



REPUBLIC OF MACEDONIA
Ministry of Agriculture, Forestry and Water Economy

**NATIONAL AGRICULTURAL AND RURAL DEVELOPMENT
STRATEGY (NARDS)**

FOR THE PERIOD 2007-2013

Skopje, June 2007

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS.....	4
1. PURPOSES AND STRUCTURE OF THE DOCUMENT.....	6
1.1. Purposes.....	6
1.2. Structure of the document	6
2. CURRENT SITUATION	7
2.1. Role of Agriculture in the Economy	7
2.1.1. Geographic, Political and Administrative Background	7
2.1.2. Macroeconomic Framework	8
2.1.3. Role of Agriculture in the Economy	9
2.2. Rural Sector Analysis	10
2.2.1. Characterisation of Rural Areas.	10
2.2.2. Rural Demography and Education.	13
2.2.3. Employment (including SMEs, Crafts and Rural Tourism).	14
2.2.4. Social Care Infrastructure.	17
2.2.5. Technical Infrastructure.	17
2.2.6. Rural Development policies.	18
2.3. Sector Analysis: Agriculture.....	19
2.3.1. Land Resources, Land Use and Main Agricultural Areas.	19
2.3.2. Land Ownership, Farm Structure and Productivity.	19
2.3.3. Agricultural Labour	21
2.3.4. Foreign Trade of Agricultural and Food Products	21
2.3.5. Main Agricultural Sub-sectors.	24
2.3.6. Crop Production Chain	24
2.3.7. Animal Production Chain	41
2.3.8. Education, Research and Extension Services in Agriculture	51
2.3.9. Biodiversity, Agriculture and the Environment	57
2.4. Sector Analysis: Fishery and Aquaculture	65
2.4.1. Fishery and Aquaculture Resources	65
2.4.2. Fishery and Aquaculture Policies and Programs	66
2.5. Sector Analysis: Forestry.....	66
2.5.1. Forest Resources	66
2.6. Sector Analysis: Water Economy	67
2.6.1. Linkages between agriculture and water resources	67
2.6.2. Status and Reform Program in the Irrigation Sector	68
2.7. Legislative and Institutional Framework.....	71
2.8. Key Factors Hampering Agricultural and Rural Development.....	72
3. AGRICULTURAL AND RURAL DEVELOPMENT STRATEGY	73
3.1. National Strategic Objective.....	73
3.2. Strategic Policy Focal Issues.....	74
3.3. Agricultural Support Policies.....	81
3.3.1. Direct Payments in Crop Production	82
3.3.2. Livestock Production Chain Policies and Measures	92

3.4. Rural Development Policies	100
3.4.1. AXIS 1 - Market efficiency and implementation of EU standards	101
3.4.2. AXIS 2 - Agri-environmental measures and local rural development	104
3.4.3. AXIS 3 - Development of the rural economy	104
3.4.4. AXIS 4 - Technical Assistance	105
3.5. Legislative Harmonisation and Institutional Reform Policies	106
3.6. Budgetary resources for agriculture and rural development	118
4. IMPLEMENTATION PLAN OF PROPOSED policies	120
5. LAND POLICY	127
6. FORESTRY	128
6.1. Vision	129
6.2. General objectives	130
6.3. Main directions:	130
7. WATER ECONOMY	130
7.1 Strategic Water Economy Determinations	130
7.2. Strengthening the capacity of the Water Economy Directorate (WED)	131
7.3 Irrigation measures	131

ACRONYMS AND ABBREVIATIONS

AE	Agro-environmental
AI	Artificial Insemination
AIS	Agricultural Information System
AMIS	Agricultural Market Information System
CAP	Common Agricultural Policy (of the EU)
CARDS	Community Assistance for Reconstruction, Development and Stability
CEFTA	Central European Free Trade Agreement
CMO	Common Market Organisation (of the EU CAP)
EU	European Union
EU-15	European Union of 15 Member States
EU-25	European Union of 25 Member States (without Bulgaria and Romania)
EU-27	European Union of 27 Member States
Eurostat	European Statistical Office
EC	European Community
FADN	Farm Accountancy Data Network
FMS	Farm Monitoring System
FTA	Free Trade Agreement
FAO	Food and Agriculture Organization (of the UN)
FIWC	Federation of Irrigation Water Committees
GAO	Gross Agricultural Output
GAP	Good Agriculture Practice/Cross Compliance (EUREPGAP)
GDP	Gross Domestic Product
GHP	Good Hygiene Practice
GIS	Geographic Information System
GHG	Glass House effect Gases
GMO	Genetically Modified Organisms
GMP	Good Manufacturing Practice
GoM	Government of RM
ha	Hectares (10,000 sq.m)
HACCP	Hazard Analysis and Critical Control Points
hl	Hectolitres (100 liters)
IFAD	International Fund for Agricultural Development (of the UN)
IACS	Integrated Administrative Control System
IICB	Inter-Institutional Coordination Body
IPA	Instrument for Pre-Accession assistance
IPARD	Rural Development component of IPA
IBRD	International Bank for Reconstruction and Development
ICT	Information and Communication Technology
I&R	Animal Identification and Registration System
ISO	International Standards Organisation
IWC	Irrigation Water Committee
kg	Kilogram
LFA	Less Favoured Areas
LPIS	Land Parcel Identification System
MAFWE	Ministry of Agriculture, Forestry and Water Economy (of RM)
MAASP	Macedonian Agricultural Advisory Support Programme (SIDA funded)
MAP	Medicinal and Aromatic Plants
MEPP	Ministry of Environment and Physical Planning
MLSG	Ministry of Self Government
MKD	Macedonian Denar
MoC	Ministry of Culture
MoE	Ministry of Economy

MoF	Ministry of Finances
MoH	Ministry of Health
MoLSG	Ministry of Local Self Government
MoSE	Ministry of Science and Education
MoTC	Ministry of Transport and Communication
n.a.	Not Available
NARDS	National Agricultural and Rural Development Strategy
NEA	National Extension Agency (Agency for Promoting Agricultural Development)
NUTS	Nomenclature of Statistical Territorial Units
OECD	Organisation Economic Co-operation and Development
OG	Official Gazette of RM
O&M	Operation and Maintenance
PGI	Protected Geographical Indication
PDO	Protected Designation of Origin
PO	Producer Organisation
RM	Republic of Macedonia
SEA	Secretariat of European Affairs (of the RM)
SEE	South Eastern Europe
SEUROP	European Carcass Classification System
SIDA	Swedish Bilateral Aid
SME	Small and Medium Enterprise
sq. km	Square Kilometre
SSO	State Statistical Office of RM
SWOT	Strengths, Weaknesses, Opportunities and Threats analysis
ton	Tons
TSG	Traditional Specialty Guaranteed
UHT	Ultra High Temperature (for milk)
UN	United Nations
VAT	Value Added Tax
VET	Vocational Educational Training
VMMS	Vineyards Monitoring and Management System
WB	World Bank
WE	Water Economy
WHO	World Health Organization
WMO	Water Management Organization
WTO	World Trade Organisation

Macedonian Denar (MKD)

Exchange rate used

€1 = MKD 61.3

1. PURPOSES AND STRUCTURE OF THE DOCUMENT

1.1. Purposes

The National Strategy for Rural and Agricultural Development 2007-2013 (NARDS) has two interlinked purposes.

The first one is to provide the Macedonian Government (and, more in particular, the Ministry of Agriculture, Forestry and Water Economy - MAFWE) and to the stakeholders (rural dwellers, farmers and their associations, producer groups and processors) a multi-annual reference material – strategy and a tool for the development of Macedonian agriculture and rural areas.

The second one is to establish a base for supporting the drafting of the hierarchically lower-level agricultural and rural development operational plans, in particular the Instrument for Pre-Accession for Agricultural and Rural Development (IPARD) plan, and for their discussion with the European Commission.

In fact, according to the EU Council Regulation no. 1085 dated 2006, establishing an Instrument for Pre-Accession Assistance (IPA) — the Preamble, point 16 stipulates that: “Assistance should be provided on the basis of a comprehensive multi-annual strategy that reflects the priorities of the Stabilisation and Association Process, as well as the strategic priorities of the pre-accession process”. This is reinforced in Title 1, article 6 Planning of assistance – “For countries listed in Annex I, assistance shall be based in particular on the Accession Partnerships. Assistance shall cover the priorities and overall strategy resulting from a regular analysis of the situation in each country and on which preparations for accession must concentrate ...”. The mentioning of the strategic document for IPA reflects and resemble the provisions for EU Member States, that are included in the EU Regulation no. 1698 of the year 2005, that requires – specifically for rural development – that “each Member State should prepare its rural development national strategy and plan constituting the reference framework for the preparation of the rural development programmes...”.

1.2. Structure of the document

The National Agricultural and Rural Development Strategy (NARDS) for the period 2007-2013 carries out in Chapter 2, an analysis of the situation of the range of responsibilities of the Ministry of Agriculture, Forestry and Water Economy. The strategy, however, does not set the strategy for all sub-sectors under MAFWE responsibility. By decision of the Strategic Planning Group, certain parts are not included because produced by other donors, namely:

- Forestry policy, already produced by FAO, and
- Water management because object of analysis and projects financed by the World Bank.

However the above are presented in summary form (background) and their implications with the IPARD co-financing are outlined. At the end of the chapter, the key factors hampering agricultural and rural development are identified.

Chapter 3 identifies the agricultural and rural development strategic objectives, sets the policy specific objectives and determines the measures to be implemented during the period.

Chapter 4 provides the implementation plans for the proposed measures.

2. CURRENT SITUATION

2.1. Role of Agriculture in the Economy

2.1.1. Geographic, Political and Administrative Background

The Republic of Macedonia is a European country located in the south western part of the Balkan Peninsula extending between 40°50' and 42°20' North Latitude, and between 20°27'30" and 23°05' East Longitude. Macedonia shares borders with two EU member states (Greece to the south and Bulgaria to the east), and with Serbia in the North (including the UN-Administered Kosovo Territory) and Albania to the West.

The total length of the border is 849 km, of which the western border is 191 km, the southern 262 km, the eastern 165 km and the northern 231 km. Although landlocked, Macedonia is at the crossroads of two major pan-European transport corridors (number 8 and 10) which link Central Europe to the Adriatic, Aegean and Black Seas.



The total land area 25,713 sq. km (equivalent to 6% of EU-25 land area, and about the size of Belgium) is prevalently mountainous and intersected by large valleys. Hills and mountains account for around 80% of the land area with the balance made up of plains (19%) and natural lakes (2%). It has a fairly well developed hydrological network (there are four river basins of which three are important in terms of water flow, the Vardar carries 80%, the Crni Drin 13% and the Strumitsa 7%) and tree major lakes (Ohrid, Prespa and Dojran that are shared with neighbouring countries). The country has around 110 major and minor artificial lakes (of which only 20 with volumes larger than 1 million m³) that are used for irrigation, water supply and production of hydroelectric power.

Soil structures in R. Macedonia are very heterogeneous (there are more than thirty types of soils) as consequence of the varied natural conditions for the soil creation (topography, climate, flora, geological formation and anthropogenic influence).

About half of the total land area is classified as agricultural (1.26 million ha), out of which 560,000 ha (44%) are cultivated land and 704,000 ha (56%) as permanent pastures. Upland or mountainous forests cover 37% of the country.

As a result of the geographic position and topography, Macedonia is at the crossroads of continental and Mediterranean climates which causes a wide variety of weather conditions. Eight climate-vegetation-soil regions have been identified with significantly heterogeneous climatic, vegetation and soil conditions¹. The land used for agriculture production is located in the Sub-Mediterranean, Continental-Sub-Mediterranean and warm Continental areas with an altitude of 50-900 m. The summer-autumn seasons are dry and hot, while winters are snowy and with short but intense freezing spells. Higher precipitation is characteristic in the period from October to December and weaker from March to May. The spring and autumn rains are intensive and cause landslides, soil erosion and local floods. During the vegetation period, drought is rather common which points out that the water is limiting factor for intensive agriculture production. Late spring freezing and early autumn frosts are not infrequent.

According to latest census (2002), the total population is around two million divided into around 650 thousand households (with 3 persons per household). Population density is 79 inhabitants/sq. km which is low compared to the EU average of 115. Around 43% of population lives in rural areas. Urban population is mainly concentrated in the capital city Skopje (23.1%, with about 600 thousand inhabitants) and the rest is distributed in the other cities (Kumanovo 105, Bitola 88, Tetovo 72 and Veles 58 thousand respectively). Macedonia's population has a multi-ethnic structure including Macedonians (64.18%), Albanians (25.17%), Turks (3.85%) and Roma (2.66%). The remaining balance of 4.14% is made up by other ethnic groups.

The Republic of Macedonia became independent in November 1991 and is a parliamentary Democracy with elections held every four years. It became member of the UN (1993), of the World Trade Organization (WTO) in 2003 and of CEFTA in 2006. Macedonia has signed in April 2001 the Stabilisation and Association Agreement with the EC and it's member States which entered into force in April 2004. In addition, the country has signed ten Free Trade Agreements with different countries from the region. In December 2005 the European Council granted the Republic of Macedonia the status of candidate country for membership to the EU. As regards the possible opening of accession negotiations, the Commission considered that these could be opened once the country has reached a sufficient degree of compliance with the membership criteria.

According to the EU Nomenclature of Statistical Territorial Units (NUTS) Macedonia as a country is classified in the NUTS I and II, and it is divided into 8 Statistical Regions (corresponding to EU Classification NUTS III), and into 34 groups of Municipalities (equivalent to districts - corresponding to EU classification NUTS IV) and into 84 Municipalities and the city of Skopje (corresponding to EU classification NUTS IV)².

2.1.2. Macroeconomic Framework

The Gross Domestic Product (GDP) of the Republic of Macedonia has grown in the 2000-2005 period, notwithstanding a drop in 2001 due to political instability. In 2005, the GDP stood at €4.46 billion, or around one percent of the EU-25 GDP. Per capita GDP stands at around 38% of the EU-25. Low standard of living, increasing poverty, high unemployment

¹ Source: Gj. Filipovski, R.Rizovski,P.Ristevski 1996: Characteristics of the climate-vegetation-soil zones (regions) in Republic of Macedonia. MANU (Macedonian Academy of Sciences and Arts), Skopje)

² Law on Territorial Organisation of Local Self Governments (RM OG 55/2004 and 12/2005)

rate (at around 36% of the workforce in 2005) and a relatively low economic growth rate remain central economic issues.

Since 2002, macroeconomic stability has been ensured by conservative fiscal and monetary policies and by the gradual liberalisation of international trade (decrease in average tariff rates) which maintained a low level of inflation (less than one percent in 2005) as well as a stable the nominal exchange rate of the currency. Foreign Direct Investment was at around two percent of GDP in recent years, quite low in general.

Table 1 - Key macroeconomic indicators 2000-2005 with comparison to the EU-25.³

	2000	2001	2002	2003	2004	2005*	EU-25 (2005)
GDP (current Mio. Euro)	3,893	3,839	4,001	4,105	4,300	4,463	2,697,935
GDP per capita (current Euro)	1,921	1,886	1,981	2,025	2,147	2,209	5,871.6
Agricultural % of GDP	12%	11.8%	12.4%	13.4%	13.2%	12%	1.6%
Exports of goods/services (% of GDP)	37	34	29	29	31	36	9.3*
GDP real growth	4.5	-4.5	0.9	2.8	4.1	4	1.6
Agriculture growth	1.0	-10.8	-2.0	4.8	6.2	1.8	
Imports of goods/services (% of GDP)	56	49	51	48	52	55	9.9*
Inflation (average)	5.8	5.5	1.8	1.2	-0.4	0.5	2.2
Registered unemployment rate (%)	32.2	30.5	31.9	36.7	37.2	36.6	9.0*
Exchange rate (1 Euro = x units MKD)	60.8	61	61.1	61.3	61.3	61.4	

Note: *Preliminary data

2.1.3. Role of Agriculture in the Economy

Agriculture (including hunting, forestry and fishery) is the third largest sector after services and industry. In the 2000-2005 period, the share of the agricultural sector in the overall GDP has remained relatively stable around 12% (compared to the 1.6% in the EU-25). If agro-processing is included, the percent increases to 16%. Agricultural GDP, in line with overall GDP, declined in 2001, but has recovered since. Agriculture has served as shock-absorber for the socio-economic and structural changes in industry and other sectors of the economy.

In 2004 the sector has provided income and employment to approximately 17% of the national workforce⁴ (around 11% in 2000) but the real contribution probably exceeds this percent as according to the latest Census (2002) about 43% of the population, 36% of the labour force and 44%⁵ of the poor live in rural areas.

Agriculture is an important contributor to foreign trade. The relative share of agri-food and fishery export in the total trade for the period from 2002-2005 is within the range of 16% to 19% (17.4% in 2005). The country is however a net importer of agricultural and food products which accounted for about 15% of total imports in 2004-05. The agricultural trade deficit in value terms has been widening in recent years, though a sizeable increase in tobacco and wine exports narrowed the gap in 2005.

The Macedonian agriculture is facing major challenges and structural reforms. WTO membership increased possibilities for export expansion but also competition on the domestic market from imported products. These challenges are going to be even more severe with the implementation of the Free Trade Agreements with the neighbouring countries and the EU-27. A decline in agriculture, forestry and fishery and associated industries could have significant adverse consequences in rural areas and to the overall

³ Source: Elaborated from Study on the State of Agriculture in Five Applicant Countries, EC DG-AGRI 2006.

⁴ Source: "Labour force survey, 2004, basic definitions, methods and final results", published by SSO. Survey made according to ILO methodology

⁵ FYR Macedonia: Growth and Poverty, 2002-2004. Western Balkans Programmatic Poverty Assessment (World Bank).

economic and social stability of the country. Strengthening the competitiveness of the Macedonian agribusiness is the focal point for its survival. This must be supported by the reform of the public institutions and by the implementation of well targeted support policies and rural development measures.

2.2. Rural Sector Analysis

2.2.1. Characterisation of Rural Areas.

Available data necessary for the socio-economic characterisation of rural areas in Macedonia is limited and the picture is thus incomplete.

There is no clear definition of rural areas as well as well as classification based on the population density in the Republic of Macedonia. In 2002 the UNDP, the SSO and the Ministry of local self government carried out a socio-economic mapping of the disparities among Municipalities in Macedonia which delineated six zones based on population concentration on the territory of the country: a weak concentration zone (up to 50 inhabitants per sq. km), medium concentration zone (51-100 inhabitants per sq. km), overpopulated zone (101-150 inhabitants per sq. km), significantly overpopulated zone (151-500 inhabitants per sq. km), very significantly overpopulated zone (501 – 1,000 inhabitants per sq. km), and massively overpopulated zone (more than 1,000 inhabitants per sq. km). In 2002, almost half (61) of the municipalities belonged to the weak concentration zone, 26 municipalities had medium concentration, 7 were overpopulated, 19 were significantly overpopulated, 4 very significantly overpopulated, and 6 municipalities had more than 1,000 inhabitants per sq. km⁶.

Table 2 - Population Development within different regions⁷

Region	Total population		Change increase 1994-2002		Growth rate	Migration balance	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%
Pelagonia	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%
Northeast	163,841	172,787	8,946	5.46	0.66	-1,557	70.6	74.4	8%
Southwest	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%
Southeast	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%

National Legislation

Three pieces of Macedonian legislation relate broadly to “Rural Areas”. The 2004 Law on Territorial Organization of the Local Self-Government⁸ defines cities and villages as follows:

- Cities are populated places that have over 3 thousand inhabitants that have a developed range of activities and over 51% of the workforce is employed in non-agricultural activities. Cities have an urban physiognomy (with areas for housing, economy, recreation and public green, squares, developed street network and communal agencies) and act as functional centre for the populated places in the vicinity.

⁶ Socio - Economic Disparities among Municipalities in Macedonia’, UNDP, 2002

⁷ Socio - Economic Disparities among Municipalities in Macedonia’, UNDP, 2002

⁸ OG No. 55/2004

- Villages are defined as mono-functional populated areas, in which one business activity is predominant, whereas the ground has agricultural physiognomy and function.

According to the law, the principal difference between villages and towns lays in the main activity orientation of their communities (agriculture in the case of villages and secondary and tertiary sectors in the case of towns). There are also other differences, such as the size of the community, level of structures, environmental surroundings, etc.

Macedonia has a total of 84 Municipalities (33 with seat in a city, 49 with seat in a village, and 10 in the capital city of Skopje), and 1,715 villages covering 86.7% of the national territory and hosting 43% of the total population (2002 census).

From 1994 to 2002, the percent of large villages (>801 inhabitants) remained stable, the percent of medium and large villages (>100 to 800 inhabitants) decreased from 58.1 to 54.8% while the percent of abandoned and small villages (<100 inhabitants) increased from 40.6 to 45.2%.

Table 3 - Evolution of the size of villages from 1994 to 2002⁹

Number of population	1994		2002	
	Number	%	Number	%
Abandoned	121	7.1	145	8.5
Up to 100 inhabitants	573	33.5	630	36.7
From 101 to 300	387	22.6	323	18.8
From 301 to 800	332	19.3	318	18.6
> 801	302	17.5	299	17.4
Total	1,715	100.0	1,715	100.0

The 2002 Law on Local Self-Government¹⁰ stipulates, among others, the following competencies of the Municipalities:

- Urban and rural planning.
- Protection of nature and of the environment (from pollution, noise and ionizing radiation).
- Local economic development (determining development priorities, running of local economic policy; support the development of small and medium size enterprises and entrepreneurship at local level, participation in the establishment and development of local network of institutions and agencies; promotion of partnership).
- Communal activities - water supply (including potable); water drainage and waste water purification; maintenance of public hygiene; solid waste management; regulation and organization of public local transportation; supply of natural gas and heating energy; construction, maintenance of local roads, streets and other infrastructure facilities (parking spaces, markets; parks, park-forests and recreational spaces).
- Culture - preserving of cultural heritage; celebration of events and persons of importance for the culture and history of the municipality.
- Recreation - development of recreational activities of the citizens; maintenance and construction of recreation facilities of public interest for the municipality.
- Social welfare and child protection – kindergartens and homes for the elderly.
- Education – establishing, financing and administering of primary and secondary schools, in cooperation with the central government.
- Healthcare – governance of the network of public health organizations and primary care.

⁹ Source: J. Jakimovski – Institute for Sociological, Political and Juridical Research Skopje 2006.

¹⁰ OG No.5/2002

Regarding less favourable areas (LFA), the 1994 Law for stimulation of the Development of Economically Insufficiently Developed Regions¹¹ provides **determination criteria for three types of specific regions and for the rural centres** as follows:

- **Hilly-mountainous** regions are the inhabited areas located at more than 800 meters above sea level that have distinct mountainous terrain configuration or, exceptionally, inhabited areas at more than 600 meters above the sea level, if they are with distinguished mountainous characteristics.
- **Border regions** are the inhabited areas in the regions that are up to 5 km from the state borders, including the inhabited areas that are farther than 5 km from the borderline, but are the first inhabited areas near the border. The inhabited areas with developed economic activity and built infrastructure do not have the status of border regions.
- **Extremely undeveloped inhabited area** have a low level of economic activity, are more than 10 km away from the city centre, without road access and basic infrastructure, high migration and small population density.
- **Rural centres** are the larger inhabited areas located in the centre of the economically underdeveloped regions where there are conditions for performing diversified economic activities which makes them "centre" of the development in that region. Municipalities may be rural centres, except for the ones with characteristics of cities.

The law further determines the:

- **Institutional set-up** (it establishes the Bureau for Economically Underdeveloped Regions, under the Ministry of Local Self Government).
- **National budget funding** (up to one percent of the country's GDP). At its peak in 2002, the Agency operated with annual budget of approximately € 9 million while in 2006 the budget was down to €3.3 million, far below the real needs, and
- **Eligible measures** (grants for economic and non-economic infrastructure projects, partial interest refund on domestic and foreign loans, investment support for economic activities/projects, employment creation, training and pensions, disability and health insurances, and for research related to economically underdeveloped areas).

According to the 2006 Decision for Determining the Economic Underdeveloped Areas¹², 64% of the total Macedonian villages are eligible to be supported under the above Law. The total number of Rural Centres is 113 (out of which 20 have the status of Specific Regions also). The total number of villages with status of Specific Regions is 1,005 delineated as follows:

- 51% are hilly-mountainous villages, mainly spread in the South-West region, followed by Polog and Pelagonia, North-East and East and the smallest number of them is located in the Vardar and South-West regions and Skopje.
- 33% are extremely undeveloped villages, largely located in the East, Vardar and Pelagonia regions and in the North-East region.
- 15% are border villages located along the border lines.

Under the current decision, around 69% of the national territory and around 17% of the total population are covered. However, the criteria for determination of economically undeveloped regions are questionable, as some Macedonian villages with high migration rate, insufficient public utilities and economic infrastructure haven't acquired the status of extremely undeveloped villages and vice versa.

¹¹ OG No. 2/94 as amended by OG No. 39/99

¹² OG No. 17/2006 and 54/2006

2.2.2. Rural Demography and Education.

According to latest census (2002), the total population of the Republic of Macedonia is around two million. Population density is 79 inhabitants/sq. km which is low (68%) compared to the EU average of 115 inhabitants/sq. km.

Around 43%¹³ of the population lives in rural areas distributed over 86.7% of the total land area. Urban population is mainly concentrated in the capital city Skopje (23.1%) and the rest is distributed in the other cities.

The average age of the population in Macedonia is approximately 33 years, and almost 68% of the population is in working age (between 15 and 64 years). The net rate of population growth has been roughly estimated at 0.4% for 2004, while the birth rate is almost twice as big as the mortality rate. Still, Macedonia has an unfavourable net average migration rate 5-1.45/1,000 inhabitants^o.

From 1981 to 2002, the number of young people (0 to 19 years) declined from 41 to 32.2%, while population aged 65 and above increased from 8 to 32.2%. Unsatisfactory rural age structure is particularly found in the Pelagonia (18.8%), East (15.5), Vardar (12.9) and North-East (12.7%) regions¹⁴.

In Macedonia 96% of the total population of over 10 years is literate. There is gender equality in the literate population, but around two thirds of the illiterate population is female¹⁵.

If the overall literacy situation is good, there appears to be a difference between urban and rural areas in the educational structure. According to the 1994 census, a sizeable share (37.9%) of village and farming population above the age of 15 have insufficient or total lack of primary education: 10.5% are illiterate and 27.4% have not completed primary education. The low rate of education in the rural areas is due to the: *“moving out of young and capable population for work, ... the lack or small number of education facilities, not sufficient care for improvement of the school education of the young population, isolation of the undeveloped villages, etc”*¹⁶.

The educational problem is obvious among the unemployed, since only 8% of them have higher or university education, the majority (54%) has secondary education, and the remaining 38% are unskilled. Young population (age 15-25) participate with 23% of the unemployed, however this percentage amounts up to 82% among the young working capable population¹⁷.

Education is a driving force of the economic and social development. It is also a factor for innovative readiness. The educational system certainly plays an important role in the young people's ability to value the local product and the local tradition. The quality of education and life-long learning could reduce the disparities between urban and rural areas which are striking in Macedonia.

Small holder farmers (especially in backward areas) have the weakest educational and professional level among agricultural producers. In the country, apart from formal secondary and university education, there is a lack of additional (non-formal) education and training for farmers. Existing media programs (radio and television) relating to agriculture are limited in duration and are very general in scope. There are no specialised agricultural magazines. The Macedonian agro-web (all official national web pages supplying useful information for agricultural stakeholders) is very poor and offers obsolete information¹⁸. There are also a

¹³ According to the last census from 1994, rural population in the country was 40.2 %.

¹⁴ Contributed paper - J. Jakimovski (Institute for Sociological Political and Juridical Research , Skopje, Macedonia)

¹⁵ Source: State Statistical Office, 2002 Population Census, Book 13

¹⁶ Rural Social Structure, J. Jakimovski 2004.

¹⁷ Statistical Yearbook of the Republic of Macedonia, 2005

¹⁸ Agricultural Knowledge and information system in Macedonia, Master thesis, Rusev Trajce, 2005.

limited number of programs teaching about local culture and history, especially about the local public resources which can encourage and improve the quality of life.¹⁹

2.2.3. Employment (including SMEs, Crafts and Rural Tourism).

According to the latest statistics²⁰, out of the total active population (885,609) of the country, 36.1% are unemployed (of which 82% are long-term unemployed). This does not compare favourably with the EU-25 average of 8.6% in 2005. Unemployment is worse in urban (68%) than in rural areas (32%)²¹ but the gap is narrowing. Furthermore, 44%²² of the poor live in rural areas.

Available statistics do not provide adequate details on rural employment by branches. Indeed the majority of rural population is engaged in the agricultural sector (mainly subsistence/household farming) and other activities, if any. Agricultural wages tend to be significantly lower than in other sectors, and almost half of all agricultural workers are unpaid family workers. Agricultural employment is also highly seasonal. The 2005 WB Poverty Assessment report concludes that agricultural employment serves as a social buffer, helping alleviate poverty and unemployment particularly in times of high off-farm unemployment.

A comparison of exclusively agricultural households, mixed households (those engaged in agriculture on private holdings and where at least one household member is employed outside agriculture), and household with no agricultural holdings, shows that mixed households have the highest incomes, followed by agricultural households. Non-agricultural rural households are worst off²³. Studies have shown a trend towards diversification into non-farm employment as a result of economic need (and, to a lesser extent, attitudes towards farming), and confirm a positive correlation between income and the number of non-farm activities households engage in. Full-time farms earn 88% of their net income from farming (the remainder is largely unearned income such as pensions). Part-time farms earn around 50% of their income from wage or self-employment, with the remainder from farming and unearned income²⁴.

Small and Medium Enterprises (SMEs)

The law on Trade Companies (2004) sets the criteria for the determination of micro, small, medium and large enterprises. In terms of number of employees, the criteria are compatible with EU ones, but are different with regards to turnover and balance sheet values²⁵. The Ministry of Economy is working to eliminate the discrepancies.

The number of private sector enterprises is increasing over time which shows that they play an increasingly important role in relation to the contribution to GDP, employment, export, etc.

The total number of registered enterprises is approximately 180,000, however in 2005 only 1/5 were active (44,424) and of these the great majority (98.8%) are SMEs.

Table 4 - Number of Active SMEs (1991 and 2000-2005)²⁶

	1991	2000	2001	2002	2003	2004	2005
--	------	------	------	------	------	------	------

¹⁹ MAFWE- Annual Agricultural Report 2005.

²⁰ Survey for labour force N; 2.1.6.26 of 9 Oct 2006 SSO

²¹ Unemployment report from 31 August 2006 published 18 Sept 2006 from the Agency for Employment of RM

²² Growth and Poverty, 2002-2004. Western Balkans Programmatic Poverty Assessment (World Bank).

²³ Source: State Statistical Office mentioned in WB document Agriculture and EU Accession: Achieving FYR Macedonia's Agricultural Potential (November, 2006).

²⁴ The main non-farm income-creating activities are trade, transport and car repair (accounting for 17.5% of all non-farm activities), followed by restaurant work, construction, food processing, tailoring, and tourism (Buchenrieder, G., J. Mollers and F. Heidhues. 2002). This analysis is based on survey data comprising households in rural areas that are employed full time in agriculture and households which have diversified or shifted away from agriculture as a source of income.

²⁵ Source: Central Registry MoE

²⁶ Source: Central Registry MoE

SMEs	9,703*	33,151	34,991	36,963	39,096	41,517	44,300
All	10,270	33,269	35,110	37,074	39,199	41,590	44,424

The number of active enterprises translates into an SME density of 22 per 1,000 inhabitants. This compares favourably with the SEE region (23), but unfavourably with the EU-15 average (45). SMEs are also important in terms of employment creation. In 2005²⁷ their share in total employment stood at 80% while contributing for only 50% of the GDP. The sectors in which most SMEs are operating are also the biggest contributors to employment (65%).

Three sectors alone comprise over 75% of the total active enterprises (and therefore also of SMEs). The wholesale and retail trade sector accounts for 48.7%, manufacturing for 16.4%, transport, storage and communication for 10.13%. Agricultural enterprises account for 2% of the total.

Table 5 - Active Enterprises by Sector (2005)²⁸

Sector	Small	Medium and Large	Total
Agriculture, hunting and forestry	934	32	966
Fishing	28	0	28
Mining and quarrying	86	7	93
Manufacturing	7,069	222	7,291
Electricity, gas and water supply	57	22	79
Construction	3,061	52	3,113
Wholesale and retail trade	21,511	121	21,632
Hotels and restaurants	1,937	19	1,956
Transport, storage and communication	4,468	32	4,500
Financial intermediation	34	2	36
Real estate, renting and business activities	2,150	18	2,168
Public administration and defence	2	1	3
Education	294	0	294
Health and social work	1,387	3	1,390
Social and personal services	859	16	875
Total	43,877	547	44,424

Craftsmanship

In 2001, 7,500 crafts were registered according to the Law on Craftsmanship. The annual growth rate of this sector was 1.4% within the period 1995-2001²⁹. More recent statistics are unavailable, as craftsmanship according to the new nomenclature, is not separated from the industry. Recent statistics³⁰ show that sole proprietors in 2004 were 19,736 entities, but on the other hand self-employed are 53,252 persons. The need for joint evidence of all micro-businesses in the country is evident. The register on trade companies and register of farmers should be merged into one register of micro-businesses.

Recent legislative changes to the Law on Craftsmanship and the Law on Trade Companies have greatly simplified the conditions for start-ups. For registration within the Craftsman chambers, it is necessary to have a crafts diploma and office/work facilities. No deposit is required for start-up. Moreover, there is a tax free period of three years after the establishment and thereafter a lump sum tax of progressive rates 15-18-24% applies.

²⁷ EBRD – Annual Country Report –FYR Macedonia - 2005

²⁸ Source: Central Registry (2005)

²⁹ Study on the craftsmanship – Institute of Economics-Skopje for the Ministry of Economy, 2002

³⁰ Statistical Yearbook of the Republic of Macedonia, 2005

Crafts are organized in 11 regional Crafts Chambers, the most active being those located in Skopje, Strumica, Prilep, Bitola, Tetovo and Kumanovo. In 2005 a National Crafts Chamber was registered in Gevgelija, however, it is not yet operational³¹

According to the Law on Vocational Education (2005) crafts licence is provided by Vocational Educational Training (VET) Centre for final examination of the craftsmen (so called master's exam).

Craftsmen licences will be provided by the craftsmen chambers. However the education and practice will be joined through education in vocational schools and practice in certified craftsmen shops. Certification of the craftsmen shops for educational purposes will be provided by the craftsmen chambers upon passed master's exam that includes pedagogy, theory of the activity and business economics. Also, after three years craftsmen education, students might continue their studies at the University level at so called higher specialist studies.

The average number of businesses per thousand inhabitants in rural municipalities in the country is 40.43 compared to 78.89 in urban municipalities (national average is 86.8). In 2005, according to the State Statistical Office³², 10% of total number of business entities' headquarters was located in rural municipalities and 2.9% of the total number of registered enterprises is in the area of agriculture, hunting, forestry and fishery (5,024)³³ – of which 21.4% are based in the rural municipalities.

Generally, rural areas are not attractive to businesses for several reasons: property right problems, lack of concentration of population, poorer educational achievements, lesser flexibility of the potential workforce, and distances from potential markets (for both inputs and outputs), all putting businesses in rural areas at a cost disadvantage. Poorly developed and diversified economic infrastructure and the consequent lack of quality jobs are common features of rural areas in Macedonia. These are also the main causes of development lag typical of these areas.

Rural Tourism

Rural tourism in all its forms (agri-tourism, eco-tourism, cultural and ethno-village, mind/body tourism, wilderness sports, eno-gastronomic, hunting, etc. and, more in general the tourism industry in Macedonia) is small and well below the potential.

After halving in 2001 compared to the previous year, the annual number of tourists has been growing gradually but slowly. In the 2000-2005 period, Macedonia's official statistics show that the average number of tourists (both inbound and domestic) is around 470 thousand per year³⁴, of which only one third (around 150 thousand/year) is from foreign countries. Of these, 50% is from the neighbouring countries. The average number of nights spent per tourist is 4, but foreign tourists spent about half of this figure. During the period, the leading tourist destination is Ohrid, which absorbs approximately 60% of Macedonia's tourist visitors, followed by Skopje (20%), alpine areas (9%) and SPAs (4%).

Official Statistics do not provide data focused specifically on rural tourism in all its forms. According to a study carried out in 2002³⁵, the main reasons for coming to Macedonia are business trips, mainly in Skopje and seminars mostly in Ohrid; vacation and recreation; and

³¹ Statistical Yearbook of the Republic of Macedonia, 2005

³¹ Executive director at the Skopje Craftsman Chamber, Ms. Snezana Denkovska

³² State Statistical Office, Statistical report 6.1.1.02

³³ The statistical report 6.1.1.02

³⁴ SSO 2000 to 2005 annual reports.

³⁵ Ministry of the Economy - Master Plan for tourism in Republic of Macedonia, Louis Berger S.A, April 2003. The study is being currently updated and reviewed.

cultural tourism mostly as a part of package offer along the visit to neighbouring countries. Foreign tourists arrive mainly by road or regular air flight. In 2002, foreign tourists spent an average of €72.5 per day, while average daily expenditure on rural/eco tourism was € 26.

The competent government authority for tourism is the Tourism Sector in the Ministry of Economy. Coordination between the Ministries involved in tourism related issues (MoE, MoEPP, MAFWE, MoC, MoT) is very weak and there is no national inter-sector body that monitors tourism development policies. The tourism activities are organised and supported by different organisations and associations, the most important one being the Chamber of Commerce and the Chamber of Tourism³⁶ (Association of tourist agencies in Macedonia, Association of hotels in Macedonia, Tourism association of Skopje).

The National Development Plan (2007-2009) states that the development of tourism is regarded as an important development priority of Macedonia both because it offers numerous business opportunities and jobs, but also because it supports the country's objectives in the area of trade, export and investment. The NDP further states that rural or country tourism is often considered an indicator of good quality regional development and that Macedonia does have the potential for development of this tourism, because of the characteristic traditional architecture, favourable environment, diversity of sites to see, visit and do and the hospitality of people. According to the National Development Plan (2007-2009), the planned investment needs for rural tourism development for the three year period total € 3 million (or about 2.8% of the total planned investments).

Considering Macedonia's diversity and quality of cultural/historical treasures and archaeological sites (over 4.200 archaeological sites, over 1.000 churches and monasteries and over 700 monuments of culture), of the environment/natural beauty (wealth of mountains, rivers and lakes, vast uninhabited stretches, unique flora and fauna) and diverse landscapes/attractions (authentic old villages, traditional houses, winter sport centres, mineral and thermo-mineral springs, hunting sites, etc.), and varied traditions (traditional foods, wines, crafts, events, etc), it is a priority to promote the integrated development of a sustainable rural tourism in Macedonia, to be carried out in cooperation by all relevant Ministries and stakeholders (private sector, associations, etc).

2.2.4. Social Care Infrastructure.

Rural social care infrastructure (kindergartens, schools, public community centres – libraries, clubs) was developed in the past, but in the majority of cases is in serious disrepair and or abandoned.

Most of the population from rural areas, especially those living in high-mountainous villages, are lacking fundamental health services, including primary health services.

2.2.5. Technical Infrastructure.

Technical infrastructure in rural areas is far from satisfactory with the exception of electrical supply which is available to 99.75% of rural population (transmission and distribution network is fairly well developed and capacity of electric energy sources is 1,430 MW that largely satisfies domestic requirements).

In Macedonia, all municipal centres have public water supply systems, but water supply remains insufficient for the needs. The percent of the rural population with public water pipeline installation is 72.3 (compared to 87.7% of the total population), 18.7 have access to water under pressure from cisterns (compared to 8% of the total population), and 8.96% of the rural population lack water supply installation (4% for total population). The state of water supply in Macedonia, even though there has been considerable construction, is not yet satisfactory. The existing water supply capacities cannot supply sufficient quantities of high quality water, which is particularly noticeable in the highly populated areas of East

³⁶ Master Plan for tourism in Republic of Macedonia, Louis Berger S.A, April 2003

Macedonia. Generally waterworks are poorly equipped and there is insufficient protection of the sources of hygiene.

Wastewater treatment plants have been built in Ohrid/Struga in Doyran and in Resen. Sewerage systems exist or are being completed in the cities and major settlements. The remaining settlements do not have any sewerage systems³⁷. The share of rural population with a public sewage installation is low and is estimated at 17.7% (for total population it is 60.1%). Total rural population without any installation for sewage is 8.9% (total population 4%). Only 10% of rural population is covered by public municipal collection of solid waste (against 70% of total population).

The Macedonian road infrastructure (including the network of feeder roads) was fairly developed in the past, and contains 9,573 km of roads in a categorised road network (1995 data), of which 909 km are motorways, 3,058 km are regional roads and the remaining 5,606 km are local roads³⁸. Of the latter around 50% are either soil based or unimproved at all and regular maintenance and extraordinary repair are a problem. Railroad transportation in Macedonia is poorly developed and includes network of 699 km of open railway lines, 226 km of rail yards and 102 km of industrial tracks.

Residents of many rural settlements, especially in mountain and remote villages, experience poor public transportation services (bus lines) to modern roads and thus to stores, schools, markets, etc. The telephone network (both fixed lines and GSM) covers the great majority of the territory; however access to information and communication technology is low in rural areas. Postal services have degraded in the recent years and small villages are often uncovered. National and local television, including cable and satellite, and radio are available throughout the country.

Municipal centres and larger villages generally have retail (green) market infrastructure working once per week. Access to market (for selling agricultural produce or for purchasing raw materials/ input supplies) is more time consuming and costly for people living in isolated villages.

2.2.6. Rural Development policies.

Rural Development in the EU policy meaning is new for the MAFWE and, more in general, for the Government of Macedonia. To date, several institutions are implementing in a non-coordinated fashion a range of public support programmes which can be broadly categorised under the heading of “rural development”. MAFWE has been running two small annual programs for agricultural investments and revitalisation of villages (amounting in average to €1.5 million per year, but which have been reduced, starting from 2004, to an average of €0.3 million per year). Similarly other sector-dedicated institutions conducted programs (SME's by the Ministry of Economy, etc.). The economically underdeveloped areas are covered by the Bureau for Economically Underdeveloped Regions (under the Ministry of Local Self Government). However, these un-coordinated schemes are stand-alone, rather than integrated Programs.

In January 2004, a Department for Financial Support and Rural Development has been established within the MAFWE, which includes a Unit for Financial Support in Agriculture and a Unit for Rural Development, whose task is to plan, design and monitor rural development policies and measures.

At the end of 2005, MAFWE has been officially appointed by the Government³⁹ to be the Managing Authority for Rural Development in Macedonia. In accordance with this Decision,

³⁷ Country Study for Biodiversity of the Republic of Macedonia (First National Report) Skopje, July, 2003
Ministry of Environment and Physical Planning

³⁸ Country Study for Biodiversity of the Republic of Macedonia (First National Report) Skopje, July, 2003
Ministry of Environment and Physical Planning

³⁹ Decision of the Government of R. Macedonia, no.19-4070/1 of 18.11.2005 (OG of RM no. 5/2006),

MAFWE has been appointed to plan, monitor and assess the activities and programs, to coordinate the activities of the various institutions of the sector and to supervise the financial functions which apply to rural development. The managing institution shall be the partner responsible for the entire cooperation with EC in the area managing the agriculture and the rural development. The overall objective is to put in place systems of support for facilitating rural development measures according to EU measures and to build administrative systems capable to meet EU pre-accession IPARD funds.

In 2006, MAFWE introduced a separate budget programme of MKD 45 million (around € 0.73 million), to fund integrally and implement a pilot IPARD-like Rural Development programme. The programme was managed by the Department for Financial Support and Rural Development. Specific program goals are the following:

- Rural area development support in accordance with the existing programs for the target users to improve agriculture and rural areas competitiveness and sustainability.
- Establishment of necessary administrative systems in the framework of MAFWE to manage the EU pre-accession rural development funds.

The programme includes one measure “Investment in Agricultural Holdings” and three sub-measures:

- Purchasing of equipment and machinery for crop production
- Purchasing of equipment and machinery for livestock production
- Purchasing of equipment and machinery for calibration, sorting and packaging of fresh agricultural products.

Eligible beneficiaries were physical and legal entities (registered farmers and agricultural enterprises).

2.3. Sector Analysis: Agriculture

2.3.1. Land Resources, Land Use and Main Agricultural Areas.

In 2004, the surface of Macedonia’s agricultural land⁴⁰ amounted to 1.26 million ha or about 49% of the total land area, while forests covered an area of 947,653 ha or 37%.

Agricultural land includes 700,000 ha of pastures (or 55.6%) located mainly in the highlands, and 560,000 ha of cultivated land (or 44.2%) mainly concentrated in valleys. From the total cultivated land, 461,000 ha (82%) was arable land⁴¹ and gardens, 58,000 ha meadows (10%), 26,000 ha vineyards (5%) and 15,000 ha orchards (3%). Each year, one third of total arable land is estimated to be left fallow. Per capita arable land is 0.625 ha which is higher than the EU-25 average (0.35 ha).

Cultivated land shows a decreasing trend from 633,000 ha in 1999 to 560,000 ha in 2004, mainly due to land abandonment (rural-to-urban population migration) and urban/industrial developments which occur at the expense of agricultural lands.

2.3.2. Land Ownership, Farm Structure and Productivity.

Macedonia’s land is partly privately and partly state owned. Around 80% of cultivable lands (463,000 ha) is owned or leased by around 180 thousand private farms. The balance is made up of state owned lands which are rented to 136 agricultural enterprises⁴². The

⁴⁰ Agricultural land includes cultivable and pasturelands. Cultivable land includes land for arable crops, orchards, vineyards and improved pastures. State Statistical Office, Statistical Yearbook 2005

⁴¹ Arable land includes land planted to annual crops (cereals, industrial, vegetable and fodder crops), nurseries and fallow land.

⁴² Privatized and not yet privatised former *agro-kombinats* and farm co-operatives. Agro-Kombinats are vertically integrated agri-businesses managed by the state, which have large land holdings and operate on state owned land on usufruct rights basis, while the state holds the effective property rights. AKs are diversified in primary production, input production, agro-food processing activities, commercial storage and marketing services. Very

majority of pasturelands is owned by the state and managed by the Public Enterprise for Pastures.

The 1996 Law on Transformation of Enterprises Managing Agricultural Land defines agricultural land as a public good or national treasure, and thus the majority of land is still state owned. The law initiated the privatisation process of public agricultural enterprises (not the land) and in 2003 about 95% of the agricultural enterprises were privatised, but the process is not completed yet⁴³. State owned land is rented to agricultural enterprises without compensation for a limited period of time, or to individual farmers with compensation.

Effective use of agricultural land in Macedonia is hampered by parcelling and fragmentation stemming from previous limitations on usable areas and ownership⁴⁴, inheritance customs, as well as a tradition of informal relations in the land market. The 1994 General Census registered around 178,000 private farms with average size of 2.5-2.8 ha fragmented into parcels of 0.3-0.5 ha. About 40% of the private farms are smaller household farms with less than 2 ha (also parcellised) that produce mainly for household subsistence and for selling surpluses to supplement other sources of income⁴⁵.

The weak land market, which failed to contribute to farm consolidation, as well as the low economic growth and lack of social security, keeps feeding the process of fragmentation and diversification of production in small lots in order to offset market fluctuations and satisfy food needs.

Despite a significant fall in 2001 and 2002, between 1990 and 2004 agricultural production value grew by 6% (largely determined by the performance of the crop sub-sector which accounts for around 70% of agricultural GDP). Over the same period production from the farm sector grew by 30% while production from the enterprises sector fell by about 50%. The success of small individual farms is due to the transfer of effective land ownership rights (late 1980s/early 1990s) which became profit-oriented and introduced business strategies mainly focused on production diversification to reduce risks⁴⁶.

However, in the long run, the existence of small and very fragmented farms, even if with medium intensity production levels, does not allow for a stronger modernization and mechanisation which results in lower competitiveness.

Since 2000, the gross agricultural output (GAO) has been increasing with net growth of 3.8%. Growth of agricultural GDP (or agricultural value-added) exceeded that of GAO, increasing by 29% between 2001 and 2004⁴⁷ which suggests rising agricultural productivity during this period. In the past few years (2002-2004) also the production index of agricultural enterprises has been rising slightly, as a result of privatization, organizational strengthening and the inception of market-oriented production strategies⁴⁸.

Information is lacking concerning agricultural mechanisation, irrigated areas and use of fertilisers and agrochemicals for the smallholder farming sector. The only available data relates to agricultural enterprises, which from 2000 to 2005 show a reduction trend in the number of tractors, in irrigated area and in fertiliser and agrochemical use⁴⁹.

often they were input suppliers and main buyers from the private farmers but indirectly through the Socially Owned Agriculture Cooperative, which have smaller land holdings and engage only in primary production

43 MAFWE- Annual Agricultural Report 2005.

44 Until 1984, the maximum amount of land allowed to be owned by a single farmer was 10 ha or 20 ha in hilly and mountainous regions.

45 MAFWE - 2004 Annual Agricultural Report: Agricultural Sector Complementary Information; Statistical Tables.

46 "The Influence of Economic Reform on Agricultural Production in Macedonia in the Transition Period" (M. Deleva, P. Ivanovski - unpublished paper presented at the Scientific Assembly of the Association of Agricultural Economists of RM, December 2005).

47 Agricultural GDP is defined as GAO minus intermediary consumption of variable inputs.

48 MAFWE 2005 Annual Agricultural Report.

49 Source: State Statistical Office, 2005

2.3.3. Agricultural Labour

During the 2000-2005 period, on the average 21% of the active labour force in Macedonia was employed in the agricultural sector (about four times more than in the EU-25). In 2005, the percentage was 19.5%, of which 93% on private farms and the remaining were employed by agricultural enterprises. In total approximately 100,000 people are engaged in agriculture (including enterprise employees and full-time farmers) and an additional 20,000 part-time farmers and significant seasonal employment (particularly in the fruit and vegetable sector) for which accurate data is very limited. More than half of the total engaged labour is employed in crop production with the remainder is in the livestock sector.

Total income from agricultural activities of all agricultural households and companies shows constant annual growth in the 1998-2004 period (in 2004, it is estimated at MKD 25,123 million)⁵⁰. In the same year, the net salaries of labour involved in agriculture amounted to MKD 9,692 a month (approximately MKD 460 a day or about €7.5).

2.3.4. Foreign Trade of Agricultural and Food Products

Overall Macedonia's external trade has expanded significantly in the past five years, largely due to lowering of trade barriers due to WTO requirements, the signature of Free Trade Agreements (FTAs) and of the Stabilisation and Association Agreement with the European Union (entered into force in 2001), which progressively cuts tariffs on a large number of products and introduced tariff-free quotas for further product categories (though some sensitive products such as certain cuts of meat, cheese, fresh and processed vegetables and fruits, grapes and wine, rice, and tobacco remain heavily protected by tariffs or quotas). Other trade reforms include removal of subsidies on several important products and removal of price support, particularly tobacco.⁵¹

The liberalization of trade exchange after the WTO membership and in accordance with the SAA with the EU has resulted in a bigger trade deficit which peaked in 2004⁵² as a result of the increased import demand.

Macedonia is net importer of food products. In parallel with the general trade tendencies analyzing the period 2000-2005, the data on export in agricultural and food products indicates a worsened trend up to 2004, whilst the export of agricultural and food products in 2005 show improved rapidly due to further trade liberalization. The import data illustrate slight increase in the last 6 years, demonstrating the lowest import realized in 2001. The trade balance deficit compared to 2004 has halved in 2005, reaching € 69.5 million, as a result of the relatively small increase in imports and the significant increase in exports.

Table 6 - Value of total and agricultural products (2000- 2005) in €million⁵³.

	2000			2001			2002			2003			2004			2005		
	Exp.	Imp.	Trade balance															
Total trade	1.435	2.272	-837	1.293	1.892	-599	1.178	2.106	-928	1.207	2.038	-831	1.346	2.354	-1.008	1.644	2.601	-957,5
Agr. Trade	221	281	-62	215	268	-53	221	314	-91	214	292	-84	214	338	-125	279	348	-69,5
%	15,4%	12,4%	7,4%	16,6%	14,2%	8,8%	18,8%	14,9%	9,8%	17,7%	14,3%	10,1%	15,9%	14,4%	12,4%	17,0%	13,4%	7,3%

⁵⁰ This indicator of agricultural income for individual agricultural producers represents the income generated by the agricultural household as a compensation for the employed labour of all household members. In the case of agricultural enterprises, the indicator represents the profit made by the production units of the company.

⁵¹ Agriculture and EU Accession Report: Achieving FYR Macedonia's Agricultural Potential (World Bank 2006)

⁵² Annual Report of the National Bank of RM for 2005.

⁵³ Source: State statistical office, 2005

In comparison with 2004, the export of agro-food products in 2005 increased considerably by 30%. In the same way, the share of exported agro-food products showed an increase from 15.9% to 17% in 2005 in the total exports, which confirms the significance of agricultural products in the total trade in Macedonia. In comparison with total imports, imports of agricultural and food products in the last 6 years have been stable at approximately 14% of the total value of imports in Macedonia.

Structure of imports and exports of agricultural and food products

In 2005, the total exchange of agro-food products (group 01 to 24 of combined nomenclature of custom tariffs) accounted to € 627 million, and a deficit of € 69.5 million was realized. The export value of agro-food products in 2005 amounted to almost € 280 million. The most significant export product in 2005, as presented in the table below, is tobacco with value of exports around € 82.1 mill or 30% of the total value of agro-food exports. The export value of the beverages (including wine) is around € 49.8 mil (18.2%), vegetables € 37.7 mill. or 13.8% of the total agro-food exports, then fruits amounting to € 18.5 mill. (6.7%), meat (mainly lamb) accounting to € 13.1 mill.(4.8% share out of total agro-food exports). These products account for almost 74% of the total agro-food export in 2005.

On the import side in 2005, the total import amounted to € 348 million, and the most significant imported product group is meat, valued at around € 56 million representing 16.1% share of the total import of agro-food products, out of which the share of fresh and chilled beef in the total agro-food imports is 6%, poultry is 6%, pigs and pork 3%.The import of various food preparations (soups, yeast, tea, sauces, ice-cream) has a significant share in the total agro-food imports (8.3%), followed by fats and oils (8%), sugar (6.3%), preparation of cereals, flour (6.1%), cereals (5.6%), cacao and cacao products (5.5%), dairy products, eggs and honey (5.4%), meat and fishery products (5.3%). These groups of products account for 62% of the overall import.

Table 7 - Export, import, and trade balance of Agro-food products according to tariff groups in 2005⁵⁴

CN	NAME	EXPORT		IMPORT		Trade balance	Import/ export coverage (%)
		Value €	%	Value €	%	€	
01	LIVE ANIMALS	79.831	0,00%	1.393.555	0,40%	-1.313.724	5,7
02	MEAT AND OFFAL	13.070.982	4,80%	56.025.761	16,10%	-42.954.779	23,3
03	FISH	566.299	0,20%	8.218.335	2,40%	-7.652.036	6,9
04	DAIRY PRODUCE, EGGS, HONEY	6.117.359	2,20%	18.287.352	5,40%	-12.169.993	33,5
05	PRODUCTS OF ANIMAL ORIGIN	169.802	0,10%	1.821.667	0,50%	-1.651.865	9,3
06	LIVE PLANTS AND FLORICULTURAL PRODUCTS	3.060.223	1,10%	2.674.513	0,80%	385.710	114,4
07	VEGETABLES	37.762.944	13,80%	3.585.717	1,10%	34.177.227	1.053,1
08	FRUIT	18.473.162	6,70%	15.684.543	4,60%	2.788.619	117,8
09	COFFEE, TEA, SPICES	1.648.807	0,60%	11.376.272	3,30%	-9.727.465	14,5
10	CEREALS	1.766.734	0,60%	19.028.128	5,60%	-17.261.394	9,3
11	PRODUCTS OF THE MILLING INDUSTRY	308.892	0,10%	6.013.944	1,80%	-5.705.052	5,1
12	OIL SEEDS, MEDICINAL PLANTS, FODDER	1.791.429	0,70%	8.775.199	2,60%	-6.983.770	20,4
13	GUMS, RESINS	47.489	0,00%	946.106	0,30%	-898.617	5,0
14	VEGETABLE PLAITING MATERIALS	45.608	0,00%	58.127	0,00%	-12.519	78,5
15	FATS AND OILS	2.275.623	0,80%	26.736.458	7,90%	-24.460.835	8,5
16	MEAT AND FISHERY PRODUCTS	6.155.279	2,20%	17.864.429	5,30%	-11.709.150	34,5
17	SUGARS AND SUGAR CONFECTIONERY	7.288.484	2,70%	21.582.853	6,30%	-14.294.369	33,8

⁵⁴ Source: State Statistical Office, 2005

18	CACAO	5.203.114	1,90%	18.615.520	5,50%	-13.412.406	28,0
19	PREPARATIONS OF CEREALS, FLOUR, STARCH	11.584.923	4,20%	20.625.938	6,10%	-9.041.015	56,2
20	PRESERVED VEGETABLES AND FRUIT	14.279.869	5,20%	14.803.233	4,40%	-523.364	96,5
21	MISCELLANEOUS FOOD PREPARATIONS	10.355.057	3,80%	28.338.069	8,30%	-17.983.012	36,5
22	BEVERAGES, WINE, SPIRITS AND VINEGAR	49.783.696	18,20%	12.837.753	3,80%	36.945.943	387,8
23	ANIMAL FEED	184.915	0,10%	12.276.857	3,60%	-12.091.942	1,5
24	TOBACCO AND MANUFACTURED TOBACCO	82.100.465	30,00%	12.569.994	3,70%	69.530.471	653,1
		274.120.987	100%	340.140.321	100%	-66.019.334	80,6

The deficit was evident in the most of the product groups. Macedonian balance in foreign trade of agro-food products is only positive in tobacco (€ 69.5 million), beverages, spirits, wine, vinegar (€ 36.9 million), vegetables (€ 34.1 million), fruits (€ 2.8 million) and live plants and floricultural products (€ 386 thousands). Import/export coverage was relatively high in trade with this group of products where the surplus was achieved.

Imports and exports of agricultural and food products by country

The enlarged EU-25 is Macedonia's main partner in the trade in agricultural, food and fish products, with 46.5% share in the total exports value and with 41.8% in the total import value in 2005. As far as the exporting destination are concerned, Macedonian most important export market from the EU-25 is neighbouring Greece accounting for 43% (one third of the total export to EU-25 in 2005), following by Belgium (15%), Germany and Italy with 13% respectively, and Slovenia (5%). The share in total exports from the EU-25 countries is stable.

Table 8 - Trade with agricultural and food products by countries in 2005⁵⁵

Country	Export 2005		Import 2005		Trade balance 2005	Import / export coverage	Weighted average rate ⁵⁶ 2005
	mil. €	%	mil. €	%	mil. €	%	%
EU-25	129,5	46,50%	145,4	41,80%	-15,9	89%	3,51
Serbia and Montenegro	77,5	27,80%	60,7	17,40%	16,9	128%	0,52
Bulgaria	5,7	2,00%	20,3	5,80%	-14,6	28%	0,96
Romania	1,1	0,40%	0,3	0,10%	0,8	367%	1,24
Croatia	18	6,50%	19,8	5,70%	-1,8	91%	1,88
Turkey	4,8	1,70%	17,5	5,00%	-12,6	27%	9,21
Other FTA*	22,5	8,10%	12,1	3,50%	10,4	186%	~ 1-1,50
Other countries from world	19,4	7,00%	72,1	20,70%	-52,7	27%	2,43
Total agro-food trade	278,6	100,00%	348,1	100,00%	-69,5	80%	

* Bosnia and Herzegovina, Albania, Ukraine, Moldavia and EFTA

In 2005, the majority of imports of agricultural and food products from the EU-25 came from Greece (22%), Austria (13%), Slovenia (12%), Germany (11%), Poland (10%), followed by Italy, Hungary and Holland with 6%, respectively.

In addition to EU-25, other important trade partners include countries emerging from the former Yugoslavia and Balkan countries, as traditional partners with which Macedonia has signed Free Trade Agreements (primarily Serbia and Montenegro as the most important partners (accounting almost 28% from total export value and 17.4% from the total import value), followed by Croatia, Bosnia and Herzegovina, Albania and Turkey.

⁵⁵ Source: SSO Trade Review by countries, 2005

⁵⁶ Source: Ministry of Finance (Customs Information for 2005); Sector for Taxes and Customs of the MoF

Positive trends with foreign markets occurred only in trade agro-food products with Serbia and Montenegro, achieving surplus of € 16.9 million; then Romania (€ 800 thousand) and other countries with which Macedonia has signed FTA with (Bosnia and Herzegovina, Albania, Ukraine, Moldavia and EFTA).

The general conclusion is that Macedonia depends on imports mostly for meat, processed products and other food preparation as well as for cereals. The analysis of the foreign trade sends a clear signal to domestic agro-food producers to work on restructuring of production and to create conditions to overcome the deficit. A small number of exported products emphasize the problem of competitiveness of domestic products, considering the quality, price competitiveness and potential quantities that may be sold outside Macedonia.

2.3.5. Main Agricultural Sub-sectors.

The structure of agricultural production has been stable in the last ten years and in the 2000-2005 period production has remained at the same level or has increased for the majority of agricultural products. In 2004, the agricultural gross production value (in current prices) amounted to MKD 59.510 million (approx. € 970 million).

The biggest contributor is plant production, including wine (79%), and the balance is made up by livestock products (21%). The production of fruits and vegetables (including wine) experienced the biggest gross value in 2004, with a share of 32 and 18.5% respectively in the overall value of the gross product in agriculture, or with around 40 and 23% of the total value of field crops. The biggest share of the gross product of the livestock sector in 2004 goes to livestock products with a 52% share (of which, dairy products participated with some 36% in the total value of livestock products) and livestock breeding with 48%.

2.3.6. Crop Production Chain

Crop production is analysed in four main groups, namely Cereals, Industrial (including Fodder) Crops, Fruits (including grapes) and Vegetables (including potatoes).

Table 9 - Crop area, production and yields in crop production, 2000-2005⁵⁷

	2000	2001	2002	2003	2004	2005
Crop area (in ha)						
Cereals	221,226	210,304	195,932	195,076	189,337	203,158
Industrial crops (incl. fodder)	60,863	59,070	61,358	55,740	54,465	54,227
Vegetables (incl. potato)	55,451	50,370	51,016	49,191	51,119	46,992
Fruits (incl. grapes)	42,944	43,983	42,348	42,610	41,291	38,912
Production (in tons)						
Cereals	564,005	474,442	556,045	466,446	676,632	644,620
Industrial crops (incl. fodder)	283,996	255,027	286,908	280,783	281,089	295,879
Vegetables (incl. potato)	653,803	656,648	665,064	668,161	697,651	679,064
Fruits (incl. grapes)	264,256	229,805	118,935	243,821	254,613	265,717
Yields (tons per ha)						
Cereals	2.55	2.26	2.84	2.39	3.57	3.17
Industrial crops (incl. fodder)	4.67	4.32	4.68	5.04	5.16	5.46
Vegetables (incl. potato)	11.79	13.04	13.04	13.58	13.65	14.45
Fruits (incl. grapes)	6.15	5.22	2.81	5.72	6.17	6.83

During the period, all crop groups show a decrease in sown areas and in particular cereals. In the last few years, vegetable crops have stabilized the descending trend in areas sown, after the drop experienced in 2000 and 2001. General production trends in the crop sub-sector have been positive, but yearly fluctuations are higher than in the EU-25. This is

⁵⁷ Agricultural Publication 2005 SSO

possibly due to the lack of application of improved farm technologies (including irrigation) to mitigate climate variations and to shifting targets of past agricultural support policies.

2.3.6.1. Cereals

Cereals are strategically important and the most grown crops, but Macedonia does not produce enough to meet the domestic needs. In the 2000-2005 period, wheat was the most frequently planted cereal crop covering 54% of the total area planted with cereal crops, followed by barley (24%), maize (17%), rye (2%), rice and oats (1% each). Maize, barley and rye are mainly used for animal feed.

Table 10 - Crop area, production and yields in cereal crops, 2000-2005⁵⁸

	2000	2001	2002	2003	2004	2005
Crop area (in ha)						
Cereals	221,226	210,304	195,932	195,076	189,337	203,158
<i>wheat</i>	121,669	117,496	102,774	104,300	101,607	108,881
<i>barley</i>	49,988	49,950	49,883	46,946	44,975	50,654
<i>Rye</i>	5,845	5,465	3,945	4,437	4,546	4,752
<i>oats</i>	2,374	2,107	2,589	2,230	2,408	2,687
<i>maize</i>	37,488	33,768	34,873	34,150	32,913	33,578
<i>Rice</i>	3,862	1,518	1,868	3,013	2,888	2,606
Production (in tons)						
Cereals	564,005	474,442	556,045	466,446	676,632	644,620
<i>wheat</i>	299,356	246,208	266,961	225,300	356,825	333,880
<i>barley</i>	110,145	91,534	128,560	83,244	148,892	136,891
<i>Rye</i>	8,211	9,455	7,123	6,057	10,273	9,451
<i>oats</i>	2,477	2,275	3,855	2,419	4,091	3,593
<i>Maize</i>	125,383	117,070	140,694	136,492	141,875	148,234
<i>Rice</i>	18,433	7,900	8,852	12,934	14,676	12,570
Yields (tons per ha)						
Cereals	2.55	2.26	2.84	2.39	3.57	3.17
<i>wheat</i>	2.46	2.10	2.60	2.16	3.51	3.07
<i>barley</i>	2.20	1.83	2.58	1.77	3.31	2.70
<i>Rye</i>	1.40	1.73	1.81	1.37	2.26	1.99
<i>Oats</i>	1.04	1.08	1.49	1.08	1.70	1.34
<i>Maize</i>	3.34	3.47	4.03	4.00	4.31	4.41
<i>Rice</i>	4.77	5.20	4.74	4.29	5.08	4.82

During the 2000-2005 period, overall cereals planted area decreased slightly. The trend of reduction of area planted with cereal crops in the last years is mainly a result of the reduction of the market price and of direct state support (price guarantee of wheat and premium for every kilogram of produced grains). Wheat producers are under the considerable influence of the obligations taken with the joining of Macedonia to the WTO which concern the agreed customs free quotas of 80,000 tons, cancellation of intervention purchase from the state stocks by the enforcement of the Law on Commodity Stocks⁵⁹ of 01.01.2005, except the keeping of secure food reserves, as well as the change of the principle of import licences with the principle first-come-first-served. The insufficient budget for support of agricultural production is an additional influence on the restriction (in 2003 the support of the wheat was cancelled). However, due to the re-introduction of subsidies in 2004/2005, surfaces of barley, rye and oats have shown an upward trend⁶⁰. The support so far extended to cereal

⁵⁸ Agricultural Publication 2005 SSO

⁵⁹ OG Republic of Macedonia' No. 68/2004.

⁶⁰ In the 2003/04 and 2004/05 MAFWE's support consisted of MKD 3,000 (approx €50) per sown ha of cereals.

cultivation, lacking any criteria, has not stimulated yield increases, as farmers remained attached to the traditional methods of farming and maintained the current level of production.

During the reference period, average annual cereal production has been around 564 thousand tons. From the 2004 harvest, the Commodity Stocks Bureau within the Ministry of Finance purchased 15,000 tons of wheat from individual producers⁶¹

Generally there are small differences between the yields achieved by the agricultural enterprises and the individual agricultural producers. Average yields of all cereal crops (around 2.8 - 3 ton/ha in the 2000-2005 period, but with an increasing trend) are generally low compared to the EU-25 (5 ton/ha) due to low input of agro-chemicals (crop protection and fertilisers), the use of uncertified, low yielding seeds and/or of inadequate quality, insufficient soil moisture/irrigation), inadequate application of agro technical measures (crop rotation, on time sowing, etc.) and obsolete mechanisation for soil working, harvesting and transport (which cause harvest and post-harvest losses).

Macedonia does not produce enough grain to meet domestic needs. Production of wheat meets around 2/3 of the domestic demand. Usually, around 40-50% of the produced quantity of wheat is traded on the internal market. In 2004, a total of 117.5 thousand tons or only 33% of the production was offered and purchased as a market surplus which comes partly as a result of the abandoning of the direct price support. The rest of the produced quantities are consumed within the agricultural economies themselves, while a considerable part is used for animal feed. The shortage of wheat is in average 120,000 tons (2000-2004) and the needs are met by imports from the international market⁶².

SWOT analysis in the cereal crops sub-sector.

Strengths	Weaknesses
<ul style="list-style-type: none">• Good environmental production conditions (soils and sun).• Potential higher yields achievable, which could reduce dependency from imports.• Tradition in cereal production.• Existence of high genetic potential varieties• Existing demand from milling and feed industry.	<ul style="list-style-type: none">• Average yields of all cereal crops are generally low due to high rate of monoculture, high costs of inputs resulting in low use of agro-chemicals (seed dressing, crop protection and fertilisers), the use of uncertified, low yielding seeds and/or of inadequate quality, insufficient soil moisture (inadequate irrigation), inadequate application of agro technical measures (crop rotation, on-time sowing, etc.) and obsolete mechanisation for soil working, harvesting and transport (which cause high harvest and post-harvest losses).• Climatic adverse conditions (early winter or spring frosts, floods, spring drought, high summer temperatures) cause important yield drops.
Opportunities	Threats
<ul style="list-style-type: none">• Unsatisfied domestic demand of cereals for milling and feed industry.• Introduction of certified seeds and seedlings• Expansion of land (areas) under cereal crops• Specific cereal crops with market potential, of important use in livestock feed production and produced in mountain regions should be continued to be supported (durum wheat, triticale, rye, barley, oats and maize).	<ul style="list-style-type: none">• Prices of the international markets are substantially lower than the domestic cost price.• Research/extension and size of seed plots of crop cultivars is limited.

2.3.6.2. Industrial and Fodder Crops

In the 2000-2005 period, industrial crops (including fodder crops) are sown on approximately 10% of arable lands. During the same period, most of the industrial crop area was planted with tobacco (34%) and alfalfa (32%) and the balance is made up of sunflower (10%), sugarbeet (3%), motley hay and clover (6% each), fodder peas (3%), fodder maize (4%) and

⁶¹ Official Gazette of RM No.56/2004.

⁶² The trade deficit amounted to 38 mil.€ in 2004 and 23 mil.€ in 2005.

fodder beet (1%). Other industrial crops (namely poppy and fibre crops) are statistically insignificant.

Table 11 - Crop area, production and yield in industrial and fodder crops, 2000-2005⁶³

	2000	2001	2002	2003	2004	2005
Crop area (in ha)						
Industrial crops (incl. fodder)	60,863	59,070	61,358	55,740	54,465	54,227
<i>Tobacco</i>	22,785	20,310	20,538	18,101	17,717	18,490
<i>Sunflower</i>	6,006	6,082	6,525	5,561	5,179	5,371
<i>Sugar beet</i>	2,022	1,679	1,492	1,267	1,542	1,648
<i>Poppy</i>	490	250	129	101	116	159
<i>Clover</i>	2,685	2,610	4,197	3,953	3,857	3,784
<i>Motley hay</i>	3,610	3,499	4,039	3,522	2,851	2,643
<i>Alfalfa</i>	18,232	19,202	18,735	18,238	18,315	17,847
<i>Fodder peas</i>	1,799	1,476	2,679	2,234	2,018	1,738
<i>Fodder maize</i>	2,655	3,205	2,322	2,278	2,425	2,171
<i>Fodder beet</i>	579	757	702	485	445	376
Production (in tons)						
Industrial crops (incl. fodder)	283,996	255,027	286,908	280,783	281,089	295,879
<i>Tobacco</i>	22,175	23,217	22,911	23,986	21,630	27,691
<i>Sunflower</i>	7,351	5,475	8,760	6,794	7,764	6,711
<i>Sugar beet</i>	56,450	38,281	43,817	40,154	47,223	57,836
<i>Poppy</i>	144	134	54	56	62	91
<i>Clover</i>	9,533	9,928	16,332	15,634	16,166	15,901
<i>Motley hay</i>	8,323	9,844	12,092	10,837	9,253	8,680
<i>Alfalfa</i>	113,265	103,658	114,482	114,718	113,012	121,528
<i>Fodder peas</i>	5,248	4,688	7,459	5,454	5,557	5,172
<i>Fodder maize</i>	55,993	52,152	55,020	57,907	55,694	48,027
<i>Fodder beet</i>	5,514	7,650	5,981	5,243	4,728	4,241
Yields (tons per ha)						
Industrial crops (incl. fodder)	4.67	4.32	4.68	5.04	5.16	5.46
<i>Tobacco</i>	0.97	1.14	1.12	1.33	1.22	1.50
<i>Sunflower</i>	1.22	0.90	1.34	1.22	1.50	1.25
<i>Sugar beet</i>	27.92	22.80	29.37	31.69	30.62	35.09
<i>Poppy</i>	0.29	0.54	0.42	0.55	0.53	0.57
<i>Clover</i>	3.55	3.80	3.89	3.95	4.19	4.20
<i>Motley hay</i>	2.31	2.81	2.99	3.08	3.25	3.28
<i>Alfalfa</i>	6.21	5.40	6.11	6.29	6.17	6.81
<i>Fodder peas</i>	2.92	3.18	2.78	2.44	2.75	2.98
<i>Fodder maize</i>	21.09	16.27	23.70	25.42	22.97	22.12
<i>Fodder beet</i>	9.52	10.11	8.52	10.81	10.62	11.28

In the reference period, industrial crops have slightly decreased their area sown, whereas fodder crops have remained stable. Overall, industrial and fodder crops have increased production, reflecting yield increases.

Tobacco is traditionally a strategic product for Macedonia due to its social aspects (it is the main cash crop and engages considerable rural labour in the specific production areas and in the processing industry), to its export trade relevance (raw and processed tobacco

⁶³ Agricultural Publication 2005 SSO

accounted for 30% of the total export of agricultural and food products in 2005, and produced a net positive balance of around €70 million in the same year), and to the non-negligible tax revenues for the national budget. In the 2000-2005 period, average production and purchase of tobacco has been around 23 thousand tons, with average purchase price of around MKD 113.60 for the same period and purchase prices have been highest for oriental aromatic types of tobacco⁶⁴.

Tobacco producers received premium per kg of produced and sold tobacco to the tobacco enterprise-buyer of the yields 2001, and the payment of the resources was realized through the Agricultural Fund. The tobacco produced in 2005, the tobacco producers that sold their production to the buyers, have realized the right for premium per kg, and the resources were provided from the Budget of the Republic of Macedonia from the collected compensation/reimbursement at the amount at MKD 3,00/pack of cigarettes, paid to the tobacco producers.

During the 2000-2005 period, the areas under tobacco have decreased by 20%, due to the transformation of the tobacco kombinats and erratic support policies followed by the Government⁶⁵. During the 1998-1999 period, an administered (guaranteed⁶⁶) price was set annually for small-leaf oriental aromatic tobaccos not exceeding 70% of the average annual world prices plus transport to Skopje in the previous three years⁶⁷. In 2001 tobacco producers have been subsidized through the Agriculture Fund with direct price support per quantity and quality produced and sold to registered tobacco processors. For 2005 produced tobacco, the tobacco producers who sold their production to the purchasers were subsidised per kilogram and the funds were provided from the Republic of Macedonia budget accounting for 3 MKD/ pack of cigarettes which was paid by the producers of tobacco products.

In June 2006, Macedonia ratified the WHO Framework Convention on Tobacco Control (FCTC) and has to meet the entailing obligations.

In 2006 a new comprehensive Law on Tobacco and Tobacco Producers⁶⁸ entered into force which regulates the primary tobacco production, the financing, purchase, storage, processing of purchased raw tobacco in leaves, trade of fermented tobacco, as well as the production of tobacco products. In accordance with Article 50 and Article 51 of the Law on Tobacco and Tobacco Products, the compensation paid by the producers or the importers of tobacco products is determined, at the amount of MKD 3,00/pack of cigarettes, which will be used for financing the activities in the primary tobacco production, for additional financing of the primary agricultural production, and promotion of the export.

In the 2000-2005 period, the area planted with **sunflower** has decreased by 10% following a longer-term trend (from 30.4 thousand ha in 1992 to 5.4 thousand ha in 2005). Sunflower is grown mainly in Pelagonia region (50-70%), followed by Kumanovo and to some extent, Sveti Nikole regions⁶⁹.

⁶⁴ MAFWE - Annual Agriculture Report 2005.

⁶⁵ In accordance with the Law on Tobacco (Official Gazette of the Republic of Macedonia No. 69/96 and No. 15/98) the tobacco was financed by the Government by budget allocation for the purpose of undertaking the tobacco not purchased by the state stocks in cases when the buyer is not able to perform the payment for the (not purchased) tobacco according to the contract because of redundancy or liquidation. In accordance with the Law on Trade (Official Gazette of the Republic of Macedonia No. 23/95 and 16/04) the guaranteed price for small-leaf oriental raw tobacco was prescribed aimed at protecting the producers from monopolized behavior of the tobacco enterprises, and it was applied until 29 March 2005.

⁶⁶ The guaranteed price represented a basis for determination of the purchase prices per types and classes of tobacco on the occasion of concluding contracts for production and purchase between the producers and buyers

⁶⁷ Law on Trade (OG no. 23/95 and 16/04); Law on tobacco (OG no. 69/96 and 15/98); Law on Government of Republic of Macedonia (OG no. 59/00).

⁶⁸ OG. no. 24/2006

⁶⁹ Data from Agro Food Industry "Blagoja Gorev", Veles

During the reference period (2000-2005) yields remained stable on the low side (on average 1.3 tons per hectare). Total annual domestic production amounted in average to 7,000 tons which are insufficient to cover Macedonia's edible oil requirements (only 7.2% is covered) and the balance is met by imports. The decrease in surfaces invested with sunflower can be attributed to the problems of the former large agricultural complexes which were responsible for a large part of the sunflower seed production, irrigation malfunctioning, obsolete mechanisation, use of low yielding varieties, late payment by processors, competition by lower cost raw sunflower oil, which make the crop unprofitable for farmers. Sunflower is mainly used for edible oil production (sunflower is the traditional household cooking oil) and oilcakes for animal feed, but also is a potential crop of interest for bio-diesel production.

Until 2003 there were no direct measures for supporting sunflower production. In 2004 a grant (about €50 per ha) was applied as financial support on compensation on part of increased costs within production process⁷⁰, which was however abolished in 2005. Regarding import customs taxes, a 15% for sunflower seeds and refined oil (for olive oil 10%) is applied, while no tax is applied to the imports of raw sunflower oil.

Oil beet, traditionally grown for forage purposes, is a relatively new crop for edible oil production. It is sown on approximately about 500 ha in the 2001-2005 period (240 ha in 2005). Oilbeet is mainly used for edible oil production and oilcakes for animal feed, but also it is leading oil seed crop for bio-diesel production (obligatory additive in diesel fuel in all EU member counties to up to 5.75 and 20% respectively in 2010 and in 2020). The increase of production of sunflower and oilbeet is not only a question of preferences of the producers but also a national interest. Two factories are being built currently for the production of bio-diesel in Macedonia as in almost all the countries in the region (Bulgaria, Romania, Croatia and Serbia).

Soy bean is also another dual use crop (human food/animal feed and bio-diesel). No import custom taxes are applied to oil beet (as well as for soy, castor oil, sesame, flax and hemp) while for peanuts it is 5%.

The great majority of **sugar beet** production comes from individual agricultural producers, concentrated on limited areas in the Pelagonija valley and are processed in the only sugar factory in the country (Bitola). It is the only industrial crop where the sown areas increased in 2004 and 2005 after a steep decline in 2002 and especially 2003 (in average 1,600 ha in the reference period). This was a result of the introduced subsidies (direct market support to deliverers of sugarbeet to the processors). In 2004, pursuant the agriculture development support programme, 3.2 million MKD were disbursed (about 2,100 MKD/ha or € 34.2/ha), as well as financial support on compensation on the part of increased costs in the production process. Yields have been stable in the last three years, around 30-35 ton/ha which are relatively low when compared with yields in the EU, but more favourable when compared with the regional yields achieved in similar agro-climatic conditions. The total purchased and processed sugarbeet into sugar meets only 7.6% of the annual sugar consumption requirements within the country, and the balance is met through considerable import of raw or semi-processed product for refinement, and to a lesser extent refined sugar (which has a 30% customs import tax). The very low area under sugarbeet forces the sole processing factory to import 80% of capacity in the form of semi refined sugar. As a result of the low customs protection of import of sugar beet (5%) and raw sugar (2%), the significantly lower world prices⁷¹ of sugar and the significantly higher yields of producers from areas with more favourable climate conditions, Macedonian sugar beet production is not competitive compared to the imported products.

⁷⁰ Law on Agriculture Development Support ("Official Gazette of RM" no. 24/92, no. 32/92, no. 23/92, no. 78/93 and 14/96),

⁷¹ around 300€ per tons

Poppy is grown on limited and controlled fields and under state administrative control⁷² and is purchased and processed by an authorised chemical company (Alkaloid). Current domestic production of poppy capsules (poppy straw) covers only 30% of industry needs, and the balance is covered by imports of raw material for extraction of alkaloids mainly from Spain and Australia. There is potential for increasing the surface of poppy cultivation from the current 100-150 ha to around 2000 ha. Customs taxes on imported poppy seed accounts for 15%.

Fodder crops have been subject of policy measures mainly aimed at increasing supply of animal feed. Specifically the measure concerns the development of artificial meadows by planting esperzeta. Feed and fodder production in Macedonia meets only 30-35% of the total national requirements. Forage plants cover only 8% of the total arable area in the county unlike the countries with developed livestock industry where this share is about 40%. One of the reasons for this situation is the lack of sufficient land per farm and small size farms which are unprofitable to be cultivated by forage plants. Furthermore, Macedonia is net importer of maize for seed and fodder for almost half of domestic needs. The lack of fodder and feed (and thus their high cost) is one of the main limiting factors for livestock production development which has negative effect on the cost structure of meat production (feed and fodder can account for 50 to 85% of production cost) particularly with intensive fattening.

SWOT analysis in the industrial and fodder crops sub-sector.

Strengths	Weaknesses
<ul style="list-style-type: none"> • Good environmental production conditions. • Tradition in tobacco production. • Strong consumption of edible sunflower oil. 	<ul style="list-style-type: none"> • Average yields of industrial crops are generally low due to high rate of monoculture cultivation, high costs of inputs resulting in low use of agro-chemicals (seed dressing, crop protection and fertilisers), the use of uncertified, low yielding seeds and/or of inadequate quality, insufficient soil moisture (inadequate irrigation), inadequate application of agro technical measures (crop rotation, on time sowing, etc.) and obsolete mechanisation for soil working, harvesting and transport (which cause high harvest and post-harvest losses). • Processing of sunflower is carried out only by one company which purchases 80% of imported raw oil for producing edible oil. The company has obsolete equipment and facilities and requires large investments to be efficient. • Low production of fodder crops
Opportunities	Threats
<ul style="list-style-type: none"> • Potential higher yields achievable, which could reduce dependency from imports. • Existing demand from oil milling, livestock and feed industries. • Bio-diesel production, neglected to date, is an important element to be taken into consideration in the future. 	<ul style="list-style-type: none"> • Prices of the international markets are substantially lower than the domestic cost price for sunflower and sugarbeet. • Erratic State support to tobacco and sunflower production in the past years. • Small competitiveness of sunflower • Small scale of sugarbeet production.

2.3.6.3. Fruit production (including grapes)

In the 2000-2005 period, fruit orchards (including grapes) covered 43.4 thousand hectares, of which grape production accounted for around 62% (of which 30% table grapes), and the remaining are fruit orchards (apples 18%), plums (7%), sour cherries (5%), peaches (3%), pears (2%), and apricots and cherries (1% each).

In the reference period, average total fruit production (excluding grapes) has been 118 thousand tons⁷³ to which apples contributed around 60%, stone fruits (cherries, sour cherries, peaches, apricots and plums) around 35%.

⁷² Law on production and market of narcotic drugs (O.G. no. 13/91)

⁷³ SSO 2005.

Areas invested with orchards have shown a consistent decline since the late 1980' (in the average 500 ha per year converted to annual crops or pastures) and an increasing obsolescence of plantations. These trends are mainly a consequence of the absence of investments due to the transformation of the social sector (whose plantations account for approximately 50% of fruit farming - especially apricot, peach, almond and sour cherry, etc. - were neglected) and loss of the traditional Yugoslav markets which entailed export market uncertainty. Moreover, the domestic fruit processing industry (potential domestic buyer) is small and backward (outdated technologies) and their products have no markets.

Table 12 - Crop area, production, yields of fruit crops (including grapes), 2000-2005⁷⁴

	2000	2001	2002	2003	2004	2005
Crop area (in ha)						
Fruits (incl. grapes)	42,944	43,983	42,348	42,610	41,291	38,912
<i>apples</i>	7,379	7,456	7,283	8,110	8,051	7,200
<i>plums</i>	3,206	3,655	3,063	3,141	3,133	2,610
<i>peaches</i>	1,411	1,249	1,320	1,329	984	949
<i>apricots</i>	597	433	424	368	350	345
<i>pears</i>	1,071	1,099	1,080	1,039	1,040	830
<i>cherries</i>	360	360	358	345	354	300
<i>sour cherries</i>	2,270	2,503	2,518	2,478	2,492	1,535
<i>quinces</i>	120	118	109	109	109	98
<i>grapes (table and wine)</i>	26,530	27,111	26,194	25,692	24,777	25,044
Production (in tons)						
Fruits	402,204	300,866	230,274	342,892	398,666	410,951
<i>apples</i>	84,275	38,433	63,470	61,936	82,414	86,217
<i>plums</i>	23,421	13,252	24,203	15,313	25,815	25,254
<i>peaches</i>	9,512	4,598	6,315	7,261	12,045	11,041
<i>apricots</i>	4,168	2,271	2,546	1,436	4,476	2,964
<i>pears</i>	8,949	6,487	7,817	5,980	7,058	8,892
<i>cherries</i>	3,346	2,412	3,175	2,782	4,017	4,358
<i>sour cherries</i>	3,293	3,032	3,213	3,690	7,324	5,532
<i>quinces</i>	983	576	600	673	904	975
<i>grapes (table and wine)</i>	264,256	229,805	118,935	243,821	254,613	265,717
Yields (tons per ha)						
Fruits	9.37	6.84	5.44	8.05	9.66	10.56
<i>apples</i>	11.42	5.15	8.72	7.64	10.24	11.97
<i>plums</i>	7.31	3.63	7.90	4.87	8.24	9.67
<i>peaches</i>	6.74	3.68	4.78	5.46	12.24	11.63
<i>apricots</i>	6.98	5.25	6.00	3.90	12.80	8.59
<i>pears</i>	8.35	5.90	7.24	5.76	6.78	10.72
<i>cherries</i>	9.30	6.70	8.88	8.07	11.35	14.51
<i>sour cherries</i>	1.45	1.21	1.28	1.49	2.94	3.60
<i>quinces</i>	8.20	4.89	5.49	6.16	8.28	9.91
<i>grapes (table and wine)</i>	9.96	8.48	4.54	9.49	10.28	10.61

Yields in qualitative and quantitative terms are hampered by use of old machinery, of uncertified propagating material (imported mainly from neighbouring countries, given Macedonia's insufficient domestic production) and insufficient use of agricultural inputs and

⁷⁴ Agricultural Publication 2000-2005 SSO

irrigation. Fruit farmers are poorly organised. A recent survey conducted among producers, wholesalers and retail traders and agricultural associations shows that the fruit farming sector is inadequately supported in financial and technical terms (research/extension), there is lack of packing, sorting and manipulation, storage and processing capacities, and lack of legislation on market standards for quality for both domestic and foreign markets⁷⁵.

The private orchards cover 84% of the total area planted with fruit trees (average size of farming agricultural households producing fruit is 2.9 ha, out of which 1.4 ha are fruit plantations), whereas the size of the orchards of the agricultural enterprises is in average 30 ha. Two thirds of the fruit producers are part-time farmers. Between June and October, around 85% of the fruit producers market their products, corresponding to the lowest market prices.

In 2005, export of fruit (including dried and semi processed) amounted to €18.4 million (mainly apples 30%, table grape 22%, wine grape 19% and semi-processed fruit 8%), while imports amounted to € 15.6 million (85% tropical fruits and citrus). Net exports were € 2.8 million⁷⁶. The largest part of the fruit export is to the neighbouring countries.

Apple production dominates the fruit farming sector (around 60% of fruit production) and mainly occurs in the regions of Resen and Ohrid lakes where up to 70,000 tons of apples are produced, mainly of the variety Idared (60% of the total - not well demanded on the world market), Golden Delicious and Jonathan. Apples are placed mainly on the domestic and, to a lesser extent, export markets (Bulgaria, Albania and Serbia) for fresh consumption. Industrial apple is processed in Macedonian factories in very small quantities, and a higher percentage is exported in the neighbouring countries. Apple dominantly contributes to the production and export in the fruit farming sector, but has unfavourable age and variety structure of the plantations.

Plums are produced throughout the country (around 18% of fruit production) but mainly concentrated in the eastern region. Plantations are extensive, without irrigation and re-investments. Fruits are mainly used for production of rakia (brandy), although a small part is placed on the domestic market for fresh consumption and insignificant part for export.

Peaches (around 7% of fruit production) are grown in the Central region (Rosoman) and are placed for fresh consumption on the domestic market, and in the recent years larger quantities started to be exported to Russia and Ukraine. Pear production is insufficient to meet the needs of the domestic market, and there is underproduction, despite the potential, and the needs are mainly satisfied by imports.

Apricots (around 3% of fruit production) are grown in the Central region (Rosoman) with limited production (around 1,000 tons) due to lack of markets, the insignificant interest of the processing capacities, frequent damages of late spring freezing etc.

Cherries and **sour cherries**, (respectively around 3 and 4% of fruit production) are mainly grown in the Western part (Tetovo) in large plantations established by the social sector farms (60% of production). Smallholder sour cherry orchards range from 0.5 to 3 ha but yields are higher (17 kg per tree against 6 kg of the large plantations). This is due to the ageing of the trees in the enterprise production areas. Sour cherries are sold fresh, frozen, and processed into compotes for foreign markets.

Pear production drastically reduced as a result of fire blight (*Erwinia amylovora*) outbreak. As a result there is a shortage of pear production, and only imported pears are found in the winter period. In 2004 an increase in the number of pear trees was registered in comparison with 2003 (from 5,980 trees in 2003 to 7,058 trees in 2004). The growth of plantation of this fruit is financially supported through measures in the annual MAFWE Programme.

⁷⁵ Source: Study on the competitiveness of the fruit farming sector in Republic of Macedonia, year 2005 (SLR Project)

⁷⁶ SSO 2005

The production of **soft fruits** is minimal (mainly strawberry, followed by raspberries and blackberries, blueberry, mulberry, currants and aronia) and the largest part of the production, not statistically recorded, comes from natural resources. The region around Pehcevo is characterised as favourable for organised production of soft fruit. Around 50% of production is sold for fresh consumption on the domestic markets, and the balance is purchased through collecting sites by about ten Macedonian processing companies, which also export. The trade with raspberry shows a positive trade balance in the last five years, which explains that berries are attractive on international markets.

Sub-tropical fruit (pomegranate, kaki, figs and kiwi) are typical of the southern region; production is mainly placed on the domestic market, while small quantities are exported. Production of **nuts** is insignificant, although there are favourable conditions. Domestic demand is mainly satisfied with imported goods. In the last 2-3 years there is an increased interest in establishing hazelnut plantations.

The alternative fruit crops (soft fruits and subtropical) have relatively low price of the seedlings, with simple and non-labour intensive production process, with significant volume of production, as well as, with ensured placement on the market and huge demand by the processing industry in the country, and especially abroad (Greece).

Grape is a traditional and important crop for Macedonia. In the producing areas it is a cash crop employing rural labour and it is important for production of wine which has large export trade relevance. Viticulture is probably the most important and strategic industry in the area of plant production, since together with the wine production it contributes to around 17%-20% of the agricultural GDP. Wine holds the first position in the export of beverages, and is the second most important product after tobacco in terms of export value of agricultural products.

There are three vine-growing regions in Macedonia divided into 16 sub-regions (Vinogorje). The main production occurs in the Vardar valley (central region - Povardarie) which accounts for around 83% of the production, followed by the Pelagonija-Polog region (the western region covering 13% of the production) and the Pcinja-Osogovo region (the eastern region covering about 4%). The sub-regions are characterized by specific production conditions determining the structure of the vine varieties. In the last 15 years, there is an uneven establishment of new vineyards. In the Vardar valley the number of vineyards is increasing, while other regions face reductions.

In the past 10 years there is a downward trend of the land areas under grape production (from around 30 thousand ha to 24.8 thousand in 2005). According to MAFWE⁷⁷, this tendency is likely to continue in the future, since vineyards replanting and new plantings (mainly from the smallholder sector) are insufficient to offset the uprooting of old ones. During the 2000-2005 period, an average of 25.9 thousand ha were cultivated, of which 70% (around 17.9 thousand hectares) were for wine production, and 30% for table grapes and dried raisin (around 8 thousand ha).

Average annual production in the reference period is around 230,000 tons (of which around 65,000 tons or 28% are table grapes). Average yields in the reference period are 8.9 tons/ha, and in the last three years they show an increasing trend due essentially to good climatic conditions. In 2004 private producers were dominant grape producers with an average share of the total production of 79%, while agricultural enterprises accounted for 21%⁷⁸.

Due to the favourable climate, the Macedonian **table grapes** are of prominent quality and significant exporting potential with prospectively increase of the current foreign currency influx of €7 million (2005). The assortment of the table grape varieties includes several

⁷⁷ MAFWE - Annual Agricultural Report 2005

⁷⁸ SSO Yearbooks 2000-2005

classes from very early to very late table grape varieties. Due to favourable climatic conditions in some vine growing regions table grape varieties have a comparative advantage over wine varieties, but there is insufficient presence them in the favourable vine growing regions. There is a lack of grading and packaging centres for table grape, and of cooling facilities (to extend its post harvest period). A large part of the production of table grape is intended for the domestic market, and exports to regional markets (at unfavourable prices) are limited. Due to the problems that exist on the table grape market and the increased interest for wine exports, an unknown quantity of table grape is processed into wine and wine by-products.

White **wine grapes** predominate in Macedonia (mostly of the Smederevka variety, around 60%, which is not much in demand on the market). The red wine variety Vranec is present in approximately 20% of vineyards. Macedonian vineyards have suffered for a long period of under-investment, resulting in an unfavourable age structure. Over 60% of vineyards are older than 15 years, which is the optimal age of vineyards. Out of these, about 38% are at the end of their production cycle (>20 years) and should be uprooted/re-planted, which require significant financial investments⁷⁹. In the EU wine-producing member states, these activities have been sustained both technically and economically through ad hoc subsidies. The existing wide range of row densities (distances between rows and within a row) hamper mechanised operations which are limited to soil cultivation and vine protection (and insignificantly for ampelo-technical measures, harvesting, establishment of new vineyards, etc.) Tractors and equipment are mainly technically and economically obsolete. Irrigation is also more than often inexistent, thus contributing to high yield variations. As vineyard development has progressed in a disorderly way (biological features of the varieties and microclimate were not taken into consideration) a high percentage of the vineyards are located in the so-called freezing zones where bud freezing occurs frequently.

Wine grape producers suffer from several management problems. Grape producers do not have the ability to obtain credit, or to influence raw materials supply (thus reduced use of agro-chemicals), exert price control of the grape, and ensure timely payments for their deliveries, especially from the larger processing capacities. Grape sales to the wineries are generally not regulated by specifically agreed pre-conditions or by cooperation contracts (whether short-term or long-term) and thus rivalry (competition among wineries for grapes) and non loyal competition (on the side of grape growers) prevail⁸⁰.

Domestic support for the vineyards was provided under the MAFWE Annual Agricultural Development Programme. Measures in the programme relate only to the planting of high quality new vine plants for wine-grapes of the recommended varieties. The main criteria for receiving support is the production or purchase of healthy vine plants of the varieties Chardonnay, Sauvignon, Semillon, Zilavka, Traminec, Muscat O'tonel, Vranec, Cabernet Sauvignon, Cabernet Franc, Burgundy Red, Merlot, Teran, and Syrah, with the purpose of planting new vineyards or renewing old ones. The purpose is to promote vine growing and wine production, i.e. to encourage producers to plant new, more profitable grape varieties of high quality. In 2004 and 2005 a subsidy of around €737 per ha is extended to beneficiaries (legal entities and physical persons) that meet the general and specific conditions. This measure, although relevant, appears to be limited in terms of amount subsidized in particular for the establishment of new plantations.

Since 2004 Governmental subsidies are being granted for organic production in orchards including vineyards (from 0.2 till 5 ha), of an amount of MKD 8.000 per hectare. A further amounts of MKD 4 million are being granted for marketing activities (standardization of production in accordance with EU requirements), for all fruit and vegetable producers.

⁷⁹ Source: Department for Vineyards, Wine and Orchards (MAFWE)

⁸⁰ Economic Analysis of the Macedonian Viticulture – A Competitiveness View of the Grape and Wine Sectors, Gordana Manevska Tasevska MBA tesis - Uppsala 2006

2.3.6.4. Vegetables

The major vegetable production regions are located in the south of the country (Strumica, Gevgelija), characterized by modified Mediterranean climate, and also in Kumanovo and Skopje, where moderate continental climate is present.

Vegetables (including potatoes) are one of the most important sub-sectors of Macedonian agriculture. In 2004, around 740,000 tons were produced on a total area of approximately 60,000 hectares, out of which 260 ha were under heated glass house production, and the rest under plastic tunnels or in open fields. The glass-house production of vegetables is highly profitable due to early harvest in January (one month before neighbouring countries) and maintaining high prices until April/May. Tomato, pepper and cucumber are grown under plastic or glasshouses that vary from unsophisticated to modern imported computer-controlled installations. In the Strumica region some modern glass-houses are heated with thermal water.

Excluding beans and potatoes carry-crops, according to the statistics for the 2000-2005 period, the area sown with vegetables has averaged 50,000 ha, and total vegetable production has averaged 670,000 tons. During the reference period, potatoes predominate with 26% of the total area cultivated with vegetables, followed by peppers and melons (15% each), beans (14%), tomatoes (13%), cabbage and onions (7% each) and garlic (2%). In terms of produced quantities, potatoes again lead with 26% of the total vegetable production, followed by watermelons (20%), tomatoes (18%), peppers (17%) and by other vegetables (cabbage, cucumbers along with other vegetables such as leek, green peas, string beans, cauliflower, lettuce, eggplants, etc.).

Table 13 - Crop area, production, yields of vegetables (incl. potatoes), 2000-2005⁸¹

	2000	2001	2002	2003	2004	2005
Crop area (in ha)						
Vegetables	55,451	50,370	51,016	49,191	51,119	46,992
Tomatoes	6,784	6,550	6,459	6,411	6,267	5,769
Peppers	7,762	7,454	7,506	7,578	8,135	8,170
Garlic	1,267	1,111	1,087	1,092	1,098	1,105
Beans	9,274	6,798	6,527	6,210	8,135	5,254
Lentils	295	185	227	144	142	103
Cabbage	3,726	3,676	3,488	3,662	4,025	3,856
Onion	4,071	3,778	3,748	3,385	3,203	3,218
Melons	8,607	7,734	8,145	7,221	6,669	6,591
Potatoes	13,665	13,084	13,829	13,488	13,445	12,926
Production (in tons)						
Vegetables	653,803	656,648	665,064	668,161	697,651	679,064
tomatoes	134,654	126,313	109,506	129,739	114,490	116,633
peppers	116,597	111,611	108,073	111,494	127,852	127,472
Garlic	4,079	4,878	4,305	4,363	3,669	4,077
Beans	6,154	5,302	5,724	5,578	5,939	6,325
Lentils	192	120	156	144	144	69
Cabbage	70,378	75,284	70,586	75,347	92,319	66,499
Onion	36,336	30,594	34,589	30,478	34,334	38,465
Melons	124,968	130,073	152,443	140,393	125,381	132,872
Potatoes	160,444	172,473	179,682	170,625	193,523	186,653
Yields (tons per ha)						
Vegetables	11.79	13.04	13.04	13.58	13.65	14.45

⁸¹ Agricultural Publication 2005 SSO

<i>tomatoes</i>	19.85	19.28	16.95	20.24	18.27	20.22
<i>peppers</i>	15.02	14.97	14.40	14.71	15.72	15.60
<i>Garlic</i>	3.22	4.39	3.96	4.00	3.34	3.69
<i>beans</i>	0.66	0.78	0.88	0.90	0.73	1.20
<i>lentils</i>	0.65	0.65	0.69	1.00	1.01	0.67
<i>cabbage</i>	18.89	20.48	20.24	20.58	22.94	17.25
<i>Onion</i>	8.93	8.10	9.23	9.00	10.72	11.95
<i>melons</i>	14.52	16.82	18.72	19.44	18.80	20.16
Potatoes	11.74	13.18	12.99	12.65	14.39	14.44

Recently, in addition to the traditionally produced vegetable crops, producers are becoming increasingly oriented towards intensive production of alternative and non-traditional crops, demanded on the EU markets and beyond, and which enable higher incomes with limited resources like broccoli, Brussels sprouts, Chinese cabbage, asparagus and others. Flower production is one of the prospective industries of agriculture with secured marketing and satisfactory prices, as well as already demonstrated interest for foreign investments in the production capacities. Macedonia has abundant aromatic and medicinal herbs, wild herbs as a result of the hilly-mountainous relief, climatic and soil advantages, as well as ecologically clean environment. From the export of essential oils, solutions and other products of these plants Macedonia realises a foreign currency inflow of around \$10 million annually⁸². But one of the limiting facts is that they are mainly quantities from wild plants, while organised production of plantations of aromatic and medicinal herbs which have huge potential is at the very beginning of its development.

Vegetable production, in particular in the small individual farmers sector 'garden production', is characterized by very small plots, often not exceeding a hectare of land per farmer. Much of this garden production is to meet producers' home needs. Though the region has a long tradition in vegetables production, it lacks new technologies. However, technologically and economically modern realities do exist, and are expanding in some areas.

Regarding the inputs in the vegetable production, the seed material cultivated in open fields and in greenhouses is usually imported from Holland, Israel, Serbia & Montenegro, Bulgaria and Greece, and only a limited amount of the required vegetable seed material is produced locally. The fertilizer applied is most of the time of Macedonian origin, while the plant protection materials are imported. Typically, furrow irrigation is used on open fields, while sprinkle and drip irrigation is more often found in protected vegetable production i.e. under plastic tunnels or the glasshouse production. For most of the crops, the producers normally produce seeds, which are afterwards planted on the field.

There are no governmental subsidies to the vegetables sub sector, except for organic production. In the domestic market, fresh vegetables are mainly traded on urban and rural assembly wholesale and urban retail (green) markets and to a lesser extent directly to supermarkets/shops. Wholesale markets have limited storage capacities, while rural assembly markets lack sorting/grading/packing facilities necessary to fulfil minimum market standards. Currently, Macedonian producers are not facing serious problems concerning the compliance with quality requirements for exports to regional markets. However, other markets such as EU are increasing their requirements for quality standards, food safety and protection of consumers. Further enhancement of such capacities is essential to strengthen the market according to the EU standards.

The largest quantity of raw materials is provided to the industry through intermediaries (trading companies). Vertical integration between farmers and processors is weak. Some vegetable processors pre-finance the production of the private farmers, but during the last few years, the industry experienced major problems in assuring sufficient deliveries from farmers. Long-term delivery agreements are uncommon and un-loyalty occurs on both

⁸² Source: SEED Report – The Balkan Herbs Sector

parties, so certain processors have started their own production. Imports of raw products for processing are very limited, due to high import duties on fruit and vegetables in Macedonia. Since the processing industry is export oriented, it is making efforts to improve the quality standards by introducing new technologies and standards such as HACCP and ISO.

Macedonia is a net exporter of vegetables given the market surplus of around 60% of the domestic production⁸³. The export of vegetables is mainly organised by domestic trade firms at the purchase points or the wholesale markets. The large agricultural enterprises often act as direct exporters of their own production. The foreign trade in vegetables is largely constituted of five main products (tomatoes, peppers, cabbage, melons and cucumbers). The early vegetable crops are the most attractive products intended for export and they are placed mainly on the EU markets (Czech Republic, Slovakia, Poland, Greece and Germany) as well as on the regional markets given the fact that the harvest season for the early vegetables in Macedonia begins early. In 2005, exports of vegetables produced a net trade balance of €34 million, while exports of processed vegetables (predominantly “ajvar” canned dill pickles, cucumbers and mushrooms) produced a net trade balance of about €50 million⁸⁴. The largest share of imports (83% in 2005) is constituted by canned olives and processed potatoes. Macedonia has been producing olives since 1999. The total number of planted trees is estimated to be approximately 40.000. However, production of olives is far less than the existing demand.

Tomatoes: Around 80% of the tomato production is in the south eastern and central regions (Gevgelija, first and largest, Strumica, Valandovo, Dojran, Kavadarci, Demir Kapija, Veles and Sveti Nikole). In the last years agricultural enterprises and co-operatives show an increase in the application of modern technology in greenhouses and plastic tunnels, which contributed to the increase in yields, revenues and to overcome the seasonal nature of the production (tomato is now continuously presence on the market during the year).

Pepper production has a longstanding tradition in Macedonia and it is most frequent in Strumica and Radovis regions and in the Polog region – Skopje and Kumanovo. Peppers are predominantly grown on open fields, but certain quantities are produced as early vegetable in greenhouses and in plastic tunnels. In 2004/2005 around 10% of the area was under industrial peppers and the balance was for non-industrial peppers (small plots but with higher yields). In the last years there is an increase of production under modern plastic and glass houses. The new techniques and the new industrial pepper production have created higher income, overcoming the seasonal character of the production and disease control.

Apart for fresh consumption, peppers are mostly used for processing industry as: semi-product (semi-frozen, frozen, dried, pepper in vinegar, pepperoni in barrels) and final product (ajvar, lutenica, pindzur, guvec, baked pepper, fried piper, feferoni in vinegar). Currently there are 25 processing companies but there is scope for further expansion and modernisation of the industry, as the crop, fresh or processed, shows overall interesting developments both on domestic and foreign markets. Macedonia imports but also produces seed material.

Melons and Watermelon: the areas under these crops show a decrease in the last years due to the low market prices and the conversion of the melon fields into fields for other early vegetable crops.

Potato: Potato absorbs a big part of labour, especially in the hilly-mountainous production regions (Berovo, Kratovo and Kriva Palanka) and in the lowland production regions (Skopje and Kumanovo). Production is predominantly intended for the domestic consumers and the processing industry. It is estimated that about 50% are consumed annually at the household level, while the rest is sold to catering facilities and processing industry (which is however

⁸³ Around 30-40% of the domestic production of vegetables is intended for domestic consumption (fresh vegetables 230.700 tons, potato 58.500 tons). In 2004 the domestic consumption of vegetables was assessed to around 35% of the production.

⁸⁴ MAFWE – 2005 Annual Agricultural report.

limited in size and restricted to the production of chips). An insignificant part is exported. Macedonia is a net importer of seed potato, mainly from Netherlands and Serbia and Montenegro, and possibly domestic production of the latter could be strengthened. The average potato yields are below EU benchmarks due to seed problems (uncertified seed with low quality and health) and inappropriate production practices.

Fruit and vegetable processing

Fruit and vegetables enterprises mainly produce semi-finished products (tomato paste, ketchup and tomato juices, apple concentrates, deep frozen sour cherries - intended for further processing, dried products such as plums, raisin, carrots, parsley, onions, garlic) and higher processed products (in jars or canned are roasted peppers, ajvar, lutenica, djuvec, marinated gherkins, hot and sweet peppers, red beets and fruit products with added sugars such as sour cherry compotes, jams, etc).

Most of the enterprises have old equipment. In the majority of cases investments have been in the purchase of single machines within production lines. Compared to western similar products, the Macedonian ones are of a traditional type, with average packaging. Western technologies that intervene to a lower extent in texture, taste and other quality and packaging characteristics are uncommon. However, some of these enterprises are starting to adopt new marketing strategies and are renewing production lines.

In the last decade, a number of private enterprises have progressively engaged in ecological fruit and vegetable processing. These enterprises began on a small scale and expanded production facilities as demand for their products grew. Some of the entrepreneurs were already experienced in trade in horticultural products. Private enterprises usually produce smaller ranges of products but focus on higher processed (value-added) products primarily for the export market. Most of the private enterprises have new equipment but a few have machines and production lines that require high labour intensity.

In 2006 a survey was performed on around 40 fruits and vegetable processing companies⁸⁵. In general, around 90% of the overall activity is vegetable processing, while roughly around 10% is fruit processing. In relation to the type of processing, the largest portion of the processors are involved in canning, a small number of them have drying and freezing capacities, while the rest of them have combined production lines.

The industry over the period 2003 – 2006 shows a continuous increase in production, mainly due to the increased demand for the Macedonian processed goods by foreign buyers, and domestic market growth resulting from strong penetration of the retail chains and changes in the lifestyle of the population (buying processed products rather than preparing them at home). In 2004, the industry output was 4.7 thousand tons higher than in 2003 (+22,4%) while in 2005 the production was 2.5 thousand tons higher than in 2004 (+9,7%).

The fruits and vegetable processing industry is very export oriented, exporting around 80% of its total output. The EU and neighbouring markets are the main export destinations for domestically produced processed products. Overseas markets (particularly Australia) due to large communities of immigrants from Macedonia but also from other Balkan countries are also very important export destinations. The values recorded in relation to export volumes indicate that domestic processors mainly export products with low added value, also regarded as standard or “commodity” products.

Approximately 68% of the companies are based in towns, while the remaining 32% of the processing facilities are located in the rural areas (villages located close to the nearby towns). The vast majority of the fruit and vegetable processing companies are classified as

⁸⁵ The project “Fruit and vegetable processing industry and its influence on job creation in the Republic of Macedonia” is a result of a joint cooperation between Macedonian Agricultural Advisory Support Programme (MAASP) and Macedonian Association of Fruit and Vegetable Processors (MAP).

micro or small sized companies (88% in 2005). Only 5 companies in 2005 have more than 50 employees, out of which only 3 have more than 100 employees. There are no large scale enterprises in the fruit and vegetable processing industry.

The fruit and vegetable processing industry is very labour intensive. However, extreme seasonality of the processing business does not allow larger employment on full time basis. According to the data provided by respondents the total number of full time employees amounts to 11.021 in 2005 (with increasing trend). The employment of the seasonal labour by the processing industry follows the same positive trend as for full time employment, with 2.154 workers in 2005. The seasonal labour is usually engaged during the high processing season for around 4-5 months per year.

The net price per working hour in 2005 varies from 35 up to 60 MKD, an average being 46,74MKD/hour. The general characteristic of the fruits and vegetables processing industry is a low level of utilization of installed production capacity. The average utilization in 2005 amounted to approximately 27%. The overall installed capacity for fruits and vegetables processing is around 122.000 t of final output.

According to the fruits and vegetables processors the main reasons that prevent higher utilisation of the processing capacities are the lack of raw materials, lack of labour force, lack of working capital; and, lack of markets.

There is a need for preferential treatment of the fruits and vegetables processing business in relation to investment opportunities. The industry is closely linked to the rural areas and its further growth will require additional on-farm labour and will stimulate off-farm employment. Additionally, the fruits and vegetables processing business has the possibility to contribute to the economic development in underdeveloped regions especially in regards to job creation, reducing migration of younger population and stimulation of new private businesses.

However, modest results in recent years should not overshadow the existing potential for improving international competitiveness of this sector in the near future: favourable natural growing conditions, in particular for fruits and vegetables and some non-traditional crops like berries, herbs, spices and mushrooms. Currently there is no government policy for fruit and vegetable processing industry.

The main recommendations issued from the processors, that should positively affect the performances of the fruit and vegetables processing industry in the forthcoming period, are the following:

- Promote micro and small enterprises as this has higher demand for full-time labour and greater flexibility in employment of part-time seasonal labour;
- Greater collaboration with producers to ensure an adequate, timely supply of product;
- Develop mechanisms to increase current under utilisation of the capacities that in return, would allow rapid expansion with minimum capital requirements;
- Develop preferential/grant schemes aiming to support the industry;
- Provide strong marketing and promotional support to the exporters of processed F&V;
- Identify, promote and facilitate model(s) for improved multi stakeholders' dialogue (companies, MAP, MAFWE, MoE etc.).

Wineries

According to the 2006 data⁸⁶, there are 43 registered wineries in the country, with total maximum wine production capacity of 1,685,540 hectolitres. A few wineries control the wine market in terms of capacity, production, as well as exports. The largest firm accounts alone for 30%, and the first six firms account together for 80% of the total wine production.

⁸⁶ Register of the Vine, Wine and Orchards Department of MAFWE.

Wineries' production capacity for red wines (60%) is larger than that of white wines (40%) due to the fact that white grape varieties (which are predominant) are commonly used more for the production of rakija. During the last few years the number of new private wineries (mainly small- and medium-sized plants) has considerably grown, which is an interesting trend given that the overall vineyard surface shows a continuous decrease. These wineries tend to focus on production of bottled and higher quality wines, through strict control of variety selection, vineyard management and harvesting, transport and delivery practices. They also invest in sophisticated processing, bottling and marketing technologies and compete on both the domestic and international markets.

Macedonia is a net-wine exporter but the biggest part (around 85%) is exported in bulk. On average, wine export represents 40% of the grape production 2002 – 2004 (including table grapes) and 13% of Macedonian food exports. The export of bottled red and white wines is mainly oriented to the ex-Yugoslav market (except for Slovenia). The export of bulk red and white wines is directed towards EU-15. A prominent characteristic of the export of Macedonian bulk wine in EU -15 is the decrease in value, which indicates a fall in the price of exported wines per hectolitre.

In general, despite the fact that EU-15 is the dominant market for great quantities of Macedonian wine, the traditional Macedonian market (former-Yugoslav republics, excluding Slovenia) becomes equal in significance to EU-15 because of the increasing export of bottled wines with a higher price.

Wine trade analysis indicate nine countries as main destination markets of Macedonian exports: Germany and more recently Austria (in the EU-15), Serbia, Montenegro and Croatia (ex-Yugoslavia), and among the new EU member-states - Slovenia and the Czech Republic. Other export markets are Albania, Japan and Russia. In the SAA, Macedonia allocates to the EU a preferential customs-free quota of 3 thousand hl with an annual increase of 300 hl.

The export of Macedonian wine to the EU market under the SAA preferential zero-duty tariff quota (15 thousand hl for quality sparkling and wine of fresh grapes, with an annual increase of 6 thousand hl, and 285 thousand hl for wine with an annual decrease of 6 thousand hl) is subject to the adoption of the authorized oenological practices applicable in the EU. Furthermore, Macedonian wines with geographic origin that are intended for export on the EU market must be subject to the same rules of production, recognition and control that are applicable in the EU. The current level of controls in the Macedonian wine sector is not sufficient to guarantee the quality and origin of the product.

SWOT analysis in the fruit and vegetables production sub-sector.

Strengths	Weaknesses
<ul style="list-style-type: none">• Suitable climatic and agricultural conditions in several regions, for several fruits (berries in Pehcevo, apples in Prespa, grapes in Kavadarci, etc.) and vegetables (Strumica and Gevgelija, etc).• Specialised production tradition and skills (e.g. glasshouse production in Strumica Region).• Low level of pollution of natural resources, quasi-organic production.• Good geographical location: not far from EU markets, close to logistic corridors• Hot water wells provide cost advantages in production of early vegetables (greenhouses)• Cheap and abundant labour.• A number of high skilled farmers.• Good reputation and well established marketing positions in former Yugoslav states and in other Balkan	<ul style="list-style-type: none">• Small structured / fragmented primary production (causes cost increases).• Poor capital endowments (investment and working capital), poor access to credit. Inadequate public investment financial support in particular for multi-annual crops and installations (greenhouses, post-harvest facilities).• Old farm machinery, often inadequate or low quality planting material and outdated farming practices (little updated plantations, inappropriate use of agricultural inputs, lack of drip irrigation systems, etc), which reflect in fluctuating and low yields.• Several fruit varieties are not commercial or suitable for storing, processing (especially apples, sour cherries).• Great number of farmers is conservative, entrepreneurial thinking is underdeveloped, labour productivity is often low. There is a weak horizontal cooperation (farmer cooperatives and associations).

- countries. Several regional products are well known in the domestic market and have high credit
- Consumer loyalty to domestic produce.
 - Substantial export markets established in the EU and in neighbouring countries (e.g. early vegetables, organic vegetables)
 - Unorganized/uncoordinated production leads to excess supply and wide price fluctuations.
 - Wholesale markets are rudimentary, market information is deficient, stable marketing links are rare. Marketing standards are non-existent.
 - Weak vertical integration (farmers and processors). Poor contract enforcement both on farmers' and processors'/traders' side. Illiquid processors often delay payments.
 - Low investment in multi-annual crops (obsolescence of fruit and grape plantations).
 - Weak research and weak support from the extension services (especially for marketing).

Opportunities	Threats
<ul style="list-style-type: none"> • Interest of foreign companies is likely to develop into investments in processing and retailing; and will organize farmers' supply (e.g. for berries, sour cherries, organic fruits) • Good development prospects for fruits are: berries (raspberry, blackberry, blueberry) and sour cherry, (high labour intensity; niche products with growing markets in the EU and in Macedonia); table grapes due to suitable climate and good taste; organic fruits (growing demand in the EU and high price premiums); Peach exports to Russia and Ukraine. • Good development prospects in the vegetable sub-sector are pepper (especially processed, marinated, etc.), red pepper, cut and frozen pepper for ethnic markets in the EU; asparagus, having a niche market and facing growing demand in the EU, especially in Germany; and creating employment due to its high labour intensity; early vegetables in neighbouring markets (climate in Macedonia does not allow to compete in EU markets in the very early season with Greece, Italy and Turkey); organic vegetables, facing still growing demand in the EU and enjoying high price premiums over conventional produce; planted curative and aromatic herbs. 	<ul style="list-style-type: none"> • Strong competitors in export markets. Spain, China, Morocco, Turkey (vegetables) and Serbia (berries), Serbia, Poland, Hungary (sour cherries). • Import liberalization, resulting in increased imports of fresh and processed products and keen competition in the domestic market. • Export markets are increasing their requirements for quality standards, food safety and consumer protection. Good Agricultural Practice (GAP) is missing; EUREPGAP standard is introduced only on a few farms only. • Imports of often uncertified fruit, grape and vegetables (potato, etc) seeds and seedlings (costs and dubious quality).

2.3.7. Animal Production Chain

Animal production and associated slaughtering, export and processing industry are key contributors to the agricultural and domestic economy. Historically, livestock breeding (except pig and poultry breeding) has been carried out by the agricultural smallholder sector, which includes individual farm producers, whose production is mainly for their own consumption, a certain number of commercially oriented family farms that are on the rise and big specialised livestock production enterprises, the number of which is in decline.

Table 14 - Number of animals and key productions, 2000-2005⁸⁷

	2000	2001	2002	2003	2004	2005
Livestock numbers						
Cattle	264,968	265,266	258,973	259,976	254,803	248,185
Sheep	1,250,686	1,285,099	1,233,830	1,239,330	1,432,369	1,244,000
Goats		78,542	81,439	71,810	67,786	62,190
Pigs	204,135	189,293	196,223	179,050	158,231	155,753
Poultry	3,713,369	2,749,637	2,900,966	2,417,362	2,725,298	2,617,012
Beehives	75,481	70,869	70,088	71,602	69,036	66,738
Production						
Beef and veal (ton)	7,287	5,835	6,738	8,691	8,824	7,604

⁸⁷ Agricultural Publication 2000-2005 SSO

Cow Milk (000 lit)	220,244	200,904	198,431	191,533	212,898	197,464
Sheep Milk (000 lit)	40,156	47,486	51,626	52,466	47,876	48,700
Pig meat (ton)	9,323	8,413	10,626	9,609	9,373	8,897
Poultry meat (ton)	4,840	4,702	3,992	4,116	3,189	3,809
Sheep/goat meat (ton)	4,919	5,789	4,637	5,895	7,030	6,857
Eggs (000 pieces)		395,000	345,000	283,000	340,000	340,000
Wool (ton)	1,920	1,917	1,914	2,003	3,176	1,791
Honey (ton)	1,087	982	853	1,026	916	1,042

In the last ten years, livestock production has a downward trend. Livestock numbers (although not evident from the statistics) have decreased. Beef and sheep meat have increased, while decreasing for poultry products. Milk production almost doubled between 1994 and 2000, while yields, though still comparatively low, have increased steadily. The poultry industry, which is mostly focused on egg production, has declined steadily over the past twenty years, though private individual farms have been increasing activity in this sector.

Macedonia heavily depends of imported feedstuffs, energetic (maize), proteins and fats from vegetables (soybean and sunflower meal, corn gluten meal) as well as complete and supplement feed mixtures (combination of proteins, or proteins, minerals and vitamins). According to the official statistics, in the year 2003 the import of animal feeding stuffs included 25,500 tons of products and by-products from oilseeds, 7,800 tons of complete feed mixtures and 3,800 tons of premixes.

Table 15 - Imports and Exports in kg (2005)⁸⁸.

Imports	
Raw meat and edible meat offal	51,516,065
Sausages and similar products of meat	3,038,423
Raw milk	0
Dairy products including ice cream	18,507,481
Exports	
Raw meat and edible meat offal	3,349,295
Sausages and similar products of meat	497,242
Raw milk	10,509,462
Dairy products including ice cream	779,411

Macedonia is a net exporter of raw milk but a net importer of raw meat and edible meat offal, of sausages and similar meat products and of dairy products.

In 2006 in Macedonia operate 143 licensed establishments for slaughtering, treatment, processing, production, collection, storing, refrigerating, freezing and trade of products and raw material of animal origin, for which the Veterinary Directorate has issued veterinary-sanitary license and keeps a register⁸⁹. Of these 37 are export establishments and only 10 have export licence for EU countries. Export establishments which produce products of animal origin shall possess export control number, whereas the establishments which place their products on the domestic market do not possess permission number.

Table 16 - Licensed establishments in Macedonia, 2006⁹⁰

Type of establishment	N. of licensed establishments	Export establishments	EU export license
Slaughter houses for red meat (beef, pig and lamb)	21	7	7 for lamb
Poultry slaughter houses	2	2	

⁸⁸ Source: State Statistical Office report 2005

⁸⁹ Law on Veterinary Health (OG of RM No 28/98)

⁹⁰ Veterinary Directorate 2006

Game meat	-	-	
Establishments for meat processing and meat products	37	11	
Establishment for milk processing and dairy products	70	6	1
Fish and fish products	-	-	
Establishments for snails processing	2	2	2
Establishments for production of egg products	2	2	
Establishments for honey	3	2	
Other establishments	6	5	
Total	143	37	10

The dairy processing plants are small or medium sized with average of 50% usage of the installed processing capacities. Only one dairy processing company is registered for export to EC. In 2003, production at processing plants is: UHT and fluid milk (60.000 ton), yogurt and sour cream (15,500 ton), cheese (3,400 ton), butter and other products (1,000 ton). The annual production at individual farmers for 2003 is: milk (56,300 ton), cheese (10,700 ton), butter and other products (1,600 ton). Domestic production covers 76% of market needs and 24% is covered by imports.

The Macedonian **meat processing industry** is very dependant on imports of raw meat. The establishments for animal slaughter, processing and storage of products of animal origin are divided into the following categories:

- Establishments for animal slaughter;
- Establishments for meat cutting;
- Establishments for processing and cutting of game meat;
- Establishments for meat processing and preparation of products of animal origin;
- Establishments for cooling, freezing and storage of products of animal origin.

With regard to construction, technical equipment, capacity, methods of operation and organization of veterinary inspection, they are classified as follows:

- Establishments with larger production capacity - industrial establishments;
- Establishments with smaller production capacity - crafting establishments;
- Establishments (rooms) in households for milk processing and preparation of dairy products, processing of honey and collection, sorting and packaging of eggs.

The above establishments have to fulfil the general conditions that are common for all establishments, related to location, yards, roads, water supply and drainage of waste water, material used in facility construction, equipment, ventilation, lights, premises for equipment sanitation, premises for general needs of personnel and veterinary inspection, and hygiene of the employees. The special conditions are dependant on the type and scale of production. The Veterinary Directorate performs the control of activities and application of the laws concerning foodstuff of animal origin.

There are no EU approved red meat slaughterhouses (except for seven lamb slaughterhouses). The main problem appears to be in the water treatment plants and the lack of interest of processors to fulfil EU requirements. The carcass evaluation system does not follow the SEUROPE classification system) and other standards according EU internal market. There is a poor application of HACCP and of self-control.

There is no EU-compliant rendering facility in the country.

2.3.7.1. Cattle

Livestock production is mainly carried out in the hilly and mountainous areas along the northern, western and eastern borders of the country. The national breed structure includes mainly dual dairy/meat production breeds, but the main orientation is for milk production. Meat production is generally subsidiary and based on culled cows and fattening of male

calves, whereas fattening of meat type breeds is on very small scale and based on imported dual-purpose breeds from Serbia. The main breeds include 54% Busha (primitive, domestic breed used for milk, meat and marginally work in remote areas), 19% Simmental (equal for meat and milk), 13% East Friesian/Holstein (predominantly milk), 13% Montafon (predominantly milk) and 1% Oberintal (predominantly milk)⁹¹.

The number of cattle has been steadily declining in the last ten years. In the 2000-2005 period the average number of cattle has been 258.7 thousand (248.2 thousand heads in 2005). The number of cows and gravid heifers has also decreased from 70% of total cattle heads in 2001 to 63% in 2005 (approximately 157 thousand of which in average 88 thousand or 56% were milking cows).

The average size of cattle farms is small and the average milk yield per cow is around 2,362 litres⁹². In 2005, 91% of cattle farms had less than 10 heads, 6% had less than 20, 2% had less than 50, and only 1% had more⁹³. The general structure of the cattle farmers is estimated as follows:

1. *Traditional farmers* (75% of the total number) having low productive 1-3 cows with low annual milk production of 2-3 thousand l/cow. The productivity is very low due to the inappropriate conditions under which they are kept, as well as the low quality feed. This type of producers does not represent a firm base for future market production.
2. *Family farms* with 5-20 cows with annual milk production of 4-5 thousand l/cow medium input. Most often they are mixed farms with few types of production that should represent a future base of the cattle production. According to prevailing standards in neighbouring countries, farms with minimum 10 cows are considered to be economically viable⁹⁴.
3. *Specialized farms* with more than 20 cows, high performance, with annual milk production of >5 thousand l/cow. The number of these types of farms is small, only 3% of the farms in 2005. Only 1% of farms have >50 and they should be holders of the production of quality genetic material for the remaining farms (reproductive centres).

In the 2000-2006 period the average annual cattle meat production (weight of the slaughtered cattle expressed in carcasses) was around 7,500 tons (7,600 tons in 2005), which is insufficient to meet the national needs (consumers and processing industry). According to SSO, round 14,000 tons are imported annually in 2004-2005 (16,000 tons according to the Veterinary Institute), part of which is under reduced import customs quotas. Domestic demand for beef (including for the industry) are met by imports with average value of €21 million per year.

In the 2000-2006 period the Macedonian average annual milk production was around 203,500 litres (197,500 in 2005). According to official statistics, overall cow milk production shows a downward direction and dairy production is vulnerable and very often problematic. The produced milk is used either for fresh consumption or processed into yoghurt, sour milk, sour milk cream, cheese, curd cheese, hard yellow cheese, processed cheese and other. Macedonia is a net importer of dairy products (in 2005, the total quantity of imported dairy products amounted to 17 thousand tons)⁹⁵ for a total amount of €17.5 million (2005).

The major import countries of dairy products for Macedonia are: Slovenia 45% of the total imports, Germany (17%), Croatia (13%), Serbia and Montenegro (8%) Czech Republic and Bulgaria (5%), Bosnia and Herzegovina (2%), Greece and France (1%).

⁹¹ MAFWE Annual Agricultural Report 2005

⁹² State Statistical Office of the Republic of Macedonia. 2006. p. 418.

⁹³ 2005 - Animal Identification and Registration System, Veterinary Directorate, MAFWE

⁹⁴ The European average is 24 cows per farm, in Greece is 8, in UK and Holland is 70 per farm.

⁹⁵ State Statistical Office, 2005

One of the main limiting factors in the livestock production is high price of the roughage (fodder) and feed that influence to the final cost structure of the meat production (50 to 85%), particularly in the intensive fattening mainly present in the lowland regions.

Cattle production is supported by the MAFWE with the main aim to improve the breed structure of Macedonian dairy herd (there are three main instruments: supporting the “high quality” cows, supporting production records control, supporting registered cows) and financial support for produced, ensiled and hayed fodder for on-farm use. Support measures do not show results as neither the number of the cows nor their productivity has improved. Official data show that there are 3,840 high-yielding milking cows in breeding farms that should serve to improve the genetic background of individual farmer’s herds. It however appears that they are just replacing their own herd needs⁹⁶. There is no proper instrument, offered by the state to the processors that regulates market surplus by supporting the storage of milk products with longer shelf life (butter, cheese).

SWOT analysis in the Cattle production sub-sector.

Strengths	Weaknesses
<ul style="list-style-type: none">• Favourable environmental and ecological production conditions.• Availability of substantial areas for grazing and fodder production.• Tradition in cattle farming.• Local breeds are adapted to environmental conditions.• Several traditional dairy products exist.	<ul style="list-style-type: none">• Small size of farms with dominant low input–output farming technology.• Scarce production and high costs of roughage (fodder) and concentrated animal feed (which is mainly imported).• Little specialisation (milk or meat) in production.• Weak or inexistent vertical integration among farmers and processors (few yearly contracts based on quantities and quality are offered to the farmers by processors). Processors have a dominant position.• Low educational level of farm management (in particular smallholder farmers), resulting in bad herd management practices and in lower quantity and quality of raw milk.• Technical assistance offered by NEA agents and MAFWE regional officers has no integrated approach and is mainly focused on production problems concerning feeding, health etc.• Data bases for reliable breeding information are not properly used (no estimation of Breeding Value exists – breeding and performance data are just recorded and no final BV analysis is carried out so that real high quality cows could be identified and disseminated). There is no continuity in realization of breeding and selection programs.• No domestic or foreign private breeding companies exist. Artificial Insemination centres exist for cattle and swine (however AI with bulls of proven Breeding Value is rare)• No National Coordinating Body that articulates the industry and the government• MAFWE support measures do not show results as neither the number of the cows nor their productivity has improved.• There is no proper instrument, offered by the state to the processors that regulates market surplus by supporting the storage of milk products with longer shelf life (butter, cheese).
Opportunities	Threats
<ul style="list-style-type: none">• Adding value to meat and milk products by processing, quality improvement, branding etc;• Improved Pasture management.	<ul style="list-style-type: none">• Without proper market regulations there is large import of cheaper meat and dairy products from EU and from other third countries.• Disease outbreaks (foot-and-mouth and brucellosis).

2.3.7.2. Sheep and Goats

The Macedonian sheep breeding has a long tradition, is supported by favourable natural conditions (flocks are raised in ecologically clean zones and pastures account for about half of the total agricultural land) and contributes substantially to agricultural exports. Whereas

⁹⁶ Dragoslav Kocovski, contributed paper 2006

expert's opinions place the number of sheep between 6 and 8 hundred thousand, official statistics (2000-2005) show an annual average of 1.28 million sheep in the country (1.24 million in 2005, of which 67% breeding ewes – mostly milking, 27% lambs and yearlings, 6% rams and sterile ewes). The exact number of heads and farms is not known since the registry and tagging of sheep is still not performed⁹⁷.

Around 96% of the milking ewes are held by individual private farmers. In 2004 the number of sheep farms was estimated at 2,964⁹⁸. The majority of the farms keep less than 51 sheep, in about 45% the sheep flock was between 101 and 300 heads, and there are around ten farms where the number of sheep exceeded 1,000 heads. The typical sheep and goat farm is a family business using family-owned land, barns and family labour. Larger farms or groups of farmers tend to rent state pastures during the summer season. Bigger flocks can only be found in the Western part of the country. Typically there are only one or two goats being kept by the farmers and their milk and meat is produced for the family. In recent years, however, some investments have been made into the sector.

The breed structure of the sheep population in the Republic of Macedonia consists mainly of the Pramenka divided into the Ovce Pole breed (60%) and the Shar Planina (30%) while the balance is made of Pramenka crosses with Merino and/or Awassi. Given the dominant opportunity of exporting lamb meat, traditionally there is no clearly defined production orientation (meat–wool vs. milk–meat).

Similarly to the sheep, goat breeding was an important traditional activity in the past. Due to overgrazing, goat breeding was banned in the 50ties up to 1989, resulting in an insignificant goat population. Subsequently, interest in goat breeding re-started and in the 2001-2005 period there was an annual average of 72 thousand goats in Macedonia (62.2 thousand in 2005)⁹⁹. Expert estimations, however, put the number of goats to around 100 thousand¹⁰⁰. According to the data of the Livestock Institute, there are 1,200 goat farms in the country but if the farms with 1 to 5 heads are not considered, the number of farms is only 664. The number of goat breeders has been increasing as a result of the market demand for goat milk and for its profitability. Nevertheless, the main problems that this developing competitive industry is facing are the lack of application of technical-technological solutions on the farms, unorganized producers placing small and un-standardized quantities of milk products on the market, resulting in generally insufficient use of available natural and other resources in this industry. Despite the big interest shown by the developed European countries for goat milk and cheese, the Macedonian producers are far from fully exploiting the favourable customs-free trade and the evident demand, mainly due to the lack of consistent milk quality, not being able to establish recognizable cheese branding, and insufficient quantities that meet EU quality standards, and not fulfilling the conditions for obtaining exporting licence by a number of processing capacities.

Goat population in Macedonia belongs to the Balkan breed, but there are crosses with Saanen and more recently with Alpine, the latter supported by established reproduction centres. The performance of goats is variable due to the different production conditions. Average goat production characteristics are live weight from 30 to 40 kg and milk yield of 150 litres¹⁰¹. Kidding occurs in February/March and their body weight at 60 days is 15 kg, when they are sold in the local markets together with lambs.

Total average **sheep milk** production in the 2001-2005 period is about 49.6 thousand litres (48.7 thousand in 2005) with average yield of 57 litres per ewe (59 litres in 2005, with increasing trend). Ewes of individual farmers produce 60 l/year while ewes of enterprises

⁹⁷ Dragoslav Kocovski, contributed paper 2006, states that the official figure of lambs is low (the provided estimation is around 788 thousand lambs/yearlings, which is logical compared to the number of breeding ewes).

⁹⁸ EAR funded study on internationally competitive sub sectors - Sheep and Goat products 2006

⁹⁹ SSO 2001-2005 statistical Yearbooks

¹⁰⁰ EAR funded study on internationally competitive sub sectors - Sheep and Goat products 2006

¹⁰¹ Modernization of Macedonian Agriculture, Current situation of Goat and Sheep, V.Dzabirski

only 39 l. Most of the milk is processed in to white sheep cheese (feta type) which is mainly sold on the domestic market, but small quantities (6 thousand tons/year) are exported to neighbouring countries (Greece) in the milking season. Other dairy products are sheep kashkaval, sour milk, and whey. Sheep dairy products have good export potential due to the low production costs and high quality. However, the weak production technology can be emphasised as a significant problem, as well as the hygiene and application of the quality standards. There is only one dairy in the country with a licence to export to the EU while two other processors possess the export licence to third (non-EU) countries. Lately producers show a trend in milk production and crosses with sheep breeds with high milk production potential are increasing. In order to promote the stockbreeding, a number of breeding centres were established with high quality rams (Eastern-Friesian, Württemberg and Awassi breeds) under the control of authorised institutions.

The market for **goat milk** is still undeveloped but prices are relatively high. As a result, increasingly farmers are equipped with on-farm processing facilities and they supply supermarkets and cheese shops with speciality cheeses. Since the price of goat milk is half of the prize of sheep milk (i.e. almost equal to the cow milk price), a lot of sheep farmers are keeping also goats and mixing the goat milk with the sheep milk.

The average **sheep meat production** from 2000 to 2005 was 5,855 tons (6,857 tons in 2005) and also shows an increasing trend. In 2004, 3,023 tons of lamb meat was exported (SSO)¹⁰². Around 75% of the Macedonian lamb carcasses are exported to EU countries (around €12.5 million are realized per year, which makes it the third agricultural export product), mainly Greece (2,126 tonnes) and Italy (761 tonnes) and concentrated in the Christmas and Easter periods. These markets require carcass weight of 7 to 8 kg. Lambs are slaughtered in slaughterhouses possessing export licences and are exported as fresh chilled meat. Macedonian exports to the EU are free from import duties, however, the distinguished “Macedonian lamb” is currently under threat due to the introduction and the mixture of different breeds, and it is becoming more and more difficult to produce uniform slaughtered lamb of the required qualities. Smaller quantities are sold to Croatia (which is becoming significant growing market), Serbia and Montenegro, as well as Cyprus, generally in duty free quota. **Sheep skins** are sought by the tanning and leather industry, but wool (2 kg per full-grown sheep in 2003) tends to be of low value.

Sheep numbers have decreased in the last decade due to the 1996-99 ban on lamb exports (to Italy and Greece) for the Foot and Mouth disease outbreak and to changing expectations of young farmers. In the recent years sheep sector attempts modest but steady growth which has been supported by the Government.

The goals of the current MAFWE policy measures in the sheep and goat industry are to increase their number and improve the breed structure of Macedonian sheep and goat herds. For sheep, the policy supports the increased number of sheep in the herd, the breeding centres for Awassi and Württemberg and the delivery of the F1 crosses (Awassi and Württemberg x local breeds) to individual farms. For goats, the policy supports the increased number of goats in the herd, the breeding centres for F1 crosses (Alpina x local breeds) for delivery to individual farms.

SWOT analysis in the Sheep and Goat production sub-sector.

Strengths	Weaknesses
<ul style="list-style-type: none">• Favourable environmental and ecological production conditions.• Availability of substantial areas for grazing.• Tradition in sheep and goat farming.	<ul style="list-style-type: none">• Small size of farms flocks and herds. There is a lack of reliable data about the size of the industry (number of farms and number of animals) and of individual identification and registration of animals and farms.• The traditional export markets for lamb carcasses suffer from disorganized supply. There is a need for more synchronized approach in contracting the farmers to concentrate on certain (meat) breeds and follow production technologies so that the final product (lambs) are in a weight range and

¹⁰² In 2005, according to EU DG AGRI data, exports were 2,615 tons

<ul style="list-style-type: none">Local breeds have adapted to environmental conditions.Sufficient number (7) of lamb slaughterhouses with EU licences.Several traditional dairy products are produced.Quality of lamb and cheese products is recognised on export and domestic markets.	<p>uniform quality acceptable for foreign markets. Carcass classification does not follow the EU regulation (S/EUROP).</p> <ul style="list-style-type: none">There is weak vertical integration, little contract farming and loose contracts between sheepherders and dairy processing plants. There are no cheese market regulations. There is no organisation for joint marketing of dairy products and most of the farmers are still selling individually. Labelling and branding of cheeses is still missing in several regions.There is only one dairy in the country with a licence to export to the EU while two other processors possess the export licence to third (non-EU) countries.Low productivity of the local breeds and populations, seasonal variations in milk production and low quality of milk. These are due to the fact that on-farm technology and breeding practices are old (there is no proper pasture management, low input-output farming technology is dominant, high productive stock is underfed: low level of in energy and proteins input). No serious breeding work is carried out by the majority of the farms (according to the meat-wool and milk-meat production orientations). There is a lack of raw milk quality scheme and raw milk quality control.The number of shepherds is drastically decreasing due to ageing and lack of replacement. No education programs are offered to the new and existing farmers.Lack of performance control. No estimation of Breeding Value exists (breeding and performance data are just recorded and no final analysis of BV is carried out) so that real high quality breeding stock could be identified and disseminated.There is no National Coordinating Body that will articulate the industry and the government to organise the market and production. Farmers' associations are still weak and no rights have been given to them e.g. in breeding. Only about half of the sheep farms have joined the associations and they are representing only 20 to 25% of the sheep. There is no real breeding association in the small ruminant industry.
---	---

Opportunities	Threats
<ul style="list-style-type: none">Adding value to meat and milk products by processing, quality improvement, branding etc;Starting of national promotion programmes for sheep and goat products, in domestic and international markets.Veterinarians are starting the identification and registration programme for sheep and goat.	<ul style="list-style-type: none">The "Macedonian lamb" is currently under threat due to the introduction and the mixture of different breeds, and it is becoming more and more difficult to produce uniform slaughtered lamb, of the required qualities.Animal health problems (mainly brucellosis). Without a support scheme, sheep and goat farming could suffer.

2.3.7.3. Pigs

In the 2000-2005 period, the average pig population was 180 thousand heads (155.7 thousand in 2005). According to statistical data, the number of pigs in Macedonia shows a decrease (particularly noticeable in the private sector), mainly due to the high price of feed, the largest production cost component. In 2005 the structure of the pig herd was piglets (31.5%), fatteners (47.2%), sows and gilts (15.9%), boars (1.3%) and others (4.1%)¹⁰³.

The enterprises, which deal in an organised manner with the pig breeding and production (closed cycle, artificial insemination, etc), are owners of around 40% of the total number of pigs in the country, while the remaining 60% of the pigs are property of the individual producers (low intensity breeding and selection, with around 1-3 sows and total herd of 15-20 heads). From the statistics, it can be estimated that a substantial amount of the fatteners of individual farms are not slaughtered in registered slaughterhouses, but rather sold to private customers or used for household needs¹⁰⁴.

¹⁰³ Data for year 2005 are from the May 2006 report of the SSO.

¹⁰⁴ Dragoslav Kocovski, contributed paper 2006. According to 2005 SSO figures, individual farms hold 68.5% of sows and gilts and only 45% of piglets+fatteners, against corresponding percents of enterprises of 31.5% and 45%, but efficiency of individual farms is not 50% lower (piglets /sow) than in the enterprises.

The most frequent breeds are Landrace (Belgian, Danish, Swedish and German) as well as big Yorkshire and Durok. The input of new genetic material is only done with the import of boars, to avoid inbreeding and increase of average production results.

In the 2000-2005 period, average annual production of pork meat is 9.37 thousand tons (8,897 tons in 2005). Fattened pigs are slaughtered at approximately 100 kg of live weight. It is estimated that around 90% of domestic demand for fresh pork meat is covered by domestic production, but the Macedonian meat industry imports all of its needs of frozen pork meat (5,567 tons in 2005 or 18% of value of agricultural imports according to SSO, but 7,193 tons according to the Veterinary Institute). The main markets from which pork meat is imported are the EU (62%), Brazil (11%) and Poland (4%). Imported products of pork meat (ham, sausages and bacon) are relatively cheaper despite import customs duties. In 2005, the share of pigs and pork in the total agri-food export is 3%.

The goal of the current policy measures in the pig industry is to improve the breed structure of Macedonian pig herds through provision of support to high quality crosses of recognized genetics and to production records control for high productive animals. Support has been declining in recent years.

SWOT analysis in Pig production sub-sector.

Strengths	Weaknesses
<ul style="list-style-type: none">• Large domestic demand for pig meat and products.• Several large production units	<ul style="list-style-type: none">• Individual farms have poor pig nutrition (pork feed is maize-based, requires significant imports each year and is costly for individual farmers). On-farm technology is rudimentary (housing, equipment) and management. Average low productivity is also due to poor reproductive management (insufficient use of artificial insemination, slow introduction of proven genetics under proper breeding plans and reproductive management). This is partly due to the low capacity of government-supported breeding centres to disseminate genetics. Assistance in breeding and selection is to the level of data collection and not analyzing and using them as a tool for BV evaluation and selective breeding of genetically superior animals.• Low technical knowledge of smallholder individual pig producers. No constant education programs are available to adult and young farmers on breeding methods and integrated market concept of the production chain.• No existing market standards and pricing based on evaluation of carcasses (market classes according SEUROP) and other standards according EU internal market.• Shared responsibilities between MAFWE and Ministry of Economy on market monitoring, planning and control. There is no National Coordinating Body that will articulate the industry and the Government• Low vertical and horizontal pork chain organization). No contract farming between enterprises and individual farmers.• Existence of important unregulated informal market (purchase, slaughter, storage), which sometimes reaches butcheries and retail outlets.• Technical assistance offered by NEA agents and MAFWE regional officers has no integrated approach and mainly focuses on production problems concerning feeding, health, etc.• Some of the pig enterprises there are well organized breeding schemes based on TA delivery services by independent professionals.
Opportunities	Threats
<ul style="list-style-type: none">• Adding value to meat products by processing, quality improvement, branding etc;• Increase of maize crop production.	<ul style="list-style-type: none">• Without proper market regulations there is large import of cheaper meat products from other countries.• State support has been declining in recent years.• Various Disease outbreaks.

2.3.7.4. Poultry

The poultry industry, mostly focusing on egg production, has declined steadily over the past twenty years, though individual farms have been increasing activity in this sector. According

to the SSO data for the 2000-2005 period the average annual number of poultry in Macedonia was around 2.85 million (2.6 million in 2005). In 2005, 2.23 million or 83% are layer hens with total production of around 340 million eggs (152 eggs/layer), and of 3,809 tons of meat (only one fourth is from broilers and the rest comes from spent layers). In the reference period there is a decrease in the number of layers which did not affect egg production due to increased productivity (proper environment, management and equipment, etc).

Egg production is the primary activity of the Macedonian poultry industry. The latter is on a three-tiered level. There are large farms (about ten of them, holding around 37% of total layers, average 80-100 thousand layers per farm and average production of over 300 eggs/hen/year), many medium family-owned farms (holding around 63% of layers, average capacity of 2-5 thousand hens per farm, with average production of 108 eggs/hen/year) and backyard poultry. Macedonia is self sufficient in egg production.

Specialised broiler production is at an early stage of development, but is gaining positions on the market despite the large imports of frozen poultry meat which lower the prices on the domestic market. The production is organized in big farms of industrial type, and around 30 smaller private farms on cooperative principle with production of 6% (1.000 tons/year) of the market demands for fresh chicken meat. Integrated contract farming in poultry meat production has started. However, there are only two slaughterhouses in the country (total capacity of 2 million birds per year), which limits the development of broiler production. Although domestic poultry meat production has grown fast in the last decade, it covers only 20% of domestic demand. Imports of poultry meat account for the largest share of the total imports of agri-food products. In 2005 around 25 thousand tons were imported (or 37.6% of value of meat and meat products imports (in value terms: €21,1million in 2005), mainly frozen poultry meat for the processing industry) from USA (30%), Slovenia (18%), China (14%) and the EU-15 (13%).

In the Republic of Macedonia there are imports of between 300 and 500 thousands one-day-old chicks, and as many 12 to 16 weeks-old pullets with total amount of €180 to 300 thousand for one-day-old chicks, and €1 to 2 million for pullets. The main goals of the past policy measures in the poultry industry were to develop the broiler industry by supporting the parent stock farms for sold one-day-old chicks (broilers and layers) and the fattened broilers sold to slaughter houses.

An interesting development on the poultry industry is the recent development of new activities, such as the ostrich farming. Currently there are over 45 farmers keeping ostriches, and the total production in the last year has been estimated to 800 ostriches. With relatively low value of the existing investment (2000 to 4000 euros per family), solid incomes and ensured placement of the production on contractual basis, farm production of these birds, although in the first development stage, provides good opportunities as profitable alternative for diversification of the existing agricultural activities.

SWOT analysis in Poultry production sub-sector.

Strengths	Weaknesses
<ul style="list-style-type: none">• Increasing domestic demand for poultry meat and eggs.• Increased productivity (proper environment, management and equipment, etc) of specialised farms.• Egg and poultry meat enterprises are integrated from farm to market in production,	<ul style="list-style-type: none">• Low productivity of medium family poultry farms due to low productive crosses, poor nutrition (feed is maize-based and is costly for family farms), old on farm equipment.• Family owned layer farms need to be organized and integrated.• There are no marketing standards and pricing based on evaluation of carcasses on slaughter line.• Generally the slaughtered animals are low live weight.• There are only two slaughterhouses in the country (total capacity of 2 million birds per year), which limits the development of broiler production

- No National Coordinating Body that articulates the industry and the government.

Opportunities	Threats
<ul style="list-style-type: none">• Increase of feed crop production.• Campaigns for increasing consumption of fresh poultry meat• Ostrich farming	<ul style="list-style-type: none">• Without proper market regulations there is large import of cheaper frozen poultry meat from other countries.• Egg production is pressed by un-favourable market prices.• Various Diseases and market shrinking due to Avian Influenza.

2.3.7.5. Beekeeping

Natural conditions in Macedonia are favourable for the development of bee keeping. In average, during the 2000-2005 period, there were 70.6 thousand beehives (66.7 thousand in 2005), with an annual average production of 984 tons of honey (1,042 in 2005). Statistical data indicate decreasing trend in the number of bee hives since 2000, to which corresponds a honey production increase. Average production of honey per hive is low, ranging from 12 to 20 kg per hive (15 kg in 2005). Better managed hives, however, produce 50-60 kg/hive/yr. Most honey is multifloral and one third is mono-floral. Other products are beeswax, propolis, and queen honey.

The dominant species is the Carniolan Bee. Currently, there are approximately 11,000 honey producers, mostly with 5-10 beehives. In most cases, bee-keeping is a part-time activity providing some 40-45% of household income. Only 14% has commercial production of honey, owning about 100 bee hives. There are 12 honey processors in Macedonia. In 2005, repro-centre for selection and breeding of reproductive material has been registered. Almost whole honey production is consumed domestically and 8% is exported (in 2004 to USA, Australia and Serbia and Montenegro). Honey imports are less than 1%, and are subject to a tariff of 45%.

In 2005, the beekeeping sector was supported by the Agriculture Development Program aimed at the supply of queen and bee swarms, but there is no policy for supporting apiculture.

2.3.7.6. Snail Breeding

Breeding snails is a profitable business which has developed during last 5 years in Macedonia. The production is provided on the basis of previously agreed contracts with foreign companies which guarantee sales by the purchase price which is created by the stock market and it is between €3-5/kg which provides solid incomes. Currently there are 26 breeders united in Snail Breeders Association with seat in Kumanovo. The average investment is between € 2-3 per area of m² or for example about € 6,000 for small size farm of 2,000 m² which provides 2-2.5 ton snail production.

2.3.8. Education, Research and Extension Services in Agriculture

2.3.8.1. Educational system

The Macedonian educational system, under the responsibility of the Ministry of Science and Education (MoSE), went through reforms towards the modernization of curricula and educational activities. In 2004 the government adopted a 2005–2015 national programme for the development of education to comprehensively reform this area based on the processes of democracy, decentralization, autonomy, pluralism, multiculturalism and globalisation, as well as on international educational standards of knowledge and skills and on the principles of lifelong learning. However, the educational system still needs to be improved in order to establish educational standards compatible with the ones of EU member states, including external verification, design of appropriate study programs, information exchange and cooperation with educational institutions of other countries, etc.

Secondary Vocational Education and Training (VET) is based on three to four-year programmes, as well as two-year specialised education and training programmes, all developed and regulated by the state. In order to adjust it to the social and economic changes and the requirements of the labour market, the country is currently transforming the secondary VET particularly aimed at integration of the work and continuation of the education as an important component for building of knowledge-based society.

The following table shows the number of Secondary schools in Agriculture, veterinary, food production and forestry in 2003/04 and 2004/05 and the corresponding number of pupils. In the agriculture branch secondary schools a negative enrolment trend is evident (except for forestry), as employment after high school graduation is difficult.

Table 19 - Number of Sector secondary vocational education schools and pupils¹⁰⁵

Type of school	No. of Schools 2003/2004	No. of Schools 2004/2005	No. of pupils 2003/2004	No. of pupils 2004/2005
Agriculture	10	10	2,883	2,722
Veterinarian	4	4	1,364	1,267
Food production	6	6	2,026	1,885
Forestry	2	3	390	411
Total	22	23	6,663	6,285

In a rapidly changing social and natural environment, agricultural education and training have a critical role and need to incorporate new modules to produce their socio-economic benefits. The new scientific data in the areas of biotechnology, computer based technologies and digital communications shorten the time required for their implementation into practice. In the global economy the processing industry, storage, packaging, transport and marketing are of enormous importance for the agriculture, so is the education in these areas. Environmental protection and the urgent need to conserve the natural resources are of no lesser significance, provided that the relevant factors would be educated on topics such as: Plant protection Management, Integrated Pest Management, Rational Plant Fertilizer Management etc. The education needs to provide knowledge, skills and positive approach towards sustainable agricultural and rural development.

There is no evidence of serious non-formal education carried out by workers' universities, employment centres, etc. in any of the agricultural areas in the country. Although there is university capacity in agricultural and veterinary sciences, it has never been used for training of farmers (except within incidental donor funded projects), which is still mainly carried out at a secondary level of education. A law on non-formal education and adult education regulating the offer of educational services of non-formal type through an adequate system of accrediting should contribute to overcome these deficiencies is planned to be adopted in 2007. The Adult Learning Strategy which sets out the future plans for the development of human resources was promoted by the Macedonian Government in 2006. This Strategy will also represent a basis the development of non-formal and lifelong education in the area of agriculture. So far, the first steps for creation of curricula (Good Agricultural Practice – GAP, entrepreneurship skills, organic production, first aid in agriculture, etc.) for various stakeholders in agriculture have been made by the Foundation *Agro-Centre for Education (ACE)*, founded by the Institute of Agriculture in Skopje. Also the Faculty of Agricultural Sciences and Food for several years (since 2002), there is an independent Center for applied research and continuous education in the field of agriculture, established by the Faculty. The Center, during this period of its work, has realized important activities and results in the field of research, transfer of knowledge and implementation of up to date technologies (training programmes and seminars).

The Law on Higher Education, amended in 200¹⁰⁶, provided the framework for implementation of the principles of the Bologna process¹⁰⁷. The Macedonian agricultural

¹⁰⁵ State Statistical Office data

¹⁰⁶ Official Gazette of the Republic of Macedonia No. 64/00 and No. 49/03.

higher education system includes five educational institutions: the Faculty of Agricultural Sciences and Food in Skopje, the Faculty of Veterinary Health in Skopje, the Faculty of Biotechnical Sciences in Bitola, the Faculty of Forestry in Skopje and the Centre for Polytechnic studies at Tetovo State University.

Albeit large agricultural production/industrial enterprises have been mostly closed or restructured, educational institutions still do not respond in terms of curricula, educational and qualification standards to the needs of much larger community of small- and emerging medium-scale farmers and agricultural industry. In addition, the stand-alone nature of Macedonian agricultural universities hampers the possibility of interdisciplinary studies, which are important in sectors relevant to EU policies (cross-compliance principles, environmental dimension and rural development). At the same time, there are weak links between schools and businesses.

The majority of students who join agriculture faculties are from the rural areas but agricultural higher education is increasingly neglected by students, so every year more than thirty percent of the vacant places remain unfilled.

Table 20 - Number of enrolled students in Sector higher educational system¹⁰⁸

Faculty	Year 2003/2004	Year 2004/2005	Year 2005/2006
Faculty of Agricultural Sciences and Food in Skopje	1,306	1,156	924
Faculty of Veterinary Health in Skopje	359	339	324
Faculty of Biotechnical Sciences in Bitola	865	841	930
Faculty of Forestry in Skopje	698	804	726
Centre for Polytechnic Studies at Tetovo State University*	n/a	n/a	116
Total	3,228	3,140	3,020

The decreasing interest in agriculture-related professions could worsen given the deteriorating trend in the agricultural sector, the low level of professionalism and commercialization of farm production and limited job opportunities. Also, within the formal education system in Macedonia, when it comes to post-graduate studies in agriculture, the student receives modules for scientific approach (MSc), but there are no specialized studies in certain areas (Specialized Master Diploma).

2.3.8.2. Research System

On the basis of the Law on Scientific Research, agricultural public research and technological development activities are under the competence of, and funded through, the MoSE. The Macedonian research system in the wider area of agricultural sciences consists of six public scientific research institutes: Institute of Agriculture (Skopje), Institute for Livestock (Skopje), Institute for Tobacco (Prilep), Institute for Southern Crops (Strumica), Veterinary Institute (integrated with the Faculty of Veterinary Medicine) and the Hydro-biological Institute, Ohrid.

The Research Institutes, affiliated with the universities, are poorly supported by the Government. Agricultural research institutions currently employ some 300 persons wholly or mainly engaged in research, of which about 40% are at graduate or post-graduate levels. Apart from institutes, a smaller portion of research in agriculture is conducted by higher educational institutions in the area of agriculture and by the Macedonian Academy of Sciences and Arts. All those institutions suffer from following major institutional deficiencies: *low capability to respond to upcoming challenges and support policy reforms in EU*

¹⁰⁷ The faculties started the re-organization of departments, studies, study groups and programs as well as introduced credit transfer system implemented in line with the European Credit Transfer System (ECTS).

¹⁰⁸ Source: State Statistical Office. Tetovo University has data only for 2005/2006

*approximation process*¹⁰⁹; *insufficient facilities, equipment and materials; and unsatisfactory level of young researchers' ratio in the total number of researchers.*

Public spending on agricultural research and education has been reduced in the 2003-2005 period. Agricultural research and education are mainly funded by MoES (about MKD 136 million/year – equivalent to €2.2 million)¹¹⁰. The MoES method of funding of research institutions has recently changed, and provides only for core funding of salaries which constitute only about 20% of the budgets, while the balance comes from project funds. Funds for research projects are granted according to the proposed programs or by a public bidding procedure. In 2005 the total amount spent for all five research institutions' activities (including their current expenditures) was only MKD 141 million (equivalent to €2.3 million). As a result of under-funding, research staff cannot be fully utilized. In order to overcome lack of funds in the short term, many institutes are devoting greater efforts to providing services for which they can charge, such as seeds sale, agriculture information services, and advice to farmers on fertilizer regimes, rather than research work.

MAFWE, through its Agricultural Support Programme, commissions to educational institutions, scientific and research institutions the carrying out of scientific projects aimed at improving productivity with funds sourced from the regular annual programmes of its sectors and directorates, amounting to around MKD 5.5 million (equivalent to €89.430) per year. Projects include maintenance of a gene bank, production of certified virus-free seedling materials, analyses and testing of plants for diseases and pest's protection, tobacco research, livestock breeding, etc. While some of these have resulted in specific crop and livestock advances, the generally low levels of productivity suggest a rather poor return on total investment over the years. Deployed within different ministry's programs, there is a small evidence of coordination in planning of the measures and evaluation of impacts of MAFWE research efforts in reality. In relative terms, only 8% of the total actual public budget spending in agriculture (MKD 1,736 million - equivalent to €28.227) was allocated for agriculture research and education. Compared to agricultural GDP, the share of funds allocated to agricultural research and education amounted to only about 0.40%.

Communication channels, policies and finances to improve research orientation are not available due to lack of funding, awareness and commitment. MAFWE currently has no formal responsibility in screening and approval of state financing of agricultural research (and education) and lacks internal administrative capacity committed to education policy and research in the agricultural sector. Research is still oriented towards large-scale exploitations rather than based on needs by the wider community of small- and medium-scale farmers.

Agricultural research policy in Macedonia today remains highly fragmented. Inter-institutional cooperation and horizontal linkages between research and educational institutions, administrative policy formulation institutions (MoES and MAFWE), the National extension services (NEA) and the end users in the sector are very weak. No seriously organized approach of communication and knowledge transfer between research institutions and the national advisory service has been established yet and as a result potentially useful research results are not readily available to producers. The public scientific research institutions do carry out some advisory activity but it is mainly limited to a few publicly-funded training/educational activities (mainly linked to their research activities) and to the occasional provision of advice on an individual basis.

The framework for the establishment of quality partnerships and *transfer of agricultural technologies and knowledge between the higher education and research institutions on one side and the economy* on the other is ineffective. The mechanisms of interaction between research and agri-food business sector are not developed, and this leads to insignificant

¹⁰⁹ Specifically in areas of establishment of supporting systems as FADN, Market Information System, LPIS, reference laboratories, agriculture policy analysis, agro-economy, soil testing etc.

¹¹⁰ Analyses made for Macedonia Agriculture ESW by the World Bank team, 2006 based on interviews with representatives from the Ministry of Education and Science

private investments and participation in applied research and innovation. In addition, there is insufficient involvement of employers in the profiling of the workforce that will correspond to the current needs of the market. The policy does not stimulate cooperation between higher education institutions, research institutions and the economy.

2.3.8.3. Extension System

In Macedonia agricultural advisory services are primarily provided by public sector institutions and increasingly by the private sector, including farmers associations.

The **private sector** includes different categories service providers. The most relevant, though still limited at country level, are the individual advisors or consulting firms (agricultural engineers, economists, agronomists, soil specialists, plant protection specialists, veterinaries, etc.) that in some cases also avail of laboratories and professional equipment. Usually the frequency and distribution (number of advisors, range of available specific expertise) of delivered advice by this category is directly related to the level of economic and demographic development of the specific regions, being more concentrated where agriculture is prosperous and economically important in the region. This type of services is thus part of the commercial and/or export-oriented farming system (such as in Gevgelija, Bitola and Strumica) or where farming is specialised (such as Kavadarci for wine grapes). Their target groups are progressive farmers, willing and able to pay for specialist services, and agro-processors. In these regions, advice is also provided by input suppliers (seeds and seedlings, fertilizers, agrochemicals) and machinery and equipment suppliers, as part of pre- and post- sale company policies.

The range and the quality of services provided by the existing **farmer associations and producer associations** are variable and determined by their internal human and organizational resources and to the availability of international donor projects and funds. Generally, these still offer a limited range of services, use insufficiently diversified methods, address limited target groups and have a limited effect in satisfying the advisory needs.

So far the trials for the establishment of more professional private organization of advisors, such as associations or advisory groups, have been of limited duration and have been usually linked with lifetime of support provided by different project and during their activities (such as Agro-manager in the past and IFAD consultants) and a certification system for suppliers of agricultural advisory services has not been established in the country yet.

Apart from the scientific-research institutions (for whom the provision of agricultural advisory services is a limited and supplementary activity) the main publicly mandated bodies are the **National Extension Agency (NEA)**¹¹¹ that provides advice nationwide to farmers as primary activity, and the MAFWE which carries out some activities in this field.

NEA's structure is designed at three management levels: directorate, regional centers and work units. NEA has headquarters in Bitola and coordinates 6 regional centres and 30 working units all over the country. Out of 125 employees, 90 are technical advisors. NEA is responsible for, and mainly oriented to, the provision of technical advice to individual agricultural producers through education meetings (farmer field days), the provision of off-the-shelf technical-economic packages for different agricultural production patterns and tailored services to individual and associated farmers. NEA is the largest receiver of state funds allocated for agricultural advisory services and its annual budget (salaries and basic operational costs) is entirely covered by the MAFWE. It has no other income as only a small portion of its target group is able or willing to pay. The 2005 budget consists of 5 budget programs in average of annual amount of MKD 45 million (€730,000) or around 3% of the public budget spending in agriculture in 2005.

¹¹¹ Founded in 1988 by the Law on Foundation of Agency for Promoting the Development of Agriculture (OG No 3/98) and which integrated into a single institution the former Centres for Development of Individual Agriculture that had existed as individual legal entities before.

NEA's strengths are:

- High expert knowledge of basic production skills.
- Good physical network.
- Established farm monitoring system (FMS), which is an advanced and technically well-structured system for monitoring of agriculture which collects structural and financial data on the functioning of around 400 individual farms providing advisors with data for business management advices. The FMS has been widely recognized by EU experts as sound basis to be upgraded towards future FADN system required for formulation of CAP.

NEA's weaknesses are:

- Lack of long-term strategy.
- Lack of integrated formulation and functional management of tasks and activities (practical plans are prepared monthly and monitored through an electronic programme, but evaluation procedures are missing).
- Poor internal communication between the management teams.
- Minimal links with MAFWE, which acts only as financier but without any say or direct supervision of NEA's activities.
- Ageing and de-motivated manpower with narrow technical/technological orientation and lack of business, post-harvest orientation and market knowledge.
- Since the establishment of FMS, NEA has a permanent problem to provide approx. MKD 2 million for its operational costs.
- MAFWE's agricultural policy objectives and instruments toward advisory services have been fairly undefined in the latest years and there is still an unclear delineation between the MAFWE regional offices¹¹² and NEA.

At the moment, there is no dedicated MAFWE internal administrative capacity committed to the extension policy in the agricultural sector that realistically envisages and promotes joint actions among stakeholders in knowledge creation and transfer process. Recently MAFWE embarked on advisory improvement reforms supported by the SIDA-funded MAASP programme which started in 2004. Recommendations prepared by MAASP for improvement of the advisory services should serve as a contribution to the process of creating an appropriate strategy and policy in the area of advisory services, primarily for NEA. An infrastructure for engagement at municipal level through five pilots has been established and initial activities have begun, providing base for collaboration among municipalities, NEA, private sector and farmers associations through advisory groups. This field work should provide basis for identifying sustainable and demand driven agriculture service provision, identifying priorities, stimulating interest, leading actual implementation and organizing monitoring.

¹¹² MAFWE finances through its Annual Agricultural Programmes different advisory activities (trainings, seminars, consultations and publishing reference agricultural literature) in amounts that vary from MKD 1-3 million per year. Additionally, MAFWE's Agricultural Department 88 staffs, located in the countrywide network 33 regional offices, perform administrative and agricultural policy extension activities and support farmers in the preparation of state subsidy applications, dissemination of MAFWE policy information (including land policy) and reporting on sown and harvested areas. Over time, the regional offices have acquired increasing importance in extension activities, but with preserved status quo in terms of instructional capacity, remaining understaffed and poorly-equipped.

2.3.9. Biodiversity, Agriculture and the Environment

Biodiversity in agriculture is of particular importance for the human survival primarily for satisfying the basic needs of food supplies. With the civilization development, humanity continuously creates new species, varieties and breeds with improved characteristics. Especially in the past 50-100 years, modern genotypes are forced for the purpose of intensive production “high investments – high yields”. In this process, many of the old varieties and breeds were unable to survive and are extinct as genetic resources. The indigenous varieties, breeds and types/ species present on the Macedonian territory should be preserved mainly because of the economic, scientific, cultural, social-economic, and environmental interest/benefits. Agro-biodiversity has been analysed so far in the Study on the status of biodiversity in the Republic of Macedonia (First National Report), as well as the Biodiversity Strategy and the Action plan (2004-2008), (Ministry of Environment and Physical Planning, 2003).

2.3.9.1. Legislative Background

The relevant EU Legislation in the context of agri-environment is the following:

Framework legislation

EEC Regulations 1698/2005 (support for rural development from the European Agricultural and Rural Development Fund, Article 39, agri-environment payments) and/2006 (implementing rules for rural development measures)¹¹³.

Regulation of the European Council (EC) No 870/2004 of 24.04.2004 (establishment of a programme for preservation, characterization, collection and use of genetic resources in the agriculture)

Cross – compliance legislation (Statutory Management Requirements)

Environment

Council Directives: 79/409/EEC (the conservation of wild birds), 80/68/EEC (protection of groundwater against pollution caused by certain dangerous substances), 86/278/EEC (protection of the environment, and in particular of the soil, when sewage sludge is used in agriculture), 91/676/EEC (the protection of waters against pollution caused by nitrates from agri- cultural sources) and 92/43/EEC (on the conservation of natural habitats and of wild flora and fauna).

Public, animal and plant health

Council Directives 92/102/EEC (identification and registration of animals), 91/414/EEC (placing of plant protection products on the market), 96/22/EC (concerning the prohibition on the use in stock farming of certain substances having a hormonal or thyrostatic action and of beta-agonists), 85/511/EEC (Community measures for the control of foot-and-mouth disease), 92/119/EEC (Community measures for the control of certain animal diseases and specific measures relating to swine vesicular disease), and 2000/75/EC (laying down specific provisions for the control and eradication of bluetongue).

Commission Regulations (EC) 2629/97 (laying down detailed rules for the implementation of Council Regulation (EC), 820/97 (ear tags, holding registers and passports in the framework of the system for the identification and registration of bovine animals).

Regulations of the European Parliament and of the Council 1760/2000 (establishing a system for the identification and registration of bovine animals and regarding the labelling of beef and beef products and repealing Council Regulation (EC) No 820/97), 178/2002 (laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety) and 999/2001 (laying

¹¹³ Approved by STAR Committee in late October 2006, but still not published in the Official Journal.

down rules for the prevention, control and eradication of certain transmissible spongiform encephalopathies)

Animal welfare

Council Directive 91/629/EEC (laying down minimum standards for the protection of calves), 91/630/EEC (laying down minimum standards for the protection of pigs), 98/58/EC (concerning the protection of animals kept for farming purposes).

Relevant Macedonian Legislation

In 1996¹¹⁴, the Law on Environment and Nature Protection and Promotion¹¹⁵ was adopted which significantly contributed to the development of environmental policy in the country and to the increase of public awareness. The law, although not fully harmonised with the relevant EU Directives, incorporates the principles of environmental protection and regulates the issues of access to environmental information, public participation in environmental decision-making, environmental impact assessment procedure, plans for industrial accidents controlling, as well as control mechanisms available to environmental inspectors. It furthermore provides the foundation for the adoption of further legislation for the detailed regulation of certain issues related to the protection of the environment including:

- Law on Waste Management¹¹⁶
- Law on Nature Protection¹¹⁷
- Law on Ambient Air Quality¹¹⁸
- The Law on Organic Production was adopted in 2004; it regulates the production, processing, marketing and labelling of organic production and applies to all types of organic agricultural products intended for human consumption and animal feeding. The basic aims are human health protection, biological diversity protection, consumer protection, guarantee of safety, food monitoring and quality.

MAFWE prepared a programme in 2004 for the establishment and development of organic production that was implemented in 2005 amounting to MKD 6 million. The funds allocated for the first measure (financial support for areas subject to conversion from conventional farming production to organic) represent a compensation for the lost yields per production area in the process of conversion. Yield reduction can reach up to 50% in the first year depending on the farmed crop and the area under inspection and certification.

The funds intended for realisation of the second and third measures (financial support for costs for organic products control and certification, and for laboratory analyses) are aimed at introducing a control system, i.e. inspection and certification of production, which ensure confirmation of application of the prescribed standards concerning a production manner. Currently, there are no summarised data for production of integrated crops or organic production neither an organised register for those producers. The Law on organic production envisages establishment of register of organic producers but the details still need to be drafted in appropriate legal form (by-laws) to support the implementation.

- A Draft Law on Waters is in the adoption process (expected in the first quarter of 2007). The draft contains provisions for the protection of water resources against agricultural pollution, and calls for the adoption and implementation on a voluntary basis of a “code

¹¹⁴ In 2004 the Law on Nature Protection (Official Gazette 67/04 and 16/05) was adopted, and in 2005 the Law on Environment as well, so the Law on Environment and Nature Protection and Promotion ceased to have effect

¹¹⁵ OG of RM No 13/03 consolidated text

¹¹⁶ OG of RM No 68/04, and 71/04.

¹¹⁷ OG of RM” No. 67/04.

¹¹⁸ OG of RM” No. 67/04,

of good agricultural practices.” Full approximation and compliance with EU Nitrates Directive will require that farmers practicing intensive irrigated agriculture in areas vulnerable to nitrate pollution adopt measures to control run-off.

- Legislation on GMOs is currently in preparation. The framework program for GMO was done by the Ministry of Environment and Physical planning. Legislation for control of trade in respect of GMO content is urgently required, especially by the agro-processors.
- EU harmonised phytosanitary and veterinary legislation needs to be adopted.
- Several of the EU environmental related legislation (especially those concerning Cross Compliance) still need to be incorporated in the Macedonian legal system.

Table 21 - List of International Documents ratified and initiated for ratification by the Republic of Macedonia

No.	Title of the International Document	Year of the Ratification/signing
1.	Stockholm Convention on Persistent Organic Pollutants	2004
2.	Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal	1999
3.	Convention on Environmental Impact Assessment in a Trans-boundary Context (ESPO)	1999
4	Aarhus Convention on Access to Information, Public Participation in Decision Making and Access to Justice	1999
5	Kiev Protocol for Strategic Environmental Assessment	2003, signed
6	Protocol on Pollutant release and transfer registers	2003, signed
7	European Agreement on International Carriage of Dangerous Substances by Road (ADR)	1994
8	Convention on Biological Diversity*	1997
9	Convention on the Wetlands of International Importance, particularly as Waterfowl Habitat	1997
10	Convention on the Conservation of European Wildlife and Natural Habitat	1997
11	Convention on the Conservation of Migratory Species of Wild Animals	1999
12	The International Treaty on Plant Genetic Resources, FAO-2001	Not ratified yet

2.3.9.2. Environmental Priorities and Problems Related to Agriculture

Very limited quantitative data is available in Macedonia concerning the environmental problems related with agriculture. Therefore the preparation and adoption of a set of monitoring guidelines and standards for soil and water, the establishment of a systematic operational agri-environmental monitoring program for soil, surface and groundwater and biodiversity, the designation of water bodies affected by pollution and the formulation and piloting of a “Code of Good Agricultural Practices” are a priority. The main agro-environmental problems identified are:

- **Soil erosion is one of the most important environmental problems.** Soil erosion has increased in the last decade. The combination of natural vulnerability (sloping terrain, vulnerable soil structures and occurrence of intensive rains), inappropriate land use (destruction of natural flora, conversion of grasslands for cash crop cultivation, establishment of large fields involving the destruction of former shelterbelts, landscape elements and field margins) and farming practices (overgrazing, use of monocultures, limited application of organic materials, ploughing of steep slopes, lack of soil conservation tillage techniques, insufficient land use for winter cover crops) contribute to the acceleration of erosion processes. Currently an estimated 38%¹¹⁹ of the country experiences medium to severe erosion processes, with an annual total soil loss of about

¹¹⁹ Agricultural Institute estimates.

17.106 million m³. Soil erosion results in large amounts of sediment ending up in artificial and natural accumulations, leading to a reduction of storage or flow capacity of water and damage of critical hydraulic infrastructure.

- **Water pollution by nitrates and phosphates, pesticides and organic manures caused by agricultural sources** are reported in Macedonia. Although untreated municipal and industrial wastewater discharge is the main cause of water pollution, diffuse pollution of ground and surface waters with nitrates and phosphates (due to excessive application of mineral fertilisers and animal manures, especially in highly erosion-prone soils) occurs in areas where there are many intensive farms. According to the latest data there is a low use of mineral fertilisers (around 104kg NPK per ha of arable land or 12kg NPK/ha agriculture land). There is no data on fertiliser use at farm level. Point source pollution of surface waters with pesticides, nitrogen compounds, phosphates, various organic materials with high Biological Oxygen Demand (BOD) and pathogenic organisms (due to poorly stored and managed pesticide, manure, slurry, dirty water, silage effluent and other farm wastes) occurs in areas with highly intensive farming and livestock establishments. It is expected that agricultural pollution will increase with the modernization and intensification of agriculture.
- **Biodiversity loss due to intensification of agriculture** (associated with higher fertiliser and pesticide use, semi-natural grassland conversion to arable land, and new irrigation developments) is reported in localized high production potential areas.
- **Biodiversity loss due to land abandonment**, in particular in marginal areas, can lead to the deterioration and eventually the disappearance of semi-natural habitats and traditional landscapes in the places concerned. Traditional management of grasslands, and low input, high crop diversity mixed farming, which maintained of high nature value habitats, have ceased in many marginal but environmentally valuable areas.
- **Agricultural generated air pollution** has not been given appropriate attention as the majority of national initiatives focus on emissions from industrial plants and transport. Methane and ammonia emissions (so-called glass house effect gases -GHG) originating from inadequate storage and application of slurry and manure occur in regions where there are significant numbers of livestock farms. The estimated share of the GHG emissions from the agriculture sector in the national emissions is 14.13%. Air quality is also affected in windy areas, as the upper layer of soil can be eroded causing sometimes pesticide and fertiliser pollution in areas where it accumulates.
- **Environmental problems related to irrigation**. Although the Macedonian irrigated area has decreased in the last 15 years, the construction of new irrigation schemes and the low efficiency and water consuming irrigation systems impose greater water demands especially in the driest months of the year when river flows need to be maintained downstream to protect fish, other freshwater species and their predators. Water-saving on-farm irrigation techniques (e.g. using drip irrigation) may alleviate the pressure on limited water resources and improve runoff of agro-chemicals.
- **Soil-related environmental problems** are (i) soil pollution by fertilizers and pesticides (localized particularly in fruit – apple, and vegetable producing regions), (ii) loss of soil organic matter (due to mono-cropping, low organic fertilizer use), (iii) soil compaction of the upper soil layers due to the both dryness and intensive rainfalls, (iv) soil acidification due to acid rains, use of acidifying inorganic fertilizers, and low use of livestock manure.
- **Genetic erosion of local breeds and varieties** has been given little attention and financial support. Breeds and crop varieties considered to be endangered and maintained are the Busha cattle breed, the Karakachan sheep, the domestic (Balkan) goat, the local primitive pig race, the Sharplaninets shepherd dog and some landraces and indigenous species of cereals, fruits, vegetables, industrial crops, etc.

- **Impact of the climatic changes on the agricultural production.** On the basis of some scenarios (UNCCC) for the climatic changes in Republic of Macedonia, a system should be established on monitoring of the impact on: (i). Primary crop production, (ii) Livestock production, (iii) Soils, (iv) Agri-food sector, food supply, and food quality and safety. To overcome the potential dangers, it is necessary to establish: (i) Legislative and institutional measures, (ii) Management of data collection and monitoring/initial warning system (iii) Project on approximation, measures, programmes and research projects.

2.3.9.3. Status and needs for setting up an agri-environmental policy

Currently no agri-environment policy exists in Macedonia, and the only ongoing activity is the organic farming scheme managed by the MAWFE. Main gaps to be filled are:

- legislation harmonization in a number of fields is ongoing but not complete,
- there is lack of dedicated human resources in the MAFWE rural development department for planning and implementation of agri-environmental measures,
- the delineation of competences between different ministries is unclear, and there is a lack of cooperation between competent authorities (mostly MAFWE and MEPP)
- there is no ongoing environmental monitoring processes and consequent lack of appropriate data on agricultural-related environmental issues (soils, water, biodiversity, landscape)
- knowledge of advisory service on agri-environment is non-existent,
- no targeted training for farmers.
- lack of data on farm-level agricultural information (introduction of FADN is very early phase)
- lack of expertise on the field of agri-environment and rural development
- farmers' knowledge on agri-environment issues/practices are very low or missing

2.3.10. Taxation in Agriculture and Rural Credit

2.3.10.1. Agricultural and Rural Taxation

Taxes which impact on the agriculture sector are: Value Added Tax, Property and Real Estate Sales Tax, Profit Tax and Personal Income Tax.

Value Added Tax

In accordance with the terms provided for in the VAT Law, legal entities and individual farmers registered for VAT purposes, besides their duties according to the terms stipulated in the law, have the right to be returned the VAT amount on purchases of raw and reproductive materials.

From October 2006 a new VAT tax regime¹²⁰ was adopted for the agricultural sector (including forestry), which reduced the previous 18% levy rate to the current 5% only for selected products (seeds and propagating materials, fertilisers, phytosanitary products, agricultural machinery, plastic sheets for agricultural purposes). VAT recovery is a long process, and there is a need to find simpler solutions.

All VAT-unregistered (individual) farmers are therefore de facto final consumers and consequently pay higher prices for their raw and reproduction materials. Small producers usually do not register due to costs associated with bookkeeping (accounting services), bureaucratic hindrances, the low education and lack of adequate training.

¹²⁰ Decision for Products eligible Under Preferential 5% VAT rates (OG 102/2006)

In accordance with the Law on Civil Associations and Foundations, individual farmers can join together in associations to represent their common interests, including advisory and education, as well as their common interests in marketing, storage and packing services, etc. Associations however, do not have the right to deal in trade and production, but they can establish legal entities for these purposes.

Property Tax and Real Estate Sales and Rights Tax¹²¹

Individual farmers and legal entities do not pay property taxes on immovable property (farm buildings and on agriculture land) but pay it on movable property (commercial motor vehicles, tractors and combines) on a proportional basis, that is, 0.1% of the market value of the property.

Sales of real estate and the property rights are subject to taxes on sales of real estate and property rights. The real estate sales and property rights taxes are calculated on the value of the real estate/the right in the amount of 3%. This applies both to all physical and legal persons. Transfer of property or property rights has to be registered in the real estate registry, which records the new taxpayer. The sale of real estate in the procedure of agrarian consolidation is exempted from this tax.

Profit Tax¹²²

Legal entities in the agriculture sector pay taxes on profit, equivalent to 12% in 2007 and 10% in 2008. The tax base is reduced by the amount of profit invested in economically undeveloped regions and in specific regions (the reduction cannot exceed 50% of the tax base) and by the amount of the assets of his profit invested in environmental protection. Starting-up companies are subject of a 50% profit tax rebate in first year.

Personal Income Tax¹²³

Physical persons (including individual farmers and craftsmen) are subject to personal income tax. Income from agricultural activity applies to:

- **Cadastral income.** The tax is calculated by means of standardized amounts established (annually) by a commission on the basis of land productivity according to its quality, that is, by the category of arable land and in the following manner as proscribed by the Law: the cadastral income determined for each type of land, regardless if it is used in agriculture or forestry, or if activity at all on land of that type, sets up the basis for tax calculation. The enforcement of this type of taxation was postponed from 2002 up to 2006 included (check if postponement refers only to Cadastral income or also to PIT
- **Income tax** is calculated on the income earned by the physical person who is in the agricultural business and is registered as land owner or user in the land register. The personal income tax rate is 12% (from 2007 and 10% in 2008) for an annual income of 360,000 denars (€5,900) and 18% if the income is above that limit. On January 1 2005, besides the two existing progressive rates of 12% and 18%, a new tax rate of 24%, on annual income higher than 720,000 denars was introduced.

The Law on Personal Income Tax also prescribes that the owner or the land user who has an income from farming which significantly surpasses the cadastral income, shall pay personal income taxes.

Exemptions and reductions of personal income tax on cadastral income: the owner or the land user in the less developed regions is exempted from cadastral income tax. The

¹²¹ Law on Property Taxes OG. n. 80/1993 as amended and modified in OG 3/1994, 71/1996 and 54/2000

¹²² Law on Profit Tax OG n. 80/1993 as amended and modified in OG 33/1995, 43/1995, 71/1996, 5/1997, 28/1998 and 11/2001

¹²³ Personal Income Tax Law OG 80/93 as amended and modified in OG 3/9, 70/94, 71/96, 28/97, 8/2001, 50/2001, 52/2001, 2/2002, 44/2002, 99/2004, 120/2005.

cadastral municipalities, in which more than 50 percent of the land is of VIth and VIIIth category in terms of quality, are considered less developed regions. The land owners, who take up farming as their primary business activity, are also exempted from the cadastral income tax, as well as the persons who return to villages, that is, who become farmers but were unemployed before, are also free from paying tax for five years from the beginning of their business activities. The additional relief is 50% tax exemption for amelioration and 100% for land consolidation but only for the current year. The tax basis is reduced also for amounts invested in buildings of business significance and equipment, but only 30% of the cadastral income. If the yields from one or more land plots is lower due to extraordinary reasons (such as plant diseases, pests or other extraordinary events), the cadastral income is reduced proportionally to the reduced production caused by the damages. The Government of the Republic of Macedonia, on the basis of damage assessment, authorizes tax exemptions.

The taxpayer is temporarily exempt from paying taxes for:

- Land that was not exploitable and through investment became useable, for a period of five years from the beginning of the amelioration of the land, and
- Land on which new vineyards, orchards and other long-standing plantations are cultivated for a period of five years.

Income from collection of forest fruits, medicinal plants, tea, wild mushrooms realized by natural persons are exempted from taxation from April 2006.

2.3.10.2. Agricultural and Rural Credit

Provision of financial services for the development of agriculture and rural development of the Republic of Macedonia, is very limited. The perception of the financial institutions for the agriculture sector is not beneficial for the development of the business in agriculture sector especially support to the agriculture small-holding structure, since agriculture is viewed as a nrisky or high-risk sector, where decisions for investment take longer to be taken. This lack of confidence is mainly due to the lack of previous experience in placement of credits in the scetor and lack of appropriate knowledge and skills for proper analysis of the business in agriculture, risk assessment and profitability of the investment. In circumstancves when farmers have no accounting evidence for the revenues and expenditures in the past period, and difficultires are created in the process of assessment of the ability of the credit applicants for the implementation of the planned investment.

Until recently, the number of banks which considered commencing creditting in this sector was very small. In addition to the insufficient knowledge of the characteristics and performances of the farming business, other factors had an influence on the lack of confidence of the financial institutions to get involved in the sector. They were mainly due to the conservative approach to the application of instruments of safety / security (колатерал), non-regulated ownership-legal relations in rural areas and non-transparent land policy. Securing of the plant and livestock production, which due to the high premiums burdens the already modest budget of the family businesses, was at the same time a condition for granting a credit, since banks were not prepared to take the risk which at the time of credit paying back might harm or transform the investment into unprofitable and unsustainable. Then, the high administrative costs, especially in processing of credit requests for small amounts makes the individual farmers not sufficiently attractive clients for the banks. The marketing of the products which most often has direct impact on the repayment of the credit is one of the key problems, especially upon loss of traditional markets of former Yugoslavia. In circumstances of insufficient marketing of products, insufficient knowledge of the characteristics of the domestic and foreign markets, lack of analyses and market research for the preferences of the consumers, quality standards and requirements, the market risk has increased dramatically, which is especially present in cases of introduction of new

production. Among other, this reason was identified on the list of weaknesses in the sector which deter the financial institutions from providing their funds in agriculture.

The low level of education of the rural population, generally, contributes to the viewing of the credit policy not in a market-oriented manner, disregarding the risk connected with any credit, negative impact of the assessment done by the financial institution for the development possibilities and capabilities of the credit-applicant.

The mutual lack of confidence on the relation financial institutions – rural population, mentality and tradition of this population has created a gap which needed mostly understanding, availability and trust.

One of the reasons which keeps the individual farmers and small enterprises planning to start a new business in agriculture from the financial institutions, is the limited and inappropriate technical and business support that will help the planned investment to be realised more successfully and with a minimal risk. The network of persons trained and competent to draft a business plan and propose recommendations for handling the potential risks and meet the requirements and criteria of the bank is not sufficiently developed.

Finally, non-functional laws in agriculture especially their application has definitely complicated the process of approximation of the sectors banking and agriculture.

Credit lines provided by World Bank and IFAD in 1997 which had a commercial character were the first efforts for establishment of sustainable mechanisms of commercial crediting of the private sector – farmers – of small business from the rural areas (via “Project for rural development of the southern and eastern regions IFAD1”). The Government has understood the importance of the intervention in the rural areas, where the poverty rate was especially dominant.

With the second credit line of IFAD, an efficient system has been established of commercial crediting in agriculture, which has increased the interest of the financial institutions involved in the process of crediting, which is a result of the acquired knowledge and skills for proper analyses of the business in agriculture, risk assessment and profitability of the investment.

The credit products offered via the IFAD credit line, placed via banks and saving houses, for the development of primary production in agriculture and processing and trade of the agriculture products intended for support to the small and medium enterprises, are in complete compliance with the developmental needs of the rural population, which is confirmed with the fact that there is a strong interest for the utilization of these credits.

In the placement of IFAD credits, saving houses played an important role and helped the access of the rural population to the credit funds.

IFAD projects under which the two credit lines are being implemented, can reasonably be named pioneers in the establishment of a functional and efficient mechanism of rural crediting via business banks and saving houses.

In the meantime other donors have supported the credit lines for the development of the agro-business, as well as small number of financial institutions (Procredit bank, Saving house – Moznosti etc.), but still the offer of the finances for the rural population is far from satisfactory. The lack of available resources for support of the rural credit policy, remains one of the key factors for the development of agriculture and rural development in a wider sense in the Republic of Macedonia.

The available credit lines have significant importance in the context of utilization of the pre-accession assistance from the EU for rural development, that is the available credit funds will be regarded as a condition for successful utilization of the IPARD funds, to be available from 2008, while the planned amount for the two-year period (2008 and 2009) is 19 million euros. Experience from other countries in the region showed that very often the IPARD grant funds cannot be fully utilised because of the inexistence of programmes on pre-financing (available and favourable credit lines).

Support of the development of the private sector is a key element in the poverty reduction, which will be achieved by development of new and expansion of the existing profitable rural businesses both agriculture and non-agriculture. One of the extremely important measures is provision of available credits for rural development.

The experience so far obtained via implementation of the rural credit policy shows that only when the basis is sound, by operation of efficient mechanisms of commercial crediting in accordance with the market conditions this policy should be further developed.

2.4. Sector Analysis: Fishery and Aquaculture

2.4.1. Fishery and Aquaculture Resources

The social and political changes in the last decade impacted negatively on the fishing sector (introduction of market conditions, reduced role of the government due to lack of financial resources, fall in the spending ability of citizens, etc), which resulted in a reduction of importance of the role of the fishery and aquaculture sector in the overall economy. However, the sector locally has important economic meaning for tourism and restoration, and social and environmental roles which should not be neglected in an equilibrated and diversified agricultural and rural development policy.

In Macedonia fishing areas amount to about 56,000 ha of which 83% are natural lakes (Ohrid, Prespa and Dojran), 11% are artificial lakes, 4% are rivers and 1% are fisheries. Fishery has a very small share in the GDP (only 0.1%) and employment in the fishery sector is also at a very low level. Total catch was 1,271 tons in 2004, 56% of which was trout and 20% carp¹²⁴. The amount of fish landings from open waters is constantly dropping, while artificial fish ponds production is increasing (75% of total catch in 2004).

The Law on Fishery (1993) regulates commercial fishery, sports fishery and production of fish. The fishery sector is under the jurisdiction of MAFWE, which licenses commercial companies and sports fishing associations and authorizes the installation of fish farms. The National Agricultural Inspectorate is responsible for monitoring and control. In Macedonia there is no restriction on the amount of fish caught, while the regime to use the fish stock from waters available for fishing is based on annual programs which take into consideration the biological characteristics of the available fish species for reproduction, and the fishing is in proportion with the natural birth rate. Sport fishing is restricted to certain number of days in the year, and to the use of authorized fishing equipment.

Fish ranching of good quality types of fish within the Republic of Macedonia will be allowed once the new Law on Fishery and Aquaculture will be adopted (planned in the first quarter of 2007), which will regulate all activities of the sub-sector.

The fish produced in fish hatcheries is sold in the market as fresh unprocessed fish. Fresh fish is typically sold in the local market through retail stores or directly to restaurants. Demand for specific fish types (the Ohrid trout and eel and the Dojran and Prespa carp) surpasses the supply resulting in high prices.

According to official statistics, average annual household consumption is around 22.3 kg of fish and fish products (resulting in a per capita consumption of around 6-8 kg annually), which is low in comparison with the EU countries (about 20 kg per capita/year). Macedonia is a net importer of fish and fish products. Total imports of fish and fish products in the period of 2000 – 2004 have been marked by constant growth. The majority of the imported fish and fish products in 2004 were frozen sea fish with about 50% share of the total import value; followed by canned fish (whole or pieces) about 38%; and fresh fish about 6%. The remaining 6% include fish fillets, shellfish, molluscs, smoked fish, and caviar. The largest share in the value of fish product imports in 2004 were imports from Argentina (23.2%), Croatia and Spain (each with 10%), Greece (5.5%) followed by Bulgaria, Serbia and Montenegro¹²⁵.

¹²⁴ Source: State Statistical Office, 2005

¹²⁵ Source: State Statistical Office, 2005, SITC classification of trade

2.4.2. Fishery and Aquaculture Policies and Programs

MAFWE support to fishery has been provided through the annual Programme for Development of Agriculture. Starting from 2004, funding was allocated for increasing the fish fund through stocking fishing waters with endemic fish species and for certain measures related to the development of scientific projects for promotion of fishery. In 2005 the total amount disbursed for the sector was around MKD 4.65 million (equivalent to €76 thousand¹²⁶). MAFWE is drafting a new, EU-harmonised, Law on Fishery and Aquaculture covering resource management, inspection and control, structural and market policy, and information distribution.

New opportunities will arise with the allowing of regulated fish ranching in open waters, which should be supported in the short term via funding to carry out artificial spawn of Ohrid trout and fish ranching of Ohrid Lake with raised offspring, and to develop ranching fishing in Dojran and Prespa Lakes. Future consideration should be given to support the renovation of the existing Trout and Carp aquaculture especially concerning environmental issues (recycling of by-products or production waste, and the elimination and/or treatment of waste), and the purchase and installation of equipment for transport to, and storing of fresh fish in, markets (including cooling, ice production for storage and freezing), as well as improvement of HACCP, quality and packaging.

2.5. Sector Analysis: Forestry

2.5.1. Forest Resources

This sector analysis is the summary of the MAFWE – 2006 Strategy for Sustainable Development of Forestry in the Republic of Macedonia (2006). The area classified as forestland¹²⁷ is approximately 1.16 million ha (45% of the total Macedonian territory) out of which forests proper are 947,653 ha (37.2%)¹²⁸. The forest species are for 82% deciduous, 12% coniferous and 6% mixed. According to their origin, 29% of the forests are categorized as high and 71% as low forests.

The state owns 90.14% of the total forest area (total wood mass is 92.2%). The private owned forests are 9.86% (94,146 ha) of the total forest area, and their portion of the total wood mass is 7.8%.

The total wood mass is 74,343,000 m³, and the total annual growth 1,830,000 m³ with average annual increase per hectare of 2.02m³. The annual planned woodcutting mass is about 1,300,000 m³.

Macedonia has significant resources of other forest products: medicinal plants, wild mushrooms, forest fruits, and a diverse game. The importance of forests is emphasized by the fact that the main part of the territory of the protected areas in the country are under forest. Furthermore, forests have other very significant functions such as recreational sport, eco-tourism and recreational hunting, soil and environmental quality improvement, biodiversity conservation, erosion control and flood protection. Also, over the last decade the role of forests in the reduction of global warming through fixation of carbon dioxide has gathered recognition on global level.

The general contribution of the forest industry (primary and secondary wood processing, furniture, paper and celluloses, etc) in the GDP is 2.5-3%. The economic, social and ecological functions of forests are of significant importance to the sustainable development of society and for improving the quality of life, especially in rural and mountain areas.

¹²⁶ Source: MAFWE, Annual program for support and development of agriculture

¹²⁷ According to the Law on Forests (OG. No. 47/97, 7/2000 and 89/2004), forest land is land covered with forest tree and shrub species, as well as forest bare lands and meadows, forest roads, forest nurseries and other areas that are closely connected to forests.

¹²⁸ MAFWE – 2006 Strategy for Sustainable Development of Forestry in the RM.

The main threats and problems in forest management and governance are: extensive illegal logging, other illegal activities, forest fires which have affected nearly 100,000 ha in the last 10 years, drying of forests due to drought and climate change, insect calamities and diseases. All these lead to enormous economic and environmental losses to the sector.

Political and economic changes in R. Macedonia in accordance with the EU-integration processes require prioritising and focussing on the multifunctional use of forests and their management, integrating much wider aspects where protection, biodiversity and the care of the nature and the environment are placed first.

Macedonia is a signatory of several international agreements and conventions on forests and environmental protection which have an impact on the forestry sector. The EU orientation of Macedonia presupposes the harmonization of forestry policy and related obligations.

In accordance with Article 69 of the Law on Forests the Macedonian Government adopts a Program for Expansion of Forest Reproduction. In 2005, the Program funded the following measures implemented by the Forestry Sector of the MAFWE:

1. Afforestation of 673 ha of bare and eroded lands covering an area of 824 ha.
2. Care of forest crops with space - on an area of 1049 ha;
3. Rehabilitation of forests affected by fires - on an area of 138 ha;
4. Prevention of mass drying of pine forests - on an area of 19 ha;
5. In course of the reported period, a total of 462.264 seedlings of various forest types have been provided and used. Out of them 403.185 seedlings have been used for afforestation of private-owned land and 59.079 seedlings for the ecology activity "Youth for Clean Environment". Of the total quantity of seedlings, the predominant species were: white pine, black pine, Arizona cypress, locust, while the remaining species were insignificant;
6. Protection of forests against diseases, pests and forest fires. Ministry of agriculture, forestry and water economy in accordance with the multi-annual cooperation with the centre for Reporting, Diagnosis, Prognosis – department at the Forestry Faculty on the basis of detailed analyses prepares an annual report on the health status of the forests with recommendations on the measures that should be taken to prevent spread, or eradication of certain pests. Then MAFWE submits this report to the Government of RM.

2.6. Sector Analysis: Water Economy

This sector analysis is based on Chapter 6 (Water Resource Management for a Sustainable Agriculture Sector) of the World Bank issued Agriculture and EU Accession Report: Achieving FYR Macedonia's Agricultural Potential (2006).

2.6.1. Linkages between agriculture and water resources

Due to climactic constraints, Macedonia's agricultural competitiveness depends on reliable, cost-effective and timely irrigation water for many crops, in particular for high-value summer and perennial crops. Water deficits occur during the summer seasons that vary from 250 mm in the west and 450 mm in the east. In addition, Macedonia is prone to droughts¹²⁹ which cause significant economic losses in terms of reduced agriculture production in both rain-fed and irrigated areas. Irrigation has significant positive effects on farmers' incomes as a result of increased crop yield per hectare, cropping intensity, diversification and land-use intensity.

The total area with irrigation infrastructure is 164,000ha comprising 144 schemes, but only

¹²⁹ During the past 18 years, the country experienced severe droughts (annual precipitation below 390 mm) in 1988, 1990, 1993, and 2000. Source WB issued Agriculture and EU Accession Report: Achieving FYR Macedonia's Agricultural Potential (2006).

127,000ha (or 32% of the cultivable area) can actually be irrigated. Most irrigation systems are more than 25 years old and the total irrigated area underwent a severe decline starting in the early 1990s. MAFWE estimates that only 23,500 ha, or 18%, of the once equipped area was irrigated in 2004.

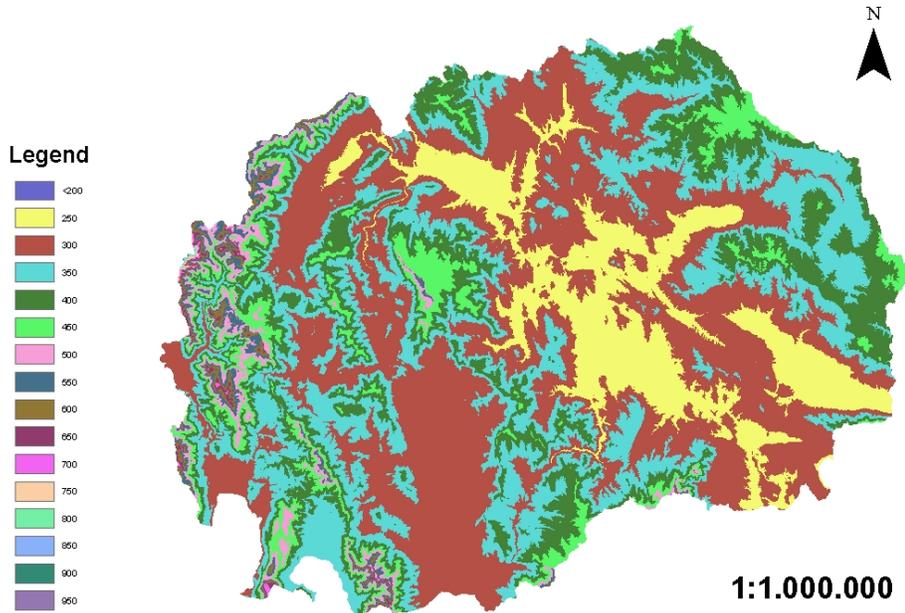
In the last 15 years, maintenance of irrigation systems by the state Water Companies has been insufficient, resulting in deterioration of schemes, falling service levels, irregular water supply, reduced water-use efficiency and high water losses. In turn, these impacted negatively on crop production and eroded farmer's ability to pay for water.

2.6.2. Status and Reform Program in the Irrigation Sector

Irrigation is an integral part of plant production and it is treated as an agro-technical measure which the farmer applies on his areas. The irrigation in Republic of Macedonia is a necessary agro-technical measure which has to be applied in order to obtain stable and profitable yields of the agricultural crops, firstly due to the lack of water from natural sources (rainfall).

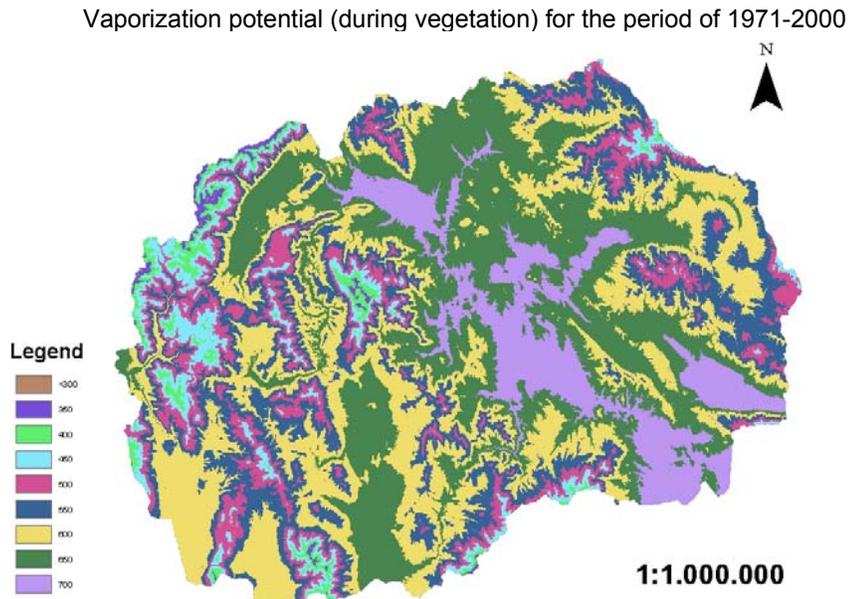
The rainfalls during the vegetation period in Republic of Macedonia are shown on map 1. It can be seen that most of the agricultural regions in Republic of Macedonia are between 250-300mm water sediment during the vegetation period (April-September), which is insufficient for normal crop growth.

Map 1. Rainfalls during the vegetation season in RM for the period of periodo1971-2000

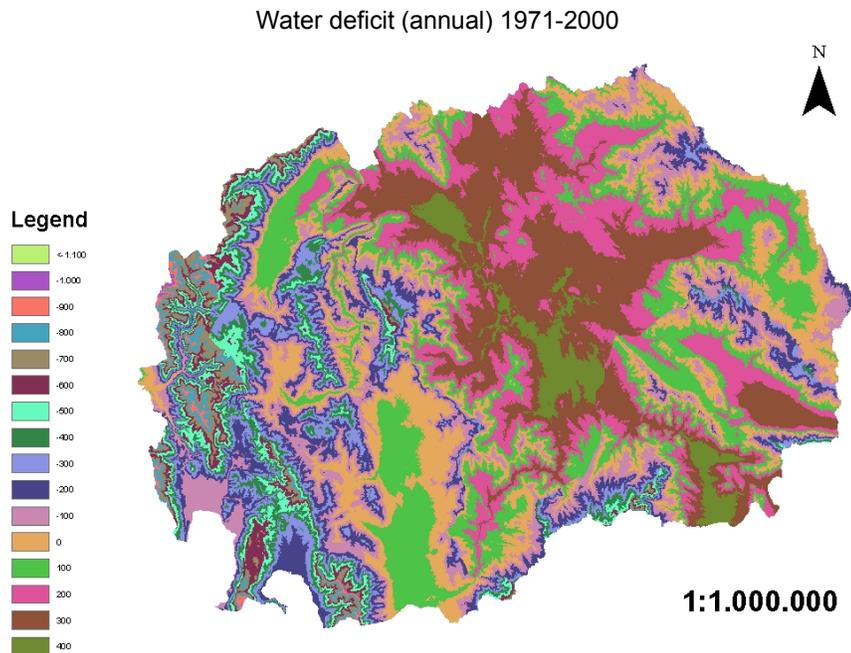


Crops need much more water. The data are given on map 2. Taking this into consideration, the main agricultural regions in RM need 500-700mm water sediment. This results in acute water deficit (map 3) ranging from 100mm in Pelagonija and Polog to 400mm in central Vardar region.

Map 2. Potential vaporizations during the vegetation season in RM for the period of 1971-2000



Map 3. Annual water deficit in RM for the period of 1971-2000



This leads to a conclusion that without irrigation, a development of agricultural production can not be expected, and this should be the very basis for all future agricultural projections. The irrigation has to be compulsory measure for perennial crops (firstly, fruit growing),

gardening, and fodder production (firstly, forage crops), and investments without provided irrigation are not to be supported in these sectors.

Macedonia has been addressing institutional reform of the irrigation sector and the restoration of deteriorated irrigation systems since 1997/98. The most recent institutional reform of the irrigation sector was launched in 2003, accompanied by infrastructure improvements. Though the reorganization process is not yet complete, the provision of better services has facilitated farmer participation in reform.

To date, the reform of the irrigation sector has been positive in the areas covered by the IRRP. During the 2005 irrigation season, more than 90% of the IWCs were actively engaged in managing distribution networks, the average O&M cost has been reduced and reform is impacting positively on farmers' incomes. However, progress in improving O&M cost recovery has been limited (between 24-100%), particularly in the larger irrigation schemes, as a result of broader land and water resource management issues to which the government needs to pay attention (in particular the cost-sharing arrangements between water users and the state for activities performed by WEs and FIWCs that have a broad public good function).

Following the degradation of irrigation schemes, farmers started to develop water boreholes and tube wells to irrigate gardens or vegetable plots. Roughly 200,000 rural households are served with 100,000 wells, irrigating about 5,000 ha of land. At present, groundwater abstraction does not have a significant impact on the sector, but with agricultural growth more groundwater irrigation developments are expected especially for high-value crops, (particularly vineyards and vegetables in greenhouses). Unregulated use of groundwater resources has potential to pose serious problems.

The summarized key policy implications for the Government are to:

Irrigation sector

- Continue with the liquidation of the remaining WMOs.
- Continue supporting the establishment of IWCs, FWICs and WEs through strengthened MAFWE capacity to provide information, technical support and to monitor the irrigation sector.
- Continue supporting the rehabilitation of irrigation schemes responding to IWC's demands.
- Formulate a detailed and cost-effective prioritization of investments in irrigation systems, with focus of the rehabilitation of deteriorated irrigation infrastructure.
- Adopt and enforce appropriate regulations for the use and protection of groundwater sources, and strengthen the institutions responsible for groundwater monitoring and information systems.

Water Resources

- Define appropriate cost-allocation and cost-sharing arrangements to allow the self financing of the new water user groups and the sustainability of major hydraulic infrastructure needed by farmers and for non-agricultural purposes. In this context the Water Fund should be a useful tool to cover the cost of FIWC and WE activities with public good functions.
- Update the Water Master Plan ensuring environmental compliance (conditions of water licenses and minimum environmental flows).
- Review the draft new Law on Waters, harmonized with the EU Water Framework Directive, in order to

1. Identify the competent authority, delineate responsibilities among different ministries (MAFWE, MEPP, MoH and MoE) and institutions (Water Fund Agency, WEs, FIWCs) and explain linkages between authorities and councils of the river basin district units, WEs and FIWCs;
2. Organise and simplify administrative procedures for issuing permits and water rights.
3. Clarify other issues (the length of the concession for specific purposes extends beyond the length of the water permit, the level and use of the concession fee and the relationship with the fees currently charged by the Water Fund; and procedures to grant concessions to existing hydropower plans in case they are privatized).
4. Prepare detailed tasks, responsibilities and staffing requirements for the new institutional framework, and prepare realistic financial implication forecasts to make implementation of the law successful.

2.7. Legislative and Institutional Framework

The Ministry of Agriculture, Forestry and Water Economy (MAFWE) is competent for agriculture and rural development, forestry and hunting, fishery, animal health protection and veterinary public health, phytosanitary (plant protection and plant protection products), seeds and seedlings, and water economy.

Key responsibilities of the MAFWE are the formulation and implementation of agricultural strategy, policy and related measures; drafting legislation; planning and administration of government-funded programs and investments, including bilateral and international programs; and supervision, monitoring, including inspection and laboratory services in areas of plants, pesticides, seeds and seedlings, veterinary (epidemiological services and disease control), forestry, fisheries.

The Ministry is organized in 5 Sectors, 4 Directorates (Veterinary Directorate, Seeds and Seedlings Directorate, Phytosanitary directorate and Water Economy Directorate) and two State Inspectorates for agriculture and forestry, and the State Phytosanitary Laboratory with the status of Bureau. Approximately 430 staff members are employed by the Ministry, of whom less than 20% are based in the headquarters and the balance in the 33 regional offices. The Hydro-meteorological Directorate, an institution within the Ministry, has a total of 207 employees.

The State Agriculture Inspectorate activities are stipulated in the Law on Agricultural Inspection¹³⁰. The SAI central office, comprising the Director's Office, two technical divisions and an administrative division, is responsible for the coordination of inspection activities. The six Regional Offices carry out inspections on the agricultural, crop and animal production sectors. Total staff is 27 (4 in the central offices, 23 in the regional offices).

The State Inspectorate of Forestry and Hunting controls and supervises the enforcement of the Law on Forests¹³¹, the Law on Hunting¹³², and all other laws and law binding acts that are in the function of forestry and hunting. The Forestry Police as a sector within the Ministry of Agriculture, Forestry and Water Economy protects the forests in accordance to the Law on Forests. MAFWE administers the forests and forestlands of state ownership through the Public Enterprise "Macedonian Forests", National Parks and Hunting grounds, Public Enterprise "Jasen".

The Veterinary Inspection is within the Veterinary Directorate. The competences of the Veterinary Inspectorate are stipulated in the Veterinary Law¹³³. It implements, supervises and controls cross-border consignments of animal origin at 9 border crossings, with 11

¹³⁰ Official Gazette of the RM" No.38/04

¹³¹ Official Gazette of the RM" No 47/97, 7/00, 89/04

¹³² Official Gazette of the RM" No 20/96, 34/97, 69/04

¹³³ Official Gazette of R. Macedonia no. 28/98

veterinary inspectors. Also, it supervises controls and checks animal health protection, production and trading, raw materials and offal of animal origin inside the country, through the veterinary inspectors located in the MAFWE 25 local units, with 45 veterinary inspectors and 5 associates, doctors of veterinary medicine. The veterinary–sanitary control and supervision provides enforcement of the Veterinary Law provisions, to ensure adequate animal health protection against contagious diseases which from the animals spread to people, veterinary protection and upgrading of human and natural environment, production and trade with healthy edible products of animal origin, etc. The Veterinary Directorate is administering an animal identification and registration system based on the Law on Animal Identification and Registration¹³⁴, which is harmonised with the European legislation.

The Phytosanitary Inspection is within the Phytosanitary Directorate. The competencies of the phytosanitary Inspection are regulated in the Plant Protection Law¹³⁵, Plant Health Law¹³⁶, and the Seed and Seedling Material Law¹³⁷. The phytosanitary Inspection Department has a staff of 21 which carry out the inland and border inspection of plants and products of plant origin and issue phytosanitary certificates. The inspection service currently covers 14 Border posts, 11 Export terminals including 11 on road.

The State Phytosanitary Laboratory (with status of bureau) is part of the National integrated phytosanitary system and represents a service of the Phytosanitary Directorate, Seeds and Seedlings Directorate and relevant inspection services for timely diagnosis of harmful organisms with plants, quality control of pesticides and quality control of seeds and seedlings.

The MAFWE is undergoing a deep institutional reform and strengthening of human resources to be able to implement (at both central and local levels) the EU-harmonized new legislation that will be adopted in the following years. A new organizational structure of the MAFWE is being adopted, and plans for recruiting and training of existing and new staff are underway.

In terms of legislative reform, to align Macedonian legislation to the EU Acquis, the revised National Plan for the Adoption of the Acquis¹³⁸ should be adopted by Government in early 2007. A number of important pieces of EU harmonized primary and secondary legislation have been passed in 2006 (Plant protection law, Law on seeds and propagating materials, Wine law, etc) but much remains to be done in the short and medium term (in the run-up for accession) to fully align agricultural and rural development legislation.

2.8. Key Factors Hampering Agricultural and Rural Development

Based on the situation and SWOT analyses carried out in this chapter, the key factors hampering Macedonia's agricultural and rural development are the following:

At the rural level

1. Low standard of living in terms of physical and social infrastructure (which result in migration, ageing, low education, unemployment of rural population).
2. Lack of alternative (off-farm) employment/income generation opportunities (which result in over-dependence on agriculture as sole source of income, low wages, poverty).

At production and processing levels

3. Small size of farms and their fragmentation, (which result in high costs per unit and production inefficiencies).

¹³⁴ Official Gazette of RM 69/2004

¹³⁵ Official Gazette of RM 25/98 and 6/00

¹³⁶ Official Gazette of RM 29/05

¹³⁷ Official Gazette of RM 39/2006

¹³⁸ The first NPAA was adopted in March 2006 by the Government.

4. Outdated crop production and breeding technologies (which result in low yields/quality of produce).
5. Weak horizontal integration (farmers associations/cooperatives/producer groups) (which result in weak political influence, low bargaining power for purchase of inputs and sale of production).
6. Weak vertical integration between farmers and processors (which result in unorganised production leading to excess supply and wide price variations, inadequate raw material supply in terms of timing, quantity and quality, use of imported raw materials to compensate, under-usage of installed capacities).
7. Low level of farmer education/training (which result in conservative attitude to innovation).
8. Weak support services such as market information, credit, research/extension, support policies (which result in weak market orientation, farm undercapitalisation, low rate of innovation, lack of medium term production planning and organisation).
9. Lack of product quality (market) and GAP and EUREPGAP standards.
10. Small size of the processing industry (which result in insufficient economies of scale).
11. Outdated processing technologies (which result in low productivity, high costs, lower quality products)
12. Weak adoption of food quality and safety standards (ISO, HACCP, GMP) and low attention to environmental concerns (which result in few industries are allowed to export to the EU).

3. AGRICULTURAL AND RURAL DEVELOPMENT STRATEGY

3.1. National Strategic Objective

Agricultural and Rural Development are key elements for Macedonia's pre-accession to the European Union. Following Macedonia's application for EU Membership in 2004, in December 2005 the European Council granted the Republic of Macedonia the status of candidate country for European Union membership. Negotiations for accession will start only when the EC considers that the country has reached a sufficient degree of compliance with the membership criteria.

MAFWE has adopted the following strategic objective as the basis for agricultural and rural development and the formulation of agricultural policy:

To strengthen the ability of Macedonian agriculture to compete in the integrated regional markets of the European Union and south-eastern Europe through measures to increase the efficiency of agricultural production, processing and marketing, and to build appropriate, effective public and private institutions; to improve farm incomes; to ensure that consumers have access to safe, healthy food; to optimize the use of scarce land, forest and water resources, in an environmentally sustainable manner; and to build viable rural communities through sustainable rural development.

The NARDS objective contributes to the achievement of the Strategic Objective stated in the National Economic Development Plan 2007-2009 which is:

”To increase international competitiveness of the country that is required for a sustained economic growth and higher employment”

And contributes to four out of five of the NDP’s key sub-objectives, namely:

- To develop new and improve existing physical infrastructure, particularly those related to transport, energy, ICT, environment and irrigation, in order to support economic growth and improve the overall competitiveness of the country.
- To improve quality of education and training so that it will respond effectively to the requirements of the labour market, including the requirements of the knowledge based economy.
- To create preconditions for better use of agricultural potential of the country through better land management and institutional capacity building of the sector, through strengthened rural development, and through establishing conditions for safe food production and trade.
- To create preconditions required for effective design and implementation of the balanced regional development policy within the country.

3.2. Strategic Policy Focal Issues

To achieve the stated strategic objective, six strategic policy focal issues should be addressed during the period (2007-2013), which are outlined below.

1) Increase Sector Competitiveness

Increased competitiveness of the agricultural sector can be achieved through enhancing the efficiency of the key factors of production namely land, labour and capital, horizontal and vertical integration and improving agricultural support policies and the modernisation of the processing industry. The key policy directions to be followed to achieve sustainable competitiveness of producers on domestic and foreign markets are the:

- Increase in size of viable (market oriented) family holdings. Efficient land use is hampered by the small scale, fragmentation and parcellisation of private farms (which are the majority in Macedonia) which entail backward production technologies, a large rural subsistence and informal economy and the slow development of markets. Alone, the existence of some modern, efficient and market oriented production realities cannot offset the overall situation. The increase of size of market oriented family farms, the reduction of the parcellisation and the concurrent prevention of further fragmentation (reduction in size of parcels) can be achieved through appropriately designed and synergic policies such as the securitization of land titles, an appropriate taxation regime which encourages consolidation and enhances the land market, the privatization/long term land lease of state owned land and land consolidation programs, etc). These policies might involve the necessity to revise land and taxation related legislation.
- Increase in labour productivity through adoption of improved crop production and livestock breeding techniques. This can be achieved through appropriately targeted agricultural development support (for example providing crop or livestock subsidies only to registered farmers that use certified seed or improved breeds, that adopt GAP practices, etc), through investment support (to improve mechanisation – especially favouring machinery rings, - farm infrastructure and equipment, etc) and farmer’s training/education.
- Increase in the availability of capital. Availability of capital can be achieved through improved commercial credit, the implementation of targeted credit programs and public support to investment.

- ⇒ In the short term, MAFWE should pursue the continuation of the IFAD credit scheme ensuring the sustainability of the established group of advisors which mediate between the farmers and banks and favourable credit conditions for short- (working capital), medium- (for investments in equipment) and long-term (for investment in facilities and land) loans.
- ⇒ As many farmers and rural entrepreneurs will face difficulties in the pre-financing and in the equity matching of IPARD public (EU + National) funds (the co-financing requirement) MAFWE should, during the IPARD preparation, involve commercial banks and saving houses so that they get acquainted with the IPARD procedures and financing mechanisms. At a later stage, the signature of memorandums of understanding between MAFWE and the willing financial institutions for recognition of the contracts signed between the Paying Agency and the applicant concerning the approved projects, should be an option to be pursued.
- ⇒ The reduction of VAT at 5% should be extended to all raw materials used in agricultural production, with particular reference to livestock production inputs (feed and fodder). Allocation of subsidies for agricultural fuel and oil would help to reduce agricultural production costs.
- Increase in the availability of technology. In a rapidly changing technological, social, economic and natural environment, agricultural educational, research and extension institutions need to reform to respond to the needs of much larger community of small- and emerging medium-scale farmers and agricultural industry. MAFWE should be involved formally (sharing responsibility with the MoE) in agricultural education and in research orientation and thus needs to establish internal capacity for education policy, research and extension. MAFWE should establish a National Committee for creation and transfer of knowledge covering research/extension/training/education (members MAFWE, MOE, Public Scientific Institutions and University, NEA, private advisors and farmers/processors), to coordinate the planning and supervise implementation of the agreed programs and activities.
 - ⇒ Concerning education, there is a need for allowing interdisciplinary studies, for strengthening of the links between schools and businesses.
 - ⇒ Concerning training there is a need to develop non-formal education through a system for permanent life-long learning, training and qualification of farmers, small primary processors and other stakeholders (craftsmen, micro and small and medium enterprise managers), with the support of training and education institutions selected through public tendering. Technical, economic, market, business management, on-farm conversion (production shift) and off-farm diversification (non agricultural activities).
 - ⇒ Research Institutes need to be better supported by the State via contracts for research activities, to increase their capability to support the EU policy reforms and carry out research which is relevant to the policy indications of the MAFWE. A multi-annual research programme with PSI/Universities in line with the strategic directions for agriculture and rural development should be prepared by the stakeholders.
 - ⇒ Inter-institutional linkage (including feed-back mechanisms) between MAFWE, research/education and extension services (National Extension Agency-NEA) should be strongly pursued.
 - ⇒ The National Extension Agency has a crucial role in acting as a transmission chain between MAFWE policies, the research institutions (and their research results) and the farming community. NEA's role, vision and long-term strategy should be addressed as a priority, and annual work programmes devised and implemented

under MAFWE guidance. Adequate technical and financial means need to be provided for NEA's organisational restructuring in order to be effective. Human resources development should be central to the reform of the institution. Recurrent technical (production and post-harvest), business and market training is needed for enhancing and updating the knowledge of the advisors. Additionally a certification system for advisors should be established.

- Improvement of agricultural support policies can be achieved through the establishment of a new regime of subsidies which must be traceable, carefully targeted and monitored as currently the payment mechanism for farm subsidies (per ha or per head of animal) does not allow adequate verification, mainly due to the absence of registers. The new regime of subsidies should be gradually shifted to an income support mechanism (decoupled payments) in accordance with Common Agricultural Policy EU (CAP), and shall comply with the commitments of the WTO that relate to the restrictions in the part of the market access (the amount of the tax protection), the amount of the summary measures for support and support to export.
- Increase of the competitiveness of agricultural processing and of the feed and food industry. The modernisation of the industry and improved competitiveness are pre-conditions for the development of agriculture in general. Based on the experience of the new EU member states, the number of establishments in Macedonia will reduce in the medium term, as some of the industry faces significant gaps in production technologies and process lay-out, hygiene standards and marketing developments and face serious difficulties and costly exercises of implementing EU production, quality and hygienic standards. Progress in this regard could be stimulated through targeted investment support focused on the weakest links in the chain (viable dairy processing industry and slaughterhouses) with particular emphasis on milk processing and collection equipment and environmental issues (waste management), and in fostering the adoption of HACCP and ISO standards. Furthermore, since the growth of the Macedonian food industry is inexorably linked to increased exports (as the domestic market has limited growth prospects), and to benefit from trade liberalisation, agricultural and food industry has to strengthen its international competitiveness by focusing on value-added product ranges, increased productivity, quality and safety of products as well as improved management and marketing.
- Horizontal organisation, involves two different levels that need to be both promoted:
 - ⇒ the roles and functions of professional and/or inter-professional organisations (representing one or more sectors) need to be expanded through the establishment of permanent fora for public and private sector dialogue (namely the Agri-Food Co-operation Council including farmers, processors, clients, suppliers, traders) and supported financially for the implementation of delegated technical functions (such as the keeping of registers of members, the provision of services such as providing bookkeeping services to farm holdings, the establishment and maintenance of herd books, farmers training, etc.).
 - ⇒ The roles and functions of producer groups and cooperatives (of economic relevance) can be enhanced through the enactment of the related legislation (in particular removing the legal and institutional impediments to their ability to implement economic activities, and definition of their recognition criteria) according to EU requirements, and the provision of adequate institutional support and digressive financial incentives in order for them to be able to prospectively take on responsibilities under the CAP as Common Market Organizations.
- Vertical organisation, i.e. integration of farmers with the processing industry through stable contractual relations, is needed is to improve quality of raw materials supply as well as their quantity and seasonal distribution (some facilities operate only part of the

year). This can be achieved through favouring the discussion between the parties, the collective agreement on standard contract templates for different products, the better enforcement of contracts through appropriate arbitration and sanctions regime, and appropriate incentives to producers (could be one of the eligibility criteria for support).

2) Achieve Food Quality and Safety

- Increased safety of foods (both at production and processing levels) is an important pre-condition for increasing the competitive position of the food products on the foreign (in particular on the EU ones) and domestic markets. At the industry level, this should be achieved through the provision of financial incentives (assistance to the producers in implementing HACCP¹³⁹, DPP, DHP, EUREP GAP, for advisory, analyses and certification) and through the:
 - ⇒ Priority enactment of primary and secondary legislation and internal acts and preparation of guidelines of internationally recognised safety standards (HACCP, ISO 22000, GMP/GHP),
 - ⇒ Strengthen technical capacity and train the food inspection services of the Food Directorate (MoH) as well as the official veterinarians and phytosanitary inspectors (MAFWE) to ensure effective controls (including the stepping up of fraud control).
 - ⇒ Strengthen the technical capacity of the laboratories (State Phytosanitary Laboratory of MAFWE, of the Faculty of Veterinary Medicine and of MoH – Bureau of health protection to achieve accreditation in accordance with ISO 17025.
 - ⇒ Perceive the situation of the food industry regarding the implementation plan of food quality and safety standards in order to meet the requirements within a given time frame determined by law (2009).
 - ⇒ Ensure traceability of raw materials and food products in all phases of production and circulation by implementing the standards.

- Increased quality of plant and animal products is an important pre-condition for increasing the competitive position of the domestic agricultural products on the foreign markets, and in particular on the EU ones. This should be achieved through the provision of financial incentives (for advisory, bookkeeping, analyses and certification, registration of products in the Bureau of industrial property protection) and through the:
 - ⇒ Priority enactment of primary and secondary legislation and internal acts and preparation of guidelines of EU quality standards (EUREPGAP/cross compliance, SEUROP, etc.).
 - ⇒ Ensuring the controls (including the stepping up of fraud control within the consumer protection and MRLs controls) and introducing certification of food products by the state bodies.
 - ⇒ Introduction of EU harmonised protected branding, geographical origin rules and production disciplinary (PGI Protected Geographical Indication, PDO Protected Designation of Origin, TSG Traditional Specialty, etc).
 - ⇒ Stimulation measures for the adoption of quality standards are the establishment of farmer producer associations and fostering farmer's and processors training.

¹³⁹ This standard is to be compulsory since 01.01.2009

3) Achieve sustainable resource management

Little attention has been given in the past to the subject of agro-environment (biodiversity, agriculture and the environment), which has conversely increased importance in the EU Common Agricultural Policy over the years (agro-environmental measures are the only obligatory part of the rural development Acquis communautaire).

The objectives of the Macedonian agri-environmental policy should be to protect and improve physical, chemical and biological soil conditions, to reduce the water-related environmental problems in agriculture, to preserve traditional low input farming systems and traditional landscapes, to provide alternative use for areas with low potential, preserve valuable grassland habitats and arable land through extensive cultivation methods or landscape management on high nature value areas preserving and protecting biodiversity, sensitive habitat types and specific rare species and to provide effective tools for the implementation of the Nitrate Directive, Water Framework Directive and the future NATURA 2000 network¹⁴⁰.

In order to establish an agri-environmental policy, the following activities should be implemented:

- EU primary legislative regulations should be introduced in the Macedonian legal system, as well as specific regulation(s) should be developed for Good Agricultural Practice/Cross Compliance containing the minimum standards for average farming practice (minimum requirements for nutrient management, pesticide use, avoid of land abandonment, maintenance of permanent grasslands, etc). Once adopted these regulations will be the baseline for agro-environmental payments and at the same time should be the minimum requirement for direct payments (agricultural support programme). A regulation should be developed for (pilot) AE support system containing objectives, measures, eligibility, beneficiaries, payment rates, selection criteria, monitoring, control and sanction measures.
- MAFWE has to establish agri-environmental capacity within the Rural Development Department. An interdisciplinary AE working group should be established which should be the main panel for the establishment of AE policy and measures. This working group should involve officials from the MAFWE, MEPP, Ministry of Finance, Ministry of Health, Institute of Agriculture, Faculty of Agriculture and Food, NEA, farmers association and relevant NGOs. Different information material should also be developed for broader purposes.
- MAFWE should establish an agri-environmental information system within AIS. This system should be the (information decision-making support) source for policy development and implementation of baseline data collection for AE policy planning (soils, water, biodiversity), GIS system for AE mapping, training material development, advisory system background, monitoring). The Agri-Environment Information System would also serve the obligatory reporting function about AE development to the European Commission.
- MAFWE (with other relevant Ministries) should prepare a set of monitoring guidelines and standards for soil and water, the establishment of a systematic operational agri-environmental monitoring program for soil, surface and groundwater and biodiversity, the designation of water bodies affected by pollution.

4) Improve living conditions in rural areas

Rural Development in the EU policy meaning is new for the MAFWE. To date, several institutions are implementing in a non-coordinated fashion a range of public support programmes which can be broadly categorised under the heading of “rural development”.

¹⁴⁰ Natura 2000 addresses issues of protected areas and national parks and is under the responsibility of MOEPP

Coordination among institutions, establishment and operation of new institutions (IICB and paying agency), the modification or introduction of enabling legislation and enhancement of human resources are difficult tasks that need to be performed in the 2007-2013 period.

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

- The legislation for the determination of the rural areas and of the less favoured areas should be amended to introduce the concept of population density which is a pillar in the OECD and Eurostat methodologies adopted in the EU¹⁴¹ in order to target more effectively public support and investment funds.
- MAFWE should implement a participatory socio-economic survey of rural municipalities (with particular focus in the LFA) to collect updated and uniform data for determining the situation of rural population, development trends and needs assessment, that will complement the agricultural census (to be implemented in 2007). Results of the census and of the survey will be used by MAFWE to guide the design of targeted rural development measures and performance indicators.
- Delineation of the role(s) and participation of other ministries and state bodies (such as the Bureau for Economically Underdeveloped Regions and of the Municipalities) needs to be regulated in the context of the Rural Development policy development, implementation and monitoring.

The improvement of the living standards in rural areas can be achieved through the improvement of the physical infrastructure, through favouring of creation of off-farm employment and income generation opportunities, and through diversification of agricultural production. The key policy directions are:

- Physical infrastructure improvement. Rural population (including the population living in the LFA) represents a large part of total Macedonian population with significant ageing, educational problems, and unemployment, poverty and migration trends. Factors that contribute to social uncertainty are the lack or inadequacy of social and technical infrastructure, especially in LFAs, and insufficient access to markets. These can be improved in prioritised and selected less favoured areas aiming particularly at basic and environmental infrastructure (roads, water supply and waste management, etc.), through targeted investments with the coordinated approach of different ministries, bodies and local governance.
- Off-farm employment. Due to the weak number and strength of enterprises in rural areas (in particular SMEs), there is a lack of alternative (off-farm) employment opportunities and the rural population is mainly agricultural, often subsistence-oriented, with low incomes and value added. Improvements in the off-farm rural economy (crafts and SMEs) are important for improving rural labour productivity and wages and can be stimulated through adequate policies and investment support aimed at the creation and strengthening of non-farm businesses and rural tourism activities.

¹⁴¹ OECD differentiates between two hierarchical levels – local and regional. At the local communities level (NUTS 5) rural areas are communities with population density of 150 citizens per sq. km. At the regional level, (mainly NUTS 3), OECD distinguishes larger functional or administrative units on the basis of their rural nature, and depending on the regional participation of the population that lives in these rural communities. In order to facilitate the principles of analyses, the following grouping is applied: (a) Predominantly rural regions (over 50% of the population lives in the rural communities), (b) Considerably rural regions (15 - 50% of the population lives in the rural communities), and (c) Predominantly urban regions (less than 15% of the population lives in the rural communities). Eurostat's approach is based on the urbanization level, thus, each European region can be classified in one of the three classes: (a) Densely populated zones (these are groups of municipalities in which each is populated with more than 500 citizens per sq. km and the total population of this zone is at least 50,000 citizens), (b) Mid-zones (these are groups of municipalities with population density of 100 – 500 citizens per sq. km. The total number of the population of these zones is at least 50,000 citizens, which is close to the number of densely populated zones), and (c) Sparsely populated zones (these are groups of municipalities which do not fall into any of the above mentioned zones, that is, they have less than 100 citizens per sq. km).

- Diversification of agricultural production can be achieved through adequate support policies to production and marketing and investment support for post-harvest operations.

5) Reform the regulatory and institutional framework

The experience made by the new EU member states in the EU integration process show that agriculture is one of the most difficult chapters to be negotiated and is the sector where complex legislative obligations and extensive institutional changes and implementation measures have to be undertaken. The main areas and tasks in the legislative domain are summarised below.

- Food safety, veterinary, phytosanitary, seeds and propagating materials and animal nutrition. The EU legislation in this field aims at facilitating the internal and foreign trade in the veterinary sector, plant protection and animal nutrition. By protecting the health of plants and animals, together with animal welfare, the health of the population is protected and thus the expectations of consumers are met. The main precondition for enlargement of the common market in this field to associated countries, in addition to coordination of legislation, is having adequate and trained administration in place. In general, it requires adequate control systems. Administrative capacity needs to be strengthened and national competent authorities established in order to ensure adequate implementation of legislation in this field, with adequate number of trained staff and adequate means and programs.
- Common Markets Organization. This refers to legislation that regulates agricultural markets. Implementation, management and control in CAP requirement development, modifications and strengthening of adequate administrative capacities. It is necessary to establish administration for CAP financial flows (paying agency) as well as special information systems for policy follow-up, such as IACS (Integrated Administration and Control System) and various registries. Special attention should be paid to the quality policy and various product classifications.
- Rural development. Establishing enabling legislation and administrative structures that are capable of rural development planning, identifying the structural needs in rural areas, the development, implementation and management of rural development programs; control of financial flows and measures undertaken; monitoring, reporting, control and evaluation of programs.

The MAFWE institutional reform is necessary to enable it to perform the new duties and tasks entailing from the regulatory reform. The main areas and tasks are summarised below.

- Delineation of shared responsibilities. MAFWE shares responsibilities with other Ministries and Government bodies in the fields of food (processing of agricultural products, CMOs, marketing and regulation of internal markets, external trade with food products) with the Ministry of Economy, food safety with Food Directorate (Ministry of Health), agri-environment, protection, marketing and promotion of natural resources (water, soil and forests) with the Ministry of Environment and Spatial Planning, data Information Systems, statistical research, exchange of information, agriculture census etc. with the State Statistical Office, planning of the education policy, research and training in agriculture with the Ministry of Education and Science.
- Horizontal and vertical reorganisation of MAFWE at central and regional levels. A new systematization of the Ministry is prepared but further changes during the strategy period can be foreseen according to the needs of the EU legislative harmonization process. Also changes in primary legislation could be necessary.
 - ⇒ Enhancement of MAFWE Human Resources. To overcome the extremely poor capacity (in numbers and skills) of the human resources in particular in the key positions for execution of the complex tasks in the upcoming period. This requires a

situation analysis of the existing human capacities and skills, the definition of the optimum organizational structure (including defining of the work tasks) on the basis of the defined strategic directions for implementation of the planned reforms in the sector and under the MAFWE, the assignment of staff at the needed work posts in the existing and newly established organizational units: human resources, Analysis and AIS, design and management of projects, EU integration, Department for land policy, and preparation and implementation of a plan for training.

- ⇒ Establishment of the IPARD paying agency. The paying agency is being established under the Government and needs to be accredited (first at national and then at EU Commission level) by mid 2008, for performance of the payments, control and audit of the realization of national schemes (agriculture support program and rural development measures) and IPARD rural development measures. Necessary activities are the Establishment of the Inter-Institutional Co-ordination body (IICB) for Rural Development policy, planning and monitoring (proposed members are MAFWE, MoF, MoE, MLSG, MoC, MoLSA, MoSE, MoESP, MoTC, SEA), and the enactment of Law on establishment of IPARD Agency, Decision for establishment of inter-institutional coordination body, enactment of numerous internal procedures and methodology of disbursement, control and monitoring.
- ⇒ Adoption of the IPARD Plan. The IPARD Plan needs to be prepared in the first half of 2007 (including ex-ante-evaluation) and further discussed and then approved by the EU Commission Services. Additionally MAFWE has to ensure the necessary national co-financing¹⁴² for the 2007-2010 period and the appointment of the IPARD Monitoring Committee.
- ⇒ Establishment of an Agricultural Information System. The AIS shall include a number of subsystems: National farm accountancy data network (FADN), Agriculture Market Information System (MIS), appropriate and reliable agriculture statistics (including support to the Economic accounts for agriculture) and establish an Integrated Administrative Control System (IACS) integrating various registers (Farm register, Animal Identification and Registration-I&R, Vineyard Monitoring and Management System- VMMS, users of direct support, Land Parcel Identification System, and the Agro-environment information system.
- ⇒ Achieve the accreditation of reference laboratories (State Phytosanitary Laboratory under the MAFWE, Faculty of Veterinary Medicine, Ministry of Health and – State Bureau of Health Protection).

3.3. Agricultural Support Policies

The Agricultural Support Policy, which represents the first pillar of the EU CAP, is funded by national funds. **Direct Payment Measures** represent the essential instrument of the national support policy in agriculture and consist of direct payments per ha in crop production and per head in livestock production.

The past support measures for agriculture were allocated for certain number of traditional products without a defined concept for the expected effects and objectives to be achieved. With a predominantly social character, the measures were without clearly defined criteria for application for support and in circumstances of absence of successful systems of monitoring, control and impact assessment. The 2007-2013 strategy sets new support policy principles and measures which will be refined and adapted to the expected changes in legislation, institutions and in control systems. The Government shall allocate increasing amounts for subsidies for support of the agricultural production, up to € 20 million in 2010.

¹⁴² National co-financing is 25% of EU funding.

Taking into consideration the following facts:

- No date for accession of Macedonia to the EU is set.
- Macedonia has to gradually reform its regulatory, institutional and agricultural support policies harmonizing them with those of the EU CAP by time of accession.
- The CAP is a moving target and important modifications will occur before the accession of Macedonia (increased simplification, decoupling and decreased support).

It is necessary to be cautious with the introduction of the current CAP, and a pragmatic approach has to be followed. The selected agricultural support policies under this Strategy therefore mainly takes into consideration the development and social requirements of Macedonian agriculture, and will be adjusted gradually as and when the country is ready for the shift towards the CAP models. This will also depend on the amount of financial resources available to the MAFWE to implement these policies in the future.

Target categories of products /producers

To achieve the defined objectives of the new government policy in agriculture the support policy is intended for the following target categories of products or producers:

1. Support to **competitive, export oriented products** for which there is demand in particular on the European markets, and with comparative advantage over the foreign production (**tobacco, grape production and quality wines, lamb meat, fruit and vegetable production**).
2. Production of **alternative crops and/or non-traditional products** with export potential which generate higher income with more limited resources and which are an alternative solution for the traditional products with a declining competitiveness, with reduction of the customs protection (organic and integrated production, oil bearing crops products for production of bio-fuel, production of flowers, berries and nuts, asparagus, broccoli, snails, ostriches, aromatic and medicinal plants).
3. Support to **traditional products, traditional skills and knowledge with social importance** for rural areas and importance for **safety in the provision of basic food** for the population with insufficient performances in the productivity supported in a given short-term to mid-term transition period of adaptation via measures for increase of yields in regions with comparative advantages for production/farming and measures for introduction of alternative production in the regions with very low yields and quality when compared with the imported ones (wheat).
4. Support to products which **significantly participate in the value of the import** and have non-utilized potential for increase of the production and are with an appropriate competitive advantage when compared with the products of other countries (production of broilers, beef via the system cow-calve).
5. Production of **high-productive, certified, and adapted to domestic conditions seeds and seedlings** and their distribution to the users to overcome the problem by use of mercantile products as cereals and improvement of the variety quality (tobacco, early vegetables, fruits and vineyards), as well as measures for **improvement of the breed structure with the livestock farming**.
6. Support to implementation of EU standards which increase the competition of products (HACCP, EUROGAP, certification of organic production, support to activities for promotion of characteristic national brands of farming products and their promotion on the external markets).

3.3.1. Direct Payments in Crop Production

Yields and production of annual and perennial crops show high annual variations due to the combination of climatic influence (insufficiently alleviated by use of modern on-farm technologies, *in primis* irrigation) and to past non-consistent agricultural support policies. Vertical integration (stable contractual and cooperative relations between farmers and the processing industry) and producer groups in the fruit and vegetable sub-sectors are weak or non-existing. The processing industry needs to be modernised. The sub-sector requires increased support from research, training and advisory services. A first step in the reduction of inputs cost (improved seeds and seedlings, and of agrochemicals – fertilisers and pest control products) has been the VAT reduction.

Existing subsidies to integrated crop management and good agricultural practice, as well as organic production should continue, to support ever increasing export demand, and related control/inspection requires to be stepped up. Market quality standards need to be defined and adopted for the majority of crops, as well as safety standards in the industry (HACCP) which are becoming increasingly important. The production of certified seeds (all crops and in particular potato) and propagation materials (fruit seedlings and grape rootstock) needs to be expanded and controlled.

The proposed measures are the tools for realization of the specific objectives in the sub sectors. The proposed measures are intended to support only producers that:

- Are registered with the MAFWE and with the relevant Association and National Councils (the responsibility and part of control mechanisms will be entrusted to associations and councils).
- Have regular bookkeeping
- Can prove contracts with market traders, processors or distributors
- Can prove use of certified seeds.
- Once enabling legislation shall be adopted, financial support should be preferably channelled through applicants that are organized in groups of farmers (producer groups, organisations and co-operatives) that contribute to market chain.

The gradual entry into force of the above general eligibility criteria (which could be modified as need be), depends on the establishment of the relevant registers, control mechanisms and manuals for implementation of the measures.

WHEAT AND OTHER CEREAL CROPS

Cereals are the most common agricultural crop. Given the high level of imports, support should be aimed at increasing quality and productivity rather than extending sowed areas, via use of certified seeds and improved agro-techniques (fertilisers and protection), improved advisory services, and machinery rings to decrease harvest and post-harvest losses.

Aims of support

To enable certain level of domestic production of wheat for production of the basic food products of the population in the Republic of Macedonia, appropriate budget support should be provided with defined aims and expected results directed towards improvement of quality and productivity (higher output per unit of input) as follows:

- In the short-term, maintaining an optimal level of production of wheat of domestic production, which in the recent years despite the significant decrease of the domestic price towards the world price, is still maintained between 70%-90% of the total domestic demand.
- In the medium-term, alleviation of the negative trade balance via substitution of the significant import of wheat with domestic production through increased productivity, that is yields of 3.500-4.000 kg/ha as a result of the application of systematic

measures¹⁴³ as well as guiding criteria for application. With the increase of the yields and the total domestic production by 35%, domestic needs will be satisfied and imports reduced.

WHEAT	2007	2008	2009	2010	2011	2012	2013	Domestic Demand (tons)	Domestic Production/ demand
Hectares	108,881	109,425	109,973	110,522	111,075	111,630	112,189	500,000	90%
Yields (ton/ha)	3.07	3.2	3.4	3.5	3.7	3.8	4.0		
Production (tons)	334,265	351,053	368,685	387,202	406,649	427,073	448,523		

The above projection is based on the assumption that the stimulation measures will increase marginally the number of hectares planted with wheat (by 0.5% per year), and that average productivity increases linearly by 5% per year. The base for hectares, yields and production for the year 2007 is aligned with SSO data for 2005.

In accordance with the analysis of the limitations / constraints which influence the productivity, small scale farmers with areas less than 2 to 3 hectares which objectively cannot be adapted to the type of technologies needed for intensive production, will improve the situation of the income of the limited resources via gradual shift towards more intensive production as fruit and vegetables, oilseed crops, alternative and non-traditional crops, which from this year have become a subject of support. In that respect these producers are encouraged towards replacing of the cereal crops by alternative products (oilseeds and other products) in regions where the yield of wheat is significantly below 3.000 kg/ha on areas lower than 2 hectares.

On the other hand, regarding the sector of commercial production of wheat it will be necessary to improve the production technology and significantly increase the productivity and competitiveness. MAFWE will support this sector via appropriate advisory services, subsidising the production of certified seed, as a support to the associations of machinery rings which should improve the situation by use of agri-machinery in order to decrease the harvest and post-harvest losses which can go up to 30% of production.

Support should also be provided to crops that are used as feed by the livestock industry (maize, barley, triticale, rye and oats), or to crops which have export potential such as durum wheat (which is also drought resistant). Macedonia is a net importer of maize for seeds and livestock feed for almost half of the domestic needs. Generally, the size of the current area with maize is sufficient to cover the domestic needs if the average yield is increased by about one half through the use of high-productive hybrids and introduction of new technologies of production.

MAIZE	2007	2008	2009	2010	2011	2012	2013	Domestic Demand	Domestic Production/ demand
Hectares	33,578	33,578	33,578	33,578	33,578	33,578	33,578	198,079	89%
Yields (ton/ha)	4.41	4.5	4.7	4.8	5.0	5.1	5.3		
Production (tons)	148,079	152,521	157,097	161,810	166,664	171,664	176,814		

The above projection is based on the assumption that the stimulation measures will increase the linearly average productivity by 3% per year (due to the fact that a number of corn growers already use improved seeds and agro-techniques, including irrigation). The base for hectares, yields and production for the year 2007 is aligned with SSO data for 2005.

Description of the measure

¹⁴³ Via utilization of certified, high-productive seed, appropriate row density, inter-cropping, improvement and maintenance of soil fertility, analysis of the pedological structure and application of appropriate agri-technical measures, cleansing of the soil from residues etc.

Financial support for improvement of the productivity of production of wheat

The current investments in the production of wheat are sufficient for the existing yields level (3 tons/ha). To achieve better production results, that is yields of over 3.500-4.000 kg/ha additional investments are needed in inputs - seed material, fertilisers and protection should be supported financially. As a result, with the support and higher yield it is expected that the price per unit of product will be reduced.

The support per hectare will be paid for produced and sold wheat to the milling industry on the condition to allow yields of at least 3.000 kg/ha, and for the minimum sown area of 2 ha. Additionally, in this way, besides the higher productivity and lower price per unit of product, enlargement of areas is also encouraged.

From the beginning of 2008, granting of the support for production of wheat will be conditioned upon use of certified seed wheat by supplying of certificate for purchased certified seed material.

Financial support to production of wheat seed

In order to stimulate the production of sufficient certified seeds of domestic origin, the production of the seedlings of wheat will be supported financially for the projected area of 1.000 hectares.

Financial support to production of seed of other cereal crops

The production of certified and high-productive seedlings of maize, barley and other cereals will be financially supported for the planned 400 hectares production area.

TOBACCO

Tobacco, for its social importance, requires the continuation of regular financial subsidies (per kg sold to the purchasing enterprises). Support shall be directed towards increased production of small-leaf oriental aromatic tobacco through providing incentives for the improvement of the quality, production technology, preparation and drying of the tobacco raw material and assortment in compliance with the interest of the multinational companies for investment in the tobacco purchase.

With the measures for financing the activities in the primary tobacco production, the immediate beneficiaries of the financial assistance shall be the immediate primary tobacco producers, and the scientific-educational institutions in the area of tobacco production, as well as the providers of public services in the part of maintenance and upgrading of the information systems and creation of software programmes for improved recording and control of the tobacco production and tobacco producers, introducing of the register for tobacco buyers, as well as production of seed material. The programme for financing the activities in the primary tobacco production results from, and is in compliance with, the Law in Tobacco and Tobacco Products.

The primary tobacco producers that have concluded contracts for production and purchase of tobacco with the tobacco buyers for production of oriental aromatic types of tobacco shall obtain a financial support per kg produced and sold tobacco depending on the quality, i.e. only the first three classes shall be subsidized.

Aims of support

To improve the quality and production of tobacco and maintain incomes of producers.

Description of the measure

Financial support of the scientific research activities within the primary tobacco production

Financing scientific research activities within the primary tobacco production is a benefit to the tobacco producers, sales improvement in accordance with the increased interest of the

multinational companies for investing in tobacco purchase, as well as long-term increase of competition on the foreign market.

This measure comprises:

- the researches of the tobacco soils in order to carry out identification of prohibited heavy metals quantities in tobacco raw materials and determining the level of their contamination according legal provisions and worlds pollution standards, as well as systematic control of the tobacco soil fertility.
- on the account of improving genetic base by creating and introducing new tobacco brands in the production of Republic of Macedonia a measure has been foreseen which is to improve and modernize the structure, quality of the tobacco brands, as well as to increase the tobacco production.

Maintaining and updating of the information system and programmes for improved registration and control of tobacco production and producers

Adequate financial amounts have to be foreseen for implementation of these activities.

Organizing seminars, education and public awareness

The measure should foresee funds on organizing materials, education and public awareness intended for the purpose of organizing workshops for introducing EU regulations and guidelines for the common market of raw tobacco and reconciliation of national provisions with EU provisions, and for the purpose of preparation, printing and issuing booklets on criteria of estimating the tobacco quality and quantity during purchase; for the purpose of organizing training for the candidates who take an exam on receiving valuator license and etc.

OILSEED CROPS

Key oil-bearing crop production (sunflower, oilbeet and soy beans) needs to be strongly developed both in terms of areas sown and of yields, via direct support per ha, to substitute imports and for their versatility (edible oil, oilcakes for animal feed, bio-diesel production, and forage in the case of oilbeet). Moreover, oil seed crops provide opportunities for crop rotation and allow better capacity utilization of the existing processing industry. Financial support should be provided to producers to stimulate cultivation of these crops, to increase the use of certified seed and to develop new varieties.

Aims of support

Support for the production of sunflower and other oilseed crops have been introduced to support/ encourage the increase of production of oilseed crops to meet the increasing demand of the raw materials for the production of bio-diesel. Until the EU accession when this production will be obligatory, Macedonia may realise a substantial foreign currency inflow from the export of these crops to the interested potential buyers from abroad.

Also, the demand for the sunflower oil is also high for the needs of production of edible oil, which may gradually contribute to decrease the import of unrefined oil. The production of sunflower seeds represents an alternative sustainable sector for the Macedonian producers, within the context of the favourable climatic conditions primarily for the cereal crops, since sunflower is more resistant to droughts / aridity and is most often cultivated without irrigation.

Sunflower	2007	2008	2009	2010	2011	2012	2013	Domestic Demand	Domestic Production/ demand
Hectares	5,371	5,908	6,499	7,149	7,864	8,650	9,515	93,000	20%
Yields (ton/ha)	1.25	1.4	1.5	1.6	1.7	1.8	2.0		
Production (tons)	6,714	7,976	9,475	11,257	13,373	15,887	18,874		

The above projection is based on the assumption that the stimulation measures will increase the number of hectares planted with sunflower (by 10% per year), and that average productivity increases linearly by 8% per year. The base for hectares, yields and production for the year 2007 is aligned with SSO data for 2005.

Description of the measure

Financial support for increase of the production of oilseed crops- sunflower, oilseed rape and soy bean

To realize the plans for expansion of the areas under oilseed crops it should be foreseen the support by direct payments per sown area for producers cultivating these crops on a minimum area of 2 hectares.

The increase of the competitiveness of the sunflower seed production is possible via increase of the yields to at least 1.5 tons per hectare.

Financial support for production of basic and certified seed material for the oilseed crops

In order to enable a sufficient quality and safe seeds for the production of oil-yielding / oilseed crops as one of the important measures to increase the productivity and hence competitiveness, there will be support provided for production of certified seeds for the planned 150 hectares. This measure is intended to emphasize the possibilities / potential for production of hybrid varieties (sunflower for instance) with a short vegetation which in condition of irrigation - drip irrigation is possible to be cultivated as a second crop as a plantation after the harvest of the autumn cereal crops.

FODDER PRODUCTION

Fodder and feed crops need to be supported as their high purchase costs for the livestock breeders, together with the sub-optimal number of heads per farm, is the main limitation for the development of profitable cattle farming and, more generally, of livestock production.

Aims of support

Besides the average optimal number of heads per farm, Macedonia's production of at least 80% of the total fodder requirements is the second necessary condition for allowing profitable cattle farming and, more generally livestock production.

Description of measure

Fodder production for individual needs of livestock producers shall be supported by an additional amount per hectare sown area with incoming crops (barley, maize). Due to the importance of maize and barley as significant input for fodder production, it shall be more appropriate if the support is realized directly in favour of market oriented livestock producers which usually produce appropriate fodder quantity.

In order to implement this measure, financial support should be planned for minimum areas of 2 ha owned or leased by the applicant for support, who fulfils all previously set conditions on utilization of support pursuant to stipulated measure criteria for support of agriculture development in the part of livestock production.

FRUIT PRODUCTION

Fruit production (traditional, alternative and organic) should be supported for its good demand prospects and for its significant comparative advantages due to its labour-intensive characteristics (especially in the hilly-mountainous regions) and favourable pedo-climatical conditions. Direct financial support should be provided to increase the surface of stone fruits (peaches, apricots, plums, cherries, and sour cherries) and pear, soft fruits (raspberries, blackberries, aronia), nuts (hazel-nuts, almonds, walnut and chestnuts), alternative fruits (figs, kaki and pomegranate), and olives. Support shall also be provided for increasing the production of certified seedlings and propagating materials. Other actions to redress the

situation for the fruits sub-sector include the (a) establishment of a fruit farming registration system (similar to what is being done in the vineyards), (b) support export promotion activities, (c) introduce protected geographical origin, expand research/extension and demonstration plots, and (d) establish market information systems.

Aims of the support

The objective of the support is to terminate the decreasing process of fruit production as an industry with significant competitive potential and to provide incentive for bigger production of the existing fruit crops, as well as support to the process of introducing new products, demanded on the markets that have comparative advantage for production, particularly in the economically depressed hilly-mountainous areas of the country.

Description of the measure

1.13 Financial support for increasing the fruit production

Aiming to promote a higher fruit production, a financial support has to be foreseen, for projected new 1.150 ha with competitive fruit crops (minimum size of the new plantations):

1. *Stone fruits* (peaches, apricots, plums, cherries, and sour cherries) *and pear*. (0,3 ha)
2. *Soft fruits*: raspberries, blackberries, aronia (0,1 ha)
3. *Nuts*: hazel-nuts, almonds, walnut and chestnuts. (0,3 ha)
4. *Alternative fruits*: figs, kaki and pomegranate (0,1 ha)

1.14 Financial support for increasing the domestic production and decreasing the imports of olives

Aiming to create conditions for decreasing the imports of olives, a financial support for establishment of new plantations has to be ensured in determined areas with climate-soil characteristics appropriate for this kind of production and appropriate varieties.

1.15 Financial support for production of healthy and high quality seedlings

For the purpose of healthy and high quality seedlings of domestic production from the seedlings centres in the country, financial support should be ensured.

VITICULTURE

Grape production, both for fresh consumption and wine production, needs to be maintained given the significant ageing of the vineyards and the relevance of the industry and exports. Support should be focused on the replacement of old vineyards. Complementary policies for the wine grape sector should be oriented to strengthen the controls to ensure the traceability of wines and support export promotion activities.

Aims of the support

The Macedonian viticulture production shall be orientated towards the production and marketing on domestic and export markets of high quality wines for which favourable conditions exist and increasing of the export of quantities of high quality wines in the following years. Some of the traditional predominant varieties which are not demanded on the foreign markets, and for which there is a reduced interest on the domestic and international markets, shall be prospectively replaced with new varieties of high quality grapes in compliance with the requirements of the external markets. Although a replacement of the varieties, and improvement of the overall structures is needed, however, the replacement shall be made gradually and in parallel with the intensifying the establishments of new vineyards, with the purpose to avoid a drop of the total production due to the multi-annual period without any yields between the period of investment and achieving the yields from the new vineyards, and the significant percentage of old vineyards that should be replaced with new plantings.

Description of the measure

Financial support for maintenance and increasing the grape production (including table grapes)

For the purpose of achieving an optimal grape production in the country and increased export of wine and table grape, a support for establishment of new vineyards (or replacement of old vineyards) is determined, following the new contemporary courses in regards to the variety structure in accordance with the trend of long standing development of the preferences of the foreign consumers and main markets, without neglecting the Macedonian indigenous varieties of grapes cultivated in our viticulture regions¹⁴⁴, in any case with adequate marketing approach for stressing the special features and the quality.

Resources have to be allocated for a contribution to investment costs of around 15 to 20% of the new plantations for a total area of approximately 1,800-2,000 hectares per year (from 2007 to 2013 a total of 12,600 ha should be renewed), under the following conditions:

- Minimum size of individual parcels not less than 0,3 hectares,
- Selection from the list of classified varieties (and in the favourable areas once they will have been earmarked by MAFWE with the adoption of the Rulebook on delimitation of areas planted with vine planned for 2008)
- Applicants shall have registered vineyards in the Vineyard Cadastre within MAFWE (provided they are in the Tikves pilot region in 2007 and, when extended at national level in 2008, registration shall apply nationwide).

VEGETABLE FARMING

Vegetable production is a growing activity in Macedonia and needs to be supported in particular to increase areas under glass/greenhouses, expand production of industrial pepper (open air and plastic tunnels), non traditional vegetables (asparagus, etc), aromatic and medicinal herbs and production of quality and certified seeds. Complementary support policies for the sub-sector should be oriented to (a) the establishment of a vegetable farm registration system and provision of technical and financial support to producer groups for their set-up and support their investment in post-harvest facilities, (b) provide targeted investment support to farms (machinery, equipment), (c) provide investment support for the modernisation of the processing industry, (d) support export promotion activities, introduction of protected geographical origin, research/extension and demonstration plots, training of farmers and inspectors, dissemination of manuals for EUREPGAP standards, and (e) establish market information systems.

Aims of support

The aim of the support in the part of the vegetable farming is maintenance and increase of the participation in the existing markets (the region of the South and Eastern Europe for the fresh products, and EU for the processing) and improvement of the value structure of the export with the existing ones, and via introduction of new demanded products. Due to the existing and the potential significant impact of the value structure on the export, early vegetables, alternative and organic products (vegetables) are subject of the direct support.

The prominent competitive advantage of the production of vegetables is however a result of the beginning of the season of harvesting at least one month earlier than most of the countries in the region, cheap labour and stable connections with the traditional markets of former Yugoslavia which have been re-established in the early 90-ies.

¹⁴⁴ As an example: Vranec, Kratosija, Strusina and Zilavka that because of their aroma, they would be well positioned on the foreign markets.

According to the analysis, the following segments of the vegetable farming are identified for their relative comparative advantages:

- *early vegetable farming*, by which highest prices can be achieved at the beginning of the season if the yield reaches the market one to two weeks earlier than the competitors/ rival manufacturers;
- *red industrial pepper* - processed for the ethnic markets in the EU;
- *asparagus* as non-traditional and alternative product with a niche (special, specific markets) and the increasing demand in EU, and which engages more workforce due to the labour intensive character of the production process;
- *organic farming* for the still increasing demand in the EU and higher prices than the conventional products.

Description of the measure

Financial support for increase of the areas under glass/greenhouses

First option: Establishment of new 10 hectares under greenhouses with the following crops: tomato, pepper, cucumber and flower with financial support per hectare. For investments in protected facilities with alternative sources of heating, there is a possibility of introduction of a preferential amount as a result of the higher amount of the investment.

Second option: direct support per hectare of sown protected areas under greenhouses to cover a part of the operational costs for the greenhouse farming.

The required criteria for the eligibility to use the funds of this measure in addition to the reported planted areas in greenhouses include an evidence for provided certified seeds and seedlings, and priority shall be given to the applicants who will submit a document / evidence of introduced system of certification and registration (EUROGAP). Distribution of funds per crops will be determined each year by the MAFWE.

Financial support for vegetable production - industrial pepper in the open air and in plastic tunnels

The measure for financial support for vegetable production - industrial pepper – open field production and in plastic tunnels envisions financial support for the planned areas planted with peppers (on 3.300 ha). This measure will include those producers which have reported a minimal area of 0.5 ha and evidence for the sold quantity and quality to the processing industry or the realised export.

Financial support for vegetable farming of asparagus

The financial support for farming of the asparagus should be envisioned for the planned 120 hectares reported areas planted with these crops. Financial support is per hectare for a minimum 0.3 ha sown area.

Financial support for the production of aromatic and medicinal herbs

Financial support has to be provided for the production of aromatic and medicinal herbs. The disbursement will be for a minimum of 0.1 ha sown area, while the amounts per hectare are defined after the total reported production capacity.

Financial support for domestic production of quality and certified seeds

Domestic production of quality and certified seeds for vegetable farming, especially of the domestic demanded varieties of red pepper, will be supported.

ORGANIC PRODUCTION

Organic production (both crop and livestock) should continue to be developed due to the favourable conditions in the country and the demand for these products on the EU market.

Support shall be oriented to organic production and for the conversion from conventional production, to reduce the expenses for control and certification of organic products and for laboratory analyses, for the implementation of research projects, the preparation of educational material, for promotion, training of farmers.

Aims of support

The purpose for financial support is to promote and support the development of organic production in Macedonia because of the favourable conditions in the country and the demand for these products on the EU market.

Description of the measure

Financial support for organic areas and areas under conversion from conventional agricultural production into organic one

The purpose of this measure is introduction of the standards stipulated by the Book of Rules for organic agricultural crop production of the producer/farmer i.e. production conversion from conventional into organic, which causes yield decrease by 50% during the first years, for which financial support is granted on the part of the reduced production/lost profit, as regulated by the measure. The same measure is applied in all countries which have introduced organic production system and it represents starting point for support of the organic production development. The funds payment is carried out by the provisions of the Contract between the producer and the Ministry.

Financial support of organic production in livestock farms

The purpose of this measure is introduction of the standards regulated by the Book of Rules for organic livestock production of the producer, i.e. production conversion from conventional into organic one, which increases the breeding expenses of the farm during the first years. This measure combined with the measure no. 1 (for crop production) is necessary for conversion of the whole production of a single farm, which is a model required within the organic agriculture. The funds payment is carried out by the provisions of the Contract between the producer and the Ministry.

Financial support of expenses for control and certification of organic products

The purpose of the measure is compensation of 50% of the control and certification expenses of the production which is necessary procedure by which the accredited and authorized certification bodies provide confirmation for applying stipulated standards while receiving organic product. The procedure implies constant control (inspection) over the production, up to its packaging and transport on the market. Since the certification is paid in advance to the certificatory to start up with the procedure of certification, financial support is needed on the part of the expenses after receiving the certificate for the produced product. The funds are paid on the basis of issued certificate for organic production and final product.

Financial support for the costs of lab analyses in organic farms

The purpose of the measure is compensation of lab analyses costs of organic farm soil, organic fertilizers which are added, and water which is used for irrigation of the producing area, as a basic condition for organic production. Product analysis confirms its increased value as an organic product. Analyses are increased costs of the producer and therefore a financial support has been foreseen on the part of the analyses costs which have to be done.

Funds payment is performed according submitted analysis and certificate on organic product or farm, at the end of the producing cycle.

Implementation of the scientific – research project important for acquiring participation of foreign projects for organic agricultural production

Financial support shall be allocated for implementation of this measure.

General measures

These measures are necessary part of the overall activity which supports and develops the organic production in Republic of Macedonia.

The measure – drafting educational material for organic production – implies financial support on printing professional literature of the area, which should be available to all of the entities within the organic system in order to get familiar with the legal provisions, education, professional advice and scientific knowledge for practical application in the production.

The measure – propaganda and promotion – comprises support of the public knowledge with the benefits of the organic agriculture, public campaigns, promotions, fair participation and manifestations. This measure covers drafting promotion materials.

The measure – education and training – is intended for all participants within the organic production. The most important are organic producers united in associations, professional companies, public enterprises, civil servants, schools of agriculture, local self-government, civil associations (as consumers). This measure shall have significant effect on both production sector and marketing with organic products.

The measure intended for expenses on the work of Verification Commission is minimum compensation for activities on a single supporting MAFWE body which shall verify all the requests for issuing national label of organic production, and also compare the approval procedures of organic products import in Republic of Macedonia. Since it has been foreseen for the Commission to be mainly composed of external persons this measure shall refer to them, according Decision of the Minister.

3.3.2. Livestock Production Chain Policies and Measures

Overall livestock production has a downward trend (although with internal variations) and Macedonia is a large importer of animal products (meat and meat-based products), except for eggs and milk. Generally, the sector lacks organisation (many but fragmented breeders associations and weak national level representation) that require reinforcing and empowering to carry out certain services (herd books, breeding value assessment). Vertical integration (however existing in pig and poultry) is weak and should be promoted. Production systems in the median-sized farms are backward (poor housing/facilities, equipment, nutrition and genetic value). Costs of feed (mostly imported) are high, and VAT reduction (as already done in the crop sub-sector) should be introduced. The sub-sector requires the controlled liberalisation of artificial insemination services (cattle and pigs), an improved production specialisation (milk vs. meat in cattle, milk vs. lamb in sheep, egg vs. broiler in poultry), the upgrading of research and increased training and advisory services in production, marketing and organisation. The sub-sector lacks updated market quality standards (carcass evaluation SEUROP). A small percent of slaughtering and processing establishment are licensed for exports to the EU and existing capacities are unused, which show an overall backward situation. Milk and meat quality and safety standards are not EU-harmonised and there is a poor application of HACCP and of self-controls regime. There is insufficient poultry slaughtering capacity in the country.

The proposed measures are the tools for realization of the specific objectives in the sub sectors. The proposed measures are not intended to support all producers but to support only livestock producers that:

- Are registered with the MAFWE and relevant Associations and National Councils (the responsibility and part of control mechanisms will be entrusted to associations and councils).
- Have regular bookkeeping.

- For the cattle sub-sector, the eligibility to receive financial support is conditioned with compulsory tagging of the animals in accordance with the Law on Animal Identification and Registration and their registration in the database and timely notification of all the changes on the animal holding. This shall serve as an incentive for the process of registration of the animals and monitoring of the animal movements. This condition will be extended for goat and sheep once the relevant legislation and systems will be in place (planned for 2009).
- Can prove contracts with market traders, processors or distributors.

The entry into force of the above general eligibility criteria (which could be modified as need be), depends on the establishment of the relevant registers, control mechanisms and manuals for implementation of the measures.

General policies for the meat and dairy production are (a) investment support for animal holdings (housing, production equipment including for fodder and feed, collection of milk waste management, etc.), (b) support in purchase of AI services and strengthen the production in registered centres of high breeding value animals and parent stock farms to restructure and orientate the farmers herds or flocks (sheep, goat, pig and poultry), (c) investment support to modernise the dairy, slaughtering and meat processing industry (premises, processing and collection equipment, waste management, etc), (d) establishment of independent milk laboratories, (e) set-up of an instrument to regulate market surpluses by supporting the storage of milk products with longer shelf life (butter, cheese), (f) support export promotion activities and introduction of protected geographical origin (for dairy products), (g) research/extension, training of farmers and inspectors, dissemination of manuals for safety and market standards.

CATTLE PRODUCTION

Concerning cattle farming, the main constraints are the small size of heads per farm and the high costs of feed and fodder. Support should be provided to increase the production of beef (to decrease meat imports) as well as maintaining the milk production at least at the existing level. Support should be provided through direct support measures (for herd maintenance and expansion, for stimulating the cow-calve system, for supporting the control over the origin and the production features of high-yielding breeds and for the strengthening of the nucleuses of Elite, I and Ia class cows). Other support measures should involve professional training of farmers, etc.

Aims of the support

Increasing the offer of domestic production of beef and subsequent decreasing of the imports, as well as maintaining the milk production at least on the existing level by improving the structure of the cattle farms in terms of average size, breed structure and specialization in terms of milk or meat production which are the main objectives that should be accomplished in cattle farming, partially through the direct support measures. Improving the professionalism of cattle farming, enlargement of herds and reduction of the expenditures per unit product, i.e. achieving adequate level of economy of scale in the production would require, in short or medium term, the substantial increase in the number of farms with 5-10 cows, and in the long term of specialized farms with 20 heads or more.

Additionally, due to the unfavourable impact of the feed as a main and important element in the cost structure of the beef and milk production, a support to the feed production on the farms is foreseen, described as a separate measure should be foreseen. In order to improve the productivity in the meat and milk production, incentive measures for production and distribution of quality genetic material in the cattle farming is introduced.

Description of the measure

Financial support for maintenance and expansion of herd

For providing financial support for maintenance and expansion of the herds of cattle farms, financial resources should be foreseen to cover approximately 90.000 heads. This measure shall cover farmers having tagged and registered cattle, disregarding the breed and production features for minimum number of five¹⁴⁵ cattle kept on the farm that have applied for support. However, the allocation of the resources may be performed non-linearly with regards to different breeds.

Financial support for heads via the cow-calve system

For the purpose of creating conditions for gradual increase of the veal production/ beef meat according to the production technology which in compliance with the available natural potentials of the low-mountainous pastures, financial support for stimulating the cattle farmers for keeping cows via the cow-cattle system should be introduced. The measure would additionally influence on the revitalization and development of the passive high-mountainous rural areas in the Republic of Macedonia.

For realization of this measure, financial resources should be foreseen to cover approximately 3.000 heads tagged and registered farmers and for a herd with minimum 30 heads. The checking of the breeding system covered by this measure shall be done all applicants (due to the relatively small number of farmers that apply this breeding system).

Financial support for tagged cows of high breeds for which control of the production features is conducted

In order to introduce control over the origin and the production features of the cows from the high yielding breeds, a financial support for tagged cows of high breeds is provided for which control of the production features is conducted. Over the past years approximately 15.000 heads have been subjected to control. This measure enables insights on the quantity and quality of milk obtained, and on the other hand, provides incentive for increasing the number of heads per farm. It is planned that around 6.000 heads should be covered on farms with at least 10 heads.

Financial support for kept and appraised cows in Elite, I and Ia class (tagged and registered)

In order to provide an incentive to the keepers of high quality heads, the farmers with bigger cattle farms -nucleus for classified cows of Elite, I and Ia should be supported per head, for the further expansion of positive genes in the existing population of milking cows in the Republic of Macedonia.

SHEEP PRODUCTION

Support to the sheep production should be directed towards increasing the lamb meat and milk production in order to better use available natural resources, expand exports via enhanced competitiveness (particularly in comparison with the regional producers from Bulgaria and Romania), and to provide income generating possibilities in less favoured areas. Support should thus be provided to (a) increase the basic herd (reimbursing the losses of unrealized sales), and for covering partially the breeding, feed and veterinary costs for keeping the lambs and to (b) farmer's purchase of improved rams of the Württemberg and Awassi breeds.

Aims of the support

The support to the sheep production should be directed towards increasing the lamb meat and milk production, as key strategic components of the domestic agricultural production that is provided for the following reasons:

¹⁴⁵ According to the MAFWE analysis for the support for 2005:

up to 3 (1 and 2 cows) were 33% of the applications with participation of 9% of the total amount
up to 5 (1-4 cows) were 62% of the applications with participation of 26% from the total amount
up to 10 (1-9) were 85% of the applications with participation of 52 % from the total amount

- Gradual creation of conditions for achieving the realistic and optimal production capacity and further development in compliance with the natural potentials of the country (that is currently 1/2 or even 1/3 of the possibilities),
- The sheep production is the only component of the livestock production with significant exporting potential on the EU markets. Therefore, it is of essential importance to maintain and increase the market participation by ensuring higher level of competitiveness, particularly in comparison with the regional producers from Bulgaria and Romania that are now supported as domestic producers in EU from the beginning of 2007.
- The importance of the sector for development of the high-mountainous less favourable rural areas in unemployment and poverty reduction, where the possibilities for alternative employment are extremely limited (every 400 heads of sheep provide for existence of 5-membered family, plus additional employments in the milk industry).

For achieving simultaneous increasing of both, meat and milk production, it is necessary that the basic herd is increased, which will in short-term influence on the farmers income, due to the keeping the lambs intended for meat production. Namely, the producers instead selling 75-80% of the total lamb production, they should be stimulated to keep bigger number or all the ewe-lambs. The results from keeping the ewe-lamb for increasing the core herd, may be seen in the following year by having higher number of lambs available in the slaughterhouses, and sheep meat for processing, although the first year a certain decline of the exported quantities can be expected. The financial support is provided with the purpose of reimbursing the losses of unrealized sells, and for covering partially the breeding, feed and veterinary costs for keeping the lambs.

Description of the measure

Financial support for increasing the basic sheep herd

The financial support for increasing the basic herd shall be realized through payments per kept ewe-lambs.

In order to determine the actual number of kept milking heads, the notification of the number of sheep by the farmers shall commence in October. The number declared shall be checked by a list of farmers-sheep breeders with exact number of sheep, i.e. blood samples for brucellosis analysis taken by the authorized Veterinary Stations, reporting by the MAFWE regional units, and local farmers associations, and by additional field checks by the Agricultural Inspectorate in case of discrepancies in the status.

In order to stimulate the associating of the smaller sheep farms, thus increasing their productivity, the right for making use of the support is granted to the herds with a number of at least 50 milking ewes¹⁴⁶.

Financial support for providing rams of the Württemberg and Awassi breeds

In order to improve the breed structure, support for providing rams of the Württemberg and Awassi breeds should be foreseen. The measure shall be realized through participation of MAFWE with 60% in the total cost of the ram, while the remaining amount for the provided rams shall be covered by the farmers. The planned number of rams that can be provided by the breeding centres per year is 100 heads.

¹⁴⁶ From the results analysed for the support for 2005:

Up to 30 sheep were 18% of the applications with participation of 3% from the total paid amount

30-50 were 13% of the applications with participation of 13% from the total paid amount

50-70 were 13% of the applications with participation of 7% from the total paid amount

Over 70 were 56% of the applications with participation of 85% from the total paid amount

GOAT PRODUCTION

For the purpose of providing more intensive development of the goat breeding industry (for the same reasons of sheep), it is necessary to foresee financial assistance for increasing the basic herd, for supporting goat herds of Alpine and Saanen breeds for which a control of the production features is conducted (registered in the herd books), and for the farmer's purchase of male heads for reproduction of the Alpine breed.

Aims of the support

For the purpose of providing more intensive development of this traditional and competitive branch of the Macedonian livestock industry that is in its beginning phase, and increasing the production of goat meat and milk, it is necessary that support for increasing the basic herd is enabled. Similarly as in the sheep production, the goat production should reach the level of realistic and sustainable production capacity in accordance with the available natural potential of the country in order to take advantage of the demand for goat milk and meat on the EU markets, and the possibility that this industry obtains the real meaning for the development of high-mountainous less favourable areas by reducing the unemployment and poverty in the rural areas.

Description of the measure

Financial support for increasing the basic goat herd

For realization of this measure, payment per head should be foreseen for approximately 70.000 goats per year. The beneficiary of the support shall be the goat farmers owning herds of at least 30 goats as minimum estimated size of eligible farm of this type of production.

For the purpose of determination of the actual number of kept milking heads, the notification of the number of goats by the farmers shall commence in October each year. The number declared shall be checked by a list of farmers-goat breeders with exact number of goats, i.e. blood samples for brucellosis analysis taken by the authorized Veterinary Stations, reporting by the MAFWE regional units, and local farmers associations, and by additional field checks by the Agricultural Inspectorate in case of discrepancies in the status.

Financial support to goat herds of Alpine and Saanen breeds for which a control of the production features is conducted (registered in the herd books)

With a purpose of systematic identification of herds with high quality heads of Alpine and Saanen breeds, and in accordance with the National Breeding Program for Livestock in the Republic of Macedonia in the goat industry, a continuous support to the quality goat herds is necessary, that will enable this livestock industry a continuous genetic enhance in direction of increasing the production features as well as the number of goat population.

The total amount of the financial support for registration in the herd books and conducted control over the production features on 2,000 goats of both breeds should be foreseen and intended to support the herds with at least 30 milking goats.

Financial support for providing male heads for reproduction of the Alpine breed

In order to increase the productivity in the milk production by improving the breed structure, financial resources should be foreseen. The Ministry will subsidize part (around 60%) of the resources needed for providing of purebred high milking goat breeds of the Alpine breed from the registered breeding centre, for the purpose of establishment of new farms or increasing the existing ones. This support will provide for supply of 100 goats per year.

PIG FARMING

Pork meat production should be supported to create the conditions for an increase of production, i.e. providing income support to pig farmers burdened by the high feed prices and to increase the productivity by improving the breed structure (purchase of tested boars

and sows), and gradual disappearance of the unrecorded slaughtering. In the medium term, increased pork meat production will tend to meet the needs of the domestic meat industry thus reducing the large trade deficit.

Aims of the support

The support of the pork meat production is introduced with the following aims: creating conditions for an increase of production; providing support to the incomes of the primary producers of pork meat burdened with the big influence of the high price of the feed; increasing the productivity by improving the breed structure; institutionalisation of the unrecorded slaughtering into the regular course in the process of meat processing in the slaughterhouses, and finally better possibility to meet the needs of the domestic meat industry in development and subsequent decrease of the big gross trade deficit with this product.

Description of the measures

Financial support for kept and sold minimum 5 fatteners with minimum weight of 80 kg

The support provided for selling of minimum 5 heads with minimum weight of 80 kg in the slaughterhouses capacities aims to stimulate bigger production of fatteners as a final product in the pig production and direct the producers of the household farm holdings to hand over their production to the slaughtering capacities, i.e. to decrease the slaughtering and unregistered selling of pork meat which is not in accordance with the places and conditions prescribed by the law. The financial resources should cover around 100.000 fatteners per year kept and sold to the slaughterhouses.

Financial support for kept and sold for reproduction tested boars and sows of the planned breeds

In accordance with the National breeding programme for livestock farming for the high quality tested male and female reproduction material (boars and sows), for which there is a need in the commercial pig farms. The measure is intended for kept and sold 80 boars and 200 sows, that has successfully past the performance test, to be supported.

POULTRY

The support to the poultry breeding should be focussed on strengthening of the broiler production industry, i.e. increasing of the domestic production of chicken meat which is in the early development stage and it is slowly taking its place on the market, despite the serious competition of low-priced imports. Financial support to broiler production should cover both the production of one-day broilers (currently imported, with entailing risks of entering and spreading of highly infectious diseases) and the fattening of broilers on specialised broiler farms. Support to poultry egg production should focus on the production of one-day-old chicks from parent farms, necessary for replacement of layer hens in the flocks.

Aims of the support

The support to the poultry is intended for strengthening of the broiler production industry, i.e. increasing of the domestic production of chicken meat as an industry that is in the early development stage, and it is slowly taking its place on the market, despite the serious external competition. The domestic fresh chicken meat is already recognizable by the consumers as quality and healthy domestic product, due to the increasing consumption of white meat due to the changing consumer preferences (healthy food consumption). This, as well as the fact that it is a question of a product with higher contribution in the total value of imported agri-food products provides good reasons for a more serious approach to the support of the development of this important sub-sector. Therefore financial support in the poultry industry is oriented towards measures which integrally include the process of broiler production (production of one-day broilers and fattening of broilers on specialised broiler farms).

Additionally, the support to the production system of eggs which is well developed, i.e. with a production level that exceeds the demands of the country, focuses on the production of one-day-old chicks from parent farms, necessary for replacement of layer hens in the flocks.

Description of the measure

Financial support to broiler farmers

With the aim to increase the investment capacity for expanding the production of the broiler keepers, a financial support should be provided for a projected 1.5 million fattened broilers delivered to the slaughterhouses.

Financial support for production of one-day-old broilers for the broilers industry

The production of one-day-old broilers for the broiler industry shall be supported (per sold chick) for the planned 1.500.000 chicks. The aim of the measure is to decrease the production cost of the chicks to a competitive level with the imported goods, and to provide incentive to the domestic production thereby ensuring protection against introducing diseases during imports of one-day-old chicks under conditions of increased danger of occurrence and spread of Avian influenza, and other contagious diseases to the poultry. The realization of the financial support would be in accordance with the criteria of produced and delivered one-day-old chicks to the farms for fattening.

Financial support for produced and sold one-day-old chicks from egg-producing hybrids

The financial support for promotion of the domestic production of the one-day-old chicks needed for the egg-producing industry shall influence to the prevention and protection of introducing the diseases during imports of one-day-old chicks, saving of resources needed for import of chicks and pullets, and engaging the domestic capacities. The support resources should be foreseen for the projected production of 500.000 one-day-old chicks, produced and delivered to the farms for keeping pullets.

ALTERNATIVE ANIMAL PRODUCTION

Alternative animal production that have good niche market prospects and which require limited initial investments (such as ostrich farming, beekeeping, snail production), should be promoted in the rural areas with the aim of providing additional incomes (particularly in the less favourable rural areas) and providing diversification opportunities from traditional less competitive agricultural activities.

APICULTURE

Aims of the support

Aim is to support the sustainable development of beekeeping as alternative agro-business providing additional incomes particularly in the abandoned areas, or for replacing the traditional less competitive agricultural activities.

Measure description

Financial support for provision of breeder queen

Financially, this measure foresees to support the provision of breeder queens with controlled quality of selective features, whose provision is of great interest. For this measure a total procurement of 1,000 breeder queens is foreseen per year.

Financial support for procurement of bee swarms of domestic production

Increase on the physical size of this economy branch base, i.e. increase of the current production size shall be provided by financial support for procurement of bee swarms weighting 1.2 kg. Bee swarms have been foreseen to increase the already existing apiaries by at least 10 bee families, as well as starting up new bee keepers. The measure should foresee the financial support of 50% of the market cost for procurement of 1,000 swarms.

Financial support for sown areas under honey plants

For the purpose of increasing honey production as well as enrichment of the Macedonian honey flora, it should be foreseen the financing of sown areas with honey plants as compensation on the part of the incurred costs due to the increased production and quality by bee family. About 500 ha per year should be supported.

BREEDING SNAILS

Aims of the support

Aim is to support the sustainable development of snails breeding as alternative agrobusiness providing additional incomes particularly in the abandoned areas, or for replacing the traditional less competitive agricultural activities.

Description of measure

Financial support for building new farms for snail production

Financial support (in the order of 20% of the investment) should be granted per unit area of one m² enclosed farm for snail production for minimum areas of 2 ha and this is equally referring to both the new producers and the existing ones. In order to identify the current situation of this new and insufficiently recorded productive agricultural branch, the producers who apply are required to submit complete data on their production capacities pursuant to the guidelines on implementation of the measure.

OSTRICH FARMING

Support is introduced to ostrich farming with the aim to provide incentive and increasing of the production, as prospective agri-business, with the objective to create new alternatives for additional income and employment opportunities, particularly on the abandoned areas, less favourable rural areas, and for replacement of the traditional less competitive agricultural activities.

Financial support for production of ostriches

Financial support should be granted per raised and kept chick. In order to identify the current situation of this new and insufficiently recorded producing agricultural industry, the producers that have applied are required to submit a complete data on their production in accordance with the manual for conducting the measure.

FISHERY

Aims of the support

The aim is to increase the total value of fishing waters by developing the fish ranching activity with noble offspring and fish of high value. Benefits shall be provided to both to the consumers and to the industry.

Description of measure

Financial support of open waters fish ranching

One part of the resources shall be used for financial support to carry out artificial spawn of Ohrid trout and fish ranching of Ohrid Lake with raised offspring. The other part of the resources shall be used for support of ranching fishing parks with offspring of appropriate types of fish, as well as ranching of Dojran and Prespa Lake with raised offspring of hot waters types of fish. It has been suggested the ranching of the fishing waters to be carried out by ranching material which is produced in the fish breeding ponds of Macedonia. The noble type of fish (*Stzostedion lucioperka* - Smu], *Hypophthalmichthys nobilis*, *Hypophthalmichthys molitriks*) which are foreseen to enter fishing waters in order to increase

the productive effects and the total production, and which are impossible to be provided with offspring, shall be imported from abroad.

3.4. Rural Development Policies

The process of European integration in Macedonia has been supported from 2000 – 2006 by the European Union through the CARDS (Community Assistance in Restructuring, Development and Stability) program funding. From 2007 onwards the European Union has introduced a new financial Instrument for Pre-accession Assistance (IPA)¹⁴⁷, with a financial envelope of € 11.468 million which will cover the period 2007–13. IPA includes four components, namely

- (a) Transition assistance, institution building (and linked investment) actions related to the Acquis communautaire, as well as actions supporting beneficiary countries to comply with the criteria defined by the Copenhagen European Council of June 1993.
- (b) Cross-border co-operation.
- (c) Regional Development and Human Resources Development, and
- (d) Rural Development (IPARD) that has the objective to help candidate countries prepare for post-accession EU-funded rural development programmes, by implementing pre-accession assistance through systems which are as similar as possible to those required after accession. The provisions under this component mirror those of Rural Development for Member States, with the necessary adaptations. The scope of the rural development component includes a number of actions among those eligible under the Rural Development Regulation for Member States, so as to achieve the operational objective of contributing to the sustainable adaptation of the agricultural sector and rural areas in beneficiary countries.

Rural Development policies in Macedonia (to be funded by both national funds or by IPARD) shall contribute to achieving the following objectives:

AXIS 1 - Improving market efficiency and implementation of EU standards;

- Measure 1: Investments in farm to restructure and upgrade to the EU standards;
- Measure 2: Support for the setting-up of producer groups;
- Measure 3: Investments in processing and marketing of agriculture products to restructure and upgrade to the EU standards.

AXIS 2 - Preparatory actions for implementation of agri-environmental measures and local rural development strategies;

- Measure 4: Actions to improve the environment and the countryside;

AXIS 3 - Development of the rural economy.

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

AXIS 4 – Technical Assistance.

- Measure 7: Technical Assistance, information and publicity campaigns.
- Measure 8: Vocational educational and training.

The list of measures and sub-measures presented in the following sections and their earmarking for national or IPARD co-financing is necessarily tentative, as their final prioritisation and selection, as well as their allocation to the different funding sources has to be determined by the MAFWE (and the IICB) and ultimately stipulated in the IPARD Plan,

¹⁴⁷ Council Regulation (EC) 1085/2006 of 17 July 2006 Establishing an Instrument for pre-Accession Assistance (IPA)

which has to be agreed with the EU Commission Services, and depends on the available national and EU resources available.

3.4.1. AXIS 1 - Market efficiency and implementation of EU standards

Measure 1: Investments in farm to restructure and upgrade to the EU standards

Objectives: (a) Restructuring/modernization of farms; (b) Achieving conformity with EU quality and hygiene standards; (c) Improving storage and management of products; (d) Improving animal welfare; (e) Improving waste management, and (f) Promote environmentally sound farming

Sub-Measures funded by National Funds are the following:

SUB-MEASURE: Investments on cereal and industrial crops

Eligible productions: cereal (all), industrial (tobacco, sunflower, oilbeet, sugarbeet and fodder crops)

Description: Purchase of soil working, seeding, harvesting and transport agricultural machinery and equipment including software commensurate with the size of farm; purchase and installation of on-farm (water saving) irrigation equipment; construction and purchase of on-farm processing and packing equipment; construction of storage facilities, construction and modernization of greenhouses and specialized equipment for microclimatic control and software; construction of storage facilities, drying facilities and equipment commensurate with farm size.

SUB-MEASURE: Investments on aquaculture farms

Eligible production: Fish

Description: Eligible expenditures could be the renovation of existing trout aqua-culture production facilities (including the recycling of by-products or production waste, and the elimination and/or treatment of waste), the purchase and installation of equipment for transport to, and storing of fresh fish, in markets (including cooling, ice production for storage and freezing), as well as improvement of HACCP, quality and packaging.

Sub-Measures funded by IPARD public funds (National + EU) are the following:

SUB-MEASURE: Investments on orchards and grape production

Eligible productions: Fruit, vegetable and grape production

Description: Planting and grubbing-up and replanting of specialised perennials (orchards, vineyards and berries) using high quality rootstock and varieties (hybrids excluded in grapes); purchase of specialised agricultural machinery and equipment for orchards and vines, including software; purchase and installation of on-farm irrigation equipment (which enables water saving); modernisation of greenhouses and of specialised equipment for microclimate control and software; construction of storage facilities for inputs; purchase of on-farm processing and packing equipment, including software; establishment of controlled nurseries for certified perennials.

SUB-MEASURE: Investments on livestock farms

Eligible productions: Cattle, sheep and goats (meat and milk), pigs, poultry (meat)

Description: Construction and modernisation of premises for raising and fattening of animals and storage facilities for fodder and feed; equipment and machinery for feeding, watering, clearing the manure, ventilation, milking (including mobile), on-farm cooling equipment, equipment for fodder processing; loading/unloading equipment and specialised transport; building of manure and septic pits; setting up filters and places for disinfecting, insemination points; equipment and disposal for environmentally friendly production including for purification of water for pig and poultry breeding farms; build and equip milk collection points, including raw milk quality grading equipment, applied for by recognized producer groups; cooling tanks, tanks for pasteurisation of milk and production of on-farm dairy products with capacity consistent with farm capacity; farm mechanisation, suited with milk and meat production, specialised equipment, including software.

Measure 2: Support for the set-up of producer groups

Introduction of the Common Market Organisations concept. Strategic is the need for the Law for introduction of market organisations (producer organisations PO's) for agriculture products should be prepared, harmonised to EC Regulation 2200/96. So far, the Ministry of Economy is in charge of the issues related to the internal market including the establishment of CMOs and export promotional activities. This should be changed and MAFWE should become the competent authority for all issues related to establishment of CMO for fresh fruit and vegetables and CMO for processed fruit and vegetables.

Producer organisations (PO's) are the key element of the CMO. Therefore it is necessary to implement the EC legal provisions on producer organisations as soon as possible in Macedonian legislation in order to start the recognition process. It should be incorporated as a legal provision or separate legal act on the terms and conditions for recognition of producer organisations in the fruit and vegetables sector.

Objective: Establishment and strengthening of crop and livestock producer organisations

Measure funded by National Funds is the following:

MEASURE: Support to the set-up of producer groups

Eligible production sub-sectors: Crop and livestock producer associations

Description: Financial support is granted to recognised crop and livestock producer associations for the first four years after establishment at a digressive annual flat rate. Eligible for recognition are producer groups (legal entities) which establish mandatory common rules, stated in annex to the statutes and countersigned by all members, which concern joint production (in particular use of breeds, sorts, inputs, cultural practices, etc.), sorting and manipulation, packaging and marketing of production, and production information (in particular on harvest, stocks and sales). Eligible for recognition shall be producer groups that have a minimum number of members (that can be different for the different crops or livestock productions), and have a minimum joint marketed production or a minimum area both determined for each of the different crops or livestock productions.

Annual aid shall be determined as a percent of the value of the annual marketed production and shall amount for the first, second, third and fourth years to a digressive annual percent of the value marketed production up to a certain maximum ceilings to be determined. The payment of the first instalment shall be made one year after the date of signature of the contract for financial support with the paying agency.

Measure 3: Investments in processing and marketing of agriculture products to restructure and upgrade to the EU standards.

Objectives: (a) restructuring/modernization of processing capacities; (b) achievement of conformity with EU quality, hygiene and food-safety standards; (c) improving the efficiency (d) improving market access and market share on domestic and external markets, and (e) introduction of environmentally friendly technologies.

Sub-Measure funded by National Funds is the following:

SUB-MEASURE: Improving the processing of products of plant origin

Eligible sub-sectors: Wine production

Description: renovation or improvement of wineries; purchase of equipment for improvement of hygiene; for by-products recycling and treatment of solid and liquid waste; laboratories and equipment to improve product quality control; setting up HACCP and ISO quality management systems.

Sub-Measures funded by IPARD public funds (National + EU) are the following:

SUB-MEASURE: Improving the processing of products of plant origin

Eligible sub-sectors: fresh fruit and vegetable primary manipulation and packaging:

Description: Renovation or improvement of fresh products sorting, storing, cooling, deep freezing, packaging, labelling for cooperatives, producer groups and SME's, purchase of equipment and installations for by-products recycling and treatment of solid and liquid waste; setting up HACCP and ISO quality management systems.

Eligible sub-sectors: Fruit and vegetable processing

Description: Renovation or improvement of processing plants; purchase of new technologies for storing, cooling, deep freezing, drying, dehydrating and packaging and equipment for the improvement of hygiene and product quality including laboratories; purchase of equipment and installations for by-products recycling and treatment of solid and liquid waste; setting up HACCP and ISO quality management systems.

SUB-MEASURE: Improving the processing of products of animal origin

Eligible sub-sectors: Cattle, Sheep and Goats (meat and milk), pigs and poultry (meat)

Description: In the **dairy sector:** milk storing and transport machinery/equipment (collection points cooling tanks, raw milk quality grading equipment, bulk milk tankers, cold chain for retail distribution); modernisation of dairy processing establishments. Setting up a system of quality management (ISO 9000), purchase of equipment for improvement of hygiene, product quality and packaging; solid or liquid waste treatment, recycling or elimination plants for environmental protection; laboratories and equipment to improve and control the product quality (HACCP, ISO 17025).

In the **meat sector:** vehicles for transport of live animals for slaughter and finished products to retail distribution; renovation of slaughterhouses and meat processing establishments; investment for providing hygienic and animal welfare conditions of slaughterhouses, improving the storage of finished products (construction and equipment of freezing and cooling facilities). Setting up a system of quality management (ISO 9000), purchase of

equipment for improvement of hygiene, product quality and packaging; solid or liquid waste treatment, recycling or elimination plants for environmental protection; laboratories and equipment to improve and control the product quality (HACCP, ISO 17025).

3.4.2. AXIS 2 - Agri-environmental measures and local rural development

Measure 4: Actions to improve the environment and the countryside

Objectives: (a) Maintenance of indigenous breeds endangered of being lost to farming, (b) expansion of organic farming; (c) protection of soils and water from pollution and other agriculture related degradation.

Sub-Measures funded by National Funds are the following:

SUB-MEASURE: Maintenance of indigenous breeds endangered of being lost to farming

Eligible sub-sectors: Cattle, sheep and goats and pigs.

Description: Direct financial support (per head of animal) to farmers keeping indigenous breeds of cattle (Busha Breed), sheep (Ovce Pole, Shar Planina) goat (Balkan breed) and pigs (local breed); support to farmers pay the ILS annual certification of the breeds. Around 2,000 Busha Breed, 3,500 Ovce Pole and Shar Planina Sheep, around 1,000 Balkan breed goats and around 1,000 local pig breed will be maintained.

SUB-MEASURE: Maintenance of local landraces

Eligible sub-sectors: vegetables, cereals, industrial crops, fruits, vineyards

Description: Direct support to growers that will maintain on-farm traditional landraces (jabuchar, dolga zolta, volovslo srce, kavardzik), per hectare. Support conservation activities for ex-situ collections.

SUB-MEASURE: Collection and cultivation of endangered species of MAPs

Eligible sub-sectors: medicinal and aromatic plants (MAPs)

Description: Direct support to farmers that will cultivate medicinal and aromatic plants MAPs (sage, menthe, oregano, mountain tea, thymus, gentian etc), per hectare.

3.4.3. AXIS 3 - Development of the rural economy

Measure 5: Development and diversification of rural economic activities

Objectives: (a) Development of non-farm business activities, and (b) Development of rural tourism activities

Sub-Measures funded by IPARD public funds (National + EU) are the following:

SUB-MEASURE: Support to non-farm business activities.

Eligible sub-sectors: Handicrafts and micro-enterprises, garden centres, wood-processing, silkworm breeding and processing, horse breeding, mushroom production, herb collection, essential oil cultures processing, tourist business (excursions, cultural-historical guiding, trekking, kayak, caves, etc).

Description: Establishment, modernisation and expansion of existing businesses through construction or reconstruction of production facilities/workshops; refurbishment and furnishing of retail sale and promotional stands for produce; purchase of special transport, storage, processing and packaging equipment, machinery and tools.

SUB-MEASURE: Support to rural tourism activities.

Eligible sub-sectors: Rural Tourism (Agro, Eco, Eno-gastronomic, Hunting, Cultural, and Ethno-village)

Description: Construction, renovation and/or expansion of existing of traditional buildings in function of rural tourism; renovation of existing buildings of historical and cultural heritage value, privately or municipality owned; construction recreation facilities supporting rural tourism (camping and picnicking sites, wine routes, hiking and mountain biking trails, signalisation; horse-riding, sports fishing and other outdoor sports facilities; establishment of public gardens, etc); promotional activities for rural tourism including the creation of multipurpose rural tourism centres; creation or modernization of controlled game protection areas (i.e. tourist accommodation facilities, outdoor facilities, non-intensive wild game breeding and hunting).

Measure 6: improvement and development of rural infrastructure

Objectives: Improvement of living and working conditions in rural areas

Sub-Measure funded by IPA public funds (National + EU) are the following:

SUB-MEASURE: Support to rural infrastructure.

Eligible sub-sectors: Rural technical and social infrastructure.

Description: Investments in social and technical infrastructure (rural roads, sewage and water supply systems, information and communication technologies, use of renewable sources, etc.)¹⁴⁸.

3.4.4. AXIS 4 - Technical Assistance

Measure 7: Technical Assistance, information and publicity campaigns.

Objectives: (a) preparing effective and monitorable measures; (b) ensuring information flow and publicity campaigns; (c) upgrading capacities, and (d) provision of technical expertise.

Sub-Measure funded by IPARD public funds (National + EU) are the following:

MEASURE: Technical assistance, information and publicity campaigns

¹⁴⁸ The Inter-Institutional Coordination body for rural development should plan, prioritize and define the interventions.

Eligible sub-sectors: All sub-sectors

Description: activities related to the preparation, monitoring, evaluation, information and control activities which are necessary for the implementation of the programme. These activities shall include in particular the:

- (a) meetings and other activities necessary to discharge the responsibilities of the sectoral monitoring committee for this component, such as studies contracted and realised via expert assistance;
- (b) information and publicity campaigns;
- (c) translation and interpretation at the request of the Commission, not including those required pursuant to the application of the framework, sectoral and financing agreements;
- (d) visits and seminars;
- (e) activities related to the preparation of measures in the programme to ensure their effectiveness, including those measures whose application is foreseen at a later stage;
- (f) interim evaluation of the programme;
- (g) establishment and operation of a national network to coordinate activities developed under Article 178 as well as of a future national rural development network consistent with Article 68 of Council Regulation (EC) No 1698/2005.

Measure 8: Vocational Education and Training.

Objectives: Upgrading of knowledge and skills in technical, commercial and economic issues.

Sub-Measure funded by IPARD public funds (National + EU) are the following:

SUB-MEASURE: Training program for farmers (crop and livestock), processing managers.

Eligible sub-sectors: Crop and livestock

Description: Continuous training programme to educate new (young) and existing crop farmers and breeders, and milk, meat, fruit and vegetable processing plants managers on technical (including agro-environmental), and management (including financial) skills, and chain integration¹⁴⁹. Training shall contribute to the improvement of the occupational skills and competence of persons engaged in the agricultural, food, and forestry sectors and other economic actors.

3.5. Legislative Harmonisation and Institutional Reform Policies

Agriculture and rural development are among the most demanding fields in Macedonia's process of accession to the European Union in terms of legislative harmonisation and of institutional reform. The EU Requirements administrative structures that need to be established in Macedonia to ensure the free flow of goods and the implementation and control of the European Union Common Agricultural and Rural Development Policies are as follows:

Veterinary sector, plant protection and animal nutrition.

¹⁴⁹ This measure shall be funded by IPA, and the Inter-Institutional Coordination body for rural development should plan, prioritize and define the interventions.

EU legislation in this field aims at facilitating the internal and foreign trade in veterinary sector, plant protection and animal nutrition and at the same time protects the public health, animal health, and animal welfare and meets the expectations of consumers.

Apart from the harmonisation of Macedonian legislation with the EU *acquis* the main precondition for enlargement of the common market in this field is having an adequate and trained administration. This requires a functioning system of controls at the place of origin, non-discriminatory controls during transport, in final destinations and external borders and a satisfactory laboratory control system. Implementation of *Acquis Communautaire* in this field requires the following administrative capacity:

- The designation of national competent authorities in the veterinary and animal nutrition sectors (Veterinary Directorate of MAFWE) and plant protection (Phytosanitary Directorate of MAFWE) and quality of seed and planting material (Seeds and Seedlings Directorate), which shall be responsible for securing adequate implementation of legislation in these fields, with staff adequate in number and qualifications and adequate resources (Directive 89/662/EEC and Directive 2000/29/EC).
- Adequate budget, including the emergency fund for disease control.
- Adequate administrative instructions for staff as well as contingency plans.
- Official veterinarians designated by the competent central veterinary authority for border controls, control of establishments and issuing of health certificates (Directive 96/93/EC), and for control of imported animal feed and substances for animal feed (Directive 95/69/EEC and Directive 95/53/EC) who have access to adequate laboratories, including equipment, as well as the satisfactory laboratory diagnostic system.
- Official phytosanitary inspectors, designated by the competent authority for control of inland establishments or imports of plants or plant products (Directive 2000/29/EC), and for control of the quality of seed and planting material, and of Plant protection Products (Council Directive 91/414/EEC) who have access to adequate laboratories (testing of health condition of plants and testing of the quality such as purity, germination, etc.).
- Official food inspectors for control of food production establishments (MoH and MAFWE), and for control of foodstuffs placed on the market (MoH), who have access to adequate laboratories.
- Comprehensive control of establishments for the purpose of meeting the conditions laid down by EU legislation and hence protection of the animal health, public health, plant health and quality;
- Competent veterinary authority responsible for animal identification and for registration of holdings and movement control, including the databases;
- Competent phytosanitary authority responsible for registration of subjects;
- Intranet connecting the veterinary authorities within the country; external animal movement control system (ANIMO); and system of notification on animal diseases (ADNS);
- Comprehensive residue control program and access to adequate laboratories;
- Zoonoses control program;
- Surveillance and monitoring programs;
- The right to appeal and dispute settlement;
- Efficient organization of keepers capable of keeping the central registry in livestock breeding under control of competent authorities;

- Registration of producers and official testing of seed and planting material done by national control bodies.

Agricultural markets

Implementation, management and control of the Common Agricultural Policy require the development and strengthening of adequate administrative capacities.

a) Administration explicitly required by the Acquis communautaire

(i) Horizontal structures

Administration necessary for CAP financial flows management under EAGGF Guarantee Section has to meet certain requirements.

- The Paying Agency has to be accredited in compliance with the rules of the Community (Council Regulation No. 1290/2005) and has to be capable of providing adequate guarantees that:
 - Acceptability of the application and conformity with the rules of the Community are checked before granting the payment;
 - Payments are done correctly and are completely registered in the accounts;
 - Documents required are submitted within the period and in the form set by the rules of the Community;
 - It must keep records that justify the payments made and that state in detail the administrative and physical control carried out;
 - Macedonia must notify the Commission of the body responsible for issuing and withdrawal of accreditation of the paying agency – certification body (Commission Regulation 1663/95).
- An Integrated Administration and Control System (IACS) must be established and consist of (Council Regulation 3508/92):
 - Computerized database;
 - Alpha-numeric system of identification of agricultural parcels;
 - Applications for assistance;
 - Integrated control system;
 - Animal identification and registration system;
 - Relevant registers of farms, land and animals;
 - Administration for efficient implementation of registration and identification plans.
- For the purpose of implementation of Acquis Communautaire in FADN (Farm Accountancy Data network, Macedonia must establish a Liaison Agency, which, among other things, has to:
 - Be capable of developing a plan for selection of holdings from which data would be collected and to report on implementation of the plan,
 - Verify the data from farms.
- Macedonia must establish a national committee for data networks, responsible for selection of holdings from which data are collected. The committee must meet the conditions laid down by the Council Regulation 79/65/EEC and particularly:
 - Be capable of approving the plan for selection of holdings from which data would be collected and to report on implementation of the plan;
 - Abide by the rules laid down in the legislation for appointing of the president of the commission and decision making.

(ii) Administration necessary for organization of the common market/special sectors

- Agencies and intervention centres necessary for making interventions and setting aside products in a number of sectors. Separate agencies for separate sectors can be established or one body can be established. Depending on the specific characteristics of specific sectors, they must be capable of carrying out the tasks such as:
 - Regular monitoring of markets and prices;
 - Buying, public storing, sale and control of stocks in establishments issued with licences in compliance with EC standards;
 - Implementation of the system of control of use of intervention products;
 - Other tasks and requirements specific for the sector that are described in detail in Commission Regulations (EC) 824/2000, 2131/93 and 2273/93.
- Use of instruments of Procurement Management in EC in some sectors requirements special administration forms, for example authorized buyers (dairies) in the dairy sector (Commission Regulation (EEC) No. 536/93). They have, for example:
 - Keep detailed records on stocks and registers prescribed;
 - Have their premises in the member state concerned where records on stocks, registers and other documents can be checked.
- In a number of sectors, Acquis communautaire lays down precise rules for Producer organizations. Thus, for example, in the fruit and vegetable growing sector, producer organizations, among other things, have to (Council Regulation 2200/1996):
 - Be established on free initiative of producers of certain product
 - Have rules of association that are in line with the rules laid down by the Regulation;
 - Enable its members to get technical assistance in implementation of ecologically acceptable growing practice,
 - Have a minimal membership and cover the minimal production volume that can be marketed.
- In the wine production sector, authorized distilleries, are required, which must be capable of carrying out detailed tasks as laid down by the Acquis communautaire (Commission Regulation 1623/2000) including:
 - Specific requirements regarding the payment of purchase price to producers,
 - Issuing of the certificate on delivery,
 - Reporting to the Intervention Agency on quantities of distilled products.
 - Establish the Vineyard registry.

b) Administrative structures not explicitly mentioned

The necessary administrative structures are not always stated in the Acquis communautaire. In many cases, there are terms such as “competent authorities” when the required administrative structure is referred to. It means that it is left to every member state to freely decide which of institutions is responsible for efficient implementation of the Acquis communautaire. In practice, in most cases it is the Ministry of Agriculture or the MAFWE designated competent authority (agency or department). However, functions that member states of EU have to have capacity to carry them out through administrative structures they form are clearly stated in the Acquis communautaire. Key functions to be carried out by administrative structures include:

(i) Horizontal structures

- Use of mechanisms of the common market organization that manage the trade with third countries. These administrative structures (MoE, MoF, Customs Directorate and MAFWE) must be capable of carrying out the tasks that include:
 - Management over export refunds for the purpose of covering the difference between prices in the EU and lower prices in the world and export levies,
 - Issuing of export/import licences,

- Management of tariff quotas,
- Use of the export control system etc.
- Use of relevant rules of the Customs Code of the community.
- Macedonia also has to efficiently meet the requirements of statistical elements of the Acquis communautaire. The State Statistical Office and the relevant statistical unit of the MAFWE (to be established) must be capable of taking part in:
 - Agricultural census,
 - Surveys on the agriculture structure
 - Farm Income Survey - FIS
 - Requirements as regards collecting of data specific of the sector in question, for example, areas and yields of crops.
- MAFWE must also have administrative structures for efficient implementation of the legislation of the community in the field of Organic farming. The designated competent authority must be capable, among other things, of carrying out the following tasks:
 - Administrative tasks such as registration of specific reports presented by producers;
 - Establishing of the system of surveillance and control;
 - Use of effective enforcement measures.
- Implementation of the Community legislation in the Quality policy. The designated competent authority (MAFWE) must be capable of, among other things, carrying out the following tasks:
 - Check whether the application for geographic indication, indication of origin or certificate on special feature is justified or not.
 - Ensure that approved inspection structures are in place.

(ii) Administration necessary for organization of the common market/special sectors

- Use of instruments of supply management in EC, such as production quotas for sugar, dairy and milling industry.
- MAFWE must have the necessary administrative structures in order to be able to implement the classification of carcasses and reporting on prices of livestock, cattle, for example (Council Regulation 1208/81 and 1186/90).
- MAFWE should start preparing for implementation and enforcement of the special rules of the common market organizations for specific sectors that relate to free circulation of agricultural products capable of ensuring:
 - Observance of different standards of sale, classification by size and packaging,
 - Observance of the rules on labelling (for example in the viticulture and beef sectors), analyses, controls and monitoring.

Macedonia should focus on the preparations for meeting these requirements and focus on institutional building within the public sector. Nevertheless, private sector must make improvements in production, processing and marketing and to develop producer organizations in order to strengthen the competitiveness of the food production sector. Gradual introduction of marketing standards, presentation rules and product labelling should take place, as well as observance of standards in the field of public health and environmental protection.

Rural development (Council Regulation (EC) 1698/2005)

a) Administration that is explicitly required by Acquis communautaire

In rural development, the only and the most important administrative structure is stated in the Acquis communautaire. Macedonia must establish the Monitoring Committee for the purpose of evaluation of efficiency and quality of implementation of rural development program. The

Committee must meet the requirements presented in the Council Regulation 1698/2005, including among other things:

- That it is established in agreement with authorities following the consultations with partners (who are to promote equal participation of men and women);
- That a representative of the Commission takes part in activities of the Committee in the capacity of advisor and
- To develop its own rules and procedures under the institutional, legal and financial framework of the country concerned and to agree these rules with the authorities.

b) Administrative structures not stated

The only obligatory Acquis communautaire in rural development are the agro-ecological measures. Beyond that, Macedonia can decide whether or not it would use the relevant EU provisions in according to its conditions and needs. That is why Macedonia is obliged to establish and maintain administrative structures only for the measures it implements.

All the administrative structures established must be capable of ensuring full observance of the strict EC rules on implementation of rural development measures. MAFWE has been designated by the Government to be the competent authority for rural development.

The implementing administrative structures (Department for Rural Development and Inter-Institutional Coordination Body) must be capable of carrying out the following functions:

- Identification of structural needs in rural areas;
- Development, implementation and management of rural development programs;
- Control of financial flow and measures implemented;
- Monitoring, reporting, control and evaluation of programs and individual actions.

In order to carry out these functions, the established administrative structures have to fulfil the requirements of EU legislation. That is why, among other things, they must be characterized by:

- Participation of all social partners,
- Participation of regional and local authorities and other competent state authorities,
- Observance of the section rules on guidance and/or guarantees

Conditions for implementation of Community legislation in the sector of fisheries are similar – it requires adequate administration for efficient implementation of the Community rules as regards market economy and resource management (protection of fish stocks), inspection, control and enforcement.

The MAFWE plans to implement in 2007-2013 a comprehensive institutional reform program encompassing the following priority actions:

Delineation of shared responsibilities with other Ministries and Government bodies.
--

Results

Clarified competencies of MAFWE which overlap with other executive bodies of the Government for the purposes of development of integrated approach in the planning of the development of the primary farming and processing from the aspect of production, marketing, food safety, development of rural areas and management and protection of the natural resources in the part of:

- Food (processing of agricultural products, CMOs, marketing and regulation of internal markets, external trade with food products) with the Ministry of Economy, Food Directorate (Ministry of Health),
- Food safety with the Food Directorate within the Ministry of Health (shared with the Veterinary department of the MAFWE)
- Agri-environment, protection, marketing and promotion of natural resources (water, soil and forests) with the Ministry of Environment and Spatial Planning,
- Establishment of Information Systems, statistical research, exchange of information, agriculture census etc. with the State Statistical Office,
- Planning of the education policy, research and training in agriculture with the Ministry of Education and Science.

Activities

1. Establishment of inter-ministerial inter-sector working groups for the analysis of the problems with the competencies for more efficient execution of the role of the public service in the given areas of which a part will continue to function as permanent Committees with a clear mission and approved by the Government for organizing inter-institutional relationships, defining of the rules for cooperation and coordination of various issues of common interest;
2. Planning of restructuring (financial, organizational, human resources, legal changes) and possible delegation of powers.
3. Establishment of a Government working body for defining of the possible measures for the settling of the existing situation (via delegation/clear division of the powers, establishing efficient cooperation, rationalization of the services/ departments etc.) and defining of the necessary changes in the existing laws;
4. Implementation of the new proposed structural and organisational solutions;

Legal Implications

Changes in the Law on the state administration bodies, Law on internal organization of the organs of state administration and Internal acts of the Ministries. Possible changes in the Legislation in the field of the internal market, food safety and environment and deletion of provisions from the existing laws and their amendment (harmonized with National programme for adoption of the EU legislation)

Horizontal and vertical re-organisation MAFWE sectors at central and regional level,

Results

Established functional structure according to the needs for the newly clarified responsibilities under the EU harmonization process.

Activities

1. Horizontal reorganization by establishment of new organizational parts for secretarial support
 - Department for analysis of the land policy and agriculture information system, to conduct analyses for policy formulation in agriculture and rural development, support project design, elaboration of fiscal implications of the policy options and legal approximation, support to the establishment of the AIS and enabling an organised

approach in the information flow, as well as involvement in advisory services, research, education and training,

- Secretariat for administration that will include the newly established Department for human resources and budget planning, as well as the already existing departments and units for common and general issues (legal department),
- Assessment of the efficiency and changes of the internal procedures (especially common services for budget planning, accountancy and internal audit),

2. Vertical reorganization connected with the changes in the status of the institutions and organizations within and under MAFWE:

- Establishment of a Paying Agency
- Agroberza – restructuring of the institution,
- Seeds and Seedlings Department - merging with the department for plant protection,
- Inspectorates - strengthening of the State Agriculture and other Inspectorates (veterinary, phytosanitary, forestry and water economy) in terms of additional human resources, equipment and training in order to achieve adequate and quality inspections in accordance with European good practice (as a part of the capacity building for IACS) and rationalization of resources of different inspectorates by unification of their capacities in a single MAFWE Inspectorate.
- State Phytosanitary Laboratory – strengthening of the capacity of the State phytosanitary laboratory, regarding additional human resources, equipment and training and defining of the relations and competences with the Phytosanitary Directorate, Seeds and Seedlings Directorate and the relevant inspection services. The aim is to enable an efficient phytosanitary control and protection against spread of harmful organisms with plants, quality control of pesticides and quality control of seeds and seedlings.
- Department for management of farming land and pastures to set and implement efficient measures for land policy for purposes of creating an operational land market (especially state-owned market), pastures management in RM and organization of the establishment of the system of registration of the land parcels (Land Parcel Identification System),

3. Regional MAFWE offices – carry out an institutional analysis to redefine their position, capacities and responsibilities in view of the objectives of the rural and agricultural policy, of changes in the competencies of the National Extension Agency, of introducing a regional approach for the rational use of resources and increased efficiency of MAFWE activities.

Legal implications

- Amendments in the Law on administration organs, Law on internal organization of state administration organs and internal acts of the Ministry regarding formulation of the internal procedure of operation,
- Possible amendments to the Laws in the domain of the internal market, food safety and environment,
- Enactment of laws for annulment of the Law for the institutions that are non-existent.

Establishment of Paying Agency

Results

Established operational Payment Agency, accredited by mid 2008, for performance of the payments, control and audit of the realization of national policies (agriculture support program and rural development measures) and IPARD rural development measures.

Activities

MAFWE's priority activities (2007 and onwards) regarding introduction of integrated rural development approach accompanied with institutional capacity development have to be focused to the:

- Establishment of the Inter-Institutional Co-ordination body (IICB) for Rural Development policy, planning and monitoring (proposed members are MAFWE, MoF, MoE, MLSG, MoC, MoLSA, MoES, MoESP, MoTC, and SEA).
- Development the IPARD Plan and ensure its adoption.
- Ensuring the necessary national co-financing¹⁵⁰ for the 2007-2010 period.
- Appointment of the IPARD Monitoring Committee.
- Establishment and national and EU accreditation of the Paying Agency which will manage the national schemes (agricultural support, rural development program and agro-environmental program) and IPARD measures.

Legal implications

Enactment of Law on establishment of IPARD Agency, Decision for establishment of inter-institutional coordination body, enactment of numerous internal procedures and methodology of disbursement, control and monitoring.

Enhancement of the human resources

Results

Overcome the extremely poor capacity – human resources in MAFWE both in terms of the quantity and in terms of the professional staff potential in particular in the key positions for execution of the complex tasks in the upcoming period.

Activities

1. Situation analysis in the existing human capacities and skills for the purposes of enhancement of the existing capacity,
2. Define the optimum organizational structure (including defining of the work tasks) on the basis of the defined strategic directions for implementation of the planned reforms in the sector and under the MAFWE,
3. Assign staff at the needed work posts on the basis of clear criteria for skilfulness, professionalism and dedication to the work of the key posts for the existing and newly established organizational units: human resources, Analysis and AIS, design and management of projects, EU integration, Department for land policy,
4. Preparation of a plan for training and additional training – of the existing staff and the new employees,
6. Implementation of training and additional training.

Legal implications

¹⁵⁰ National co-financing is 25% of EU funding.

Changes in the internal acts of MAFWE-systematisation and formulation of appropriate procedures for implementation of the training.

Establishment of an Agricultural Information System (AIS)

Results

Established subsystems of the integrated AIS: National farm accountancy data network (FADN), Agriculture Market Information System (MIS), appropriate and reliable agriculture statistics (including support to the Economic accounts for agriculture) and integration of registers (Farm register, Animal Identification and Registration-I&R, Vineyard Monitoring and Management System- VMMS, users of direct support, LPIS, and eventually the Agro-environment information system) into an Integrated Administrative Control System (IACS).

Activities

1. Drafting of an IT strategy – guiding document for establishment of Integrated Information System of MAFWE (intranet + internet) in accordance with the IT Strategy of the Government,
2. Reaching an optimal IT equipment in MAFWE for the flow of information and appropriate accessibility levels
3. Establishment of National Farm Accountancy Data Network - 'Macedonian FADN' (Farm Accountancy Data Network), which includes enactment of an appropriate legislation, appointing an institution for data collection, Liaison Agency and National Committee for FADN/AIS with defined rules and procedures for cooperation, financing and exchange of information,
4. Establishing an Agriculture Market Information System (AMIS) consisting of reporters for the quantities and prices of the traded farming products and system of reception and analysis of data,
5. Defining of the role and the contribution of MAFWE in the preparation of Economic Accounts for Agriculture-EAA and the remaining agriculture statistics, participation in the statistical research, as well as capacity building and analyses of these data in close cooperation with the State Statistical Office,
6. Maintenance and integration of various registers /data bases including GIS applications (agri-environment information system, farmers register – per type of farming, farming parcels, livestock (Animal Identification and Registration-I&R, Vineyard Monitoring and Management System- VMMS), cadastre of areas – vineyards, users of direct support, etc.) in a sole IT system of MAFWE on the level of farm with standardized procedures and methodologies of management, approach and exchange of data supported by appropriate software and hardware capacity,
7. Reorganization of WEB page of MAFWE for a complete transparency and simplification of procedures and access to information and forms for the interested users.

Legal implications

Drafting legislation in the part of the farm accountancy, for introduction of systems, management with information and stimulation for participation in establishment and work of the sub-systems of AIS and amendments of the secondary and internal acts.

Creation and transfer of knowledge

Results

Improved operational links between research/extension/farmers (including feedback) and MAFWE, and capacity to transfer of the technical –technological achievements to farmers as well as improving of the quality of services to support of the upcoming reforms in the process of the EU negotiations

Activities

1. MAFWE to establish a National Committee for creation and transfer of knowledge covering research/extension/training/education (members MAFWE, MOE, Public Scientific Institutions and University, NEA, private advisors and farmers/processors), to coordinate the planning and supervise implementation of the agreed programs and activities.

2. The Advisory services – National Extension Agency (NEA)

- Positioning of NEA as a separate institution (second level budget user) according to the needs in the implementation of reforms and the new agricultural and environmental policies. The links with MAFWE should be close, mutual and functional, but not subordinated, and there should be a clear distinction in the provision of the government programmes

- Plan and implement an organisational and functional restructuring of NEA to increase work efficiency and introduce assessment procedures.

- Prepare a long term strategy for NEA.

- The Government enacts a programme on provision of individual public service that should be realized by NEA, defining the type and scope of services, method and dynamics of their provision/ implementation, scope and method of provision etc. That is needed because of the inter-sectoral character of the services provided.

- Plan and implement training programs to increase technical and business (including marketing) skills of the advisors and establish a certification system for advisors.

3. Research

- prepare a multi-annual research programme with PSI/Universities in line with the strategic directions for agriculture and rural development,

- Support the preparation of a code for Good Agricultural Practice/Cross Compliance, and the establishment of systematic monitoring program for soils, surface and groundwater and biodiversity.

- Enhance the capacity of public health institutes for participation in the seventh European Research Framework of EU - FP7,

- Support in the accreditation of reference laboratories for plant and animal health under the competence of MAFWE.

4. Education

- Propose an update of secondary and higher education curricula in accordance with the technological and market progress and needs of the Macedonian agriculture and favour inter-disciplinary studies for rural development and European agriculture policies.

5. Training

- Development of a system for permanent life-long learning, additional training and pre-qualification of farmers and other stakeholders with the support of training and education institutions selected through public tendering. Technical, economic, market, business management, on-farm conversion (production shift) and off-farm diversification (non agricultural activities).

Legal implications

Amendments to the internal acts of the research institutes and educational institutions
(possible change in the Law on Research - Scientific activity)

3.6. Budgetary resources for agriculture and rural development

In 2005, overall public expenditure in agriculture was € 28.3 million or around 1.7% of the total Government budget¹⁵¹ which is low if compared to the contribution of the sector to the national economy (12% of GDP), and the number of people living in rural areas (around 40%). In 2006 the increased overall MAFWE budget expenditure amounted to € 23.7 million. For 2007, the MAFWE has planned a further budget increase to € 34 million.

In terms of planning future resources for the two pillars of the MAFWE policy (Agricultural Development Programme and Rural Development), the MAFWE has planned to:

- increase gradually the amount of funding for the Agricultural Development Program (from € 16.9 million in 2007 up to € 20 million in 2010);
- increase gradually the amount allocated for the national rural development program (from € 0.734 million in 2007 up to € 3.2 million in 2010);
- allocate co-financing for IPARD funds (from € 0.7 million for 2007 to € 4.16 million for 2010);

Therefore, to face increased subsidies and the implementation of national rural development measures and the co-financing of the IPARD measures, the following funds are planned by MAFWE up to 2010¹⁵².

Agricultural Development Programme

Funding of agricultural subsidies (2007-2010) in € and MKD¹⁵³.

Year	Subsidies (National Funds)	
	€	MKD
2007	16,933,116	1,038,000,000
2008	17,898,303	1,097,166,000
2009	18,918,507	1,159,704,462
2010	19,996,862	1,225,807,616
Total	73,746,788	4,520,678,078

National Rural Development schemes

National Rural Development funding sources 2007-2010 in € and MKD¹⁵⁴

Year	Total €	Investment Sources €	
		National	
		Public	Private
2007	1,101,141.93	734,094.62	367,047.31
2008	3,303,000.00	2,202,000.00	1,101,000.00
2009	3,750,000.00	2,500,000.00	1,250,000.00
2010	4,800,000.00	3,200,000.00	1,600,000.00
Total	12,954,141.93	8,636,094.62	4,318,047.31

Year	Total MKD	Investment Sources MKD	
		National	
		Public	Private

¹⁵¹ The MAFWE budget accounted for 81% (MKD 1,404 million or €22.9 million), the Ministry of Education and Science for 8%, (for agricultural research and education), the Hydro-Meteorological Office 5%, the Water Fund for 4% and the National Extension Agency for 3%.

¹⁵² Financial Planning cannot arrive at 2013 since both national and EU (IPARD) documents arrive at 2010.

¹⁵³ 2007-2010 Estimation elaborated from the "Development of Agriculture Government Programme".

¹⁵⁴ Elaborated from the "Budget circular 2007-2009". The figure for 2007 is subject to changes after rebalancing of the budget.

2007	67,500,000	45,000,000	22,500,000
2008	202,473,900	134,982,600	67,491,300
2009	229,875,000	153,250,000	76,625,000
2010	294,240,000	196,160,000	98,080,000
Total	794,088,900	529,392,600	264,696,300

National co-financing of IPARD

IPARD funding sources 2007-2010 in € and MKD¹⁵⁵

Year	Total €	Investment Sources €		
		EU	National	
			Public	Private
2007	5,600,000	2,100,000	700,000	2,800,000
2008	17,866,667	6,700,000	2,233,333	8,933,333
2009	26,666,667	10,000,000	3,333,333	13,333,333
2010	33,333,333	12,500,000	4,166,667	16,666,667
Total	83,466,667	31,300,000	10,433,333	41,733,333

Year	Total MKD	Investment Sources MKD		
		EU	National	
			Public	Private
2007	343,280,000	128,730,000	42,910,000	171,640,000
2008	1,095,226,667	410,710,000	136,903,333	547,613,333
2009	1,634,666,667	613,000,000	204,333,333	817,333,333
2010	2,043,333,333	766,250,000	255,416,667	1,021,666,667
Total	5,116,506,667	1,918,690,000	639,563,333	2,558,253,333

¹⁵⁵ Calculations based on EC Indicative Multi-annual Document 2006. Assuming that the Paying Agency will receive conferral of management by mid 2008, disbursement of funds is scheduled to be N+1 (i.e. the 2007 funds will be disbursed in 2008, etc).

4. IMPLEMENTATION PLAN OF PROPOSED POLICIES

1) Increase Sector Competitiveness

Increase size of farms	Leading Agency/ Partner	2007	2008	2009	2010	2011	2012	2013	Potential Sources of Financing
Revision of legislation	MAFWE/ MoF								WB, GoM funds
Implementation privatisation/land leases	MAFWE								WB, GoM funds
Land Consolidation Programs	MAFWE								GoM funds

Increase of labour productivity	Leading Agency/ Partner	2007	2008	2009	2010	2011	2012	2013	Potential Sources of Financing
Targeted agricultural support	MAFWE/ MoF								GoM funds
Investment support (equipment, machinery, infrastructure)	MAFWE								IPARD + GoM
Support to machinery rings	MAFWE								GoM funds
Farmer Education /training	MAFWE/MoSE								IPARD + GoM

Increase in the availability of capital	Leading Agency/ Partner	2007	2008	2009	2010	2011	2012	2013	Potential Sources of Financing
IFAD Credit programme	MAFWE/ MoF								IFAD+GoM funds
MoU with commercial banks (IPARD)	MAFWE								IPARD + GoM
Reduction of VAT for livestock products	MAFWE / MoF								GoM

Increase in the availability of technology	Leading Agency/ Partner	2007	2008	2009	2010	2011	2012	2013	Potential Sources of Financing
Review of legislation (involvement of MAFWE in Educ.&Res., interdisciplinarity studies)	MAFWE/ MoSE								GoM funds
MAFWE to establish internal capacity	MAFWE								GoM
Establishment and operation of National Committee for creation and transfer of knowledge	MAFWE/ MoSE								GoM
Develop non-formal education programs									IPARD, GoM
Development of multi-annual research programs and implementation									GoM, EU 7 th FP
Restructuring/HR Development of NEA	MAFWE / NEA								GoM
Certification system for advisors	MAFWE								GoM

Improvement of agricultural support policies	Leading Agency/ Partner	2007	2008	2009	2010	2011	2012	2013	Potential Sources of Financing
Establish registers	MAFWE								GoM funds
Establishment of IACS	MAFWE								GoM
Establishment and operation of Paying Agency	MAFWE/ MoF								GoM
Operation of IACS and paying agency	MAFWE								IPARD, GoM

Increase of the competitiveness of agricultural processing and of the feed and food industry	Leading Agency/ Partner	2007	2008	2009	2010	2011	2012	2013	Potential Sources of Financing
Amend legislation concerning competency in Agr.Industry	MAFWE/MoE								GoM funds
Audit of Industry and set deadlines	MAFWE/MoH/ MoE/MoEPP/								GoM
Investment support	MAFWE/MoF								GoM , IPARD

Horizontal and Vertical Organisation	Leading Agency/ Partner	2007	2008	2009	2010	2011	2012	2013	Potential Sources of Financing
Establish and operation of agri-food Cooperation Council	MAFWE/Stakeholders								GoM funds
Contractual financial support to professional organisations (delegation of technical functions)	MAFWE/ Stakeholders								GoM
Review of legislation on Producer Organisations (EU Harmonisation)	MAFWE								GOM
Provision of Financial support to POs	MAFWE								GoM, IPARD
Stimulation measures for vertical integration (eligibility criteria)	MAFWE								GoM

2) Achieve Food Quality and Safety

Food Safety	Leading Agency/ Partner	2007	2008	2009	2010	2011	2012	2013	Potential Sources of Financing
Establish Working group	MAFWE/MoH/MoE								GoM
Enactment of legislation/guidelines of safety standards (HACCP, ISO, GMP/GHP),	MAFWE/MoH/MoE								GoM funds
Training of Inspection services	MAFWE/MoH								GoM
Training of laboratory staff on new methods of examination and their implementation	State Phyto laboratory/Veterinry Institute/MoH								
Audit of food industry with deadlines	MoH/MAFWE								GOM
Ensure traceability system	MoH/MAFWE								GoM, IPARD

Quality of Plant and Animal products	Leading Agency/ Partner	2007	2008	2009	2010	2011	2012	2013	Potential Sources of Financing
Establish Working group	MAFWE								GoM
Enactment of legislation/guidelines of quality standards (GAP, EUREPGAP/cross compliance, SEUROP),	MAFWE								GoM funds
Training of laboratory staff on new methods of examination and their implementation	State Phyto laboratory/Veterinary Institute/MoH								GoM, Bilateral Aid
Training, operation of inspection services	MAFWE/MoE								GoM
Support to adoption of quality standards (eligibility, training, etc)	MAFWE								GOM, IPARD
Enactment of EU harmonised legislation for protection of origin	MAFWE								GoM

3) Achieve sustainable resource management

Agro-environment	Leading Agency/ Partner	2007	2008	2009	2010	2011	2012	2013	Potential Sources of Financing
Establish Working group	MAFWE/MoEPP/MoF, MoH, MoSE								GoM
Enactment of EU primary legislative regulations	MAFWE								GoM funds
Prepare a set of monitoring guidelines and standards	MAFWE/MoEPP								
Establish AE Capacity in MAFWE, incl. Inspection	MAFWE								GoM, Bilateral Aid
Pilot AE Programs	MAFWE								GOM
Establish (part of IACS) AE GIS	MAFWE								GOM, bilateral
Implementation of AE Measures	MAFWE								GoM, IPARD

4) Improve living conditions in rural areas

Rural Development	Leading Agency/ Partner	2007	2008	2009	2010	2011	2012	2013	Potential Sources of Financing
Establish/operation of IICB	MAFWE, MoF, MoE, MLSG, MoC, MoLSA, MoSE, MoESP, MoTC, SEA								GoM
Revise LFA legislation and delineate roles of State bodies	MAFWE/MoEPP/MoF, MoH, MoSE								GoM
Adoption of IPARD Plan	MAFWE/IICB								GoM, CARDS/WB
Establish operation of Monitoring Committee									GoM IPARD
Socio Economic Survey of LFAs	MAFWE								Bilateral, FAO
Implementation of measures	MAFWE								GoM, IPARD

5) Reform the regulatory and institutional framework

Rural Development	Leading Agency/ Partner	2007	2008	2009	2010	2011	2012	2013	Potential Sources of Financing
Establish/operation of working group attribution of responsibilities	MAFWE, MoE, MoH, MoEPP, SSO, MoSE, SEA								
MAFWE reorganisation	MAFWE, MoF,								GoM
HR Development	MAFWE								Bilateral, FAO
Establish/accreditation of paying agency	MAFWE/MoF								GoM/WB
Establish operation of Agricultural Information System	MAFWE								
Accreditation of MAFWE reference laboratories	MAFWE								GoM, CARDS, WB, Bilateral

Plan Funding Requirements**(2007 - 2010)**

No	Policies	Required Funds in €								Potential Sources of Assistance
		Total	2007	2008	2009	2010	2011	2012	2013	
1	Agricultural support policies	73,746,788	16,933,116	17,898,303	18,918,507	19,996,862	n.a.	n.a.	n.a.	Bilateral
2	Rural Development Policies (National)	8,636,095	734,095	2,202,000	2,500,000	3,200,000	n.a.	n.a.	n.a.	Bilateral, CARDS
3	Rural Development policies (IPARD)	10,433,333	700,000	2,233,333	3,333,333	4,166,667	n.a.	n.a.	n.a.	IPA and IPARD
4	Institutional reform and legal harmonisation policies	NPAA	NPAA	NPAA	NPAA	NPAA	NPAA	NPAA	NPAA	CARDS, IPA, IPARD, WB, Bilateral funding

5. LAND POLICY

Agricultural land is a general interest to the Republic of Macedonia and has a special protection. Currently, the utilization, availability, protection and transformation of the agricultural land in state ownership are regulated by the Law on Agricultural Land (Official Gazette of RM n° 25/98, 18/99 and 2/2004).

Due to the changes that have taken place so far and the experience from this law, there is a need for further adjustment of certain issues which refer to the management and utilization of agricultural land in state ownership, further specifications of transformation of agricultural land for exploitation of minerals, prevention against further parceling of the agricultural parcels, protection of the agricultural land against pollution and contamination for the purpose of protection of human health, animals and plants, preserving of the arable areas from permanent transformation, as well as strengthening of the control and sanction policy. MAFWE is in a process of adoption of a new law on agricultural land. It governs the utilization, availability, protection and transformation of the agricultural land.

From this point of view, and in order to obtain better benefit from the arable agricultural land, merging of the arable areas have been provided, as well as implementation of agro-technical and agro-meliorative measures, prevention against erosion, pollution and contamination of agricultural land, regulating the manner of its temporary and permanent transformation.

This law provides better legal safety regarding the utilization of the agricultural land which equally treats both domestic and foreign entities, and solves the issue for termination of the users' right on utilization of agricultural land in state ownership who have not regulated the manner of utilization pursuant to Article 62 from the Law on agricultural land, as well as strengthens the control and sanction provisions.

The aims of this Law are:

- rational utilization of agricultural land as limited natural resource;
- protection of agricultural land;
- providing legal safety to the owners and users of agricultural land.

The changes of the law refer to pre-emptive right. Namely, in order to prevent parceling of agricultural parcels, and having function of more rational utilization of the agricultural parcels and application of the measures, in case of sale, priority right have the following: the common owner, owner and the neighbors whose land bounds with the land which is for sale. Regarding the exchange of agricultural land and for the purpose of merging the agricultural parcels, the agricultural land in state ownership will be exchanged with private agricultural land, and this will be carried out only if the private parcels which are a subject of the exchange bounds with the state parcels.

In case of final denationalization decision, the exchange will be carried out to the parcels which are not boundary ones.

The procedure on agricultural land exchange is to be carried out by the Ministry upon a request of the interested party or ex officio.

Regarding the cadastre, the agricultural land is a part of real estate which includes: land, buildings, and special parts of constructions which can be a subject of proprietary rights in compliance with the legal provisions.

The arable land, depending on the quality is divided in eight cadastre classes: meadows, paddies, gardens, orchards, vineyards, pastures, forests and marshes.

Non-arable land is naturally non-arable land as well as artificially non-arable land (streets, land under buildings, and construction land).

Currently, the cadastre data are organized in outdated databases which have no capacity to meet the requirements for categorization and data utilization. This is one of the reasons why the State Geodesy Bureau plans to establish new electronic cadastre very soon.

For the time being, MAFWE has not established systematic and updated records of agricultural land, including the state land as well.

In order to overcome the ongoing problems, MAFWE undertakes certain activities related to creating agricultural land policy. A part of them will be implemented through the agricultural support project and EU accession, financed by the World Bank, and implemented by MAFWE, i.e. the part which refers to Administrative institutional strengthening of MAFWE capacities in compliance with the EU pre-accession requirements. The funds and activities intended for establishing the Integrated Administrative Control System (IACS), Single Farm Register and Land Parcel Identification System (LPIS) which will be the basis for creating efficient system for administration and control of the national policy programs for direct support in agriculture.

There will be established information and ownership of agricultural parcels and they will be constantly supplemented into the register by the unit of registration within the department of agricultural land registration and management at MAFWE. A full establishment of LPIS is to be completed by 2010.

As part of IACS, LPIS will be connected with single farmer register managed by department of policy and strategy analyses.

Moreover, for this purpose MAFWE will collaborate with the State Geodesy Bureau and if necessary, it will use the data of this institution. In the course of implementation of activities, it is necessary to carry out the orto-photo images (data) from LPIS with the current ones of the State Bureau in order to discover the state land usurpations.

LPIS will start up with pilot projects in three regions, which will be additionally determined, and they will be carried out by MAFWE, and later on they will be over the whole territory of Republic of Macedonia. The objective is to establish a detailed database and agricultural land standards in compliance with the EU requirements (EC Regulation 1593/00) for the purpose of further harmonization and acceptance of the Common Agricultural Policy – CAP.

LPIS will be established on the basis of maps or documents from the agricultural land register or other type of map reports. Utilization should be a type of computer geographic information system, using aerial or spatial orto-photo techniques, with constant standards which provide the smallest map unit having the proportion of 1:10.000.

By introducing the system, not only the owners of agricultural parcels, but also the beneficiaries of concessions and lease contracts of state agricultural land will be registered which will provide an insight into the manner of state agricultural land utilization.

After introducing LPIS, MAFWE will also have an insight into the manner of utilization (type of crop which is being grown) on the state agricultural land and data on farm size used by individual farmers, which is one of the conditions for efficient work of the Paying Agency and utilization of the pre-accession funds (IPARD).

6. FORESTRY

Considering the economic significance of the forestry department in Republic of Macedonia, the share of the forestry regarding the environment protection and the need of development of sustainable management of the forestry resources, the Government of Republic of Macedonia in November, 2004 initiated a process for preparation of National Strategy for Sustainable Development of Forestry. This process was supported by the Food and Agriculture Organization, United Nations – FAO, providing local and international expertise and technical support which contributed to the preparation of the Strategy for the next 20 years. The Action Plan is an integral part of the Strategy which contains the measures and activities which are to be done for the future development of the forestry and hunting within a determined timeframe.

The following text is an extract from the Strategy for Sustainable Development of Forestry in the Republic of Macedonia.

6.1. Vision

Stimulated by the economic importance of the forests, the activities of the forestry department will be competitive and modifiable to the constantly variable market demands. In line with the capacities, the forestry will provide conditions and resources for sustainable economic growth of the development. Areas under forestry will constantly grow through forestation of the bare areas with high quality material, giving priority to the autochthonous types. Cultivation and protection of the artificially raised forests will be appropriate and in due time, which will provide biologically and economically quality wood. Compliance with the legal regulation and its consistent implementation will completely eradicate the illegal deforestation and other harmful activities in forestry. These different activities will contribute to enlargement of the overall wood mass and improvement of the wood and timber quality.

The economic activities with other forestry products will result in significant economic benefits for the forestry department and country as well, and it will be appropriately regulated by legislation. The modern infrastructure and accompanying constructions for collecting, processing and packaging of other forestry products, will provide competitiveness of the products on the EU market. The biological capacities will be respected and the excessive utilization will be limited, thus economically and ecologically valuable types and biodiversity will be protected.

The country will recognize the generally useful functions of the forests and will put them in legal and economic frames, thus improving and stabilizing the position of the forestry in the society.

Special attention will be given to the conservation and protection of the woods as main pillar of the eco-system. This is important for the biodiversity in general terms, but it will also provide social, economic and cultural benefits for the citizens of Macedonia.

Macedonia will be a popular destination for recreation, sport, eco-tourism, and hunting tourism which will result in a significant inflow of foreign exchange. Besides the current tourist centers, a considerable part of the activities and destinations will be directed towards forest regions which are under forestry department.

There will be an efficient system for early reporting, alarming and control of forestry fires and the country will be able to provide efficient prevention against pests and pathogens through a modern quarantine service. If pests or pathogens over-multiply, the competent institution will respond quickly and aptly applying ecologically acceptable suppress measures.

Management staff and all the employees of the forestry department will use up-to-date technology and will constantly follow the latest scientific and technological achievements. There will be a close, mutual cooperation with the scientific and educational institutions during the additional training, specialization, scientific researches and applicative activities. The forestry will establish constantly updated and efficient database available to all relevant parties. The forestry will be a member of the important international organizations via its qualified representatives of government and non-government bodies and it will actively participate in the transfer of knowledge and experience from its domain.

The forestry sector will employ qualified and skilled staff which will receive high income with social and pension insurance and it will provide social, cultural, sport and recreational facilities.

The forestry management will be transparent, regardless of the level it covers – state, regional or local one, and the decisions will be strictly professional. The professional management will provide good practice when dealing with social, cultural, institutional, environmental and economic factors in our attempt to reach sustainable business activities with forests.

All interested parties united with a same vision should participate in carrying out the aims and actions of the strategy.

The strategy will lead to fulfillment of this vision, and the leading principle will be sustainability. The sustainable development meets the needs of both the present and future generations.

6.2. General objectives

The objective of the Government of Republic of Macedonia is to increase the contribution of the forestry department within the national economy and rural development, through sustainable forest business activities providing renewable resources and protection of the local and global environment, thus providing better quality life for all the citizens. In order to sustain and improve the economic efficiency of the forestry so as to meet the requirements of the overall national development, the Government will provide the following:

- legal, institutional and economic framework for implementation of the sustainable forest business activities;
- constant financial mechanism which will improve the situation of the forests and development of the forestry.

6.3. Main directions:

1. Enlarging the forest covered area and improving the quality of the forests in accordance with the physical planning of the Republic of Macedonia.
2. Multifunctional forest management and sustainable development of forestry.
3. Increasing the contribution of forests and related goods and services to the quality of life in rural areas.
4. Enhancing the public and social functions of forests and forestry through the strategy for development by comprehensive valorization of its general and social functions.
5. Raising the awareness of the environmental and social values of forests.
6. Improving the conditions for identification of the national and international funds for sector development support.
7. Harmonization of the forestry legislation with the national interests and international commitments

7. WATER ECONOMY

7.1 Strategic Water Economy Determinations

Generally, the Government of Republic of Macedonia will continue with the liquidation of the remained water economy organizations on national level and will support establishment of Water Communities, Water Communities Federation and Water Economies.

Moreover, the government is aware of the fact that there is a need to build capacity within MAFWE which will provide information and technical support to the groups of water users and to monitor the water economy department. For this purpose, MAFWE is in a process of establishing institutional structure which the EU countries have. A functional overview has been done recently, which has identified the basic structure necessary to the Ministry.

Directions of the government support are coming to an end in the reforming process of the irrigation department which started in 2003 within the framework of the Project of Rehabilitation and Restructuring of the Irrigation Systems. It allows the water users to manage the irrigation systems. The objectives include: (a) introduction of the participative irrigation management “initiated by the demand”; and (b) discharging the state of financial responsibility for the irrigation department.

7.2. Strengthening the capacity of the Water Economy Directorate (WED)

Objectives

The activities aim to strengthen the capacity of the Water Economy Directorate (WED) to effectively support and oversee the establishment of new water communities and water economy and monitor their performance, as well as to carry out improved planning of water resources.

Required Inputs

The following activities are to be carried out:

- Implementation of the already adopted systematization plan for the WED,
- Development and installation of a full GIS system for water and land management, surface water, and registry of water users with adequate licensing, using remote sensing data to monitor and evaluate performance of irrigation and drainage system performance.
- Development and capacity building for an IWC/WE support unit to help establish new IWCs/WEs, monitor their performance, and provide technical assistance and support to water users (ToR provided in Annex 4.6). This will include: provision of legal and technical advice for formation and establishment of new IWCs/WEs; publicity, communication and awareness campaigns about establishment of IWCs/WEs including study tours to already established IWCs/WEs; training and capacity building programs on financial management, technical management (system operations and maintenance), proper water management for multiple and sometimes competing stakeholders; baseline and periodic surveys to gauge the effectiveness and efficiency of services delivered by IWCs/WEs; and crop budget surveys to assess agriculture performance.

7.3 Irrigation measures

Although 120.000 ha of agricultural area in RM can be irrigated, during the last few years there have been irrigated only 30.000. This is unfavorable situation since the irrigation is the best available practice for the Macedonian agriculture in order to achieve high and stable yields with high quality. Construction of new irrigation systems is rather expensive, so special attention should be given to the rehabilitation of the current systems in short-term period. Construction of new systems has been recommended in order to enlarge the areas under irrigation and to overcome the drought problem as much as it is possible.

The irrigation development policy should be oriented towards the agricultural producers and to enhance their capacities for more efficient utilization of irrigation water.

The best policy to adjust the irrigated areas would be: to apply techniques which will save water during the irrigation (micro-irrigation) which would cover the same, and even enlarge the irrigated areas using the same water quantity.

The best available practice is enhancing the irrigation efficiency via micro-irrigation (above 90% utilization of the water capacity) compared to less than 50% channel irrigation and about 70% of rainfall irrigation.

Rehabilitation of the irrigation systems should have a priority when adjusting the micro-irrigation techniques.

Further on, there should be undertaken some other measures like: determining the real price of the irrigation water. The farmers should pay real price for the water in order to become aware of the significance that the water saving techniques have, which will provide constant operation of the whole system.

The structural reforms which have already started in the water economy department of RM (formation of water communities, liquidation of the outdated water economy and creating a

new one) are to be completed. It is necessary to cover all of the irrigated areas with the new organizational structure, depending on the current legislation.

One of the priorities is extending the level of knowledge for the modern and efficient irrigation techniques through education of farmers and other users of irrigation water. Training of water communities for the purpose of building up their capacities must be urgently performed (drafting irrigation plans, measuring the water, distribution etc.).

One of the important issues is public awareness. The farmers have to be aware of the increase of yields and income through decreased water utilization by using micro-irrigation systems. Public awareness campaign has to take place as soon as possible for the water communities as well, their full operation, price and terms of payment etc.

Moreover, during the forthcoming period, there should be introduced measures which will support the agricultural producers regarding the irrigation equipment procurement (favorable loans, subsidies for the established micro-irrigation systems etc.).