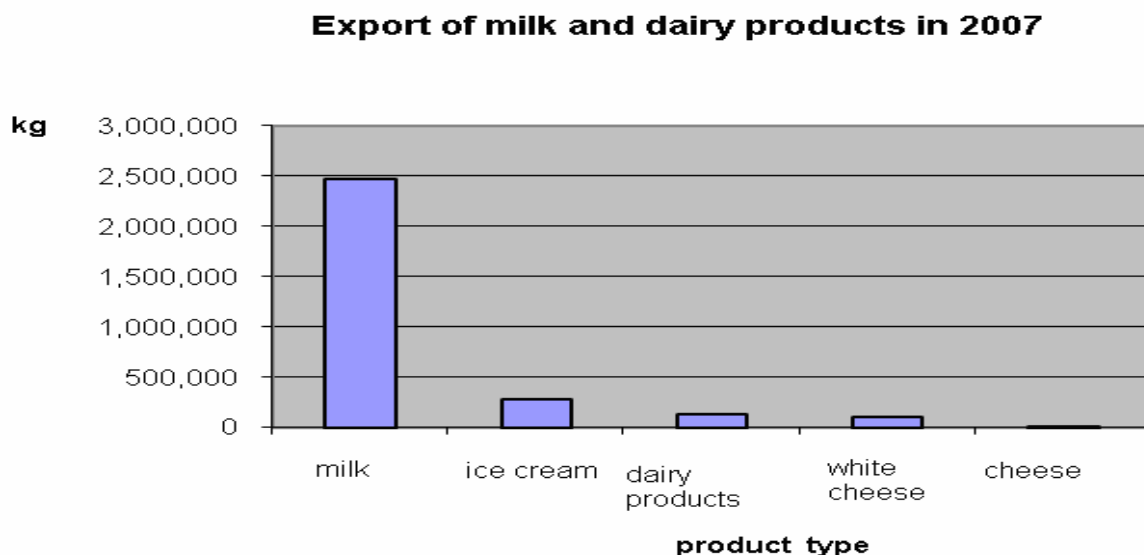
**Import of milk and dairy products in R. Macedonia in 2007**



### ***G. Export of milk and milk products***

During the year 2007, the largest export of milk was realized in Serbia and Bulgaria (fresh milk). Milk products were mostly intended for the market in Serbia and Bosnia and Herzegovina.

Chart on the export of milk and milk products during the year 2007



### ***H. Meat and meat products import***

In reference to meat import, it amounted to 56.388.965 kg in 2007 and it was increased by 18% in relation to 2006, and by 13% in relation to 2005.

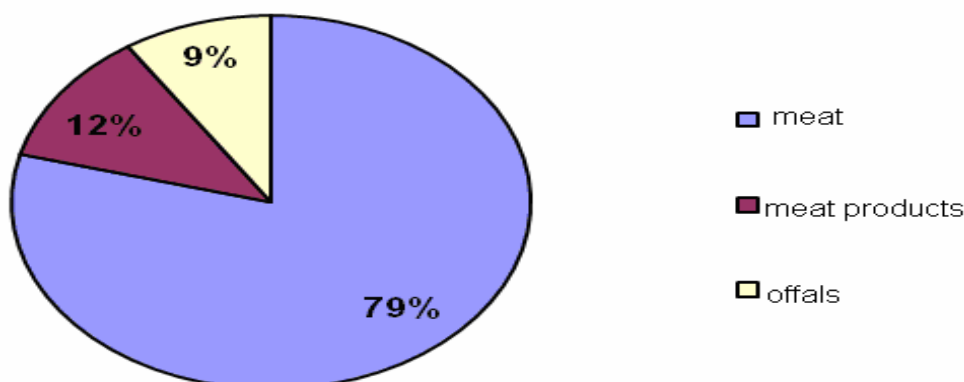
Chicken meat had the most import in the year 2007. It was mostly imported from Brazil, USA, and Canada. From the European countries it was mostly imported from Greece, the Netherlands, and Slovenia.

Beef is second according to import having the largest imported quantity from Brazil, Serbia, and Austria.

The largest quantities of pig meat were imported from Canada, Spain, Serbia, and USA.

Mostly meat cans and semi-permanent meat products were imported from meat products.

## Import of meat, meat products and offals in 2007

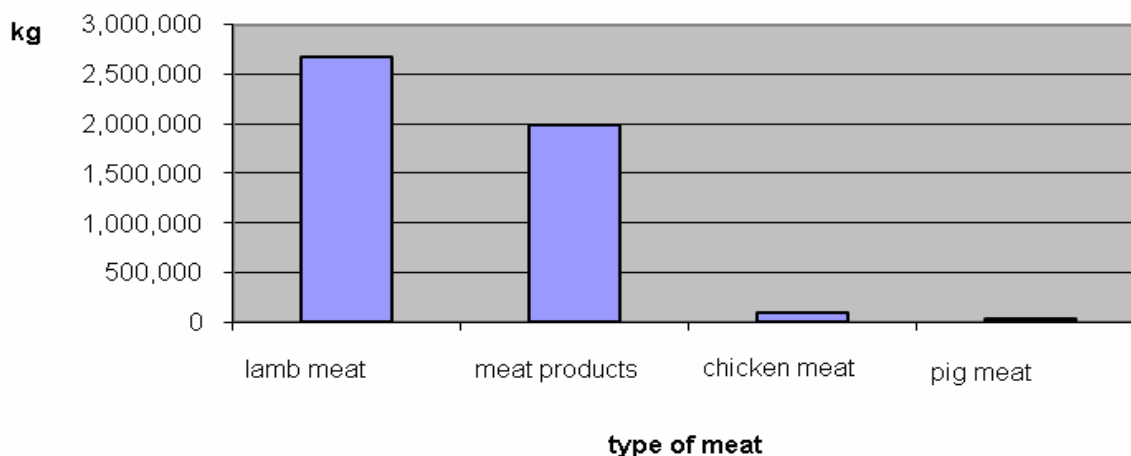


### 9 Meat and meat products export

Same as the previous years, the export of lamb meat in the value of 2.672.578 kg dominated this year in relation to the other meat categories. It was followed by chicken with 89.663 kg of export and pig meat with 29.562 kg. A significant percentage of the export falls to meat products in the value of 1.991.988 kg. The most exported meat products are the semi-permanent meat products to Serbia and cattle skins to Italy and Turkey.

Graphical display of meat and meat products that have been exported from the Republic of Macedonia in 2007

### Export of meat and meat products from R. Macedonia in 2007



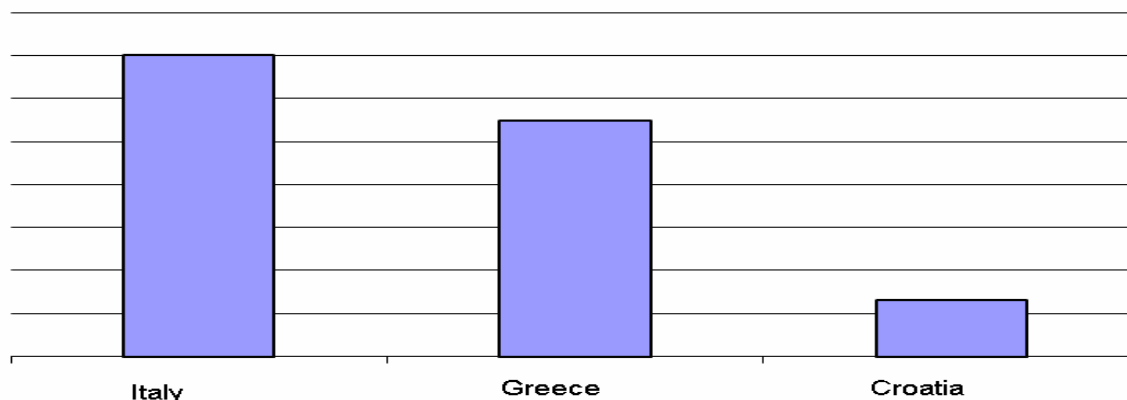
The Republic of Macedonia has a significant import of lamb meet to the neighboring countries and the EU countries. The tradition of lamb meet export has been continual which is confirmed by the figures in the table below:

Table display of the number of slaughtered lambs and produced lamb meat intended for export in the years 2005, 2006, and 2007

Lambs	Year		
	2005	2006	2007
No of slaughtered lambs	273.302	281.122	277.428
Kilograms of produced meat	2.492.191	2.743.709	2.633.708

Graphical display of the countries that were the largest importers of lamb meat from the Republic of Macedonia in 2007

**Export of lamb in 2007**



## 10 Future activities of the Veterinary Directorate

The following have been planned as future activities of the Veterinary Directorate:

### ***A. Trainings for strengthening the state veterinary service***

### ***B. Upgrade of the animal identification and registration system:***

- Start of the marking of small ruminants (start of 2008);
- Inclusion of pigs in the animal identification and registration system – (During 2008/2009 after which the marking of pigs is expected to start);
- Preparation of software and purchase of necessary goods (ear marks, applicators, printed materials) for the needs of the pig marking system;
- Upgrade of the legal framework for pigs identification and registration;

### ***C. Improvement of the animals' healthcare and wellbeing measures:***

- Changes in parts of the Brucellosis Programme and the TBC Programme appropriately to the revision findings that are followed by implementation of the same (2007-2008);

- Epidemiological studies for zoologists and economically important diseases and preparation of recommendations for the preparation of suppression/control programmes for economically important diseases.
- Preparation of suppression/control recommendations for economically important diseases in order for the number of infected animals as well as the losses from the diseases to decrease;
- Introduction of the risk estimation principle as a decision making method in relation to the animals healthcare;
- Preparation of rulebooks for emergency measure plans in case of diseases (contagions);
- Integration and upgrade of the animal healthcare information system;
- Campaign for raising animal wellbeing awareness;

***D. Introduction, upgrade, and improvement of certain systems necessary for the functionality of the Veterinary Directorate and the veterinary inspection services as well adjustment to the EU standards***

- Introduction and improvement of the safety systems for food of animal origin and animal by-products;
- Introduction of the Rapid Alert System for Food and Feed (RASFF) – the purpose of the system is to provide the competent bodies for control of food intended for human use and feed with an effective information exchange tool which refer to the undertaken measures and the measures that should be undertaken with the purpose of ensuring safety of the food intended for human use and feed (during 2008);
- Adjustment of the production capacities for food of animal origin with the EU standards;
- Establishment of an animal origin by-products gathering and treatment system (2008-2010).

***Improvement of the veterinary-medical preparations and animal nutrition system:***

- The purpose of the programme is to build and improve the regulatory-legislative institutional structure of the Republic of Macedonia in relation to production, trade, and use of the veterinary medical preparations – during 2008;
- The purpose of the programme is to build and improve the regulatory-legislative institutional structure of the Republic of Macedonia in relation to production, trade, and use of feed and animal nutrition – during 2008.

### ***Other system that will build the state veterinary service capacity:***

- Introduction of an IT system for network connection and information exchange between the Veterinary Directorate, the regional offices, and border crosses;
- Introduction of a TRAdE Control and Expert System (TRACES) as part of a unique electronic data base for monitoring the movement of shipments of live animals and certain products of animal origin in the internal trade of the EU and those that need to be imported from third countries as well as providing all relevant data related to the trade with these shipments. The purpose of this system is to prevent the entry of contagious diseases during the trade with live animals and product of animal origin as well as to provide unobstructed import of live animals and products of animal origin – during 2008.

## **11 PHYTOSANITARY DIRECTORATE IN 2007**

Plants as goods of general interest for the Republic receive special protection established by law. Therefore, the health of plants is a right and responsibility of the Republic of Macedonia - The Ministry of Agriculture, Forestry and Water Economy, the Phytosanitary Directorate, the State Phytosanitary Laboratory, the public service providers and the owners.

The competencies of the Phytosanitary Directorate as a body in the structure of the Ministry of Agriculture, Forestry and Water Economy arise from the Law of Plant Health, the Law on Plant Protection, the Law on Fertilizers, and the Law on Plant Protection Products.

The activities of the phytosanitary area have been focused by the Phytosanitary Directorate on: organizing measures for prevention of insertion and spreading of harmful organisms, implementing measures for suppression, control over the implementation of measures, analysis and evaluation of the health status of plants in and out of the soil, assessing the risk from appearance and spreading of harmful organisms, harmonization the National Legislation with the EU legislation, coordination of all activities of the phytosanitary area with all involved, elaboration of database and informing all interested parties.

## **12 PLANT PROTECTION**

Within the frameworks of the five-year project 2003-2008 for monitoring and signalization of the quarantine and economically significant diseases, pests, and weeds, the Phytosanitary Directorate of the Ministry of Agriculture, Forestry and Water Economy continued the Plant Health Programme, and for the purposes of its realization during the 2007, it engaged a number of scientists and experts from various organizations in the Republic of Macedonia such as: the Faculty of Agriculture and Food - Skopje, the Institute of Agriculture - Skopje, the Institute for Tobacco - Prilep, the National Extension Agency as well the local units of the Ministry of Agriculture, Forestry and Water Economy.



The Ministry of Agriculture, Forestry and Water Economy – the Phytosanitary Directorate is the organizer of the forecast, determination and monitoring of the vegetable diseases, pests, and weeds in the Republic of Macedonia.

The Faculty of Agriculture and Food in Skopje - Plant Protection Department is the scientific – expert bearer of the forecast, determination and monitoring of the vegetable diseases, pests, and weeds in the Republic of Macedonia.

In the course of 2007, the Phytosanitary Directorate realized the Plant Health Programme, whereby the Budget of the Republic of Macedonia provided it with resources in the amount of 14.000.000.00 denars. A detailed report was delivered to the Government of the Republic of Macedonia for the realization of the financial resources intended for the Programme.

## **DISEASES AND PESTS SITUATION IN 2007**

During 2007, a forecast and monitoring were conducted concerning the two economically most important diseases of the apple caused by the parasites: ***Venturia inaequalis (Coke) Winter*** conidial stadium and ***Spilocea pomi Fr. et Fr.*** agent of smoky dots on the leaves and scabby apple fruits.

***Venturia inaequalis (Coke) Winter*** - in 2007 an attack of this parasite was determined in the beginning of the vegetation, but later, there were no conditions for spread of this parasite due to the drought. Despite the relatively small amount of rain in the Prespa region, which is the biggest producer of apples, several weak and strong infections appeared. It is important that the protection against this pathogen started with the winter spraying and later continued during the vegetation.

***Podosphaera leucotricha (Ellis et Everhart) Salmon*** – agent of apple rust fungus – This pathogen is a constant threat for the apple groves in the Prespa region because this region is mainly represented by Aidared variety with 65%, which is very sensitive to this pathogen. Attack by this apple parasite in the Prespa region was noticed even during the winter period through the appearance of white sprouts and white flower buds.

***Erwinia amylovora (Burrill) Winslow et al*** – agent of apple, pear, quince rust fungus etc. - Due to the considerably dry period and unfavorable conditions for development of this phytopathogen bacteria, in the course of entire vegetation there were no significant damages due to attack by this parasite. Attack by this parasite has been noticed in the Valandovo region. Appropriate insecticides were used for elimination of the vectors of this pathogen, as well as mechanic measures such as removing the diseased plants and burning the same.

***Plasmopara viticola (Berkeley et Curtis) Berlese et De Toni*** – agent of vine rust fungus – In the Ohrid, Ovchepole, Kumanovo, Gevgelija, and Valandovo region the attack on the vine groves by this pathogen in 2007 was registered with low intensity. The appearance of the primary diseases was monitored and protection advises were given, so that the successfully applied fungicides and the unfavorable conditions for development of this pathogen did not permit significant damages of the vine.

***Uncinula necator (Schweintz) Burrill*** – agent of vine rust fungus- The attack by this pathogen on the vine was noticed more massively during the first decade of

August when favorable conditions existed. Massive appearance of this pathogen was noticed at the abandoned vine groves as well as at the more irrigated yard vines.

***Botrytis cinerea* Person f.vitis Klebahn-** agent of vine grey rot – this pathogen of vine is determined in the Ohrid and Valandovo region, regions where damages from hailing were noticed. In order to protect from this pathogen a series of preventive measure were conducted, (thinning out leafs as well as chemical measures).

***Phomopsis viticola* Sacc** – agent of excoriosis (black dots) of the vineyards. This fungi disease in the Valandovo region caused significant damages during the last years and for that reason the vine producers were informed properly through announcements for the purposes of undertaking protective measures. Chemical protections were also conducted. The attack by this pathogen in the Gevgelija region was noticed on various plants and on various locations.

***Venturia pirina* (Bref.) Aderhold** – agent of pear smoky scabies. In the Prespa region the appearance of this pathogen has been limited due to the reduced number of pear stalks. Fungicides were used as a protection.

***Phytophthora cactorum* (Leb. Et Cohn) Schroet** – agent of rotting of the fruits' root neck and root. - This pathogen is regularly present in the Prespa region. In the Ohrid region this pathogen is noticed in groves where underground waters are high, especially in the winter period, and also where furrow irrigation has been conducted. Copper fungicides are used as a protection by hosing them around the diseased stalks.

***Taphrina deformans* (Berk.) Tulasne** - agent of peach curling leafs. - This pathogen was determined with higher intensity at individual peach stalks at the yards and weekend houses in the Ohrid region. Contact fungicides were used as protection.

***Stigmina carpophila* (Lev.Ellis), (*Clasterosporium carpophyllum* Aderh.)** - agent of bone fruit pellets. This pathogen has been noticed in the entire report region with more massive appearance on the plums and cherries. Particularly strong intensity of attack from this pathogen has been noticed on abandoned groves. Copper preparations in the beginning of the vegetation were used as a protection.

***Monila laxa* (Ader. i Ruhl.)Honey ex Whetz** - agent of drying of flowers, sprigs and fruits of the plums and cherries. Attack by this pathogen on the plums and cherries was determined in the Ohrid region and the attack was significantly stronger on the abandoned groves. Fungicides were used as protection measures. An attack on the apricots by this pathogen was noticed In the Valandovo region and the entire region was recommended protection measures via announcements.

***Phytophthora capsici* Leonian-** agent of pepper rust fungus - This pathogen has been determined at the Prespa region, in 2007, on very small pepper plots. By applying the preventive measures such as: proper irrigation, use of healthy seedling, soil treatments, as well as foil treatments of plants satisfactory results were achieved.

***Leveillula taurica* (Lev.) Arn.** - agent of pepper and tomato rust fungus. –An attack by this pathogen has been noticed in the Valandovo region, at numerous places where tomatoes are produced in plastic tunnels. The situation was improved by using fungicides.

***Phytophthora infestans* (Mont) de Bary** – agent of potato and tomato rust fungus- Due to the favorable conditions for development, this parasite has been determined at several regions in the Republic of Macedonia. An attack of the potato

by this parasite has been registered in the Prespa region, where 2-3 treatments contributed to good protection from this disease. The intensity of appearance of potato rust fungus has been low in the Strumica - Radovish region, as well in the Gevgelija-Valandovo region.

***Alternaria solani (Ell. & Mart.) Jones & Grout*** - agent of tomato and potato brown dots. In the Ohrid region this pathogen was determined at the tomato and potato as well as at some other representatives of the family *Solanaceae*. Bigger damages were determined in the parts of the regions with mechanic damages due to hail.

***Peronospora tabacina Adam*** - agent of tobacco rust fungus. This pathogen of tobacco was determined in the Veles regions, in the villages: Buzalkovo, Chashka and Ivankovci. Chemical treatments have been conducted with the following fungicides: Cineb S-65, Antracol, Ridomil, Dithane M-45.

Concerning the biological struggle in the Republic of Macedonia it can be said that its application is not on the satisfactory level. The main reason for the insufficient application of the biological plant protection measures against the harmful insects in the glasshouse production is the very difficult economic situation of the companies whose main activities are agricultural production, as well as the lack of opportunities for certification of the obtained production.

## **PHYTOSANITARY INSPECTION**

The phytosanitary inspection is part of the Phytosanitary Directorate and it is included in the system for monitoring and conducting of preventive measures against appearance, spread and suppression of harmful organisms. It performs phytosanitary inspection of the export, import, reexport and transport of plant and vegetable products consignments.

### **EXPORT**

In 2007, the phytosanitary inspections of the export consignments were conducted by phytosanitary inspectors on 13 export terminals for posting the export consignments (Skopje, Kavadarci, Strumica, Veles, Gevgelija, Kumanovo, Tetovo, Ohrid, Prilep, Resen, Kichevo and Struga). The phytosanitary inspections were conducted according to the monitoring system of the production place, during the vegetation and before posting the consignments. In 2007, an inspection has been conducted of a total of 30.989 consignments measuring 299,833.239 tones; 11,167.80 m<sup>3</sup>; 3.222.145 no. The export is usually executed through the most frequent border crossings: Bogorodica, Novo selo, Tabanovce, Kjafasan and Deve Bair.

### **IMPORT**

In 2007, the phytosanitary inspections of import consignments were conducted by phytosanitary inspectors on 16 border crossings. The phytosanitary inspections were conducted according to the import system: documentation examination, consignment identification with documentation, and phytosanitary inspection aspect of harmful organisms presence.

The phytosanitary inspectors in 2007 conducted control over 20.469 consignments measuring: 407.488,099 tones; 44.289,38 m<sup>3</sup>; 4.014.682 no.

The import is usually conducted through the most frequent border crossings: Bogorodica, Novo Selo, Tabanovce, Kjafasan and Deve Bair. The biggest number of consignments are imported from: the Republic of Serbia, Greece, Bosnia and Herzegovina (supplement 2).

When conducting phytosanitary inspection and control over the import, export and transport of plant consignments and vegetable products at the cross-border trade in the Republic of Macedonia, the phytosanitary inspectors charge a fee.

The money collected from the fees in 2007 amount to 60.855.369,10 denars. The collected funds are revenues for the Budget of the Republic of Macedonia.

### **PLANT PROTECTION PRODUCTS**

In compliance with the Law of Plant Protection, the use of products for plant protection in the Republic of Macedonia is possible only when the products are approved by the Ministry of Agriculture, Forestry and Water Economy.

The plant protection products can be produced by domestic producers or they can be produced outside the borders of the Republic of Macedonia and imported by authorized representatives. Before being imported, the products are subject to examination on the border crossings by the phytosanitary inspectors.

There are 534 registered plant protection products in total, 47 of which are newly registered in 2007 or their registration has been continued.

During the last year the Ministry of Agriculture, Forestry and Water Economy issued permission for:

- 1 domestic producer who formulates plant protection products.
- 12 foreign producers represented by 10 authorized representatives, who simultaneously conduct the import and trade the products plants protection wholesale.

198 agricultural pharmacies are entered in the registry of the Ministry of Agriculture, Forestry and Water Economy - Phytosanitary Directorate.

According to the conducted inspections of the phytosanitary inspection at the border crossings, 146 consignments with 1.155.192 kg of plants protection products were imported in 2007.

In September 2007, the Law on Plant Protection Products was passed (Official Gazette of the Republic of Macedonia no. 110/07) in compliance with the European legislation, and it has been passed on the basis of the Directive 91/414 EEC, by which the plant protection resources are renamed into to the plant protection products. It is necessary for certain by-laws to be passed, which would bring innovations in the operation, for the implementation of the Law.

### **FERTILIZERS**

Fertilizers are regulated by the Law on Fertilizers Quality and Quality Control and according to the same, the Republic of Macedonia has 211 registered fertilizers in total, 25 of which are newly registered in 2007 whereby: 6 fertilizers are domestic and 19 are from foreign producers.

The Law on Fertilizers was passed in 2007, (Official Gazette of the Republic of Macedonia no.110/07) which is in compliance with the European legislation on the basis of the Regulation 2003/2003 EC, and by-laws shall be derived from the same which shall contribute to its successful implementation. By entering into force the new law shall change the name manures into fertilizers.

According to the inspection of the border crossings conducted by the phytosanitary inspection, 3226 consignments were imported containing 77.019.965 kg fertilizers in 2007.

Products import under control of the Directorate in 2007:

<b>Product</b>	<b>Type</b>	<b>Amounts</b>	<b>Total</b>
1. Fertilizers	NPK	44,459.611	<b>77.019.965</b>
	KAN	17,231.206	
	Superphosphate	1,097,056	
	Urea	11,102.219	
	Peat	2,077.637	
	Humus	1,052.236	
2. Protective means	Insecticides	176.092	<b>1.155.192</b>
	Fungicides	625.097	
	Herbicides	354.003	
	Rodenticides	/	
	Akaricides	/	

### **13 STATE PHYTOSANITARY LABORATORY**

For the purposes of conducting special laboratory tests of plants, vegetable products, and other laboratory facilities and objects, and aiming to diagnose and determine harmful organisms, biological organisms, biological tests, examining the physical-chemical characteristics of plant protection products, analysis of active matter, analysis of seed and planting material the State Phytosanitary Laboratory (SPL) was created as part of the Ministry of Agriculture, Forestry and Water Economy, with status the of bureau.

The legal basis for establishing the SPL is stipulated in the Article 78 of the Law of Plant Health issued in the Official Gazette of the Republic of Macedonia (29/05), and the equipment is provided with the help of the KARDS 2001 Programme donation.

In 2007, 44 different analyzes were conducted (entomological, mycological, bacteriological, nematological, virological), and it is important to note that beside health and class cleanness of the seed, the laboratory can conduct quality determination of genetically modified (GM) seed and planting material by applying molecular techniques.

Also, laboratory examinations have been conducted in compliance with the international protocols for identification and diagnosis of quarantine and non-quarantine organisms.

## **14 Seed and planting material**

### **14.1 Testing plant varieties**

The Department for Seed and Planting Material Management at the Ministry of Agriculture, Forestry, and Water Economy finances its activities in accordance with the "Seed and Planting Material Programme" and from its own financial funds, i.e. the fee that it charges foreign and domestic legal entities and natural persons for testing and registration of new varieties. These funds cover testing costs of the research stations for statistical data processing, the fees for the members of the Committee for National List of Varieties of Agricultural Plants, for providing standards for comparison with tested variety and for overhead costs.

### **14.2. Testing and approval of new varieties of agricultural plants**

During the 2007 production year, through the Committee for National List of Varieties of Agricultural Plants 89 varieties were entered for testing, recognition, and approval of the production in the Republic of Macedonia. Most of the entered varieties refer to vegetable crops, from which 32 varieties were entered for growing in open field, whilst 13 varieties were entered for growing in a protected space (tomatoes 9 varieties, cucumbers 2 varieties, peppers 2 varieties). 7 cereals varieties, 14 potato varieties, 15 tobacco varieties, 2 sunflower varieties and 6 maize varieties were entered for registering in the National List of Varieties

The testing of the new foreign and the domestic varieties in open field was performed on three sites, as follows: Public Scientific Institution "Agricultural Institute" – Skopje, Public Scientific Institution "Institute for Agricultural and Southern Crops"-Strumica, and Public Scientific Institution "Institute for Tobacco"-Prilep.

### **14.3. Implementation of expert control (approbation) and production of certified seed and planting material in 2006/2007**

Expert control was carried out and natural production of 6 984 tons of certified wheat seed was produced in the 2006/2007 production year. During the processing of the soft wheat seed material around 20% is waste, meaning that the total amount of produced wheat seed is 5 588 tons. During the expert control of barley there was total production of seed in the amount of 1 542 tons, i.e. during the processing of the seed material; around 20% of the barely is waste, whereby the total amount of produced autumn barley seed is 1 234 tons.

The lack of seed material is supplemented by farmers with the use of uncertified (mercantile seed) seed material produced by them. The inappropriate quality of the seed material that is being used contributes to decrease of yield of certain crops per unit of surface area as well as in relation to the production quality.

In general, the domestic production of seed and planting material does not meet the needs for organization of the agricultural production in the Republic of Macedonia. The remaining needs for certified seed and planting material are met by import, mostly from Serbia and Croatia. Seed material is also imported from the following countries: the Netherlands, Israel, France, Germany, and Italy – for import of vegetable crops seed material, especially the hybrid tomato and cucumber varieties that are grown in protected space, as well as for seed tomato.

The production of certified poppy seed material, is organized and controlled by "Alkaloid" from Skopje, and at the moment the offer satisfies our domestic demand.

The offer of certified tobacco seed material produced by the Tobacco Institute - Prilep, satisfies the need for seed material for the tobacco producers. The certified rise seed material is produced in the Institute of Agriculture - The Department in Kochani.

#### ***14.4. Program for seed and planting material***

In 2007 finances from the Budget of the Republic of Macedonia were provided for the realization of the "Program for seeds and planting material for the year 2007" ("Official Gazette of the Republic of Macedonia" No.38/2007). In accordance with the Law on seeds and planting material, the funds from the Program at the amount of 700 000 denars, are planned to help the production, control of the certified seeds and planting material, as well as the making of the legal acts and by-laws and their harmonizing with the EU legislation.

#### ***14.5. The Policy of the Management of Seed and Planting Material for promotion of the Management and future development plans***

The Law on seed and planting material for agricultural plants is adopted by the Assembly of the Republic of Macedonia in March 2006. It was published in "The Official Gazette of RM No.39/2006". By-laws have been adopted (7) which arise from this law: Rulebook for trade with seed material from forage and turnip, a Rulebook on the conditions that the supplier needs to meet in order to be entered in the Registry for seeds and planting material from agricultural plants, the content and the way of managing the registries and the content of the application for entry, a Rulebook for personnel, space and technical conditions and the manner of work of the authorized legal entities for performing expert control of the production of seed crops and plantations of planting material from types and varieties of agricultural plants, Rulebook for trade with seed material from oil and fiber plants, Rulebook on the manner of work, spacious and technical equipping of the authorized laboratories and methods for examining the quality of the seed material for agricultural plants, Rulebook for trade with seed material from vegetables.

#### ***14.6. Other activities from the area of Seed and Planting Material***

##### **Registering the suppliers of Seed and Planting Material**

The Management of seed and planting material, in accordance with The Law on seed and planting material and By-laws, is performing entries in to the Registry of suppliers of seed and planting material for agricultural plants. During the year 2007, a total number of 75 suppliers have been registered, of which:

- Suppliers producers of seed and planting material = 11
- Suppliers which perform preparation for the market for seed material = 3
- Suppliers for export-import of seed and planting material = 20
- Suppliers for small and large scale businesses of seed and planting material = 41

##### **Issued approvals for import of seed and planting material**

The Management for seed and planting material in the year 2007, in accordance with The Law on Seed and Planting Material and the Decision for allocating the goods in forms of import and export, has issued a total number of 417 approvals for import and export of seed and planting material.

## V. SUSTAINABLE NATURAL RESOURCES MANAGEMENT – AGRICULTURAL LAND, FORESTRY AND WATER ECONOMY

### 1 Agricultural land

According to the data collected from the Regional Offices, the territory of the Republic of Macedonia possesses a total of 197.764ha 66are 11m<sup>2</sup> of arable agricultural land in state ownership.

The Sector for Agricultural Land Registration and Management had the following employees in the year 2007:

- 1 authorized sector manager
- 1 department manager
- 8 advisors
- 2 junior officials.

The register of state-owned agricultural land users, in accordance with agreements concluded according to Article 24 of the Law on Agricultural Land (Official Gazette of the Republic of Macedonia No. 135/07)

REGIONAL OFFICES	CATEGORY OF USER	2005		2006		2007	
		Users	Area	Users	Area	Users	Area
33 REGIONAL OFFICES	Legal Entities	71	5278	16	4169	19	100
	Individual Farmers	35	1783	24	492	34	382
	Land beneficiaries	/	/	481	3701	9	91
	Natural Persons	1	1	/	/	/	/
	<b>TOTAL</b>	107	7062	521	8362	62	573

According to the data from the table, it may be concluded that the number of land beneficiaries of 481 in the year 2006 had reduced to 9 in the year 2007, thus rounding off the procedure on concluding agreements with land beneficiaries, whereas, concluding agreements with legal entities and individual farmers has increased. In accordance with the agenda for implementation of Notices for the year 2008, sudden conclusion of agreements for state-owned land use is expected, that shall be the subject of the Annual Report for 2008.

The control over the manner of management (use) of arable agricultural land in state ownership, in accordance with 56 of the Law on Agricultural Land (Official Gazette of the Republic of Macedonia No. 135/07) is performed by the State Agricultural Inspectorate, with the state agriculture inspectors.

During the year 2007, a total of 183 notifications with suggestions to terminate agreements and suggestions to regulate the status of further land use were delivered to the Sector for Registration and Management of Agricultural Land by the State Agricultural Inspectorate.

Plans of the Sector for Registration and Management of Agricultural Land in 2008:

- Equipping the departments for:
  - registration of agricultural land,
  - agricultural land management,



- agricultural land promotion,
- agricultural land exchange,
- Forming a systematized and currently updated records of state-owned agricultural land;
- Design of a state-owned land management on the basis of
- Collection of data on agricultural land and data updating with greater efficiency;
- Full insight into the manner of use of state-owned agricultural land and data on the size of farms used by farmers in state or private ownership, which represents one of the prerequisites for successful operation of the Payment Agency and use of the pre-accession funds (IPARD),
- Finalizing of the two pilot projects in relation to agricultural land in the Republic of Macedonia.
- during 2008, the 12 Notices for allocation of agricultural land in state ownership are planned to be published.

## **2 Forestry**

### **2.1 General Characteristics of the Forestry Department**

The forests, in accordance with Article 56 from the Constitution of the Republic of Macedonia, are declared to be an asset of general interest and have special protection. The forests as a national treasure, beside the economic, have a significant social and generally useful function. All the activities of managing the forests (growing, use and protection) are regulated with the Law on Forests („Official Gazette of RM” No.47/97, 7/2000, 89/04, 54/07 and 103/08).

In RM 1.159.600 hectares, are forest land of which the total surface under forests is 955.300 ha, i.e. 37% of the territory of the Republic of Macedonia. The content of the forests are leafy (deciduous) 82%, conifers (evergreen) 12% and mixed (leafy-conifers) 6%. According to the background they are tall trees 29% and small trees 71%.

The total wood volume is 74.343.000 m<sup>3</sup>, and the total annual growth is 1.830.000 m<sup>3</sup> with an average annual growth of 2,02 m<sup>3</sup> per hectare.

The planned annual quantity for cutting down (planned annual wood volume for cutting down) is about 1.300.000 m<sup>3</sup>.

Of the total surface under forests, the forests which are property of the state include 90,14%, while in wood reserves their participation is 92,2%. The private forests take up 9,86% of the total surface under forest and participate with 7,8% in the total wood reserve.

### **2.2 Current activities in the Forestry Department**

#### **2.2.1 Strategy for maintaining the development of the forestry in the Republic of Macedonia**

In 2004, FAO (Food and Agriculture Organization of the United Nations) approved the project for preparing a Strategy for maintaining the development of the forestry in the Republic of Macedonia. The process of preparing the Strategy was based on the

principle of participation of all interested parties and the principle of integrating the forestry in the development strategies and plans on a national level.

***Strategy for maintaining the development of the forestry in the Republic of Macedonia, with an Action plan 2007-2009***, was adopted by the Government of the Republic of Macedonia, on the assembly that took place on 19.06.2006. The strategy will be implemented with a defined Action plan, which contains the measures and activities for the future development of the Forestry Department with a confirmed time dynamics and evaluation of necessary materials and human resources for their realization.

The main directions of the Strategy for maintaining the development of the forestry in the Republic of Macedonia are:

- Expansion, improvement of the quality and protection of the forestry fund;
- Multi -functional managing of the forests and maintaining of the development of the forestry;
- Confirming the conditions finding national and international funds for support of the development of the forestry, and
- Coordinating the legal Rulebook from the forestry department with the national interests and international commitments.

The Ministry of Agriculture, Forestry and water Economy has signed a Memorandum for a mutual cooperation with the Netherlands Development Organization (SNV) Macedonia, financed by the Government of the Netherlands, in order to improve and develop the forestry in RM through supporting the activities in accordance with the Action plan 2007-2009 from the Strategy for maintaining the development:

- A Rulebook has been made for the owners of private forests in cooperation with the Citizens group "Private Forests" and the Public Enterprise "Makedonski Sumi".
- The Pilot project for determining the private and the state forests, in KO Rudnik, in the area of Veles.

### **2.2.2 Realization of the Program for widened reproduction of the forests for the year 2007**

The following measures were financed and realized with the Program for widened reproduction of the forests:

- Planting trees on barren regions and erosive lands in the property of the state, on a surface of 808 ha in 13 regions. The largest surfaces where trees have been planted are in the areas of: Kumanovo (196 ha), Sveti Nikole (150 ha), Shtip (146 ha) and Veles (100 ha), while in the other areas, the planting of the trees was made on smaller surfaces;

- A care was given to forest crops with line spacing on a surface of 726 ha in 7 forest farms of the PE "Makedonski Sumi" in the areas of: Sveti Nikole, Kumanovo, Shtip, Veles, and Kratovo, on a surface of 110 to 199 ha, and on a smaller surface in the other affiliates.

- Repairing of forest fire damage was made, as well as their artificial renewal on a surface of 352 ha, and a prevention of massive drying of the forests and forest crops was made on a surface of 40 ha;

- Providing forest seedlings for private planting of trees and implementation of the Ecology Action of the youth in RM. During the year 2007, a total of 280.061 seedlings were provided, of which 252.520 were planted on private lands, mainly on barren regions, fields, meadows and deserted surfaces which could not be cultivated, and planting trees on places where they were cut down, and filling in the space where forests were partially or completely destroyed (fires, drought, or damage from cattle), and for implementing of the Ecology action 27.541 seedlings were used.

For implementation of the Program for Expanded reproduction of the forests, the Forestry department at the MAFWE is competent. The work is made on the surfaces which are managed by PE "Makedonski Sumi"- Skopje, i.e. its affiliates - forest businesses.

### **2.2.3 Protection of the forests**

The Department for protection of the forests aside from the other activities which are included in the Program for expanded reproduction of the forests for 2006, in the part for protection of the forests, has performed renewing of the net for bio indicating points. This action is implemented in cooperation with the Department of Forest Protection with Faculty of Forestry. 42 Bio indicating points have been renewed, in order to continuously follow the health condition of the forests in RM.

The following of the health condition of the forests in RM and the collecting of data by the experts from PE "Makedonski Sumi" and other parties in charge of this activity, continued in 2007, for which reports were submitted.

In April 2007, the Information about the health condition of the forests in RM was submitted to the Government of RM, with draft measures, and it was adopted.

### **2.3 Hunting**

In the Hunting Department, in 2007, aside from the usual activities, an amendment of the Law on Hunting was prepared („Official Gazette of RM No. 84/07), with which a correction of some provisions of the law were made, which were an obstacle for its better implementation, as well as further precision of some articles of the law.

Because from 2008, the new ten year plan for giving the game for use, by ways of concession, will begin, in 2007 there was an approach to a detailed analysis of the game use period so far on the hunting grounds in RM (users of the game in the hunting grounds, agreements for use of the game, special hunting- economic grounds, annual plans for implementing the special hunting -economic grounds etc.)

### **2.4 Future Activities**

With the Action Plan 2007-2009 for implementing the Strategy for Maintaining the Development of the Forestry in RM, the following activities have been included:

- Bringing a new Law on Forests;
- Bringing a new Law on Hunting;

- Bringing of all the By-Laws from the Law on Reproductive Material from Forest Types of Trees („Official Gazette of RM No. 55/07);
- On 12.03.2008, there is a plan to implement the action “Day of the tree-plant your future”, in which the citizens department will take an active part, with the support of the Government of RM, during which 2.000.000 seedlings are planned to be planted in all the municipalities of the Republic, while on 29.10.2008 there is a plan to implement that same action and 6.000.000 seedlings are planned to be planted;
- Preparing a methodology for performing a national inventory of the forests in RM;
- Preparing a Study for preventive and pre-suppressive protection of the forests from fires;
- Preparing a Study on forest lands which may be erode, and;
- Preparing a Study on the development of the forest path network in RM etc.

With the Program for expanded reproduction of the forests for 2008, there is a plan to perform the work and activities in the following scale:

- Planting trees on barren regions and lands which may erode on a surface of 850 ha;
- Спроведување на одгледни мерки со прореди во шумски култури на површина од 600 ha;
- Land reclamation of degraded oak forests on a surface of 150 ha;
- Repairing fire damage to forest surfaces and their artificial renewal on a surface of 1000 ha and prevention of the spreading of massive drying of forests and forest crops on a surface of 50 ha;
- Providing forest seedlings for private planting of trees and for the Ecology action 350.000 seedlings, and
- Protection of the forests and forest crops from plant disease and harmful insects, during which there is a plan to perform airplane destruction of the harmful pine processionary moth (*Thaumatopea pityocampa* Schiff.) in the pine forest crops on a surface of about 10.000 ha in most regions in the Republic.

In 2008, The Department of Forestry and Hunting will continue with its regular activities for follow ups of the health condition of the forests in RM in cooperation with Service for Reports, Diagnosis and Prognosis with the Faculty of Forestry in Skopje.

## **2.5 The State Inspectorate of Forestry and Hunting**

During the year 2007 The State Inspectorate of Forestry and Hunting has spent 2225 days supervising, and performed 3118 reviews as follows: 2076 reviews in state enterprises, 529 in private enterprises, 97 in private forests and 291 reviews with

natural persons which perform actions in connection with the Rulebooks from the area of forestry and hunting.

From the performed reviews 2899 logs have been made and 801 decisions have been brought, of which:

- 751 decisions for removing the defects;
- 50 decisions for temporary halting of the work;

The following has been submitted:

- demands on commencing legal actions and criminal proceedings - **223**,
- for legal actions - **204**, and 4).

From **223** demands for commencing legal actions, the following have been submitted:

- Against legal entities - **95**,
- Against natural persons - **109**.

The demands for commencing criminal proceedings have been submitted in accordance with the Law on Forests - **16** in accordance with the Law on Hunting - **3**.

Of the submitted reports against legal entities **95**, the most numerous are the ones which are for offences made against the:

- Law on Forests **83** i.e. **87%**,
- Law on Hunting **12** i.e. **13%**.

Of the submitted demands against natural persons **109**, the most numerous are the ones for offences made against the:

- Law on Hunting **96** i.e. **88 %**,
- Law on Forests **13** i.e. **12 %**.

### **3 Water economy**

#### **3.1 GENERAL**

Water economy can be basically defined as a complex composition of activities that are of an economic character and a character of public interest activities that are conjoined and are essential for the performance of all the other activities in the economic sector. The activities in the economic sector that are of a public interest according to the art. 17 of Water economy Law ("Official Gazette of the Republic of Macedonia" number 4/98) are: construction, maintenance and operation of water economy facilities and equipment that are related to water supply, soil irrigation and drainage; determination of protection zones; protection from the detrimental effects on water; protection of river beds and river banks as well as lakeshores; flood protection; erosion protection and arranging of heavy rainfall; extracting of sand, ballast and boulder in order to protect and improve the water regimen; supply with water resources which provide unique water regimen in a junction or a part of junction

and preparation of project documentation and surveys linked to the water regimen improvement.

### **3.2 STRUCTURAL REFORMS IN WATER ECONOMY ORGANIZATION ACCORDING TO THE WATER COMMUNITIES LAW AND WATER ECONOMY LAW**

#### **3.2.1 Factors for the Water Economy Law and Water Communities Law enforcement**

The reasons for enforcing the Water Economy Law and Law on Water Communities are as follows:

- huge financial liabilities of the existing water economy legal entities toward the employees, funds and the other trustees;
- the existing water legal entities used to perform activities which were not related to water economy;
- overemployment and inadequate staff;
- working in specific legal vacuum i. e. organisational form that hasn't been complied with the effective laws and regulations;
- operation of water irrigation systems in bad condition.
- low quality of irrigation services to the final water users;
- operation of water drainage systems in bad condition;
- problems and low percentage of fee payment.

Because of the above-mentioned reasons the Water communities Law was passed on July 23, 2003 ("Official Gazette of the Republic of Macedonia" number 51/03 and 95/05), and the Water economy Law was passed on December 29, 2003 ("Official Gazette of the Republic of Macedonia" number 85/03 and 95/05). These laws provide a basis for implementation of the structural reforms in the water economy.

The goal of the Water communities Law is to enable the owners and users of agricultural land to establish water communities. These water communities are to be established on an unsolicited basis. The water communities are established in order to use, administrate, maintain, reconstruct and extent the small systems for irrigation and drainage of the distribution and distribution network of the hydro-improvements' systems for irrigation and drainage. The water communities as public law corporations enable interest water management and are modeled and incorporated in the other European countries as well as in the other sectors in the Republic of Macedonia. It is predicted that these legal entities as non-profitable organizations gradually take activities of a public interest which are related to soil irrigation and drainage.

Goals of the Water economy Law are to enable economical management, usage, functioning and maintenance of the water, irrigation and drainage systems, definition of the range of services that the water companies give to the water users, preparation of terms and conditions for conferring the right to use the systems and facilities of the water companies and setting up terms and conditions for regular and successful working of the water companies and using their services on the part of the water users.

### **3.2.2 Organizing the water economy activities according to the Water Communities Law and Water Economy Law**

According to the Law for Water Communities in the area of using the irrigation water, which according to the requirements of the soil in certain areas in order to organize the drainage, Water communities were established as entities that are on an unsolicited basis, and which corresponds with the economic interest of the water community members. At water use, they appear as users regarding the subject that delivers water and/or services for soil drainage within the territory for which the water community is established. The members take care and organize the operation, management, maintenance, construction, reconstruction and extension of the small systems for irrigation and/or drainage and junction network of the improvements' systems.

The water community can be established on the part by individuals or legal entities which are the owner or user of more than the half of the agricultural land within the area of the water community, and which takes stock in the activities according to the Law. Two or more water communities can organize associations or other forms of alliances in accordance with the regulations of this Law.

The legal basis for institutionalizing and setting up the water economy is established according to the Water Economy Law at water delivery, operation and maintenance of the large, multifunctional and more complex irrigation and drainage systems. These water economies appear as legal entities which are self-governed subjects to public law governed by the water users through the Board of water users as an administrative body. The legal employment of the water economies is determined by the economic thinking and the principle of self-sustaining by securing incomes from the water fee for the quantity of delivered water.

By the establishment of water communities and their associations it is expected that the following results are achieved:

1. irrigation decentralization and participation of the final users in managing the irrigation water;
2. working transparency of the new subjects (in the management board of the water communities except for the water user members there are also local self-government representatives – municipality representatives);
3. to raise water users' awareness of personal responsibility and relationship to the irrigation infrastructure;
4. reduced prices for infrastructure maintenance;
5. reduced price of water fee and better percentage of payments;
6. efficient and on-time distribution of water to the final users;

### 3.2.3 Implementation of the Water economy Law

#### 3.2.3.1 Liquidation proceedings of the existing water economy legal entities

In order to implement the foreseen reform in the water economy in 2005 were opened proceedings for liquidation of insolvent water economies. In October 2007 the government of the Republic of Macedonia reached a decision to liquidate 4 water economy companies: VP "Strumicki sliv"-Strumica, VRO "Mantovo"-Radovis, VRO "Vodostopanstvo Ohridsko ezero"-Ohrid and JVP Gevgelisko Valandovsko Pole – Gevgelija.

#### 3.2.3.2 Establishment of new water economies according to the Water economy Law

Simultaneously with the procedures for liquidation procedures for establishing of new water economies have been also opened. The basic postulate for establishment of new water economies is a characteristic of the system/systems which will be transferred for management and use such as: system with large dams, system that is multifunctional which means it administers different categories of water users, system whose area is more than 5000 ha, system that needs deployment of professional staff and a system which is economically and financially sustainable in terms of the service that can be given and paid for.

For the purpose of the Water economy Law a procedure for establishment of water economies has been opened in 2007, such as: VP "Strumicki sliv"-Strumica, VRO "Mantovo"-Radovis, VRO "Vodostopanstvo Ohridsko ezero"-Ohrid and JVP Gevgelisko Valandovsko Pole – Gevgelija. They would cover the territories and the activities which were performed by these water economies before the liquidation.

#### 3.2.3.3 Establishment of water communities according to the Water communities Law

The process of establishment of water communities began at the end of 2004. Inclusive of 2007 overall 125 water communities were established whose area amounts to 61.701 ha.

The following chart displays the coverage with water communities of the water systems in Macedonia:

Ordinal number	Water system	Number of water communities			Area of the water community (ha)
		Registered water communities	Water communities in procedure	Water communities overall	
1	Bregalnica	23	0	23	20033
2	Tikves	40	0	40	15642
3	Polog, Gostivar	13	0	13	4689
4	Polog, Tetovo	23	0	23	8995
5	Struga	5	0	5	1680
6	Kicevo	2	1	3	660
7	Strumica	5	0	5	1419
8	Ohrid	2	0	2	1010
9	Bitola	1	0	1	1030
10	Skopje	1	0	1	320
11	Gevgelija	6	0	6	2803
12	Debar	1	0	1	1008
13	Resen	3	0	3	2412
<b>altogether:</b>		<b>125</b>	<b>1</b>	<b>126</b>	<b>61701</b>



### 3.2.3.4 Structure of water community members

The territory of the established water communities amounts to an irrigation area of 61.701ha. 16.912 farmers with an area participation of 25.587 ha and 63 legal entities with an area participation of 16.473 ha have signed water community membership statement, while the remaining are non-members of the water communities. The total farmer members that are water users in the region of the Tikves improvements' system amounts to 3.207 with an area participation of 9.493 ha, in the region of Bregalnica 3.238 farmers with 14.862 ha, in the region of Polog-Gostivar 2.133 with 3.312 ha, in the region of Polog-Tetovo 3.725 farmers with an area participation of 5.818 ha and in the other regions 4.719 farmers with an area participation of 7.091 ha.

The following chart displays the structure of the water community members and the area with which they participate.

Water system	Area of the water community	Individual farmers		Legal entities	
		members	(ha)	members	(ha)
Tikves	15,642	3,166	4,650	24	6,327
Bregalnica	20,033	3205	6667	16	8195
Polog-Gostivar	5,608	2,133	3,312	1	66
Polog-Tetovo	8,933	3,723	5558	4	273
Other areas	10.820	5400	4,685	18	1691
<b>Altogether:</b>	<b>61.701</b>	<b>17.627</b>	<b>24.872</b>	<b>63</b>	<b>16.552</b>

Source:Water Economy Directory, Information on undertaking reforms in the Water Economy Sector with implementation of the Water economy Law and the Water communities Law

## 3.3 IMPROVEMENTS' SYSTEMS FOR IRRIGATION AND DRAINAGE

### 3.3.1 IMPROVEMENTS' SYSTEMS FOR IRRIGATION

The total arable land in the Republic of Macedonia amounts to approximately 577.000 ha. By the Water Economy basis, it is assessed that the aforementioned area together with the existing improvements' systems and, in future, the new ones, could provide irrigation of about 400. 000 ha, which is 69% of the total arable land.

According to the technical documentation on which the systems are based, it was foreseen that 163 693 ha fertile land was to be irrigated, but the constructed basic installation (dams, accumulations, pump stations, magistral canals etc.) in an average dry year can provide irrigation of 144 894 ha agricultural land.

Depending on the time, dynamic, sources of financing and the other terms of construction, there are three periods characteristic in the construction of the improvements system for irrigation, such as until 1958, from 1958-1975 and from 1975 to date. During the first period 27 improvements systems were built which cover 19.026 ha. Typical for the second period is an intensive construction of

improvements system. During this period the systems “Tikves”, “Bregalnica” and “Strumica” (“Turija”, “Vodoca” I “Mantovo”) were built. These systems cover an area of approximately 68.448 ha. During this period were also built 46 smaller systems which according to the technical documentation provide irrigation of 39.514 ha. Over the third period 14 new systems were built (“Strezevo”), the detailed network in “Radovisko Pole” and modernization and expansion in Gostivarsko, Tetovsko and Kicevsko Pole, as well as more than 25 systems with small accumulations. These systems provide irrigation of 40.918 ha.

### **3.3.2 IMPROVEMENTS SYSTEMS FOR DRAINAGE**

The improvements systems in Macedonia were built due to protection and drainage of agricultural and communal land as well as other areas and due to managing of the water regimen, protection of the suburbs, through roads etc.

The drainage systems cover 82.195 ha. The construction of these systems took place over two periods. Over the first period until 1958 1.052 ha of drainage systems were built, and over the second period from 1958 until today were built 81.143 ha which means overall 82.195 ha. In “Skopsko Pole” the drainage systems dewater 6.600 ha, in “Pelagonija” 30.000 ha, in “Strusko Pole” 2.680 ha, in “Strumicko Pole” 9.000 ha, in “Kocansko Pole” 6.000 ha, in “Ovce Pole” 1.700 ha and in “Prespansko Pole” 1.800 ha.

### **3.3.3 CONDITION OF THE IMPROVEMENTS SYSTEMS**

The correct and orderly functioning of the hydro systems’ installation, which is of vital importance to the agricultural production, depends on its regular maintenance. The maintenance of the basic hydro systems’ installation has an important role in the realization of the irrigation and drainage plans. Because the most of the improvements systems are built in the past and due to the lack of continuous maintenance over the years their condition is very bad with the exception of “Bregalnica”, “Tikves” and “Polog”. Such condition of the installation makes their maintenance harder and more expensive. To restore them to a working condition so that they could fulfill their function, a lot of interventions and repairs on the improvements systems must be done. One of the main reasons for the bad condition is the bad financial condition of the water economies and organizations which manage them.

The improvements system “Bregalnica” is a system which with the existing water economy infrastructure (the dams Kalimanci, Ratevska Reka, Gradce and Mavrovica, magistral canals and the detailed network) can provide irrigation of 24.554 ha, from the designed 28.300 ha, in the area of Berovo, Kochani, Vinica, Shtip and Sveti Nikole, water supply in Berovo and generation of electricity. The condition of the dams together with the accompanied facilities is stabil and they fulfill their assigned function. In 2006 rehabilitation and revitalization of the hydromechanics and the electric equipment installed in the draining foundations of the “Kalimanci and “Ratevska Reka” dams has been performed. The condition of the right magistral canal whose length amounts to 98 km and of the left magistral canal whose length amounts to 35 km is good. With financial funds raised by the Macedonia Irrigation Rehabilitation and Restructuring Project reconstruction of these two magistral canals was performed.

The improvements system "Tikves" is a system which together with the "Tikves" accumulation, the built detailed network and the other smaller systems in the surrounding areas of Kavadarci, Negotino, Demir Kapija and Gradsko, and are irrigated from channel waters, cover a possible irrigation area of 14.531 ha. Some interventions have been done on this system by financial funds raised by the Macedonia Irrigation Rehabilitation and Restructuring Project. It has been done reconstruction of the collective magistral canal, of the left and the right canal and also of the water-seal.

The improvements system "Polog" is a system which together with Mavrovo Lake and the channel waters provide irrigation of 13.925 ha in the surrounding areas of Tetovo and Gostivar. The system consists of subsystems such as "Tetovsko Pole", "Gostivarsko Pole" and "Banicko Pole". In "Gostivarsko Pole" and "Banicko Pole" the water distribution is made through opened ground and concrete canals whose length is 360 km and underground pipeline whose length is 92 km. The subsystem "Tetovsko Pole" consists of constructions on the Vardar River, magistral canal "Radiovce-Bistrica" whose length is 26 km, water distribution and detailed 80 km long network and pump stations for irrigation of the surfaces under the canal. By funds raised by the Macedonia Irrigation Rehabilitation and Restructuring Project reconstruction of the canal "Radiovce-Bistrica" has been done.

The improvements system "Strezevo" supplies water for irrigation of 20.600 ha, water for the residents, for PEK "Bitola" and for the industry in Bitola. Due to permanently ongoing maintenance the basic installation ("Strezevo" dam, the main sewer with an overall length of about 61 km and main intake tunne;) of the improvements system "Strezevo" is completely functional and fulfills its function without any problems. The detailed pipeline network that irrigates 20.600 ha is in good condition and consists of 7 steel pipelines and 3 polyester pipelines, distribution and junction PVC pipelines.

The improvements system "Prespa" consists of two pump stations with constructions on Lake Prespa, constructions on Kurbinaska, Kranska and Brajcinska River and main, distribution and detailed water network. In current conditions 3.635 ha can be irrigated, which is 2.080 ha less than possible. Due to exploitation of long term (more than 40 years), atmospheric influence, poor construction materials and also because of the lack of continuous maintenance in the last 15 years the system is in an extremely bad condition.

The improvements system "Mantovo" is a system which along with the accumulation "Mantovo", small accumulations and channel water supplies for irrigation of 5.180 ha and about 3.000.000 m<sup>3</sup> for flotation of the "Bucin" mine. This system is also in a bad condition. The hydromechanic equipment on the "Mantovo" dam needs reparation and reconstruction and for its modernization technical documentation is already compiled.

The improvements system "Strumica" is a system which along with the accumulations "Turija" and "Vodoca", the small accumulations "Novoselka", "Hamzali" and "Ilovica" and channel water supplies for irrigation of 10.160 ha, water for the residents and the industry in Strumica as well as water for generation of electricity. The improvements systems in this region ("Turija", "Vodoca" and the other smaller systems) which are managed by the water economy company "Strumicki Sliv" from Strumica are also in bad condition. In the improvements system "Turija", there is a need of repair of the spillaway on the dam "Turija" (a main project has been prepared), reconstruction of the main hatch of the draining foundation and there is a

need to prepare a main project for repair and closing of the water penetrations in the vertical hatch-tower.

In the region of Valandovo-Gevgelija the improvements system "Udovo-Valandovsko Pole" covers an irrigation area of 4,372 ha, the improvements system "Gevgelisko Pole" covers 1.210 ha and the improvements system "Paljurci" 900 ha. The improvements system "Udovo-Valandovsko Pole" consists of a pump station on the Vardar River, main opened concrete pipeline, underground detailed network and pump stations for irrigation of agricultural land during high season. The improvements system "Gevgelisko Pole" provides water by including the waters from natural watercourses and with earth canals, it is brought to the surface for irrigation, as well as using the water from the river Vardar and pumping it to the surface for irrigation and with small accumulations. The improvements system "Paljurci" consists of the "Paljurci" dam, main pipeline and detailed pipeline network. In order to improve the condition of this system the Government of the Republic of Macedonia and the Government of the Federal Republic of Germany signed a Lease Contract to the amount of 8.180.670,00 Euro of which 6.646.794,46 Euro credit and 1.553.875,64 Euro grant for financing of the project "Program for irrigation of southern valley of Vardar River".

This project provides construction and reconstruction of 4 independent systems in the region of Gevgelija, Valandovo and Bogdanci, such as: improvements system "Miravci", "Udovo", "Negorvi" and "Paljurci" with a total area of 2.932,00 ha. The realization of this project begun in January 2003, and is to be finished in 2008.

In order to improve the condition in this region a Feasibility Study is prepared and is to be financed by credit from the Republic of Germany.

The improvements system "Lipkovo" is a system which along with the accumulations "Glaznja" and "Lipkovo", the built detailed network and channel water supplies for irrigation of 6.336 ha, water for the residents and the industry in Kumanovo and for generation of electricity. This system is one of the oldest in Macedonia. Because of the long use over the years interventions are required in order to restore it to a working condition. During the military actions in Kumanovo and its surrounding major damages have been done to the "Lipkovo" and "Glaznja" dams, the network, both the aboveground and the underground system elements. VRO "Kumanovo" that operates the system didn't repair the damages done during the military actions due to the bad financial condition. At this moment reconstruction of the hydromechanical equipment of the "Glaznja" dam is being done. Except for this reconstruction some other repairs are necessary on both the dams and the underground network which consists of two main canals and secondary network.

In the area around Prilep the agricultural land is irrigated by the improvements system "Prilepsko Pole" and few other smaller systems. The improvements system "Prilepsko Pole" consists of "Pesterica" dam, one main 30 km long pipeline, 100 km long secondary canals and 300 km long detailed pipeline network. This system provides irrigation of 5,440 ha. The system is in good condition but in order to irrigate a possible area of 5,440 ha expansion of the detailed pipeline network is required.

In the area around Kicevo the agricultural land is irrigated by the improvements systems "Kicevsko Pole", "Bigor Dolenci-Celopeci", "Drugovo" and "Zajasko-Gresnicki". These systems provide irrigation of 1,220 ha. The improvements system

“Kicevsko Pole” is a newer system and consists of constructions on Treska River, main 8,2 km long pipeline and distribution junction network 25 km long. The other systems are rather old and consist of constructions on Treska River, Zajaska River and Baciska River as well as of intake opened tunnels. Due to exploitation of long term, atmospheric influence, poor construction materials and also because of the lack of continuous maintenance in the last 15 years the systems are in an extremely bad condition.

In the area around Ohrid, the agricultural land is being irrigated by the improvements systems “Slatino”, “Ljubanista”, “Velmejsko-Belciski”, “Sateska”, “Koselsko-Lakocereski” and “Korabica”. These systems can irrigate 2.090 ha. The improvements system “Slatino” consists of a dam “Slatino”, two main canals and a detailed network. The improvements system “Ljubanista” consists of a pump station located in the springs of Sveti Naum, main concrete canal and distribution concrete canals. As irrigation water, the other systems use the water of the river Sateska, the Velmej springs, Zletovska River, Matica, Pesocnica, Koselska River and Skrebatska River. The water is being brought to the irrigation areas through pipelines, concrete and ground canals. The condition of these systems is also bad. Particular problems are the caverns in the accumulation area near the dam “Slatino”.

In the region around Struga the agricultural land is being irrigated by the systems “Sum” and “Lozani” and the so called old systems. These systems can irrigate 1.665 ha. The system “Sum” consists of a dam build using the Sum spring water and two distribution canals. Water from Crni Drim River is being taken from the system “Lozani” using pump stations and is being used for irrigation of the agricultural land. Other systems include constructions build on Vevcanska River and constructions for water uptake from the springs dzepin and Bela Voda and concrete and ground canals. The condition of these systems is also bad, especially concerning the old systems.

The condition of the improvements drainage systems is also not good. More than 15 years no measures have been taken in order to make these systems functional. In the region around Strumica the condition of the drainage systems is good due to a cleansing of the main and secondary canals in 2005 using means from the budget of the Ministry of Agriculture, Forestry and Water Economy as well as means donated by Sweden. This year, in an action made by the government of the Republic of Macedonia, the main canals in the upper and lower zones were cleaned as was the canal from the inflow of Vardar River to the village of Aracinovo near Skopje. In the area around Skopje a particular problem is the collection of electricity fees for electricity used by the pumps in Taor and Belvi, which are used for pumping of water from the region around Skopje to the Vardar River. This year, in the region around Bitola the 13<sup>th</sup> canal and the Logovardi canal, where 4.000ha agricultural land was under threat of flooding, have been cleaned using means from the budget of the Ministry of Agriculture, Forestry and Water Economy. Also in this region a problem is the pump station located on the 13<sup>th</sup> canal due to a low pump capacity and the inability of pumping the water out of the canal into Crna River, when the water quantity is high. Cleaning of other drainage canals is also necessary in the region around Bitola, as is the cleaning of the drainage system in the areas around Prilep, Struga, Prespa and the protection canal in Kocani.

### 3.4. COLLECTION OF WATER FEE AND IRRIGATED AREAS

The main reason for the bad condition of the irrigation and drainage systems is the bad financial status of the water economy companies and organizations which used to operate these systems. Due to the low collection of water fee most of the water economy companies have blocked accounts, unpaid salaries and unpaid dues for several months. The irregular collection of water fee repeated back several years. Because of it, the manager handling of the systems relied on basic interventions. These interventions influenced the working capacity of the irrigation and drainage systems which influenced the profit. The illustration bellow shows the collection of water fee in the last few years.

Ordinal number	Until October 30 year .....	Water fee		Collection percentage (%)
		planed (in MKD)	collected (in MKD)	
1	2007	117,747,587	24,131,804	21
2	2006	142,673,907	93,223,490	*65
3	2005	165,170,608	28,070,142	16,99
4	2004	242,022,913	23,757,807	9,82
5	2003	262,127,918	54,190,035	20,67
6	2002	221,648,509	51,613,680	23,29
7	2001	222,032,240	28,933,149	13,03
8	2000	388.049.347	82.022.911	21.14
9	1999	393.128.091	63.049.333	16.04
10	1998	471.784.901	52.561.104	11,14
11	1997	539.796.810	93.715.030	17.36
12	1996	499.372.810	98.771.200	19.78

Source: Water Economy Directorate, information on the state of improvements systems for irrigation and drainage and water economy reforms

\* The percentage of fee payment for public water supply for the year 2006 was 65%, although, one has to consider that this information is dated October 2007, i.e. the largest part of the fees are collected after the end of current irrigation season.

Not only the non-payment of fees, but also the reduction of the irrigated areas, contributes to the poor condition of irrigation and drainage systems. Because of the smaller amount of irrigated areas, smaller fees were planed and collected, which was insufficient for undertaking measures and activities to bring the systems in a functional state. The reduction of the irrigated areas was a result of the agricultural conditions (unsecured sale of agricultural products leading to indifference by the farmers to irrigate, plant these areas with cultures that are not irrigated etc.). The irrigated cultivation areas in the last few years are shown in the next table.

Ordinal No.	Year	Potential irrigation areas (in ha)	Planned irrigation areas (in ha)	Irrigated areas (in ha)
1	2007	123.864	34.220	22.161
2	2006	123.864	29.217	18.443
3	2005	123.864	37.247	20.739
4	2004	123.864	48.189	27.498
5	2003	123.590	48.189	23.160
6	2002	122.911	32.619	15.203
7	2001	122.494	42.741	23.929
8	2000	122.877	57.823	42.248
9	1999	123.126	57.553	36.146
10	1998	124.184	57.812	27.287
11	1997	124.184	71.265	51.665

Source: Water Economy Directorate, Information on the state of improvements systems for irrigation and drainage and water economy reforms.

According to the structure of the irrigated cultures, the increase in the irrigated areas is most distinct at vine plantations. In the year 2007, as compared to 2006, additional 3.000 ha of agricultural land under vine plantations were irrigated. An increase in the irrigated areas is also to be found in regards to the areas planted with cereal crops, i.e. about 1.000 ha more in comparison to the irrigation season of the year 2006. The structure of the irrigated cultures, referring to all irrigation systems in Macedonia, is shown in the next table.

Cultures	Rice	Alfalfa	Tobacco	Sunflower	Corn	Garden crops	Vine plantations	Fruit	Cereals	Beet	Soy	Other	Total
2006	2,440	2,943	917	264	3,920	1,956	3,592	1,194	420	50	319	319	<b>18,509</b>
2007	2,556	2,807	921	186	3,739	1,468	7,155	1,371	1,448	10	183	317	<b>22,161</b>

Source: Water Economy Directorate, Information obtained from water economies and water communities

### 3.5 WATER ECONOMY INVESTMENTS

Capital investments in water economy are made in the reconstruction and building of irrigation systems and building of dams. The building and reconstruction of irrigation systems and the building of dams, further to loans and donations, are financed by the Budget of the Ministry of Agriculture, Forestry and Water Economy, within the Annual Work Programs of the Water Economy Directorate.

The next Table displays the capital investment funds from the budget of the Ministry of Agriculture, Forestry and Water Economy, on the basis of the Annual Work

Program of the Water Economy Directorate, for the period 2004-2006, and the funds planned for the year 2008, in 1.000 MKD

Description	2004	2005	2006	2007	2008
Hydro system Zletovica	100.000	70.500	118.636	111.340	327,146
Hydro system Lisice	190.000	74.025	166.363	75.695	203,900
Irrigation of the Southern Valley of Vardar River	40.000	190.000	45.825	31.334	94,304
<b>Total</b>	<b>427.000</b>	<b>464.525</b>	<b>484.656</b>	<b>219.969</b>	<b>625,350</b>

**Source:** Budget of the Ministry of Agriculture, Forestry and Water Economy, 2004, 2005, 2006 and 2007

***By implementing the Program for Stimulation of Agricultural Development – financial support for the development of water economy in the year 2007 – the following results were achieved:***

- Payment for performed operations in the year 2006 for reconstruction of the hydromechanical and electrical equipment of the 3 dams and the education pipes in Bitola.
- Repairs of the hydromechanical and electrical equipment of the valves of the bottom outlet of the dams Turija, Vodocha and Mantovo.
- Preparation of the technical documentation
- Preparation of project assignments for feasibility studies (Hydro System “Konsko”, Hydro System “Slupchanska Reka”, Hydro System “Kadina Reka” and Hydro System “Orizarska Reka” and Hydro System “Jagmular”).

The funds planned for capital investments are allocated to the following projects:

**Project for irrigation of the Southern Valley of Vardar River** – refers to reconstruction and modernization of the irrigation systems for the agricultural areas of the southern region of the river Vardar. The goal of this project is the sustainable increase of agricultural production and the irrigation systems’ productivity, as well as the improvement of the living conditions of farmers in the southern Vardar valley. On the basis of the suggested projects for financial cooperation with the German government, the project was approved in 1999. Funds to the amount of 40 Million MKD were provided for from the Budget of the Ministry of Agriculture, Forestry and Water Economy for the year 2004, and 190 Million MKD for the year 2005. During the year 2006, funds to the amount of 45.8 Million MKD were used from the budget of the Ministry of Agriculture, Forestry and Water Economy and another 240 Million MKD as a loan from the KfW Bank for the project finalization.

For the year 2007, the Ministry of Agriculture, Forestry and Water Economy provided funds to the amount of 31.3 Million MKD. The first phase of the project is planned to be fully implemented by the end of 2007.

During the year 2007, the following system parts were finished:



- Main pipes of both systems
- Installation of the hydromechanical equipment with concrete manholes for both systems
- Hydrants with water meters in the system Miravci.

The compression water supply pipelines in the system Miravci and Udovo were manufactured, built and installed in April and May. The testing of the Miravci system pipelines also began in April. The rest of hydrants for the system Udovo are going to be installed in May. The finalization of both systems and the testing of the system Miravci is scheduled for the end of May. The testing of the Udovo system will be made after the installation of well pumps.

The building of the exploitation wells began in May 2007 and ended in June 2007. The building operations of the pump stations and the installation of pumps and the control-command building, the installation of pumps and hydromechanical equipment, the pump stations' and control-command building electrical equipment, the power supply line and the transformer are planned to start during the following months.

**The Hydro System “Zletovica” Project** is a multifunctional system and provides water supply for the population, as well as the industry in the municipalities of Kratovo, Probistip, Stip, Sveti Nikole, Zletovo, Karbinci and Lozovo, irrigation of 3.000 ha agricultural land and production of electric power and protection against floods.

The total budget planned for this project is estimated to be 115 Million €, where the Japanese government would participate with 74%, whereas, the Government of the Republic of Macedonia is supposed to provide the rest of the funds. Funds to the amount of 100 Million MKD for the year 2004, and 70,5 Million MKD for the year 2005, are provided for this project from the Budget of the Ministry of Agriculture, Forestry and Water Economy. For the year 2006, funds to the amount of 118,6 Million MKD are provided from the Budget of the Ministry of Agriculture, Forestry and Water Economy, as well as a loan in the amount of 500 million from the Japanese Government for the construction of an access road and dam, with supporting facilities and water supply system facilities. 111.3 Million MKD is provided from the Budget of the Ministry of Agriculture, Forestry and Water Economy for the year 2007.

During the year 2007, the following activities were finished:

- Finishing of Package 1 – access road from Zletovo to the dam “Knezevo” (reconstruction of the slide, setting up elastic protection fence, signalization system and protection network) – these operations have been assigned to Package 2 – dam and supporting facilities.
- Package 2 – dam and supporting facilities, contractors: consortium AD “Beton” and AD “Granit” –Skopje.
  - preparatory operations begun (mobilization, access roads and settlement construction)
  - construction of the drainage tunnel begun (excavation, concreting and building of the entry/exit construction)
  - ground outlet (entry and exit construction)
  - flushing facility (tunnel excavation, concreting)

- foundation
- body of dam
- operations in quarry
- dislocation of the Kratovo pipeline, in length of 800m, which enters the body of the dam.
- Package 3 – operations and pipelines for water supply of Stip and Sveti Nikole, contractors: consortium FZC 11 October – Kumanovo”, together with AD “Beton” and AD “Granit” – Skopje
  - mobilization and preparatory operations begun
  - operations of Operation 1 – operations for Probistip begun (flexing the river, concrete edging, construction works etc.)
  - operations of Operation 3 – operations for Stip and Sveti Nikole begun (flexing of the river, concrete edging, construction works etc.)
  - Operation Kratovo (designs, concrete and construction works)
  - operations on the intake pipelines for Stip and Sveti Nikole begun (excavation and pipeline installation)
- 30% of the expropriation (final and interim) for the year 2007 are scheduled to be finished.

**The improvements system “Lisice”** is a multifunctional facility. It is to be used for water supply of the population of the city of Veles, water supply for the surrounding villages, technical water supply for the industry, irrigation of 4100 ha agricultural land, revitalization of lake “Mladost”, providing a biological minimum for river “Topolka” and improvement of the micro-climate in the region. The construction of the dam “Lisice”, together with the supporting facilities started on 01.09.1991. For the purposes of construction of the dam Lisice, funds to the amount of 190 Million MKD were provided for the year 2004 from the Budget of the Ministry of Agriculture, Forestry and Water Economy, 74,025 Million MKD for the year 2005, 166,4 Million MKD for the year 2006, and 306 Million MKD as a loan from the Kingdom of Spain, for construction works for finalization of the supporting facilities and hydro mechanical equipment. Further to the dam construction and the construction of the supporting facilities, other works for construction of an irrigation system for 4100 ha agricultural land are planned.

To date, the following operations are finalized: regulation manhole of the exit construction, second phase concreting for the hydro mechanical equipment, reconstruction of the road to Caska, access road to Galerija, main collectors, exit construction, finishing of the dam crown, cleaning the accumulation area. Furthermore, the Technical Approval Commission is expected to control and approve the use of the Dam and the supporting facilities. During the following months, a public procurement for the inflow canal of Vranovska River will be made and the beginning of the construction is planned, if funds from the budget rebalance of Republic of Macedonia are provided.

What is planned for the following period is the construction of the junction arm of the Hydro System Lisice to the accumulation Otovica, as well as the construction of the irrigation system.

#### 4 Hydro-meteorological Directorate

##### *CLIMATIC REGIONS IN MACEDONIA*

According to the experiences of most climate classifications and the adequate approach for the territory of the Republic of Macedonia (G. Filipovski, R. Rizovski and P. Ristevski in Characteristics of the Climate and Soil Zones in the Republic of Macedonia, Skopje, MANU, 1996) we differentiate between the following climatic regions:

1. Sub Mediterranean Region (50-500)
2. Temperate Continental-Sub Mediterranean Region (up to 600m)
3. Warm Continental Region (600-900m)
4. Cold Continental Region (900-1100m)
5. Sub-Forest Continental Mountain Region (1100-1300m)
6. Forest-Continental Mountain Region (1300-1650m)
7. Sub Alpine Mountain Region (1650-2250m)
8. Alpine Mountain Region (under 2250m)

**The Sub Mediterranean Region** covers small agricultural areas and is limited to the most southern part of the Vardar Valley (the region Gevgelija and Valandovo, bordering with Demir Kapija), the region of Dojran and the southwestern part of the region of Strumica. It is characterized by favorable climate and soil conditions for production of early market gardening, vineyards, fruits etc.

**Continental-Sub Mediterranean Region**, together with the first zone, cover an area of 897.000 ha, i.e. 34,9% of the territory of the Republic of Macedonia. It covers the regions along the Vardar River, starting from Demir Kapija, ending with the northern border (region around Demir Kapija, Veles and Skopje Valley), smaller areas around Pcinja River, parts along the lower and middle flow of Crna Reka, along the River Bregalnica and its influents. It is characterized by cold and moist winters and hot, rainless summers, with favorable climate and soil conditions for agricultural production.

**The Warm Continental Region** covers an area of about 704.000 ha, i.e. 27,4% of the territory of the Republic of Macedonia. It covers the regions of the valleys of Polog, Kicevo, Debar, Struga, Ohrid and Prespa, as well as Pelagonija.

It represents a bridging region between the Mediterranean and the Continental climate, i.e. a region of dominating warm continental climate and mild mediterranean influence (manifested by the mediterranean pluviometric regime). Corn, fruits and vine appear in these regions.

**The Cold Continental Region** covers an area of 250.000 ha, i.e. 13,3% of the state territory. It is represented by lower parts of mountains, where the landscape is mountainous, with a geological substrate of compact rocks. According to the climate

indicators, this region is colder and moister than the previous one, and it is dominated by cold continental climate, mildly influenced by the mountainous climate.

**Sub-Forest Continental Mountain Region** covers an area of 250.000 ha, i.e. 9,7% of the territory. This region is the adequate climate zone for beech forests.

**Forest-Continental Mountain Region** covers an area of 10,4%, i.e. 269.000 ha. It is a region with beech forests. It covers different areas of mountainous landscape all over Macedonia.

**Sub Alpine Mountain Region** covers an area of 97.000ha, i.e. 3,8% of the territory of the Republic of Macedonia. It is widely spread on several forest areas, mostly on conifers (fir tree, spruce, pinus peuce (Macedonian pine) and mountain pine).

**Alpine Mountain Region** covers areas higher than 2250m and spreads on an area of 13.000ha, i.e. 0,5%. No forests are found in this region. It is a region of mountainous Gramineae on the mountains: Kozhuf, Nidze, Baba, Deshat, Korab, Shara and Jakupica. The rainfall varies between 500 and 800 mm, however, it is unequally spread, and thus, land irrigation is needed for intensive production. During the last few years, droughts and dramatic decrease of water resources were quite frequent, which all led to irrigation decrease.

Limiting climate factors of great importance for agricultural production are the late spring and early autumn frosts, as well as the extremely low winter temperatures, which can be as low as  $-31,6^{\circ}\text{C}$  and the high summer temperatures, sometimes up to  $44.5^{\circ}\text{C}$ .

Such temperatures often caused damage on vine and fruit plantations in the last few years.

The estimation of the weather conditions for the period under analysis (June 2002 – June 2003), observed according to the main climate elements (air temperature and rainfall) imply that that this is a period with different medium monthly air temperatures in different state regions, and all are higher than  $3^{\circ}\text{C}$ , mostly during spring and summer months; or lower by  $4^{\circ}\text{C}$  in winter, which is the case in Prilep, Demir Kapija and Stip.

These oscillations in medium monthly air temperatures have the same influence on the medium maximum and minimum air temperatures, also higher than  $0,7-1,6^{\circ}\text{C}$ , as analyzed and compared to the perennial annual average.

Another important climate parameter for this period is the rainfall, which is above average in all regions of the Republic, especially during the summer of 2002; and below average in November and during the months after February, till the end of the period under analysis.

On an annual level, the comparison between the annual and the average amounts shows that the annual amounts are higher at all measuring points, by  $44,1\text{ l/m}^2$  in Prilep,  $389\text{ l/m}^2$  Strumica, i.e.  $384\text{ l/m}^2$  in Gevgelija.

The deviations in both air temperature and rainfall are considered in accordance with the perennial average (period of 1961/90).

#### **4.1. AGROMETEOROLOGICAL ANALYSIS OF WEATHER CONDITIONS IN THE REPUBLIC OF MACEDONIA DURING THE PERIOD BETWEEN JANUARY AND DECEMBER 2007**

The general estimation of weather conditions during the period under analysis, observed according to some meteorological parameters (medium monthly and average annual maximal, medium monthly and average annual minimal and medium monthly temperatures, as well as monthly and annual rainfall) on an annual basis, imply that it is a year when average annual maximal air temperatures are higher by 1,4 – 2,5 °C, and the average annual minimal temperatures by 0,2 – 1,5 °C. This leads to the conclusion that there is a mild atmosphere warming.

The medium annual air temperatures in different regions show smaller deviations in the amounts higher by 1,1 – 1,6 °C.

The rainfall values are unequal throughout the year, so the overall annual results, at all measuring points, are above average by 30-100 l/m<sup>2</sup>, except in Bitola and Gevgelija, which have less rainfall compared to the perennial average (1971/2000) by 70 i.e. 60 l/m<sup>2</sup>.

However, the same parameters, observed by months, show different variations and biggest temperature difference of up to 5 °C in the months January and February, as well as in July. At the same time, the rainfall values show a really unequal distribution. Almost during every month, the rainfall values are below average, with the exception of October and November (with rainfall of up to 188 l/m<sup>2</sup> in Demir Kapija), and over 100 l/m<sup>2</sup> measured in the other meteorological stations, which adds to the annual value, but is not enough for agricultural production.

It is due to this kind of rainfall distribution that this represents a year of drought, marked by the extremely low agricultural yields, especially in relation to the autumn wheat.

The text changes apply to the climate characteristics of Macedonia arising from the latest observations and scientific views of the Macedonian climate and the latest climate zones classification, 8 instead of 3 climatic zones, which remain same as in last year's report. There are 12 regional (main) meteorological stations in the Republic of Macedonia, which are the subject of analysis of this report.

The estimation of the weather conditions during the period under analysis, observed through some meteorological parameters shows that the average annual temperatures in the entire territory of the Republic are higher by 0,6 °C, except for Gevgelija, where the deviations are higher and amount to 1,3 °C.

By analyzing the average monthly air temperatures on a monthly level, they show the biggest deviations, which are up to 2-3 °C during the month of June, and deviations below the average, up to 2 °C, are shown during May 2007.

Three stations, distinctive for two regions in the Republic, as the most famous grain fields, and Skopje, as the main administrative center, are shown in the following chart.

## SKOPJE 2007

Indicator	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Medium monthly MAX.	10.6	10.7	15.3	21.7	25.0	31.0	35.3	32.6	24.9	17.8	7.9	3.6
Medium monthly MIN.	2.0	2.6	4.5	7.3	13.0	16.8	18.6	18.0	11.8	8.7	1.5	-0.9
Medium monthly temp..	5.1	6.5	9.6	14.3	18.6	23.9	27.1	25.1	17.7	12.7	4.3	1.0
Monthly rainfall values	30.0	21.0	31.0	7.8	96.2	34.8	1.2	52.7	27.2	140.0	69.4	14.6
Medium monthly / AVERAGE	0.6	3.1	7.5	12.6	17.6	21.5	24.1	23.6	19.2	13.2	6.6	1.7
Rainfall / AVERAGE	25.1	31.4	26.9	40.7	40	39.5	39.4	33.1	31.5	39.6	52	42
<b>Temp. difference.</b>	<b>4.5</b>	<b>3.4</b>	<b>2.1</b>	<b>1.7</b>	<b>1.0</b>	<b>2.4</b>	<b>3.0</b>	<b>1.5</b>	<b>-1.5</b>	<b>-0.5</b>	<b>-2.3</b>	<b>-0.7</b>
<b>Rainfall difference</b>	<b>4.9</b>	<b>-10.4</b>	<b>4.1</b>	<b>-32.9</b>	<b>56.2</b>	<b>-4.7</b>	<b>-38.2</b>	<b>19.6</b>	<b>-4.3</b>	<b>100.4</b>	<b>17.4</b>	<b>-27.4</b>

## BITOLA 2007

Indicator	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Medium monthly MAX.	10.9	10.0	13.7	18.5	23.4	29.4	33.1	31.4	24.5	17.9	10.1	2.8
Medium monthly MIN.	-1.0	0.7	2.1	4.2	10.2	13.3	14.6	14.8	9.3	7.0	1.2	-2.7
Medium monthly temp..	4.5	5.0	8.0	12.0	16.9	22.2	25.4	23.5	17.1	11.8	5.1	-0.1
Monthly rainfall values	32.7	21.5	42.5	21.1	46.0	40.2		47.0	13.0	119.2	82.5	64.2
Medium monthly / AVERAGE	-0.8	2.1	6.2	10.8	15.7	20.0	21.9	21.3	17.1	11.4	5.6	1.2
Rainfall / AVERAGE	46.6	52.3	46.8	50.5	56.2	37.2	39.2	36.6	40.8	61.9	75.1	65.0
<b>Temp. difference.</b>	<b>5.3</b>	<b>2.9</b>	<b>1.8</b>	<b>1.2</b>	<b>1.2</b>	<b>2.2</b>	<b>3.5</b>	<b>2.2</b>	<b>0.0</b>	<b>0.4</b>	<b>-0.5</b>	<b>-1.3</b>
<b>Rainfall difference</b>	<b>-13.9</b>	<b>-30.8</b>	<b>-4.3</b>	<b>-29.4</b>	<b>-10.2</b>	<b>3.0</b>	<b>-39.2</b>	<b>10.4</b>	<b>-27.8</b>	<b>57.3</b>	<b>7.4</b>	<b>-0.8</b>

## GEVGELIJA 2007

Indicator	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Medium monthly MAX.	15.0	12.8	17.1	22.5	26.9	32.7	36.8	34.6	27.6	21.3	13.3	8.4
Medium monthly MIN.	1.7	3.7	4.8	6.4	13.3	17.4	18.8	19.1	14.1	10.4	4.2	0.9
Medium monthly temp..	7.4	7.7	10.6	14.7	20.3	25.5	28.5	26.7	20.2	14.9	8.1	4.2
Monthly rainfall values	16.8	34.5	28.0	18.5	69.5	98.8		70.5	13.7	128.8	74.5	34.9
Medium monthly / AVERAGE	3.8	5.6	8.8	13.4	18.5	23.1	25.4	24.7	20.2	14.4	8.8	4.9
Rainfall / AVERAGE	49.5	61.2	57.8	54.3	59.4	42.3	30.5	31.6	33.1	70.1	86.7	73.1
<b>Temp. difference.</b>	<b>3.6</b>	<b>2.1</b>	<b>1.8</b>	<b>1.3</b>	<b>1.8</b>	<b>2.4</b>	<b>3.1</b>	<b>2.0</b>	<b>0.0</b>	<b>0.5</b>	<b>-0.7</b>	<b>-0.7</b>
<b>Rainfall difference</b>	<b>-32.7</b>	<b>-26.7</b>	<b>-29.8</b>	<b>-35.8</b>	<b>10.1</b>	<b>56.5</b>	<b>-30.5</b>	<b>38.9</b>	<b>-19.4</b>	<b>58.7</b>	<b>-12.2</b>	<b>-38.2</b>

As a meteorological factor of great importance for agriculture, the rainfall has values which show an increasing tendency, and are higher in the entire territory, from insignificant 10mm, up to 217mm in Ohrid.

Other places with bigger deviations are: Strumica with 60mm, Gevgelija with 57 mm and Demir Kapija with 20mm rainfall more than the perennial average.

What is distinctive for the rainfall is that the biggest deviations can be observed during October 2003, when the monthly deviations were 60 to 138mm, at all measuring points. This resulted with floods in the Republic.

## **VI. HORIZONTAL ISSUES AND ADMINISTRATIVE-CONTROL SYSTEMS OF THE AGRICULTURAL POLICY**

The implementation, operation and control of the Common Agricultural Policy aim for development and strengthening of particular administrative capacities. The National Strategy for Agricultural and Rural Development for the period of 2007-2013, have a detail review of the measures with the expected results and the planned activities.

### **1 Institutional strengthening (of MAFWE)**

**The horizontal and vertical reorganization into central and regional level of the MAFWE's sectors** – The aim is to implement a functional structure according to the needs of the newly delineated liabilities in the EU accession process.

The horizontal reorganization of MAFWE means creating new organizational divisions for secretarial support:

- The sector for agricultural policy and agricultural informational system analysis should provide an analysis for agricultural policy and rural development formulation, support for preparation of projects, elaboration of fiscal implications for political options and legal accession, AIS implementation support and organized access toward information flow, as well as inclusion of advisory services issues, research, education and training;
- Administrative Secretary which will include the newly implemented Sector for Human Resources and Budgetary Planning, as well as the existing sectors and units for common and general issues (legal sector), and
- Assessment of the efficiency and changes in the internal procedures (especially of the general services for budgetary planning, accounting and internal revision).

**Enhancement of the human resources** – The aim is to enhance the human resources at MAFWE, in both quantitative and qualitative aspects, especially to those who have the top position to conduct the complex assignments in the forthcoming period.

**MAFWE's regional services** – The Ministry for Agriculture, Forestry and Water Economy has 33 regional units throughout RM. In the forthcoming period in MAFWE there will be a redefinition of the positions, capacities and liabilities according to the agricultural policy and rural development aims, in order to implement a regional access for rational assets utilization and increased efficiency of MAFWE's activities.

### **2 Administrative Control Systems (AFSRD, Inspection services, IACS, URAH, LPIS)**

With an aim for more successful realization of the agricultural policy and rural development policy measures, Republic of Macedonia has taken or planned particular changes in the institutions and organizations which are part of or under MAFWE:

- Implementation of a Paying Agency,

- Restructuring of the Agricultural Stock Exchange.
- Inspectorates – strengthening the State Agricultural Inspectorate, as well as the remaining Inspectorates (veterinarian, phyto-sanitary, forestry and water economy) regarding increasing the number of the human resources, equipment and training. The aim is to obtain an adequate level and quality in the inspection area in accordance of the good European practices and assets rationalization from different MAFWE’s inspectorates,
- State Phyto-sanitary Laboratory (SPhL) – strengthening the capacities of State Phyto-sanitary Laboratory, regarding increasing the human resources, equipment and training courses, as well as definition of the interrelated affairs and remaining Phyto-sanitary units, the Department of Seed and planting materials and relevant inspectional services. The purpose is to provide an efficient phyto-sanitary control and protection from pests, pesticide, and seed and planting material quality control, and
- Sector for agricultural arable area and pastures management - to implement effective measures for agricultural policy, aimed towards creating functional agricultural market (especially market in a state ownership), that manages the pastures in RM and that organizes implementation of the system for registration of the agricultural areas (System for identification of the agricultural areas).

**Agency for financial support and rural development развој (AAFSRD) - AFSRD** is established in accordance with the Law on the inception of the Agency for Financial Support and Rural Development (Official Gazette of the Republic of Macedonia” No. 72/11.06.2007). Herewith, an efficient management with the financial assets from the Budget of the RM is enabled, as well as managing with the assets from the pre-accession support of EU aimed for rural development.

The Agency is responsible for the following:

- Conducting measures for the direct payments in the agriculture;
- Interventions on the market of agricultural products;
- Conducting measures for rural development;
- Realization of the assets from the pre-accession support of EU aimed for rural development;
- Conducting measures of the state support in agriculture

For accomplishment of the liabilities, the Agency is performing the following activities:

- Accession, evidence and processing of the financial support’s applications;
- Approval for assets payment;
- Organizing financial and accountancy activities;
- Internal revision;
- Organizing, conducting and coordinating of the administrative and technical controls, as well as control on the spot;
- Data gathering and processing;
- Running data bases and registry;
- Reports and analyzes preparation.



For conducting the liabilities, the Agency is performing the following acts:

- Publishing advertises and criteria for the allocation of the financial support;
- Approval of the financial support according the criteria;
- Concluding financial support's agreement with the users;
- Payments;
- Field control before and after application approval;
- Approval for the reasonable financial costs sooner than the financial payment;
- Following of the project realization;
- Running acts against the users who have used the financial assets in opposition of the agreement.

The assets for financing of the Agency's action are provided by the Budget of the Republic of Macedonia. Agency's activities could be financed from other sources in accordance with Law, as well as from the Budget of the European Union in accordance with the criteria of the bilateral agreements conducted between Republic of Macedonia and European Union.

In the forthcoming period, the established functional Agency should obtain a claimant for payments accreditation, control and revision of the national policies realization (Agricultural Support Programme and measures for rural development), as well as, IPARD measures for rural development.

**The integrative administrative control system** should cover all of the submitted supports' applications for, with a detail analysis of the administrative aspects, controls on the spot and if it is attribute, to be enable confirmation through air or satellite detection.

This system is contained by five elements (Council Regulation 3508/92):

- a. computer data base which keep the supports' applications for each agricultural holding;
- b. system for identification of agricultural areas i.e. system which allow locating and monitoring of the areas, as well as enable computerizing controls on the spot;
- c. system for identification and animal registration, which allow for supports' applications to be checked and control on the spot;
- d. applications for support over payment per unit capacity;
- e. Administration for efficient implementation of the plans for registration and identification; integrate system for administrative control and field inspections.

### **Establishment of the Agricultural Information System (AIS)**

The established subsystems for integrated Agricultural Information System (AIS) are consisted of: Farm Accountancy Data Network (FADN), Agricultural Market Information System, Agricultural Statistics (including the support towards the economic accounts in the agriculture) and register integration (farm registers/farm bookkeeping, identification and registration of animals, system for monitoring and managing vineyards, direct support users, and system for identification land parcels).

The administration necessary for managing the CAP financial flow under the EAGF (European Agricultural Guarantee Fund) should fulfil certain requests:

- The Paying Agency shall be accredited according the Community regulations (Council regulation no. 1290/2005) and shall be prepared in order to provide certain guarantees since:
- The request acceptance and the compliance with the Community regulations are checked before providing the payment;
- The payments are accurate and completely registered within the accounts; the necessary documents are submitted within the time frame and in the form set with the Community regulations;
- The evidence for payments justification shall be conducted, and it should comprise the conveyed administrative and physical controls;
- Macedonia shall inform the Committee for the body responsible for issuing and withdrawing the accreditation of the Paying Agency – certificate body (Committee regulation 1663/95).
- In order to implement the Farm Accountancy Data Network, Macedonia should establish a Liaison Agency, which will:
- Be prepared for developing a plan for economies selection from where the data will be gathered and to report for the conveying of the plan.
- Verify the farms data.
- Macedonia shall establish a National Committee for data networks, responsible for economies selection for gathering the data.

### **3 Association within the agricultural-food sector (Commercial forms of association, Producers' organizations, Cooperatives, Chambers of Commerce)**

Pursuing the Law for civil associations and foundations, the individual farmers can become associated in order to present their common interests, including the consultancy and education, as well as their common interests towards marketing, storing and packaging. The associations can not deal with trade and production, and could be established as legal entities for those purposes.

A measure which is financed by national funds supports establishment of producers' groups, i.e. associations of plants and livestock producers. The financial support is provided for the acknowledged producers of plant and livestock commodities for the first four years of their establishment. Groups of producers capable for acknowledgement are those legal entities which establish obligatory common regulations, stated with the charters' appendix and signed by all members. Those regulations are in relation to the common production (especially the usage of race, sorts, raw materials, growing practices, etc.), sorting and treating, packaging and production marketing, and production information (especially for harvesting, inventories and sales). Capable for acceptance would be the producers' groups with minimum number of members (it can differ for production of different commodities and livestock) and which have minimum joint production and minimum area, the both identified with the commodities and livestock production.

The annual aid is identified as percentage of the annual production value and for the first; second, third and fourth year will reach digressive annual percentage of the production value up to identified maximum limit. The first instalment payment should be performed one year after the signing date of the agreement for financial support with the Paying Agency.

## VII. INFORMATION-COMMUNICATIONS SYSTEMS AND KNOWLEDGE TRANSFER

### 1 Science and Research

In accordance with the social and economic changes, priority has been given to production model development by improving the agricultural production quantity and quality. Funds for programmes proposed by the research intuitions shall be allocated on the basis of the Law on Scientific and Research Activity.

The research and development institutions that implement research for agriculture and forestry development support programmes are the following: the Institute of Agriculture – Skopje, the Institute of Cattle Breeding, the Tobacco Institute – Prilep, and the Veterinary Institute. The agricultural research institutions have around 300 people employed with them, whereby 40% have higher education, MA, and PhD. Except for the institutes, part of the agricultural research is implemented by the higher education institutions.

**The Institute of Agriculture** realizes mainly four activities: scientific, publishing, applicative, and production. The scientific activity is mainly directed towards finding technical-technological solutions and their application in production. The obtained knowledge in genetic variability of domestic populations and introduced varieties of the more significant field, vegetable, vine, and fruit varieties, enable the scientific work to be focused on the creation of new genotypes of the entire agricultural crop production with better yield and quality. Resulting from the previous selective work, the Institute has created and has been acknowledged with numerous field and **vegetable crop** varieties. The Institute's applicable activity is mainly done in the experimental and productive economies and other agricultural organizations. In its experimental and productive facilities the Institute produces various field, vegetable, and fruit types as well as grapes and wines.

**The Tobacco Institute in Prilep**, which is one of the oldest institutes on the Balkans (83 years history), contributes to the tobacco being the leading agricultural product in the export of the Republic of Macedonia through its scientific and applicative activity in all segments of the production, processing, and maintenance of the variety and quality of small leaf oriental tobacco.

The Institute has its experimental field on production of sorting seed, glasshouse, complete laboratory, meteorological station, and library. It is included in the higher education institutions as an associate in specialization, MA, and PhD theses, but also for advisory service for the tobacco producers.

**The Institute of Cattle Breeding** has developed electronic tagging and a traceability system, and for this activity to be expanded it has been proposed that a central office with computers and database operators who shall enter the details on a regular weekly basis for each farm, be opened. The Institute participates in a 2.5 year research and technology transfer project which has the purpose of increasing the small farmers' profitability in different enterprises.

#### **Veterinary Institute – Veterinary Laboratories**

The Veterinary Laboratories within the frameworks of the Faculty of Veterinary Medicine – FVM implement the quality system in accordance with the ISO/IEC 9001/2000 standard which was certified by the certification body BSI (British

standard institution) on 02.06.2005, and it is implementing the ISO/IEC 17025 standard at the moment.

The Veterinary Institute was fully reconstructed with the following laboratories: Laboratory for Bacteriology, Laboratory for Virology, Laboratory for Serology, Laboratory for Parasitology and Parasitic Diseases, Laboratory for TSE (transmissible spongiform encephalopathy) Testing, Laboratory for Diagnostic Testing of Diseases in Fish, Bees, and Game, Laboratory for Animals' Hygiene and Environment Protection, Laboratory for PCR and RT-PCR Testing, Visual Diagnostic Cabinet.

The facility within FVM was reconstructed as the Food Institute with a Laboratory for Microbiology and Parasitology, Laboratory for Residues and Contaminants, Laboratory for Food Quality Analysis, Laboratory for Radiobiology, Laboratory for Milk Quality Testing.

Many trainings for the responsible persons were carried out for the purpose of introducing them to the ISO/IEC 17025/2006 standard and for them to acquire operation knowledge according to the written documentation (quality management, certain procedures, and similar).

Both laboratory information systems were upgraded for improved testing including substance traces' quantities in the samples, testing methods, registers for every step of the testing starting with the preparation of the specimen by trained analysts until the final results are obtained, in accordance with the ISO/IEC 17025/2006 standard requirements.

The FVMS\_ISO\_database database within FVM was created with the purpose of collecting and continually updating all necessary data for the ISO/IEC 17025/2006 standard.

Every year, the employees at the Veterinary Institute and the Food Institute participate in testings that check their expert knowledge and which are organized by the association of reference laboratories and not only in reference to methods that need to be accredited in the near future, but also for a large number of other laboratory testing methods.

All institutes have international connections and enjoy international projects' support. Donors fund networking with neighboring countries (SIDA, regional statistics) or training in dairy and livestock production (USAID with NAPMDP as training center for technicians) and between producer organizations (SIDA, the Macedonian National Organization of Farming with the Swedish Farming Union).

The Research Institutes are affiliated with the Faculties and are very poorly resourced by the Government. All public research activities, including agriculture, are financed by the Ministry of Science and Education. The financing method via the Ministry of Science and Education had been changed recently, now it only provides the salaries together with awarding funds for programmes and sectors in accordance with the agricultural research strategy. Any organization or individual can submit an offer or proposal for the realization of a research project. Government funds salaries which however constitute only about 20 percent of the institutes' total budgets, with the remainder coming from project funds. The funds for the research projects are obtained in accordance with the proposed programmes and through a public tender procedure.

Through the Agricultural Support Programme the Ministry of Agriculture, Forestry, and Water Economy authorizes the educational, scientific, and research institutions to carry out scientific projects which have the purpose of improving the productivity with funds that originate from the regular annual programmes of their sectors and directorates, in the amount of 5.5 million denars (equal to € 89.430) per year. The projects include maintenance of a gene bank, production of virus free certified planting materials, analysis and testing of plants for presence of diseases and protection against pests, tobacco research, livestock breeding, etc. Although some of these activities resulted with a certain improvement with the plants and livestock, the general low levels of productivity suggest a highly low return on the total investment in the past. Allocated to different programmes of the ministry there is small evidence of coordination in the planning of the measures and evaluation of the research efforts' influences of the Ministry of Agriculture, Forestry, and Water Economy in reality. Only 8% of the total public budget expenses in agriculture (1,736 million denars – equal to € 28.227) were intended for agricultural research and education. In comparison to the Gross Domestic Product, the part of the funds that was allocated to agricultural research and education amounted to only 0.40%.

## **2 Secondary and Higher Education in Agriculture**

The Macedonian education system, under the authority of the Ministry of Education and Science, has undergone reforms towards modernization of the syllabus and educational activities. In the course of 2004, the Government adopted a national programme for the development of education for the period of 2005–2015 for the total reform of this area based on the processes of democracy, decentralization, autonomy, pluralism, multiculturalism, and globalization, as well as international education standards of knowledge and skills and according to the principles of lifelong learning.

### **2.1 Agricultural Secondary Schools**

Agricultural Studies are present in the state secondary schools of the country. There were 6 different agricultural education programmes in 10 cities in the Republic of Macedonia for agricultural education. Higher education in agriculture does not attract very high attention with the new generations and every year more than 30% of the free positions are left vacant. Most of the students who are enrolled in agricultural secondary schools come from the rural areas. Around 10%-15% of the students that have enrolled do not finish their education due to different reasons.

### **2.2 Agricultural University Education**

The Macedonian system of agricultural higher education encompasses five education institutions: the Faculty of Agriculture and Food – Skopje, the Faculty of Veterinary Medicine – Skopje, the Faculty of Forestry – Skopje (part of “Ss Cyril and Methodius” University in Skopje), the Faculty of Biotechnical Sciences – Bitola (part of the “St. Kliment Ohridski” University in Bitola), The Faculty of Agriculture (part of the “Goce Delcev” University in Stip) and the Center of Polytechnic Studies (part of the State University of Tetovo). The higher education institutions are improving the study

standards and curriculums in order to achieve compatibility with the EU. The Law on Higher Education that was amended and supplemented in 2003<sup>21</sup> has provided a framework for implementation of the Bologna Process<sup>22</sup> principles.

The development system includes cooperation with education institutions from the aspect of curriculum building, student exchange, sponsoring domestic students for further education abroad etc. The faculties' educational activities are partly financed by the Ministry of Education and Science, while the largest part of about 60% of the total amount of 4.4 million euro that were spent in 2005 came from their own incomes.

These changes need to provide the necessary number of new specialized professionals necessary for the activities of individual firms, small and medium enterprises in the food industry as well as for scientific work in specialized institutions.

### No of student enrolled in the higher education system <sup>23</sup>

Faculty	Year 2003/2004	Year 2004/2005	Year 2005/2006	Year 2006/2007
Faculty of Agriculture and Food in Skopje	1,306	1,156	924	1057
Faculty of Veterinary Medicine in Skopje	359	339	324	329
Faculty of Biotechnical Sciences in Bitola	865	841	930	835
Faculty of Forestry in Skopje	698	804	726	838
Center of Polytechnic Studies in the State University of Tetovo*	/	/	116	/

## 3 Advisory and Consulting Services

### 3.1. Public Institutions (faculties, institutes)

In contrast to the past when the advisory services in the agricultural sector were mainly under authority of the public sector institutions such as the Agency for Promotion of Agricultural Development and the scientific institutions, in recent times the different categories of advise provides in agriculture take their place in the country's advisory services. In conditions of limited budget funds with the public institutions, the individual economy entities, the associations of farmers and international donator organizations, although still with a limited service offer, insufficiently differentiated methods and target groups, and limited effects in

<sup>21</sup> Official Gazette of the Republic of Macedonia No 64/00 and 49/03

<sup>22</sup> The Faculties have carried out reorganization of departments, studies, student groups, and programmes as well as introduced a credit transfer system which is implemented in accordance with ECTS.

<sup>23</sup> Source: State Statistical Office. The State University of Tetovo has available data only for 2005/2006

satisfying the advice demand, become an increasingly significant factor in the advisory activity.

It should be noted that the entities which have an additional activity as advisory service providers realize additional incomes from the projects' support (especially from foreign donors). Due to the momentary conditions (economic and demographic) in the agricultural sector, although the services are directly or indirectly intended for farmers, it is difficult to carry out collection from the individual farmers, an exception to this are the cases when the service is connected to physical exchange of goods.

Unlike the Agency for Promotion of Agricultural Development, the remaining public institutions (such as the institutes and faculties) reduce the advisory activity to an additional activity of their research, i.e. educational functions. On the other hand, seed, propagating material, fertilizers and mechanization' suppliers, as well as the veterinary stations are the most active private advisory service providers in the rural areas. The individual enterprises include different categories of service providers. The most relevant, although still limited to the country level, are the individual advisors and consulting firms (agricultural engineers for primary and secondary production, economists, soil specialists, plant protection specialist, veterinarians etc.) who in certain cases also use laboratories and professional equipment. Usually the frequency and distribution (number of advisors, range of the availability of a certain expertise) of an advice provided according to this category are directly related to the level of economic and demographic development of certain regions, with a larger concentration in places where agriculture is successful and economically significant in the region. In relation to that, this type of services presents a segment of the commercial and/or export oriented production system (such as in Gevgelija, Bitola, and Strumica) or where the production is specialized (for example: Kavadarci for vine grapes). Their target groups are progressive farmers and agro-processors. In these regions advice are also provided by the raw materials' suppliers (seed and planting materials, fertilizers, agro-chemicals) and mechanization and equipment suppliers, as part of company's before and after sale policies.

### **3.2 Agency for Promotion of Agricultural Development**

The Agency for Promotion of Agricultural Development was established in accordance with the Law on establishment of an Agency for Promotion of Agricultural Development (Official Gazette No 3/98), based on the reforms in the advisory services in Macedonia supported by the Project of the World Bank (PPIZP) and in accordance with the agricultural development strategy of the Republic of Macedonia 1995-2010.

The Agency for Promotion of Agricultural Development is a budget institution responsible for providing expert advisory services intended for the promotion of the individual agricultural production with the purpose of increasing the quality, quantity, and profitability of the agricultural production with optimal usage of the available resources. The activities are directed towards providing support in the application of advisory measures in the agricultural production process with a practical implementation of the scientific and technical knowledge directed according to the needs of the market, cooperation and strengthening of the agricultural associations, carrying out measures with the purpose of implementing Government programmes in the area of agriculture, establishment and usage of information systems in agricultural production by establishing tracking records of its profitability and

economy, preparing informative bodies which encompass both domestic and foreign information sources in the area of agriculture intended for farmers and other interested factors – institutions.

The structure of the Agency for Promotion of Agricultural Development is designed in three levels of management: Management, regional/district centers, and operational units. The seat of the Agency for Promotion of Agricultural Development is in Bitola and it coordinates 6 regional centers with 30 regional operational units throughout the country. Out of the total 137 employees, 90 are technical advisors, while the operational expenditures per employee amount to 564 thousand denars.

The Agency for Promotion of Agricultural Development is responsible for, and mainly oriented towards providing individual agricultural producers with technical advice via educational meetings, farm advice, as well as providing technically-economic advisory packages, agro-informative campaigns and similar, which are available for different types of agricultural production and services appropriate to the need of individual farmers and their associations. The Agency for Promotion of Agricultural Development presents a unique receiver of state funds intended for agricultural advisory services and its annual budget (salaries and basic operational costs) are directly provided by the Ministry of Finance.

The budget of the Agency for Promotion of Agricultural Development for 2008 was 72 million denars or approximately 1.161.000 euro in total, unlike 2007 when the budget of the Agency for Promotion of Agricultural Development amounted to 48 million denars, i.e. approximately 790 000 euro.

The program activities are directed via three basic programs with their sub-programs and the same are continually developed according to the existent conditions by upgrading and mutually complementing each other:

- database, information flow and cooperation networks establishment
- advisory service logistics and support
- advisory services implementation

The activities of the Agency for Promotion of Agricultural Development and the organizational setup monitor the following agricultural production specialties: field production, cattle breeding, vine-fruit production, vegetable production, agro economy, and information and marketing. The services of providing immediate advisory aid for the independent agricultural producers for practical implementation of appropriate measures, i.e. scientific-technical knowledge of the process of agricultural production prepared as technical-economic packages have the purpose of increasing the agricultural production quality and quantity and a larger use of the agricultural resources. The Agency aims to coordinate their services with the actual demand of the clients, i.e. the needs of individual agricultural producers and their associations, and in accordance with the application of the EU standards.

As accompanying activities in the defining and implementation of advisory services and in accordance with the present work conditions, the Agency for Promotion of Agricultural Development realizes demonstrative experiments, agrochemical analyses, and FMS database analyses. Also, the Agency carries out implementation measures for the agricultural Government programmes especially the Programme for Promotion of Agricultural Development and other activities at the request of the



Ministry of Agriculture, Forestry, and Water Economy<sup>24</sup>, maintenance and upgrading of the Farm Monitoring<sup>25</sup> System from which the information on profitability and economy of the agricultural production for their own advisory services, but also for the needs of other interested institutions is used, prepares informative bodies intended for individual agricultural producers etc.

During the current 2007, within the regulation, management, and organization activities, the maintenance of a IS software has been enabled and its upgrade was carried out, activities of improvement of the WEB page have started, lectures and trainings for the advisors were held which were supported by GTZ, SLR, SIDA Projects etc., the entire documentation was processed in accordance with the legal regulations. Within the activities of individual agricultural producers' development through the realization of expert advisory services a visit in the field was carried out and educational meetings were held with over 4000 farmers, ten demonstrative experiments were realized, database analyses were performed, pre-accession specification for the creation of the advisory service records subsystem was prepared, information processing was carried out, a database was formed for technical – economic advisory packages preparation. Within the activities that support field realization of measures of the Programme of the Ministry of Agriculture, Forestry, and Water Economy all activities related to the realization of the Programme for Promotion of Agricultural Development were carried out; monitoring, forecasting, and determination of pests was carried out and reports were prepared; trainings and lectures for the implementation and recording of organic agricultural production were carried out in cooperation with the Projects supported by the Ministry of Agriculture, Forestry, and Water Economy and active participation was taken in the support of individual agricultural producers in their application for funds to the Rural Development Programme.

Within the activities of implementation of the establishment of farm accounting records of the Republic of Macedonia, according to the EU regulations, the Agency for Promotion of Agricultural Development maintains a database on 450 farms. In the realization of the set activities, the Agency for Promotion of Agricultural Development is supported by several project financed by SIDA, such as MAASP (Macedonian Agricultural Advisory Support Programme) in reference to the increase of the advisory services' functionality, the Agricultural Statistics Improvement Project realized by the Swedish Statistics, and directed towards further development of FMS and its harmonization with the European Farm Accountancy Data Network (FADN), as well SFARM - a Project for Support to Farmers' Associations which continually includes advisors from the agency in its activities and help in the realization trainings for advisors and farmers.

### **General on the FMS Data**

#### *Farm Monitoring System / Farm Accountancy Data Network*

Within the programme of the World Bank which supports the reforms at the Agency for Promotion of Agricultural Development, an overall farm monitoring system with good technical structure was established. For the purposes of this activity, 60

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<sup>24</sup> Including monitoring, forecasting, and determination of diseases, pests, and weeds which are quarantined and economically significant for the needs of the Phytosanitary Directorate, participation in measure implementation activities of the Rural Development Programme and participation in the preaccession funds' realisation, as well as different current requirements and need of sectors of the MAFWE

<sup>25</sup> Which includes 450 farms.

advisors of the Agency for Promotion of Agricultural Development collected data on the resources, income, yield, and expenses from 450 different farms selected according to a so called “conditional” representativeness. By visiting the farms at least once every two months, the advisors collect, record, and enter the data in the database of the Agency for Promotion of Agricultural Development’ system. The present Farm Monitoring System has been widely accepted and recommended by the EU experts as a solid basis for future upgrade of the Farm Accountancy Data Network (FADN), system necessary for the formulation of the CAP (Common Agricultural Policy) type.

The Agency for Promotion of Agricultural Development of the Republic of Macedonia – Bitola has a database on individual agricultural producers’ resources, yield, income, expenses and similar. The database uses data from 450 farms that are published annually. The creation of the database, i.e. the Information System was supported by the World Bank in 2001, in accordance with the Ministry of Agriculture, Forestry, and Water Economy. During the past it has been upgraded with good quality from the Swedish Statistics, financed by SIDA. The quality of the data and the choices of specimen per years depend on several factors:

During the first year, the choosing on the farms is based on an appropriate methodology, but the same can undergo changes and it is based on the trust built between the farmer and the advisor. The specimen receives representative officiality after the Agricultural Inventory is realized and after the application of an appropriate choice methodology and definition of an individual agricultural producer or individual agricultural economy.

In the past, in different years, certain system – software upgrades were applied, the necessary types of data were further defined, the appropriate output results’ calculation methodology was developed, which had different effects on the annual calculations; (Annex 7 Farm Data Example)

- Different controls are built-in with the purpose of building a software control system;
- The data collection and recording methodology was upgraded into appropriate note books – forms, the instructions for information technology operation and use were upgraded;
- During the entire past periods there was no continuity of available necessary financial funds for filed visits,
- The Law on Farm Accountancy Data Network was passed, Official Gazette of the Republic of Macedonia 110/07,

With the support of the Ministry of Agriculture, Forestry, and Water Economy the activities of forming and operation of a Farm Accountancy Data Network National Committee and passing bylaws on FADN is in progress.

In the past period, during different years, appropriate data processing that satisfy the FADN regulations, the needs of the State Statistical Office, the Ministry of Agriculture, Forestry, and Water Economy, and most importantly, the needs of the advisory service were implemented.

## ***Annual 2006 FMS/FADN Data Report***

The creation of FMS/FADN started in 2001 in the Agency for Promotion of Agricultural Development with the financial and technical support of the World Bank. As of 2002/03 the Agency for Promotion of Agricultural Development was given support from SIDA/ Swedish Statistics. Between 2001 and 2003 there has been continual further building of FMS/FADN and in reference to completeness and the other quality aspects, they have been improved. At the moment there is no representative information on the overall coverage of farms in Macedonia. The information shall be available when the data from the agricultural inventory are entered in the Agricultural (Farm) Register. The Farm Monitoring System (FMS) encompasses the recording of resources, yields, incomes, and expenditures, labor in the production process of individual farmers.

The initiative for the creation of a farm recording system was supported by the World Bank project in accordance with the Ministry of Agriculture, Forestry, and Water Economy. The further development of FMS was realized by project financed by SIDA through Swedish Statistics. The system has a multiple user approach.

The success of FMS depends on the following:

- the advisors' motivation and work conditions, their expertise and the Agency's status,
- continual efforts for system upgrade and improvement of the data quality
- mutual trust between the advisors and the farmers
- support from other institutions necessary for FMS sustainability
- regular and timely financial funds
- need to develop and evaluate the advisory service
- need to exchange timely and good quality data directly on the filed of individual agricultural enterprises

### **3.3 Professional Consulting Services**

In Macedonia, the agricultural consulting-advisory services are primarily provided by the public sector institutions and increasingly by the private sector, including the farmers' associations. The private sector includes different categories of consulting service providers. The most relevant, although still limited to the country level, are the individual advisors and consulting firms (agricultural engineers, economists, agronomists, soil specialists, plant protection specialist, veterinarians etc.) who in certain cases also use laboratories and professional equipment. Their target groups are progressive farmers and agro-processors who are ready and can afford to pay for specialists' services. In these regions, consulting services are also provided by the raw materials' suppliers (seed and planting materials, fertilizers, agro-chemicals) and mechanization and equipment' suppliers, as part of company's before and after sale policies.

The professional consulting services are usually requested from the agricultural – alimentary industry which is export oriented towards the EU countries' markets in reference to their products. The production standards such as BRC, IFS, Globalgap, Organic or other private standards that are recognized in the EU, the ISO and HACCP standards are implemented by professional consulting companies in

Macedonia, but the certification of the same is mostly performed by internationally acknowledged certification companies. In 2007, two domestic accredited certification companies in the agricultural alimentary sector operated in Macedonia.

The level of consulting services has had a significant increase in 2007, due to the introduction of subsidies (50% of the consulting costs) for the companies which implement the European production standards. Sources for the funds are the Agricultural Promotion Programmes, the Programmes for Entrepreneurship in the Economic Development, but also the donator Programmes (USAID-BASS, GTZ, SIDA).

#### **4 Training System (informal education)**

There is no evidence of a serious **informal education** carried out by the labor universities, the employment centers etc. in each of the country's agricultural areas. Although there is university capacity in agronomy and the veterinary science, it has never been used for the training of farmers (except in secondary projects financed by donators), and it is still mainly carried out on the level of secondary school. The Law on Informal Education and Adults' Education which regulates the informal education offers' supply which is to contribute to the overcoming of such difficulties through an adequate accreditation system is planed to be adopted in 2007. The Adults' Training Strategy which sets the future plans for human resources development was promoted by the Government of the Republic of Macedonia in 2006. This Strategy shall also present a basis for an informal and lifelong agricultural education.

Until now, the first steps to forming a curriculum (good agricultural practice, enterprising skills, organic production, first aid in agriculture etc.) for different factors in agriculture were taken by the **Foundation for Agricultural Center of Education (FACE)**, established by the Institute of Agriculture in Skopje. Also, the Faculty of Agriculture and Food has established an independent **Centre for Applied Research and Permanent Education in Agriculture (CIPOZ)** in the field of agriculture in 2002. Through its activities the centre has realized significant activities and results in the field of research, knowledge transfer, modern technology application (programs and training seminars).

## VIII. ADJUSTEMENT TOWARDS THE EU AND INTERNATIONAL POLICY

### INTERNATIONAL COOPERATION

#### EU Integration

The Republic of Macedonia has continued with its efforts of harmonizing the national legislation with the EU legislation in the areas regulated by the EU Common Agricultural Policy (CAP), including institution building for the purposes of realizing the same.

The process of agricultural land registration in the real estate cadastre, the collecting and processing of secure and confirmed agricultural data and establishing efficient and financially stable payment bodies for the management and control of the funds intended for agriculture were required as short term priorities, in compliance with the EU requirements and the international audit standards, in the EU accession process.

The administration's capacity building in the area of agriculture and the preparations for implementation and practical application of the mechanisms of the common agricultural policy, primarily the Integrated Administration and Control System (IACS) and the Land Parcel Identification System (LPIS) were established as medium term priorities.

Pursuant to the obligations arising from the National Programme for Adoption of the Acquis (NPAA 2008) and referring to agriculture and rural development, the following laws were passed.

**Law on Agriculture and Rural Development**, as framework law regulating the wider area of agriculture and rural development, introduced a legal framework for adoption of the provisions arising from the EU CAP in relation to geographical names and labels of origin, the agricultural information system, the agricultural products quality, the direct support of agriculture, the common market regulation, the forms of joining by the producers, the rural development measures, the advisory services, and the research and development. The law was passed and published in the Official Gazette of the Republic of Macedonia No 135/07, dated 08.11.2007.

**Law on Agricultural Land**, published in the Official Gazette of the Republic of Macedonia No. 135/07 dated 08.11.2007, as well as the bylaws of the same published in the Official Gazette of the Republic of Macedonia No 12/08 dated 23.01.2008, regulate the use, availability, control, and protection of agricultural land.

The policy on growing, the zootechnical standards, the register of animals and the register of herds, the organizations for growing of, and trade with pureblood animals, seeds and embryos of pureblood animals were regulated by the **Law on Cattle Breeding** adopted and published in the Official Gazette of the Republic of Macedonia No 07/08 dated 15.01.2008.

In the area of fishing the **Law on Fisheries and Aquaculture** was passed (the Official Gazette of the Republic of Macedonia No 07/08 dated 15.01.2008), as well as 16 bylaws of the same, which regulate the use, management, and protection of the fish stock in the fishing waters in the Republic of Macedonia. On the basis of the law and the bylaws, several fishing bases were prepared, and at the moment a Fishery Development Strategy for a period of 12 years is being prepared.

In relation to the establishment of a legal framework in the area of **rural development**, the Rulebook on Determining Rural Areas in the Republic of Macedonia as well as the List of Rural Areas in the Republic of Macedonia were adopted, and draft versions of the Rulebook on Determining Areas with Limited Possibility of Performing Agricultural Activity in the Republic of Macedonia and the List of Areas with Limited Possibility of Performing Agricultural Activity were drawn-up.

In relation to the IPARD Programme, after its adoption by the EC in February 2008, regular modifications for the purposes of including a financial framework for the year 2008 were made. The prepared modifications were delivered and adopted by the European Commission on 23<sup>rd</sup> September 2008.

In reference to the bylaws of the laws that were previously passed, in the field of **wine production**, in the past a large number of bylaws were adopted which fully regulated the wine market. In addition, on 18<sup>th</sup> September 2007, the Government of the Republic of Macedonia passed a **National Strategy with Action Plan on the development of organic agriculture in the Republic of Macedonia for the 2007-2011 period**. In the area of organic agricultural production, a register of organic production was established on a national level, and the procedure of authorizing bodies which would carry out expert control was completed.

Within the framework of institution building, during the year 2007, the **Agricultural Inventory** was realized, whose final results were published at the end of December 2007, whereby comparative statistical data were obtained, in compliance with the EU statistical standards, which presented a basis for the preparation of a national agricultural policy and for the defining of the support measures that shall be implemented in the area of agriculture.

**The Farm Register**, was established on the basis of the Farm Register Establishment Rulebook, ("Official Gazette of the Republic of Macedonia No 62/2008") with the initial entry of the data on the farmers who submitted applications for use of subsidies in 2008. Those who have not submitted applications for use of subsidies in 2008 can apply during the following period and their data will be entered into the register in accordance with the conditions prescribed in the Rulebook. The hardware and the software for the establishment of an electronic data base for the farm register have been procured, and by the end of the year, the farm register shall be fully operational.

In relation to the **Land Parcel Identification System (LPIS)**, the necessary technical support for preparation of technical specifications of the equipment and the activities necessary for the establishment of the system have been provided. In relation to the strengthening of the institutional capacity in the field of **vine-growing**, the *National Register of Vine Groves* established for the Tikvesh pilot region (Tikvesko Vinogorje), which encompasses 15 cadastre municipalities with a total surface area of approximately 18.000 hectares, of which approximately 11.000 hectares are used for vine groves, will expand on the entire territory of the country at the end of the year.

Within the frameworks of the **Agricultural Market Information System (AMIS)**, the initial/pilot producer groups, the representative markets and informers have already been defined.

## **International Cooperation**

The Republic of Macedonia continues with the reforms in the agro-food sector. In that direction, the international, i.e. the multilateral, bilateral, and trade cooperation which has the function of development of the sectors under the competence of the Ministry of Agriculture, Forestry, and Water Economy is being created and implemented.

### **FOREIGN AID**

The projects supported by the European Union, and managed by the European Agency for Reconstruction via the CARDS programmes for 2004 and 2006 are directed towards the structural reforms and adjustment processes of the agro-food sector

#### **CARDS 2004 Structural and Legal Reforms of the Ministry of Agriculture, Forestry, and Water Economy**

The goal of the *Structural and Legal Reforms of the Ministry of Agriculture, Forestry, and Water Economy* project is capacity building of the Ministry of Agriculture, Forestry, and Water Economy in the implementation of the challenges and obligations that arise from the Euro-integration processes.

The project consists of the following components:

1. Development of horizontal services
2. Harmonization of the veterinary legal regulation
3. Rural development
4. Agricultural markets and standards

In the project's continuation phase the following components were encompassed:

1. IPARD Programming
2. IPARD Agency
3. Harmonization of the priority legal acts in the area of veterinary medicine necessary for the implementation of the IPARD Programme.

The project was completed in December 2007.

The following projects fall within **CARDS 2006**:

#### **Establishment of a Vine Groves Monitoring and Control System (second phase)**

The basic goal of the project is to establish a National Register of Vine Groves on the entire territory of the Republic of Macedonia.

The project consists of four components:

1. Establishment of a National Vine Groves Monitoring and Management System in the entire country.

The basic goal of the vine groves register is to provide:

- Monitoring and management of the production potential (registering the surface areas under vine groves, establishment of the production quantities, directing the production etc.),

- Possibility to monitor the wines, i.e. guarantee the origin of wines which is a main precondition for determining their quality category, and
  - Finding the violators.
2. Harmonization of the Macedonian legislation on wine with the EU legislation.
  3. Preparation of an International Marketing Strategy of Macedonian Wine; The purpose of this component is to make a detailed analysis of the Macedonian wine sector, to present the trends and happenings of the international wine market, to define the main problems and challenges faced by the Macedonian wine sector and to provide proposed measures for improvement of the development perspectives of the wine sector.
  4. Institution building; for the implementation of the Law on Wine the institution building of the Ministry of Agriculture, Forestry, and Water Economy is necessary.
- The project will be in progress until 15<sup>th</sup> May 2009.

**Establishment of a national animals identification system (third phase)**

The purpose of this project is the establishment of a system for identification and registration of small ruminants which is in accordance with the EU requirements, as well as preparation of a Research and Development system for pigs and future integration with the IT systems of the Ministry of Agriculture, Forestry, and Water Economy

The project will be in progress until 28<sup>th</sup> February 2009.

The **Integrated Border Management Project** is part of the regional CARDS 2006. The segment of the project that provided technical support was realized during the period of 2006/2007.

***The Agricultural Financial Services Project – IFAD 2 through which the following was established:***

- a) Institutional and financial basis for sustainable agricultural financial services, on a commercial basis, and simultaneously accessible for the project's target group and appropriate for their development goals;
- b) Skills and experience for providing agricultural financial services within the formal financial sector were developed, and
- c) The economy and technical abilities of the target group and the management skills were improved through a series of trainings and programmes; it was completed in June 2008.

Also, the **Agricultural Commercial Advisory Services Programme** which had the purpose of supporting the transformation and reorientation process of a group of private advisors engaged by the Agricultural Financial Services Project – IFAD 2, in commercially oriented consulting companies and the **Market Relations Establishment Programme** which had the purpose of helping the active participants in the agricultural products provision chain to use the present and future market opportunities through an integrated approach in the operation, were completed in May 2008.



GTZ project **“Introduction of EU directives in the Macedonian agricultural policy and support of the cooperation of the agricultural – alimentary sector with the countries in the region”** – this project realizes the activities in the area of approaching the agricultural – alimentary sector of the Republic of Macedonia to the same of the EU, as well as strengthening the regional cooperation in the sector. The project will be in progress until December 2009.

Technical support directed towards restructuring and strengthening the advisory services in the agricultural sector of the Republic of Macedonia was provided by MAASP 2 phase (**Macedonian Agricultural Advisory Support Programme**) financed by SIDA. The project supports the development of high quality agricultural advisory services in the agricultural sector (MAASP), for the implementation of the Rural Development Programme and in the function of the IPARD Programme.

Technical support for the cabinet of the Minister of Agriculture, Forestry, and Water Economy of the Republic of Macedonia was provided by SIDA through financing the **Advisory Services Project for the Cabinet of the Ministry of Agriculture, Forestry, and Water Economy in relation with the integrations towards the EU.**

### **SFARM 3 – Support of Farm Associations of the Republic of Macedonia**

SFARM 3 is a twinning project between the Federation of Swedish Farmers (LRF) and the Federation of Farmers of the Republic of Macedonia (FFRM). SFARM 3 focuses on the following:

- Organizational development;
- Information development (in relation to the market integration consequences, i.e. the EU);
- Development of the ability of representation and political dialogue;
- Entrepreneurship support in the value chain development

The general development goal of SFARM 3 is to support the development of the Federation of Farmers of the Republic of Macedonia' structure, with the purpose of growing into a sustainable organization which is governed and managed on the basis of the democracy and transparency principles.

### **USAID AgBiz Programme**

The purpose of the project is the increase of the agricultural producers, processors and merchants' competitiveness, who by working in groups or separately participate in the value added chains which have the potential of value added products export.

The activities are directed towards promotion of value added chains (fairs, student stays, technical assistance, trainings), as well towards business expansion, financial aid, and technology transfer for export focused projects on the farm level.

The **Agricultural Strengthening and EU Accession Project**, financed by the **World Bank**, is directed towards creating a modern and competitive agricultural sector, which plays a significant economical and social role, as well as aid for the country to

increase the absorption capacity and implementation of the reforms in the agricultural sector.

The project is composed of four components, as follows:

1. strengthening the administrative and managerial capacities of the Ministry of Agriculture, Forestry, and Water Economy in accordance with the requirements for entry into the EU and establishment of an integrated administrative and control system;
2. support of the Ministry of Agriculture, Forestry, and Water Economy and the payment agency for better usage of the EU rural development funds;
3. building effective capacity of the veterinary service;
4. Completion of the water economy reforms.

## **FAO**

### **Emergency assistance in the avian influenza readiness in the Republic of Macedonia OSRO/INT/603/USA**

The basic purpose of the project is strengthening the country's capacities in case of avian influenza

The following activities were encompassed with this project:

- training of veterinary inspectors and veterinary doctors,
- campaign with brochures, leaflets, and posters
- training of the media representatives,
- preparation and printing of a manual
- training for use of PCR,
- preparation and printing of a programme for suppression and eradication of avian influenza and other contagious diseases. The project was completed in December 2007.

### **Regional project OSRO/GLO/702/CAN B3 - OSRO/GLO/604/UK – operation plans for Eastern Europe**

The basic purpose of the project is strengthening the country's capacities in the case of avian influenza

The project encompasses the following activities:

- epidemiological study on avian influenza
- campaign with leaflets, brochures, and posters
- training of poultry, exotic birds and ostrich producers, hunters and fishermen,
- active and passive supervision with epidemiological and molecular methods (10.000 specimens of poultry, gees, ducks, ostriches, wild and exotic birds).

The project was completed in December 2008.

### **Definition and promotion of a legal framework for organization of producers**

Royal Norwegian Ministry of Foreign Affairs

The project has the purpose of preparing a legal framework for organization of producers and its promotion before the future users. The specific goals of the project are the following:

- Preparation of a legal framework for organization of producers (OP) through a participative approach (expert work group, public debates, and similar)
- Preparation of criteria for recognition (registration ) of OP
- Implementation of a comparative analysis of the relevant valid legal acts
- Support in the process of adoption of the proposed legislation of OP
- Promotion of the model of OP before the future users through a public informative campaign.

### **Strengthening the readiness for national forests protection against fire**

The purpose of the project is prevention, monitoring, detection, suppression, and safety from forest fires, education and establishment of an information system for protection against forest fires.

Strengthening the national capacities for effective management and prevention of forest fires, as well as strengthening the infrastructure for coordination of strategies for fire management, including foreseeing forest fires resulting from improvement of the production and protection of forests.

The activities the directed towards:

- Developing a forest management plan
- Prevention through participation of the public and education
- Developing an informative system for forest fires management on a national and regional level
- Training of the personal for fire management

The project will be in progress from October 2008 until 2010.

## IX ANNEXES

### Annex 1 Trade with agro-food products

#### Most significant exported – total – agro-food products for the period 2005, 2006, and 2007 according to share in 2007

		EXPORT								
		2005			2006			2007		
Tariff mark	Naming	Quantity in kg/hl	Value in EUR €	Share in %	Quantity in kg/hl	Value in EUR €	Share in %	Quantity in kg/hl	Value in EUR €	Share in %
2401	Tobacco, raw	21,605,455	73,300,487	26.3%	29,407,532	73,568,302	23.1%	24,015,280	63,127,852	18.2%
2204 21	Wine – in bottles	55,877	7,059,448	2.5%	80,197	9,607,718	3.0%	95,397	12,232,610	3.5%
2204 29	Wine draught	600,019	21,867,593	7.8%	746,621	25,956,016	8.2%	831,424	31,327,559	9.0%
2202	Soda drinks	43,911,339	16,530,993	5.9%	62,794,978	23,950,867	7.5%	71,818,052	26,542,034	7.7%
1905	Biscuits, and waffles	6,668,909	11,188,215	4.0%	8,454,959	14,276,998	4.5%	11,949,482	19,861,426	5.7%
0702	Tomato, fresh or refrigerated	36,592,914	12,177,021	4.4%	42,165,766	14,257,757	4.5%	47,831,674	16,890,414	4.9%
0808	Apples (pears, quinces), fresh	42,471,443	5,616,479	2.0%	64,978,902	8,931,748	2.8%	88,581,721	14,176,131	4.1%
2402	Cigarettes, cigarillos, cigars	1,118,800	8,687,968	3.1%	2,170,271	15,170,290	4.8%	1,933,273	13,871,475	4.0%
0204	Meat – lamb	2,714,122	12,587,296	4.5%	2,875,768	13,571,227	4.3%	2,786,932	13,085,515	3.8%
0806	Grapes, fresh or dried	38,016,426	7,712,390	2.8%	31,498,579	6,978,060	2.2%	46,254,144	11,082,688	3.2%
2005	Vegetables, canned	5,571,265	5,925,519	2.1%	6,378,135	7,875,729	2.5%	5,924,919	7,816,209	2.3%
0709	Vegetables, mixed, fresh or refrigerated	23,148,405	10,596,741	3.8%	10,486,244	7,303,351	2.3%	18,989,537	7,279,711	2.1%
0710	Vegetables (semi-prepared) frozen	3,916,424	2,943,854	1.1%	5,803,167	4,306,459	1.4%	8,760,052	7,057,597	2.0%

1806	Chocolates and other products that contain cacao	2,149,345	5,049,280	1.8%	2,817,180	5,929,883	1.9%	3,376,012	6,901,005	2.0%
1605	Snails, canned	1,073,138	4,606,625	1.7%	1,329,167	6,074,583	1.9%	1,284,933	5,738,986	1.7%
1704	Sugar products (including which chocolate) that do not contain cacao	2,376,321	3,725,483	1.3%	2,499,939	4,051,034	1.3%	3,075,369	5,305,915	1.5%
0707	Cucumber and gherkins, fresh	18,061,704	4,329,649	1.6%	19,783,070	4,277,400	1.3%	18,237,024	5,212,917	1.5%
0704	Cabbage (cauliflower and similar)	26,102,817	2,524,124	0.9%	29,753,453	3,559,949	1.1%	43,808,001	4,644,127	1.3%
0712	Dried vegetables	219,988	3,356,633	1.2%	308,769	4,366,852	1.4%	266,839	3,638,725	1.0%
2102	Yeast (active and inactive)	3,735,998	3,475,305	1.2%	3,565,537	3,155,819	1.0%	3,601,068	3,105,772	0.9%
0807	Watermelons (melons) fresh	35,700,185	2,568,431	0.9%	48,388,381	4,451,840	1.4%	52,257,275	2,974,226	0.9%
<b>Total of exported agro-food products</b>		<b>465,936,811</b>	<b>278,610,785</b>	<b>100.0%</b>	<b>545,532,016</b>	<b>318,009,598</b>	<b>100.0%</b>	<b>630,935,652</b>	<b>346,639,659</b>	<b>100.0%</b>

Source of data: State Statistical Office

Processing: the Ministry of Agriculture, Forestry, and Water Economy

**Most significant imported – total – agro-food products for the period 2005, 2006, and 2007  
according to share in 2007**

		IMPORT								
		2005			2006			2007		
Tariff mark	Naming	Quantity in kg	Value in EUR €	Share in %	Quantity in kg	Value in EUR €	Share in %	Quantity in kg	Value in EUR €	Share in %
0207	Poultry meat	25,141,568	21,101,459	6.1%	22,782,903	16,908,010	4.6%	29,209,239	26,697,016	5.8%
1512	Sunflower oil	28,403,051	15,966,812	4.6%	30,988,002	17,349,012	4.7%	31,020,494	22,650,069	4.9%
1701	Sugar	62,718,666	15,670,591	4.5%	58,603,905	19,976,078	5.4%	74,141,070	21,603,466	4.7%
2106	Alimentary products not stated anywhere else	7,098,883	14,468,297	4.2%	9,761,551	16,982,891	4.6%	11,065,657	21,149,744	4.6%
1806	Chocolates and other alimentary products that contain cacao	6,730,061	16,192,631	4.7%	7,764,683	17,781,538	4.8%	7,713,740	18,377,735	4.0%
1905	Biscuits and waffles	12,428,044	13,820,811	4.0%	12,620,087	14,416,373	3.9%	14,199,453	17,897,623	3.9%
0201	Beef meat, fresh or refrigerated	8,964,814	14,278,113	4.1%	8,613,967	18,819,991	5.1%	6,913,916	16,369,328	3.5%
1101	Wheat flower	3,440,797	695,533	0.2%	3,513,070	802,940	0.2%	53,098,879	14,900,903	3.2%
0901	Coffee, baked or unbaked	7,737,282	9,790,575	2.8%	7,474,015	11,116,236	3.0%	7,895,954	13,675,631	3.0%
0203	Pig meat, fresh, refrigerated or frozen	5,566,744	10,667,683	3.1%	6,789,954	12,253,481	3.3%	7,303,314	13,574,185	2.9%
1001	Wheat	90,095,482	11,285,835	3.2%	25,972,555	3,675,848	1.0%	60,367,332	12,986,079	2.8%
1005	Maize	65,817,848	7,463,033	2.1%	57,775,159	7,348,089	2.0%	52,574,093	10,102,283	2.2%
0202	Beef, frozen	5,043,395	5,990,253	1.7%	6,105,402	7,055,233	1.9%	7,547,881	9,979,742	2.2%
2202	Soda drinks	13,991,273	6,413,241	1.8%	18,507,350	7,973,234	2.2%	22,015,615	9,967,330	2.2%
2005	Canned vegetable	4,935,907	7,048,448	2.0%	5,438,808	8,208,804	2.2%	5,700,351	8,769,868	1.9%
1602	Processed meat products, dry meat products	3,038,223	8,031,608	2.3%	3,071,480	8,067,931	2.2%	3,102,605	8,499,687	1.8%
0803	Bananas, fresh	17,597,101	6,266,208	1.8%	15,085,576	6,116,999	1.7%	16,096,433	7,848,786	1.7%
0805	Oranges, lemons, grapefruit, mandarins, fresh	18,111,767	6,495,996	1.9%	18,636,748	6,672,296	1.8%	19,788,485	7,791,352	1.7%
2304	Oil cakes, for animal nutrition	23,925,570	6,067,020	1.7%	27,382,771	6,528,203	1.8%	26,890,602	7,777,501	1.7%
0401	Milk and sour cream, non-concentrated	9,714,432	4,953,605	1.4%	12,714,075	6,394,973	1.7%	15,545,748	7,611,971	1.6%
2009	Fruit juices	3,987,934	3,677,280	1.1%	3,213,474	3,816,012	1.0%	4,984,491	6,520,305	1.4%
<b>Total of imported agro-food products</b>		<b>596,449,099</b>	<b>348,086,429</b>	<b>100.0%</b>	<b>535,977,252</b>	<b>367,402,935</b>	<b>100.0%</b>	<b>694,490,933</b>	<b>461,469,971</b>	<b>100.0%</b>

Source of data: State Statistical Office

Processing: the Ministry of Agriculture, Forestry, and Water Economy

**Most significant exported agro-food products from the Republic of Macedonia to the European Union – 27, for the period 2005, 2006, and 2007 according to share in 2007**

Tariff mark	Naming	EXPORT								
		2005			2006			2007		
		Quantity in kg/hl	Value in EUR €	Share in %	Quantity in kg/hl	Value in EUR €	Share in %	Quantity in kg/hl	Value in EUR €	Share in %
2401	Tobacco, raw	15,615,234	55,487,844	40.7%	22,972,936	59,662,586	38.3%	19,104,042	57,171,570	35.3%
2204	Wine from fresh grapes	450,510	15,513,502	11.4%	456,346	15,070,168	9.7%	494,294	17,040,420	10.5%
0204	Lamb meat, fresh, refrigerated or frozen	2,606,854	12,122,254	8.9%	2,824,513	13,328,214	8.6%	2,542,026	11,949,310	7.4%
2202	Soda juices	126,670	36,732	0.0%	10,900,204	6,128,892	3.9%	13,613,880	7,485,070	4.6%
0710	Vegetables (semi-prepared), frozen	3,810,355	2,859,459	2.1%	5,669,624	4,146,023	2.7%	8,715,511	6,999,332	4.3%
0808	Apples, (pears, quinces), fresh	11,006,366	1,422,421	1.0%	28,908,155	3,723,142	2.4%	43,166,352	6,763,076	4.2%
1605	Snails canned	1,073,138	4,606,625	3.4%	1,329,167	6,074,583	3.9%	1,284,933	5,738,986	3.5%
0709	Mixed vegetables, fresh or refrigerated	12,827,377	8,183,267	6.0%	4,462,963	5,665,872	3.6%	12,386,412	5,076,502	3.1%
0702	Tomato, fresh or refrigerated	7,300,836	2,799,329	2.1%	11,929,999	4,509,781	2.9%	19,140,446	5,010,467	3.1%
1905	Biscuits, waffles	576,042	1,304,021	1.0%	627,174	1,354,344	0.9%	2,278,758	3,893,736	2.4%
0712	Dried vegetables	193,918	3,265,802	2.4%	259,714	4,032,069	2.6%	230,716	3,559,663	2.2%
2005	Canned vegetables	2,161,413	1,972,574	1.4%	1,636,091	2,127,063	1.4%	2,242,552	3,207,455	2.0%
0811	Fruit, kernel, boiled or un-boiled	1,443,750	1,272,864	0.9%	2,232,404	2,721,435	1.7%	2,927,885	2,700,635	1.7%
0704	Cabbage (cauliflower and similar) fresh or refrigerated	13,073,630	1,189,228	0.9%	12,240,727	1,262,626	0.8%	23,056,330	2,282,521	1.4%
0602	Other live plants, cuttings, coils etc.	6,163	2,060,752	1.5%	27,561	2,197,504	1.4%	6,623	2,231,287	1.4%
0807	Watermelons (melons), fresh	5,081,205	535,295	0.4%	19,145,859	2,411,826	1.5%	32,579,616	1,822,924	1.1%
2001	Vegetables, fruits, canned	917,710	908,639	0.7%	920,646	985,878	0.6%	1,374,388	1,292,647	0.8%
2009	Fruit juices	74,994	28,699	0.0%	2,234,011	1,036,534	0.7%	2,910,006	1,265,978	0.8%
0806	Gapes fresh or dried	3,790,201	469,674	0.3%	6,745,113	796,233	0.5%	8,133,183	1,241,554	0.8%
0703	Onion, alma, garlic, leek, fresh or refrigerated	826,486	114,477	0.1%	3,453,101	387,194	0.2%	6,193,942	1,126,869	0.7%
0707	Cucumber and gherkins, fresh or refrigerated	1,933,574	735,163	0.5%	3,392,577	863,977	0.6%	4,805,741	1,093,582	0.7%
<b>Total of exported agro-food products to the EU – 27</b>		<b>164,449,314</b>	<b>136,362,393</b>	<b>100.0%</b>	<b>214,223,076</b>	<b>155,822,922</b>	<b>100.0%</b>	<b>270,628,869</b>	<b>162,020,773</b>	<b>100.0%</b>

Source of data: State Statistical Office

Processing: the Ministry of Agriculture, Forestry, and Water Economy

**Most significant imported agro-food products to the Republic of Macedonia from the European Union – 27, for the period 2005, 2006, and 2007 according to share in 2007**

		IMPORT								
		2005			2006			2007		
Tariff mark	Naming	Quantity in kg	Value in EUR€	Share in %	Quantity in kg	Value in EUR€	Share in %	Quantity in kg	Value in EUR€	Share in %
2106	Alimentary products not stated anywhere else	6,266,524	12,005,840	7.2%	8,920,205	14,430,793	8.8%	10,044,099	17,878,718	10.4%
0207	Poultry meat	6,521,780	5,668,256	3.4%	8,326,318	6,863,408	4.2%	8,727,074	7,825,551	4.5%
0203	Pig meat fresh, refrigerated or frozen	4,214,100	8,814,488	5.3%	3,977,449	8,365,698	5.1%	2,918,896	6,936,203	4.0%
1512	Sunflower oil	12,272,328	6,838,105	4.1%	14,036,326	7,577,655	4.6%	8,823,510	6,303,324	3.7%
1001	Wheat	79,731,846	9,944,799	6.0%	20,538,725	2,761,443	1.7%	21,883,964	5,413,791	3.1%
1905	Biscuits and waffles	2,489,259	3,288,461	2.0%	2,711,671	3,688,783	2.2%	3,574,191	5,341,541	3.1%
1806	Chocolates and other products that contain cacao	1,625,177	5,073,016	3.1%	1,794,798	5,359,622	3.3%	1,709,497	5,335,617	3.1%
0201	Beef meat, fresh or refrigerated	7,731,017	11,662,806	7.0%	3,535,017	6,136,293	3.7%	2,628,545	4,996,272	2.9%
2005	Canned vegetables	2,024,177	3,261,428	2.0%	2,871,304	4,291,167	2.6%	3,046,438	4,579,486	2.7%
1602	Processed meat products, dried meat products	1,486,896	4,580,677	2.8%	1,417,301	4,336,728	2.6%	1,379,371	4,502,003	2.6%
1601	Sausages and similar meat products	2,397,125	4,228,050	2.5%	2,280,869	4,021,236	2.4%	2,416,258	4,460,803	2.6%
2309	Products used for animal nutrition	5,748,613	3,544,344	2.1%	4,862,517	3,588,993	2.2%	6,687,120	4,370,574	2.5%
0406	Cheese and "urda"	1,858,511	4,247,410	2.6%	1,838,604	4,600,748	2.8%	1,290,838	4,106,382	2.4%
1901	Malt extracts; alimentary products from wheat, coarse grain, grits	1,631,897	2,840,134	1.7%	1,705,206	2,745,466	1.7%	2,338,071	3,995,371	2.3%
1005	Wheat	31,275,114	3,240,583	2.0%	14,139,131	1,594,034	1.0%	13,548,526	3,641,818	2.1%
2304	Oil cakes, for animal nutrition	13,722,297	3,421,884	2.1%	14,304,996	3,352,554	2.0%	12,224,922	3,466,552	2.0%
2202	Soda juices	3,396,729	2,372,524	1.4%	2,952,599	2,393,048	1.5%	4,796,702	3,225,289	1.9%
2009	Fruit juices	1,901,830	1,835,428	1.1%	1,471,168	2,296,914	1.4%	2,003,995	3,212,053	1.9%
1209	Seed, fruits, spores for planting	162,677	1,954,464	1.2%	149,795	2,441,737	1.5%	205,284	3,158,469	1.8%
0805	Oranges, lemons, grapefruit, mandarins, fresh	4,143,984	1,381,897	0.8%	3,899,339	1,318,017	0.8%	7,800,407	2,947,305	1.7%
1701	Sugar	32,234,628	8,380,708	5.0%	34,374,457	11,341,520	6.9%	7,020,778	2,647,822	1.5%
<b>Total of imported agro-food products from the EU – 27</b>		<b>294,856,184</b>	<b>165,999,806</b>	<b>100.0%</b>	<b>226,076,405</b>	<b>164,574,257</b>	<b>100.0%</b>	<b>202,664,947</b>	<b>172,563,911</b>	<b>100.0%</b>

Source of data: State Statistical Office

Processing: the Ministry of Agriculture, Forestry, and Water Economy



## Annex 2

### APPENDIX No 1 EXPORT AT BORDER CROSSINGS DURING 2007

Border Crossing	Shipments (No)	Quantity (kg)	Quantity (m <sup>3</sup> )	Quantity (No)
Bogorodica	2,242	25,818.803	640.96	0
Novo Selo	1	22,500	0.00	0
Skopje	9,336	36,668.506	778,61	15.11
Tabanovce	418	4.260.503	425,38	3,181.243
Kjafasan	333	3.044.088	842,12	0
Deve Bair	83	390,468	603,46	0
Delchevo	56	454,793	311,93	0
Blato	52	132,181	15,00	0
Kavadarci	3,052	55,233.033	1,717.56	1,200
Veles	355	5,400.403	107.00	0
Prilep	470	4,764.857	229,00	0
Bitola	1,340	18,6685.481	3,510.80	20,000
Strumica	13,109	142,808.013	1,598.57	4,590
Ohrid	35	119,090	387,41	0
Resen	107	2,047.550	0,00	0
<b>Total:</b>	<b>30.989</b>	<b>299.833.239</b>	<b>11.167.80</b>	<b>3.222.145</b>

### APPENDIX No 2 IMPORT AT BORDER CROSSINGS DURING 2007

Border Crossing	Shipments (No)	Quantity (kg)	Quantity (m3)	Quantity (No)
Bogorodica	6,461	136,717.560	270,03	1,205.049
Novo Selo	689	11,254.636	4,303.04	0
Skopje	654	20,457.865	1,851.84	49,352
Tabanovce	8,727	169,907.108	21,973.09	2,633.202
Kjafasan	774	14,084.437	275,12	60,854
Deve Bair	753	9,106.772	4,730.44	25,830
Delchevo	1,259	20,310.090	10,881.13	0
Bitola	1,110	24,993.214	4,69	40,395
Strumica	9	55,835	0,00	0
Ohrid	33	630,582	0,00	0
<b>Total:</b>	<b>20.469</b>	<b>407.488.099</b>	<b>44.289.38</b>	<b>4.014.682</b>

### APPENDIX No 3 Realized fee from phytosanitary inspections at border crossings in 2007

<b>Border Crossing</b>	<b>Shipments</b>	<b>Export (MKD)</b>	<b>Import (MKD)</b>	<b>Transport (MKD)</b>	<b>Re-export (MKD)</b>	<b>Total (MKD)</b>
Bogorodica	19,053	1,490,020.00	9,291,894.50	4,760,075.00	814,450.00	16,356,439.50
Novo Selo	779	1,150.00	1,310,180.00	53,675.00	0,00	1,365,005.00
Skopje	10,434	2,631,482.00	1,343,360.00	31,570.00	240,305.00	4,246,717.00
Tabanovce	10,672	1,087,033.60	15,248,736.00	711,835.00	8,350.00	17,055,954.60
Kjafasan	1,492	241,775.00	820,010.00	200,322.50	4,300.00	1,266,407.50
Deve Bair	3,712	99,530.00	1,140,275.00	1,025,375.50	3,550.00	2,268,727.50
Delchevo	1,390	66,870.00	2,614,350.00	37,525.00	0,00	2,718,745.00
Blato	52	23,100.00	0,00	0,00	0,00	23,100.00
Kavadarci	3,052	3,140,310.00	0,00	0,00	0,00	3,140,310.00
Veles	355	304,200.00	0,00	0,00	0,00	304,200.00
Prilep	470	323,400.00	0,00	0,00	0,00	323,400.00
Bitola	2,614	1,316,330.00	2,106,473.00	89,980.00	2,350.00	3,515,133.00
Strumica	13,196	7,987,930.00	15,700.00	0,00	71,550.00	8,075,180.00
Ohrid	81	42,650.00	341,600.00	9,350.00	0,00	86,600.00
Resen	107	109,450.00	0,00	0,00	0,00	109,450.00
<b>Total:</b>	<b>67.459</b>	<b>18.865.230.60</b>	<b>33.925.578.50</b>	<b>6.919.705.00</b>	<b>1.144.855.00</b>	<b>60.855.369.10</b>

### Annex 3 Rural Development

#### Overview of the number of delivered requests per users (legal entities and natural persons) according to district units

Reg. No	DU	Natural persons	Legal entities	Total
1	Berovo	8	6	14
2	Bitola	8	67	75
3	Valandovo	1	5	6
4	Veles	6	15	21
5	Gevgelija	5	9	14
6	Gostivar	1	7	8
7	Delchevo	9	1	10
8	Demir Hisar	3		3
9	Kavadarci	4	13	17
10	Kochani	14	11	25
11	Kumanovo	1	4	5
12	Negotino	3	9	12
13	Ohrid	3	5	8
14	Prilep	20	18	38
15	Probistip	2	4	6
16	Radovish	8	3	11
17	Sveti Nikole	92	7	99
18	Struga	2	16	18
19	Strumica	7	13	20
20	Tetovo	20	7	27
21	Stip	1	7	8
22	Gazi Baba	10	6	16
23	Kisela Voda	7	11	18
24	Karpos	2	4	6
25	Vinica	4	4	8
26	Krushevo	2	4	6
27	Resen	1		1
28	Kratovo	1	1	2
29	Kriva Palanka	1	1	2
30	Kichevo	1	3	4
31	Debar	3		3
32	Chair	1	1	2
	<b>Total:</b>	<b>251</b>	<b>262</b>	<b>513</b>

**Overview of the number of approved requests per users (legal entities and natural persons) according to district units**

Reg. No	DU	Natural persons	Legal entities	Total
1	Berovo	5	1	6
2	Bitola	4	28	32
3	Valandovo	1		1
4	Veles	3		3
5	Gevgelija	4	1	5
6	Gostivar		1	1
7	Delchevo	7		7
8	Demir Hisar	1		1
9	Kavadarci	3	6	9
10	Kochani	11	2	13
11	Kumanovo	1		1
12	Negotino	1	2	3
13	Ohrid	1	1	2
14	Prilep	13	5	18
15	Probistip	1		1
16	Radovish	3		3
17	Sveti Nikole	56	2	58
18	Struga	1	3	4
19	Strumica	2	5	7
20	Tetovo	7	1	8
21	Stip	1	5	6
22	Gazi Baba	6		6
23	Kisela Voda		2	2
24	Karpos		1	1
25	Vinica	4		4
26	Krushevo	1		1
	<b>Total:</b>	<b>138</b>	<b>66</b>	<b>204</b>

**Overview of the number of refused requests per users (legal entities and natural persons) according to district units**

<b>Reg. No</b>	<b>DU</b>	<b>Natural persons</b>	<b>Legal entities</b>	<b>Total</b>
1	Berovo	3	5	8
2	Bitola	3	39	42
3	Valandovo	0	5	5
4	Veles	3	15	18
5	Gevgelija	1	8	9
6	Gostivar	1	6	7
7	Delchevo	2	1	3
8	Demir Hisar	2	0	2
9	Kavadarci	1	7	8
10	Kochani	3	9	12
11	Kumanovo	0	4	4
12	Negotino	2	7	9
13	Ohrid	2	4	6
14	Prilep	7	13	20
15	Probistip	1	4	5
16	Radovish	5	3	8
17	Sveti Nikole	36	5	41
18	Struga	1	13	14
19	Strumica	5	8	13
20	Tetovo	13	6	19
21	Stip	0	2	2
22	Gazi Baba	4	6	10
23	Kisela Voda	7	9	16
24	Karpos	2	3	5
25	Vinica	0	4	4
26	Krushevo	1	4	5
27	Resen	1	0	1
28	Kratovo	1	1	2
29	Kriva Palanka	1	1	2
30	Kichevo	1	3	4
31	Debar	3	0	3
32	Chair	1	1	2
	<b>Total:</b>	<b>113</b>	<b>196</b>	<b>309</b>

**Overview of the number of approved requests per users (legal entities and natural persons) according to district units**

Reg. No	DU	Measure 1.1 individual farmer (crops)	Measure 1.2 individual farmer (cattle)	Measure 1.1 legal (crops)	Measure 1.2 legal (cattle)	Measure 2.1 legal (fruit and vegetable)	Measure 2.2 legal (grape)	Measure 2.3 legal (forage for feed)	Measure 2.4 legal (meat)	Measure 2.5 legal (milk)	Total
1	Berovo		5			1					6
2	Bitola	5		5	23						33
3	Valandovo	1									1
4	Veles	2	1								3
5	Gevgelija	3	1	1							5
6	Gostivar								1		1
7	Delchevo	2	5								7
8	Demir Hisar	1									1
9	Kavadarci	3		3	1	1			1		9
10	Kochani	10	1		1			1			13
11	Kumanovo		1								1
12	Negotino	1		1			1				3
13	Ohrid	1				1					2
14	Prilep	11	2		2			3			18
15	Probistip	1									1
16	Radovish	1	2								3
17	Sveti Nikole	54	2	2							58
18	Struga	1			1	2					4
19	Strumica	2		4						1	7
20	Tetovo	4	3		1						8
21	Stip	1		2		2		1			6
22	Gazi Baba	3	3								6
23	Kisela Voda					1	1				2
24	Karpos						1				1
25	Vinica	2	2								4
26	Krushevo		1								1
	<b>Total:</b>	<b>109</b>	<b>29</b>	<b>18</b>	<b>29</b>	<b>8</b>	<b>3</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>204</b>

**Overview of the number of approved and realized requests per users (legal entities and natural persons) according to district units**

Reg. No	DU	Measure 1.1 individual farmer (crops)	Measure 1.2 individual farmer (cattle)	Measure 1.1 legal (crops)	Measure 1.2 legal (cattle)	Measure 2.1 legal (fruit and vegetables)	Measure 2.2 legal (grape)	Measure 2.3 legal (forage for feed)	Measure 2.4 legal (meat)	Measure 2.5 legal (milk)	Total
1	Berovo		5			1					6
2	Bitola	4		5	23						32
3	Valandovo	1									1
4	Veles	1	1								2
5	Gevgelija	3	1	1							5
6	Gostivar	2	4								6
7	Delchevo	1									1
8	Demir Hisar	3		3	1	1			1		9
9	Kavadarci	8	1		1			1			11
10	Kochani		1								1
11	Kumanovo	1		1			1				3
12	Negotino					1					1
13	Ohrid	11	1		2			3			17
14	Prilep	1									1
15	Probistip	1	2								3
16	Radovish	51	2	2							55
17	Sveti Nikole	1			1	2					4
18	Struga	2		4						1	7
19	Strumica	4	3		1						8
20	Tetovo	1		2		2		1			6
21	Stip	3	3								6
22	Gazi Baba					1	1				2
23	Kisela Voda						1				1
24	Karpos	2	2								4
25	Vinica		1								1
	<b>Total</b>	<b>101</b>	<b>27</b>	<b>18</b>	<b>29</b>	<b>8</b>	<b>3</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>193</b>

**Overview of the number of approved and unrealized requests per users (legal entities and natural persons) according to district units**

<b>Reg. No</b>	<b>DU</b>	<b>Measure 1.1 individual farmer (crops)</b>	<b>Measure 1.2 individual farmer (cattle)</b>	<b>Measure 1.1 legal (crops)</b>	<b>Measure 1.2 legal (cattle)</b>	<b>Measure 2.1 legal (fruit and vegetables)</b>	<b>Measure 2.2 legal (grape)</b>	<b>Measure 2.3 legal (forage for feed)</b>	<b>Measure 2.4 legal (meat)</b>	<b>Measure 2.5 legal (milk)</b>	<b>Total</b>
1	Berovo										
2	Bitola	1									1
3	Valandovo										
4	Veles	1									1
5	Gevgelija										
6	Gostivar								1		1
7	Delchevo		1								1
8	Demir Hisar										
9	Kavadarci										
10	Kochani	2									2
11	Kumanovo										
12	Negotino										
13	Ohrid	1									1
14	Prilep		1								1
15	Probistip										
16	Radovish										
17	Sveti Nikole	3									3
18	Struga										
19	Strumica										
20	Tetovo										
21	Stip										
22	Gazi Baba										
23	Kisela Voda										
24	Karpos										
25	Vinica										
26	Krushevo										
	<b>Total</b>	<b>8</b>	<b>2</b>						<b>1</b>		<b>11</b>



Annex 7 Data from the Agency for Promotion of Agricultural Development

2006 FMS Results

Table 1 Contribution margin for some plants/animals in denars (ha/head) in 2006

Plants/animals	Calculated gross incomes	Calculated direct costs	Contribution margin
Beans	211,422.74	58,716.22	152,706.52
Grapes	132,537.64	90,590.96	41,946.68
Tomatoes	227,309.12	153,847.99	73,461.13
Cabbage	219,586.32	150,736.00	68,850.32
Apples	330,815.04	204,399.06	126,415.98
Barley	28,733.96	14,450.72	14,283.24
Potato	231,285.85	111,582.24	119,703.60
Onion	458,624.27	143,433.33	315,190.93
Watermelons	201,328.27	148,217.35	53,110.93
Alfalfa	53,449.09	19,124.97	34,324.12
Milking cows	115,849.45	59,093.38	56,756.07
Pepper	366,349.79	195,291.35	171,058.44
Breeding sheep	7,454.14	3,412.38	4,041.76
Wheat	36,366.41	23,273.95	13,092.46
Maize	39,628.44	22,226.81	17,401.63
Plums	282,782.81	165,635.59	117,147.22
Tobacco	323,185.50	99,234.00	223,951.50

**Table 2 Farm Typology in the Republic of Macedonia during 2006**

<b>Type of farm</b>	<b>Definition of the type of farm</b>	<b>No of farms</b>	<b>Percentage</b>
A. Vegetable farms	More than 2/3 of the sales come from vegetables	52	11.00
B. Fruit farms	More than 2/3 of the sales come from fruit	50	11.00
C. Vine growing farms	More than 2/3 of the sales come from vine	52	11.00
D. Cereals farms	More than 2/3 of the sales come from cereals	60	13.00
H. Mixed crops farms	More than 2/3 of the sales come from crops	30	7.00
I. Cattle farms	More than 2/3 of the sales come from cattle	56	12.00
J. Sheep farms	More than 2/3 of the sales come from sheep	80	17.00
K. Goat farms	More than 2/3 of the sales come from goats	2	0.00
L. Pig farms	More than 2/3 of the sales come from pigs	1	0.00
M. Mixed animal farms	More than 2/3 of the sales come from animals	20	4.00
N. Mixed farms	No activity is present in more than 2/3	57	12.00

**Table 3 Farm activities according to the farm type for 2006**

Percentage of the total farm revenue											
Farm type	Total SGM of the farm (1000 denars)	Cattle	Vegetables	Goats	Vine growing	Fruit	Sheep	Pastures	Field products	Pigs	Total
A. Vegetable farms B. Fruit farms	8.651,18	0.06	94.80	0.00	0.26	0.14	0.00	0.00	4.64	0.10	100.00
C. Vine growing farms	518,21	0.00	0.00	0.00	0.17	98.52	0.00	0.00	1.31	0.00	100.00
D. Cereals farms	529,39	0.00	0.76	0.00	97.95	0.62	0.00	0.00	0.67	0.00	100.00
H. Mixed crops farms	2.472,58	3.99	7.03	0.32	1.71	0.52	0.00	0.00	85.65	0.78	100.00
I. Cattle farms	4.069,49	2.50	33.35	0.00	17.57	12.03	0.00	0.30	33.84	0.40	100.00
J. Sheep farms	2.672,76	88.28	0.56	0.04	0.06	0.02	0.65	0.15	9.77	0.46	100.00
K. Goat farms	854,09	1.19	0.00	0.33	0.06	0.00	94.99	0.03	3.35	0.05	100.00
L. Pig farms	50,10	0.00	0.00	94.75	0.00	0.00	0.00	0.00	5.25	0.00	100.00
M. Mixed animal farms	2.478,43	42.21	6.42	4.21	0.23	0.06	20.45	1.28	16.94	8.19	100.00
N. Mixed farms	5.414,09	36.37	9.27	1.97	0.36	0.00	15.14	1.04	33.74	2.10	100.00
Total	27.710,32	16.78	21.35	0.70	6.76	6.40	34.52	0.18	12.61	0.70	100.00

**Table 4 Size of farms according to the farm type (available land) in 2006**

Farm type	Total number of farms	Of which farms with... ha total land						Average ha per farm
		Under 1Ha	1-2Ha	2-5Ha	5-10Ha	over 10Ha	total	
<b>A. Vegetable farms</b>	52	2.04	9.44	14.45	12.57	61.49	100%	5.06
<b>B. Fruit farms</b>	50	0.15	0.88	3.31	2.81	92.85	100%	28.68
<b>C. Vine growing farms</b>	52	3.40	13.07	39.95	19.43	24.15	100%	2.60
<b>D. Cereals farms</b>	60	0.47	1.37	12.85	15.61	69.70	100%	10.14
<b>H. Mixed crops farms</b>	30	1.07	3.98	13.56	14.63	66.76	100%	7.75
<b>I. Cattle farms</b>	56	0.00	0.75	8.21	12.45	78.58	100%	14.77
<b>J. Sheep farms</b>	80	1.56	3.01	30.25	31.74	33.45	100%	3.95
<b>K. Goat farms</b>	2	0.00	0.00	100.00	0.00	0.00	100%	1.35
<b>L. Pig farms</b>	1	0.00	0.00	0.00	0.00	0.00	100%	0.00
<b>M. Mixed animal farms</b>	20	0.00	0.63	13.72	36.99	48.66	100%	8.06
<b>N. Mixed farms</b>	57	0.15	0.96	9.35	19.09	70.45	100%	10.73
<b>Total</b>	460	0.51	2.08	10.77	13.25	73.39	100%	9.98

**Table 5 Land use according to the farm type in 2006**

<b>Farm type</b>	<b>Total of farms</b>	<b>Vegetables</b>	<b>Vine growing</b>	<b>Fruit</b>	<b>Pastures</b>	<b>Field products</b>	<b>Uncultivated land</b>	<b>Arable land</b>	<b>Total land</b>
<b>A. Vegetable farms</b>	52,00	2.75	0.05	0.02	0.00	1.68	0.56	4.49	5.06
<b>B. Fruit farms</b>	50,00	0.00	0.01	1.40	0.01	0.66	26.59	2.08	28.68
<b>C. Vine growing farms</b>	52,00	0.02	1.15	0.00	0.00	0.18	1.25	1.36	2.60
<b>D. Cereals farms</b>	60,00	0.08	0.06	0.02	0.00	6.64	3.34	6.80	10.14
<b>H. Mixed crops farms</b>	30,00	0.81	0.88	0.97	0.05	3.08	1.95	5.75	7.75
<b>I. Cattle farms</b>	56,00	0.04	0.00	4.61	0.33	2.58	7.20	7.24	14.77
<b>J. Sheep farms</b>	80,00	0.01	0.01	0.22	1.81	1.57	0.33	1.81	3.95
<b>K. Goat farms</b>	2,00	0.00	0.00	0.00	0.00	0.50	0.85	0.50	1.35
<b>L. Pig farms</b>	20,00	0.13	0.02	0.01	1.15	4.76	1.98	4.92	8.06
<b>M. Mixed animal farms</b>	57,00	0.15	0.04	0.07	0.27	4.25	5.95	4.51	10.73
<b>Total</b>	460,00	0.41	0.21	0.83	0.44	2.67	5.42	4.12	9.98

Source: FMS, Agency for Promotion of Agricultural Development, Bitola

## Annex 8 International Cooperation

### Projects' overview

<i>Title</i>	<i>Creditor/ Donator</i>	<i>Project Description</i>	<i>Purpose of the Project</i>
<b>National Vine Groves Monitoring and Management System, phase II</b>	European Reconstruction Agency CARDS 2006 Contract n. 06MAC01/08/104	<p>The project consists of four components: <b>the first component – Establishment of a National Vine Groves Monitoring and Management System in the entire country.</b> The basic goal of the vine groves' register is to provide:</p> <ul style="list-style-type: none"> <li>- Monitoring and management of the production potential (registering the surface land under vine groves, determining the produced quantities, directing the production etc.),</li> <li>- Traceability of wines, i.e. guarantying the wines' origin which is the main precondition for determining their quality category, and</li> <li>- Determining the violators.</li> </ul> <p>This component includes the following activities:</p> <ul style="list-style-type: none"> <li>- supply (providing data for the cadastre from the State Authority for Geodetic Works);</li> <li>- performing photo-interpretation of vine groves;</li> <li>- cadastre updating and maintenance;</li> <li>- Opening of 6 regional offices of the vine groves register. All regional offices have been opened and are functional: Skopje – Kisela Voda, Valandovo, Negotino, Sveti Nikole, and Ohrid – Kosel, and Kavadarci (this office had been opened during the first phase of the project)</li> </ul>	To establish a National Vine Groves Register on the Entire Territory of the Country
		<p><b>Second component: coordination of the Macedonian legislation on wine with the EU legislation,</b> in the project's first phase the Law on Wine (69/2004) was passed which is partly in compliance with the EC basic regulation, but simultaneously it protects the national interests of the Macedonian Wine Sector. This component has the purpose of preparing bylaws that arise from the Law on Wine.</p>	To transport the EU wine legislation to Macedonia
		<p><b>Third component: International Marketing Strategy of Macedonian Wine;</b> The purpose of this component is to make a detailed analysis of the Macedonian wine sector, to present the</p>	To prepare a wine marketing strategy for the improvement of the Macedonian wines' marketing on the international

		<p>trends and happenings of the international wine market, to define the main problems and challenges faced by the Macedonian wine sector and to provide proposed measures for improvement of the development perspectives of the wine sector. As a result of the previously carried out detailed study, the preparation of a national wine strategy with the purpose of providing strategic recommendations on the improvement of the Macedonian wines' marketing on the international market is being prepared. This strategy is planned to be completed at the beginning of November 2008.</p>	market
		<p><b>Fourth component: Institution building;</b> The Law on Wine with its characteristics requires institution building for its successful implementation.</p> <p>At the projects' central office there are 3 trained and employed experts, as follows: legal advisor, relations advisor, and cadastre administrator who are to be employed at this division after the project is completed.</p> <p>There are 9 officers employed at the regional offices. In reference to this component, training was carried out for the inspectors at the State Agricultural Inspectors (those inspectors who are to work on the control of the wine sector).</p>	To strengthen human resources at the Vine Growing and Wine Production Department of the Ministry of Agriculture, Forestry, and Water Economy as well as the State Agricultural Inspectorate in the section of production and trade of grapes and wine.
<p><b>GTZ</b>  <b>“Introduction of EU directives in the Macedonian Agricultural Policy and support of the cooperation of the agricultural – alimentary sector with the countries from the region”</b></p>	Government of the Federal Republic of Germany	<p>The project is directed towards support and activities in the agricultural – alimentary sector of the Republic of Macedonia: in the process of EU approach, the regional economic cooperation, the introduction of quality systems and standards. The project contributes to the approximation process by supporting the Macedonian Government (Ministry of Agriculture, Forestry and Water Economy, Food Directorate – Ministry of Health) in the adjustment process of the agricultural – alimentary sector with the markets of the neighboring countries and the EU member states. The partner institutions are supported in: the adaptation of the laws and bylaws on EU approximation, the defining of the agricultural policy and strategy, the implementation of the Strategy for Approximation of the Macedonian Alimentary Sector to the EU Common Agricultural Policy, promotion of the Macedonian agricultural – alimentary sector competitiveness, promotion of participation in the European and regional trainings, introduction of EU standards in the most significant export products, regional</p>	Creation of framework services and services for preparation for EU approximation and building business relations by the state institutions and private service providers

		cooperation support, support of different activities of associations and intuitions related to the promotion of the Macedonian agricultural – alimentary products' export, support of Macedonian enterprises in the promotion, establishment, and improvement of economic cooperation.	
<b>National Animals Identification Programme – Phase III</b>	EAP	The project has been established for the purpose of supporting the Government of the Republic of Macedonia, as a EU candidate, to expand the animal identification and registration system and to continue with the development of an integrated R&D system of VIS.	Establishment of a system for identification and registration of small ruminants which is in accordance with the EU requirements, as well as preparation of a Research and Development system for pigs and future integration with the IT systems of the Ministry of Agriculture, Forestry, and Water Economy
<b>Agricultural Strengthening and Accession Project</b>	IBRD – World Bank	<p>The project is composed of four components, as follows:</p> <ol style="list-style-type: none"> <li>5. Strengthening the administrative and managerial capacities of the Ministry of Agriculture, Forestry, and Water Economy in accordance with the requirements for entry into the EU and establishment of an integrated administrative and control system;</li> <li>6. Support of the Ministry of Agriculture, Forestry, and Water Economy and the Payment Agency for better usage of the EU rural development funds;</li> <li>7. Building effective capacity of the veterinary service;</li> <li>8. Completion of the water economy reforms.</li> </ol>	<p>Continuation of the agricultural reform agenda of the Government of the Republic of Macedonia in relation to the sector's significance and challenges that it faces in the process of preparation for EU accession.</p> <p>The Project's activities are carried out depending on their relatedness with, and priorities arising from the EU integration process and Government Programme 2007-2010.</p> <p>The long-term objectives of the Republic of Macedonia that are supported by this Project are the establishment of a competitive agricultural sector and EU accession. The accession process and the EU membership itself shall create significant development advantages in the entire economy, which will become more competitive, and especially the agricultural sector, in the form of a significant pre-accession aid and direct payment for the farmers within the Common Agricultural Policy of the EU.</p>



<b>USAID AgBiz Programme</b>	USAID	1) Activities for promotion of value added chains (fairs, student stays, technical assistance, trainings), 2) Projects for business expansion, financial aid, and technology transfer for export focused projects on the farm level; 3) Promotion	Self sustainable and significant increase of competitiveness of agricultural producers, processors and merchants who by working in groups or separately participate in the value added chains which have the potential of value added products' export.
<b>FOPER (Forest Polices and economics) organized by the European Forest Institute (EFI), Finland</b>	European Forests Institute, Ministry of Foreign Affairs - Finland	Faculty of Forestry – Skopje where members of the Ministry of Agriculture, Forestry, and Water Economy are in the Managing Committee. Several trainings have been organized with the purpose of administrative capacity building.	Increase of capacities in the area of Forestry policy and economics
<b>Project of the Confederation of European Private Forest owners-CEPF“Private and community forest – developing livelihoods on the basis of secure property rights in selected countries of CEE</b>	CEPF/FAO	At the National Steering Group (NSG) there are members of the Ministry of Agriculture, Forestry, and Water Economy and of the National Association of Private Forest Owners.	The purpose of the project is preparation of a status quo analysis of the present legislation on privately owned forests in the Republic of Macedonia, exchange of experiences with the other countries from the region by organizing regional and national conferences and for certain conclusions to be reached in relation to improvement of the legislation on privately owned forests (1 March 2008 until 30 June 2009). The first phase is a status quo analysis of the present legislation on privately owned forests in the Republic of Macedonia (March 2008 until June 2009), the second phase is a Conference on the regional analyses' presentation (Serbia, Albania, and Macedonia, 20 July until 2 July 2008), the third phase shall be the organization of Conferences on a national level and the fourth phase shall be the organization of a closing Conference.
<b>Strengthening the readiness</b>	FAO	Strengthening the national capacities for effective management and prevention of forest fires, as well as strengthening the infrastructure	The purpose of the project is prevention, monitoring, detection, suppression, and

<b>for national forests protection against fire</b>		for coordination of strategies for fire management, including foreseeing forest fires resulting with improvement of the production and protection of forests. The activities the directed towards: <ul style="list-style-type: none"> <li>- Developing a forest management plan</li> <li>- Prevention through participation of the public and education</li> <li>- Developing an informative system for forest fires management on a national and regional level</li> <li>- Training of the personal for fire management</li> </ul>	safety from forest fires, education and establishment of an information system for protection against forest fires.
<b>Programme for Irrigation of the River Vardar South Valley</b>	KfW		
<b>Zletovica Basin Water Utilization Improvement Project</b>	Japan Bank for International Cooperation		
<b>SFARM 3 – Support of Farm Associations of the Republic of Macedonia</b>	SIDA	SFARM 3 is a twinning project between the Federation of Swedish Farmers (LRF) and the Federation of Farmers of the Republic of Macedonia (FFRM). SFARM 3 focuses on the following: <ul style="list-style-type: none"> <li>- Organizational development;</li> <li>- Information development (in relation to the market integration consequences, i.e. the EU);</li> <li>- Development of the ability of representation and political dialogue;</li> <li>- Entrepreneurship support in the value chain development</li> </ul>	The general development goal of SFARM 3 is to provide support in order for: <ul style="list-style-type: none"> <li>- the entire structure of the Federation of Farmers of the Republic of Macedonia to grow into an organization that is organizationally sustainable;</li> <li>- it to be governed and managed on the basis of the democracy and transparency principles.</li> </ul>
<b>Macedonian Agricultural Advisory Support Programme - MAASP</b>	SIDA	The Agricultural Advisory Support Programme operates within the frameworks of the Ministry of Agriculture, Forestry, and Water Economy and in cooperation with relevant public and private rural service providers, who work on the improvement of the living conditions of the rural population. The second phase of the Programme (MAASP – 2) is focused on the establishment of a society that includes all rural people who are enabled to use the opportunities from the European integration for a more dynamic and market oriented agriculture and rural development.	Consolidation of the reform of advisory services on a national level 2.Strengthening chosen value chains through an increased market orientation in the advisory service; and 3.Increased awareness of the capacities for reducing poverty through advisory services and for diverse rural development

		<p>The main objective of the second phase is to support the Ministry of Agriculture, Forestry and Water Economy develop a pluralistic agricultural advisory system as a tool for implementing Macedonian agricultural policy during the process of accession to the European Union. Within specific geographical domains, the Programme shall improve the conditions for the rural poor people: to reduce their poverty by enhancing the quality, relevance and accessibility of agricultural advisory services.</p>	
<p><b>Definition and promotion of a legal framework for organization of producers</b></p>	<p>Royal Norwegian Ministry of Foreign Affairs</p>	<p>The project has the purpose of preparing a legal framework for organization of producers and its promotion before the future users. The specific goals of the project are the following:</p> <ul style="list-style-type: none"> <li>• Preparation of a legal framework for organization of producers (OP) through a participative approach (expert work group, public debates, and similar)</li> <li>• Preparation of criteria for recognition (registration) of OP</li> <li>• Implementation of a comparative analysis of the relevant valid legal acts</li> <li>• Support in the process of adoption of the proposed legislation of OP</li> <li>• Promotion of the model of OP before the future users through a public informative campaign.</li> </ul>	<p>The purpose of the project is to provide the Ministry of Agriculture, Forestry and Water Economy with technical assistance in the development and promotion of a legal framework for organizations of producers in accordance with the EU criteria.</p>
<p>Encouraging Macedonia's Endeavors for Rural Land Development (EMERALD)</p>	<p>Government of the Kingdom of the Netherlands</p>	<p>Preparation of 2 pilot projects (in the Skopje, Veles, Kumanovo, Sveti Nikole regions) for reallocation of agricultural land. The project provides technical assistance (consultants, practical training, study trips) in: threats defining and possibilities for agricultural farms consolidations, through research, analyses, and evaluations, on the basis of experiences in the pilot areas, MAFWE shall define the main direction and the following steps for determining the consolidation policy, MAFWE capacity building for preparation and implementation of agricultural land consolidation strategies.</p>	<p>MAFWE capacity building in the preparation and implementation of agricultural land consolidation strategies.</p>
<p><b>Emergency assistance in the avian influenza readiness in the Republic</b></p>	<p>USAID</p>	<ul style="list-style-type: none"> <li>- training of veterinary inspectors and veterinary doctors,</li> <li>- campaign with brochures, leaflets, and posters</li> <li>- training of the media representatives,</li> <li>- preparation and printing of a manual</li> <li>- training for use of PCR,</li> <li>- Preparation and printing of a programme for suppression and</li> </ul>	<p>Building country capacities in case of avian influenza</p>

<b>of Macedonia OSRO/INT/603/ USA</b>		eradication of avian influenza and other contagious diseases.	
<b>Regional project OSRO/GLO/70 2/CAN B3 - OSRO/GLO/60 4/UK - operation plans for Eastern Europe</b>	FAO	<ul style="list-style-type: none"> <li>- epidemiological study on avian influenza</li> <li>- campaign with leaflets, brochures, and posters</li> <li>- training of poultry, exotic birds and ostrich producers, hunters and fishermen,</li> <li>- active and passive supervision with epidemiological and molecular methods (10.000 specimens of poultry, gees, ducks, ostriches, wild and exotic birds)</li> </ul>	Building country capacities in case of avian influenza
<b>Advisory Services for the Cabinet of the Minister of the Ministry of Agriculture, Forestry, and Water Economy in relation to the European integration</b>	SIDA	Direct advising for the Minister, his cabinet and divisions of the Ministry of Agriculture, Forestry and Water Economy related to laws, strategies, and other issues that refer to EU integration	Building the Ministry's capacity in relation to the EU integration processes