



An overview of agricultural statistics in Republic of Macedonia

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Preface

The perspectives in Macedonia are marvellous: hills and slopes, cultivated fields, wherever you see. The air is clear, clean colours as if it was far up in the Nordic countries. The landscape of Macedonia is a European beauty, highly recommended to be seen. The friendliness of people in Macedonia is well worth being known all over Europe. The picture I got from travelling in the country is highly different the picture preserved by various media.

So have also the perspectives been widening during my stay in Macedonia. Meeting a new country, a new region of the world. Meeting common people, to live in the shadow of war and feel the true warm and friendly atmosphere. I have to say that the paradoxes of Macedonia were many. It was far from easy to understand this society – nevertheless I came to enjoy Macedonia.

It is easy to enjoy Macedonian landscapes. When travelling around the Macedonian countryside, I got the feeling of being at home. The people are as friendly as anyone could imagine. On the travels, thanks to Aleksandra Aleksovska, we could stay anywhere, ask the man standing on roadside and always we got a happy smile, a short friendly greeting and the answer of our question. When meeting people, I saw personalities who could have been my father or grandpa. Among the peasants, I realized they indeed could have been peasants from Småland, the Swedish county from where I come. I am astonished, so much unifying countryside in the two countries Sweden and Macedonia.

This is a descriptive report. With statistics as a tool, I have made an attempt to describe Macedonia, its geography, economy, agriculture and in some way, the educational system. It is important to mention, statistics will give one picture – one among several of a country. I am afraid; the lovely impressions I got during my visit in Macedonia may not be seen in this report. Statistics use another language.

This report has not been what it is without the impressing work done by Ms Aleksandra Aleksovska – who has been my co-author and who has done a great job during my visit in Macedonia. Great thanks also to Ss. Cyril and Methodius University in Skopje with splendid help in practical matters – and especially to Prof. Dragi Demitrievski for his rich patience with me and my work. I would also like to show my gratefulness to Mrs Karin Hakelius, head of department of economics, SLU, Uppsala and professor Olof Bolin. They have both been indeed patient with my work and me.

Aim

The aim of this report is to monitor the present situation in Macedonian agriculture, economy and educational system. The aim is to give some statistical data that, in combination with a wide range of other sources, will help the reader understanding the structural basics of Macedonian agricultural environment.

This report is written in the context of discussions concerning an eventual new strategy of higher education (university level) in agro economy in Macedonia. These discussions will occur during winter 2002 / 03 and in particular in a future coming workshop due to this topic in Ohrid in June 2003.

The report is ordered by SLU, Swedish university of agricultural sciences. It is made mostly for use at the department of economics, SLU Sweden. The report is a part of the memorandum of understanding between Sweden (SLU) and Macedonia (S.Syrilus and Methodius University), signed 2002 09.

Limits

Due to the aim of my topic, (to give a review of Macedonian Society 2002), a quite wide view is chosen. This is a report and no thesis. In the aim, the agricultural, economical and educational situation is mentioned. There will also be some basic statistics about geography, geology and demography. These statistics is chosen to, if needed, give a wider view of the agricultural economical environment. When reading this report, you should be able to choose the figures you want.

This report monitor available statistics within Macedonia. The author is not competent to evaluate the sources, neither to check their validity. In stead and at least, the aim has been to use a proper footnote treatment of sources.

Johan Karlson

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1 The Republic of Macedonia



Figure 1 Rosenberg, M. T (2003). (Modified)

The Republic of Macedonia is one of Europe's less known countries, just north of Greece, east of Albania, south of Serbia and west of Bulgaria. It is one of the smallest countries in Europe as well, 25 000 square kilometers in size, about the size of the Swedish county of Dalarna. It is a beautiful hilly country in the inferior Balkan Peninsula.

Medium elevation of the Macedonian planes

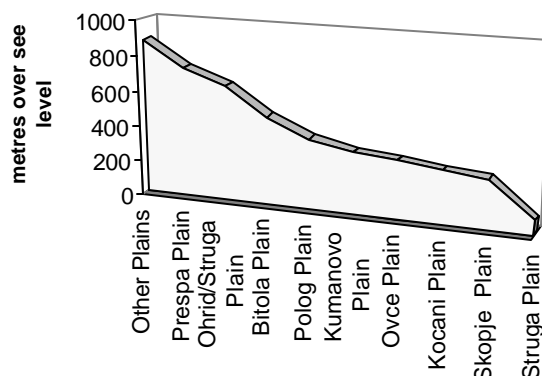


Figure 2 Elevation above sea level of Macedonian planes¹

Geologic areas, total areas, Height over the sea

Macedonia is a country of hills and mountains. The greatest part of its territory, i.e. 44.01%, is situated between 500 and 1000 meters above sea level (see Figure 2), with an average elevation of 829 meters. The complex morphotectonic processes on the territory of Macedonia have created multifaceted and divergent relief structures. In this relief, we may distinguish several geotectonic units such as:

- the extensive mountains in the east.
- the valleys and the gullies of the Macedonian-Serbian massif.
- Western-Macedonian mountains in the west with smaller valleys.
- the wider zone of the Vardar-in the central part-broken up into small stands.
- the zone of the Pelagonian Stand.
- anticlinarium, located between the Varda zone.
- and the Western-Macedonian Mountains.²

Flat and discrete plains cover a relatively small part of the territory³. It covers exclusively the beds of the big valleys: Pelagonia, the Strumica Valley, The Skopje valley, Polog, the Gevgelija – Valandovo valley, etc. Plains in the strict sense of the word do not exist in Macedonia and the valleys are situated at different altitudes from 50 to 800 metres above sea level.⁴

¹ Republic of Macedonia, Area Plain draft, Skopje, (1998).

² Ministry of economy (2002)

³ Republic of Macedonia, Area Plain draft, Skopje, (1998).

⁴ Ministry of agriculture, forestry and water economy (2001), p 29.

Sun hours, rainfalls and temperature

In Macedonia there are three climatic areas: Modified –Mediterranean, Continental and Mountainous climate. The average yearly temperatures decrease from south towards north and are:

Skopje: 12.4⁰C
Gevgelija: 14.5⁰C
Veles: 13.3⁰C

In the higher valleys and grounds the average yearly temperature of this air is even lower.

Tetovo: 11.3⁰C
Kriva Palanka: 10.7⁰C
Krusevo: 8.3⁰C
Lazaropole: 7.1⁰C

In the valleys where the bigger lakes are located, the average yearly temperature is the following:

Ohrid: 11.6⁰C
Resen: 10.2⁰C
Nov Dojran: 14.5⁰C
Mavrovi Anovi: 7.3⁰C

The sun shines from 2.100 to 2.450 hours per year. Macedonia gets the maximum number of sun-hours during the month of July lasting from 55 to 100 hours per month.

The most arid areas, with annual rainfalls up to 500 mm, are located in the middle of the valley along the River Vardar and the Ovce Pole plain. There is an amount of 500 to 600 mm of rainfall in one part of the Tikves area, the Skopje Valley, the area around Stip and the Kocani Plain, as well as in the plains around Bitola and Prilep. Amounts of 600 to 700 mm annual rainfall are found in the plains around Strumica and one part of the area of Pelagonia, around Kratovo and Kriva Palanka, the Ohrid Valley, and the area of Malesevoja. Amounts of 700-1000 mm of rainfall are found in the Gevgelija/Valandovo Plain, the area around the Dojran Lake, Polog, Kicevo, Struga and the Lake Prespa region. Areas of above 1000 mm will only be found on the high mountains of Western Macedonia and the area around Mavrovo. Along the River Vardar there is an average of only 80 and in Western Macedonia an average of 96 days with rainfall.⁵

Waters and lakes, availability of water

Generally speaking, the water resources of Macedonia are decreasing. In the period 1949-1969 the reservoirs has been decreasing by about 15%

Vardar is the longest river in Macedonia the with a mean annual flow on the border with Greece of 174m³ per second; the River Treska has 25.8m³ per second, Pcinja – 16.1m³ and

⁵ Ministry of agriculture, forestry and water economy (2001), p. 30-31.

Crna Reka –36.9m³ per second. There are 4.414 springs from which the bulk of the 31.43 m³ of water per second is supplied, of which only 58 springs have a quantity of above 100 litres per second. 80% of these are located west of the River Vardar and only 20% of them are to the east.

The country has about fifty large and small lakes, the most significant ones being the three tectonic lakes of Ohrid, Prespa and Dojran⁶. The lakes are significant hydrographical potentials, which are also important for agricultural production.

Soils and ground

Macedonia presents wide spectra of soils, common in South-Eastern Europe. There are more than 30 soil types and many other taxonomically inferior types. The dominant terrains are:

- Mountainous terrains 84,4%
- Rolling and hilly terrains 1.53%
- Plains 7.88%
- Foothills slope terrain 6.19%.

The dominating soils on the higher mountains, under the pastures, are the ranker soils and the dark soils. On the rolling terrain there are mostly regosoils, cinnamonic, forest soil, (tar, resin or pich) clayey soil, dendzas, chernozems (black soil) and lessive soil.

The dominating soils on the foot terrains are the diluvial soils, on 5.3% of the total territory of Macedonia, and alluvial-diluvial on 0.80%. On the plain terrains, which account for 7.88% of the total territory of Macedonia alluvial soils, dominate with 4.90%, while the rest are hydromorphius, holomorphius and other types and account for 2.82%.

Vegetation

The vast diversity, the distribution of some types of soils and their dendroflosristical features are directly connected to the geographical position, the orographic conditions and the area borders of different types of vegetation. Among the supposed ground –level vegetation there are the pasture communities, the rocky grounds, meadows and grasslands, swamps, and chaff grounds.

This vegetation is grouped in 10 “unions” according to its systematic display, starting from the vegetation of rocks and stony grounds, through higher mountainous and mountain pastures, plain grasslands, ending with hill pastures characteristic of Macedonia. The hill pastures located on now dissused fertile land can be found largerly on the verges of Pelagonia, Ohrid, Mariovo, Stip, Kocani and the area around Delcevo.⁷

⁶ Ministry of agriculture, forestry and water economy (2001), p. 31-32.

⁷ Ministry of agriculture, forestry and water economy (2001), p. 32-33.

2 Demography

According to the 1994 census the population of approximately 2 million is 66,5% Macedonian, 22,9% Albanian, 4% Turkish, 2,3% Rhomas (Gipsies), 2% Serbian and 2,3 % other. However, these figures have widely been questioned and new attempts to number the population are on their way.

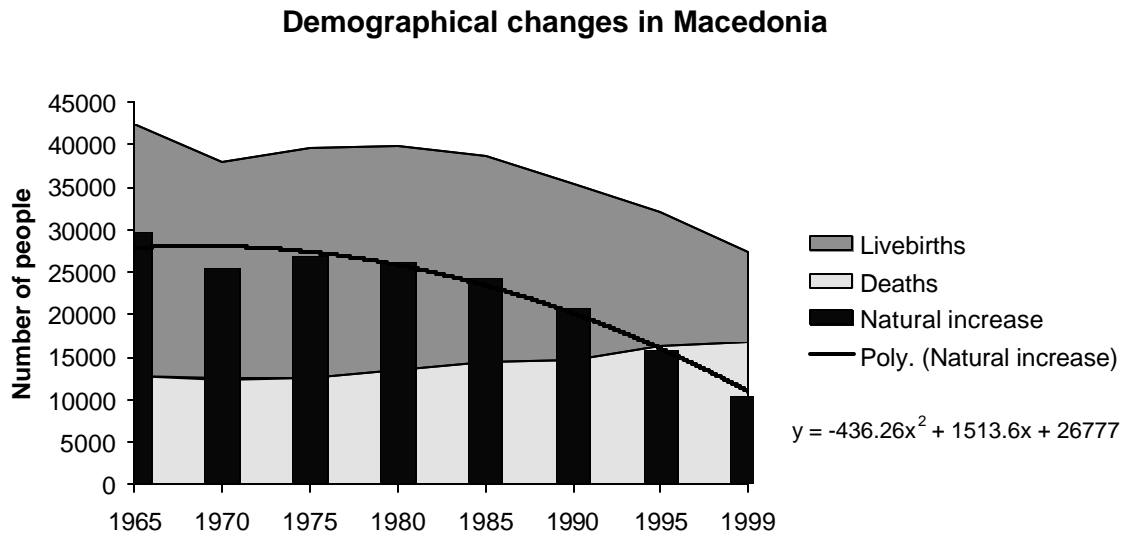


Figure 3 Demographical changes in Macedonia 1965 - 2000⁸ (please notice, the trend figures speed of population growth)

The population is still growing – as illustrated in Figure 3. The common trend in demography all over the world is however also seen in Macedonia. Deaths and births are falling in numbers and a big ratio of the national increase of population is shown in this phase of transition. Doubling time of population in the country was in 1998, about 88 years.⁹

Macedonian population is still rising in numbers, the increase is about 0,5% per year or 0,68% 1998¹⁰. When many of the EU members faces decreasing population, for instance Macedonia and Bosnia Herzegovina have increasing populations.

⁸ State Statistical Office (2001), p. 63.

⁹ Fellman, Getis, Getis (1999) pp. 542

¹⁰ UI (1998)

Population pyramid Macedonia

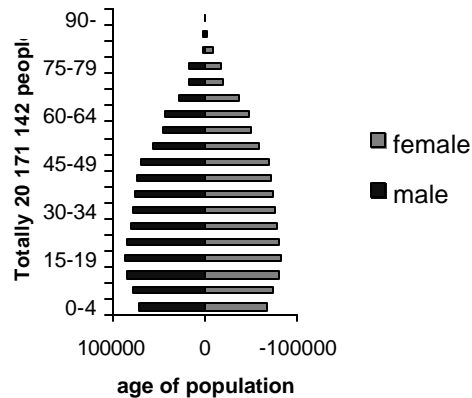


Figure 4 Population pyramid for Macedonia¹¹

The pyramid shows a quite traditional sign of a transition economy – still different than the developing countries. The births are though declining in numbers.

Urban demography

Where are the biggest towns situated?

1. Skopje – The capital is situated in the north of the Republic on both banks of Vardar, in the Skopje ravine and 240 metres above sea level. Roads from Pomoravie through Presevska Povija, from Kosovo through the Kacanik Gorge and from Greece through Povardarie and the taor Gogre lead to Skopje.
2. Bitola is the largest city in Pelagonia. It is one of the highest cities, 630 metres above sea level.
3. Tetovo is situated in Polog land on the eastern piedmont area of Shara Mountains and is the center of the ravine and whole sub-region.
4. Ohrid is the situated 700 meters above sea level along Lake Ohrid. The fortress is located in the old city, which dominates the contemporary populated area, which is in the plain. The name of the city originates from ‘hridi’, a cape-like tip of land that extends out into the sea.
5. Kumanovo has a relatively young population (established in the 14th century). Once it was an oriental small town, today it is developing to a modern city. Archaic part and buildings are preserved. It has developed thanks to the Morava – Vardar traffic artery, however, owing to the vicinity of Skopje, it has not achieve a significant development in new industry.

¹¹ Republic of Macedonia State Statistical Office (2001), p 62 – 63.

6. Krushevo is situated in the western side of Pelagonija opposite Prilep and high above a ravine. It is the highest city in Macedonia – 1250 meters above sea level.

7. Kratovo has a unique location. It is located in the crater of an extinct volcano on 680 metres above sea level, and is cut by Kratovo River. It is lead and zinc mining place and has existed from Roman times (Kratiskara).¹²

Population of the biggest cities and ratio between them

One of the classical signs of development in a country is the population ratio between the biggest cities in the country. It is often argued that the second biggest city in a developed country is about half the size of the biggest. In this way, Macedonia shows signs of imbalance between the sizes of cities. The capital, Skopje has a population of about four times the second in size, Tetovo.

1. Skopje, the capital has 600 000 inhabitants. Is an industrial center with the Steelworks, agricultural machine manufacturing industry, bus factory, oil refinery, chemical industry, electrical industry, tobacco processing industry. The good traffic arteries make it possible to supply raw materials and shipment of industrial products. It is a fair city.

2. Bitola has 100.000 inhabitants and is known for the sugar factory, textiles and refrigerating appliances. Handicrafts are a tradition of this city. The vicinity is rich in coal, vineyards and mineral water springs.

3. The western city of Tetovo, 170 000 inhabitants, is known for the textile industry and is well known for its vicinity to the Shar mountains sheep rising. The large Yugoslav-chemical and electro metallurgical industry surrounds the village of Jegunovce.

Rural demography

The overall seen movements from the rural areas to cities is also seen in Macedonia. The recent years of vast unemployment have in some way and for the moment been a force against this transformation. With high foodstuff prices and as unemployed many people find it better to stay at relatives' farms and help them in agriculture.

The urbanization process is thus biased according to ethnic aspects. When Orthodox Slavic Macedonians often move to the cities, the Albanian population stay on countryside. In combination with sometimes traditional ethnic cleansing, this process seems to be clear in the small country.

Where are the common villages situated?

The villages in Macedonia can be divided into:

1. Plain villages: The most numerous are the plain villages – 49% of all the villages. Of the total number of 801 plain villages 360 or 46% are situated in the Skopje ravine, Pelagonija, Polog, Strumica – Radovish ravine. Not small is the number of plain villages in the higher ravines such as the Ohrid - Struga ravine, where 51 of 103 villages are plain villages.

¹² Markovich (1980), p. 381-386.

2. Hillside villages - 33%. Most of them are situated in Western Macedonia, 260 or 49% of all hillside villages in the Republic. In Povardarie there are 143 villages or 27% and they are the least numerous in eastern Macedonia, i.e. 128 villages or 24%.

3. Mountain villages are 282 or 17,4%. Most of the mountain villages are situated in western Macedonia i.e. 144 villages or 51% in western Macedonia, 87 villages in eastern Macedonia or 31% and 51 villages or 18% in Povardarie.¹³

Migration within and outside the country

In the year 2000, 165 inhabitants emigrated from Macedonia, while 639 immigrated to the country.¹⁴ These figures seem to be unrealistic, lots of people do go abroad every year for work, many of them illegal. In Skopje the pressure of moving abroad, was mentioned by various categories of people. People in general argue that the new generation will find better opportunities abroad – and they often use contacts with relatives all over Europe and USA for this matter.

In the past, migration to particular areas changed the ethnic structure of the population zones in Macedonia. Some villages such as Mavrovo, Debarca, the Kozjak area etc. have been almost depopulated, and others are at the stage of full disappearance. The migrations today have quite changed the demographic structure of our population. People move the cities and ravines, mountain as well as hillsides have been emptied.

According to the inventories, the number of village population is in permanent decrease and it decreased from 68,7% in 1953 to 42% in 1992. The significant increase of the city population and the permanent depopulation of the villages create an undesirable physical location of the population, which is accompanied by numerous social and agricultural problems.

According to the volume of the temporary emigration, Macedonia today is among the regions with distinct external migration of work force. In the period 1952 to 1986 the number of permanently emigrated persons was approximately 215.000. The higher percentage of economic emigration is in the municipalities of Resen and Bitola. Their share in the total number of emigrants is almost 40%. They are followed by the municipalities of Demir Hisar, Ohrid, Kichevo, Struga, Gostivar, Tetovo.

It is difficult to determine the number of population living abroad. In Europe most of them are in Germany, i.e. 50% of all the workers abroad, some of them are in Sweden, Austria, France, Switzerland, Holland etc. As a consequence of the emigrational movements today it is believed that about 540.000 Macedonians live in the American continent. Most of them approximately 190.000 live in Canada, 180.000 in Australia, 150.000 in USA and 20.000 in Argentina. The biggest concentration of Macedonian population between the cities are Toronto – 90.000, then Detroit and Sidney 40.000, New York – 20.000, Perth – 15.000 etc.¹⁵

The Macedonian Diaspora mentioned above has to be considered as important to the small country even today. Money is sent back to the families, the contacts are common used for

¹³ Markovich (1980), p. 423-426.

¹⁴ Republic of Macedonia State Statistical Office (2001), pp. 84 – 109.

¹⁵ Stoimilov (1995), p. 101-102, 107-108.

sending the young people out around the globe. In election campaigns, this group has right to vote and thanks to their number, they are seen as still an important group in the country.

3 Economy

The economical overview cover basic development indicators as income, GDP, figures of trade balance, deflation etc. The economical situation since liberation in early 1990's in Macedonia is as well monitored in this chapter.

Industrial production

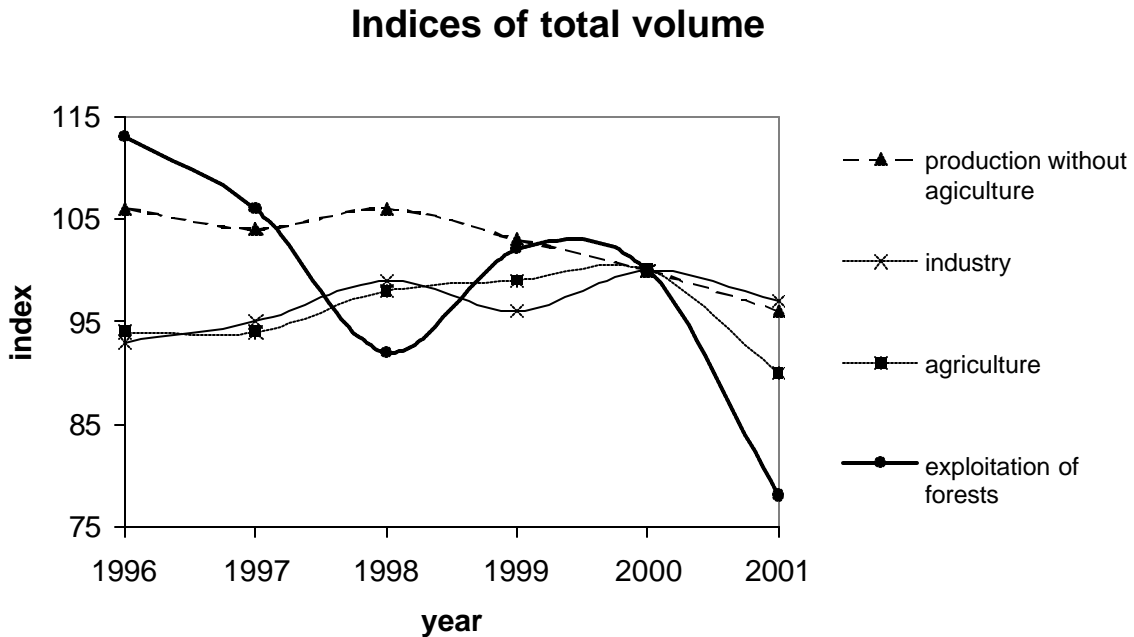


Figure 5 Indices of total volume in Macedonian production with the year of 2000 as basic year¹⁶

In Figure 5, you can see that the production in the country has been relatively stable since 1996. The industrial production has to some extent been falling since 1996. The production in forestry has steadily been falling during the period; it is the most significant tendency. Ferrous and non-ferrous metallurgical industries are based mainly on serving export customers.

The Skopje Steel Works has an annual capacity of 1,2 million tons of hot and cold rolled sheet metal. Other plants can produce ferrous alloys, seamed tubing and Ferro-nickel products. Other installations produce lead, zinc, copper, gold and silver. The construction and building materials industries rely on domestic raw materials: feldspar, calcium carbonate, bentonite, crumbled and micronized quartz, perlite, etc. Outputs include china, tile, sanitary ware, asbestos, cement and cement products as well as gypsum products.

The share of social product resulting from mining and industry was about 11%. Metal fabrication and electrical equipment industries manufacture various structures including buses, castings, batteries, cable, pumps, etc while others produce household appliances etc. Machinery for metal, wood and plastic processing industries is available. The segment's share of social products industrial activity was about 10%. Basic and process chemical industries

¹⁶ Republic of Macedonia State Statistical Office 1.2.2.08 p 5.

have accounted for about 9% of industrial social products. Capacities exist for basic chemicals, polyacrylonitrile fibre, polyvinyl chloride as well as detergents, fertilizers, polyurethane foams and fibres. Pharmaceutical and cosmetic firms are well established.

The textile industry, including fibres fabrics and finished products, is a major employer and contributor to industrial social product (over 15 %). Cotton thread and fabric, denim cloth, wool yarn, fabric and knitted fabric, are the principal products. Readymade clothing production has increased in response to demands from European and North American markets for quality merchandise at reasonable costs. A significant leather and leather processing industry exist. Skins of pig, calf, cow, bull, lamb and sheepskins are all processed for the local manufacture of furniture, clothing and shoes. With a capacity for annual production of 7 million pairs of shoes, the industry has been a major export earner.

Food and beverage processing are highly developed: flour milling and baking, canned and bottled fruits and vegetables bulk and bottled wines; beer malt and beer. Besides brewing beer they also are a license of Coca-Cola.¹⁷

Macedonia in the republic of Yugoslavia

At the end of Second World War Macedonia was a typical agrarian and underdeveloped country; only small-scale handicrafts were carried on in the towns. Over the next 40 years under the aegis of the Socialist Federal Republic of Yugoslavia investment poured in and growth averaged 5,3% annually causing the gross domestic product (GDP) to be magnified by 8 times. Industrial production grew at over 8% annually and doubled its share of GDP while the service sector's share grew by 50%.¹⁸

Council of workers, which protected wages and employment at the cost of investment, made all major decisions. Losses were financed by a banking system controlled by the largest enterprises, the "loss markers". In addition, large firms and heavy industries dominated the productive sector and many of these were integrated with firms located in other Yugoslav Republics. Enterprises which related on them for material and power inputs, were dimensioned to supply markets in the rest of Yugoslavia and the COMECON countries that have how been lost.

¹⁷ Australian Development of Foreign Affairs & Trade <http://www.dfat.gov.au/geo/fyrom> last modified: 10 july 2002.

¹⁸ Agency of Information (Facts about Macedonia) <http://faq.macedonia.org/economy/econ.overview.html> 2002.

The Macedonian economy after liberation

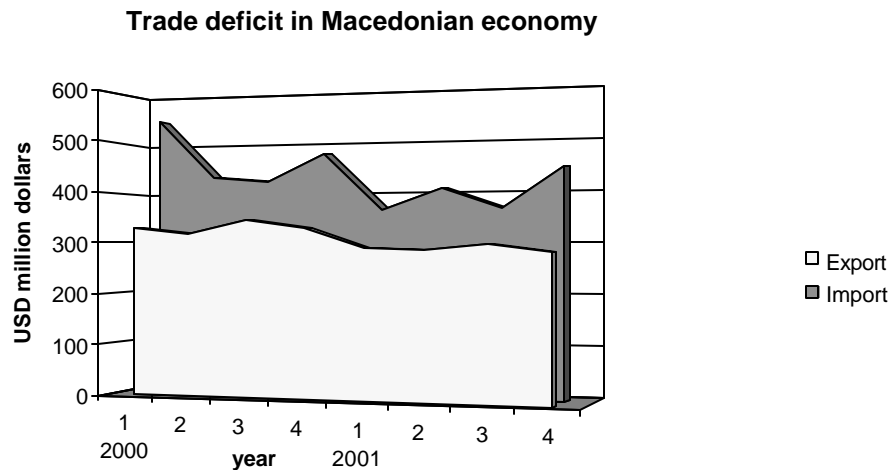


Figure 6 Trade deficit in Macedonian economy. The import to the country has steadily been higher than export in the last two years¹⁹.

The republic of Macedonia has passed through a difficult period since declaring independence in 1991, an event that coincided with the start of a painful economic transition in the region as a whole.²⁰ The loss of old markets and the difficulties of transforming a communistic plan economy into a free market economy led to a 30% fall in output, mass unemployment and hyperinflation.²¹ A quite huge trade deficit has even though occurred, as is mentioned in Figure 6.

The economy was till the early 1990's essentially dependent on the markets of the sister republics of the Former Yugoslavia, as well as the possibility to export surplus to other COMECON (communistic cooperating) countries. The break up of this system had enormous effects to the economic activity in the region. Production during the period fell dramatically more than 30 percent during the period 1990 to 1995. The collapse of old industries in turn provoked hyperinflation as government revenues declined and outlays for social welfare grew. The budget deficit reached 13,6% and prices rose by almost 2000 % in 1992.

The recent conflict in Kosovo and the related influx of refugees into Republic of Macedonia placed to some extent new burdens on the national economy – put in another way, some sources argue a positive impact in Macedonian economy due to different kinds of economical activities connected to this war. Quite a lot of foreign people have visited the region due to this conflict and the trade grew to some extent. The problems grew dramatically with the loss UN sanctions against Yugoslavia and a Greek embargo against the small country in the early

¹⁹ Republic of Macedonia State Statistical Office, 1.2.2.07 p 13.

²⁰ Australian Development of Foreign Affairs & Trade <http://www.dfat.gov.au/geo/fyrom> last modified 10 July 2002.

²¹ Australian Development of Foreign Affairs & Trade <http://www.dfat.gov.au/geo/fyrom> last modified 10 July 2002.

and mid 1990's. The end of Greek embargo in October 1995 and the lifting of UN sanctions against Yugoslavia have created a more normal environment.

Difficulties in relations with Greece culminated in their imposition of a trade embargo in February 1994, which blocked access to Greek markets and to the port of Thessalonica that had provided an important route for imports and exports to and from third country market. These events threatened the economic stability of the country and exacerbated the tensions associated with the economic and political changes generated in the move to independence. Relations with Greece were re-established in October 1995. During 1998 and 1999, economic problems in Bulgaria and political strife in Albania and Yugoslavia again undermined confidence in regional stability, although events in Kosovo in 1999 did not have the degree of negative economic impact initially expected.²²

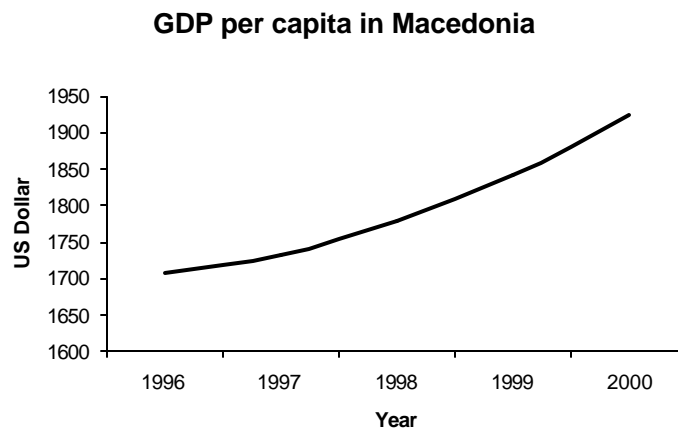


Figure 7 GDP per capita in Macedonia²³

With average net monthly income just over USD 170 in 1998, the country is a low to middle-income country, although the low rate of population increase and a high rate of literacy (over 90%) give it some advantages compared to other countries in this group.

The economy in Macedonia has even though been constantly increasing in recent years (see Figure 7). Different sources mention different levels varying by c. \$100, but the trend seems to be clarified. Still, the economy is quite weak and at least a part of this positive trend could be explained by occasional factors. Two often mentioned reasons are the Balkan wars in early and mid 1990's, and the many visiting foreign representatives in present years coping with stability and development of the Balkan society.

²² Australian Development of Foreign Affairs & Trade <http://www.dfat.gov.au/geo/fyrom> last modified: 10 July 2002.

²³ State statistical office 1.2.2.08 pp 4.

Some economical key figures

	1996	1997	1998	1999	2000
GDP at current prices (in million MKD)	176444	186019	194979	209010	236389
GDP in million US\$	3390	3458	3757	3730	3899
GDP per capita in US\$	1709	1732	1781	1843	1924
Gross Domestic product	1.2	1.4	3.4	4.3	4.5
GDP deflator	102.9	103.4	101.4	102.7	108.2
Domestic demand	1.6	3.0	3.5	1.4	...
Individual consumption	3.0	3.1	3.3	3.5	...
Collective consumption	0.2	-2.4	3.8	4.4	...
Investments in fixed capital assets	6.5	-4.3	-2.6	-1.4	...
Export of goods and services	-12.9	29.3	8.5	6.9	...
Import of goods and services	-8.6	26.4	7.4	0.1	...

Table 1 Gross Domestic Product²⁴ (growth rates unless other is stated)

Centralisation and problems with corruption

Macedonia is by now the most centralized state in Europe. 98,5% of public employed people, are employed by the state. Only 1,5% are employed by local communities over the country. In another perspective, the public sector is hugely biased in an ethnic perspective. Ethnic Macedonians dominate the public sector as well as the industry.²⁵ Due to the highly important Ohrid-treaty in 1991, this centralisation has to be reformed. Far reaching decentralisation and efforts in employing stuff representing the ethnic map is measured as an important tool in handling ethnic tensions.

The last two mandate periods the ruling parties have been deeply caught in corruption. Worst till now seems the right wing party of VMRO-DPNE has been. Today the party and its members is the biggest and richest economical force in Macedonia.²⁶ The exploding corruption has seriously damaged the possibilities of leading the small country. As a consequence of this plundering, no politician seems to be able to afford trust enough to provide needed leadership.

Budget problems

Macedonia had a budget deficit of approximately 5% in 1999. Industrial output grew by only 1,6% in 1997 instead of the expected 4-5% but surged to 12,5% by the 3rd quarter of 1999, compared to 3,5% growth for the equivalent period in the preceding year. With external debts at around USD 1.8 billion (equivalent to 55% of GDP), the republic is a moderately indebted country and should be in good position to attract external financing for viable projects.²⁷ Strict budgetary discipline combined with firm monetary and wage policies brought inflation down

²⁴ Blagica Novkovska *Monthly Statistical Bulletin of the Republic of Macedonia* 2002, 4.

²⁵ Brunnbauer 2002, p. 12.

²⁶ Brunnbauer 2002, p. 19.

²⁷ Australian Development of Foreign Affairs & Trade <http://www.dfat.gov.au/geo/fyrom> last modified 10 July 2002.

to single figures in 1995 and a mere 1,9% in 1996. Some taxation reforms were carried out, some problems remain because of the narrow tax base (with associated high rates) and inefficient collection mechanisms. Tax reforms are still needed, however, to widen the tax base, improve collection and make possible cuts in some tax rates.

Public reforms

In response to the difficult economic circumstances within the country, the Government embarked upon a wide-ranging reform program. New legislation in support of the stabilization program negotiated with the International Monetary Fund (IMF) has been developed. Most has now been enacted into law including laws on pension and insurance, labour relations, taxes (profit income, property and customs) banks, foreign trade, concession, foreign credit relations, foreign investment, securities, central bank and privatisation.²⁸ Property rights and legislation according to market and entrepreneurship are challenges of the new market economic system in Macedonia. Much has happened but especially the need of land reforms is still urgent and so far the young democracy has been unable to face the challenges connected to such a reform.

The Government privatised 1,200 inefficient “socially owned” enterprises, encompassing 60% of the labour force and 50% of GDP measures were also adopted to move the agricultural sector into private hands. As part of the reform program, the Government separated a number of large companies into smaller firms to make them more attractive to investors. These included the post office, the electric company and the 23 biggest loss-makers. The firm monetary policies applied since 1994 have led to economic stability, and the benefits of economic transformation are beginning to be felt.

The first effects of reform were seen in 1996 when GDP and real consumption increased for the first time since the start of the transition crisis. Although GDP was expected to grow by 3-4% per year in subsequent period the increase was only 2,9% in 1998. The restructuring of loss-making enterprises has added to already high unemployment and export performance remains disappointing. The private sector is expected to be the main source of growth and new jobs in the coming years. In 1995 it accounted for 40% of GDP (up from 14% in 1990) and 30% of employment (up from 10% in 1990).

²⁸ Agency of Information (Facts about Macedonia) <http://faq.macedonia.org/economy/econ.overview.html>2002.



*Figure 8 GDP deflator*²⁹

Efforts have been made to deal with the problem of high inflation brought about by increasing welfare costs and declining government revenues. Strict budgetary discipline combined with firm monetary and wage policies brought inflation down to single figures in 1996. With an inflation of about 2 – 5%, the country seems to be stable and polite.

The end of the Greek embargo in October 1995 and the lifting of UN sanctions against Yugoslavia have created a more normal economic environment. The republic has got preferential trade agreements with the EU and the other former Yugoslav republic and formed a customs union with FR Yugoslavia in 1996.

The Government has sought to simplify the foreign trade regime and to reform the social security system. Additionally, efforts have been made to improve business transparency by introducing new legislation in the fields of bankruptcy, commercial and foreign investment, and price liberalization. New institutions have also been established to ensure the smooth functioning of the market. Export subsidies were abolished in 1996 following recommendations from the World Bank, although, transport costs for exporters are subsidised, e.g. for tobacco and tobacco products³⁰.

Today, Macedonia has trade agreements with most of the European countries. One important example is the Stabilisation and Association Agreement with the EU. It allows for trade liberalisation for all agricultural products; still, some limitations like quotas and progressively reduced tariffs over a 10-year period apply to certain products. The country also has free trade agreements with other Balkan countries and EFTA. The closest co-operation is with Croatia, Bosnia-Herzegovina, Yugoslavia, and Albania, with whom they have formed a special alliance named the Stabilisation and Association process.³¹

Macedonia became a member of WTO in October 2002. They will have 3 years to comply with the Organisations rules. The country has been granted to support an agricultural product up to 5

²⁹ Republic of Macedonia State Statistical Office 1.2.2.08 p 4.

³⁰ Ericson 2003.

³¹ Hegarty, 2002.

per cent of the value of production of that product. They may also subsidise non-productive inputs with up to 5 per cent of the value of total agricultural production.

Social ownership

The associative form *Social ownership* is still common in Republic of Macedonia, however maybe a bit unusual in the western parts of Europe. Social owned Capital is not state owned Capital. "Everyone and nobody" own it and therefore it could in one perspective be seen as common land (in Swedish *härads-allmänning*). The employers' council rules socially owned enterprises³².

After liberation, 1991, many socially owned enterprises have gone into bankruptcy. Some has been privatised, however many have as a matter of fact been liquidated. When privatisation has been possible, the privatisation scheme divide the enterprises between employers (30%), governmentally ruled pension funds (15%) and actors on the market. In small enterprises the employers commonly buy out the enterprise. Bigger companies often got transferred to limited socks companies or the owning divides into shares.

Society seldom becomes as deeply sensitive as in periods of dramatic changes in the owner structures. The access to relevant information in these procedures often has a tendency to be biased in disfavour to common citizens in the country. Diverging interest causes opposition in the common debate and between the citizens. Hit by corruption, the country has been seriously vulnerable during this privatisation process.

16 agricultural enterprises employing 1200 people were in end of 2002 involved into this process of privatisation or liquidation. The value of these enterprises has been estimated to about 200 million EUR³³.

The Ohrid-treaty

The biggest intervention is the stabilisation treaty signed in Ohrid 2001, between the Macedonian government and Albanian representatives. It had never been signed without heavy pressure from the European Union and USA. The treaty is far reaching in the ambition of decentralisation of the Macedonian public sector. Integration of minorities will be highlighted thanks to this treaty and ethnic people have to be specifically selected when employing new stuff in public sector.³⁴

The Ohrid-treaty was signed 13th November 2001 between National liberation Army (NLA), the Macedonian government, in that time led by the VMRO-DPNE party. The treaty became an end to the violent conflict in the country, which had been occurring during the year 2001. The over all objective of the treaty was according to the English version of the treaty to secure the future of Macedonia's democracy and permit the development of closer and more integrated relations between republic of the republic of Macedonia and the Euro-Atlantic community.

³² Privatization Agency of the Republic of Macedonia. <http://www.mpa.org.mk/>

³³ Privatization Agency of the Republic of Macedonia. Status report as of December 31, 2002

³⁴ Brunnbauer 2002, p. 4-7.

The treaty could be monitored as a cow-trade where one part (NLA) obligated to dissolve its organisation. The other part (the government) obligated far-reaching reforms. The treaty could be monitored into three cornerstones:

- Changes in the constitution of the country. All people's equal rights were highlighted in constitutional legislation.
- Changed juridical conditions focusing on language, parliamentary procedure, decentralised structures of power, positive discrimination in order to raise the representation of minorities in the public institutions.
- A timetable was introduced, in order to eliminate violence and to demilitarise and demobilise the Albanian NLA. As a tool in these efforts, NATO as third part overtook some duties.

Foreign support to Macedonia

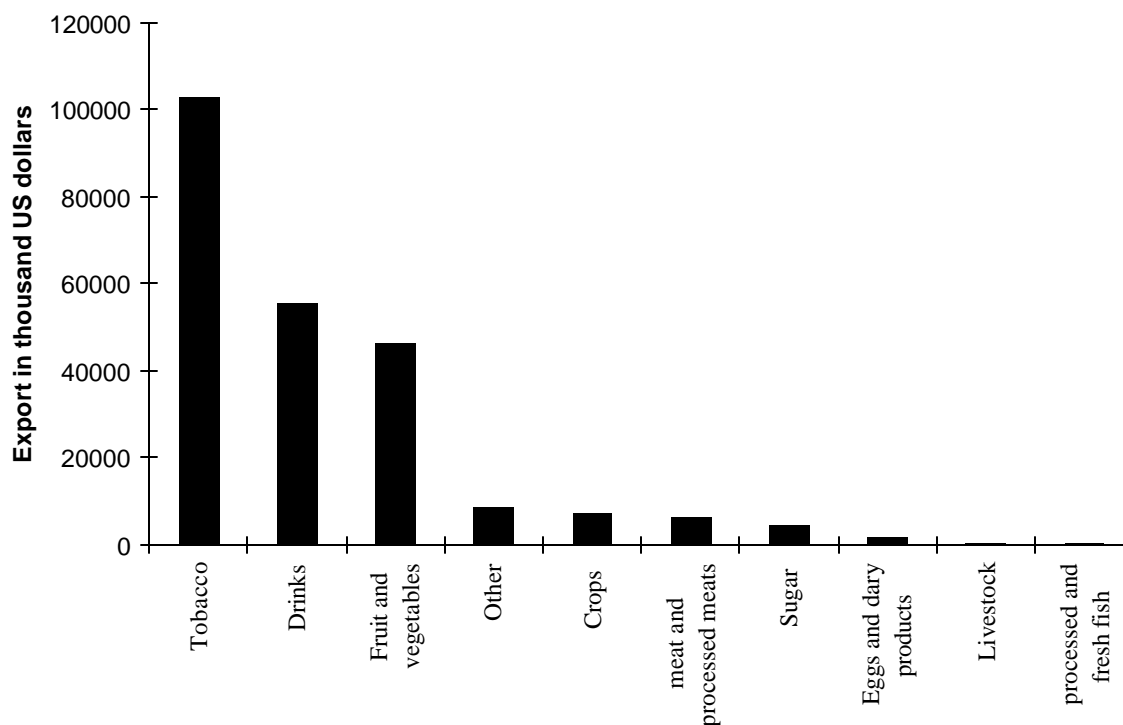
Today foreign organizations intervene in almost all levels of the Macedonian societies. The International community has provided considerable financial support for the reform program. The World Bank committed USD 240 million for seven projects in the period 1994-1996 and a further USD 170 million through to the end of the century. During 1995 the Paris Club approved the rescheduling of repayments on USD 340 million worth of commercial loans. The IMF approved a USD 74 million ESAF (Enhanced Structural Adjustment Facility) in 1997. To alleviate negative effects of the Kosovo crises on Macedonian economy, the World Bank granted a USD 50 million emergency loan in April 1998 and other international donors provided USD 250 million in grants and loans to support country's balance of payments.

Macedonia has signed preferential trade agreements with EU and other former SFRY republics. It formed a customs union with Yugoslavia in 1996. Imports in 1998 were worth USD 1.75 billion, and exports amounted to USD 1.18 billion. European countries accounted for almost 90 per cent of all foreign trade. Foreign direct investment has been growing in 1998, to inflow reaching USD 118 million, and was directed chiefly at telecommunications, cement and pharmaceutical plants, as well as the Skopje steel mill and tourism. In 1999 the trend continued in spite of the Kosovo crisis.

4 Agriculture

Trade in agricultural commodities

Overview export of agricultural commodities 1996 - 1998

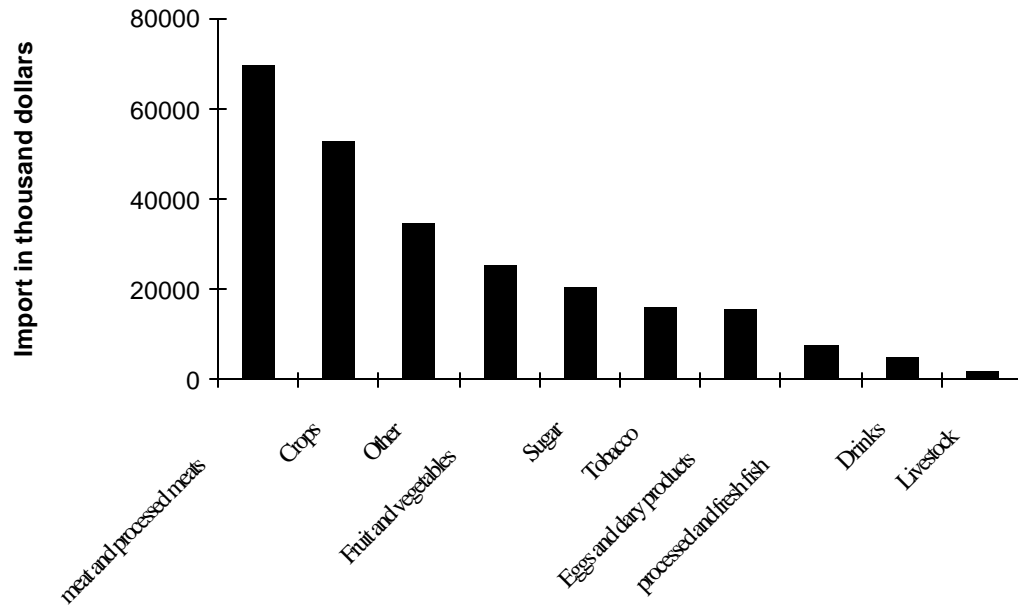


*Figure 9 Overview export of agricultural commodities*³⁵

The biggest values of export in Macedonian agricultural products are tobacco, but also wine, fruit and vegetables are exported. I.e. sun-, and labour intensive products with small amount of capital input is exported from the country.

³⁵ Ministry of agriculture, Forestry and Water Economy (2001) pp 26.

Overview import of agricultural commodities 1996 - 1998



*Figure 10 Overview import of agricultural commodities*³⁶

The country imports mostly meat and processed meats. Cereals are imported as well as fruit and sugar. I.e. capital intensive-, and cereal based products are mostly imported to the country.

It is easy to see that labour intensive and capital extensive production has been the competitive advantages in Macedonian agriculture in the past ten years. Capital is, at least until now very expensive and the lack of capital characterise quite well the present situation. The winners within the market seem to be the peasants and small-scale farmers, that newer has had the possibility to lend money from outside the family and there fore faced the situation quite well.

³⁶ Ministry of agriculture, Forestry and Water Economy (2001) pp 26.

Export and import of agricultural products in Macedonia (in milion us dollar)

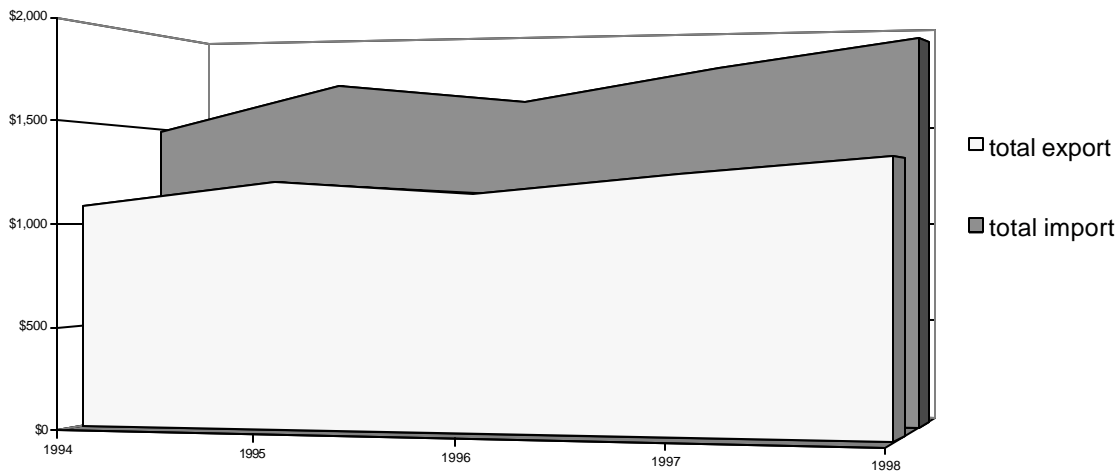


Figure 11 Export and import of agricultural products in Macedonia³⁷

Even though Macedonia is an agrarian society, the country faces a situation of trade deficit in agricultural products. The deficit is, according to this source, constantly about \$500 million. But initiated economists doubt this information – the trade deficit in agricultural commodities could not be this big.³⁸

Mostly quite well processed products imports to the country from abroad. The cheap capital and higher quality in processing foodstuff abroad relatively inside Macedonia, makes this import profitable for the country.

³⁷ Ministry of agriculture, Forestry and Water Economy (2001) pp 26.

³⁸ Dragi demitrievski, Seminar at dep. of economics, SLU, Uppsala 20021022.

Agricultural population

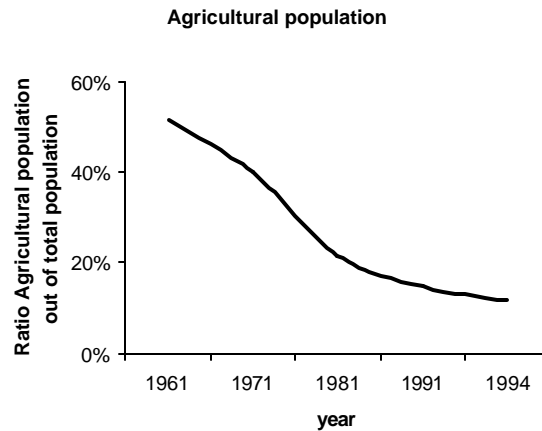


Figure 12 Trend of agricultural population in Macedonia³⁹

The share of the agricultural population in Macedonia is still very high in comparison with the EU members. About 12% of the Macedonian population is seen as (full time) farmers. The figure is a bit old, but till now give hints that this figure has not been changed dramatically since 1995. A situation with huge unemployment is expected to have been maintained this ratio or even risen the part of population engaged in agriculture during the years after 1995. In absolute numbers, it could be about 200 000 to 250 000 citizens employed full time in Macedonian agriculture.

There are difficulties with the data regarding the social and economic structure of the agricultural households, which are considered agricultural holdings as well. The difficulties refer to the data comparison of the 1994 census. The pure agricultural holdings represented 18,8%, the mixed ones 36,3%, the non-agricultural holdings 36,1% and elderly households 8,8%. Data is collected from the regular annual survey about the "Available and used funds of households"⁴⁰ when the pure agricultural households represented only 6.4%, the mixed ones 22.8% and the non-agricultural 70.8% of the total households.

³⁹ Ministry of agriculture, Forestry and Water Economy (2001) pp 47.

⁴⁰ SG RM/99

Revenues	1996			1997			1998		
	Total	Pure	Mixed	Total	Pure	Mixed	Total	Pure	Mixed
Cash agriculture	47	109	34	100	156	86	62	99	51
Consumption agriculture	44	69	39	53	54	53	50	69	45
Total revenues Agricultural Activities	91	178	73	153	210	139	112	168	96
Revenues ratio of total activity	38%	70%	31%	62%	84%	57%	40%	67%	37%
Total revenues from activity	239	253	236	245	251	243	280	249	263

Table 2 Total revenues from agricultural activities in thousand MKD / household and year. ⁴¹

Table 2 is based on the Macedonian agricultural development strategy. It is quite complex to understand and its correctness by principal could be discussed. Anyway, the authors divide the farmer group in two subgroups, “pure” and “mixed” farmers. It seems reasonable to interpret this as a distinction between full time and part time farmers.

Due to the interpreting text in the source, it shows total revenues from agricultural activities at: pure, mixed, and total agricultural households (holdings)⁴², in thousand MKD / household. Conditionally interpreted "Cash from property" and “interfamily consumption” = revenue from agricultural activities of a household.

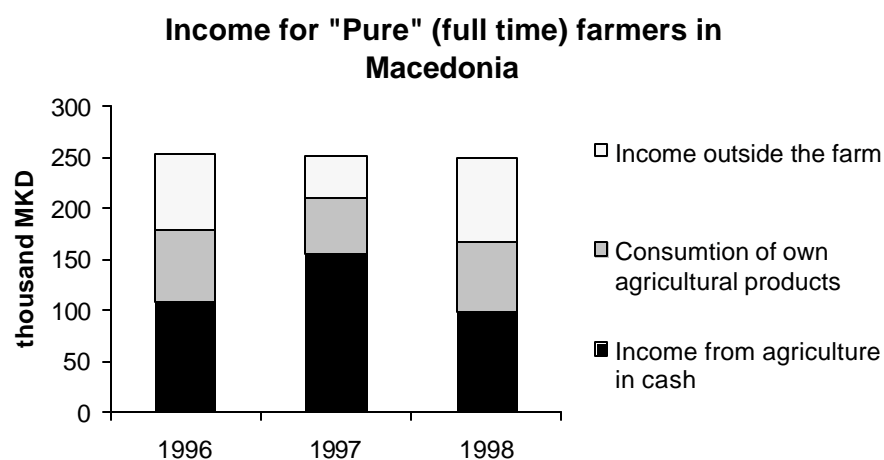


Figure 13 Income for “pure” (full time?) farmers in Macedonia⁴³

⁴¹ Ministry of agriculture, Forestry and Water Economy (2001) p. 53

⁴² SG RM/97, 98, 99

⁴³ Development strategy p. 53

Income in "mixed" (Part time) farms in Macedonia

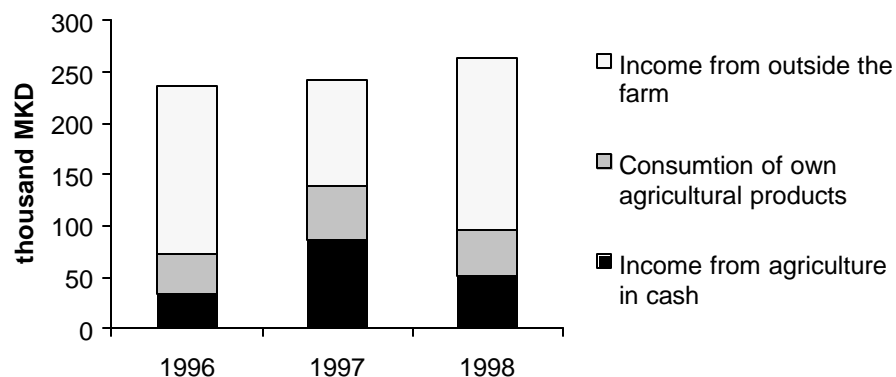


Figure 14 Incomes for "mixed" (part time) farmers in Macedonia⁴⁴

Both groups has a total income in the household at about 250 000 MKD (\approx 37 000 SEK / year). However, the total income should be about 280 000 MKD if the two subgroups were merged (Table 2). Obviously, income from outside the farmer household is heavily important for both of the groups. On average, if we merge the groups only 38% of the total revenue in 1996 are from agricultural activities, 62% in 1997 and not more than 40% in 1998.

All those who live in villages are not exclusively farmers; they complement their revenues with non-agriculture activities as well. It is also interesting to note that a large portion of the revenues of the total agriculture operations comes from consumption within the family. It ranges between 30-40% in the "pure" households and 40-50% in the "mixed" ones.

Private agricultural companies

The private agricultural holdings officially are 460,000 ha, which is approximately 73% of the total arable land in the country, and their average size is 2.58 ha. However, if we take into account the data from the last census as of 1994, the same 178 000 individual holdings stated that they were using only 229 000 ha of arable land. According to this, their average size is 1.29 ha. Out of this, we could conclude that even though they own the land, they only cultivate roughly 50% of it.

⁴⁴ Development strategy p. 53

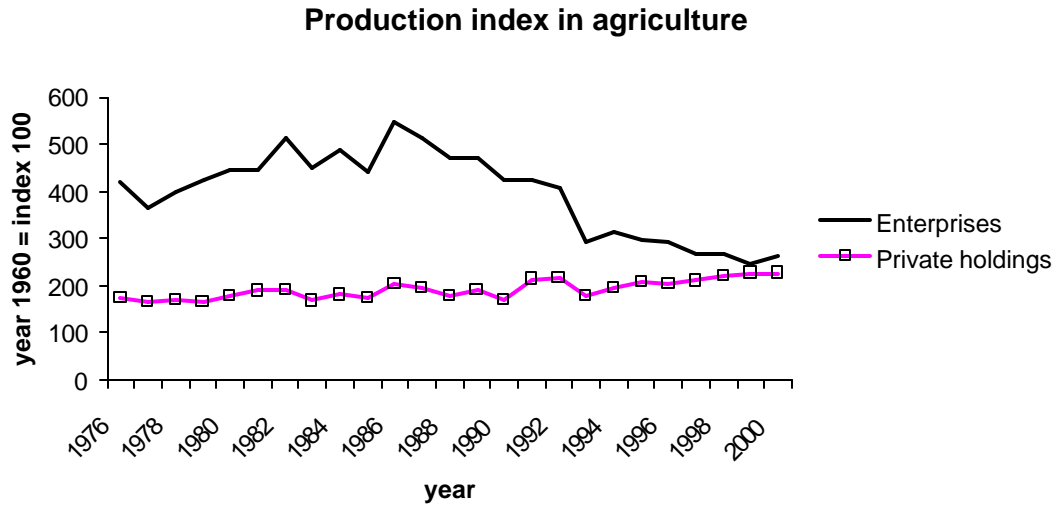


Figure 15 Production index in Macedonian agricultural production⁴⁵

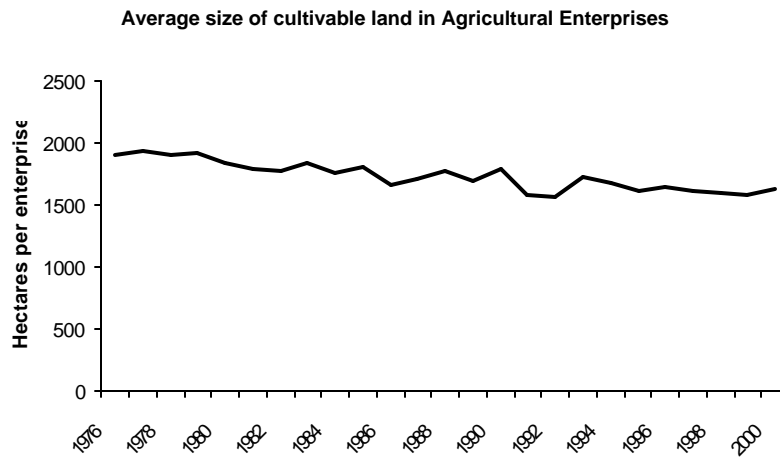


Figure 16 Average size of cultivable lands per Agricultural enterprise in Macedonia⁴⁶

⁴⁵ Republic of Macedonia State Statistical Office (2001) p. 424.

⁴⁶ Republic of Macedonia State Statistical Office (2001) p. 424.

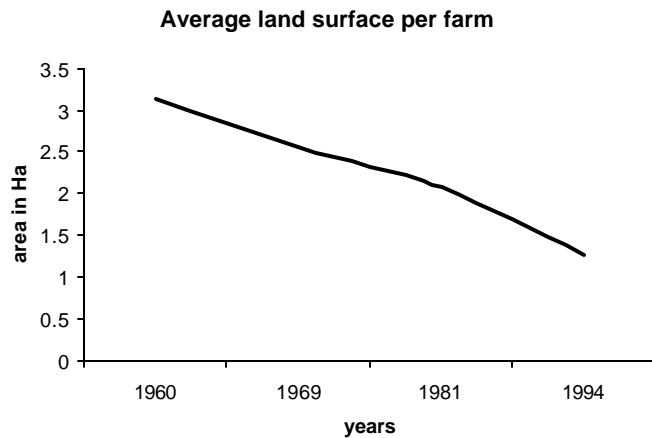


Figure 17 average areas per farm in Macedonia⁴⁷

Figure 17 shows the numbers of farm units. Macedonia has had several land reforms. The latest one in 1953 limited the maximal farmland area in a private farm to 10 ha. Since 1953, many small farms have been divided between family members and this occasion seems to be shown quite well in the figure.

Since the law of area limits in private farms 1953, the statistical median of farm size in Macedonia has instantly been decreasing, an indeed unusual trend. Some of these farms have been divided between family members – this trend also was seen in 19th century Sweden. Other reasons, especially in the last decade could be a difficult situation for large-scale, in comparison to the market situation, inefficient state-, Cooperative and collective farming.

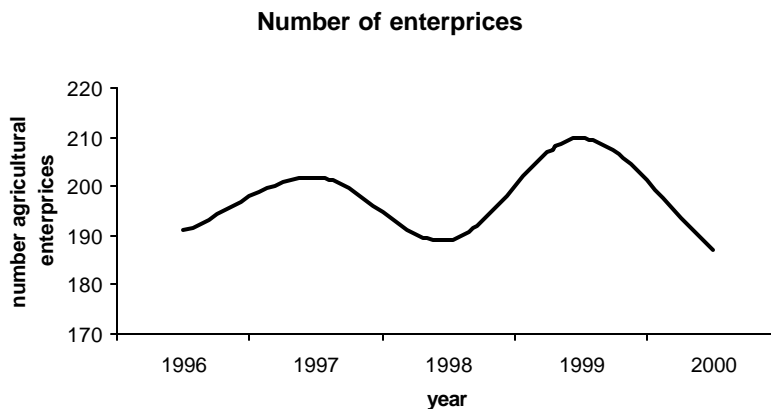


Figure 18 Number of agricultural enterprises in Macedonia Including agricultural cooperatives and economies of non-agricultural enterprises⁴⁸.

⁴⁷ Ministry of agriculture, Forestry and Water Economy (2001), p 51.

⁴⁸ Republic of Macedonia State Statistical Office (2001), p. 448.

The source to Figure 18 are a bit unclear to interpret. The definition of “agricultural enterprises” seems to be unclear. As I have understood it, agricultural enterprises today are operations following ordinary business laws, i.e. book keeping, VAT laws, firm taxation and so on.

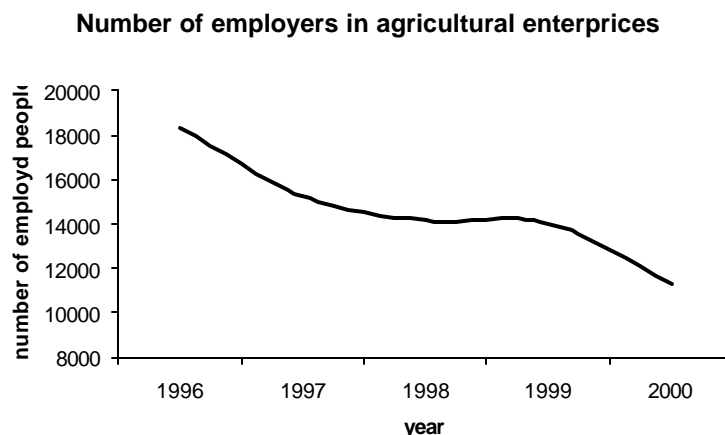


Figure 19 Number of employers in agricultural enterprises⁴⁹

The number of agricultural enterprises, around 200 units, is indeed small in comparison to the total amount of farmers. They cover about 1,5 million hectares (Figure 19), i.e. in general 7 500 hectares per enterprise. In this number also pastures and forests are included.⁵⁰ Farms over 5 000 ha per unit runs about 5/6 of the total area. About 15 000 people are employed in this enterprises.

Since 1996 there have been an on going transformation of the farm firms, something like a civil war has occurred in the country and the unemployment rate has rapidly been rising. Some of these units have been divided in smaller units; some of them have gone into bankruptcy due to, for instance, difficulties with lack of capital and high capital costs. Capital costs have, despite falling interest rates, been extremely high with an interest today to ordinary companies of about 19% per year.

An opportunity to transform small farms into firms has been opened last year. The aim is to invite small farms to transform their operations to common firms with rights and duties as other firms outside agriculture. Till today this opportunity has not been used to any higher extent. The farmers seem not to know how to do this and still it is an advanced bureaucracy for farmers to face.

⁴⁹ Republic of Macedonia State Statistical Office (2001), p. 448.

⁵⁰ Dragi demitrievski, Seminar at dep. of economics, SLU, Uppsala 20021022.

Investments in fixed assets, agricultural enterprises

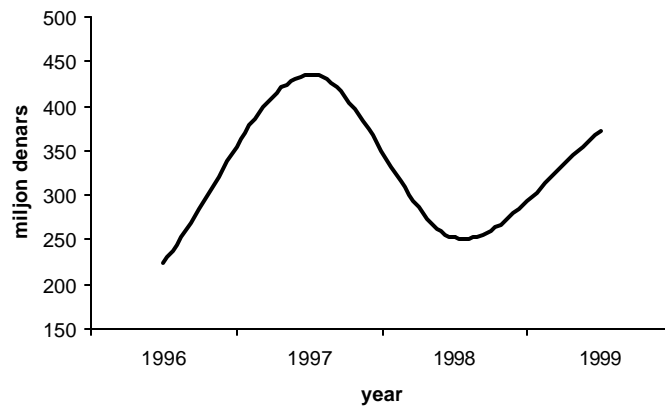


Figure 20 Investments in fixed assets in agricultural enterprises⁵¹

The investments (Figure 20) have been – due to the Statistical office in Skopje – about MKD 350 million or about SEK 30 – 60 million yearly. Again, due to high interest rates and a constant lack of foreign capital heavy pressure has been put on the investments.

Index of production in agricultural enterprises

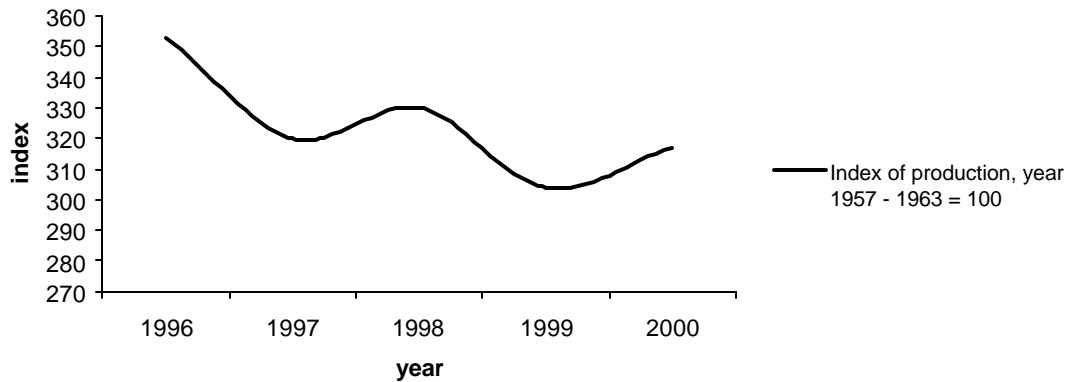


Figure 21 Index of production in agricultural enterprises with the period 1957 – 1963 as basic period⁵².

⁵¹ Republic of Macedonia State Statistical Office (2001), p. 446.

⁵² Republic of Macedonia State Statistical Office (2001), p. 446.

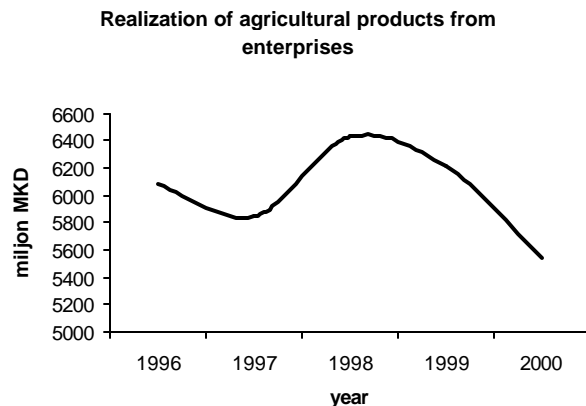


Figure 22 Realization of agricultural products from enterprises⁵³

The production in these enterprises has been rising a lot since the early 1960's. The green revolution, mechanization and structural reforms have been important tools in this transformation. But other interesting questions are the impact of rising oil prices in 1972- 75 and, of course the situation before the fall of the federation of Yugoslavia, around 1990. Despite this, the production seems not have been rising more than three times in nearly 40 years.

The economical activity in these enterprises has been falling over time. Many face problems in organization, owner structure and other issues that directly or indirectly have impact on quality and output. Even worse, almost always they need foreign capital for investments, extraordinary expensive in the time after liberation if capital has been available on the market at all.

Due to the low profitability in agriculture in general, private farmers are less and less in a position to buy new pieces of arable land and expand their property and business. This is one reason for the weak trade and free market development of the agriculture sector.

Situation of cooperatives

The period 1990-2000 is known as a stagnation period for the Republic of Macedonia, or even a period of neglect of development in agriculture cooperation. The number of cooperatives has substantially declined (from 320 in 1990 to 80 in 2000 or four times lower). Their equipment is more and more in decline, due to insufficient and deteriorated mechanisation and skill.

Many cooperatives lost their legal registration with the passing of the Transformation Law on Enterprises and Cooperatives with State-Owned Capital Doing Business on Agricultural Land⁵⁴.

⁵³ Republic of Macedonia State Statistical Office (2001), p. 446.

⁵⁴ Official Gazette no.19, 1996

With this loss, they have lost their business structure. Some of the cooperatives (up to the time of the passing of the Constitutional Court decision on Recognizing of Cooperative Property), transformed themselves, as other business entities bonded by law did.⁵⁵

Agriculture enterprises in transformation and transition

Contradictory statistics about the shares of agricultural enterprises in exploitation of t agriculture land. Officially, they have been exploiting over 600.000 ha⁵⁶. However, the Statistical Review 311/98 reveals that they exploit only 167.000 ha (the rest falls on pastures, managed by the Public Enterprise for pastures).

The model of privatisation of the agriculture organizations in Republic of Macedonia is regulated with a special Law (1996). Privatisation is not performed on agriculture land, which is a property of Republic of Macedonia. The exploitation is regulated in 1998 with the law for agricultural land. Land and other real estate have become Governmental or public property by forced regulations (regulated by a special Law for Denationalization in 2000).

According to this law the agricultural enterprises and cooperatives are transformed (privatised) into joint stock companies and limited liability companies such that the agricultural land is in governmental property and the companies will exploit them on a long-term lease.

Agricultural organizations (livestock farms, factories, wine processing plants, fish production sites, institutes, laboratories, seed production facilities etc) develop a special program for the transformation implementation and they perform the restructuring with a prior financial evaluation of each of the units/parts of the organization.

According to the information from the Agency for Privatisation⁵⁷ (March 1999), 243 agriculture companies have been registered, out of which 145 have been privatised, 13 have been liquidated a total of 158. That represents 65% of the total number of the companies. The rest of the 53 agricultural companies are in the process of privatisation and another 32 are in bankruptcy.

According to some special research, a new situation with the property structure and size of the agriculture companies has been registered, after the process of transformation and privatisation, which still goes on for some of them.

Hydro systems

Republic of Macedonia falls within the group of countries that have built their own irrigation systems that cover a relatively large portion of its territory compared to some other countries from the region (Serbia, Croatia), but at the same time it is still less advanced than some other countries (Greece, Bulgaria).

⁵⁵ Ministry of Agriculture, Forestry and Water Economy pp 218-220.

⁵⁶ SG RM/99

⁵⁷ ARMTPOK, (1999).

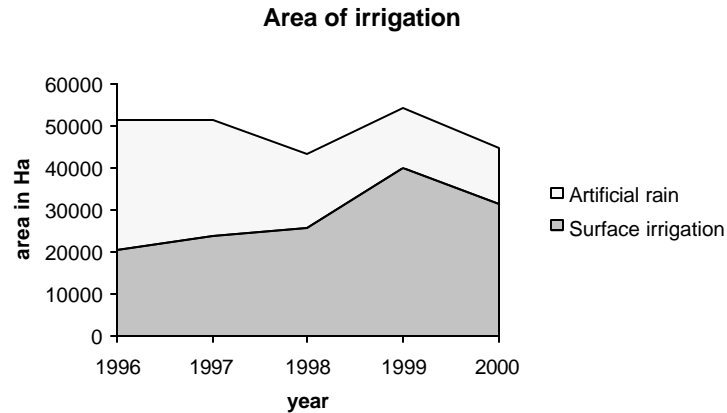


Figure 23 Area of irrigation according to type of irrigation⁵⁸

The effectively irrigated surface varies from year to year, and it ranges from 140 000 ha to 85 000 ha. After the ten-year period of drought (1985 - 1994), this size was reduced due to shortage of irrigation systems. In addition, the irrigation surface steadily decreases because of damaged and depreciated irrigation channels and other facilities, capital transformation of the large agriculture companies, irregular fee collection for irrigation services etc.⁵⁹

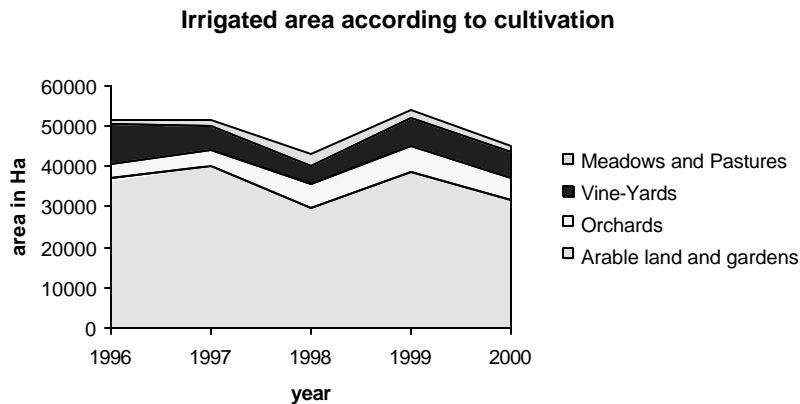


Figure 24 Irrigated areas of agricultural enterprises, cooperatives and private agricultural holdings.⁶⁰

The biggest surface covered of irrigation is arable land and gardens, i.e. husbandry crops as cereals, industrial crops, garden plants and feed crops (Figure 24).⁶¹ Only small areas of orchards, vineyards and pastures are covered by irrigation.

⁵⁸ Republic of Macedonia State Statistical Office (2001), p 445.

⁵⁹ Society of Agricultural Economists of the Republic of Macedonia (2001), pp 97-99.

⁶⁰ State Statistical Office, (2001) pp. 445

⁶¹ Republic of Macedonia State Statistical Office (2001) pp. 422.

The irrigation systems cover due to another source a projected surface of about 160 000 ha⁶². Basic facilities and irrigation channels are built for 140 000 ha, and detailed construction is completed for 132 000 ha, but due to a change in some of the land and other external reasons, only 127 000 ha can realistically be irrigated.

Out of these constructed irrigation systems (127 000 ha), 100 000 ha are related to the river of Vardar, 8 000 ha to the river of Crn Drim, and 18 000 ha to the river Strumica.. Thirteen large accumulations are constructed and linked to each of the remaining two, Crn Drim and Strumica.

The water quality in these systems is in general considered satisfactory, because most of the major accumulations are located downward along the river, over the main pollutants. However, some of these accumulations (systems) can be polluted because of their location on the river (downward from the pollutants) and the water can be of a variable quality.

Livestock production

Cattle and buffaloes

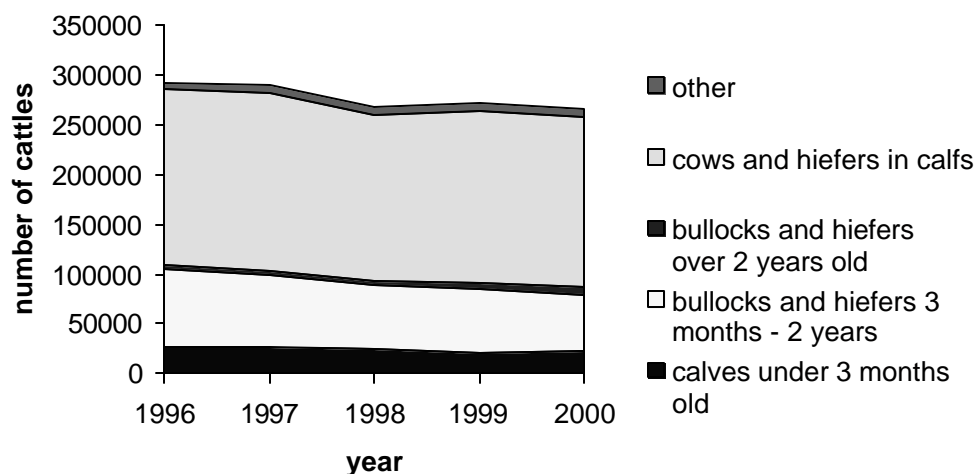


Figure 25: amount of cattle and buffaloes in Macedonia⁶³

The production of cattle has steadily decreased in recent years according to Figure 25. This trend of is also seen in EU and Eastern Europe. Especially since 2000 and the outbreak of mad cow disease, the production in many eastern European countries has decreased by up to 10%.⁶⁴ Since 2000 Macedonian production of beef has only decreased slightly. The country produce about 70% of its demand in beef and imported in 2001, between January and August, 8 000 tons of beef.

⁶² Anakiev & Assoc. *Current Condition, Protection and Opportunities for Usage of Agricultural Land and Agricultural Development; Expert Elaborate for the Needs of The Space Plan of Republic of Macedonia; Skopje*

⁶³ Republic of Macedonia State Statistical Office (2001), pp. 440.

⁶⁴ Macedonian market research and information department, (2001) pp. 11 – 17.

Average prices livestock markets in Macedonia

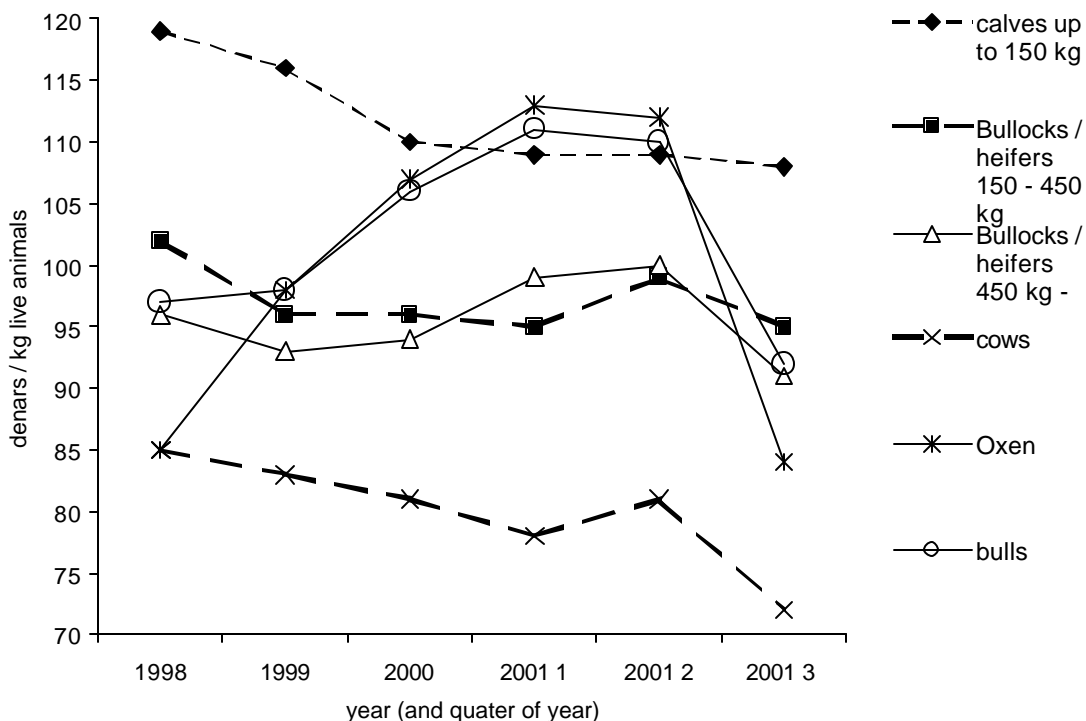


Figure 26 Average prices on livestock markets in Macedonia. ⁶⁵

The prices of livestock have been quite constant in the last three years, but declining in 2001 (

Figure 26). ⁶⁶ The price is an average price for six livestock markets. The biggest change is the price for oxen, with a decline of 25% in price, for bulls with 16% and cows with 10%. In comparison with other countries in the region, it was lower prices than in Russia, Slovakia, Bosnia and Herzegovina, but higher than the other countries in the region.

The price of calves, living weight, varies between 16 – 18 SEK, bullocks 13 – 15 SEK, cows 10 – 12 SEK during the period 1998 - 2001. ⁶⁷

⁶⁵ Macedonian market research and information department (2001), table 7.

⁶⁶ Macedonian market research and information department (2001), pp 16.

⁶⁷ With calculations of 1 SEK ≈ 6,70 MKD.

Dairy production

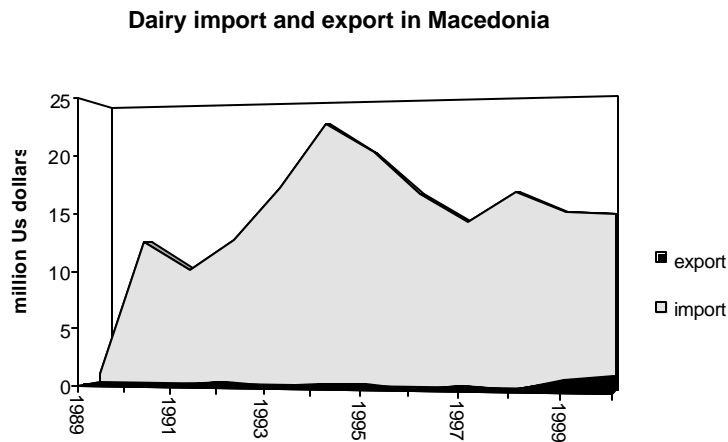


Figure 27 Dairy import and export in Macedonia⁶⁸

In Macedonia it has been a constant trade deficit in dairy commodities during the last ten years. The biggest deficit occurred 1994, when the difference between imported and exported values of dairy commodities was over \$20 million.

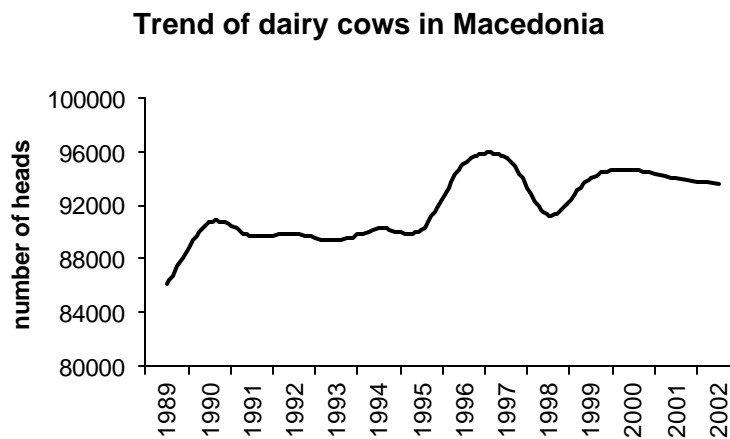


Figure 28 Population of dairy cows in Macedonia⁶⁹

⁶⁸ Market research and information department (2001b), table 5a.

⁶⁹ Market research and information department (2001b), table 3.

Production of raw cow milk

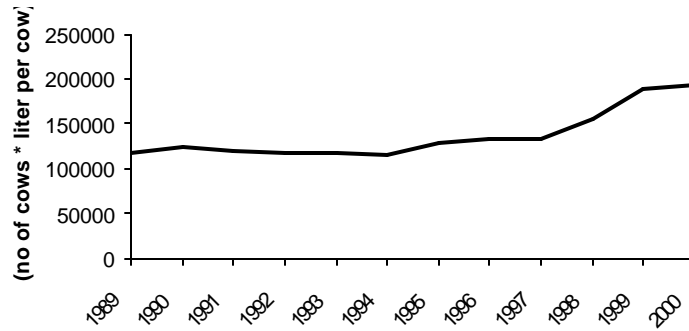


Figure 29 Production of raw cow milk⁷⁰

The production of raw cow milk has increased in Macedonia during the ten last years. Increasing prices, at least in some extent due to increasing price subsidies seems to be the reason, even though the production per head seems to be quite low, or about 2100 litres per head and year.⁷¹ The dairy industry has problems with milk quality due to lack of knowledge in primary production level.

Dairy products in retail level

Retail price of pasteurized milk in foil bag in Macedonia

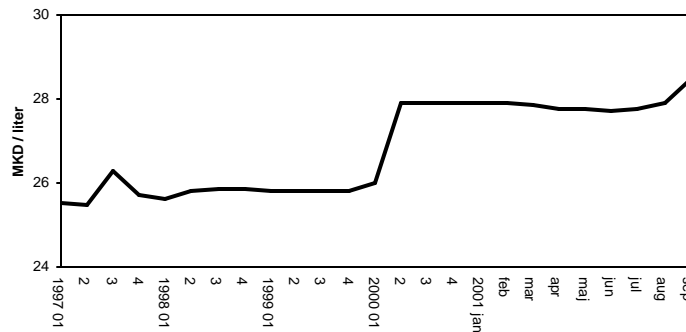


Figure 30 Retail price of pasteurised milk in foil bag in Macedonia.⁷²

The prices of milk to consumer have been constantly increasing since 1998. A sudden rise to two MKD per litre for usual and UHT milk occurred the 1st of January 2000 (Figure 30)

⁷⁰ Market research and information department (2001b), table 3.

⁷¹ Market research and information department (2001b), pp. 9.

⁷² Market research and information department (2001b), table A2.

Average prices hog production in Macedonia

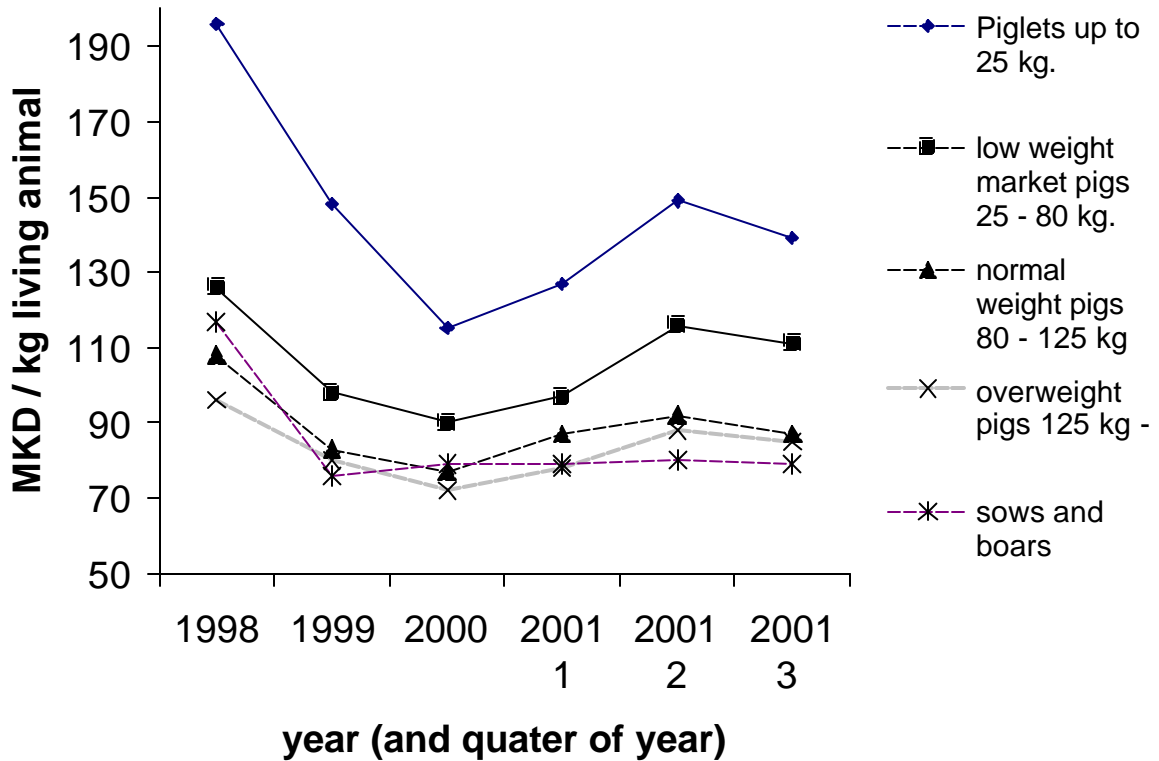


Figure 31 Average prices living hogs in Macedonia.⁷³

Macedonia has about 240 000 hogs. 35 000 of them are old hogs with piglets. The amount of hogs seems to be quite stable. The prices to farmers have slightly decreased in 2000 and 2001, about 5% for pigs up to 25kg.⁷⁴ Prices for piglets in Macedonia have been varying between 20 – 30 SEK per kg (Low weight pigs 13 – 18 SEK, normal weight pigs about 12 – 16 SEK).

⁷³ Market research and information department (2001) table 9.

⁷⁴ Market research and information department (2001) pp. 19 - 22.

Statistics of living hogs in Macedonia

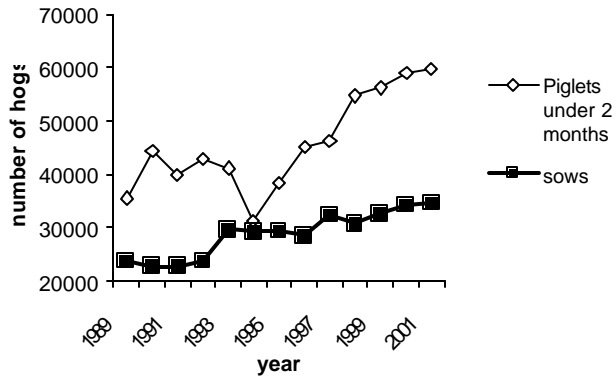


Figure 32 Statistics of living hogs in Macedonia⁷⁵

Slaughtered hogs in Macedonia

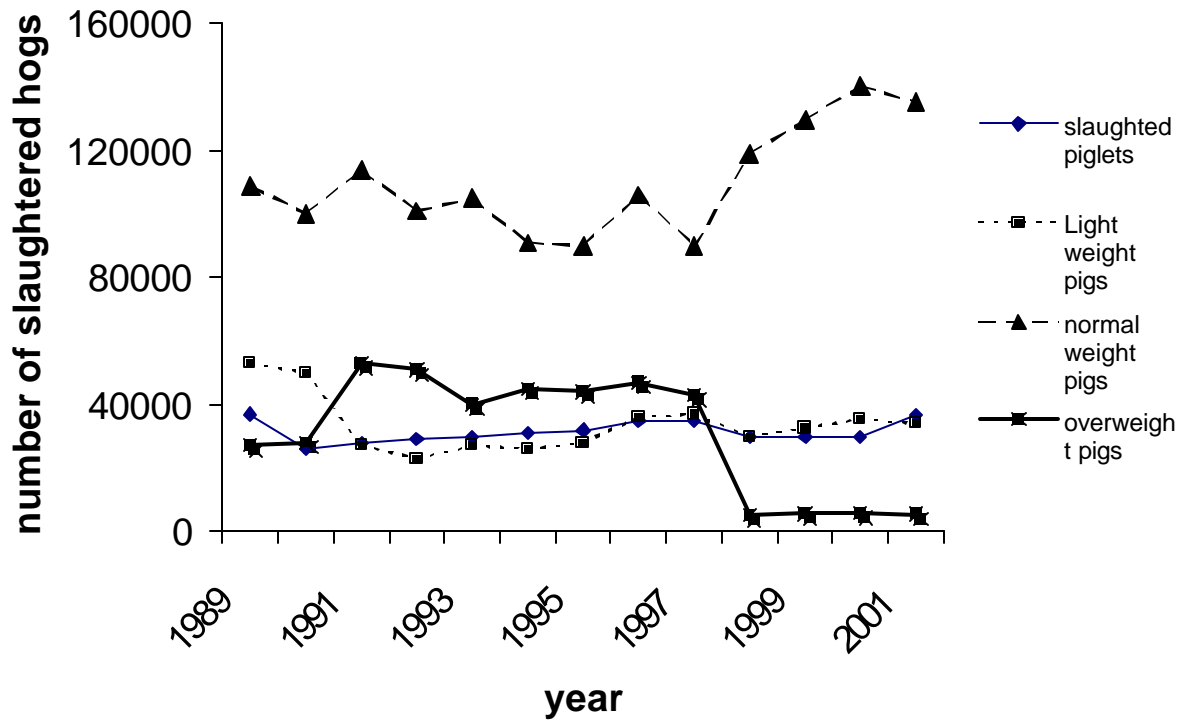


Figure 33 Slaughtered hogs in Macedonia⁷⁶

⁷⁵ Market research and information department (2001) table 9.

⁷⁶ Market research and information department (2001) table 9.

Despite this hog production about 10 000 tons, still about 2 700 tons of hog meat was imported to the country, i.e. a self-sufficiency level of about 70%. The production comes from Austria, Hungary, Croatia and USA.

Lamb production

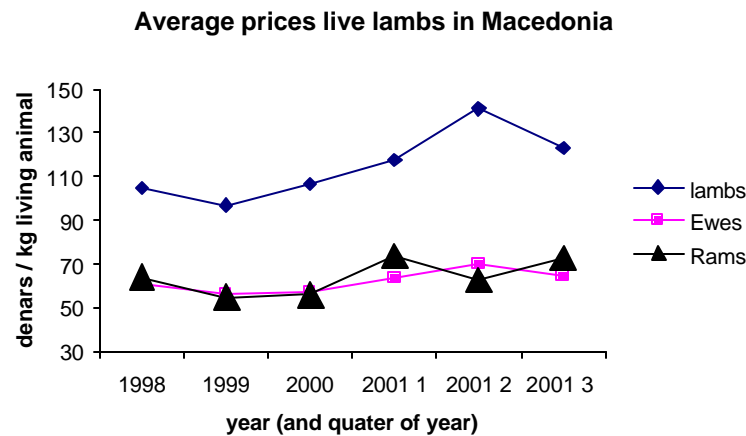


Figure 34 Prices of live lambs in Macedonia⁷⁷

The production of lambs, ewes and rams are expected to increase in coming years.⁷⁸ This increase is due to the instable situation in overall economy and the amount is expected to be about 1,4 million heads in a couple of years. Slaughtered lamb is exported and the export expects to increase as well. It is expected to be 845 000 slaughtered heads in 2002 (681 000 lambs and 163 000 ewes and rams).

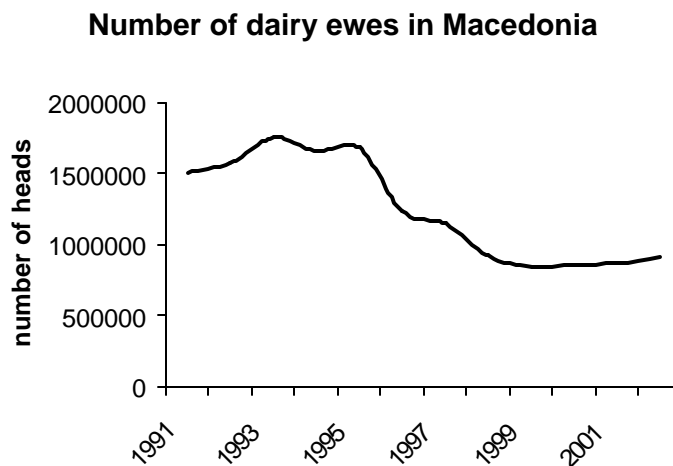


Figure 35 Number of dairy ewes in Macedonia⁷⁹

⁷⁷ Market research and information department (2001) table 9.

⁷⁸ Market research and information department (2001) p 22 – 24.

⁷⁹ Market research and information department (2001) p XX

The number of dairy ewes has been rapidly decreasing in recent years.

Poultry production

In 2001 the estimated number of pullets were 5,4 million heads. 3,4 million birds are expected to be egg-laying hens. There is a constant need for import, about 2 300 tons. In the country, 6 200 tons of poultry meat is produced, as well as 5 600 tons of meat from old egg-laying hens and 600 tons of meat from broilers.⁸⁰

Plant production

Production of usual plants in Macedonia I

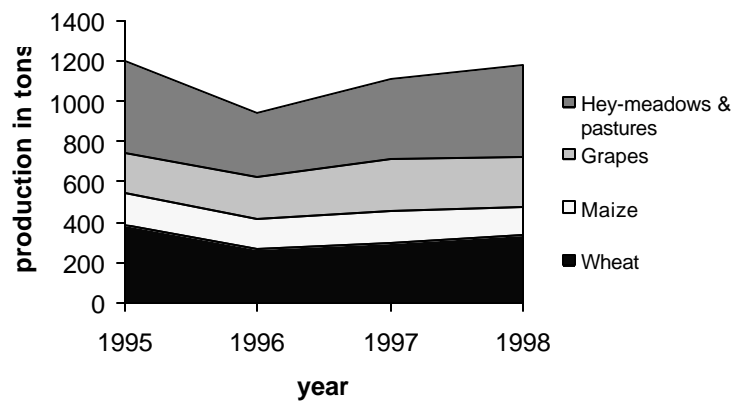


Figure 36 Review of usual plants in Republic of Macedonia in thousand tons⁸¹

Agricultural area by category of use

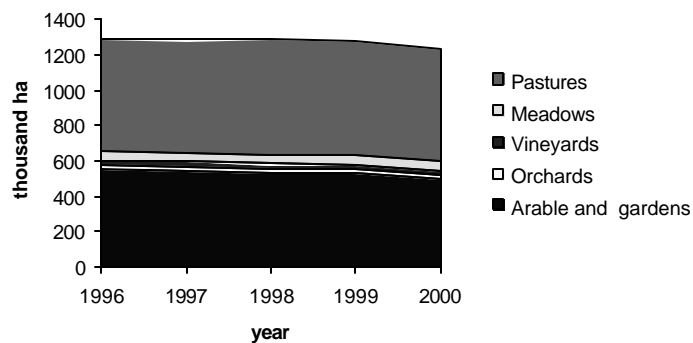


Figure 37 agricultural areas by category of use.⁸²

⁸⁰ Market research and information department (2001) p 24 -26.

⁸¹ Society of Agricultural Economists of the Republic of Macedonia, (2001), p 104.

⁸² State Statistical Office Statistical Yearbook of the Republic of Macedonia, (2001),p 432

High levels of subsidies in plant production – especially grain are introduced in the Macedonian market but it does not seem as the market had reacted especially on this. A quite complicated legal system in order to control the growing of grain may be an important factor, depressing these activities. (See Tina Ericsons master thesis)

The market on vegetables is less regulated in comparison to other parts of agriculture. Cheap capital has been provided (the IFAD program) in order to intensify small plantations by irrigation, heath in wintertime and so on. The cheap capital has had good effects of the vegetable production but the market has not been growing as fast as the production. However, the prices on for instance tomatoes and watermelons crashed in summer 2002. By now many farmers (about 1/3 of the lending farmers) seems to have trouble paying the duties for this IFAD capital.

The logistic network is only sparsely developed and many of the farmers’ seems to sell almost all of the production for sale on wholesale market in Skopje. One farmer, who I interviewed, argued that other possibilities could be dangerous. There are, as he told me, some foodstuff industries that could buy the vegetables. The processing industry often wants to pay the farmers with commodities instead of money – which of course puts pressure and risks on the farmer. Besides the processing industries, illegal traders are acting on the market as well.

Overview machinery in agriculture

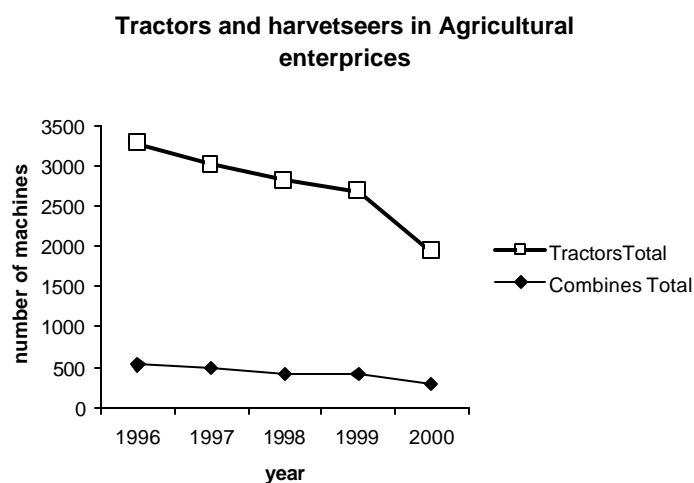


Figure 38 Number of Agricultural Machines in the agricultural enterprises and agricultural cooperatives⁸³

⁸³ State Statistical Office Statistical Yearbook of the Republic of Macedonia, (2001), p 448

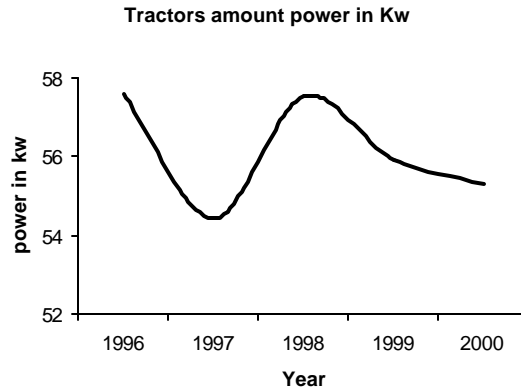


Figure 39 Tractor median power in kw⁸⁴

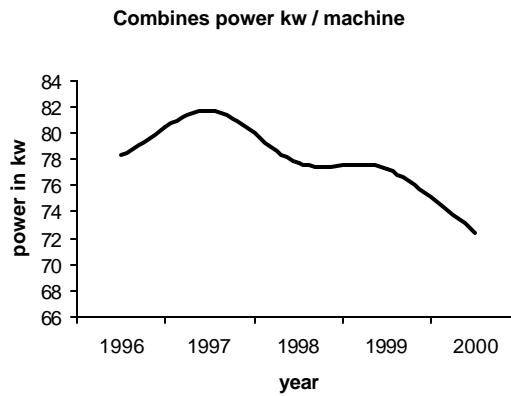


Figure 40 Combines power kw / machine⁸⁵

The information in Figure 38 - Figure 39 seems to be a bit doubtful. I cannot exactly figure out how it has been possible to estimate the figures. Anyway the trend measured is that median power in the Macedonian agricultural tractor seems to decline. If they say anything at all, maybe, they confirm the overall trend of small-scale farms being well competitive in the Macedonian agricultural environment in the 1990's.

⁸⁴ State Statistical Office Statistical Yearbook of the Republic of Macedonia, (2001), p 448

⁸⁵ State Statistical Office Statistical Yearbook of the Republic of Macedonia, (2001), p 448

5 Education in Macedonia

Immediately after the Second World War, Macedonia had only 180 people with university degrees. Most of those who had attended school had completed only four grades of elementary education. Those who had completed secondary education were considered learned. There were only 22 elementary schools. Since that time, quite a lot has happened.

Basic Education

The basic education in Macedonia is free for children in the age 7 – 15 years old. After primary school, four years of gymnasium is following with aims of higher education or a into the labour market.⁸⁶

Primary and lower secondary education consists of the following schools:

- Regular primary and lower secondary schools, which include all four-grade, five-grade, six -grade and eight-grade primary and lower secondary schools and
- Special primary and lower secondary schools for children with learning and other disabilities.
- Adult primary and lower secondary schools which enable persons over 15 years of age to complete primary and secondary education.
- Supplementary education schools refer to the basic level music and ballet schools which are attended by pupils in addition to their regular primary and lower secondary education.

⁸⁶ UI, nr 521 p 6.

Number of students in secondary school

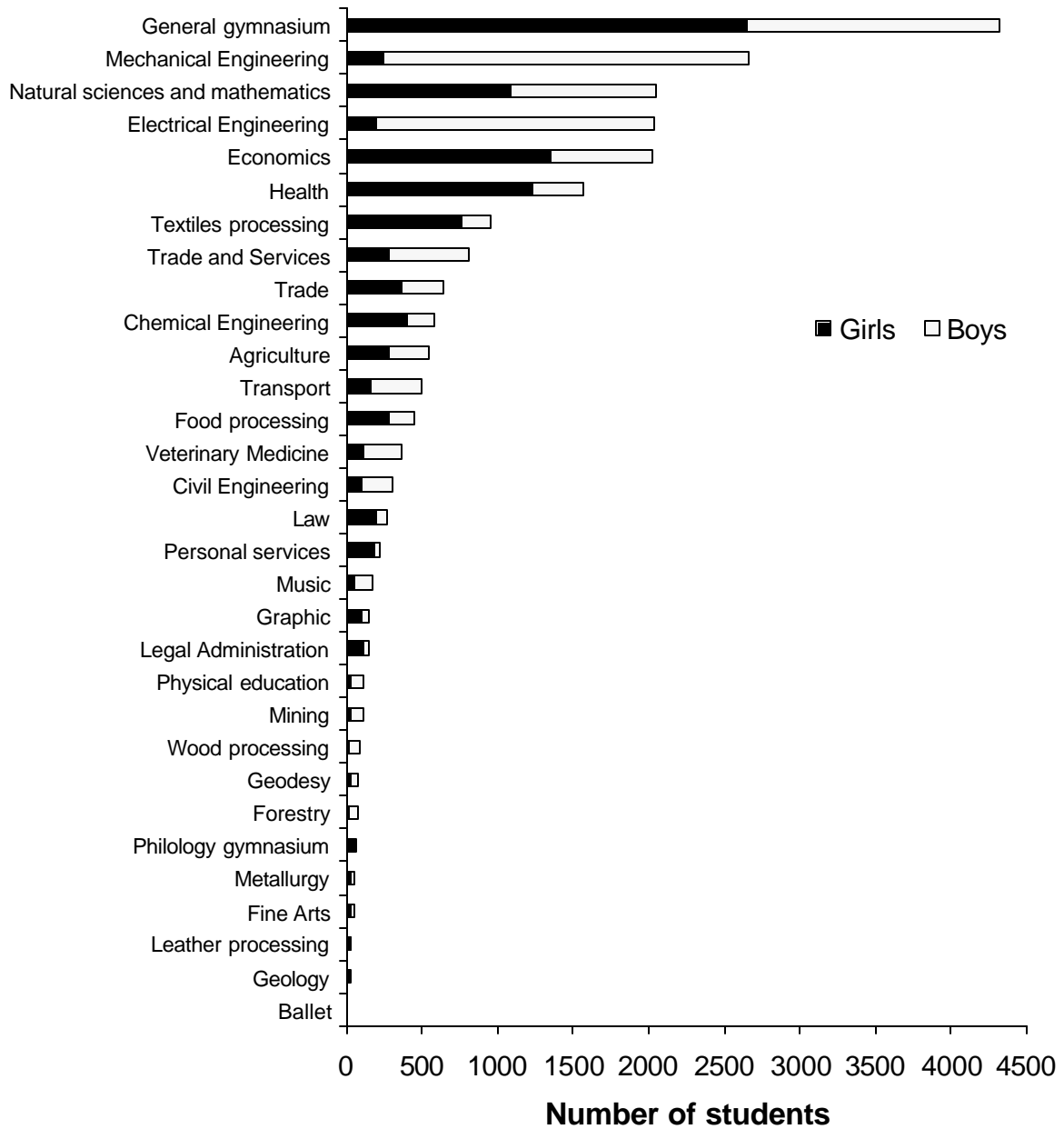


Figure 41 Number of pupils graduating from regular upper secondary schools, 1999/2000⁸⁷

⁸⁷ State Statistical Office *Statistical Yearbook of the Republic of Macedonia* (2001) p 220.

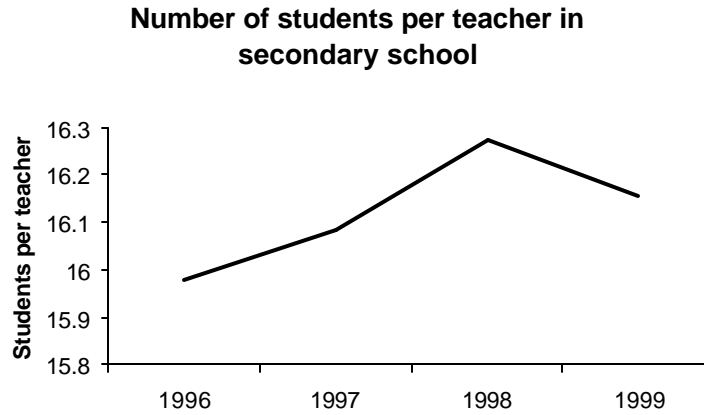


Figure 42 pupils and teachers in secondary school⁸⁸

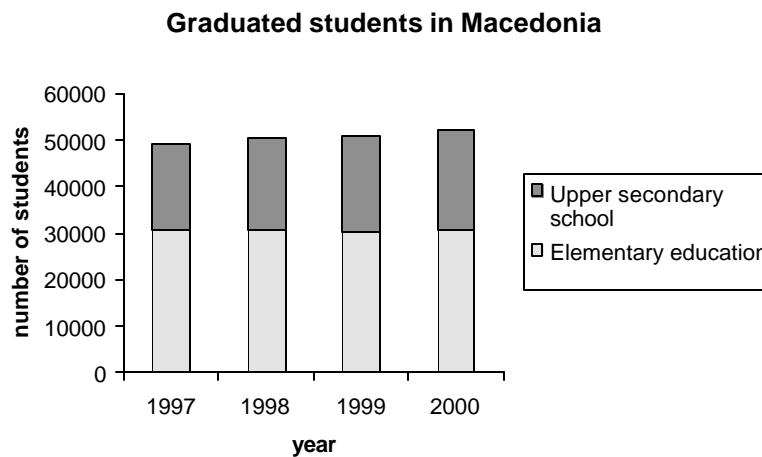


Figure 43 Graduated students in Macedonia⁸⁹

The secondary education in the Republic of Macedonia is conducted via curricula and programs for:

- Regular upper secondary schools, where the pupils decide for one of the 30 professions or for general secondary schools (which have existed since the beginning of 1991/92).
- Special upper secondary schools for persons with learning and other disabilities who are given the opportunity of training for some work.

⁸⁸ The pupils from the regular upper secondary schools are included. State Statistical Office *Statistical Yearbook of the Republic of Macedonia* (2001) p 216.

⁸⁹ Republic of Macedonia State Statistical Office (2001) p. 216.

Religious upper secondary schools

Minority languages instructed in Macedonian schools

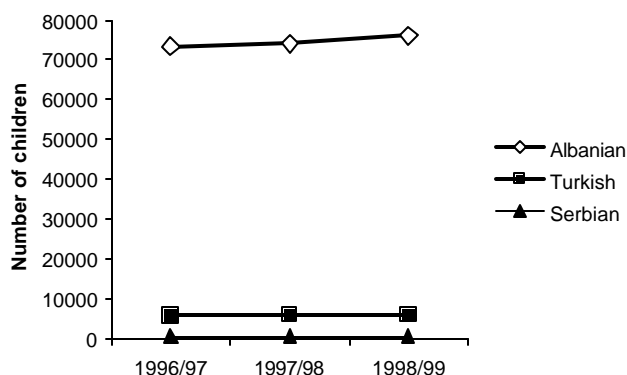


Figure 44 Number of pupils according to instruction in minority languages⁹⁰ (number of pupils in regular elementary schools)⁹¹

The overall biggest minority in Macedonia is the ethnic Albanians. About 73 000 pupils takes lessons in Albanian language. Other minorities is Turkish pupils, about 6 000 children takes Turkish lessons, and Serbian children (500 children).

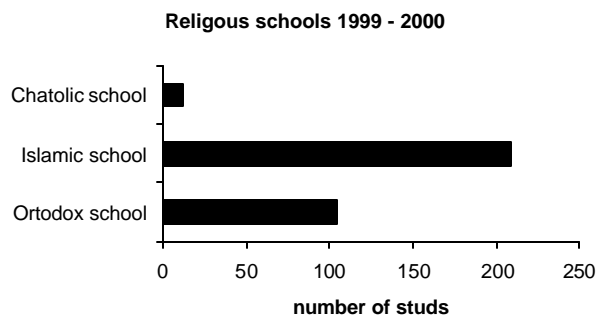


Figure 45 Number of pupils in religious schools in Macedonia⁹²

Higher education in Macedonia

Higher education at university level has been preserved since the end of World War II. Even though Macedonia was a part of the communistic Yugoslav federation, it has developed higher education in many ways in its own way. The biggest university is Ss. Cyril and Methodius University in Skopje but higher education still exists as well in Bitola as in Tetovo.

⁹⁰ State Statistical Office *Statistical Yearbook of the republic of Macedonia* (2001) p 216.

⁹¹ The pupils from the regular primary and lower secondary schools are included

⁹² State Statistical Office *Statistical Yearbook of the Republic of Macedonia* (2001) p 217.

One of the more well known reasons for the ethnic conflicts in late 1990's in Macedonia was the demand among the Albanian minority for an Albanian privately financed university in Tetovo. Still only a small part of the students (with faculty of agriculture as an good example) participates in higher university education.

The university education for "Macedonians" and "Albanians", are still heavily segregated, but changes are under way. The Ohrid-treaty signed 2001, stated active attempts in order to equalize the differences.

Ss. Cyrial and Methodius University

The Ss. Cyrial and Methodius University in Skopje was founded 1949 – at that time consisting of three faculties. Since the foundation the university has expanded a lot and consists nowadays of 24 faculties, ten institutes and other institutions..⁹³

The number of graduated students are according to Figure 46, of course, higher than the number of master degree students, even though not especially high. The most popular faculties were the faculty of economics, philosophy and pedagogy. However, the statistics according to the source in Figure 46, is difficult to understand.

⁹³ Ss Cyriland and Medhodus University (2000).

Graduated students by the way of studies and sex in Macedonia 2001

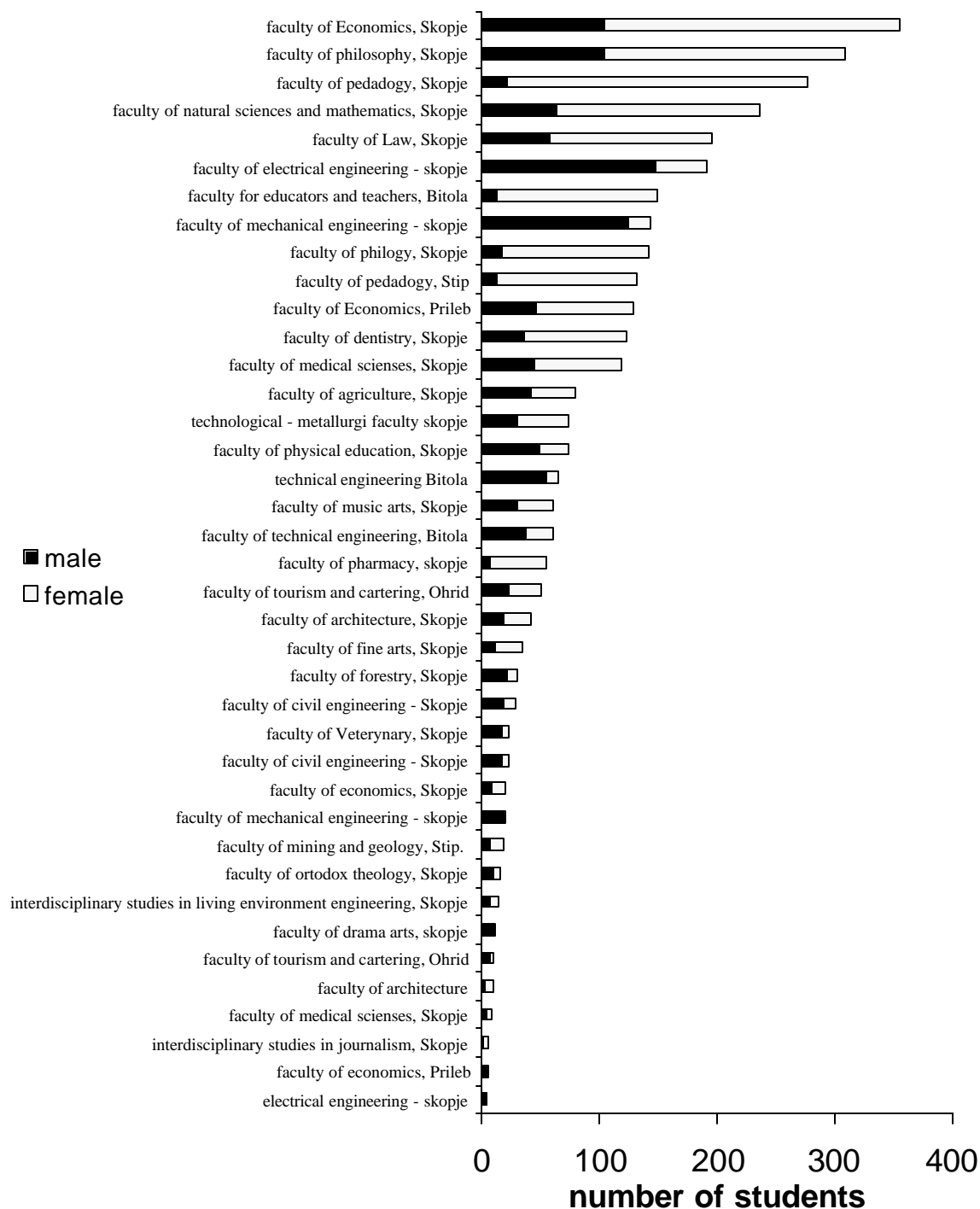


Figure 46 Graduated students by the way of studies and sex in Macedonia 2001⁹⁴

⁹⁴ State statistical office 2.4.2.06.

Research and education in faculty of agriculture

The department of economics and organization of agriculture has two main aims, to educate people in the field of agriculture at university level and to do research in this field. The education is divided in three levels, undergraduate, postgraduate and PhD studies. The postgraduate level is divided in two programmes, one-year study in order to reach specialist degree, and two years studies in order to reach Master of Science.

The aim with education

The aim with these educational programmes is to educate people with good knowledge in the subject and highest possible degrees. Every line of the programme has specified goals. The students are also supposed to, when they finalise their education, be able to handle computers and languages in a proper manner.

Postgraduate students also expects to have a proper skill in communications / foreign language. The studs in agro economy, for instance, are expected to have interests in agro economy, business and marketing and information technology.

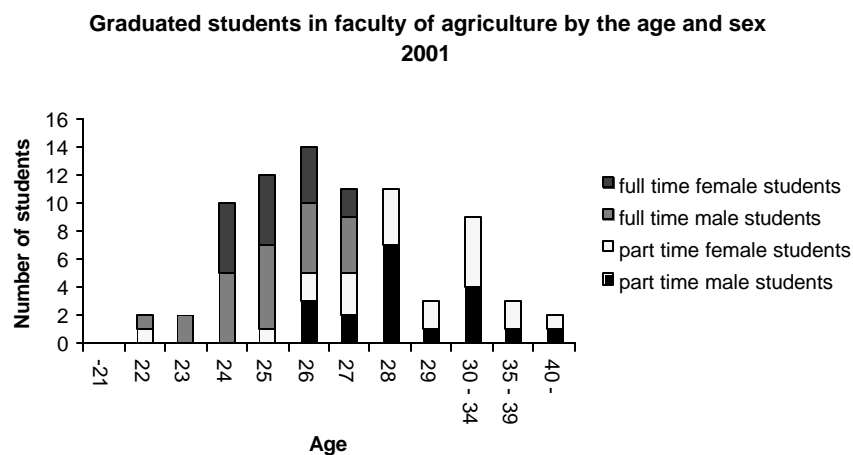
Undergraduate studies

The undergraduate studies are a program of studies in four years. The students will receive the title of agricultural engineers. The program has these ways of specialization: Field crops production, General production, Livestock production, vegetable production, Agro-management (e.g. economic development) and viticulture-, and fruit production. Since last year there are also a line of agro economics.

Specialist studies

The specialist studies have three lines, agro chemistry, seed production and seed control on field, and agricultural mechanization.

Graduated students from faculty of agriculture



*Figure 47 Graduated students in faculty of agriculture by the age and sex 2001.*⁹⁵

⁹⁵ State statistical office 2.4.2.06 pp 22 – 25.

Totally 79 students graduated from faculty of agriculture in 2001, 40 was full time students, and 39, part time students (Figure 47). The new master program is on its second year. 46% of the studs are female. Most of the full time students come almost directly from gymnasium or upper secondary school, and most of the older students are studying part time.

Master degree studies

Master degree students in Macedonia by type of scientific branch of master's thesis

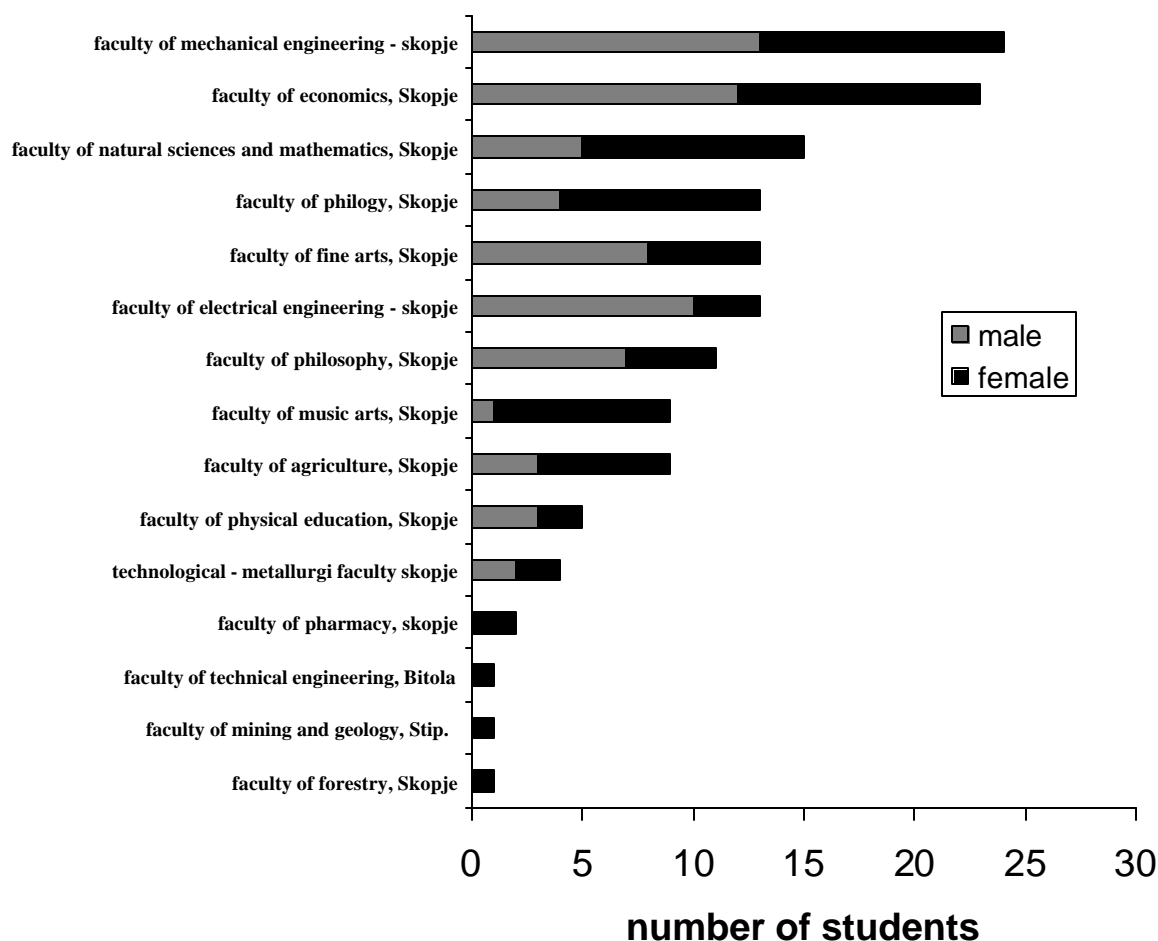


Figure 48 Master degree students in Macedonia by type of scientific branch of master's thesis. ⁹⁶

Education of master degree level is yet not very common in the country (Figure 48). In 2001, 144 students got their master degree diploma, 24 of them in the faculty of mechanical engineering, 23 in economics and 9 in faculty of agriculture. Six of the master degree students in faculty of agriculture were women. These figures will rise rapidly in future according to

⁹⁶ State statistical office 2.4.2.06 pp 36 - 39.

new master programs, which are formed right now in the context of the TEMPUS programmes and EU.

The Master degrees will in future be divided into this lines:

Agricultural mechanization, Agroecconomics, Animal products, Field production, Fish farming, Fruit production, Genetics and plant breeding, Herbology, Industrial crops, Irrigation, Pedology and Agrochemistry, Plant protection, Poultry production, Ruminants, Tobacco production and Fruit processing, Vegetable and Flower production, Viticulture production and, Weed control.

Department of economics, faculty of agriculture, Skopje

Aims of courses

In the frame of TEMPUS project, run by EU, a new educational organization has been created. The TEMPUS project is created to help Balkan countries establish new up to date agricultural university educations.

Postgraduate studies in agro economy

There are two ways of specialisation in the agro economic postgraduate education. There are a business line and a line of rural development. The postgraduate education is two years; study the first year is the same for the two lines and the second year the students follow their own line.

PhD Level

The PhD level is not completely the classical Phd, but it contains of research and defence of a thesis. It takes normally 4-5 years, not less than 3.

Research at department of economics and organisation in agriculture

The research in the department of economics and organisation in agriculture has different aims. There is domestic applied research. They do research ordered by companies, official institutions and farmer associations. It is smaller projects, about business plans etc.

There is also international cooperation about research. The department has got a number of contacts with other universities and institutions as the World Bank, SIDA, IFAD, GTZ. The last five years they have been involved in the FARE programme and the TEMPUS programme financed by the European Union.

There are two main financing organisations involved in this research.

1) The ideas of a new topic for research are often raised at the department of economics. The idea develops and maybe there will be suggestions of how to compose a group of researchers around this topic. The financing institution is in this situation the ministry of education and research.

The faculty council informs about the idea and they analyse the idea in the first step. The ministry of research and education will be informed and they compose a board of researchers from inside and outside Macedonia to independently evaluate the idea.

The projects is often three years long and are evaluated of a independent board in the same manner as above, once a year, so is the final report also treated.

2) Projects could also de created by the ministry of agriculture or by other actors. They have commonly clear aims and maybe also goals. The ministry of agriculture will often finance these projects.

The teams are gathered at the department, if competence is missed at department it will be required outside the university or outside Macedonia.

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