INTRODUCTORY SPEECH
On the promotion of the "Strategy for Agricultural Development in the Republic of Macedonia to 2005"

Let me open today's meeting at which we are promoting the *Strategy for Agricultural Development in the Republic of Macedonia to 2005* with emphasised pleasure. I say with emphasised pleasure because in the Programme Resolutions of my presidential address of January 12th 2000, I pointed out that during my mandate I shall endeavour that the Macedonian Academy of Sciences and Arts has a greater creational character and social engagement. I do not intend to revise what I have promised and what I have accomplished, I leave that to my colleagues whose preoccupation is an objective valuation of events, persons and acts.

In my inaugural address I pointed out that, besides individual scientific and research projects of the members of the Academy, I shall make an attempt to include complex multidisciplinary projects of special national interest to the Republic of Macedonia in the science programme of the Academy. I shall mention some of them – the creation of a Macedonian Encyclopaedia; research on the demographical movements in our country; a study of relations with neighbours past and present, interethnic relations in history, in the present and in the future; prospects of rapid economic development of the Republic of Macedonia; agriculture as an opportunity for an economic boom; research in the area of energetics, genetic engineering and biotechnology, natural resources, biodiversity and bio-complexity; protection of the environment, etc. Accomplishing these projects has meant including the whole of the Macedonian science potential present in the universities and the independent scientific institutes in our country. Therefore, as early as the beginning of the year 2000, in the role of the president of the Macedonian Academy and with cooperation and complete support of the Minister of Agriculture, Forestry and Water Economy, the Minister of Health and the Minister of Economy, I formed expert teams to work on creating the *Strategy of Agricultural Development in the Republic of Macedonia to*

2005, the Strategy of Improvement of Health Services for the Population in Macedonia to 2010 and the Strategy of Energetics Development.

Today we are witnesses of the beginning of the realisation of that programme with the promotion of the *Strategy of Agricultural Development in the Republic of Macedonia to 2005.*

The expert team, whose work I had the honour to coordinate, consists of eminent professors from the Faculty of Agriculture and scholars from the Institute of Economy and the Institute of Sociological, Political and Juridical Research: Professor Todor Galev, Ph.D., Professor Aleksandar Murarcaliev, Ph.D., Professor Boris Anakiev, Ph.D., Professor Ivan Angelov, Ph.D., Professor Eftim Ančev, Ph.D., Professor Dzvonko Božinović, Ph.D., Professor Jorde Jakimovski, Ph.D, Professor Hristo Popovski, Ph.D and Professor Vladimir Džabirski, Ph.D. This team has incorporated its high scientific competence and its great and long experience in agricultural research in Macedonia, bearing in mind the findings of the Macedonian and global science relevant to this area. With this significant document we have tried to create a work in which there would not be great many gaps and which would include every, even the smallest, segment of the overall system of agriculture in Macedonia in the long run, with special attention to the last decade. We have tried to create the *Strategy of Agricultural Development in Macedonia to 2005* with great professional scrupulousness and scientific valour. Therefore, we have approached the research and planning of the development of this basic system of the economy in our country in the next five years with scientific enthusiasm. Even though the time in which the agricultural development is planned consists of a period of only five years, we are convinced that the application of the measures we suggest will produce long-term effects and their results will be felt much longer, since the *Strategy* perceives Macedonia as a modern agricultural land which should rapidly achieve European standards in the production and placement of products on the European and world markets. The Strategy also provides the modalities for achieving that basic aim.

In regard to the purely methodological level, the research team based its work on empirical analysis, always beginning from an immediate facing of the facts of the development of this overall system with all its subsystems. Employing this positive approach we have not, however, neglected the system of values, since we hold the world of science to be inseparably connected with the world of values. In science, of course, they are never treated separately. On the contrary, the values in science are deeply based on positive facts and they prove their validity only in practice, which is a chief criterion of every scientific truth.

Thus the *Strategy of Agricultural Development in Macedonia to 2005* begins from the conditions, the facts and the achievements in the basic system of the development of the economy in our country, while along with this, it suggests a whole coherent system of measures for its genuine promotion, i.e. it offers its scientifically-based funded projection of its present and future development. From this point of view, the expert team insisted on an *emphasised applicative dimension* of the research. We wanted to create a Strategy that would at once become effective and would be immediately applicable in the practice of the development of agriculture in Macedonia from now to at least 2005.

What does the *Strategy of Agricultural Development in Macedonia to 2005* consist of?

Bearing in mind the reviews of the Academicians Ksente Bogoev and Nikola Kljusev, we can say that the *Strategy* begins with a survey of the main features and problems of the current situation and the dynamic trends in agricultural production in the past decade, relatively concisely illustrating the natural conditions, the land capacity and livestock potential, the ownership structure – individual farms and state-owned collective farms – and especially concentrating on plant and livestock production.

All the analyses in the *Strategy* have been derived from and supported by selective statistical data and arguments based on scientific and empirical findings. It criticises bad management of agricultural policy, especially the precipitate abandoning of measures of support for agriculture, the elimination of compensation, bonuses and other kinds of stimulations, the inexcusable maintaining of taxes on imported inputs into agricultural production, planting material, mechanisation, mineral fertilisers and protection devices, lack of adequate and systematic credits and other financial policy for the agricultural complex.

The *Strategy* especially emphasises the negative consequences in agriculture – permanent and wide abandoning of agriculture, deserting the countryside and agricultural production, the partition of properties, the decreased use of modern agro-technical measures, the disorganised purchase and placement of primary agricultural products, the total lack of *modern management*, the spreading of import dependence, the critical agricultural products, the continual instability and decline of livestock production in the past decade.

The global image the *Strategy* has of key features and problems of the current situation in agriculture is viewed within the trend of dynamics of agricultural production accomplished in the past decade, globally and in the main sectors of agriculture (crop production and livestock production), which led us, as it was expected, to a more productive valorisation of existing natural and

human potential, in comparison with the circumstances in the period immediately after the independence of our country. This confirms that the degree of meeting the domestic requirements with agricultural products and the import and export balance in the sector have been below the 1991 profit. This is in relation to the income from a unit surface of arable land as well as to the sowing structure of various kinds of cultures, which are both below the possible optimum. The same is the case with the number of livestock, the pedigree composition and income by head, the level of crop production in 1999/2000 which globally shows an index of c. 80 in comparison to 1991, while the grain and industrial cultures have the lowest indices of 67 and 71. There are exceptions in the case of the better results in viticulture and kitchen-garden culture products with indices of 80 and 78, and especially fruit production with an index of 132. As a result of this, there are indicated serious flaws in the crop production of most products with a sub-optimal income, which is particularly the case with the grain and industrial cultures.

The *Strategy* indicates that for a long time livestock production has been facing problems regarding its pedigree composition and particularly the great deficiency in fodder, and the unsatisfactory production of milk and meat. As a result of this, the percentage of satisfying the domestic needs by means of self-sustenance is remarkably low, particularly in the case of meat (beef – below 50%, pork – 67%, poultry – only 26%). The exceptions are lamb and mutton which are traditionally exported by our country (20–30% of the production). However, the import of poultry (c. 16,000 tons per year) is three times higher than the domestic production.

The *Strategy* considers agriculture to have been mainly and continuously an importer. In the period 1991–98, the value of import was on average higher than the attained exports by over 50%. The deficit in the international trade balance of agricultural products is a continuing phenomenon which, after the liberalisation of the import and export regime, will be overcome only by a greater supply of our export surplus and a swifter compliance with the quality standards and in other competing performances which are generally accepted on the international market. According to the *Strategy*, this is the greatest opportunity for our agriculture.

The *Strategy* is based on analysis and on certain knowledge of the most recent trends and the current conditions and problems in the agricultural sector both at home and worldwide. It is accordingly based on the positions of the free market economy, as well as a definite orientation toward compliance with the

standards and regulations of the European Union and the World Trade Organisation, concerning price and market relations in agriculture.

The *Strategy* among other things suggests the following strategic aims of development in order to overcome the present situation in this basic area of economic development in Macedonia:

A positive trend towards increasing crop production and livestock production, with concrete defining of the dynamics of the growth in crop growing cultures and in breeds of livestock, and an increase in the level of satisfying the domestic needs for agricultural products;

Defining the strategic priorities by overcoming the negative balance in international trade in agricultural products;

In relation to the number of livestock and the negative situation in the movement of the number of head of animals on the need for more intensive improvement in the pedigree composition of cows, pigs and sheep, is insisted as well as an increase in their productivity (production of milk and meat);

A more significant enhancement of the present situation in this particularly important part of our agriculture is linked to fodder, for which certain measures are suggested;

A repeated emphasis on the ecological aspects of agricultural production, the enormous soil pollution and products because of artificial fertilisers and protection devices.

The *Strategy* contains special chapters on the agro-political and institutional support expected in agriculture. In that context, the greatest attention should be directed towards suggestions for promotion of production and placement of products such as establishing an appropriate fund to support agriculture; investment and credit possibilities for obtaining modern mechanisation; reconstruction and extending of the systems of irrigation; modernisation of production on individual farms and collective farms; special improvement of sowing structure; modification of the pedigree composition; expanding of production capacities; and the training and building up of a professionally competent agriculture stock exchange.

Let me express my personal belief that the *Strategy* is a highly competent and argumented document which will contribute to the radical changes which are about to happen in the basic sector of the Macedonian economy.

In conclusion, let me, on behalf of the expert team and myself as an initiator of this project, express my gratitude to the Minister of Agriculture, Forestry and Water Economy, Mr. Marijan Gorčev, M.S., for his considerable en-

gagement and his strong support in the preparations of the *Strategy of Agricultural Development in the Republic of Macedonia to 2005*, which we present to the public after a long period of research work.

I am convinced that, with the creation of this strategy, the process of immediate link between science and social practice has begun.

Skopje, July 5th, 2001 *Academician Georgi Efremov*

FOREWORD

Nothing that human beings create is perfect and nothing that was created by them is so good that it cannot be better. This, if I may say, utmost request has motivated all of us from the expert team that have worked on the *Strategy of Agricultural Development in the Republic of Macedonia to 2005*. The expert team – whose work I had the honour to coordinate – consists of eminent professors from the Faculty of Agriculture and researchers from the Institute of Economy and the Institute of Sociological, Political and Juridical Research: Professor Todor Galev, Ph.D., Professor Aleksandar Murarcaliev, Ph.D., Professor Boris Anakiev, Ph.D., Professor Ivan Angelov, Ph.D., Professor Eftim Ančev, Ph.D., Professor Dzvonko Božinovic, Ph.D., Professor Jorde Jakimovski, Ph.D, Professor Hristo Popovski, Ph.D and Professor Vladimir Džabirski, Ph.D. – began the realisation of the *Strategy* with this idea: to incorporate into it their highest scientific competence but also their great and long experience in agricultural research in Macedonia, together with the findings of Macedonian and global science relevant to this area. In a word, we tried to create a work in which there would not be many gaps and which would include every, even the smallest, segment of the overall system of agriculture in Macedonia in the long run, with special attention to the last decade. Therefore the authors have signed their names to the *Strategy of Agricultural Development in Macedonia to 2005* with professional scrupulousness and scientific valour. They approached the research and planning of the development of this basic system of the economy in our country in the next five years with scientific enthusiasm. Even though the time in which the agricultural development is planned consists of a period of only five years, the application of the measures suggested we expect, as long as they are realised, will produce long-term effects and their results will be felt much longer, since the *Strategy* perceives Macedonia as a modern agricultural land which should rapidly achieve European standards in the production and placement of products on European and world markets.

With regard to the purely methodological level, the research team based its work on empirical analysis i.e. a positive approach, always beginning from

an immediate facing of the facts of the development of this overall system with all its subsystems, while not neglecting the axiological system of values, since we hold the world of science to be inseparably connected with the world of values. In science, of course, they are never treated separately. On the contrary, the values in science are deeply based on positive facts and they prove their validity only in practice, which is a chief criterion of every scientific truth. Thus the *Strategy of Agricultural Development in Macedonia to 2005* begins from the conditions, the facts and the achievements in the basic system of the development of the economy in our country, while, along with this, it suggests a whole coherent system of measures for its genuine promotion, i.e. it offers its scientifically-based projection of its present and future development. This means that the expert team was directed by the facts (as is always the case in science) which led to the values, which in the end, validly judged and valorised, would become irrefutable and permanent facts, which we insisted have an emphasised applicative dimension. We wanted to create a strategy, which, if accepted and positively evaluated, would at once become effective and be immediately applied to the practice of the development of agriculture in Macedonia from now to at least 2005. On behalf of the expert team and myself as an initiator of this project, I feel that I owe an indebted expression of gratitude to the Minister of Agriculture, Forestry and Water Economy in the Government of the Republic of Macedonia, Mr. Marijan Gorčev, M.S., for his considerable engagement and his strong support in the preparations of the *Strategy of Agricultural Development in the Republic of Macedonia to 2005*, which we present to the public after a long period of research.

Skopje, June 2001 *Academician Georgi Efremov*

INTRODUCTION

In 1996 the Ministry of Agriculture, Forestry and Water Economy[1] issued a publication on the *Strategy of Development of Agriculture, Forestry and Water Economy for the period 1995–2010.*

Towards the middle of 1996 a study was conducted on the situation and a strategy for agricultural development in the Republic of Macedonia[2] – for the period to 2020, of which an abridged version has been published as a subject part of the *National Strategy for Economic Development of the Republic of Macedonia*[3].

These study documents, even though they were not the subject-matter of a decision in the Parliament, gave certain indications of the condition of the general aims of long-term development of agriculture, i.e. of the agricultural complex in the Republic of Macedonia.

This text is an annexe to the previously conducted long-term strategies for development in agriculture, in order to produce a middle-term strategy, with more determined actual aims and measures of development of the agricultural complex in the five-year period 2001–05, a period in which reinforced compliance of our development with the standards of agricultural policy of the EU is expected.

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[1] *Стратегија за развојот на земјоделството, шумарството и водостопанството*, МЗШВ, Скопје, 1996. (*Strategy for Development of Agriculture, Forestry and Water Economy*, MAFWE, Skopje, 1996.)

[2] Т. Галев, Б. Анакиев и Р. Лозановски, *Состојба и стратегија за развој на земјоделството во Република Македонија*, МАНУ, Скопје, 1996. (T. Galev, B. Anakiev and R. Lozanovski, *The Situation and a Strategy for Agricultural Development in the Republic of Macedonia*, Macedonian Academy of Sciences and Arts, Skopje, 1996.)

[3] *National Development Strategy for Macedonia, Development and Modernisation*, Macedonian Academy of Sciences and Arts, Skopje, 1997.

The content of the middle-term strategy for agricultural development is divided into nine sections.

The first section gives an evaluation of the macro-economic situation in agriculture, i.e. in the agricultural complex, both of the Macedonian economy as well as on the international exchange.

The second section creates an analysis of the available resources, of comparative advantages, of the situation in agriculture and of the balance of supply of and demand for agro-industrial products, as a basis for the conception of the middle-term development of agriculture. The current agricultural policy and its compliance with the agricultural policy of the WTO and the EU is also analysed.

The third section provides an elaboration of the approach towards integration and adaptation of the Macedonian agricultural sector to the European common market and to the Common Agricultural Policy, the mechanisms and instruments of association, the effects of partnership and the key tasks involved in such an associating.

The fourth section elaborates the strategy of the overall middle-term development of the agricultural complex to 2005, with the best possible use of available resources, comparative advantages and improved technology. The development is presented in the form of two alternatives, by two expert teams with different approaches. Which one will be applied in practice we leave to the client who will use the document.

The fifth section presents measures for implementing the strategy for agricultural development and the rural development of the Republic of Macedonia.

The sixth section offers explicitly presented necessary institutional support for the middle-term development of the agricultural complex and the organisations which can offer international technical help for the expected development.

The seventh section presents the policy of international exchange of the agricultural sector.

The eighth section names the upholders of the policy of the development of agriculture and the agricultural complex as a whole, of the import and export of primary agricultural products and processed goods.

The ninth section presents a short content of the strategy for agricultural development through its aims, measures and makers.

I. MACROECONOMIC SITUATION

1. Economic Situation in Macedonia

After independence, the Macedonian economy suffered several periods of crisis, which left it recovering slowly. Thus, according to the macro-economic indicators in Table 1, it is apparent that since 1996 there has been a low, but positive growth rate of the GDP (1.2%–2.9%).

Table1 – Macroeconomic markers

	1994	1995	1996	1997	1998
GDP (current prices) mil. denars	146,409	169,521	176,444	184,982	190,827
GDP (current prices) mil. U.S. $	3,389	3,351	3,390	3,439	3,540
GDP change rate (in %)	-1.8	-1.1	1.2	1.4	2.9
GDP/citizen U.S. $	1,742	1,705	1,709	1,722	1,763
GDP deflator	251.9	117.1	102.9	103.4	100.2
Unemployment according to the Institute of Employment	186	216	238	253	–
Unemployment according to ILO	–	–	251	288	284
Unemployment in % according to Institute for Employment	32.0	37.7	41.1	44.2	–
Unemployment in % according to ILO	–	–	31.8	36.0	34.5
Trade balance in mil. U.S. $	-398	-514	-480	-480	-604
Mean rate NBM (den/1US $)	43.2	38.0	40.0	50.4	51.8

SG RM/98, 99; Monthly Statistical Report for RM, nos. 1, 2. IX/2000, Skopje.

However, the ratio of the GDP per capita demonstrates a constant low standard of the population in the Republic (in comparison with Slovenia approximately four times lower). Moreover, we have a high rate of unemployment, measured according to the data of the Employment Bureau and the Survey of the Workforce by the methodology of the International Labour Organisation (ILO). The trade balance indicator also demonstrates a high negative trend in the current middle-term period. Therefore, with a middle-term strategy,

the development of the total economy, as well as the agricultural complex, will have to be directed mainly towards overcoming those three negative situations – the low standard of the citizens, unemployment and the great deficit in foreign exchange. At the moment, the only positive indication is the stopping of the inflation, almost its elimination, which provides stability of the denar, but this obviously is insufficient for the growth of the economy in the Republic.

2. Agriculture in the Macedonian Economy

2.1. The Importance of Agriculture in the Total Economy

Agriculture plays an important and steady part in the Macedonian economy. It is the second greatest contributor to the GDP after industry (in the past six years participating with 10.6%). However, if the percentage of participation of industry is added (5.4% for the food-processing and tobacco industries), the agriculture assumes even greater economic importance than the rest of the industry.

In this period, according to the change rates of the GDP, industry demonstrates a positive trend, while agriculture, the opposite negative trend, concluding with 1997. If the previous observations of the rates for 1998 – 3.9% – and 1999 – 0.3% – are added to this period, the average middle-term rate for 1996-99 shows only 0.3% growth. A negative trend such as that should be corrected by the middle-term strategy.

Table 2 – Meaning of agriculture in the economy of Macedonia

	1994	1995	1996	1997	1998 p.p.
Participation of industry (% GDP)	19.9	19.9	19.9	20.7	21.8
Participation of agriculture (% GDP)	10.5	10.5	10.6	10.7	10.0
Part. of food processing and tobacco industries (% GDP)	5.4	5.4	5.4	5.5	
Industry, change rate (%)	-7.0	-8.9	5.0	2.9	4.5
Agriculture, change rate. (%)	8.4	2.3	-2.9	0.0	3.9
Employment in industrial sector (%ILO)	39.9	38.3	(32.2)	(32.0)	(32.2)
Employment in agricultural sector. (%ILO)	–	–	16.6	16.4	17.6
Employment in food processing and tobacco industries (%)	6.0	6.1	6.1	6.0	6.1

SG RM/98, 99.

According to its participation in the GDP, agriculture in Macedonia has a similar importance for employment. Agriculture, along with the food and tobacco industries, shows a great input in the employment of the population. Besides these relations, the agricultural complex participates in and is of a great importance for the transactions with the machine and chemical industries, as well as with all public services, particularly with trade, restaurant management and tourism.

2.2 Structure of Agriculture

The structure of the physical range of agriculture is dominated by plant production, which is constantly increasing (from 61% in 1994 to 70% in 1999). Compared to this, the physical range of livestock production, in the same period, is decreasing (39% to 30%). (Table 3)

Table 3 – Structure of the physical volume of the agriculture

	1994	1995	1996	1997	1998	1999
Structure of the Physical Volume	100.0	100.0	100.0	100.0	100.0	100.0
– plant production (in %)	61.4	61.7	60.9	64.0	66.5	69.9
– livestock-breeding (in %)	38.6	38.3	39.1	36.0	33.5	30,1
Total physical volume (in %)	8.0	4.8	-2.0	1.0	4.0	1.4
– plant production (in %)	14.0	5.4	3.8	2.7	7.0	-1.3
– livestock-breeding (in %)	-3.0	3.8	-2.0	-6.0	-1.0	6.4

SG RM/98, 99, Skopje.

If the result of the change of the total physical range of agricultural production is considered, the observation is that it has been falling since 1994 (it even had a negative rate in 1996), while livestock production has demonstrated a low and negative rate during the whole middle-term period (except for the improvement in 1999).

3. Importance of the Agricultural Complex in Foreign Exchange

The Macedonian trade balance is negative (Table 4). During the current middle-term period, the participation in the total export and import of the agricultural complex has been 8–21% and 8–17%, respectively, significantly affecting the total balance of payments. However, the export of food by the agricultural complex has decreased, thus in 1998 the export of food had fallen to 33% while the import of food had risen to over 90% of the total import of agro-

industrial products, which is 20% of the total import of the country, even when the balance of export and import is at its lowest (68.5%). Thus, it can be noticed that the deficit in foreign exchange rapidly increased as a result of the deficit in the amount of food import, which indicates that the next middle-term programme for agricultural development should point out the possibilities to be supported for greater increase of agricultural products, those for better satisfaction of domestic demand as well as those for export. The structure of the agro-complex is mainly dominated by tobacco (approximately 40%) and drinks (30% in 1998). The agro-complex export demonstrates a fall in the participation of processed food products, in contrast to the import, wherein their participation in the period of five years has almost doubled.

Table 4 – The agro-complex and foreign trade

(mil. US $)

	1994	1995	1996	1997	1998
Export					
Total	1,086	1,204	1,147	1,236	1,311
Products from the agro-complex %	91	105	139	260	216
Structure of agro-complex %	8.4	8.7	12.1	21.0	16.5
Agriculture and fishing	17.0	15.9	16.1	13.3	14.5
Food products	35.1	40.5	26.6	17.6	18.3
Drinks	4.4	5.5	8.8	25.0	30.0
Fodder	0.2	0.1	0	0	0
Finished off and processed tobacco	43.3	38.1	48.5	44.1	37.2
Import					
Total	1.484	1.718	1.627	1.779	1.915
Products from the agro-complex %	128	152	167	305	336
Structure of agro-complex %	8.6	8.8	10.3	17.1	17.5
Agriculture and fishing	11.0	13.7	19.5	32.8	27.8
Food products	32.1	34.4	42.9	57.9	62.3
Drinks	21.1	25.3	16.7	2.8	3.1
Fodder	4.4	3.6	4.5	1.3	1.3
Finished off and processed tobacco	31.4	23.0	16.4	5.2	5.4
Balance					
Total – deficit	-398	-514	-480	-480	-604
Agro-complex – deficit	-37	-47	-28	-45	-120
Percent	9.3	9.1	5.8	9.4	19.9
Balance of export and import (%):					
Total	73.2	70.0	70.5	69.5	68.5
Agro-complex	71.1	69.0	83.2	85.2	64.3

SG RM/98, 99.

A more detailed illustration of the development of export and import of food products is shown in Table 5. It can be noticed that the export is dominated (after tobacco) by drinks (23.8%) and fruit and vegetables (20%), while the import is dominated by meat and processed meat (27.8%) and grains (21.2%).

Table 5 – Foreign trading according to the group of manufactured or processed agricultural products

(average 1996–98)

	000 US $	%	000 US $	%
	Export		Import	
Livestock	225	0.1	1,991	0.8
Meat and processed meats	6,134	2.6	69,644	27.8
Eggs and dairy products	1,484	0.6	15,960	6.4
Processed and fresh fish	117	0	7,764	3.1
Crops and their products	7,127	3.1	52,904	21.2
Fruit and vegetables	46,595	20.0	25,566	10.2
Sugar and its products	4,403	1.9	20,668	8.3
Drinks	55,441	23.8	5,045	2.0
Tobacco and products	103,162	44.2	15,977	6.4
Other	8,530	3.7	34,590	13.8
Total:	233,248	100.0	250,109	100.0

SG RM/98, 99.

The major exchange of the Republic of Macedonia is with the EU, the neighbouring countries (FR Yugoslavia and Bulgaria), Slovenia and the USA, as well as with many other countries. (Table 6). Thus, the main participant in the export and the import is the EU (34%), but with a great deficit in the exchange. The second is FR Yugoslavia with an equalised balance and the USA with an exchange surplus. In the import Slovenia is a greater participant than the USA, but with a growing deficit. Bulgaria and Croatia do not have any important participation in the exchange with Macedonia yet, the existing exchange being with a negative balance.

The export of fresh and processed agricultural products of the Republic of Macedonia is 14%, while the import is more than 30% including the other countries, though with relatively larger location of the deficit (50% of total exchange deficit). Therefore the issue of the arrangement and realisation of balanced exchange agreements, considering each country separately, should be a permanent concern of the state.

Table 6 – Foreign trade with the EU, Macedonia's neighbours, USA and other countries (in %)

	Export			Import			Balance mil. US $	
	1996	1997	1998	1996	1997	1998	1997	1998
Total	100.0	100.0	100.0	100.0	100.0	100.0	-542	-604
EU	42.3	43.8	43.9	30.3	37.0	34.9	-117	-94
Bulgaria	3.3	2.8	3.2	6.6	5.6	4.5	-64	-44
FR Yugoslavia	21.4	22.2	18.3	10.2	11.6	12.9	70	-6
Slovenia	7.1	4.8	3.1	7.6	7.8	7.8	-79	-108
Croatia	3.0	3.2	4.1	3.0	3.9	3.4	-30	-11
USA	6.2	9.5	13.3	4.2	4.7	5.3	34	72
Other Countries	16.7	13.7	14.1	38.1	29.4	31.2	-290	-263

SG RM/98, 99, Skopje.

II. SITUATION OF THE AGRICULTURE

1. Natural Circumstances

Relief Characteristics and Geographical Position

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; the young Western-Macedonian mountains in the west with smaller valleys; the wider zone of the Vardar – in the central part – broken up into small stands and the zone of the Pelagonian Stand Anticlinarum, located between the Vardar zone and the Western-Macedonian Mountains.

Flat and not completely discrete plains cover a relatively small part of the territory of the Republic of Macedonia, covering 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 the Republic of Macedonia and the valleys lie at different altitudes – from 50 to 880 metres above sea level.

*Table 7 – Elevation above sea level and area of the plains**

Number	Plain	Medium elevation	Area in hectares
1.	Gevgelija-Valandovo	80	15,300
2.	Struga Plain	280	29,000
3.	Skopje Plain	300	26,100
4.	Kočani Plain	330	11,500
5.	Ovče Plain	350	31,700
6.	Kumanovo Plain	400	19,600
7.	Polog Plain	500	33,200
8.	Bitola Plain	650	120.600
9.	Ohrid/Stuga Plain	740	16.000
10.	Prespa Plain	880	12,500
11.	Other plains	–	164,500
TOTAL		–	490,000
Republic of Macedonia		25,713 km^2	19.1%

* *Republic of Macedonia, Area Plan draft, Skopje, 1998.*

The regions with these characteristics are scattered over 490,000 hectares and represent 19.1% of the total territory of the Republic of Macedonia. (Table 7)

However, of the total territory of the Republic of Macedonia, the high plateau cover only 7.8% and the hill and mountainous terrains amount to 92.2%.

Macedonia is a country of hills and mountains because the greatest part of its territory, i.e. 44.01%, is situated between 500 and 100 metres above sea level, with an average elevation of 829 metres.

On the territory of the Republic of Macedonia there exist all categories of inclined slopes of 0–2°, of 3–5°, of 6–15°, 16–35°, 36–55° and inclinations greater than 55°.

The Republic of Macedonia is situated in the southern part of the temperate zone and borders on the sub-tropical zone. It extends from 40°51 to 42°22 latitude and from 20°27 to 23°02 longitude and has a total surface area of 25,713 km^2.

Climate

Its geographical location, the relief, the proximity of the Aegean Sea, and, within their length, the unsheltered rivers, theVardar, Strumica and Pčinja, make possible the appearance of three climatic areas: Modified-Mediterranean; Continental and Mountainous.

The influence of these three climatic types is represented differently in the course of different years and on specific regions, thus forming climatic subtypes. There are years when the Mediterranean influence is felt all the way to Skopje, over the full length of the River Vardar, to Kočani along the River Bregalnica and in the Strumica Valley. Nevertheless, during the course of certain years, the climatic elements in the Valley of Gevgelija and Valandovo have features of a Moderate Continental climate.

The average yearly temperatures decrease from south towards north and are 14.5°C in Gevgelija, 13.3°C in Veles and 12.4°C in Skopje. In the higher valleys and grounds the average yearly temperature of the air is even lower. In Tetovo the temperature is 11.3°C, in Kriva Palanka 10.7°C, in Kruševo 8.3°C, and in Lazaropole 7.1°C. However, in the valleys, where the bigger lakes are located, the average yearly temperature is the following: in Ohrid 11.6°C, in Resen 10.2°C, in Nov Dojran 14.5°C and in Mavrovi Anovi 7.3°C.

The spread of rainfall in Macedonia, as well as its types, shows a great deal of variety.

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 Ovče Pole plain. There is an amount of 500 to 600 mm of rainfall in one part of the Tikveš area, the

Skopje Valley, the area around Štip and the Kočani 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 Maleševija. Amounts of 700–1000 mm of rainfall are found in the Gevgelija\Valandovo Plain, the area around the Dojran Lake, Polog, Kičevo, Struga and the Lake Prespa region. Rainfalls of above 1000 mm can 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.

Cloud in Macedonia ranges from 40% in the Valley of Gevgelija and Valandovo to 60% in Polog and the area around Kičevo.

The sun shines from 2,100 to 2,450 hours per year. Macedonia gets maximum sunshine during the month of July lasting from 300 to 350 hours per month, and the minimum in December lasting from 55 to 100 hours per month.

Winds blow mainly from the northern quadrant in the Republic of Macedonia, but the dominant direction in certain regions changes depending on the orographic conditions. The most common wind is the Vardarec which is dry and cold, and affects relatively large and highly valuable agricultural facilities.

Hydrographic Characteristics

The territory of Macedonia belongs to three river basins: the Aegean, the Adriatic and that which extends to the Black Sea. The major part of the territory, 86.9%, gravitates towards the Aegean Sea. 12.9% of the water gravitates towards the Adriatic and 0.2% towards the Black Sea.

There are 4,414 springs from which the bulk of the 31.43 m^3 of water per second is supplied, of which only 58 springs have a quantity of above 100 litres per second. Eighty percent of these are located west of the River Vardar and only 20% of them are to the east.

The longest river is the Vardar with a mean annual flow on the border with Greece of 173 m^3 per second, the River Treska has 25.8 m^3 per second, Pčinja – 16.1 m^3 and Crna Reka – 36.9 m^3 per second.

The water resources of Macedonia have been evaluated to be:

– 18.8 billion m^3 water from rainfall or an average precipitation of 733 mm in the basin areas;

– 6.22 billion m^3 water that flow out of the basin areas with a flow of 197.2 m^3 per second;

– 0.52 billion m^3 underground water;

– 0.42 billion m^3 from major springs.

Generally speaking, the water resources of Macedonia are decreasing. In the period 1949–69, all the three basins departing from Macedonia had a resource of 7,816.5 x 10^6 m^3, while the average water flow in the period from 1949–92 has been 6,629.5 x 10^6 m^3.

Conversely, the available water during a medium-arid year is considerably reduced: the Vardar basin having 3,340 x 10^6 m^3, the Strumica basin 106.34 x 10^6 m^3 and Crn Drim 134.90 x 10^6 m^3, or a total of 4,791 x 10^6 m^3 of available water resources during a medium-arid year.

Significant hydrographical potentials, which are also important for agricultural production, are the natural lakes – Ohrid, Prespa and Dojran.

Pedological characteristics

The topsoil in the Republic of Macedonia is largely heterogeneous in a relatively small space because there are more than 30 soil types and many other taxonomically inferior types. Macedonia presents a true pedological collection of all the types of soil present in South-Eastern Europe.

According to the pedogeographical zones, the dominant terrains are: mountainous terrains 84.4%, rolling and hilly terrains 1.53%; plains 7.88%; and foothill 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 regosols, cinnamonic, forest soils, (tar, resin or pitch) clayey soils, dendzas, chernozems (black soils) and lessivé soils.

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 hydromorphous, holomorphous and other types and account for 2.82%.

Vegetation

The vast diversity, the distribution of some types of soils and their dendrofloristical 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 disused fertile land can be found largely on the verges of Pelagonia, Ohrid, Mariovo, Štip, Kočani, Berovo and the area around Delčevo.

1.1. Agricultural areas

Regionalising of areas in Macedonia has been carried out for many different reasons and from many different aspects. Some have been orientated towards cultivating different crops like tobacco or grapes; some are orientated towards the definition of different regions from the aspects of the climate and vegetation[4] or in connection with the different types of soils, however there is another more complex regionalisation from the point of view of the natural and the economic differentiation of the areas. This division was made at the beginning of the 1970s under the guidance of Professor Ilija Mihajlov, published in 1972 under the title *Agricultural and Economic Areas and Micro-areas.*

According to Mihajlov, the natural and the economic circumstances, observed as a point of interest for the Macedonian agriculture, consist of 6 different areas and 54 micro-areas. With the overall division into 6 areas the approximate and recognised distribution of different crop-growing has been distinguished, and with the micro-partitioning, the location of crops has been specified more solidly and more precisely, and also there is a quantification of the surface areas involved.

According to Prof. Mihajlov, the six main areas are: Mediterranean, Pelagonian, Skopje and Kumanovo; the Western Area and the Area of the Big Lakes.

To achieve the goals within the strategy of agricultural production, the division into areas is of interest only if the agrarian policy is firm in regard to regional differentiation of measures and activities. However, if there is no such course of support for the agriculture or if this is done only within the country, the division is not imperative.

Professor Mihajlov's partitioning shows a great difference in regard to the perimeter of cultivated lands, which are dominant in the Mediterranean region and the Pelagonian area. Also, all the rapid systems of agricultural production are dominant primarily in the Mediterranean and then in the Pelagonian area (table 8).

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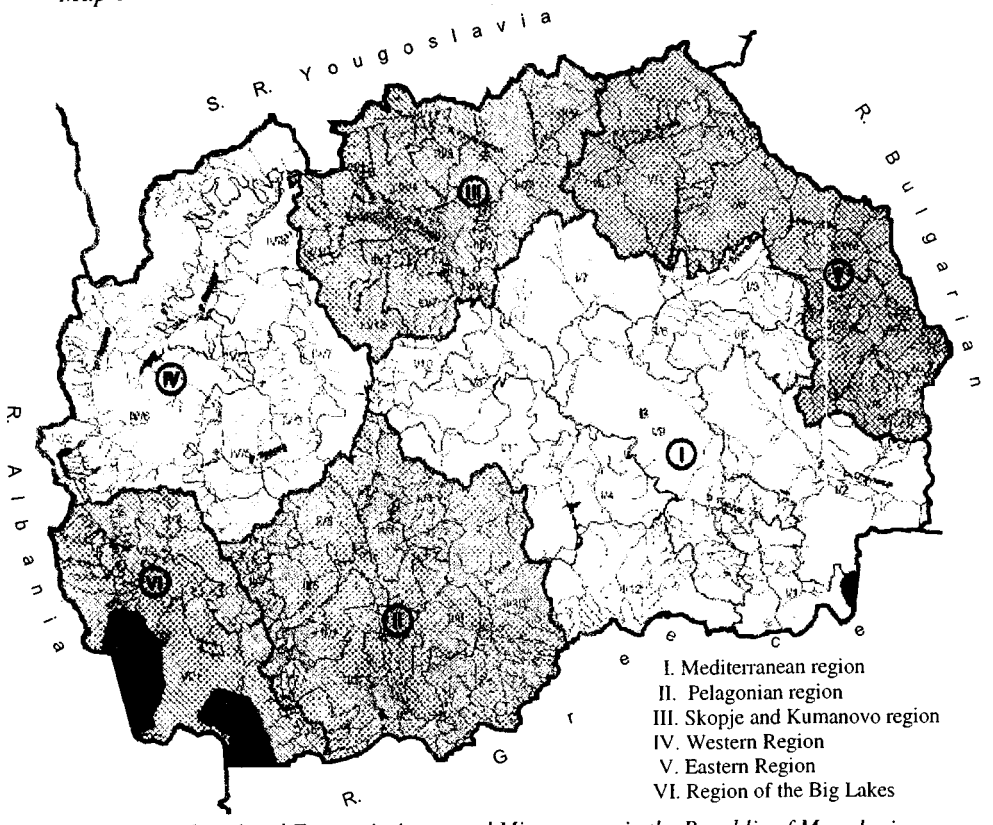
[4] Филиповски и др., *Карактеристики на климатско вегетациско почвените зони (региони) во Република Македонија,* МАНУ, Скопје, 1996. (Filipovski and others. *Characteristics of the Zones (Regions) of Macedonia according to the Climate, Vegetation and the Type of Soil.)*

Map 1



Agricultural and Economic Areas and Micro-areas in the Republic of Macedonia

Table 8 – Distribution of agricultural areas by regions RM = 100

Feature	Mediter-ranean	Pelago-nian	Skopje and Ku-manovo	Western	Eastern	Big Lakes
Agricultural Land	34.8	21.1	13.6	14.9	9.8	5.8
Land under Cultivation	36.2	21.4	15.8	10.4	10.2	6.0
Tillage and Gardening	37.4	22.0	16.4	9.6	9.4	5.2
Fruit Gardening	20.0	10.0	10.0	15.0	20.0	25.0
Vineyards	65.5	10.3	10.3	1.8	1.8	10.3
Meadows	14.5	27.3	10.9	21.8	18.2	7.3
Pastures	33.5	20.9	10.9	19.6	9.6	5.5

Despite the fact that the economic and the infrastructure conditions in the regions, as well as throughout Macedonia, have been changed in relation to those of 30 years ago, the Mihajlov division can be still of use for estimation purposes. Nonetheless, with the help of modern methods and with regard to current economic conditions, Macedonia needs a new division by regions or areas and with respect to several constraints, these taking into account the climatic and vegetation soil zones[5].

With the assistance of the above methods of application, in Macedonia, according to the altitude, there are eight climatic regions, and according to their area there dominate the sub-Mediterranean; the Continental-Mediterranean and the warm Continental areas.

Not underestimating the need for knowledge of the economic, climatic and other differences in respect to the types of the soil between different parts of the country, we wish to emphasise that, in the conditions of a developed market economy and free planning of production, and using modern technology, skill and methods of production, the complex of natural circumstances has less and less impact on the division in relation to production, i.e. less and less impact on the organisation of crop-growing within one section.

1.2. Hydro-amelioration Systems

The Republic of Macedonia belongs to that group of countries which have built systems for irrigation and drainage covering relatively large parts of the agricultural land surfaces in comparison to some countries of the region (Serbia, Croatia), but on the other hand considerably less in comparison to Bulgaria or Greece.

a. Irrigation Systems. The irrigation systems in Macedonia cover a projected area of 163,693 hectares[6]. For 142,055 hectares, the basic structures and water canals have been built, and a detailed network covers 131,978 hectares, but, since some of the space has been used for different purposes and for other reasons, in reality the irrigated surface equals 126,617 hectares.

Of these already built irrigation systems (126,617 hectares), there are 99,918 hectares which are supplied by the Vardar basin, 8,267 hectares by the

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[5] Filipovski *et al.*, quote

[6] Анакиев и др., *Состојба, заштита и можности за користење на земјоделското земјиште и развој на земјоделството. Експертен елаборат за потребите на просторниот план на РМ*, Скопје. 1998. (Anakiev *et al.*, *Conditions, Protection and Possibilities of Using Agricultural Land and Development of Agriculture. Expert Elaboration on the Needs of Area Planning in the Republic of Macedonia,* Skopje. 1998.)

Crn Drim and 18,432 supplied by the River Strumica. In the Vardar basin there are 13 large accumulations (reservoir lakes), along the Crn Drim there are 3 and along River Strumica 3.

The water from these systems, besides being used for irrigation purposes, is also used for water supplies and for generating electricity.

Generally speaking, it is considered that the quality of the water taken from these systems is satisfactory because most of the bigger reservoir-lakes have been built upstream of the polluters. However the water from some accumulation systems, built downstream of the polluters, is of different quality, which is why the chemical and the toxic substances have to be controlled.

The irrigation systems were built up to 1975. Since 1975 the farming land has increased by 40,918 hectares, but the irrigated area has not increased because of the unavailability of equipment for irrigation.

The land that is actually irrigated varies between 45 and 85 thousand hectares in different years. After 10 years of drought (1985–94), the surface was reduced because of shortage of water in the irrigation systems. The amount of the irrigated area is also decreasing because of the destruction of canals and other structures and equipment, the transformation of assets of the big farming systems or the irregular payment for water compensation.

Table 9 – Areas (in hectares) within regions that (at present) can be irrigated

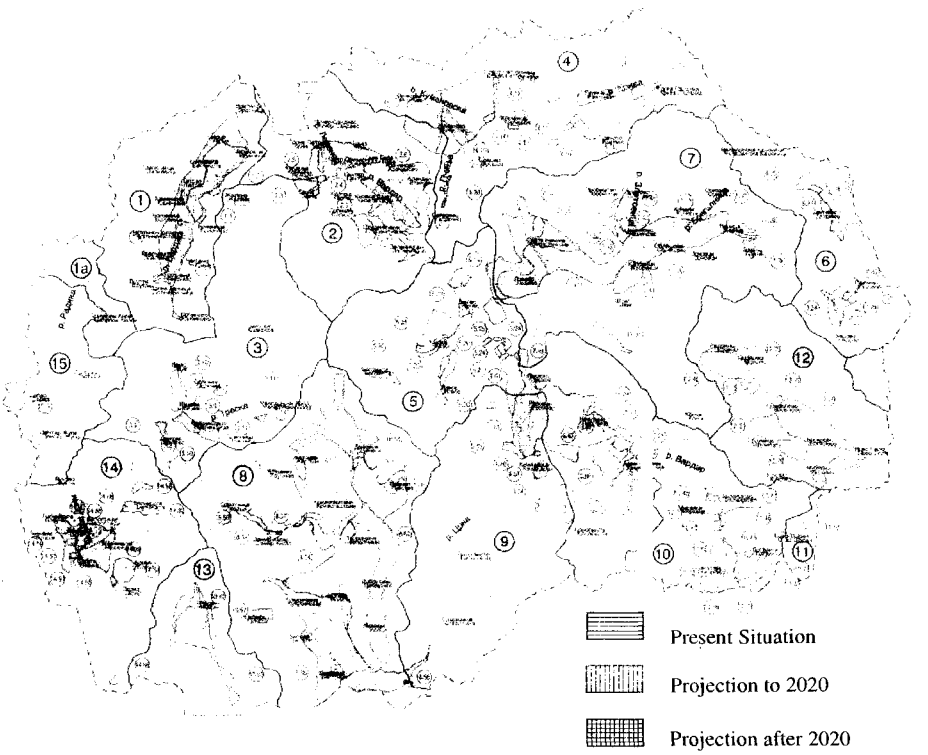
Basin	Separately	Total
I. River Vardar	–	99,918
Polog	13,350	–
Skopje Plain	1,428	–
Kičevo and Makedonski Brod	1,445	–
Pčinja – Kumanovo and Kriva Palanka	8,002	–
Mid-Vardar area	4,390	–
Upper Bregalnica, Vinica, Delčevo	1,334	–
Mid and Lower Bregalnica	25,758	–
Pelagonia	24,743	–
Lower Crna Reka, Tikveška	12,360	–
Lower Vardar, Valandovo, Gevgelija	7,108	–
II. Crn Drim Basin	–	8,267
Prespa	3,635	–
Ohrid, Struga, Debar	622	–
III. Basin of R. Strumica	–	18,432
Strumica – Strumica district – Radoviško	18,432	–
Sum TOTAL (I + II + III)	–	126,617

Within the structure of irrigated land the dominant are the following: ploughed fields and vegetable gardens, vineyards, fruit growing, while the least represented are the meadows.

Within the structure of irrigated land with regard to types of cultures, it can be seen that: grains account for 37.7%, industrial cultures 9.1%, kitchen-garden cultures 12.7%, fodder cultures 14.1%, fruit gardens 9.5%, vineyards 3.7% and the rest 3.7%.

The structure of the irrigated areas is not satisfactory since the grains are highly represented (within this structure maize, is very frequently irrigated) which is not most suitable because the involvement of kitchen-garden cultures and other intensive cultures is on a low level.

Map 2



The Republic of Macedonia – Irrigation Situation and Projections

For the irrigation of about 127,000 hectares of ground, within the structure of the groups of cultures mentioned above, according to the calculations there is a need a total of 900 million m^3 of water, for which a total of 154 million m^3 should be used on grains, on rice 144 million m^3, on kitchen-garden cultures 145 million m^3, etc.

Table 10 – Volume of irrigation

Indicator	1996	1997	1998
1. Irrigated area	51,617	51,703	43,259
– surface irrigation	20,289	23,895	25,888
– with artificial rain	31,328	27,808	17,371
2. Irrigated:			
– ploughed fields and gardens	36,958	40,140	29,547
– fruit gardens	3,534	3,885	5,911
– vineyards	9,977	6,297	4,914
– meadows and pastures	1,148	1,381	2,877

In relation to the programming of new and expanding of old irrigation systems, there are many alternatives that have been proposed by experts and institutions. These are long-term projections. Thus, according to the basic water economy plan of SR Macedonia (1973), there is given the information that Macedonia has "suitable areas for irrigation" of a gross of 421,000 hectares, while "total irrigation" can be carried out on an area of 370,000 hectares.

According to the predictions of certain experts, by the year 2020 there can be provided irrigation for an additional 266,000 hectares – the optimistic alternative – but optimal estimates are expected to be around 139,000 hectares.

According to our view, there are no possibilities of building new irrigation systems by 2005, but there is a need for expansion of the existing ones, making the infrastructure usable, organising the management and the relations among owners.

We consider that it would be very realistic to expect a higher percentage of exploitation of completed and renovated installations of irrigation systems by 2005, and for them to be able to provide water for about 100,000 hectares. This figure is double the figure of irrigated areas during the last three years.

b. Drainage Systems – Hydro-ameliorative measures have been undertaken on swampy and damp terrains and these have been converted into fertile soil. The most important drainage systems are the following: Pelagonian drainage system – covering an area of 54,000 hectares, the one at Skopsko Plain – 6,600 hectares, and one at Strumičko Plain – 9,000 hectares. The total drained and reclaimed area is 72,000 hectares.

The sustainability of these systems depends to a large extent on the floods and the erosion of the soil.

During depression of the large irrigation systems in certain years and depending on the methods used, there has been marked over-watering of the soil and a need for drainage systems.

The condition of the drainage systems is even worse, because they have been more neglected than the irrigation systems. The draining power has been reduced by 40 to 50%. The network of canals is around 2,000 km long with 12 pumping stations and an engine capacity of 92 KW.

In the period to 2005, there need to be interventions to put into effect the existing drainage systems and specific measures have to be taken to stop the erosion of the soil and protect irrigated land from the overflow of excess water from the canals, or their filling up.

c. Water Law – With the passing of the Water Law, the conditions have made possible an integral water economy and its protection. In accordance with the Law, a single enterprise for water economy has been formed as well as a water fund. The concentration of financial assets and the integration of material and human resources should lead to a more suitable (if not, more optimal) level of the use and protection of water resources, as well as of irrigation and drainage facilities.

We consider that with this Law and with the integration of everyone involved in water management, one of the most serious problems – the payment of water compensation, will be eliminated, as this has been one of the main reasons for the shortage of financial assets for the sustenance of the systems and for their ruination.

2. Socio-demographic Characteristics

Dynamics of Rural Population and Size of Settlements

The Macedonian countryside in the last few decades has gone through a process of dynamic transition.

Along with the positive changes, the rural areas have experienced many negative processes and phenomena. The intensive abandoning of agricultural land, and the unrestricted rural exodus, have produced a great void in the rural areas, with a special accent on devitalisation of the agricultural population. The changes in the movement of the agricultural population from 1948 up to now in the Republic of Macedonia are given in Table 11.

In comparison to 1948 when 72% of our population lived in villages, today only 40% of the population of the Republic of Macedonia lives in rural areas.

Table 11 – Movement of population living in villages in the Republic of Macedonia

Year	Total		Rural	
	Number	%	Number	%
1948	1,152,986	100.0	834,485	72.4
1961	1,406,003	100.0	863,070	61.4
1971	1,647,308	100.0	844,231	48.8
1981	1,909,136	100.0	879,937	46.1
1994	1,945,932	100.0	782,334	40.2

Source: Statistical Review of SR Macedonia nos. 115 and 116
Statistical Institute of the Republic of Macedonia, vol I.

The migration and abandoning of agricultural land have had negative consequences, especially on the remote hilly and mountainous villages and on the compact backward areas.

The decline in population in these villages and areas is a result of neglected agricultural development and other economic branches, the unresolved infrastructural needs of the settlements, etc.

According to the census (1994) the following sizes of rural settlements, in relation to the number of people, is evident in the Republic of Macedonia.

Size of Village	Number of villages	%
Totally abandoned	121	7.1
Up to 100 inhabitants	573	33.5
101 – 300	387	22.6
301 – 800	330	19.3
> 801	300	17.5
TOTAL	1,711	100.0

Of these, especially problematic are the villages with less than 50 inhabitants, and there are 360 of them representing 68.2% of the total number, or the villages with no more than 100 citizens or 20.6%, i.e. one fifth of the total number of villages in the Republic of Macedonia. From the subgroup of villages with no more than 50 people living in them, especially the villages with no more than 10 people, and there are altogether 104 of them, we can expect total displacement.

The spread of the small settlements according to municipalities, or according to their occurrence in rural areas varies; in certain municipalities they are more recurrent than in others. The situation is really serious within the mu-

nicipalities where the occurrence of settlements with no more than 50 inhabitants, is more than 50%; this is the case in: Vitolište, Drugovo, Kavadarci, Konopište, Kosel, Mavrovi Anovi, Orizari, Prilep and Staravina. The occurence of more than 30% of villages that have no more than 50 people, happens in the following municipalities: Bač, Belčišta, Bogomila, Veles, Vranešnica, Demir Kapija, Izvor, Karbinci, Lukovo, Novaci, Petrovec, Probištip, Rosoman, Samokov, Sopotnica, Čaška, Češinovo and Štip.

Spread of Villages According to Orographic Conditions

The Republic of Macedonia has a variable relief structure – ranging from high to low terrains, and the number of population on these terrains is closely connected to the orographic circumstances. Bearing in mind the fact that every kind of micro-relief of the terrain has its own economic and agricultural significance, it is important to know the degree of settlement and the function of population with regard to exploitation of natural resources within an area.

The situation of the population of the villages in hilly and mountainous regions and in the plains is shown in Table 12.

Table 12 – Dynamics of settlement of villages in hilly and mountainous regions and in the plains

Types of Villages	Number of Villages	Population 1948		Population 1994	
		number	%	number	%
Plains	1,275	643,926	77.2	678,647	86.7
Hills and mountains (above 800 metres elev.)	436	190,559	22.8	203,687	13.3
TOTAL	1,711	834,485	100.0	782,334	100.0

There are fewer mountainous villages (with an average of 238 inhabitants) than villages in the plains (average: 532 inhabitants), because the concentration of the village population is situated in the villages of the plains, i.e. 86.7% of the total village population live in the latter settlements. The distribution of the population living in the plains, in relation to particular municipalities, is diverse, and only in the municipalities of Debar and Berovo is the population in the plains smaller than the population of the mountainous area.

The number of inhabitants of hilly and mountainous villages is evidently decreasing, which means that the emigration of the population from these villages is not relaxing. In comparison to 1948, the number of inhabitants of hilly and mountainous villages has been reduced by 46%, this being an enormous decrease. Actually, this group of villages is characterised by overwhelmingly small settlements.

We can conclude, from the given data on the types of villages according to their orographic conditions, that there are differences in the number and settlement of the villages and that there is a difference in the dynamics of settlement. Indeed, the hilly and mountainous settlements are being displaced or are being over-taken by depopulation and deagrarisation, and in the major part of the villages in the plains the population is rising.

Compact and Passive (Backward) Areas

Within the Republic of Macedonia there are 14 compact backward areas, namely: Azot, the area around Belasica, the Vlainsko area, the area around German-Bilinsko, Gorna Reka, Debarca, Kozjačija, Kopačija, the area around Konečko and Lakavičko, the Kotor area, the area around Mavrovo and Mijačko, Malesija, Mariovo and the area around Plačkovica. The status of a compact backward area is that of an area which covers many settlements that have a decidedly low level of economic activity, no sufficient development of economic and public services infrastructure, a very high level of migration and a small density of population.

Table 13 – Dynamics of population within compact backward areas

Area	Number of villages	Population 1948	Population 1994	Index 1948=100
Azot	12	5,725	1,338	23
Belasica	8	1,261	766	61
Vlainsko	6	5,899	3,176	54
German-Bilinsko	18	9,794	3,221	33
Gorna Reka	13	2,413	1,335	55
Debarca	21	1,688	3,291	28
Kozjak	18	6,839	1,560	23
Kopačija	7	2,141	280	13
Konečko-lakavičko	36	10,424	4,819	46
Kotor	22	10,095	1,785	18
Mariovo-Mijak	8	2,782	47	2
Malesija	14	5,442	2,895	53
Mariovo	29	12,496	1,378	11
Plačkovica	21	5,465	1,707	31
TOTAL	233	92,464	27,598	30
Participation within the total of RM	13.6%	11.1%	3.5%	

Source: Our own research, Population Census, Families and Lodgings of 1981, Belgrade, 1986 *and Documentation of 1994 Census,* Institute of Statistics of the Republic of Macedonia, Vol.5.

All compact backward areas are characterised by a significant decrease in population, namely, there has been a reduction of 64,866 inhabitants or 70% of the population. At the same time the most imminent decrease in population has occurred from 1948–94 in the areas around Mavrovo and Mijačko (98%), in Mariovo (89%), the Kopačija region (87%), the Kotor area (82%), the area around Kozjak (77%) and Azot (77%). As a result of the migration trends, these areas are among Macedonia's demographically endangered areas. All the villages of the compact backward type show negative migration results, and, if this process continues, the depopulation will become more and more evident and a large number of villages shall cease to exist as settlements.

Education and Age Structure of the Rural Population

The depopulation of the rural settlements is also reflected within the population structure in accordance with age and education.

Table 14 – Dynamics of age structure of the rural population

Year	Total	0–19	20 –64	65 and above	unknown
1981	100.0	41.0	51.0	8.0	–
1994	100.0	36.0	54.1	9.6	0.3

From the above markers it is evident that the participation of young people (0–19 years of age) in the total population of the rural areas has a declining trend. The dynamics of participation of people, of 65 or more years of age makes the ageing of the rural population even more obvious. There is a higher tendency of ageing in the compact, mountainous and backward regions.

The social category of *pure farmers,* is represented mostly by old people and, with regard to this, it is easy to talk about a residual population in the Macedonian village. The households of aged people are becoming a serious social economic problem. On the level of the economy, there primarily need to be emphasised the facilities which are not being exploited (the farmland) at the disposal of the households of older people, and on the social level, the fact that they give small or modest yields. Such conditions lead to weakening of the household, lowering of investments in agricultural production (insufficient and inferior cultivation of the land, a lower number of cattle in stock) and to the lack of maintenance of the housing.

As can be seen from Table 15, of the total number of 567,102 people living in rural areas of 15 or more years of age, registered in the census of 1994, there are 59,692 people, or 10.5% without any education, i.e. they have not finished the first grade of elementary education, therefore the greatest part of

them are illiterate (55,552 or 7.8% of the total number of the rural population of 10 or more years of age).

Table 15 – Educational structure of rural population of 15 or more years of age

Situation in 1994

	Total	Male	Female
Total	100.0	100.0	100.0
Without any education	10.5	5.7	15.4
Incomplete elementary education	27.4	23.6	31.2
Elementary school	41.1	42.5	39.7
High school education	17.7	23.8	11.6
College and higher education	2.3	3.4	1.3
Unknown	0.2	0.2	0.2

Source: Our research, vol. 2, Vital, Ethnic, Educational and Economic Indicators of the Population, Statistical Institute of the RM, Skopje, 1996.

However, the individuals without any education – as well as the other educational groups – are not equally represented regarding their gender structure. Women are considerably more represented within the groups; illiterate (75%), without any schooling (73%) and with uncompleted elementary education (57%); in contrast, men are present within the groups: with high school education (68%) and with college or higher education (73%).

On the level of elementary education, children in urban areas are fully incorporated into the system of mandatory education (96.2% in 1997) but in rural areas this number is drastically lower (88.5% in 1997).

People with higher education, starting with high school and upwards, have a considerably lower representation among the people of the mountainous villages and among the compact and backward regions, and there is a dominance of people without any school training or with incomplete elementary education. For this there are many reasons, but the most important are: emigration of the young and productive population which is more educated, wide use of traditional agricultural means and primitive methods; absence or shortage of educational institutions and buildings; insufficient care about enhancing instruction of the young population in the schools; and the present isolation of the compact and backward areas or the remoteness of the mountainous villages. Nonetheless, regardless of the reasons the consequences for the economy are catastrophic (especially in the agriculture). The individuals who have finished a few grades of elementary education, and even those who have finished elementary school are not capable of managing and developing modern agricultural production by themselves. (Table 16)

Table 16 – Level of development of the countryside in the Republic of Macedonia

Indicators	Marker in urban areas	Marker in rural areas	Difference
Rate of literacy in % (1994)	96.7	91.4	-5.3
Literacy rate of female population in % (1994)	94.8	86.9	-7.9
Number of students per 1,000 inhabitants	42	23	-19
Labour force (% of total population)	66.4	60.2	-6.2
Female labour force (% from the total)	48.6	47.6	-1.0

The comparative results of Table 16 show that urban areas have a higher degree of development than rural areas. Therefore it is totally justifiable to devote special care to people from rural areas, with an accent on mountainous and compact and backward areas.

The absence of a specific development policy in the villages, as a process for the development of the infrastructure (communal, state-owned public services and processing facilities) is an important negative element in the entire development policy in the Republic of Macedonia. There are many villages today that are out of reach of the socio-economic development, their demographic structure is deteriorating and their economic and social life is being slowly extinguished.

The current social and political events in our country, regardless of the efforts that have been made to bridge the transitional period, have led to a drastic decline in the general material and social security of the households in the villages, and those that are located in the undeveloped regions have been left to themselves, being at the verge of their existence as a result of the general lack of concern.

In the places where there is emigration of the population, the agricultural facilities (the land) are left unexploited, and in the places where there is overpopulation of villages, the agricultural surface is relatively limited. There is an imbalance in the diffusion of population and agricultural surface which is a particular socio-economic phenomenon.

From the above we can see that the current economic and agrarian policy of the Republic of Macedonia has had a positive effect on the development of larger villages and villages which are in the close vicinity of towns, and on villages which possess fertile land and a good traffic communication infrastructure

with urban areas, and villages in which economic and infrastructure buildings have been already constructed. The inhabitants of these villages have an opportunity to be employed within the non-agrarian sector, without having to leave their place of residence, because, being daily migrants, they have an opportunity to travel every day to their place of work and, after working-hours, to return to the village and work on their land.

Equally, the population of hilly and mountainous villages and those within the compact-backward areas, because of unsatisfactory means of traffic communication and basic infrastructure in general (public or state-owned facilities), have had to permanently migrate and leave the village, leaving the cultivated land or working on it in an inadequate fashion.

3. Agricultural Population and Labour Force

3.1. Agricultural Population

After the Second World War, the Republic of Macedonia was one of the regions in the Balkans where agriculture played a primary role, when the agricultural population constituted 72% of the total population. Afterwards, there followed a process of fast deagrarisation, encouraged by the socio-economic development of the country as a whole, which was expressed most evidently in the period between the two censuses of 1971 and 1981, when the number of farmers dwindled to only 21.7% of the total population. Still the process of deagrarisation has continued, and in the period between 1981 and 1991, the participation of farmers in the total population has decreased to 14.7% and, according to the last census of 1994, it has declined to 11.6% of the whole population.

With the results from the new census, in 2001 we can expect a new fall in the farming population, but it is evident that the tempo of abandoning villages and work on the land is moving faster than the possibility of finding employment within the non-agricultural sector in the country. Conversely, there is a tendency and a need for employing the non-agricultural population to work on the land and in the countryside. In this sense there is encouraging information with regard to the percentage of the total population living in the villages. While in 1961 62% of people lived in the countryside, and in 1991 32%, in the year 1994, for the first time, there has been a slight increase, with a figure of 39% of people living on the land.

Table 17 – total farming population in the Republic of Macedonia

Year of census	Total population (000)	Of which, the agricultural population		% of total population living in rural areas
		Total (000)	% from total population	
1961	1,406	723	51.4	61.4
1971	1,647	657	40.0	51.5
1981	1,909	414	21.7	42.3
1991	2,034	300	14.7	32.0
1994	1,946	226	11.6	39.0

OG RM/1998 and 1999 (processed according to many tables)

3.2. Labour Force within Agricultural Sector

To measure the situation and the movement of the labour-force within agriculture, the results of the censuses have been taken into consideration, according to the number of the active agricultural population and its relation to the total population, counted on the basis of individuals employed within the agricultural sector in general, no matter in which category of the agricultural economy (individuals, enterprises or cooperatives).

Table 18 – Trends of active and supported agricultural population

Year of census	Agricultural population (000)			Structure (%)	
	Total	Active	Supported	Active	Supported
1961	723	307	316	42.5	57.5
1971	657	329	328	50.2	49.9
1981	414	216	198	52.2	47.7
1991	300	180	120	60.0	40.0
1994	226	91	135	40.3	59.7

Thus we may observe that, according to the information in Table 18, the active agricultural population, being the labour-force in the agricultural sector, is in close relation to the tendency to a drastic decrease of the agricultural population, so that in 1994 there was a decrease of 91,354 employed in the agricultural sector (in comparison to the 1961 situation where the number of employed was three times lower). There are also signs of tendencies to less and less participation of the active agricultural population in the total number of the agricultural population, i.e. more and more individuals who have to be supported (60%).

On the other hand, the 1996[7] regular survey of the labour-force, carried out by the Statistical Institute, shows that in 1996, within the agricultural sector, 89,000 people were employed (16.6% of the total employment in the country), in 1997 84,000 (16.4%) while in 1998 there were more than 95,000 people (17.6%). It is obvious that in 1998 there was a considerable increase of employment within the agricultural sector. However, this happened only in connection with the employment of a work force for use in the individual agricultural economies, because in the same period of time there was a decrease of employment within agricultural enterprises and cooperatives, from a total of 18,000 to 15,000 and to 14,000 individuals employed in the mentioned period of three years. This phenomenon deserves special research attention, because the strategy for the forthcoming mid-term development will still depend upon the three main sectors of agriculture in the Republic of Macedonia, where the character and the quality of the labour-force is different. For example, the data shows that, in 1996, the total number of people employed in the agricultural sector, questioned by the survey, minus the number employed in enterprises and cooperatives, was 71,358, while, according to the 1994 census, there were an active agricultural population of 91,000. Bearing this difference in mind, it follows that approximately 20,000 agriculturally active inhabitants have not been sufficiently engaged in agriculture on individual agricultural holdings (something which will be obvious in the survey of the socio-economical characteristics of individual agricultural economies). Actually, the current level of the labour-force in the country will not prove to be a limiting factor for a more intensive development of agriculture.

4. Agrarian Structure

Within the agricultural sector there are two categories of agricultural economies: a) organisations (enterprises and cooperatives) and b) individual agricultural economies, constituting the agrarian structure of agriculture.

Data from Table 19 shows that these two categories of economies, show a different participation in and development tendency of agriculture in the period immediately before the creation of the agricultural development strategy for the forthcoming middle-term period.

[7] SG RM/99, p. 198.

Table 19 – Markers for agricultural organisation development

Year	Index of value of production (1990 = 100)			Percentage of participation in purchase		Participation in cultivated surface (%)		Participation in number of conditional heads (%)		Participation in number of tractors (%)	
	Total	Agricultural orgs.	Individ. agr. orgs.	Agricultural orgs.	Individ. agr. orgs.	Agricultural orgs.	Individ. agr. economies	Agricultural orgs.	Individ. agr. economies	Agricultural orgs.	Individ. agr. economies
1993	94	69	105	59	41	31	69	13	87	6	94
1994	101	73	113	67	33	30	70	12	88	6	96
1995	105	70	121	66	34	30	70	12	88	5	95
1996	104	69	119	65	35	30	70	11	89	5	95
1997	104	63	123	73	27	29	71	10	90	5	95
1998	109	63	129	57	43	27	73	10	90	4	96

SG RM/99, processed according to tables on pp. 353 and 358.

The value indices of production, in comparison to 1990, show that, in agricultural organisations, immediately after the independence of the Republic of Macedonia, their values had decreased by 30%, and in 1998, by 37%. Nonetheless, at the same time, individual agricultural economies have sustained crises in the economy while showing a tendency to stable growth of the value of their production. Yet, in relation to their participation in the purchase and in the realisation of market-surpluses, the individual economies lag behind the agricultural organisations, owing to natural consumption of a part of the production by their own family households.

The dwindling value of the agricultural production of the organisations may be linked to the less and less use of cultivated surface, while, as far as the individual economies are concerned, at first glance, there seem to be no changes. However according to the population census of 1994[8], farmers have stated that they do not use all the 461,000 hectares of land which can be cultivated, as constantly shown by the statistics, but only 228,000 hectares (or 50%). In this connection, in the forthcoming mid-term interval, a much more extensive use of cultivated land for agricultural production on the part of individual economies has to be supported with the help of all the measures of the state.

[8] 1994 Population Census, vol. 10/97

According to participation and representation in the total number of conditional stock head, for the same reasons there is a decreasing trend of the number of conditional head in agricultural organisations (in 1993 they had 41,000, and in 1998 31,000 head, which is only 10% of the total number in the country) and in individual agricultural economies there is a trend of inconsiderable changes. Also in connection with the use of number of tractors, there is a tendency for a decrease in the agricultural organisations (from 3,250 in 1993 to 2,480 in 1998), while within individual agricultural economies the number is constantly increasing (from 48,000 in 1993 to 55,503 in 1998).

It is a pity that published statistical information cannot be accessed, with regard to the ratio of the value achieved or the GDP of agricultural production, from the viewed categories of economies in the last few years. However, on the basis of out-of-date information in relation to the total value of the domestic product in agriculture (a category which is no longer statistically valid), agricultural organisations, in 1993 for example, contributed 23.4%, while individual economies participated with 76.6%. This shows that both categories of economies will play a considerable role, building a specific agrarian structure in the forthcoming development of agriculture.

4.1. Individual Agricultural Economies

– Structure of Estates

As opposed to the decrease in number of the active agricultural population (labour-force of agriculture) there has been an increase in the number of individual agricultural economies. Therefore, according to the censuses of 1960, 1969, 1981 and 1994, there has been a noticeable movement in the total number of: individual agricultural economies, the estate-structure groups and their average size. (Table 20)

According to the last census (1994), the average surface of the estates has dwindled to 1.28 hectares of cultivated surface per individual agricultural economy[9]. It is also evident that there was a process of smaller and smaller division of land estates, according to their average size, of individual economies –

[9] According to the Statistical Institute (v. XIII/96), an agricultural household in possession of an estate of: at least 0.1 hectare of land under cultivation, or – 1 cow and 1 calf, – or 1 cow and 2 adult stock (sheep or goats), – or 5 adult sheep or goats, – or 3 adult pigs, – or 4 adult sheep or goats or pigs, – 50 poultry fowl, – or 20 beehives. If there is a switch to EUROSTAT standards, at least 1 hectare of land under cultivation or 0.3 hectares of plantations or more than 2 conditional head of livestock is required, the number of agricultural households will decrease by 40-50%.

a process lasting for decades, massively focused on the 2 hectare-estate division. It is a pity that there is no published data for the year 1994 of the ownership structure of individual economies, but, from the drastic decrease of the average size of the economies, we can assume that they are yet more concentrated in the 2 hectare-estate group.

Table 20 – Number and structure of individual agricultural economies

Land surface (ha)	1960	1969	1981	1994[1]
0–2	43%	58%	68%	
2–5	34%	29%	24%	
5–10	18%	11%	7%	
> 10	5%	2%	1%	
Total	100%	100%	100%	
Average surface (ha)	3.14	2.56	2.07	1.28
Number of economies (000)	156.7	161.3	176.3	178.1

[1] *Census of population, vols. 10/97 and 8/96.*

This greater and greater chopping-up in size of individual economies, on the average, is certainly still going on, particularly if we bear in mind that the already small estates are being divided into even smaller ones. Thus this process is dangerously diminishing the development of agriculture through the creation of very small-size individual economies, i.e. this process is greatly decreasing their profitability and competitiveness in agricultural production. There are small-size estates in other countries also, but nowhere in Europe does there exist such a small-size average estate as in our country. There are 4.8 hectares estates in Slovenia or, in the EU: 4 hectares in Greece, and 5.6 hectares in Italy, while the rest of the EU member-states possess an average size of estates of between 15 to 65 hectares. After the redefinition of a typical Macedonian agricultural household, according to the standards of EUROSTAT, their number, for certain, is going to get smaller, i.e. their average size will increase, but it will still amount to less than 3 hectares.

– *Socio-economic Structure*

The main reason for the overzealous chopping-up of land estates of individual economies in the country is the previously surveyed process of deagrarisation of the countryside and the unregulated right of inheritance in connection with agricultural land. This is something that, in the past period, was a major cause for differentiating among 4 socio-economic groups, which, according to the time-gap between the 1981 and 1994 censuses, shows the following structure (total number of agricultural households = 100):

– purely agricultural households: 29.3% in 1981 and 18.8% in 1994;

– mixed households: 32.3% in 1981 and 36.3% in 1994;

– non-agricultural households: 34.4% in 1981 and 36.1% in 1994;

– elderly households: 4% in 1998 and 8.8% in 1994.

This is how, in a period of 15 years, the purely agricultural households (individual economies) have decreased in number by 10% and now amount to approximately 19%, in the interest of a 4% increase of the mixed ones, less than 2% of the non-agricultural ones and almost 55% of the elderly households.

But, according to the standard annual survey on "Available and Used Assets of Households",[10] the Statistical Institute, in accordance with the 1998 Survey, estimates that the purely agricultural households (with 4.5 members on average) participate with 6.4%, the ones with a mixed structure (with 4.9 members on average) with 22.8% and the non-agricultural households (3.7 members on average) with 70.8% of the total number of households in the country. Also, if in this case we take it that the purely agricultural and the mixed households represent the total number of individual agricultural economies, then the socio-economic structure of the households, compared with 1994, will be: 55.1% individual economies and 45.9% non-agricultural households, and in 1998: 29.2% individual economies and 70.8% non-agricultural households.

Throughout this analysis of individual agricultural economies there is one part that is missing and that is the part about relative accounting information on the basis of sample, representative of different types of individual agricultural economies in the Republic of Macedonia, by which we may follow their work and economic situation more realistically. This is something which member-states of the EU have had for a long time[11].

However, we will use some of the markers of the above-mentioned Survey of the Available and Used Assets of Households, but, before that, we will concentrate on something that makes the individual economies (family farms) a characteristic system of economic units, here and all over the world.

The individual agricultural economy, according to the definition of the FAO, is a system consisting of 3 subsystems:

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[10] SG RM/99, p. 572.

[11] The farms are observed on the basis of their accounting, grouped according to household production into 8 types: 1. crop-production, etc.; 2. kitchen-garden, 3. wine-production, 4. fruit-production, 5. heifers; 6. livestock for meat-production (cattle, sheep and goats), 7. pig and poultry-production and 8. mixed production.

- a household which decides about, manages and executes activities in agricultural production;
- an agricultural business on the estate – an economic unit, from which employment, cash profit (from the market) and other goods in kind (food for the family) can be provided;
- a component for profit-making with activities conducted by members of the family outside the agricultural economy.

Table 21 – Total profit of agricultural business in pure, mixed and total number of agricultural households (economies)[12]

000 den./household

Income	1996			1997			1998		
	total	pure	mixed	total	pure	mixed	total	pure	mixed
Cash – farmer	47	109	34	100	156	86	62	99	51
In kind – farmer	44	69	39	53	54	53	50	69	45
Total agr. business	91	178	73	153	210	139	112	168	96
% of total business	38	70	31	62	84	57	40	67	37
Total business	239	253	236	245	251	243	280	249	263

The interpretation of this is the following: 'cash from the estate' and 'value of consumption of other goods in kind' = profit from agricultural business of the household.

From Table 21 it is evident that even the 'purely agricultural households' are not totally pure, this being more evident in certain years (in 1997- 84%), and less evident in 1998 – 67%. Conversely, the situation with the 'mixed agricultural households' and their profit-making from doing agricultural business is very variable, so that in 1996 and in 1998 they made 30% profit, while in 1997 the profit was nearly 60%, meaning that the realisation of the total average income per agricultural household is mainly dependent on the degree of profit of the mixed households from work outside the agricultural business. In any case, all agricultural households in 1996 from doing business with agriculture made an average profit of only 38%, 62% in 1997 and 40% in 1998, so that people

[12] SG RM/97, 98, 99.

living in villages, are not completely devoted to agriculture and supplement their profit with non-agricultural activities outside the business, in addition to the insufficiently used or cultivated land available. On the other hand, it is interesting to note that a large part of the income of the total agricultural business, is not a market component but it is presented as an in-kind consumption component, in the case of the purely agricultural households 30–40%, and with the mixed ones, a little more than 40–50%.

From now on, it will not be enough to create possibilities for individual agricultural farmers to lease land from agricultural enterprises, but there will have to be a prompt production of an appropriate programme of general measures aimed at the agricultural sector and a separate project for the development of agriculture in hilly and mountainous areas of the country, for support of individual agricultural producers and others who will be interested in the promotion of agriculture (those within the food and food-processing industry) to create a profitable setting for agricultural business. Besides this, also the creation of a programme for a favourable crediting of young farmers, similar to that in the EU, deserves our attention (aim 5).

4.2. Agricultural Organisations

According to the Statistical Institute of the Republic of Macedonia, agricultural organisations are divided into the following groups: agricultural enterprises (agricultural economies – without considerable facilities, and agricultural-industrial plants – with considerable processing facilities) and agricultural cooperatives.

4.2.1. Agricultural Enterprises

During the time of the former Socialist Federative Republic of Yugoslavia, the development strategy of the agro-complex was directed towards intensification of the development of agricultural enterprises, i.e. towards agricultural-industrial plants. However, since the independence of the Republic of Macedonia, these, little by little, have started to lose their importance, falling into huge debts towards banks, from the high inflation and degradation of the banking system, caused by several crises of the economy. Their production started to fall, and the results of their work became worse and worse. This kind of situation and the changes in the system, in the economy and in the political system of the state, have contributed to finding a way-out through implementation of a certain amount of privatisation – transformation of agricultural enterprises with an aim of achieving greater economic efficiency and their de-monopolisation in the forthcoming development of the agro-complex.

Estate Structure of Agricultural Enterprises

It is not, in fact, a matter of the structure of the estates, but the structure of the land-use of the state-owned agricultural surface area by agricultural enterprises. And with the most current Law on Use of Agricultural Land (from 1998), they are not obliged to pay for lease of the land for a period of 5 years.

Table 22 – Estate structure of agricultural enterprises

Groups (ha)	1996		1997		1998	
	No.	%	No.	%	No.	%
0–50	49	29.3	37	23.6	38	23.0
50–100	7	4.2	7	4.5	7	4.2
100–300	19	11.3	16	10.1	19	11.6
300–500	8	4.8	9	5.7	12	7.3
500–1,000	20	12.0	24	15.3	25	15.2
1,000–2,500	24	14.4	24	15.3	24	14.5
2,500–5,000	15	9.0	16	10.2	16	9.1
> 5,000	25	15.0	24	5.3	24	14.5
Total no.	167	100.0	157	100.0	165	100.0
Total agr. (cult.) in 000 ha	610 (197)		615 (189)		613 (174)	
Average size (ha)	3,653 (1.179)		3,917 (1.204)		3,715 (1.055)	

SG/RM99, pp. 353, 375.

There is various uncoordinated statistical information on the use of agricultural land by agricultural enterprises. Thus, according to the data given in Table 16 from the SG RM/99, they have been using more that 600,000 hectares of agricultural land. However, the Statistical Review 311/98 shows that they have used only 167,000 hectares (the rest of the surface concerns pastures which are managed by the Communal Company for Pastures). Conversely, according to specific research[13], the 35 registered plants alone use 165,000 hectares of agricultural land. Therefore it is more realistic to emphasise the conditions which have been created after the implementation of the privatisation of agricultural enterprises.

[13] Д-р Тодор Галев: *Состојбата и развојот на земјоделските претпријатија во постприватизациониот период во Република Македонија*, Здружение на агроекономистите на Република Македонија, Скопје, 1999. (Dr. Todor Galev: *The Development Situation of Agricultural Enterprises in the Post-Privatisation Period in the Republic of Macedonia.* Agro-economist Association of the Republic of Macedonia, Skopje, 1999.)

Privatisation and Transition of Agricultural Enterprises

The privatisation model in the Republic of Macedonia is regulated by a separate Law (from 1996) which consists of the following:

– transformation of agricultural land owned by the Republic of Macedonia is not possible (the use has been regulated by a separate law of 1998), nor of land or other estate which, by means of force, has become state-owned, i.e. national property (regulated in 2000 by a separate Law on Denationalisation);

– this Law provides for the implementation of the transformation (privatisation) of agricultural enterprises and cooperatives into shareholding associations and limited associations, so that agricultural land is owned by the state, and they will make use of it by means of long-term leasing;

– agricultural organisations which possess processing facilities or other systematic technical units (a livestock-breeding farm, factory, wine cellar, fish pond, greenhouse, institute, laboratory, inseminating station, experimenting centre, and the like) or have been organised in a complex way, during the process of the decision to transform themselves have to pass a Transformation Programme and to restructure themselves according to the estimated value of state-owned capital in every part of the organisation.

In accordance with the most recent information from the Privatisation Agency[14], (March 1999), 243 agricultural enterprises have been registered, of which 145 have been privatised and 13 have been shut down, or a total of 158 enterprises representing 65% of the total number of enterprises. The rest 53 are in a process of privatisation and 32 went into bankruptcy.

The total value of the registered agricultural enterprises has been estimated to be 291,325,000 DM, from which shareholding capital amount to 18.31%, state-owned capital for sale to 42.65%, retirement funds – 7.53% and, a total of 31.51% of permanent goods.

Smaller enterprises have been privatised according to the model where employees buy the enterprise, and the bigger ones (agro-plants) mostly by a managerial purchase system (52%), with a transformation of demands of creditors to permanent investments (26%) and with purchasing of personnel and the enterprise itself (22%).

According to specific research (after the process of transformation, which has not yet started in all the enterprises) a new situation can be ascertained with

[14] *Information on Transformation of Agricultural Enterprises and Cooperatives.* ARMTPOK (Agency of the Republic of Macedonia for Transformation and Privatisation of State-Owned Capital), Skopje, 1999.

regard to the estate structure and also in connection to the size of the agricultural enterprises.

Table 23 – Situation of the estate structure before and after privatisation

Size	Situation according to: SG RM/99 for 1997		Situation according to research: 35 agro combines (1997)		after privatisation (1999)	
ha	No.	ha/No.	No.	ha/No.	No.	ha/No.
< 500	69	114	7	251	7	251
500–1,000	24	742	6	800	16	480
1,000-2,000	24	1,575	7	1,520	20	820
2,500–5,000	16	3,525	4	3,480	21	927
> 5,000	24	20,620	11	12,170	104	1,288
Total	157	3,916	35	4,718	168	982
Total agr. surface ha		614,811		165,133		165,133
Smaller agr. enterprises			75		75	
Total No.	157		110		243	

From comparative analysis of the data, we can see, once again, that agricultural enterprises before privatisation (in 1997), as expressed in the statistics, had a considerably larger used surface (615,000 hectares), compared with 165,000 hectares (this concerning only the 35 agro-plants or combines) according to the research. For this discrepancy, the most realistic explanation is the already-mentioned note that the statistics concerning agricultural enterprises included the surfaces of the Public Enterprise for Pastures. Besides this kind of information, research has shown that the 35 agro-plants engage themselves on agricultural land that is shown within the statistics as land that is used by all enterprises, so that the number of enterprises after the privatisation has become considerably higher, and the average size of used land has become considerably smaller. Therefore, the statistical research does not follow the trends of changes in connection with agricultural enterprises.

Within the analysis, it is not by chance that attention has been focused on the privatisation of the agro-plants, because the disintegration of agriculture, the processing and the servicing and catering businesses, as separate associations, present themselves as being a characteristic features of privatisation (with the exception of the more complex ones which have chosen to organise themselves as holding companies). That is how the 35 agro-plants transformed themselves into 120 associations of purely agricultural enterprises with an average size of 1,376 hectares and 57 associations organised as food-processing and servicing

enterprises, such as: 9 wine cellars, 9 dairies, 6 slaughter-houses, 2 refrigerated warehouses, 5 canning factories and processing enterprises, 2 forage production factories, 11 servicing associations for trading enterprises, 6 cooperatives, 3 food and catering, 3 accounting and 1 Hydro Ameliorative System.

Certainly, this transformation has de-monopolised the former role of agro-plants in agriculture with an increase in economic efficiency in newly-established associations. However, although this has been already formally done, their post-privatisation period has been very complicated and hard from an organisational point of view. Therefore, now, when agricultural enterprises are in the process of becoming private, there must not be political prejudice against them, on the contrary they have to be supported by all means of agrarian policy in the forthcoming mid-term development, since they will continue to be important entities in the development of the agro-complex.

For example, in 1998 a Law for establishing an Agency for Boosting the Development of Agriculture was passed. But, in the Law there are more activities concerning only the boosting of development of individual agricultural producers. It will be of great help if, by analogy to the already-produced Project for Boosting the Development of Private Farming[15], in the forthcoming mid-term period, there is worked out and implemented a project for enterprises, although the above project supposedly was to deal with the problems of privatisation of agro-plants and their future organisational and economic development. Now, after the disintegration of certain agricultural and non-agricultural enterprises, we cannot allow other extremes to take place – the break-up of existing relations; these relations have to be used for creating adequate cooperative relations. Agricultural enterprises, in contrast to the individual economies, possess accounting information services, which, however, do not have any input into a wider functional system. Hereafter, the experts' proposal of the above project for organising an *Agro-business Centre,* which is to be in the service of the agro-management and marketing and to do accounting monitoring for the individual economies as well as the enterprises of the agro-complex, deserves our attention. This is something that will be useful as well for the counsellors of the agricultural counselling services and the managers within the agrobusiness enterprises, on the one hand, and the creators of the agrarian policy within the agro-complex, on the other.

At the moment, the most substantial help for the newly-established enterprises would be to provide satisfactory, short-term, investment loans and to

[15] Saint Agne P. and others: *Private Farm Support Project – Republic of Macedonia,* FAO Investment Center, Rome, 1993.

create possibilities for partial writing-off of debts, accumulated in a period of abnormal economic conditions, immediately after the independence of the Republic of Macedonia. (There is something similar going on in Greece[16] with the help of a special law for the writing-off of debts to 400 farmers amounting to 450 million Euros.)

4.2.2. Agricultural Cooperatives

The development of agricultural cooperation in the Republic of Macedonia is in a constant decrease. Thus, from 321 agricultural cooperatives existing in 1990, today it is estimated that there are only 80[17] of them (according to the statistics, only 24). Their number is constantly falling, and those which do exist barely make a living and are without any clear prospects.

According to the information in Table 24, agricultural cooperatives in 1998, according to the figures of the total number of agricultural organisations, accounted for 13%, and with regard to used land under cultivation, only for 2% (belonging to agricultural enterprises). Nonetheless, according to the author quoted here, nowadays there are 80 cooperatives with a total of 9,870 hectares of cultivable surface area and 3,200 employees.

Table 24 – Property structure of agricultural cooperatives

Groups (ha)	1996		1997		1998	
	No.	%	No.	%	No.	%
< 50	5	20.8	7	29.2	7	29.2
50–100	3	12.5	3	12.5	3	12.5
100–300	9	37.6	10	41.7	10	41.7
300–500	5	20.8	3	12.5	3	12.5
500–1,000	2	8.3	1	4.1	1	4.1
Total	24	100.0	24	100.0	24	100.0
Total agr. surface (ha)	4,984		3,906		3,906	
Average size (ha)	802		163		163	

SG RM/99, p. 375

These cooperatives have already completed their transformational process so that their capital has become a cooperative capital and only a small number

[16] *The Agricultural Situation in the European Union* – Report 1998, Brussels.

[17] Б. Пашоја, *Денешна состојба и проблеми во задругите во Република Македонија*, Здружение на агроекономистите на Р. Македонија, 2000, Скопје. (B. Pašoja, *Current Situation and Problems within Cooperatives in the Republic of Macedonia*, Agroeconomist Association of the Republic of Macedonia, 2000, Skopje.)

of them have gone through privatisation. This is something which has been achieved through the procedures of the Constitutional Court, because agricultural cooperatives have entered a process of privatisation, together with the enterprises, according to the Transformation Law, without having to recognise cooperative ownership of assets. This has brought about a decrease in the number of cooperatives and a selling-out of capital for certain cooperatives.

From 1996 onwards, there has been an appearance and reinforcement of certain new forms of cooperation, i.e. associations of agricultural producers, which has made the role of agricultural cooperatives unclear. Therefore we need to pass a new law on cooperatives, as soon as possible, by which their status will be redefined, new forms of cooperation will be pointed out, in order to achieve more substantial support on the part of agrarian policy-makers in the country.

5. Crop Production

Crop production is an especially important segment of the agro-complex, since on its organisation depend the level and quality of agricultural land-use, the entire development of livestock-breeding, the development of the food-processing and tobacco industries.

The analysis of the situation of crop production will be made through: its size, its quality and use of agricultural facilities, the relationship between branches of crop-production, the structure of cultivated land-use and use of crop-growing land, the yields of particular cultures and total production, etc[18].

5.1. Agricultural Surface and its Use

The agricultural surface covers 49.9% (in 1999) of the total area of the Republic of Macedonia (25,713 km^2), and during the last few years it has been varying between 1,284,000 hectares and 1,293,000 hectares. In comparison to the 1985–94 average, when the agricultural surface was equal to 1,319,000 hectares, the 1999 capacity of 1,284,000 hectares has been 2.7% lower, i.e. 35,000 hectares less, than that of 1985–94.

The agricultural surface, with respect to its capacity, is dangerously and constantly decreasing, which can be seen from the trends of the last 10 years (1990-99, Table 27). If we take into consideration a much longer period, we will see that this decrease in agricultural surface is a serious problem, since there is

[18] Information on crop production provided by: *Statistical Reviews:* 277, 298, 311 and 5.4.03 as well as SG of RM 1999.

Table 25 – Agricultural surfaces according to their use (total) (in 000 hectares)

Year	Agri-cultural surface	Cultivatable surface					Pastures	Reeds, swamps and fish ponds
		Total	Ploughed and market-gardens	Fruit gardens	Vineyards	Mead-ows		
Average 1985–94	1,319	665	554	23	34	54	649	2
1995	1,289	656	550	20	31	55	631	2
1996	1,291	658	554	20	29	55	632	1
1997	1,285	647	546	18	29	54	636	2
1998	1,293	635	533	19	29	54	656	2
1999	1,284	633	534	17	28	54	649	2
2005	1,280	630	527	22	31	50	648	2

Table 26 – Agricultural surfaces divided into sectors according to their way of use[1] (in 000 hectares)

Year	Land surface		Cultivatable surface										Pastures		Swamps and reeds	
			Total cultivated		Ploughed and market garden		Fruit gardens		Vineyards		Meadows					
	Agr. Enterprises[2]	Individual Economies[2]	Agr. Enterprises	Individual Economies	Agr. Enterprises	Individual Economies	Agr. Enterprises	Individual Economies	Agr. Enterprises	Individual Economies	Agr. Enterprises	Individual Economies	Agr. Enterprises	Individual Economies	Agr. Enterprises	Individual Economies.
1995	614	543	146	458	127	378	3.9	14.3	11.7	18.1	3.1	48	467	84	1	1
1996	615	545	143	461	126	381	3.5	14.4	11.0	17.6	2.4	48	470	84	0.5	0.5
1997	619	545	140	458	123	379	3.1	13.4	10.5	17.6	2.8	47	478	86	1	1
1998	617	547	143	461	124	381	3.1	14.3	10.5	17.9	4.9	47	473	86	1	1
1999	605	545	135	460	117	381	3.1	13.4	10.1	17.8	5.0	47	469	85	1	1
2005	616	664	171	459	153	374	5.0	17.0	11.0	20.0	6.0	44	444	90	1	1

[1] Besides the two "sectors", i.e. agricultural enterprises and individual agricultural economies, the official statistics in all statistical reviews "Kitchen-garden production, Fruit-Production and Viticulture..." show information such as: "Other unorganised agricultural land". This category is showing up in all forms of land use. Thus in 1999 there were: 133.4 thousand hectares of agricultural, 38.5 thousand hectares of cultivable, 35.4 thousand hectares of ploughed land and kitchen-gardens, and some land for fruit growing and vineyards.

[2] According to official statistics – "agricultural enterprises", i.e. "individual agricultural economies".

a decrease in a potential, without which nobody has as yet succeeded in providing food for people and animals. If we consider that in 1960 there were 1,540,000 hectares of land under cultivation, we will come to the conclusion that in 1960 the figure was 256,000 hectares larger than that of 1999, to be exact 6,400 hectares of land decrease per year (from 1960 to 1999). If, on the other hand, we compare the capacity of 1999 with that of ten years ago, it will become obvious that the annual decrease in agricultural surface is 3%, or 3,600 hectares.

The decline (decrease) of agricultural surface is an unstoppable process, but for a country with such limited suitable surface for intensive agricultural production (approximately 50% of it pastures), this declining trend is very disturbing, particularly because of the transformation of agricultural land for building, high-ways and other construction, when it is permanently lost for agricultural production.

The structure of the agricultural surface, i.e. the distinction between cultivated land and pastures, is approximately 50%, and this being relatively constant, it will not be changed for a long period of time, since according to official statistics there is no transformation of pastures into cultivated surfaces or vice versa. However, as we will see later, the abandoned cultivated land, which has been transformed into other systems, accounts for a very large part of this, but statistical data does not register this and it continues to be registered as abandoned cultivated surfaces.

Reviewing agricultural surfaces in "sectors", i.e. according to ownership, shows that the private sector or individual agricultural economies own 42.4% of the agricultural surface, agricultural enterprises and cooperatives own 47.1%, while 10.3% is ranked as "other unorganised land". According to this, we can state that 42.2% of agricultural land is private, and all the rest (57.6%) is state-owned or cooperative, i.e. owned by "agricultural enterprises and cooperatives". However, the land of agricultural cooperatives is equal to only 6,994 hectares as registered in the statistical survey of 1996. (After 1996, the Statistical Office Gazette statistics do not list cooperative land).

The ratio between private and state-owned property with regard to cultivable surfaces, market garden cultivations and ploughed lands, is more in favour of the private sector, and even more in favour of certain categories (ways of use) within the private sector – vineyards, fruit gardens, meadows (Table 26).

In connection with cultivable surfaces, 77% is in private possession, with 76.5% in ploughed land and market garden surfaces 79% in fruit plantations, etc. State-owned land dominates over the private in regard to pastures, where private farmers own only 15.3% of the pastures.

The dualism in the registering of state-owned (and cooperative) property, i.e. according to statistics as "unorganised land", presents a dilemma: how should use of these capacities (facilities) be planned in the future? If it is "unorganised", do we exclude it from future planning, does it have to be treated as some other, third entity or is it to be included within the state-owned property, i.e. within "agricultural enterprises"? We have decided to use the third example, by which "unorganised" capacities have been included in the agricultural enterprises on the level of all categories (Table 26), therefore "cultivable surfaces", "ploughed land and market garden surfaces" as well as pastures, within the agricultural enterprises have gone through changes on the bases of the differences shown in 1999 (see footnote 1 in Table 26).

We can see from the structure of the use of cultivable surface that 84.2% of it has been used for ploughed fields and market gardens, 8.5% for meadows, and for the intensive system of fruit gardens and vineyards only 7.1% (Table 25). In the case of agricultural enterprises the ratio is more favourable, since fruit and vine plantations (or surfaces) account for 9.8% of the cultivable surface, and meadows 3.7%.

It is obvious that Macedonia has a relatively limited natural capacity for intensive agricultural production, because it utilises only 50% of the total number of categories for highly-economical production. The rest of the capacity, i.e. the pastures, may be a solid base for developed, limited intensity livestock-breeding production.

5.2. Arable Farming

Use of Ploughed Land and Market Gardens

Following fruit gardens and vineyards, ploughed fields and market gardens are potentially the most intensive systems of use. They represent the biggest capacity of the cultivable surfaces, and because of this they are particularly important, and on the way of their use depends the character of production and the entire success of agriculture.

The capacity of ploughed and market gardens, in the last five years, has been in the vicinity of 540,000 hectares or from 533,000 hectares to 554,000 hectares, with an approximately 3% declining trend (1999:1995).

The extent of the ploughed land and market gardens can be seen through the representation of different groups of crop and garden cultures, but since there are many ploughed lands and market gardens which have not been sown over a period of 10 years, and with the continual increase of the capacity, there is an immediate need for establishing the capacity of the surfaces which have

been already sown. Thus we can see from Table 28 that on an annual average there are about 362,000 hectares sown, which in the last five years have continually decreased, so that, in 1999, in comparison to 1995, there was a 4.3% decrease. In this period, of the available ploughed land and market gardens, there was an average of 67% in use, while 33% of the land was left fallow or uncultivated.

The problem of abandoned (uncultivated) ploughing surfaces is a very serious one, because one third of them are not in use at all. Sadly, nobody has felt any kind of responsibility to do anything to clarify this problem, since not all of these surfaces are suitable for agricultural production. There is a need for an evaluation of which of them are suitable and which are not, and those ones which are not will need restructuring for some other use. According to the estimates from the *Area Plan*, nearly 50% of these surfaces are not suitable for agricultural production and will need to be released, i.e. to be restructured for afforestation. Consequently, it is anticipated that by 2020 approximately 90,000 hectares of these surfaces will be forested, which is also provided for within the *Area Plan.*

With regard to sown surfaces, the participation of grains is the highest (Table 29) – more than 60% – and from 1995 onwards they have shown a slight increase. After grains, there follow kitchen-garden cultures with 17%, with a declining tendency within the last 5 years.

Industrial cultures, however, show the most important increase in surfaces, as well as with their participation within the total sown surfaces from 9-12%. Forage cultures, in connection with surfaces sown with them, are close to industrial ones, with a variation of 37,000–39,000 hectares and with a stable participation of approx. 10% in the last 5 years.

The analysis of the use of ploughed and market garden fields, according to their ownership, is greatly to the advantage of individual economies. Thus, individual economies sow around 160,000 hectares of about 220,000 hectares under grains, or 73%, and agricultural enterprises 27%. In regard to industrial cultures, individual economies sow 79% of surfaces, while in regard to kitchen-garden cultures they sow even more.

Specifically, of approx. 60,000 hectares of kitchen-garden cultures per year, individual economies are involved in 50,000 hectares or 83%.

The relatively highest participation of agricultural enterprises in the use of the limited surfaces is in forage cultures with nearly 40%, as a result of the needs to feed livestock, and that is mainly aimed towards cattle.

Table 27 – Structure of agricultural surface use (in 000 ha)

Category	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2005
Total land surfaces	1,320	1,295	1,308	1,299	1,298	1,289	1,291	1,285	1,293	1,284	1,280
Index 1990 = 100	100	98.1	99.1	98.4	98.3	97.7	97.8	97.3	97.9	97.3	97.0
Cultivable surface	666	664	669	663	661	656	658	647	635	633	630
Index 1990 = 100	100	99.7	100.4	99.5	99.2	98.5	98.8	97.1	95,3	95.0	94.6
Ploughed and market garden surfaces	565	552	550	553	553	550	554	546	533	534	527
Index 1990 = 100	100	99.5	99.1	99.6	99.6	99.1	99.8	98.4	96.0	96.2	93.2
Fruit gardens	22	23	21	21	20	20	20	18	19	17	22
Index 1990 = 100	100	105	95.5	95.5	90.9	90,9	90.9	81.8	86.4	77.3	100
Vineyards	35	34	34	33	32	31	29	29	29	28	31
Index 1990 = 100	100	97.1	97.1	94.3	91.4	88.6	82.8	82.8	82.8	80.0	88.6
Meadows	54	54	56	56	56	56	55	54	54	54	50
Pastures	651	630	645	634	635	631	632	636	656	649	648
Swamps, reeds fish ponds	2	2	2	2	2	1	1	2	2	2	2

Table 28 – Use of ploughed land and market gardens (in 000 hectares)

Groups of cultures	1995	1996	1997	1998	1999	Average	2005
Ploughed and market garden surfaces	550	554	546	533	534	543,4	527
Index 1995 = 100	100	100.7	99.3	96.9	97.1	98.8	95.8
Total sown surfaces	374	360	360	357	358	361.8	375
Index 1995 = 100	100	96.3	96.3	95.5	95.7	96.7	100.2
of that: (of the sown surfaces)							
– Grains	242	227	224	221	219	226.6	225
Index 1995 = 100	100	93.8	92,6	91.3	90.5	93,6	93.0
– Industrial cultures	33	33	38	43	43	38	45
Index 1995 = 100	100	100.0	115.2	130.3	130.3	115.2	136.4
– Kitchen-garden cultures	60	61	60	57	59	59.8	60
Index 1995 = 100	100	101.6	100.0	95.0	98.3	99.7	100.0
– Forage cultures	39	39	38	36	37	38	45
Index 1995 = 100	100	100.0	97.4	92.3	94.9	97.4	115.3
Nurseries, fallow and uncultivable ploughing surfaces	176	194	186	176	176	182	152
Index 1995 = 100	100	110	106	100	100	103	86

Table 29 – Structure of use of ploughed land and market gardens

Groups of Cultures	1995	1996	1997	1998	1999	Avearge	2005
Ploughing and market-garden surfaces	100	100	100	100	100	100	100
Of that: sown surfaces	68	65	66	67	67	67	71
Of that: (of the sown surfaces) %							
– Grains	65	63	63	62	61	63	60
– Industrial cultures	9	9	10	12	12	10	12
- Kitchen-garden cultures	16	17	16	16	16	17	16
– Forage cultures	10	11	11	10	10	10	12
Ploughing and market-garden surfaces	100	100	100	100	100	100	100
Of that: nurseries, fallow land and uncultivable surfaces	32	35	34	33	33	33	29
Sown surfaces	100	100	100	100	100	100	100
Of that: fallow land and uncultivable surfaces	47	54	52	49	49	50	42

If the structure of cultivable and ploughed surfaces use is watched over a longer period of time, many interesting phenomena, which should warn us of certain negative features, can be observed from the following:

– fall in cultivable surfaces (in 1989 – 668,000; 1999 – 633,000 hectares);

– fall in ploughed and market garden surfaces (in 1989 – 555,000 hectares, in 1999 – 534,000 hectares);

– fall in long-term perennial plantations (in 1989 – 59,000 hectares, in 1999 – 45,000 hectares).

– a decrease in sown surfaces (in 1989 – 71% of ploughed and market garden surfaces, and in 1999 – 67%);

– increase of uncultivated (not sown) ploughed and market garden surfaces (in 1989 – 28% of ploughed and market garden surfaces, and in 1999 – 33%);

– the participation of intensive ways of use of ploughed and market garden surfaces is decreasing (industrial and kitchen-garden cultures), which participated with 24% in 1989, and in 1999 with 19%;

– the use of high-technological and technical methods is declining because of the strong decrease in participation of agricultural enterprises in the exploitation of capacities, etc.

Sowing Structure

a. G r a i n s. Obviously grains cover a substantially large part of the sown surfaces (Table 29). In the total area under grains, there is a far greater participation of wheat, then maize, and afterwards comes barley. As the high participation of grain-cultures is evidently and extensively reflected in the use of ploughed and market garden surfaces, the same happens with the high participation of cereal grains with regard to the total surface under grains, since they participate with 80% (see Table 31 for the average in the last 5 years), and maize and rice with 20%, being cultures which require higher investment, this being indicative of intensive production.

Agricultural enterprises participate with 26% of the surfaces under grains. Their involvement is highest in surfaces under wheat, approx. 35%, then in surfaces under rice, while with regard to the rest of the grains their participation is much lower. With regard to maize, being the most intensive culture, agricultural enterprises participate with 5% of the sown surfaces.

Observing the movement of grain culture surfaces, in the last 5 years there has been a relative stability, coming mainly from small differences with regard to wheat, maize and barley, noticed on a yearly basis.

It is known that the influence of the Mediterranean Climate, the periods of drought and the low, relative humidity in the air of Macedonia cause relatively low yields of grains, as well as other Continental Cultures. Therefore, possibilities for expansion of these cultures, or planning for considerably higher yields in Macedonia, are limited.

b. Industrial Cultures. Of the five most important industrial cultures, tobacco is most widespread on the surfaces, and then comes the sunflower. In contrast to the grain cultures, the total surfaces under industrial cultures have shown a certain growth in the last five years, which is mainly a result of the growth in surfaces under tobacco, which have increased from 11,000 hectares in 1995 to more than 29,000 hectares in 1999. In such a way the participation of tobacco in the entire surfaces under industrial cultures reached nearly 69% in 1999, in comparison to the 38.5% participation in 1995.

The surfaces under sunflowers show relative uncertainty and a tendency to stagnation because in the last five years they have shown trends ranging from 10,000–17,000 hectares. Therefore, the participation of sunflowers, from over 53% in 1996, dwindled to only 23.4% in 1999.

Sugar-beet covers relatively small surfaces which do not reach even 50% of surfaces needed to satisfy the needs of the single Macedonian sugar plant. However, in the last 5 years there has been a tendency towards an increase and stabilisation of sugar-beet on more than 2,000 hectares.

The surfaces under industrial cultures, in "sectors", show a high advantage in the case of individual agricultural producers, who in 1995 held 70% of the surfaces. Nonetheless, in regard to sugar-beet and sunflowers, agricultural enterprises have approximately the same surface-capacity, and during certain years even greater, but in any case, less differentially arranged on a yearly basis (Table 30).

With respect to sunflowers and sugar beet there are appearances of serious problems connected to building capacities and their finalisation. Sadly, conditions are not ripe for the engagement of greater surfaces from which the economical raw-material can be produced in proportion to the sizes of the plants for processing sunflowers and sugar beet. Here, boosting production of raw-materials, can be of help.

c. Kitchen–Garden Cultures. Participation of kitchen-garden cultures in the sowing structure is relatively satisfactory (in view of the market situation, the built-up finalisation facilities, etc.) Also the participation in the last five years has been relatively stable and moving from 16 to 17%, and on a surface of from 59,000 to 61,000 hectares under cultivation.

Table 30 – Sown surfaces in "sectors"

Culture	1995		1996		1997		1998		1999		2005
	Agr. Enterprises	Indiv. Agr. Economies	Agr. Enterprises	Indiv. Agr. Economies	Agr. Enterprises	Indiv. Agr. Economies	Agr. Enterprises	Indiv. Agr. Economies	Agr. Enterprises	Indiv. Agr. Economies	Total
Wheat (000 ha)	54	76	45	73	41	74	41	73	39	75	115
Rye (ha)	509	8,466	140	6,974	218	6,995	453	6,842	130	6,223	7,000
Barley (000 ha)	19	36	16	33	17	34	20	33	16	34	45
Oats (ha)	190	3,194	71	2,757	55	2,895	49	3,039	11	2,757	3,000
Maize (000 ha)	2	40	2	40	2	38	2	37	2	37	50
Rice (ha)	174	1,081	522	3,634	609	4,652	542	3,944	470	3,718	5,000
Sugar beet (ha)	780	574	921	1,077	840	1,340	617	1,167	800	1,489	3,000
Industrial pepper (ha)	23	731	95	453	51	587	112	727	35	734	1,500
Sunflowers (ha)	6,841	7,508	10,657	5,844	8,780	4,416	8,464	4,058	6,389	3,447	15,000
Poppy seeds (ha)	650	665	100	497	22	279	79	184	72	187	500
Onions (ha)	138	4,609	83	4,699	88	4,527	42	4,383	52	4,257	4,500
Garlic (ha)	–	1,510	–	1,653	–	1,465	–	1,412	–	1,325	1,500
Beans - pure sowing (ha)	2	6,381	4	7,003	10	6,892	2	6,884	7	6,964	7,500

Table 30 – Continuation

Peas grains (ha)	9	1,013	9	1.117	2	1.005	1	1.096	24	1.087	1.000
Lentils (ha)	–	293	–	299	–	292	–	262	–	288	500
Cabbage and kale (ha)	12	3,460	4	3,271	8	3,337	13	3,686	10	3,527	4,000
Tomatoes (ha)	353	6,891	517	8,189	128	6,818	340	6,387	392	6,359	8,000
Peppers (ha)	124	7,904	111	8,500	80	7,868	80	7,601	45	7,488	9,000
Watermelon (ha)	447	8,358	680	8,470	358	7,591	571	7,700	430	7,447	7,000
Pumpkins (ha)	–	–	–	–	–	–	–	–	–	–	2,000
Clover (ha)	424	2,120	312	2,149	511	1,998	222	2,196	73	2,637	5,000
Lucerne (ha)	4,370	15,139	3,870	16,064	3,388	16,050	3.222	15,779	3,492	15,493	26,000
Vetch hey (ha)	257	3,890	166	3,932	469	4,524	579	3,711	696	3,378	5,000
Forage peas hey (ha)	1,021	663	952	730	1.211	497	632	438	1,290	524	4,000
Forage maize (ha)	1,253	573	1,027	658	1,282	695	1,258	690	1,300	808	4,000
Livestock-beet (ha)	45	329	5	337	63	329	106	321	89	436	1,000

The participation of the kitchen-garden cultures, separately, in the total surface under kitchen-garden cultures is more evenly distributed in comparison to the distribution of grains and industrial cultures where one or two cultures have been dominant.

Nevertheless, tomatoes take up about one forth of the total area under kitchen-garden cultures, with a relatively stable participation, then follow the peppers, tomatoes, watermelons and beans (Table 31). In Tables 30 and 31 there is a review of the data in connection with surfaces taken up by the more important cultures, according to which certain differences arise from the information in Table 28, where the total surface under kitchen-garden cultures is shown, and the same is true in relation to other groups of cultures.

All kitchen-garden cultures show small differences in the surfaces taken up by them and arranged through the years, with a certain tendency to an increase in surfaces under tomatoes, peppers and beans, and a decline in surfaces under watermelons.

As for surfaces taken up by kitchen-garden cultures with regard to "sectors", it is evident that kitchen-garden cultures have the lowest participation (of all groups of cultures) within agricultural enterprises. Their participation five years ago was slightly higher (4.2% in 1995, 2.1% in 1999) than nowadays. It is known that, up until now, agricultural enterprises have not openly adopted kitchen-garden production, and especially not cultures where the work process is not entirely mechanised.

Thus agricultural enterprises do not have surfaces under garlic or lentils, and with regard to surfaces under beans, peas, cabbages and others, they have only symbolic plantations.

d. Forage Cultures. Forage cultures also have a relatively stable participation in connection with surfaces and sowing culture. The range of surfaces moves within the borders of relatively small differences on a year-to-year basis (from 36,000 to 39,000 hectares), but in the last two years there has been a decrease of 2,000 hectares in relation to the situation in 1995. This is why the participation of sown surfaces has gone down by 1%

Lucerne has a dominant place in connection with engaged surfaces and in comparison to other cultures, which is positive, since it has a relatively superior quality in comparison with all other forage foods, and it can be used in different forms (green paste, hay, flour). Besides lucerne, other surfaces are mainly engaged for hay-production, such as the production of: clover, vetch, peas, while relatively few surfaces are engaged in growing forage maize, and even fewer in livestock beet.

Table 31 – Structures of the sown surfaces (total)

Cultures	1995		1996		1997		1998		1999		Average		2005	
	Surfaces	%	Surfaces	%	Surfaces	%	Surfaces	%	Surfaces	%	Surfaces	%	Surfaces	%
Wheat (000 ha)	130	54.0	118	52.9	115	51.9	114	51.6	114	52.8	118	52.7	115	51.1
Rye (ha)	8,975	3.7	7,114	3.2	7,213	3.3	7,295	3.3	6,353	2.9	7,391	3.3	7,000	3.2
Barley (000 ha)	55	22.9	49	22.0	51	23.0	53	24.0	50	23.1	52	23.2	45	20.0
Oats (ha)	3,384	1.4	2,828	1.3	2,950	1.3	3,088	1.4	2,768	1.3	3,004	1.3	3,000	1.3
Maize (000 ha)	42	17.5	42	18.8	40	18.1	39	17.7	39	18.0	40	17.8	50	22.2
Rice (ha)	1,255	0.5	4,156	1.8	5,261	2.4	4,486	2.0	4,188	1.9	3,869	1.7	5,000	2.2
Total grains (ha)	**240,614**	**100**	**223,098**	**100**	**221,424**	**100**	**220,869**	**100**	**216,309**	**100**	**224,264**	**100**	**225**	**100**
Tobacco (ha)	10,894	38.5	11,734	36.8	19,296	54.5	25,004	61.1	29,385	68.8	19,263	54.4	25,000	55.6
Sugar-beet (ha)	1,254	4.8	1,998	6.3	2,180	6.2	1,784	4.4	2,289	5.4	1,921	5.4	3,000	6.7
Industrial peppers (ha)	754	2.7	748	1.7	638	1.8	839	2.1	769	1.8	710	2.0	1,500	3.3
Sunflowers (000 ha)	14	49.4	17	53.3	13	36.7	13	31.8	10	23.4	13	36.7	15	33.3
Poppy seeds (ha)	1,315	4.6	597	1.9	291	0.8	263	0.6	259	0.6	545	1.5	500	1.1
Total industrial cult. (ha)	**28,317**	**100**	**31,877**	**100**	**35,405**	**100**	**40,890**	**100**	**42,702**	**100**	**35,439**	**100**	**45,000**	**100**
Potatoes (000 ha)	14	25.1	14	23.5	14	25.5	13	24.4	13	25.9	14	25.4	15	25.0
Onions (000 ha)	5	9.0	5	8.4	5	9.2	4	7.6	4	8.0	5	9.1	4.5	7.5
Garlic (ha)	1,510	2.7	1,653	2.8	14,65	2.7	1,412	2.6	1,325	2.6	1,473	2.7	1,500	2.5
Beans pure sowing (ha)	6,383	11.5	7,007	11.8	69,00	12.5	6,886	12.9	6,971	13.9	6,829	12.4	7,500	12.5

Table 31 – Continuation

Peas (ha)	1,022	1.8	1,126	1.9	1,007	1.8	1,097	2.0	1,111	2.2	1,073	1.9	1,000	1.7
Lentils (ha)	293	0.5	299	0.5	292	0.5	262	0.5	288	0.6	287	0.5	500	0.8
Cabbage and kale (ha)	3,472	6.2	3,275	5.5	3,345	6.1	3,699	6.9	3,537	7.0	3,465	6.3	4,000	6.7
Tomatoes (000 ha)	7	12.6	3	15.2	7	12.7	7	13.1	7	13.9	7	12.7	8.0	13.3
Peppers (000 ha)	8	14.4	9	15.2	8	14.5	8	15.0	8	15.9	8	14.5	9.0	15.0
Watermelon (000 ha)	9	16.2	9	15.2	8	14.5	8	15.0	5	10.0	8	14.5	7.0	11.7
Pumpkins (ha)	–	–	–	–	–	–	–	–	–	–	–	–	2,000	3.3
Total kitchen-garden cultures (ha)	**55,680**	**100**	**59,360**	**100**	**55,009**	**100**	**53,356**	**100**	**50,232**	**100**	**55,127**	**100**	**60,000**	**100**
Clover (ha)	2,544	8.3	2,461	8.1	2,509	8.2	2,418	8.3	2,710	9.0	2,528	8.5	5,000	11.1
Lucerne (000 ha)	20	65.4	20	66.1	19	62.1	19	65.1	19	62.8	19	63.8	26.0	57.8
Vetch hey (ha)	4,147	13.6	4,098	13.5	4,993	16.3	4,290	14.7	4,074	13.5	4,320	14.5	5,000	11.1
Forage peas hey(ha)	1,684	5.5	1,682	5.6	1,708	5.6	1,070	3..7	1,814	6.0	1,592	5.3	4,000	8.9
Forage maize (ha)	1,826	6.0	1,685	5.6	1,977	6.5	1,948	6.7	2,108	7.0	1,909	6.5	4,000	8.9
Livestock beet (ha)	374	1.2	342	1.1	392	1.3	427	1.5	525	1.7	412	1.4	1,000	2.2
Total forage (ha)	**30,575**	**100**	**30,267**	**100**	**30,579**	**100**	**29,153**	**100**	**30,231**	**100**	**29,761**	**100**	**45,000**	**100**

Agricultural enterprises have participated in engaged surfaces under fodder cultures with about 20% in the last few years, and five years ago they participated with nearly 25%. They are engaged mostly in surfaces under lucerne, with somewhere between 18 and 20% of the total surface under lucerne. Agricultural enterprises possess more surface under forage maze in comparison to individual producers, more specifically: 1.6 to 2.2 times greater surfaces in the last five years.

Surfaces under Meadows and Pastures

Meadows, according to official statistics, have kept their same size, moving in the vicinity of 55,000 hectares.

But the pastures, on the other hand, are about ten times larger in surface than meadows. Their size, in different years, has been shown by statistics to have relatively substantial differences, while the differences should really appear in relation to the difference in cultivable surface. There is, however, no greater activity for the transformation of the extensive agricultural system such as a transformation of pastures into a more intensive systems of meadows, ploughed surface, etc.

Yields of Crop-Producing Cultures

The extent of the yields is a marker of the achieved levels in technology, with the precondition that the varieties have adapted themselves to the natural conditions of production, in which the potential possibilities of the variety can be reached.

a. G r a i n s. The yields of grains are relatively low and in the last five years have shown stagnation. Wheat seldom provides 3,000 kg/ha, and it is more likely to be closer to 2,500 kg/ha. When speaking about wheat, we can say that the yields of agricultural enterprises are almost regularly somewhat higher than those of individual agricultural economies.

There is also a similar relation with regard to yields of the other three cereals (rye, barley and oats) so that agricultural enterprises have more convincing and regularly higher yields. Here again, in connection with all three types of cereal grains, the yields are very low and distant from the potential possibilities of varieties which grow naturally and economically in this region.

With regard to maize the yields are even lower. Only on one single occasion, in the last five years, has a satisfactory yield been reached, and that only by the efforts of the agricultural enterprises (nearly 7,000 kilos per hectare in 1995). During other years the yields of agricultural enterprises are regularly 20–30% higher than the yields of individual agricultural economies. Sadly, again,

Table 32 – Yields measured per hectare of grains, industrial, kitchen-garden and forage cultures, meadows and pastures

Type of product	1995		1996		1997		1998		1999		2005
	Agr. Enterpries	Indiv. Agr. Economies	Agr. Enterprises	Indiv. Agr. Economies	Agr. Enterprises	Indiv. Agr. Economies	Agr. Enterprises	Indiv. Agr. Economies	Agr. Enterprises	Indiv. Agr. Economies	Total
Wheat (kg)	2,793	3,027	2,307	2,289	2,766	2,430	3,193	2,883	2,812	2,798	3,000
Rye (kg)	2,134	1,602	1,586	1,613	2,092	1,476	2,311	1,853	1,448	1,646	1,800
Barley (kg)	3,086	2,612	2,067		2,632	2,214	2,833	2,555	2,869	2,447	2,800
Oats (kg)	1,500	1,292	479		1,967	1,094	1,531	1,298	1,163	1,182	1,300
Maize (kg)	6,965	3,711	5,821	3,253	1,017	3,836	5,454	3,520	4,840	4,055	5,000
Rice (kg)	4,121	5,301	5,201	5,382	4,246	4,732	4,265	5,180	3,012	4,301	5,000
Sugar beet (t)	46.4	32.1	41.5	37.2	31.1	34.4	30.2	33.8	32.3	27.7	35
Industr. Peppers (kg)	3,000	2,834	7,789	2,954	6,490	2,740	6,679	5,433	6,360	3,977	5,000
Sunflowers (kg)	1,725	1,397	1,328	1,101	1,128	1,131	1,071	1,005	1,435	1,383	1,500
Poppy seeds (kg)	448	686	600	682	593	673	241	.852	319	867	800
Onions (kg)	6,920	8,165	4,120	8,161	5,333	7,755	7,905	8,076	7,263	8,896	8,000

Table 32 – Continuation

Garlic (kg)	–	3,433	–	3,048	–	2.741	–	3.322	–	3.457	3.500
Beans pure sowing (kg)	1,500	994	1,250	841	500	1,088	1,000	832	2,066	1,092	1,500
Peas grains (kg)	2,111	1,645	444	2,168	3,500	1,809	1,000	1,853	1,440	1,618	1,800
Lentils (kg)		717	–	602	–	761	–	572	–	615	700
Cabbage and kale (t)	7.0	15.2	10.3	15.1	13.9	15.6	17.7	18.4	23.6	19.7	21
Tomatoes (t)	28.2	18.0	25.7	16.2	38.4	16.3	22.3	18.5	32.5	18.2	22
Pepper (t)	17.1	11.8	14.6	14.0	15.6	12.6	13.4	14.1	15.7	15.5	18
Watermelon (t)	5.4	13.6	6.8	13.2	8.6	11.9	8.7	14.9	8.9	15.8	17
Lucerne (kg)	6,518	5,109	6,748	5,138	6,179	5,039	5,028	5,137	5,633	5,923	7,000
Vetch hay (kg)	4,763	2,370	2,729	2,276	2,313	2,252	3,406	2,149	3,328	2,717	3,000
Fodder peas hay (kg)	5,288	2,804	5,143	2,262	2,968	2,690	1,896	2,763	4,000	3,190	4,000
Forage maize (t)	28.0	9.9	24.8	13,9	28.4	12.3	26,7	21,4	30,6	19,1	30
Livestock beet (t)	22.0	11.2	57.2	9.3	31.3	11.0	12,4	11,3	6,1	12,5	13
Meadows (kg)	1,033	1,751	1,354	1,673	924	2,227	1,205	1,878	1,232	3,018	2,000
Pastures (kg)	533	487	394	97	440	544	499	540	474	527	600

the average yields of the state are approximately the same as the yields of individual agricultural economies, because of the size of surfaces involved, since average yield is a notional value of the two 'sectors'. Thus, the average mean yield of maize is 4,093 kg/ha, of barley 2,517 kg/ha, of wheat 2,803, etc.

The rice yield has been relatively satisfactory, despite the substantial oscillation on a yearly basis, from 3,012 kg/ha to 5,301 kg/ha. There is a curious phenomenon with regard to the rice yields, because, during all 5 years that have been subject to our observation, the yield of agricultural enterprises has been lower than that of the individual agricultural economies. There has been an especially large difference in the last two years, when the difference exceeded 1,000 kg/ha.

b. Industrial Cultures. It is also obvious that industrial cultures are stagnating (Table 32), particularly in two sectors. A more evident stagnation has been observed with the most important industrial cultures (tobacco, sunflowers, sugar-beet), on average for both the "sectors".

Tobacco shows serious differences between 1995 and 1999, with a 20% difference in favour of 1995.

With sugar-beet, there is an even greater difference, the yields of 1995 are 37.7% higher than in 1999.

Also the yield of sunflowers in 1999 is 9% lower than that in 1995, etc.

The yields of industrial cultures, divided into "sectors" show that agricultural enterprises have had better yields for several years than individual agricultural economies. But there have been years when for all cultures the yields have been greater for the individual agricultural economies. For tobacco, this difference was more realistic in the first two years (1995 and 1996), because agricultural enterprises mainly produce tobacco with large leaves, with potential tobacco-varieties which have much higher yields than the oriental tobacco produced by individual agricultural economies.

The relations between the two sectors with regard to sugar beet and sunflowers, are as expected, but it was not expected that the poppy-seed yields would be so much in favour of individual economies.

c. Kitchen–Garden Cultures. Yields of kitchen-garden cultures are expected to be stable and satisfactory, because their production has mainly been taking place on irrigated surfaces. However, here again yields are highly uncertain on a yearly basis, and are as low as with other cultures, and some of them are in stagnation.

If we closely observe some of the main kitchen-garden cultures: tomatoes, peppers, beans, potatoes and watermelons, we will see that potato-yields in the last five years have been moving between 8,000 and 16,000 kg/ha, bean-yields between 500 and 2,066 kg/ha, tomatoes between 16.2 tons/ha and 32.5 tons/ha; in the case of peppers the differences are mostly low (the lowest yields were 11.8 tons/ha, and the highest 17.1 tons/ha) and for watermelons between 5.4 tons/ha and 15.8 tons per hectare.

Agricultural enterprises account for only a small part of the average yield of kitchen-garden cultures (in comparison to the two "sectors"), since they participate with relatively small surfaces. As far as potatoes are concerned, the individual agricultural economies had better yields in the first three years, and agricultural enterprises had better yields in the last 2 years. Private economies have had better yields of onions during all five years. The individual economies have managed to catch up with the enterprises during the last years in bean-production. With regard to peas the production has been equalised. As far as tomatoes and peppers are concerned, agricultural enterprises have the advantage, which is a result of having these cultures in green-houses within the enterprises. Individual economies have had higher yields of watermelons throughout the five-year period, as well as the yields of cabbage and kale.

d) Fodder Cultures. All forage plants used as stock fodder have had relatively low yields. They are a little more stable on a yearly basis but, as with other groups of cultures, they are quite stagnant.

The most relative uncertainty of yields can be observed in connection with clover, particularly with the yields of the agricultural enterprises, but there are also occurrences of relatively high increases in comparison to 1999 – more than 12,300 kg/ha of hay, which is 5 times higher than the amount the preceding year and might be considered as a chance phenomenon – or an error in the official statistical figures.

Lucerne, the most important fodder culture, has had relatively stable yields within the two "sectors", with an approximately equal value. But this is not good because yields of lucerne hay cannot reach even 10,000 kg/ha which is a realistic value, since it is mainly grown on irrigated surfaces.

As far as vetch is concerned and particularly stock peas, their yields are stable, but there is no increase, rather a fall in their production. Sadly, forage maize (for storage in silos) show great differences in the yearly yields, particularly in the case of individual farmers, where it is present on relatively small surfaces.

The yields on meadows and pastures are also very small. It is considered that in 1999 a better and more satisfactory yield was achieved – on meadows 3,000 kg/ha of hay, and this is attributed to individual economies.

The yields from pastures are of great importance because they are scattered over very large surfaces, as well as for the development of livestock-breeding production, yet, they, like the meadows, are not fertilised and no one is concerned about an increase in their yields.

Total Crop-Production

The result of the production capacities involved and the achievement in yields equals the total production of plant products.

a. G r a i n s. The global estimate of the total grain production is that, with the exception of rice, all other five types of grains have a stagnating production (from 1995 to 1999 – Table 33). Matters stand that way since wheat in 1999 reached 84% of the production of 1995 because there was an obvious decrease with regard to both "sectors". Concerning rye, the decrease amounts to 27%, barley decreased by 26%, while the lowest decline was in maize production, approx. 3%. The increase in the production of rice was 170% in 1999 in comparison to 1995, because of the 1995 water-shortage and involvement at that time in 3.6 times less surfaces under rice than in 1999.

There is an equivalent stagnation in both "sectors", however agricultural enterprises have a small relative participation in the procedure of grain production, which in 1999 had the following course: for wheat, individual economies had 1.88% more production, for rye 10 times more, for barley 2.02 times more, for oats 250 times more, for maize 16.9 times more and for rice 11 times more.

b. I n d u s t r i a l C u l t u r e s. The movement of total production of industrial cultures is different from that of the grain cultures. Three cultures, in the last five years, recorded an increase in production, while two other cultures are decreasing. Agricultural enterprises have made a greater contribution to the total production of sugar beet and sunflowers; nonetheless, the other two cultures in 1999 had a considerably lower production than in 1995.

As with grains, industrial cultures record yearly oscillations in their course of production, where the difference is sometimes in a ratio of 2:1.

The total production of tobacco in 1998 was two times greater than that in 1996; production of sugar-beet is 43% greater in 1996 than in 1995, and sunflower-production in 1995 was 1.7 times greater than that in 1998. As a result of unstable yields, and difference in surface-involvement, there are similar relations with regard to the other industrial cultures. The following question must

be raised: how can industry, based on primary production of these cultures, have a stable and economical production? It is certain that this kind of wavering may be a result linked to weather conditions, but also of unstable purchase prices and the non-existence of a business system for producers and processors to be able to deal with each other.

c. Kitchen-Garden Cultures. Total production of the most important kitchen-garden cultures (with largest surfaces) in these last five years has shown a relative stability. That is the case with potatoes where the difference on a yearly basis is 2 to 3,000 tons; even less so with beans; a small uncertainty with tomatoes, however total production is stagnating, watermelons recorded small differences; while with peppers there are greater differences and fluctuations on a yearly basis, as well as stagnation.

The participation of agricultural enterprises in the total production of kitchen-garden cultures is relatively low. In comparison to the other cultures, they have a somewhat greater participation in regard to peppers, tomatoes and watermelons, although their realistic participation is less than 10% of the total production.

d. Forage Cultures. The total production of the main stock-fodder cultures has been relatively stable throughout the years. Participation of agricultural enterprises is somewhat higher than their participation in kitchen-garden cultures.

As far as clover is concerned, in the last years production has increased and reached nearly 14,000 tons, in comparison to the 7,000 tons of 1995, and that is thanks to individual economies.

Total production of lucerne reaches an average of approximately 100,000 tons per year, of which 80% is attributed to individual agricultural economies, and stock maize production reaches 55,000 tons, with a participation of the agricultural economies of 71%. The situation is similar with stock-feeding peas, but with emphasis on its decrease in the total production. While the production of stock-feeding beet has shown a relative increase from 1995 to 1999, the hay production from vetch is stable, with approximately 10,000 tons per year.

Table 33 – Total grain production

Year	Wheat (000 tonnes)			Rye (000 tonnes)			Barley (000 tonnes)		
	Total	Agr. Enterprises	Indiv. Agr. Economies.	Total	Agr. Enterprises	Indiv. Agr. Economies	Total	Agr. Enterprises	Indiv. Agr. Economies
1995	381	150	231	15	1	14	152	59	93
1996	269	103	166	11	0,2	10.8	78	32	66
1997	294	113	181	11	0,5	10.5	120	45	75
1998	337	126	211	14	1	13	142	56	86
1999	320	111	209	11	1	10	127	42	85
2005	345	–	–	13	–	–	126	–	–

Year	Oats (tonnes)			Maize (000 tonnes)			Rice (tonnes)		
	Total	Agr. Enterprises	Indiv. Agr. Economies	Total	Agr. Enterprises	Indiv. Agr. Economies	Total	Agr. Enterprises	Indiv. Agr. Economies
1995	4.412	285	4.127	166	17	149	6.447	717	5.730
1996	2.837	34	2.803	142	13	129	22.274	2.715	19.559
1997	3.226	60	3.166	157	12	146	20.460	2.586	22.014
1998	4.021	75	3.946	141	8	133	22.663	2.235	20.428
1999	3.272	13	3.259	161	9	152	17.430	1.440	15.990
2005	3.900	–	–	250	–	–	25.000	–	–

Table 34 – Total production of industrial cultures

Year	Tobacco (tonnes)			Sugar beet (tonnes)		
	Total	Agr. Enterprises.	Indiv. Agr. Economies	Total	Agr. Enterprises	Indiv. Agr. Economies
1995	15,683	550	15,133	54,607	36,198	18,409
1996	15,412	454	14,958	78,278	38,245	40,033
1997	23,308	583	24,726	72,249	26,143	46,106
1998	32,746	508	33,781	58,090	18,656	39,434
1999	29,368	676	28,692	67,036	25,857	41,179
2005	35,000	–	–	105,000	–	–

Year	Industrial peppers (tonnes)			Sunflowers (tonnes)			Poppy seeds (tonnes)		
	Total	Agr. Enterprises	Indiv. Agr. Economies	Total	Agr. Enterprises	Indiv. Agr. Economies	Total	Agr. Enterprises	Indiv. Agr. Economies
1995	1,812	69	1,743	22,290	11,802	10,488	747	291	456
1996	2,078	740	1,338	20,586	14,151	6,435	399	60	339
1997	1,939	331	1,608	14,902	9,908	4,994	201	13	188
1998	4,698	748	3,905	13,148	9,069	4,079	176	19	157
1999	3,142	223	2,919	13,937	9,170	4,767	259	72	187
2005	7,500	–	–	22,500	–	–	400	–	–

Table 35 – Total production of kitchen-garden cultures

Year	Potatoes (000 tonnes)			Onions (tonnes)			Garlic (tonnes)			Beans - pure sowing (tonnes)		
	Total	Agr. Enter-prises	Ind. Econo-mies	Total	Agr. Enter-prises	Ind. Econo-mies	Total	Agr. Enter-prises	Ind. Econo-mies	Total	Agr. Enter-prises	Ind. Econo-mies
1995	154	2	152	38,589	955	37,631	5,184	–	5,184	6,348	3	6,345
1996	153	1	152	38,690	342	38,348	5,038	–	5,038	5,892	5	6,887
1997	155	1	154	35,536	469	35,067	4,016	–	4,016	7,506	5	7,501
1998	178	1	177	35,729	332	35,398	4,690	–	4,690	5,731	2	5,729
1999	165	1	164	38,255	378	37,877	4,580	–	4,580	7,618	14	7,604
2005	210	–	–	36,000	–	–	5,250	–	–	11,250	–	–

Year	Peas – Grain			Lentils (tonnes)			Cabbage and Kale (tonnes)			Tomatoes (000 tonnes)		
	Total	Agr. Enter-prises	Ind. Econo-mies	Total	Agr. Enter-prises	Ind. Econo-mies	Total	Agr. Enter-prises	Ind. Econo-mies	Total	Agr. Enter-prises	Ind. Econo-mies
1995	1,685	19	1,666	210	–	210	52,848	84	52,764	134	10	124
1996	2,426	4	2,422	180	–	180	49,383	41	49,349	146	13	133
1997	1,825	7	1,818	222	–	222	52,037	111	51,926	117	5	112
1998	2,035	1	2,034	262	–	262	68,095	230	67,867	126	8	118
1999	1,793	34	1,759	177	–	177	69,562	236	69,326	128	13	115
2005	1,800	–	–	350	–	–	84,000	–	–	176	–	–

Table 35 – Continuation

Year	Peppers (tonnes)			Maize (000 tonnes)			Beans for sowing (tonnes)		
	Total	Agr. Enter-prises	Agr. Enter-prises	Total	Agr. Enter-prises	Ind. Econ omies	Total	Agr. Enter-prises	Ind. Econo mies
1995	95,570	2,123	93,447	116	2	114	5,599	–	5,599
1996	120,813	1,621	119,192	116	5	111	5,245	–	5,245
1997	99,985	1,250	98,735	93	3	90	7,435	–	7,435
1998	110,631	1,077	109,554	120	5	115	7,904	–	7,904
1999	116,468	707	115,761	121	4	117	7,557	–	7,557
2005	162,000	–	–	119	–	–	7,600	–	–

Year	Cabbage – late (tonnes)		
	Total	Agr. Enter-prises	Agr. Enter-prises
1995	2,994	–	2,994
1996	1,510	–	1,510
1997	1,395	20	1,915
1998	–	–	–
1999	615	–	615
2005	600	–	–

Table 36 – Total production of livestock-fodder cultures

Year	Clover			Lucerne			Vetch Hay		
	Production (tonnes)			Production (000 tonnes)			Production (tonnes)		
	Total	Agr. Enterprises	Ind. Agr. Economies	Total	Agr. Enterprises	Ind. Agr. Economies	Total	Agr. Enterprises	Ind. Agr. Economies
1995	8,948	955	7,993	106	29	77	10,445	1224	9,221
1996	10,046	1,066	8,980	107	25	82	9,402	453	8,949
1997	8,608	807	7,801	100	19	81	10,664	1,085	9,579
1998	10,037	548	9,489	97	16	81	9,946	1,972	2,149
1999	13,937	898	13,039	108	21	87	10,405	1,228	9,177
2005	25,000	–	–	182	–	–	15,000	–	–

Year	Fodder peas hay			Forage maize			Livestock beet		
	Production (tonnes)			Production (000 tonnes)			Production (tonnes)		
	Total	Agr. Enterprises	Ind. Agr. Economies	Total	Agr. Enterprises	Ind. Agr. Economies	Total	Agr. Enterprises	Ind. Agr. Economies
1995	7,258	5,399	1,859	41	35	6	4,682	994	3,688
1996	6,501	4,850	1,651	35	25	10	3,419	286	3,133
1997	4,931	3,594	1,337	45	36	9	5,608	1,973	3,635
1998	2,408	1,198	1,210	49	34	14	4,967	1,310	3,657
1999	4,716	3,160	1,556	55	39	16	6,015	546	5,469
2005	16,000	–	–	120	–	–	13,000	–	–

Table 37 – Total production of: sown land, meadows and pastures

Year	Sown under clover (tonnes)	Sown lucerne (tonnes)	Meadows (000 tonnes)	Pastures (000 tonnes)
1995	197	901	90	316
1996	342	945	86	227
1997	507	1.100	119	285
1998	432	1.146	98	360
1999	440	1.150	144	237
2005	500	1.100	100	388

Certain Markers for the Level of Technology

We have tried to establish the level of investments technology aimed at plant production, as much as time and space have allowed for such research. To this end we have provided certain information that is used as indicators for the level of annual investments, but, sadly, this only refers to agricultural enterprises. Certainly, with the help of these indicators we cannot make aspirations to reaching exact technological level markers.

The facts show relatively substandard technology, because of great changes in the amounts of fertilisers, pesticides, oil, and so on used, in relatively the same capacities. The expenditure of mineral fertilisers has increased quite considerably since 1993, yet along with this, yields are not noticeably bigger. It is known that also in this "sector" fertilising is carried out without any agrochemical analysis of the soil and without balancing of nutritious elements. Therefore, the customary procedure of fertilising, with the same composition of the nutritious elements, is irrational. Along with fertilisers and pesticides, the annual differences are also great for oil expenditure. Expenses have been growing in the last few years but this does not reflect itself on production.

Table 38 – Review of expenditure for certain inputs in production

Value	1995	1996	1997	1998	1999
Expenditure mineral fertiliser total in agr. enterprises (t)	18,969	10,339	17,021	21,617	17,270
Fertil. per 1 ha cultiv. surface (kg)	130	72	121	151	127
Expenditure protect. means in agr. enterprises (t)	573	556	506	229	1,047
Expenditure oil (t) in agr. enterprises	16,919	14,537	12,607	12,594	24,753
Irrigated surface (ha)	49,072	51,617	51,703	43,259	54,240
Conditional head livestock (000)	300	337	319	311	287

Besides the inappropriate growing technology of extensive systems within individual agricultural economies, the question of the choice of varieties is also problematic. The current system of production and marketing of seeds is not compatible with the conditions and the possibilities of the producers, so that the seeds (still) produced in state-owned institutions are expensive (have not been subsidised), and the habits of producers of using their own seeds do not change easily, since there is no serious effort, action or worked-out system for changes in the situation. In this way, the possibility of individual agricultural economies using new yield varieties and high quality seed is to a great extent difficult.

5.3. Fruit Production

Plantation Size

Until the 60s of the past century, fruit production was treated in an extensive fashion and there was not much attention focused on it. From the 1960s and up to 1985, a maximum had been reached in the building of plantations. There were 24,000 hectares of plantations (of different kinds), i.e. fruit production covered 3.6% of all cultivable land. This was, above all, owing to intensive investment in many varieties, which were interesting for growing in the country. From 1985 onwards there followed a period of decreased investments in perennial plantations and after 1990 the situation has reached its minimum. Fruit varieties have different seasonal periods of exploitation, so that during the period of intensive investment the old plantations were torn out (cleared away), and at the expense of these, new, more sophisticated ones being built up, introducing contemporary varieties. Since the subsiding of investments, the expired (used-up) plantations have continually been cleared away, but new ones have not been planted. With this, fruit growing has been reduced to a negative situation. Namely, according to up-to-date statistics, fruit production has been reduced to 17,000 hectares, i.e. in percentage of the total cultivable land it occupies a very small share, namely 2.7%. The decrease in fruit plantation is a result of the following reasons: transformation of the state-owned sector, since the same varieties, such as: apricots, peaches, morello cherries, almonds and even apples, were planted on larger surfaces. The decrease is also because of the lost Yugoslav market, i.e. certain varieties were disposed of, to a great extent, in the former Yugoslav Republics. The third but not the most important cause, which was, nevertheless, influential in the decrease in surfaces as well as in production, is the considerable change of climate in the last 15 years, with dry and extremely cold winters, frosts in late spring and outstandingly hot and dry summers.

Cultivation Technology

Our producers, no matter what they deal with, have mastered the technology of cultivation very well. For example, the apple-producers from Prespa are skilled on an international level, so that certain experts from Western countries, who have visited this region, are very positively surprised at the manner of cultivation as well as at the yields received within the private sector, where production per hectare is moving from 40,000 to even 80,000 kg. The same is the case with peaches because from one hectare the gain is substantial, amounting to 20–30 tons. The creation of plantations is done with very modern means (e.g. the apples are cultivated in a so-called dense plantation, where there are 1,000

Table 39 – Fruit trees – productive (in 000)

Fruit Variety	1995		1996		1997		1998		1999		2005
	Agr. Enterprise	Ind. Agr. Economies	Agr. Enterprise	Ind. Agr. Economies	Agr. Enterprise	Ind. Agr. Economies	Agr. Enterprise	Ind. Agr. Economies	Agr. Enterprise	Ind. Agr. Economies	Total
Cherries	7	146	01	160	01	157	01	155	01	154	180
Morello Cherries	754	119	611	141	528	105	572	106	553	102	1,157
Apricots	213	177	117	170	116	163	98	161	93	149	567
Quince	2	45	3	50	3	58	3	52	3	50	60
Apples	808	1,722	755	1,789	664	2,374	697	2,421	660	2,454	3,540
Pears	338	505	190	499	179	496	105	471	91	462	700
Plums	90	1,375	77	1,386	69	1,345	63	1,340	57	1,330	1,692
Peaches	222	211	258	219	340	286	306	292	291	295	600
Walnuts	1	152	3	142	2	170	4	143	4	171	190
Almond	196	30	156	27	161	25	147	27	187	26	200

to 1,200 plants, and the situation is the same with other varieties. For gaining substantial and quality yields we need to implement modern measures, as, for example, pruning, fertilising, watering, protection, etc. The pruning technology is quite good, but with fertilising (particularly with artificial fertilisers) there are problems. Very few, and maybe not even a single contemporary farmer tests for soil quality, what kind and quantity of substances (nitrogen, phosphorus, potassium, etc.) there are in the soil and what the quantity is that, possibly, needs to be added. Fertilisation is done every year, with identical quantities and identical fertilisers, no matter whether they are present that year within the soil, or not. Therefore, this important measure needs far greater attention.

As far as irrigation is concerned, it does not satisfy the needs within some regions, while in those regions where irrigation systems are present, there are either small quantities of water or the systems are in a very bad state. For example in the Prespa region there is a functional system which is in a very bad state, and, on the top of that, the system has been very badly constructed, so that from it only a small percentage of the apple plantations are being irrigated A large number of farmers have made their own bores and, with the help of gas engines, pump water and carry out irrigation.

We want to direct attention to the fact that, without water, intensive fruit production is not possible, because the fruit tree is "required" to grow, to bear fruit and to yield quality fruits. The situation with protection is similar to that with fertilisation. Specifically, in the Prespa region, where 70% of the modern plantations are situated there is no inspection of the farmers' protection. There is more pesticide spraying than is required, and this is done with means which are very expensive and the protection to a large extent is more of a burden than a gain in production. Efforts are being made, through the World Bank, at appropriate training of farmers in phyto-protection, which has to be a continuing process.

So far as the gathering (picking) of the production is concerned, there are some problems as to particular varieties of fruits. Unskilled personnel, during the picking process, damage, or pick the fruits without the stalks, or they squash them, and so the fruits are not very durable. There are also such things as missing the picking period, so that fruits get overripe, and again lose in durability. Thirdly, during gathering, the fruits are put in inadequate containers (packaging), i.e. in crates – the fruits become damaged and they get rotten faster in the warehouses. The situation is similar with certain other varieties, e.g. peaches and apricots, for processed consumption. With the morello cherry there are no problems in the picking process, because it is 100% processed, i.e. it is frozen, so that durability is not an issue.

Table 40 – Yields of fruits in kg/tree

Fruit Variety	1995		1996		1997		1998		1999		2005
	Agr. Enterprise	Ind. Agr. Economies	Agr. Enterprise	Ind. Agr. Economies	Agr. Enterprise	Ind. Agr. Economies	Agr. Enterprise	Ind. Agr. Economies	Agr. Enterprise	Ind. Agr. Economies	Total
Cherries	0	23	14	22	20	18	10	23	6	24	25
Morrelo Cherries	5	16	3	18	3	16	5	19	7	21	14
Apricots	13	18	16	21	1	7	14	12	7	25	18
Quince	–	15	–	16	17	15	22	17	7	19	20
Apples	14	34	15	30	14	28	9	23	6	28	34
Pears	2	17	5	23	4	15	8	18	6	20	25
Plums	6	12	11	22	6	13	4	15	15	20	19
Peaches	5	15	13	18	1	11	9	14	13	18	20
Walnuts	12	19	3	23	6	21	4	21	5	23	18
Almonds	1	7	3	13	4	11	1	10	1	13	13

The storage of varieties which have to be kept for a longer time, e.g. apples, has certain problems. Namely, in the Republic of Macedonia there are a large number of refrigerated warehouses, with a controllable as well as an uncontrollable atmosphere. Because storage is very expensive (except in holding agro-plants, where apples are kept in refrigerated conditions, but the number in these refrigerators does not exceed 10% of the apple production), farmers keep their fruit in regular fruit storage so that it achieves edible ripeness very swiftly.

Yields and Total Production

Yields and the total production can be observed in Tables 40 and 41, for the period of the last 5 years, as well as the production for 2005, by agricultural enterprises as well as by individual agricultural economies.

Yields are given in kg/tree, and total production in tons, for 10 fruit varieties. The highest yields, as for the last 5 years, in the projection for 2005, are expected from apples. This fruit variety is dominant in the country. As until now, it is projected to be dominant in 2005 also, accounting for 58% percent of the total fruit-production. The second place is occupied by plums with 16.5% of the total production, then apricots with 6.3%, morello cherries with 5%, pears with 4.9%, peaches with 4.4%, walnuts 4.0%, cherries with 1.8%, quince with 0.4% and finally almonds with 0.4%.

The yields are variable, according to official statistical data, with regard to all varieties. In the case of pears the yields are 6 to 24 kg/tree, of morello cherries from 5 to 21 kg/tree, of apricots from 1 to 25 kg/tree, of apples from 9 to 34 kg/tree, etc., that is to say the trends are similar to those of the other varieties.

As far as the yields divided into "sectors" are concerned, almost all varieties (Table 40) have better yields within individual economies than in the agricultural enterprises. This difference is particularly evident in the last few years, when in agricultural enterprises there was an decrease of expertise and related other activities.

As a result of the varying yields, the total production is also unstable. If we take, for example, the most common varieties of fruits, such as: morello cherries, apples, peaches and etc., we will see that total annual production shows great variations. Such differences in market production are unwelcome, since they include a lack of confidence on the part of the wholesale workers, big consumers and the processing companies in the fruit-producers. The production of the morello cherry in the last 5 years has risen from 3,000 to 6,000 tons, apples from 60,000 to 80,000 tons, peaches from 3,500 to 9,000 tons, etc. These figures show relatively large differences in a period of only a few years, which cannot be explained only on the basis of low yields because of weather and natural conditions.

Table 41 – Total fruit production (in tonnes)

Year	Cherries			Morello Cherries			Apricots			Quince			Apples		
	Total	Agr. Enterprises	Ind. Agr. Economies	Total	Agr. Enterprises	Ind. Agr. Economies	Total	Agr. Enterprises	Ind. Agr. Economies	Total	Agr. Enterprises	Ind. Agr. Economies	Total	Agr. Enterprises	Ind. Agr. Economies
1995	3,343	3	3,340	5,300	3,422	1,878	6,061	2,766	3,295	672	–	672	69,850	11,165	58,685
1996	3,479	1	3,478	4,625	2,090	2,535	4,296	708	3,588	825	1	824	65,399	11,078	54,321
1997	2,852	1	2,851	3,067	1,384	1,683	1,305	123	1,182	932	50	882	76,602	9,605	66,997
1998	3,535	1	3,534	5,109	3,145	1,964	2,348	433	1,915	963	59	904	61,663	6,581	55,082
1999	3,725	1	3,724	5,774	3,643	2,131	4,426	677	3,749	946	20	926	72,952	4,175	68,777
2005	3,700	–	3,700	10,413	6,413	4,000	13,041	3,000	10,041	900	–	900	120,360	11,034	109,326

Year	Pears			Plums			Peaches			Walnuts			Almonds		
	Total	Agr. Enterprises	Ind. Agr. Economies	Total	Agr. Enterprises	Ind. Agr. Economies	Total	Agr. Enterprises	Ind. Agr. Economies	Total	Agr. Enterpr.	Ind. Agr. Economies	Total	Agr. Enterpr.	Ind. Agr. Economies
1995	9,188	566	8,552	11,221	523	16,698	4,333	1,122	3,211	2,838	14	2,824	384	176	208
1996	12,730	1,011	11,719	30,878	837	30,041	7,343	3,290	4,053	3,829	8	3,209	827	482	345
1997	8,226	691	7,335	17,633	420	17,213	3,545	321	3,224	3,532	11	3,521	903	620	283
1998	9,257	836	8,421	19,751	260	19,491	6,823	2,847	3,976	2,971	17	2,954	460	195	265
1999	9,834	587	9,247	28,089	836	27,253	9,003	3,660	5,343	3,958	18	3,940	390	262	328
2005	10,000	700	9,300	33,840	3,800	30,040	9,000	3,000	6,000	4,000	15	3,985	800	600	200

5.4. Viticulture

Surfaces

Viticulture, as one of the basic branches of the total agricultural production in the last five years, was present in the Republic of Macedonia on a surface of 28,732 hectares in 1999 and 29,871 hectares in 1995. Of the total surface area of grapevine plantations table grapes account for approximately 35% while the wine producing varieties 65%. Because of delay in renewing the grapevine plantations, the age structure of the plantation has been disturbed. The participation of the plantations with reduced productivity, i.e. over 20 years of age, is very high. This situation is a potential danger for a reduction of yields in the forthcoming period. The dilution of the plantations, i.e. the participation of empty plots, is high as a result of old age, frosts, etc.

The leading variety in the assortment of the table varieties is *afus ali*, which has been giving very good results in many grapevine areas. Other varieties present are *cardinal, ribier, m. hamburg, white winter* and *m. italia*. These varieties, with proper choice of location and application of variety ampelotechnique measures, provide high-quality grapes.

Table 42 – Surfaces under grapevine plantations according to ownership

Year	Total		Agricultural Enterprises		Individual Agricultural Economies	
	ha	%	ha	%	ha	%
1995	29,871	100.0	11,634	38.9	18,237	61.1
1996	28,419	100.0	10,856	38.2	17,563	61.8
1997	28,697	100.0	10,646	37.1	18,051	62.9
1998	28,267	100.0	10,317	36.5	17,950	63.5
1999	28,732	100.0	10,315	35.9	18,414	64.1

Source: Statistical Review 1996–2000.

With regard to wine-producing varieties, because of unplanned structuring, the lack of development strategy and neglect of the global trends, an inappropriate assortment for our ecological situation can be noted. Dominant are varieties of local significance while the participation of globally proved and sought-after varieties is very low. Most of the grapevine regions possess comparative advantages for production of red wine, but their assortment also includes varieties which provide raw material for the production of white wine. The proportion of white v. red wine-producing varieties is 55:45 and it is inap-

propriate for our viticulture situation. The *smederevka* and *vranec* varieties account for approximately 80% of the total production of wine-producing grape. In the last 7–8 years *the chardonnay, r. risling, merlot, cabernet sauvignon* and *red burgundy* varieties have been planted more intensively. Their participation in the total production is still low.

Table 43 – Surfaces under productive grapevine plantations

Total	Yielding surfaces in ha				
	Total	Agricultural Enterprises		Individual Agricultural Economies	
		Ha	%	Ha	%
1995	28,929	11,268	39.0	17,661	61.0
1996	27,254	10,402	38.2	16,852	61.8
1997	27,300	10,141	37.1	17,157	62.9
1998	27,257	9,963	36.5	17,294	63.5
1999	26,944	9,662	35.9	17,282	64.1

Source: Statistical review 1996–2000.

Production Technology

The technology applied in the construction and regular growing of grapevine plantations lags behind the modern achievements. We have deviations in the proper choice of location – variety. There is a great diversity in the distance of planting, the height of the vines, the system of growing and the method of pruning. Specific ampelo-technique measures are scarcely or not at all used.

As a result of insufficient, outdated and varying mechanisation there only is a partial application of agro-technical measures (cultivation, protection, irrigation, fertilization). The use of fertilizers in viticulture has been reduced to under the minimal necessary amounts, which is one of the reasons for the reduction of the yields.

The gathering of grapes is performed manually. The lack of a working force, packing, transport, etc. results in unpunctual grape-gathering and loss of its supreme features from premature or delayed gathering. The plantations which can employ mechanised gathering are few. The disturbed market situation results in a prolonged transportation of the grapes from the plantations to the processing buildings.

Yields and Total Production

The yields in the last two years have not been satisfactory and have been under our objective possibilities. In the period 1996-99 they varied from 6,591 kilograms per hectare in 1995 to 9,464 kilograms per hectare in 1997. The reduced yields have been greatly influenced by climatic conditions, the dilution of the plantations, the age structure and the reduced investments in the regular cultivation of the plantations. The climate has had a severe negative influence with low winter temperatures at the appropriately chosen variety – location.

The production of grapes for the 1995-99 period varied between 190,000 tonnes in 1999 to 258,360 tonnes in 1997. The individual agricultural businesses have accounted for 58.5% to 65.4% of the total production of grapes.

Table 44 – Production of grapes

Year	Total in tonnes	Agricultural Enterprises		Individual Agricultural Economies		Yield ha/kg
		Tonnes	%	Tonnes	%	
1995	190,677	70,591	37.0	120,086	63.0	6,591
1996	214,513	89,046	41.5	125,467	58.5	7,870
1997	258,360	103,229	40.0	155,131	60.0	9,464
1998	243,567	84,371	34.6	159,196	65.4	8,936
1999	190,000	68,400	36.0	121,600	64.0	7,052

Source: Statistical Review 1996–2000.

As a result of the reduced surfaces and the low yields in the 1995–99 period, the amount of processed grapes varied between 166,034 tonnes in 1999 to 222,776 tonnes in 1998. Characteristic of this period is the low participation of the individual agricultural businesses (26.0–44.9%).

The production of wine for the 1995–99 period varied between 910,530 hectolitres in 1995 to 1,227,100 hectolitres in 1998. The amount of processed grapes and wine produced is under the capabilities and capacities for the processing of grapes and production of wine.

Table 45 – Processed grapes

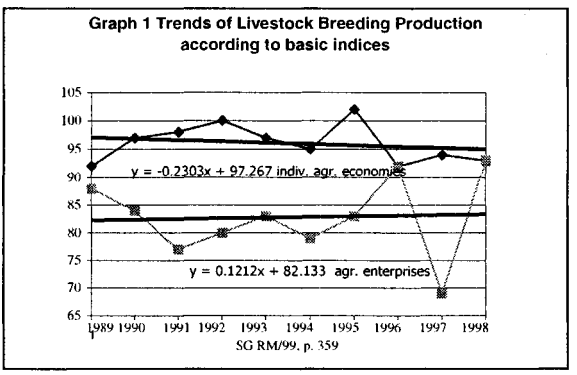
Year	Total		Agricultural Enterprises		Individual Agricultural Economies	
	tonnes	%	tonnes	%	tonnes	%
1995	167,364	100.0	92,165	55.1	75,199	44.9
1996	210,655	100.0	155,883	74.0	54,772	26.0
1997	213,766	100.0	145,966	68.3	67,800	31.7
1998	222,776	100.0	153,919	69.1	68,857	30.9
1999	166,034	100.0	108,338	65.2	57,696	34.8

Source: Statistical Preview 1996–2000.

6. Livestock and Fish Production

In the last decade (1989–98), the development of livestock production measured according to the total number of conditional head of livestock has fallen by 7% (336,000 to 311,000 head), mainly as a result of the crisis in which the agricultural businesses found themselves (reducing the number of conditional head from 55,000 to 31,000). Regarding the individual businesses, there have not been any changes or increase. Their participation in the total number of head has been 90%, but as it will be seen later, with livestock of low quality in comparison to the agricultural businesses.

A much better picture is given by the movement of the value of livestock production within both the business groups on the basis of a comparison of basic indices of the present with the previous decade (Graph 1).



There is no doubt that the value of livestock production in both business groups is below the level of the previous decade, in the case of the individual

businesses close to that level (2–5 points lower) while in the case of the agricultural businesses more than 15 points lower, but with a slight increasing trend.

That situation in livestock production has been a result of the situations in different livestock production branches.

6.1. Cattle-breeding

Number of breeding cows

In cattle-breeding there are quantitative and qualitative differences between the two business groups, first according to the number of breeding and milch cows, and then according to the pedigree composition and their productivity.

Table 46 – Movement of breeding cows

Year	Total no.		Agricultural Enterprises		Individual Agricultural Economies	
	Cows and milk-giving heifers	Milch Cows	Cows and milk-giving heifers	Milch Cows	Cows and milk-giving heifers	Milch Cows
1993	165,280	89,357	10,571	8,185	154,709	81,065
1994	165,813	90,250	9,500	7,357	156,313	82,893
1995	166,374	90,150	8,967	6,684	157,407	83,466
1996	175,621	95,051	7,824	6,118	167,797	88,933
1997	177,383	95,493	7,594	5,524	169,789	89,969
1998	166,553	91,255	6,978	5,082	159,575	86,173

Source: SG RM/98, 99.

It can be noticed, from the movements of the number of breeding cows, that in the analysed period it is almost without change. However, if the situation of the different business groups is observed, it will be noticed that in the case of the agricultural businesses the number of breeding cows has been falling drastically while the number of milch cows somewhat slower, whereas the individual businesses have maintained a steady number of cows but with a permanent increase of milking cows which results in the appearance of an increased production of cow's milk.

From the review, the proportion between the number of cows and stall heifers and the category of milch cows can be observed, as well as the relation between the existing cows in both the business groups. Thus, the agricultural businesses in 1993 accounted for 6.4% of the total number of cows, while in

1998 only 4.2%. With reference to the participation of milch cows in the total number of cows and stall heifers, the agricultural businesses maintain a better proportion, 73–77%, while the individual businesses 52–54%, which points to the reduced breeding of the cows in these herds.

Besides the movement of the number of breeding heads of cows, it is significant to notice the situation of the pedigree composition of the cows in both the business groups. According to different research[19], it can be noticed that in comparison to the agricultural businesses (where the pedigree composition is almost 100% ennobled breeds), in the individual businesses the participation in the total number of cows of ennobled breeds of cows (Eastern-Frisian, Montafon, Simmental, Oberental) is 23%, half-breed with *busha* is 45% and *busha* only 33%. The reason for the registered increased production of milk in the herds is the ongoing ennobling of the pedigree composition.

Production of cow's milk

Table 47 – Movement of the production of cow's milk

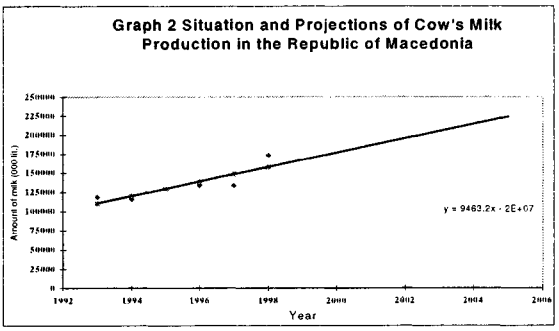
Year	Total		Agricultural Enterprises		Individual Agricultural Economies	
	Total 000 litres	litres milk/cow	Total 000 litres	litres milk/cow	Total 000 litres	litres milk/cow
1993	118,398	1,325	36,916	4,276	81,488	983
1994	115,791	1,283	32,532	4,422	83,259	1,004
1995	128,825	1,429	26,962	4,032	101,863	1,220
1996	133,642	1,406	25,234	4,124	108,408	1,218
1997	133,308	1,396	23,073	4,177	110,235	1,225
1998	173,167	1,902	22,595	4,446	150,672	1,748

Source: SG RM/98, 99.

The major influence on the total production of cow's milk comes from the situation of the individual businesses in relation to the number of breeding cows, their pedigree composition and appropriate food and breeding. Therefore,

[19] *Основи за заокружување на сточарскиот комплекс во новите услови на стопанисување во Република Македонија*, Институт за сточарство, Скопје, 1993 и *Услови, можности и потребни мерки за зголемување на производството на млеко и месо во Република Македонија*, МЗШВ, Скопје, 1992. (*Bases for Completion of the Livestock Production Complex within the New Situation of the Economy in the Republic of Macedonia,* Livestock Production Institute, Skopje, 1993 and *Situation, Advantages and Necessary Measures for Increasing of Milk and Meat Production in the Republic of Macedonia,* Ministry of Agriculture, Forestry and Water Engineering, Skopje, 1992.)

their participation in the total production of milk in 1993 was 69% while in 1998 it was 87%. The movement of the average yields demonstrates that the individual businesses slowly but steadily increase the milch quality of the cows (which lately is a result of the increased purchase of high milk yield milch cows and heifers). That is the main reason for the increasing trend in the total milk production (Graph 2).



However, the agricultural businesses produce less milk, not due to a significant reduction of yields (although the genetic potential of the existing breeds is not exploited either), but chiefly because of the noted reduction of the number of breeding cows (1.63 times in 6 years). However, they still account for 40% of the market surplus and keep cows which provide 2.5 times more milk yield than the average of the individual cattle breeders.

Total growth

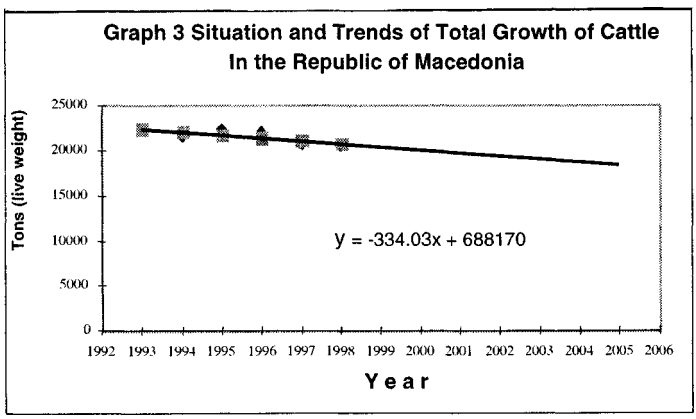
Table 48 – Movement of growth of cows (live weight)

Year	Total growth		Agricultural Enterprises		Individual Agricultural Economies	
	Total 000 kg	kg. growth/ cow	Total 000 kg	kg. growth/ cow	Total 000 kg	kg. growth/ cow
1993	22,315	135	3,750	355	18,565	120
1994	21,600	130	2,842	300	18,758	120
1995	22,417	135	3,528	393	18,889	120
1996	22,082	126	2,946	376	19,136	114
1997	20,698	117	2,021	266	18,617	110
1998	20,585	124	1,954	280	18,631	117

Source: SG RM/98, 99.

The total growth (Table 48) represents the growth which is acquired from a whole herd of cows in both business groups, defined in terms of one breeding head (cow or stall heifer). Thus the quality of the production of the cows can be recognised, even in relation to the growth in live weight since in our situation there is no difference between milch herds and herds for meat production, but the production direction is a combined one of meat and milk.

Thus, it can be noted that, contrary to the positive trend in the production of milk, the total growth has a negative trend (Graph 3), which originates mainly from the reduction of cows in the agricultural businesses (where the total growth has declined by 10% in 6 years). The growth of cows in the individual businesses is steadier, although there, as well as in the agricultural businesses, the growth by cow has a decreasing trend. The growth is low and can be related to the low breeding and the pedigree composition of the cows. On the other hand, the individual businesses have a dominant participation in the total growth of cows (80–90%). However, the opposite trends, positive for milk and negative for growth, in both of the business groups, demonstrate that the improvement of food for milch cows is more beneficial rather than the fattening of the rest of the cow categories for meat. This is something to bear in mind in the middle-term strategy for cattle-breeding.



6.2. Sheep-breeding

Number of breeding and milch sheep

In comparison to the situation in cattle-breeding, sheep production is still based on the autochthonous, not on a selected, population (in both of the business groups), consisting of *šarplaninski* and *ovčepolski* breeds, which by means

of merinisation have produced a great number of merino half-breeds, while lately, genetic improvements are being conducted with the Wirttenberg breed. Thus, it can be noted that there is no great qualitative difference between the two business groups. However, quantitatively, the number of breeding sheep has been reduced more rapidly in the individual businesses, the last 6 years even two times, while in the agricultural businesses 1.4 times, thus, in comparison with their 7% participation in the last 6 years, they now participate with 10% in the total number of breeding sheep (Table 49).

Table 49 – Movement of the number of breeding and milch sheep

Year	Total		Agricultural Enterprises		Individual Agricultural Economies	
	Total growth of sheep	Milch sheep	Total growth of sheep	Milch sheep	Total growth of sheep	Milch sheep
1993	1,841,809	1,754,088	124,848	114,641	1,716,964	1,639,447
1994	1,710,338	1,659,135	122,917	112,247	1,584,421	1,546,888
1995	1,736,717	1,683,146	112,708	106,325	1,624,009	1,576,821
1996	1,232,890	1,232,488	105,721	99,792	1,127,169	1,132,696
1997	1,177,724	1,147,791	96,169	86,770	1,081,556	1,061,021
1998	947,263	921,884	89,989	87,476	857,274	834,408

Source: SG RM/98, 99.

Production of sheep's milk

According to the relation between milch sheep and the total number of breeding sheep, a good breeding rate can be noticed in both the business groups (in individual businesses 90%, while in the agricultural businesses 97%), but, according to the milk yields by milch sheep, there is a slight difference in favour of the individual businesses (Table50).

If the production of sheep's milk continues to decline (which is closely connected to the reduction of sheep) according to the trend of the analysed previous six-year period (Graph 4), it will result in the disappearance of both sheep and milk by the end of the middle-term period. The EU embargo on the import of lamb has been considered the main reason for the drastic reduction of sheep in that period, due to foot-and-mouth disease[20]. Moreover, there has been a lack of an appropriate stimulating government policy for the development of sheep-breeding.

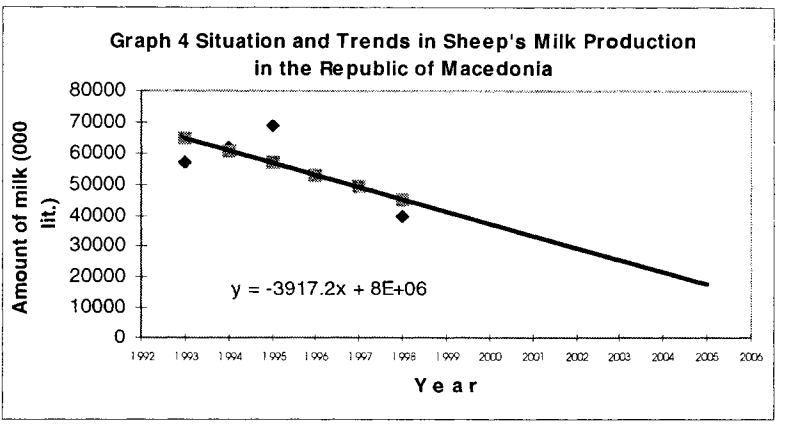
[20] MAMA – Project, Skopje, 2000, (Macedonian situations and prospects: milk and dairy products; livestock and meat – Project for Agro-business Marketing in Macedonia).

and milk by the end of the middle-term period. The EU embargo on the import of lamb has been considered the main reason for the drastic reduction of sheep in that period, due to foot-and-mouth disease[20]. Moreover, there has been a lack of an appropriate stimulating government policy for the development of sheep-breeding.

Table 50 – Movement of the production of sheep's milk

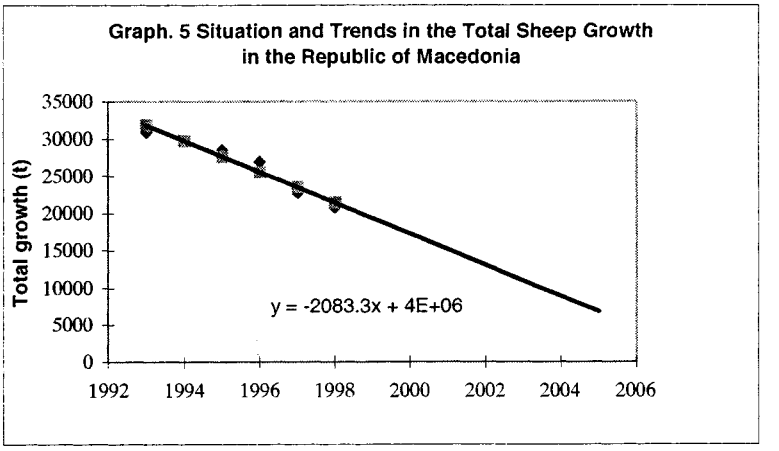
Year	Total		Agricultural Enterprises		Individual Agricultural Economies	
	Total 000 l	l/milch sheep	Total 000 l	l/milch sheep	Total 000 l	l/milch sheep
1993	59,639	34	3,159	28	56,480	35
1994	61,388	37	3,828	34	57,560	40
1995	69,009	41	3,756	36	65,253	43
1996	52,997	43	3,402	34	49,595	47
1997	49,355	43	3,718	31	46,637	48
1998	39,641	43	2,675	31	36,966	48

Source: SG RM/98, 99.



[20] MAMA – Project, Skopje, 2000, (Macedonian situations and prospects: milk and dairy products; livestock and meat – Project for Agro-business Marketing in Macedonia).

The case of the movement of sheep growth, in contrast to the growth of cows, demonstrates the same drastic negative trend both in relation to the production of milk and in relation to the growth of the flocks of sheep (Tab. 51 and Graph 5), which is closely related to the trend of reduction of breeding sheep



in the individual businesses by 1.5 times, while in the agricultural businesses by 10% over the six-year period. However, the individual businesses participate with 91–93% in the total production, while the rest is the participation of the agricultural businesses. On the whole, if this trend continues to the end of the middle-term period (2006), the growth will finish up the same as the production of milk, a matter which cannot be allowed.

6.3. Pig-breeding

In pig breeding there still exist quantitative and qualitative differences between the two groups of agricultural businesses. The pig herds in the agricultural businesses consist of ennobled, highly productive white breeds and sows with 12–13 annually bred piglets (the result of which is production of an average of 1,200 kilograms growth) while on the individual farms there are 6–5 annually bred piglets, of which one is fattened up to 80 kilograms growth, while the others are sold. Modern family farms have been rapidly developing lately, which will reduce the indicated difference.

Total number of pigs and total number of breeding pigs

The participation of the individual farms in the total number of pigs is 60%, while in relation to sows and pregnant fattened sows it is 70% of the total number, whereas the participation of the agricultural businesses in the total number is 40% and 30% respectively. It can be immediately noticed that in the agricultural businesses there are about 8 pigs per sow whereas on the individual farms there are about 5, which is a result of the afore-mentioned practice, selling the greater number of piglets to the neighbours.

Table 52 – Movement of the number of pigs and sows

Year	Total		Agricultural Enterprises		Individual Agricultural Economies	
	Fattened sows pregnant	Total pigs	Fattened sows pregnant	Total pigs	Fattened sows pregnant	Total pigs
1993	29,478	184,920	8,611	71,190	20,867	113,730
1994	29,288	171,571	8,745	65,570	20,543	106,009
1995	29,420	175,063	9,391	66,286	20,029	108,777
1996	28,546	192,396	9,137	69,709	19,409	122,627
1997	32,948	184,293	8,875	60,011	24,073	124,282
1998	30,834	196,839	9,198	72,446	21,636	124,343

Source: SG RM/98, 99.

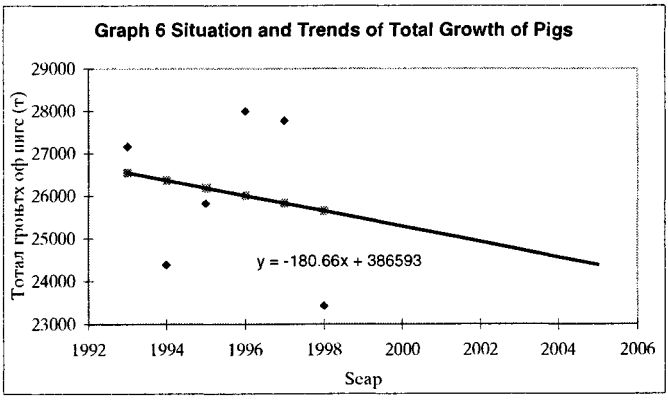
Total growth

The total growth is conditioned by the system by which pigs are bred in both groups of agricultural businesses. Therefore, the agricultural businesses, though they participate less in the total number of pigs and sows, approach the individual farms in the total growth production (in a 40:60% ratio). This is due to the greater productivity per sow and pregnant fattened sow. However, it can be noticed that the relatively low yields in growth in both the groups, are due to an insufficient pig diet. The data and the graph demonstrate a cyclical movement of growth, without any normal trend, i.e. depending on the way the producers supplied themselves with necessary concentrates, and favourable market conditions in different years. Because of the favourable import of pork by an increasing number of meat-processing businesses, frequently the domestic producers' market has undergone aggravations.

Table 53 – Movement of pig growth (live weight)

Year	Total		Agricultural Enterprises		Individual Agricultural Economies	
	Total 000 kg	kg/sow and fattened pregnant sow	Total 000 kg	kg/sow and fattened pregnant sow	Total 000 kg	kg/sow and fattened pregnant sow
1993	27,158	92	10,333	1,200	16,825	81
1994	24,388	83	10,494	1,200	13,894	68
1995	25,813	88	11,269	1,200	14,544	73
1996	27,992	98	10,964	1,200	17,028	88
1997	27,769	84	10,650	1,200	17,119	71
1998	23,429	75	10,118	1,100	13,311	62

Source: SG RM/98, 99.



6.4. Goat-breeding

In spite of the existence of a law prohibiting goat-breeding, it is estimated that in the past individual producers permanently bred about 100,000 goats, of which the greater number belonged to primitive breeds, while the Saanen breed was bred individually. At present, with the revoking of the ban and the establishing of a centre for reproduction of breeding material, goat-breeding will develop in all phases of reproductive production. So far, due to the reasons indicated, a goat statistic has not existed. Only recently could the first official data for the number of goats be seen at the Statistics Institute, that is the total number of 85,537 in 1999, of which 110 in the agricultural businesses and 85,427 on individual farms. With reference to the production, it has been estimated that

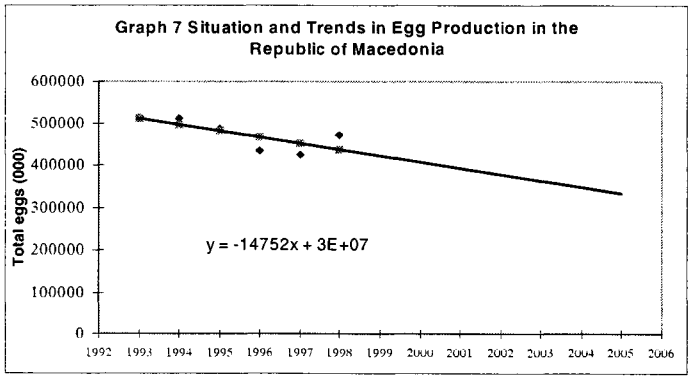
the annual yield should be 300–400 litres of milk and 1.5 kid per head. The main bases for goat-breeding are the extensive hilly and mountainous pasture-lands (even more so than sheep), but they also require manual feeding in the non-vegetation period.

6.5. Poultry Production

Number of Egg-Laying Hens and Egg Production

Egg-laying hens maintain the leading place among poultry in Macedonia, mainly as a market production of the agricultural businesses. They participate with 40-50% of the total of egg-laying hens and 60% in egg production.

Since the line for chicken meat production ends with repro-centre problems, at present only the situation of the egg-production line and the growth of rejected egg-laying hens can be noted. The agricultural businesses own capacities for 500,000 egg-laying hens, i.e. for the production of 600 million eggs, annually. However, as can be observed from Table 54 (and from Graph 7 even more clearly), the number and the egg production have been declining. Egg



production on the individual farms is seasonal, the number of hens has been constantly falling (from 2.4 million in 1993 to 1.9 million in 1998) and the egg yields have been very low, on average 80 eggs per egg-laying hen (in 1998 an increase of 120 eggs was recorded).

Total Growth

As sources of growth, for now, the situation can be presented of the growth movement of old egg-laying hens, excluded from the renewal of the flock in the agricultural businesses and the total poultry in the individual businesses.

Table 54 – Movement of the number of egg-laying hens and egg production

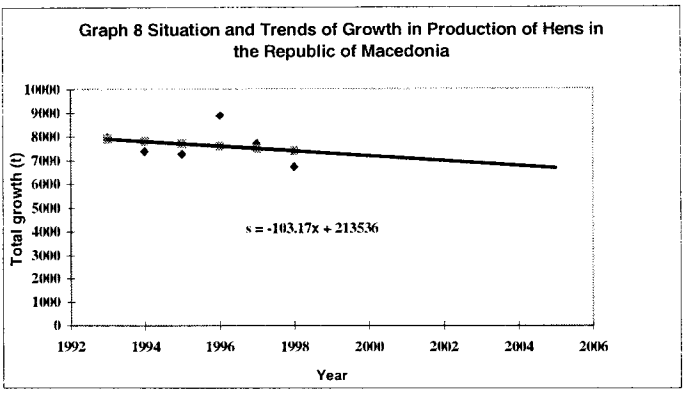
Year	Total			Agricultural Enterprises			Individual Agricultural Economies		
	000 egg-laying hens	eggs/egg-laying hen	000 eggs	000 egg-laying hens	eggs/egg-laying hen	000 eggs	000 egg-laying hens	eggs/egg-laying hen	000 eggs
1993	3,889	132	513,390	1,529	207	316,540	2,360	83	196,850
1994	4,017	127	510,148	1,521	194	295,130	2,496	86	215,018
1995	4,266	132	485,493	1,292	233	301,088	2,974	62	184,405
1996	3,061	142	434,602	1,321	233	307,845	1,740	73	126,757
1997	2,858	149	425,910	1,054	236	248,635	1,804	98	177,375
1998	2,943	160	470,844	1,670	230	246,017	1,873	120	224,827

Source: SG RM/98, 99.

Table 55 – Movement of growth of egg-laying hens and total poultry (individual farms and agricultural businesses)

Year	Total			Agricultural Enterprises			Individual Agricultural Economies		
	Poultry (000)	kg/poultry	growth (t)	Poultry (000)	kg/poultry	growth (t)	Poultry (000)	kg/poultry	growth (t)
1993	4,393	1.8	7,967	1,529	1.6	2,446	2,864	1.9	5,521
1994	4,685	1.6	7,382	1,521	1.6	2,434	3,164	1.6	4,948
1995	4,880	1.5	7,274	1,292	1.6	2,067	3,588	1.5	5,207
1996	3,361	2.6	8,889	1,321	1.6	2,114	2,049	3.3	6,775
1997	3,275	2.4	7,710	1,054	1.6	1,686	3,170	1.9	6,024
1998	3,339	2.0	6,725	1,670	1.6	2,672	1,669	2.4	4,053

Source: SG RM/98, 99.



6.6 Fish-breeding

In Macedonia there is fish trading in the natural lakes, without a diet of fodder mixtures, and in artificial fishponds, with programmes for intensive production of fish and nutrition of fodder mixtures. The total annual fish production in Macedonia is about 1,200 tonnes (Table 56).

Table 56 – Catch of freshwater fish

Year	Total	Trout		Carp		Cat-fish	Other fish
		Total	Fish ponds	Total	Fish ponds		
1993	1,235	456	280	139	153	5	500
1994	1,230	394	260	215	112	28	612
1995	1,505	450	420	420	140	6	612
1996	989	454	450	388	145	3	632
1997	1,009	429	399	316	112	2	262
1998	1,388	453	324	394	378	3	538

Source: SG RM/98, 99.

50% of the total catch of fish is of trout, of carp and a little catfish, while the rest is of other fish. From the review it can be seen that the intensive production of trout is mostly conducted at fishponds, while last year the same level was reached by the production of carp. It is estimated that the available water resources are not sufficiently exploited for fish production, thus in the middle-term period, by the construction of a repro-centre for fish reproduction and a solution of the problem with fodder mixtures, a programme of up to 5,000 tonnes annual catch could be realized.

7. Processing and Marketing of Agricultural Production

7.1. Market Approach

The agricultural production market, as well as its future finalisation, is particularly significant for maintenance of the production cycle in normal terms.

The market is significant both for its production orientation towards the consumers' demands as well as for the long-lasting development of production.

Agricultural product marketing has become an independent area within market research, due to the many specificities which distinguish it from the marketing of other products.

With reference to the concrete application of marketing, growing attention is paid to marketing as a specific system of organising business activities directed towards solving the problems of realisation on a microeconomic level, through research into the consumers' demands and adjusting the production to these.

The agricultural and processed products market in the Republic of Macedonia is characterised by specificities which result from the specificities of the production processes, and further of the final products and of the character of the consumers.

The following are classified as particular specificities of the agricultural product supply[21]:

– Uncontrollable changes in its range, as a result of the influence of climatic factors;

– Relatively rapid increase of the supply, as a result of the application of scientific and technological progress;

– The season of the supply of products.

Primary agricultural production reflects on the satisfaction of the direct consumption demands, on the satisfaction of individual (natural) spending, on the demands of the food-processing and tobacco industries and on exports. The satisfaction of those demands is conducted through several means such as sale by purchase, sale on the green markets, direct sale to the final consumers, inter-village and country trade, etc. Despite the different means of possible realisation of agricultural production, it has been shown long ago that it is not sufficient, which has resulted in imposing a need for establishing agro-stock exchanges, without which no European country could be imagined, no matter what the development level of the primary production and the market of that country.

[21] Misev P., *Agromarketing*, Gorex Press, Sofia 1996.

Unfortunately, in Macedonia the market is not sufficiently developed, while the non-existence of an agro-stock exchange and real wholesale markets has been hindering not only the primary production sale but also the supplying for wholesale, of the wholesale purchasers, etc., whereas the worst is the lack of an appropriate price formation, thus the primary producers are exposed to extortions and most often they are forced to sell the production under unfavourable conditions. Unfortunately, the organising of the primary producers into associations, corporations and trade collectives, has not brought any results yet, thus they are not protected from the market participants organised as purchasers who operate on the wholesale market in Skopje who are familiarly known as the green mafia.

Table 57 – Competitiveness of more important agricultural products[22]

No.	Product	% of production	No.	Product	% of production
1.	Wheat	39.1	13.	Apples	22.9
2.	Unhusked Rice	59.4	14.	Cherries	12.3
3.	Sunflowers	92.3	15.	Peaches	51.2
4.	Sugar-beet	98.2	16.	Apricots	22.0
5.	Tobacco	94.0	17.	Grapes	36.0
6.	Potatoes	6.1	18.	Beef	40.6
7.	Beans	15.0	19.	Pork	61.3
8.	Onions	8.9	20.	Mutton and Lamb	40.0
9.	Cabbage	4.8			
10.	Tomatoes	25.4	21.	Poultry meat	26.3
11.	Peppers	12.5	22.	Fresh milk	25.3
12.	Watermelons	9.5	23.	Eggs	75.0

Primary agricultural production in the Republic of Macedonia has a relatively low competitiveness when calculated as the relation between purchase, the green market and production. Of course, the market is also in close relation with the production range and with many other factors such as product prices, product substitution, import, market institution organisations, marketing as a concept of macro-economic social institution, etc.

[22] Анакиев Б. и др., *Примарното земјоделско производство во Р. Македонија, база за повисок степен на финализација и извоз (завршен извештај)*, Министерство за наука, Земјоделски факултет, Скопје, 1997, 100 стр. (Anakiev B., etc., *Primary agricultural production in the Republic of Macedonia, a basis for a higher level of finalisation and export (final report)*, Ministry of Science, Faculty of Agriculture, Skopje, 1997, 100 pages.)

As can be seen and is to be expected, the greatest competitiveness belongs to the industrial cultures, which are not consumed in primary form and whose whole production is intended for the market. Grains – except those produced as fodder and which are not competitive in Macedonia – i.e. that is wheat and rice, have a relatively higher competitiveness compared to the kitchen-garden cultures, whose competitiveness is quite different from culture to culture, but apart from tomatoes, all other kitchen-garden cultures have a competitiveness of below 20%. With reference to fruit cultures, the competitiveness is unexpectedly relatively low, particularly of the apricot and apple, while the same is true of grapes. Relatively higher competitiveness is detected among the livestock products, where close to 30–40% (on average) of the production is intended for the market, while of eggs as much as 75%.

With reference to the products sold, it is logical that the country markets are not of any significance for grain and industrial cultures. However, kitchen-garden cultures are predominantly sold on green markets. The greater proportion of fruit products and grapes is sold on green markets, especially cherries and walnuts, while apples and apricots are of more significance in purchase by the wholesale trade, whereas for peaches and apricots both kinds of sale are of equal importance. The greater amount of livestock products is sold by purchase, while the green markets are of the greatest importance for eggs.

The market for processing of agricultural products, i.e. the products of the food-processing and tobacco industries, in comparison with the primary production, is more regular and somewhat normal. However, a relatively complex problem is the competitiveness on the domestic market of imported products. That problem will grow even more if the domestic food-processing and tobacco industries are not fit for severe competitiveness in terms of their assortment, quality and price.

7.2. Significance of the Food-processing and Tobacco Industries

Those industries consist of four processing branches which do not have a particular relation, except that the raw material basis for all of them is the primary agricultural production. Thus, the shortened name signifies the production of food-processed products, production of drinks, production of fodder (industrial units for production of fodder) and production and processing of tobacco (more specifically cultivation and processing of tobacco).

The importance of these industries for the economy of the Republic of Macedonia and for the development of primary production is certain, since the development of these industries contributes to a steady and abundant agricul-

tural production, thus allowing a higher economy of production, greater export from the agro-complex, and at the same time it also contributes to a substitution of imported products on the domestic market, which influences the reduction of the balance of payments deficit, etc.

Industry employs about 17,000 workers (in 1994 close to 25,000 employees)[23]. In the GDP of the Republic of Macedonia, it participates with 5.5%, while in the export from the agro-complex of the Republic of Macedonia, tobacco and the drinks alone participate with close to 62%[24].

7.3. Capacities

The Republic of Macedonia had built a relatively sufficient number of processing capacities which were supported by a relatively big and developed market, but also by raw material from the former Yugoslavia. Unfortunately, in the past ten years, those capacities have become obsolete; there were not sufficient investments in new and modern capacities, thus nowadays there are relatively few modern capacities (i.e. production lines) for sophisticated technology, or a high level of finalisation and quality that can compete with the large assortment and amount of imported products from developed countries.

Unfortunately, the exploitation of the capacities in the entire industry, as well as in those branches, is below the 'permitted' level, that is a level which demonstrates that the low level of exploited capacities can hardly be expected to result in positive economic effects.

Nevertheless, in comparison to the total industry, as can be seen from the Annual Statistical Review of the Republic of Macedonia, 1999, a somewhat better capacity exploitation can be found in the production of drinks, of fodder and in the tobacco and production processing. The given data refer to 1997 (up-to-date data have not yet been issued). It is interesting to observe the reasons for exploitation reduction which are provided by the research into the 1991–95 period.

While in 1991 the food-processing industry had a pure service use of 74.2% and 61.7%, in 1995 this was 38.4% i.e. 27.2%[25]. With reference to the production and processing of tobacco by organising principle, in 1991 the ex-

[23] Annual Statistic Review of the Republic of Macedonia, 1999.

[24] Anakiev B. 1999, *Export from the Agro-complex. Strategy for Export of the Republic of Macedonia,* Macedonian Academy of Sciences and Arts, Skopje 1999.

[25] Anakiev B., etc., *Primary Agricultural Production in the Republic of Macedonia, Basis for Higher Level of Finalisation and Export.*

ploitation had been 84.3% and 70.9%, while in 1995 it was 64.5% and 49.3%. The latest data show that in 1997 there still was no improvement of the exploitation level of the capacities.

Table 58 – Exploitation of capacities based on possible and accomplished production

Industrial brunches	Within the projected time framework of work in the capacities		Within the framework of technological time of work in the capacities	
	Pure service	Organisational principles	Pure service	Organisational principles
Macedonian Industry – total	39.4	39.7	31.6	32.7
Production of food products	39.5	39.0	28.8	29.6
Production of drinks	50.1	39.6	39.8	31.5
Production of fodder	57.1	38.3	40.7	25.3
Production and processing of tobacco	46.1	38.7	35.2	28.6

Table 59 – Review of more significant capacities

1. Mills (000 tonnes)	438	9. For fruit processing (000 tonnes)	27
2. Oil processing	30.000	10. Dairies (000 litres/day)	374
3. Sugar plant (tonnes)	20.000	11. Slaughter-houses and meat processing (000 tonnes)	52
4. Breweries (000 hl)	276	12. Fodder factories (000 tonnes)	281
5. Wine cellars (mil. litres)	220	13. Refrigerated warehouses (000 tonnes)	102
6. Production lines for bottling (000 litres)	50.000	14. Silo (000 tonnes)	450
7. Vegetable processing (000 t)	37	15. Storage for mixing tobacco (000 t)	150
8. Frozen products (000 tonnes)	32	16. Cigarette production (one variety in tonnes)	19.200

A great proportion of the capacities have overtaken the domestic production of their raw material basis (oil, sugar, tobacco, etc.). A certain number of capacities built by small businesses should be added to this, although the influence some of them have on the market is minor, appearing as a substitution for some of the suspended old capacities (for example *Skopje Dairy*). However, significant capacities are in production with a relatively wide range of assortment, with sophisticated technology and a relatively great range (*Skok Trade-*

Rosoman, the wine cellar in Kavadarci, the dairies in the surroundings of Bitola and Tetovo, etc.).

7.4. Assortment and Range of Production

The assortment of the food-processing industry (excluding drinks, fodder and tobacco), according to the statistics, amounts to about 120 products. By the addition of several groups of drinks, of fermented tobacco and cigarettes, the total number amounts to about 130 products. However, the statistics (in the Annual Statistics Review) issue data on about twenty products or groups of products, which are greater according to the range of production, thus we estimate that this is sufficient for a presentation of occurrences and movements in these industries. Also, we are of the opinion that this insight into the movement of production in the past five years is sufficient for an evaluation of the future development.

The reviewing of the range of production demonstrates, above all, the relatively unstable production of a great number of products, as well as relative stagnation in production, because with many products, particularly food, from 1995 to 1998, there was a decline. We suppose that the production after the independence of Macedonia was drastically reduced in comparison to 1988 and 1989. However, the reduction cannot be noticed in those products. It is apparent that, in the last five years, the production is close to or identical with the production ten years ago. For example, in 1989 as in 1997, the same amount of flour, sausage products, cooking oil, etc., was produced, whereas there was a greater production of sugar (in 1997 more than 1989), cheese, tobacco, soft drinks, yeast, while there was smaller production of refined rice, canned vegetables, fresh milk, cigarettes, etc.

According to the assortment and the range of production it is estimated that in that period almost no progress was made, but the same level of production was maintained. In these industrial branches, which were highly integrated with agriculture (in Agro-Industrial Units) the process of privatisation began relatively late; they were left to themselves, that is the whole attention of the government, the World Bank and the other institutions was directed towards small individual farms and farmers. In such a situation, it was quite hard to maintain the production on the level of before 1990, which was reflected in the many industrial branches in decline (20–35%) in their industrial production.

Table 60 -- Review of the present range of production and forecast to 2005

No.	Product	Meaure-ment	1994	1995	1996	1997	1998	2005
1.	Flour	000 tonnes	144	168	143	164	154	186
2.	Unhusked rice	tonnes	3,340	2,868	2,960	4,921	6,590	4,960
3.	Pasta	tonnes	1,156	649	1,032	1,049	871	1,050
4.	Fruit process-ing with sugar	tonnes	5,094	5,480	6,455	5,387	3,354	6,460
5.	Vegetable cans	tonnes	7,283	7,846	11,901	2,246	5,701	7,400
6.	Ground pepper	tonnes	81	58	96	25	58	77
7.	Fresh meat	tonnes	6,945	5,397	5,315	4,011	3,274	5,900
8.	Sausaged products	tonnes	1,341	733	974	982	1,463	1,230
9.	Butter	tonnes	2	–	–	–	–	–
10.	Cheese	tonnes	1,546	1,695	1,490	1,334	1,502	1,800
11.	Sugar	tonnes	6,351	7,205	17,993	35,183	40,354	34,000
12.	Sweets jams, and chocolate products	tonnes	12,583	12,308	11,824	11,426	11,658	14,352
13.	Eating oil	tonnes	19,039	12,396	21,905	21,006	18,825	21,950
14.	Yeast	tonnes	5,231	5,408	5,779	6,493	5,803	6,890
15.	Refined dena-tured alcohol	000 hl	2,371	2,692	4,004	3,180	2,479	3,520
16.	Beer	000 hl	725	620	622	600	578	750
17.	Non-alcoholic and refreshing beverages	000 hl	507	627	628	942	816	845
18.	Complete fodder concoctions	000 hl	126	127	130	106	98	139
19.	Wine	mil. litres	102	91	101	96	123	150
20.	Fermented tobacco	tonnes	21,143	16,152	13,980	14,904	23,297	21,380
21.	Cigarettes	mil. units	13,538	10,615	7,851	9,678	7,009	11,700

What can be noticed from the review of the production range, by products, can be seen semi-illustratively from the linked indices according to the official statistics, while a relatively great decline can be noticed in 1998 in comparison to 1997 in all industrial branches except in the production and processing of tobacco.

Table 61 – Review of linked indices

Industrial brunch	1996 1995	1997 1996	1998 1997
Industry of the Republic of Macedonia (total)	103	102	104
Production of food products	100	102	98
Production of beverages	132	112	92
Production of fodder	102	81	93
Production and processing of tobacco	80	114	114

8. Production, Import and Export and Balances

On the basis of analysis of the situation in plant production and livestock production and the balances, it is necessary to give a cross-section (1998) in relation to production, import-export, balances and the self-sufficiency of the Republic of Macedonia in the more important agricultural products and the export-oriented products according to soil groups. Those are products which are the closest to the line of optimal exploitation of the comparative advantages of the Macedonian region for agricultural development.

The balances in Table 62 demonstrate that, of the important agricultural products, the production of wheat and maize, including the production of beef, pork and poultry meat and cow's milk, are significantly deficient food products for the population in Macedonia. Those products have been imported to 30-70% (grains-poultry meat) of the total demands although they are in the line of being comparative advantages. However, the producers are not sufficiently supported with financial backing as a result of the unfair competition on the market, so that we have great arable surfaces and Hydro-Ameliorative Systems unexploited for agricultural production. The same reasons also refer to the insufficient production of raw material for the sugar and cooking oil industries (only 20% satisfaction of the demands).

On the other hand, the kitchen-garden products (tomatoes, paprikas), apples, the table grape and the wine grape, are important export-oriented products.

Table 62 – Production; export-import; balances and the most frequent countries

(in mil. tonnes)

Products	Production	Import	Export	Balance	% self-sufficiency	Most common countries of EU % with Macedonia		
						EU	fSFRY	Oth.
Wheat	336.6	163.2	–	499.7	67	6	12	82
Maize	141.0	54.6	–	195.6	72	1	91	8
Rice	22.3	–	16.6	16.1	141	–	98	2
Tomatoes	125.7	0.4	15.2	110.9	113	1	97	2
Peppers	110.6	0.4	22.6	88.3	125	5	87	8
Apples	61.7	0.9	19.0	43.4	142	1	42	57
Table grapes	23.6	0.5	15.1	9.3	257	3	77	20
Beef	7.1	9.1	–	16.2	44	60	30	10
Mutton	11.6	3.8	–	15.4	59	26	38	36
Pork	5.6	–	0.8	4.8	117	88	12	–
Poultry meat	6.7	15.5	–	22.2	34	17	81	2
Cow's milk	173.4	69.9	–	243.4	71	27	36	37
Sheep's cheese – milk	41.6	3.2	–	44.8	93	6	70	24
Eggs (mil. units.)	470.8	–	25.6	445.2	106	10	80	10
Beet into sugar	7.6	23.4	–	31.0	24	31	6	64
Sunflowers into oil	4.3	19.7	–	24.0	18	46	14	40
Grapes into wine	122.7	–	102.6	20.1	610	50	10	40
Tobacco	32.7	5.7	27.2	11.2	343	23	18	59

EU – European Union;
fSFRY – former Socialist Federative Republic of Yugoslavia;
Oth. – other countries .

The production of tobacco is entirely oriented towards export and the satisfaction of the domestic tobacco industry.

The most important partners of the products from the Macedonian agro-complex are Albania, Greece, Slovenia, the USA and the FR of Yugoslavia.

The small number of strategic partners in the international exchange of the agricultural and food-processed products is insufficient and risky for the agro-complex's stability. The narrow export market is a result of the limited ability of the Macedonian business people to establish of direct links with part-

ners in the former Yugoslav countries and of the still unestablished bilateral relations of the country for free trade with other countries in the world, potential strategic partners. The shift of the placement towards other markets is prevented by the inherited low technical and technological level of the capacities, by the obsolete technology and the late adjustment of the products towards standards of quality, the preparation and the health condition of the products. Prevented by the systematic reforms which had to be conducted, as well as by the indirect damages suffered as a result of the events in the country and its surroundings, the subjects of the agro-complex also reduced the reproduction cycle of those products which have been competing in the foreign exchange.

The international exchange was not advanced by a parallel institutionalising of new, internationally recognised and permitted instruments and measures. A planned strategy of differentiated foreign exchange does not exist. The foreign exchange is chiefly conducted by customs taxes, special import taxes and export-import quotas. The export subsidies are chiefly applied to wine, lamb, fruit and vegetables. Since independence, tax release has been mainly registered in the import of livestock, meat (excluding lamb), milk, flour, wheat, maize, sugar, cooking oil, salt, fodder, fish flour and delicatessen products[26]. There is an absence of institutional support for repro-materials and components (seed, planting material, protection devices, oil derivatives, etc.), which are imported for the production of surplus agricultural and food products representative of the economic structure and the Macedonian export (kitchen-garden production, tobacco, apples, grapes, lamb and mutton, wine, etc.), as well as equipment for conducting of agricultural operations.

Respecting the principles of liberation of the foreign exchange, in the 1995 and 1997 period, the Customs Tariff Law was passed. The Law is based on:

a. The principles and the standards of the WTO and the EU;
b. The combined nomenclature of the EU;
c. The 1996 World Customs Organization Convention for a Harmonising System.

These bases in practice allowed the abandoning of the policy of applying several import taxes in Macedonia. Also, the export and import quantitative limits were revoked. An increased customs rate tax was established, settled according to the *cascade system.* Apart from the customs tax, an agricultural surcharge levy was established as well as different forms of out-of-duty barriers.

[26] Службен весник на РМ бр. 17, 36, 43 и 84, од 1992 година. (Official Gazette of the Republic of Macedonia nos. 17,36, 43 and 84, 1992.)

The application of prohibitive customs tax, anti-dumping customs tax, compensatory customs tax and *ad valorem* customs tax did not allow openness, i.e. liberalisation, of the foreign exchange and increase of the agricultural production to an adequate level of self-sufficiency. Therefore, a preferential customs rate has been applied in practice.

The Republic of Macedonia has practised a preferential customs rate for the import of certain products from developing countries. All of the former Yugoslav countries are here included. In the initial phase they are determined freely[27]. Only the import of goods originating from Slovenia is conditioned by compensation of agricultural products, for which protective prices have been determined[28]. This means that the preferential customs taxes refer to agricultural products intended for consumption and are tied to the market price.

All of that allowed the agriculture to show a deficit in the foreign exchange. The value of import in the 1991-98 period is greater than the value of export, on average, by about 55%. The long list of import components (raw material, equipment, reproduction material, etc.), in world prices, without institutional support, and directed straight to the production process, had a significant influence on the formation of the high production price of the production intended for the market. Along with the application of classically inappropriate preparation, and lack of adjustment towards the consumers' taste and demand on the international market, this meant that the primary agricultural production proved uncompetitive. It obtained such a dimension also on the former Yugoslav common market, which received the agricultural products in a raw form, without preparation according to world standards.

9. Agrarian Policy

Even in the long-term strategy for agricultural development of Macedonia (1996) it was evident that the development could be successful only if it was supported by an appropriately flexible agrarian policy and government measures which would protect the agricultural products in pace with every change of the market conditions resulting from dominating or unfair market influence.

Unfortunately, the planned strategy did not become a compulsory document for implementation, thus the agricultural products in the past period were neither appropriately financially stimulated nor protected for profitable and competitive production. This, as can be seen later, strongly influenced the

[27] Official Gazette of the Republic of Macedonia, no. 27/92, p. 448

[28] Official Gazette of the Republic of Macedonia, no. 57/94, p. 1650

negative trends in the production of several agricultural and processed products during the current middle-term period.

Due to the reasons indicated, within the middle-term strategy for agricultural development it will be necessary to conduct a comparative analysis of the agrarian policy on two levels:

a. the situation of the current agrarian policy; and
b. the necessary reforms for adaptation of the agrarian policy to the EU and the WTO agrarian policies.

9.1. Land Policy

Due to the dynamic process of demographical deagrarisation, changes within the agrarian structure should also have been expected, in terms of reduction of the number of individual farms, as well as an increase in the average size of the land property and the parcels, but, unfortunately, such a process did not take place. In the Republic of Macedonia, the number of individual farms has been increasing. Thus, for example, in 1960 the number of such households was 156,676, while in 1994 it was 178,087, which is an increase of 13.7%. Hence, we have a fragmented agriculture and consequently it never attracts the capital essential to development. In such a situation, the only capital of the Macedonian small farms is the farmer who is tied to the property (land), due to the impossibility to choose another business, at the time of deciding on his professional orientation.

In Macedonia, the individual farms on average consist of small properties, an unqualified work force and low quality capital.

It is known that, in all developed countries, if the transfer of the work force to other businesses is intensive, the enlargement of land property and the increase of labour productivity are conducted with the same intensity[29].

Research has shown that in the Republic of Macedonia, the arable surface of the small farms consists of 5,205 divided parts, or, on average, one farm consists of 7.4 separate parcels, with 0.43 hectares average size. 51.8% of the total number of farms consist of over 6 parcels, 34.6% of 3–5 parcels, whereas only 13.6% of the farms consist of up to 2 parcels of property.

It is evident that with the increase of the property size, the participation of the farms with a greater number of parcels also increases.

[29] In the 1950–60 decade, the average size of farm was increased by 18% in Germany, 21% in Belgium, 28% in Canada, 4% in Denmark, 31% in the USA, 81% in Iceland, 32% in Norway, 15% in Sweden, while at the same time the number of parcels was reduced. Source – Les Faibles revenus dans Agriculture, Paris; OCDE, 1964.

Table 63 – How many separated parts does the property you cultivate consists of?

Estate categories	Total	Up to 2 parcels	3–5 parcels	More than 6 parcels
Total	100.0	13.6	34.6	51.8
< 1.0 ha	100.0	51.9	35.5	12.6
1.01–2.00 ha	100.0	9.7	38.2	52.1
2.01–3.00 ha	100.0	9.0	38.9	52.1
3.01–5.00 ha	100.0	4.5	26.6	68.9
5.01–8.00 ha	100.0	–	29.0	71.0
> 8.01 ha	100.0	–	28.6	71.4

Source: 'The Influence of Industrialisation on the Social Processes and Changes in the Countryside in the Republic of Macedonia' Project, Institute for Sociological and Politico-Judicial Research, Skopje .

The size of the property of the individual farms, and their fragmentation into a great number of small parts, is an obstacle to organising agricultural production and presents a limiting factor for organising productive and intensive production.

Although the research data show that the individual farms in the Republic of Macedonia consist of small properties and that this has negative implications on saving, profitability, productivity and intensity, the research also shows that a great number of the individual farms are not interested in changing the size of their property (56.0%).

The percentage of farms that are interested in property increase is smaller than the percentage of those which do not have such plans.

The desire for property increase is in the case of farms with less property. Accordingly, the small property farms cannot organise a productive production of goods and therefore they are in need of a larger land property.

Table 64 – Would you like to increase the property?

Estate category	Total	Yes	Neither to increase nor decrease the property	No
Total	100.0	37.6	56.0	6.4
< 1.01 ha	100.0	51.9	40.5	7.6
1.01–2.00 ha	100.0	43.0	47.1	9.9
2.01–3.00 ha	100.0	41.0	56.3	2.9
3.01–5.00 ha	100.0	28.8	66.1	5.1
5.01–8.00 ha	100.0	31.9	64.5	3.6
> 8.01 ha	100.0	37.1	60.9	2.0

Source: Ibid.

What comes next in the land policy?

Although it is desirable for market trends to play the main part in the determination of the farms' size and the level of fragmentation, nevertheless those trends might not succeed in giving sufficiently clear signals. Therefore, it will be necessary to develop a system of precisely determined measures and procedures in order for the small farms to find ways of enlargement, by signing agreements with relatives and neighbours for exchanging parcels to enlarge their property, or the size of their parcels, in different ways. The initiatives for enlargement of the property could be supported by long-term credits, different approaches to credits or other government-supported initiatives. Also, in this way they can join other programmes such as rent and concession of state land. Regardless of the structure of the programmes, above all serious attempts should be made to study the limiting factors for managing the land, as well as how to prepare a public information campaign for the aims and mechanisms of the enlargement programmes.

It is not advisable to conduct a reconstruction of the small farms through a forced enlargement of land size programme. Nevertheless, there are ways that can accelerate the enlargement process, which will be achieved by a land market. Initiatives could be supported directly through the *tax policy, different approaches to credits,* or indirectly through *relating to other programmes for participation in redistribution of land.* For example, the farmers who would like to rent state land could be stimulated to exchange or sell the parcels which are distant from their farms. Every programme should be preceded by serious attempts to understand the obstacles to the enlargement programmes, while, by a public information campaign, the aims and mechanisms of the enlargement programme should be presented.

Amendments and additions to the Land Exploitation Law should be passed, in terms of improvement of land management in order to provide economic exploitation and protection of the sensitive eco-systems. The land should be protected from environment-damaging activities or activities considered socially inappropriate by the population. There is a need for affirmation of such a land policy, which will provide orientation of this natural resource towards the farmers, particularly towards those whose primary profession is agricultural production.

9.2. The Budget and Measures of the Agrarian Policy

The chief mechanisms and measures of the agrarian policy for support of agricultural development are different categories of subsidies (financial stimulations) by the state, such as:

a. direct price subsidies for the chief agricultural products;
b. a credit policy, subsidies for inputs and investment support in agriculture;
c. export stimulation, customs taxes and import surcharges in the foreign trade.

The Ministry of Agriculture, Forestry and Water Economy is the main authority in relation to direct price subsidies and subsidies for inputs in agriculture, for which it receives special budget funds from the government. The Ministry of Economy and the Ministry of Foreign Affairs hold authority over the categories of subsidising a. and b., while the Ministry of Finance is the chief regulator of all subsidy categories in agriculture.

As can be seen (Table 65), the subsidies in agriculture from the budget of the Ministry of Agriculture, Forestry and Water Economy, since 1994 have been completely reduced (with 3.2% to 0.4% interest). In that period price subsidies practically stopped, the means for revitalization of the countryside, and investments have been symbolic, while only the means for the annual programmes for stimulation of agricultural development remain in use. This is a

Table 65 – Subsidies in agriculture from the budget of the Ministry of Agriculture, Forestry and Water Economy (in mil. denars.)

Subsidies types	1994	1995	1996	1997	1998	1999	2000	2001
1. Bonus for seeds	177	178	161	0	0	0	0	0
2. Bonus for interest crediting	954	149	0	0	0	0	0	0
3. Premium	889	740	352	71	0	0	0	0
4. Programme for boost of development	75	92	210	361	233	244	229	*814
5. Programme for revitalisation of countryside	0	15	15	15	20	20	20	25
6. Programme for investments	0	0	0	0	19	48	82	132
Total budget MAFWE	2,095	1,174	738	447	272	312	331	606
Index 1994 = 100	100	56	35	21	13	15	16	29
Subsidies % from budget of Macedonia	3.2	1.7	1.1	0.7	0.4	0.4	–	1.0
Subsedies % of GDP	1.4	0.7	0.4	0.2	0.1	0.1	–	–

Source: National Budgets of the Republic of Macedonia; SG RM/98,99, Skopje,
** part of the assets increased by 214 mil. Denars; for health protection of animals and plants in 2001.*

programme which is very significant, but chiefly refers to the support of the Agency for Promotion of Individual Producers' activities giving financial support for supplying seed material, the establishment of regions, etc.; in crop production for production of planting material; in fruit production and viticulture, as well as in livestock breeding (for supplying of breeding male heads), introducing register bookkeeping, etc.; with a total amount of 4 million EURO.

Thus, in 1999, the total budget means for subsidies in agriculture were 5.14 million EURO, an amount that represents only 0.4% of the state budget or 0.1% of the GDP. If that is compared, for example, to the intervention fund for subsidies to agriculture in Slovenia, which has been constantly increasing and in 1997 reached more than 200 million EURO (3.3% of the state budget), the extent of our negligence of financial stimulation of agricultural development in Macedonia will be revealed.

Production Prices Situation

The comparison is interesting between the domestic production prices of the chief agricultural products to those in Slovenia, calculated in a percent relation to the prices of the EU and the accomplished prices of import and export.

Certainly, the data of one year do not show a correct idea, but they show a certain notion that the domestic production prices of only few products are just slightly above EU prices (rice, sunflower oil, pork and eggs). Certain of the prices are quite close to the EU prices (barley, maize and beef), while the rest are significantly lower than EU prices. The comparison of domestic production prices with the accomplished prices of the export-oriented products is very important. Thus, there are products whose export prices are satisfactory (tomatoes and table grapes), while the rest accomplish low prices. During import, the import prices of wheat and beef are on the same level as the domestic prices, while the rest of the products are significantly below the level of the domestic prices (barley, maize, sugar beet, sunflower, pork and cow's milk), products which should be protected the most from unfair competition from import.

From the indicated data and a comparison with Slovenia, it can be concluded generally that the domestic producers demonstrate competitive agricultural production, both in comparison to the EU and Slovenian prices, as well as in comparison with the accomplished prices in import and export, but, at the cost of low domestic prices and consequently of low income. It shows that the state, being underdeveloped even in the period of transition, for some time must use measures for protection and stimulation of the agricultural production development. Slovenia has been doing this to a great extent.

Table 66 – Index of domestic production prices and prices in Slovenia

Products	Domestic production prices % originating		Slovenia % from the EU
	Import*–Export	EU	
Wheat	99*	105	146
Barley	61*	98	104
Maize	79*	103	79
Rice	70	130	–
Sugar-beet into sugar	68*	48	97
Sunflowers (into eatable oil)	73*	113	–
Tomatoes	129	60	87
Apples	77	37	68
Table grapes	93	29	–
Beef/baby beef	99*	104	99
Pork	66*	116	113
Lamb	77	59	–
Eggs	83	115	–
Cow's milk	33*	29	90
Wine	85	55	–
Tobacco in tongas	42	59	–

SG RM/98; EU 1998 Report, Brussels; CEEC – Slovenia, European Commission, 1998.

The role of the Bureau of Market Reserves

The Bureau of Market Reserves intervenes in the interest of providing stability in the supply and the demand of certain agricultural products, when there is a shortage, or a surplus, in the balance needs of the state, although not promptly or extensively. The Bureau buys up the surpluses at guaranteed (protective) prices in order to store and keep them, by favourable credit conditions, until the moment of sale when a market deficit appears. Such are the cases with the purchase of wheat, tobacco, lamb and other products. Unfortunately, for this kind of support the state also engages yet lower means (1996-674 million denars, 1997 – 303 million, 1998 – 225 million, 1995 – 142 million, 2000 – 112 million and 2001 – 497 million denars).

In the market policy for foreign trade Macedonia has in the past used more capital for export stimulations of export-oriented agricultural products (export agricultural surcharge levy, when the global price is lower than the domestic), which was abolished concluding with 1997. However, the market policy continues to impose relatively high import (duty) taxes as a protective measure for domestic agricultural products.

Table 67 – Import and import customs taxes on agricultural products

	1998	1999	1999/98
Total import (mil. denars)	19,961	15,926	80
Total customs levy (mil. den.)	6,205	6,044	97
Customs levy from total import (%)	35.00	38.00	
Basic customs (%)	9.65	11.96	99
Special customs (%)	15.83	17.12	102
Agr. Surcharge Levy (%)	3.52	4.16	111
Tax (%)	3.20	3.65	105
Excise tax (%)	1.80	0.11	5
Records (%)	1.00	1.00	100

Report of the Customs Authority Skopje

The import customs taxes are 35% to 38% of the total value of the import of agricultural and agro-industrial products. Practically, the major customs rate was 25% to 30%, the agricultural surcharge levy 3.5% to 4.2% and the rest are tax and administrative costs of the customs, while the participation of excise tax is slight. The export customs taxes are practically disciplinary measures for the importers, to turn first towards exploitation of domestic production before they import agricultural products, which should provide automatism for more secure placement of the domestic agricultural production. However, the customs taxes are included in the state budget income, which is far from allowing such a sum for stimulation of agricultural development.

The agricultural surcharge levy is an *ad hoc* determined variable import tax due setting the import (global) price on the protective domestic price level. However, the major customs taxes are determined by legal regulations published in the Official Gazette of the Republic of Macedonia.

As it is known, GATT imposes low import tariff rates and it is apparent that Slovenia has been greatly adjusting to those rates. However, the Macedonian tariff rates are obviously in a great divergence from these scheduled by GATT, although some of them have already been adapted according to the Stabilisation and Association Agreement between the Republic of Macedonia and the EU.

Table 68 – Macedonian, Slovenian and the General agreement of tariffs and trade import tariffs (rates) (in %)

Products	Macedonia 2001	Slovenia 1997	GATT 2000
Wheat	20	5	5
Flour	25	–	–
Maize	2	11	8
Rice	60	–	–
Raw material for edible oil	25	–	–
Raw material for sugar production	2	17	12
Tomatoes	40	–	–
Apples	60	–	–
Table grapes	60	–	–
Beef/baby beef	18	12	9
Lamb	40	–	–
Pork	20	14	11
Poultry meat	20	14	11
Regular and white cheese	35	–	–
Eggs	40	6	5
Wine	50	23	17
Oriental tobacco	30	–	–

Source: Official Gazette no. 75/2001; CEEC – Slovenia 1998, European Commission.

9.3. International Material and Technical Help

Due to the negative financial situation of the country, particularly of the agricultural sector, in order to invest domestic capital in agricultural production development, international material and technical help is necessary. The Republic of Macedonia, after its independence, has made attempts at involvement in the international financial institutions and for receiving funds for economic development. The success of the negotiations has provided direct foreign investments of 112,308,000 American dollars concluding with 1998[30]. 13,500,000 American dollars, or 8.3%, have been intended for agricultural development. That is not sufficient for the implementation of profitable production programmes.

[30] Annual Statistics Review of the Republic of Macedonia, 1999, p. 705.

9.4. Adaptation of the Agrarian Policy of Macedonia to the WTO and the EU

The abandoning of subsidies in the agriculture of Macedonia is a serious problem since it was demonstrated that the GDP in agriculture, in the actual middle-term period, has developed within an average rate of 0.3 %. Therefore, financial stimulation of the agro-complex producers must return in the revitalisation of the agricultural sector and the countryside, and that on a satisfactory level, by the establishment of a special fund for that purpose, in addition to many other things which will also be discussed in this document.

Only in a such situation can the further adaptation of the Macedonian agrarian policy to the WTO and the EU be dealt with, otherwise the only remaining issues will be the import customs taxes of EU goods and vice versa, and the harmonisation of certain compulsory legal regulations in relation to the Agreement with the EU.

The establishment of the Agricultural Support Fund would depend on the economic interests and aims of the agro-complex development of the Republic of Macedonia, adjusting its work according to the reforms of the agrarian policy conducted by the EU.

First, all of the five aims[31] which the EU has determined in the Common Agricultural Policy and Reforms are also the essential part of this *Strategy* for middle-term development of the agro-complex in Macedonia. Therefore, the accomplishment of the aim of the development of an efficient, competitive and profitable agrarian sector, based on the principles of the open market, is unavoidable, the aim, being, by the necessary financial support, promptly to protect the producers from all distortions and defects which can happen on the domestic and the international markets for agricultural and agro-industrial products. Only in such a situation can we count on a normal and desirable development of the agro-complex, i.e. rapid development of all areas according to the comparative advantages for agricultural production.

The necessary financial funds could be provided for those purposes, for stimulation of the producers, since in the past such funds have been provided,

[31] They are (1) achievement of a greater competitiveness by lower prices of the agricultural products; (2) providing agricultural products with qualitative and healthy nutrition; (3) providing a steady income and living conditions of the agricultural producers; (4) applying production methods with improvement of the environment; (5) creating possibilities for employment, i.e. better retirement for elderly agrarians with the intention of greater employment of younger farmers, etc.

only if there is evidence of the aims which are to be achieved through the development of the agro-complex. For example, it would be sufficient if the state renounced part of the budget income from import of agricultural products, in order to establish a fund which would help in the application of the model of agrarian reform which has been applied in the EU.

Certainly, providing satisfactory credits will be primary for the agro-complex development, for turnover and investment capital, but, if a profitable environment is not provided at least for the better producers in the placement and on the market, they will quickly be transformed into debts and a lack of interest in further development.

a) The Agreement on Stabilisation and Association with the EU

By enforcing the Agreement on Stabilisation and Association between the Republic of Macedonia and the EU,[32] the April 1997 Agreement on Cooperation was replaced and, with reference to the customs tax regime in agriculture and fish-breeding the following is forecast:

1. The EU will eliminate the customs taxes for the import of agricultural products originating from the Republic of Macedonia, except those with tariff indication live-cattle, frozen beef and wine (from the nomenclature of the Official Gazette of the Republic of Macedonia, no. 38/96). Also it will completely eliminate customs taxes for fish and fish products.
2. The EU will determine a customs tax, 20% within the tariff quota, 1650 tons of baby beef for import originating from the Republic of Macedonia by a specially defined tariff indication (Annexe II).
3. The Republic of Macedonia will eliminate the customs tax on the import of agricultural products originating from the EU for a) certain agricultural products indicated in Annexe IVa; b) certain indicated in Annexe IVb, within the planned quotas for every product; c) it will eliminate the taxes with same effect as customs taxes, i.e. it will reduce by 50% the most-favoured-nation taxes for fish and fish products originating from the EU (Annexe IVc); d) in Annexes I and II, with a special protocol 3, all trade arrangements for agricultural processing products for which all customs taxes are eliminated, are mentioned.

[32] Agreement on Stabilisation and Association between the Republic of Macedonia and the EU. Unofficial text translation, 2001.

Therefore, with the Agreement on Stabilisation and Association with the EU, in reference to the agriculture and fish-breeding trade, obligatory relations are planned only with the issue of the import customs taxes regime, on three levels, a) import of products without customs tax (those in Annexes I and IVa); b) group of products with progressive reduction of import customs taxes according to most-favoured-country (those in Annexe II); c) a group of products with a progressive increase of quotas and reduction of the percent of customs rates in the next three years (those in Annexe IVb and c).

Table 69 – Import taxes for chief products according to the Official Gazette and the Agreement with the EU

Products	Level of customs*	2001	2002	2003
Wheat	According to Official Gazette	20%		
Flour	According to OG	25%		
Maize	Rate > tariff quota	90 > 20,000	80 > 20,000	70 > 20,000
Rice	According to OG	60%		
Crude oil	Rate > tariff quota	90 > 5,000	80 > 10,000	70 > 15,000
Non-refined and regular sugar	Rate > tariff quota	90 > 5,000	80 > 10,000	70 > 15,000
Tomatoes and peppers	According to OG	40%		
Apples	According to OG	60%		
Table grapes	According to OG	60%		
Beef	According to OG	18%		
Lamb	Without tariff quota			
Pork	Rate > tariff quota	90 > 2,000	80 > 2,000	70 > 2,000
Poultry meat	Rate > tariff quota	90 > 1,500	80 > 2,000	70 > 3,000
Cow's milk	According to OG	25%		
Powder milk	Rate > tariff quota	90 > 200	80 > 300	70 > 400
Cheese and cheese-cream	% from most-favoured-nation	80 %	65 %	50 %
Eggs	According to OG	40%		
Wine	Special agreement	50%		
Oriental tobacco	Without customs (import)	30%		

** According to Official Gazette, no. 15/ 2001 and Agreement with the EU.*

With reference to the indicated responsibilities, in Table 69 a review is given of the changes expected regarding the chief agricultural products of the Republic of Macedonia in the next three years.

Therefore, with reference to import customs rates, the Agreement is not concerned with the planned rates in the Official Gazette no. 15/2001 for wheat, wheat flour, rice, tomatoes, apples, grapes, beef, cow's milk and eggs. For import of maize, unprocessed oil, unprocessed sugar (sugar), pork, poultry and powdered milk, customs rates are determined above certain tariff quotes for the next three years. The customs rate for cheese and cheese-cream is planned in percentage of the most-favoured-nation customs tax, of wine according to a special agreement and of oriental tobacco free import, without customs tax.

The general assumption of the Agreement is that it does not oblige the Republic of Macedonia regarding many products, with reference to the import customs rates, even for those that are planned there is a possibility of further concessions, in terms of a greater liberalisation of the agricultural and fish products trade. Therefore, if there are serious disturbances of the market or the domestic regulating mechanisms, it will be immediately possible to find the appropriate solutions. The same approach will be used upon the discovery of dumping in the trade or other distortions on the market. The responsible bodies of the state are obliged to precisely monitor the market and promptly reveal serious violations in any sector of the importing party, and to conduct appropriate measures such as elimination, reduction or increase of the customs rates, through the Council or the Stabilisation and Association Committee.

b. Free Trade Agreements With Other Countries

Apart from the Stabilisation and Association Agreement with the EU, the Republic of Macedonia has signed Free Trade Agreements with Slovenia (1997), the FR of Yugoslavia (1996), Croatia (1997), Bulgaria, Switzerland, Norway and Iceland. Negotiations for free trade are in process with Albania, Bosnia and Herzegovina, Romania and Ukraine. Macedonia is also negotiating an associative membership in the Central European Free Market Agreement (CEFTA). These agreements significantly expand the free trade in agricultural products in range and without customs taxes.

The indicated quotas for free import (without customs tax) of main agricultural products originating from the ex-Yugoslavian countries show the Republic of Macedonia to be satisfying its demands and providing a considerable export from those countries.

Table 70 – Tariff quotas for free export of certain agricultural products from Macedonia, Slovenia, the FR of Yugoslavia and Croatia.

From Macedonia into Slovenia		From Slovenia into Macedonia	
Products	Quotas (t)	Products	Quotas (t)
Lamb	100	Poultry meat	3,950
Tomatoes	2,000	Pork	100
Peppers	2,000	Milk	3,000
Grapes	1,000	Powdered milk	50
Wine	22,000	Cheese	50
Tobacco	1,500	Butter	50

From Macedonia into Croatia		From Croatia into Macedonia	
Products	Quotas (t)	Products	Quotas (t)
Lamb	800	Poultry meat	1,200
Tomatoes	4,000	Fresh fish	250
Peppers	3,500	Milk	600
Grapes	8.000	Yogurt	150
Apples	1.000	Cheese	300
Rice	3.000	Tobacco	2,500
Wine	4.000		
Tobacco	2.500		

From FRY into Macedonia	
Products	Quotas (t)
Wheat	100,000
Wheat flour	10,000
Oil (sunflower)	500
Sugar	700
Livestock (no.)	4,600
Pork	1,000
Milk and milk-cream	750
Cheese and cheese-cream	100

Source: Free-Trade Agreements (Official Gazette, no. 48/96, no. 59/96 and no. 28/97).

However, it was noticed in the review of trade exchange, that there are problems with reference to the completion of the planned quotas for export and import of certain products as a result of which the export from Macedonia has not been covered reciprocally by the other countries and vice versa, particularly in the case of Slovenia and Croatia. Therefore, the seriousness should be taken into consideration of both agreeing and applying of the Free Trade Agreements with any country, in reference to the more precise planning of the export-import tariff quotas' size and the possibility of their accomplishment by any agreed party.

Actually, the foreign trade exchange, by outlining the tariff quotas of the agricultural products from Macedonia, particularly to the ex-Yugoslav countries, is based on good business relations with known partners in the countries that import the Macedonian products, as well as with partners in the countries who are exporters of deficient agricultural products. However, nevertheless, the indicated faults are present and there should be added the frequent lack of documents relating to origin and quality standards, health condition and other requirements for the products.

In conclusion it should be noted that, by applying the Free Trade Agreement both with the EU and other countries, as with the announced reduction of the existing customs tariff rates, the Republic of Macedonia in the future will significantly reduce its import customs taxes, particularly for the chief agricultural products, with which domestic producers will also intensively experience unfair competition on the part of the tax-free import. Therefore, it can be freely said that as much as the liberalisation of the trade exchange is to be increased – which is an unavoidable process – the domestic producers of deficient agricultural products will need a more efficient stimulant and protective measures for providing a profitable market for their products.

III. ADAPTING AND INTEGRATING THE AGRICULTURAL SECTOR INTO THE EU

The conditions and problems in agriculture, which have been previously stated, obviously impose the need for radical changes in all the segments of production and economics. The solutions should be looked for, primarily, in our own material capacities and available resources. However, the transformation process and its specifics have had drastic negative effects on the economic parameters in agriculture which will not be able to even come close to the degree of development of the developed western countries without international financial support. The support requires the precondition of integration and inclusion into the large economic systems. This means the CAP of the EU and the WTO.

This is why, the primary strategic goal of Macedonian agriculture should be:

a) Integration into the large economic systems;

b) Adaptation of agricultural production intended for both domestic and foreign markets, in accordance with world standards, principles and tenets of international trade.

1. General Principles for Adaptation to the Common European Market and the Common Agricultural Policy

The primary EU goals consist of economic stability and growth of production, and, as part of that, also of agriculture, improvement of living standards of the EU population and establishing a high degree of mutual respect among the member-countries. Within those general principles, special emphasis and efforts are put into adapting national policies to the Common Economic Policy, and, in the agricultural sector, into adopting an applicable Common Agricultural Policy. For that purpose, numerous legal regulations with a unified set of instruments have been adopted. The physiognomy of the instruments and measures consists of:

a) optimal usage of the region's advantages;
b) complete provision of the needs for finished products and raw materals;
c) stability of supply;
d) decrease of the dependency on imports;
e) avoiding food risks;
f) greater employment, etc.

The coming of Macedonian agriculture closer to the primary principles of the Common Agricultural Policy is dependent upon:

a) an increase in economic efficiency of agriculture;
b) market production, competitively adapted to the common and the world market;
c) rational use of existing natural resources and production factors;
d) introduction and implementation of modern scientific and technological solutions, knowledge, information technology and professional services in the villages;
e) prevention of agro-ecological imbalance.

The implementation of the general principles will lead to:

a) agricultural production with lower production prices, competitive both on domestic and foreign markets;
b) production of quality export food;
c) improvement of living standards of agricultural producers and the population in general;
d) decrease of unemployment among the active and able agricultural population, etc.

2. Mechanisms and Instruments of Association

The set of instruments for an accelerated integration and adaptation of the agriculture to the CAP, should be sublimated in:

a) the Price System;
b) the Tax System;
c) the Customs System;
d) the Monetary System;
e) standardisation.

The Common European Market is striving towards a high degree of liberalisation. However, agricultural production, in market economy conditions, is not bereft of care from the state, in the case of the overall action of the economic laws. The range of protective agro-economic measures is determined by the state interest in accordance with the conditions of production and the demand. Protectionism is most present in the price policy. Special protective price forms are being used here.

For Macedonia, the protective policy for the basic strategic products should be based on the border price. The final products, and the inputs which are not included in the national production structure, should be bound to the benchmark price. The products with quality on a world standard level should receive a referential (adequate) price during export.

The specific approach to the establishment of the more important basic products, without a doubt, is conditioned by the production possibilities, the level of the production forces and capacities and by the total production needs for nutrition. The structure of the traditional agricultural production suggests that a borderline (protective) price should be determined for products of strategic importance and in short supply. The list consists of wheat, rice, sugar beet, rape, sunflower, meat, milk and dairy products. The implementation of the referential price is, of course, connected to the national trademark products that generate a significant net foreign currency effect. This range of products consists of tobacco and its finished product – cigarettes, wine, lamb, fruit, apples, grapes, as well as several vegetable products.

The benchmark price is closely connected to the agricultural inputs, the agricultural machines and equipment.

The subsidies for the stimulation of the development of plant and animal production should be reduced to an annual level of decrease of 2.4% and a subsidised export volume of 1.4%.

In the tax system area, a unified Value Added Tax, sales tax and other fiscal taxes should be prepared and implemented. The reform of the fiscal system and fiscal policy, in accordance with the principles of the EU tax system, has already been carried out. A fiscal system and a financial policy have been established on the territory of the Republic of Macedonia in accordance with the single EU fiscal system. As part of it, allocation neutrality was established. The tax burden is in correlation with the economic capacities. It also enables continuation of market motivation and strengthening of entrepreneurship and management. It provides feasibility and transparency. However, the established tax system has shown in practice certain negative features which have visible im-

plications on the development of agriculture. Bearing in mind the characteristics of agricultural production, the rate of the taxes related to agricultural reproduction is still high. The most-favoured-nation clause allows, within the framework of the single EU tax system, lowering the rates and alleviating the tax burden for certain agricultural products. This is of special importance for the imported raw materials and products with a higher degree of finalisation.

The establishment of the Customs Union for the purpose of eliminating customs barriers, inspections and quantitative limitations within the Union, as well as the establishment of common (single) customs rates, binds the Republic of Macedonia to adapt its customs system and reform the customs rates. In that area a certain correction has been made. Practice, however, confirms that the Republic of Macedonia applies high customs taxes. Import tariffs (rates) are much higher than the rates applied by the World Trade Organisation. For wheat, the rate is 15% higher, for corn 7%, for beef, poultry and pork 9%, for eggs 35%, for wine 33%, etc. These are not in accordance with the principles and tenets of the Common Agricultural Policy in the part concerning customs policy. That is why, the membership in the EU brings about the obligation to lower the customs rate to a minimum, with the possibility of abolishing it. Macedonia is applying such minimal customs rates in its trade exchange with the former Yugoslav Republics, with Bulgaria, Switzerland, Norway and Iceland in accordance with the free trade agreements. The relaxed customs policy excludes incentives as an instrument to harmonise the import with the domestic price, i.e. the world with the export price. In that context, the Agreement for Association and Stabilisation of Macedonia with the EU has been signed. It carries the obligation for the free flow of agricultural products, tax-free, of products with a progressive lowering of the import customs rates and of products with quantitative limitations, with a lowered customs rate for a period of three years (Annexes II and IV).

The Republic of Macedonia, in order to join the EU, will have to introduce a single currency – the Euro – as the means of payment into its monetary system. All agricultural products, besides the price expressed in denars, will also contain a price expressed in euros. This means that monetary compensation will have to be implemented, which means price parity and representative (central) exchange rates. The difference between the denar and the euro, as a consequence of the devaluation or re-evaluation of the national currency, will have to be made up through a compensatory sum, that is to say through monetary compensation of the export of agricultural products. The amount of the monetary compensation, as an internal import customs rate, and the stimulation of export of agricultural products, require forming a special agricultural support fund,

composed of domestic assets and part of the assets of the European Fund for Guarantees and Directions in Agriculture (FEOGA). Adaptation of the monetary system is a long-term project. In the mid term, it is quite impossible to establish an adapted monetary policy. However, it should be initiated and prepared for the long term.

The common European market strictly follows the qualitative performances of agricultural products. This concerns the provisions relating to the origin and labelling of products, the sanitary – hygienic and health-safety norms, as well the industrial and technical standards. All of them should be met through preparing and carrying out the legislation transferred from the EU. Of them all, the provisions regulating the issues concerning product quality are most important.

Product quality is defined here by the Law on Standardisation. It covers only elements of product quality in the narrow sense of the word (chemical composition, physical and organoleptic characteristics), while the microbiological characteristics, the content of pesticides, heavy metals and others are covered by the Law on the Health Condition of Food Supplies and Objects for General Use.

The standards regulated by the Law on Standardisation are meant to create the basis for the development of a single market and the removal of the trade barriers.

Standards and regulations are the simplest form of extra-customs protection. The goal of entering the international market with agricultural and food products can be achieved only through following EU standards and regulations. During this, we must not overlook the fact that there are some typical products whose identity must be preserved. This regulation is not new and is not something that has to be examined and implemented for the first time. On the contrary, the tendency towards standardisation has been quite expressed both here and in other countries. In that direction, efforts are being made in our Republic, too, to bring the standardisation of agricultural and food products closer to European and world standards.

The legal regulations for the processing of the quality of agricultural and food products have been covered with 29 rule books in the last 30 years. Namely, the single regulation, published in 1957, which regulated the conditions for production and sale of life products, has been turned today into 28 and into another 10 regulations covering the taking of samples for the chemical and physical examination of certain agricultural and food products or group of products. The manner of adoption of these regulations is connected with the adoption of the same or similar regulations in other countries or with the adop-

tion of international regulations or standards. Macedonia should be a member of a great number of international organisations - such as ISO, Codex Alimentarius, ECE, OECD, and more recently harmonise also with the EU which has separate regulations and directives.

Our Republic should show great interest in having a good relationship with all the countries in the world, especially in collaborating with the countries of Europe and the neighbouring countries. Besides the import, which is continuing in these countries, we should also offer them our agricultural and food products. This is especially important because 15 European countries are beginning to implement the common national programme for the development of trade within the common European market. In practice, this means that all countries outside the EU group will experience problems in the trade in agricultural and food products. That is why we need to quickly harmonise our regulations with the EU, that is to say, with the international ones which the EU recognises. At first sight, that seems very simple. However, that is not so easy to do. The regulations adopted by the fifteen countries apply only to them, and not to countries outside the Union.

Our regulations differ from theirs. They have a different approach to solving certain problems. They solve many issues through simple directives, which we solve through different laws for certain fields. It is often impossible to cover all the issues concerning quality, prices, trade and the like with only one of our regulations. All this imposes the need for permanent monitoring of these countries' documents and the need for accurate information on which of our acts can we adapt to the change they make. Production accommodation and adaptation to these changes is of special importance concerning the quality of supply. In that regard, there is a good Rule Book on the quality of fruits and vegetables which gives all the parameters for three types of qualities (extra, I and II), a Rule Book on the quality of mushrooms and mushroom products, and a Rule Book on the quality of poultry meat (harmonised with ECE regulations). There is also an accepted method for examination which is provided by ISO (six methods for examination of meat and meat products), etc. However, in the near future, Macedonia should prepare the most elementary laws and sub-legal acts, such as:

1. Legislation on veterinary medicine, plants and animal nutrition

a) Veterinary legislation

- trade in livestock, semen, ovaries and embryos;
- trade in animal products;
- control measures;

- marketing of animal products;
- measures covering more than one sector;
- imports from third countries of livestock and animal products;
- system for control and protection;
- raising cattle and thoroughbred animals;
- animal welfare.

b) Legislation on plant protection and animal nutrition

- seeds and breeding materials;
- plants or plant products;
- animal nutrition;
- products for plant protection;
- residuals from pesticides;
- rights to difference of plants in the community;
- organic farming.

2. Agricultural markets

- young beef and veal, lamb and goat meat;
- fruits and vegetables;
- wine and wine processed products;
- pork, poultry and eggs.

3. Effects of Integration

The accession of the Republic of Macedonia to the EU will cause significant positive effects in the agricultural sector. These will be achieved through the goals of the common market and common policy, and through the support of the Fund for Guarantees and Directions in Agriculture (FEOGA).

The common market and the common policy provide:

a) free flow of goods, capital and work-force;
b) broadening of the market for selling agricultural products;
c) possibilities of intensive and increased supply for export;
d) optimal use of national comparative advantages for production of competitive products;
e) enrichment of the choice of products for consumption with favourable prices for domestic consumers;
f) eliminating price fluctuation and achieving market stability, etc.

The Fund for Guarantees and Directions in Agriculture enables:

a) covering of costs related to intervention in the internal market for agricultural products, restitutions for exports to the world market, aid in food and monetary compensations;

b) financing the restructuring of agricultural production, activating unused surfaces favourable for agricultural production and support of rural development.

The common market and the common policy prefer borders open for trade, by eliminating customs taxes, obstacles and barriers in trade exchanges and the elimination of the implementation of subsidies that prevent competition. This enables the transition towards liberalisation of the markets included in the Union.

From the aspect of the agriculture in the Republic of Macedonia, the introduction of complete liberalisation would be possible only when we achieve, in the domestic market, a balance between the supply and the demand, as well as productivity which would be approximate to the average world productivity. As long as the domestic market does not achieve a degree of self-sufficiency with the basic primary agricultural products, the negotiations for association with the EU and the WTO should be directed towards reciprocal free trade within the framework of the 'asymmetric' liberalisation that the EU applies[33] for the countries with the associative membership status.

The necessary reforms in the field of agriculture, concerning prices, subsidies, taxes, the monetary policy and the export trade system should include, besides domestic budget support, strong support from the Fund for Guarantees and Directions in Agriculture. In order to achieve an accelerated trend in self-sufficiency in agricultural products, average world productivity and removal of competition, the financial support from FEOGA should be linked with the production price (costs) of the products in short supply on the domestic market. This does not clash with the principles of the common agricultural policy and the traditional support provided to the agro complex by the EU. The EU on average allocates annually for the support of the agro complex around 47% of total budget assets, which is on average 5,000 euros per producer annually. [34]

[33] The common European market is much more open for the equal members of the Union, than for associated states.

[34] Export Strategy for the Republic of Macedonia, Macedonian Academy of Sciences and Arts, Skopje, 1999, p. 137

The national institutional support of agriculture should take advantage of the possibilities of fiscal exemptions, covering of transport costs, awarding concessions, etc. For the purpose of stabilisation of the market price, association should be based on the principles and elements contained in the indicative price, intervention price and benchmark price, and in exports, those contained in the permit and in the material support of restitutions.

Broadening the market for selling agricultural products is at the same time a challenge for increased supply and for an intensive export of products which the European market can absorb. Advantages are seen in the selling of vegetables, fruits, wine, veal and pork to the German market, young beef, veal, lamb and pork to Italy and Greece, wine, fruits and vegetables to Holland, Luxemburg, Ireland and Denmark, with guaranteed export prices which also contain an average profit.

The wide range of primary agricultural products and processed products from the member states of the EU, in accordance with the most-favoured-nation status[35], will significantly enrich the choice of products on the domestic market with products for reproduction and with finished products for direct consumption. The support provided by the EU, linked to the market price, expressed in the guaranteed export price and customs-free transfer enables agriculture, the processing industry and the domestic consumers to supply themselves with raw materials paying 'real prices', appropriate to the material possibilities and the paying ability of the consumers.

The developed and branched out industry, from the aspect of agricultural machinery and equipment, reproduction materials and products intended for cattle nutrition, in the integration focus will offer better conditions for the modernisation of the production function in agriculture and for achieving greater production per surface unit and per head of livestock.

The Fund for Guarantees and Directions in Agriculture, through its guarantee section, is expected to help and support the market and price policy for agricultural products from the Republic of Macedonia. More precisely, the assets intended for guarantees by the EU Fund will enable covering costs related to the intervention in the common market for agricultural products, to the restitutions in the exports to the world market, aid in food and monetary compensations.

[35] The European Union grants, to its associative member states which are not developed or are developing, in accordance the "most favoured nation" clause, provides larger material help in the sector of production and export, in comparison to developed member states.

The Fund for Guarantees and Directions in Agriculture, through its directions or orientation section, is expected to allocate part of its assets to Macedonian agriculture, for the structural movement of agricultural production. The Fund has at its disposal annually around 20-25% of the total budget assets of the Union. Sometimes these are much higher and amount to 50-65% of total Union expenditures. The section, also, has a long-standing practice in financing projects and programmes, not only covering restructuring agricultural production, but also covering the process of agricultural expansion, supplying power to villages, construction of local roads, processing capacities, etc.

Larger-scale negative effects in the foreign trade, due to the influence of foreign competition, should not be expected because a significant part of the non-customs barriers have already been transformed into a higher customs rate. Also, a part of the imports has been liberalised and the support for agricultural production has been significantly decreased, as fundaments of the agricultural policy.

The stated effects and losses caused by the integration of the Republic of Macedonia into the EU and WTO are merely suppositions, based on the present EU researches into the practical findings concerning the integration of non-developed countries and developing countries. The Quantification of the benefits and the disadvantages of agriculture in the Republic of Macedonia deriving from liberalisation is possible through detailed research using the analytical method, and those from protectionism, according to the PSE (Producer Subsidy Equivalent) method, i.e. the equivalent to the subsidised producers and consumers.

The Republic of Macedonia should also base its security in free trade on the creation of a customs union with those countries with which it has developed trade relations. This should especially be emphasised with those countries which produce the same product, but with greatly varying production costs.

4. Subject and Tasks

Starting from the importance and the benefits of the process of integration within the EU, the efforts of the Republic of Macedonia should be directed towards adaptation of the economic policy to the principles and standards of the EU economic policy. In that context, it is essential to formulate the agricultural policy in accordance with the principles, instruments and measures of the EU common agricultural policy.

From a global perspective, the agricultural policy of the Republic of Macedonia should contain:

a) the production policy;
b) market policy and price policy;
c) structural-rural policy;
d) agro-environmental policy;
e) education in the field of agriculture.

The content of the sub-systems of the agricultural policy should enable its practical realisation which would mean:

1. Increasing the economic efficiency of agriculture through the free operation of market laws, through the decrease of administrative regulating and government interfering in the business economy and through adapting to the criteria of the world market for agricultural products.

2. Introduction of specialisation of the production of goods with products which will be proven and competitive on the world market and inclusion into international trade, business cooperation and the integration processes in the world;

3. Introduction of modern scientific and technological solutions, knowledge, information technology and professional services in the villages;

4. Integration processes within the private agricultural sector;

5. Greater use of natural resources in agricultural production and preserving the agro-environmental balance;

6. Harmonisation of legal acts with EU legislation regarding veterinary medicine, plants and animal nutrition, their protection and the common European market concerning agriculture.

The production policy has the task of maintaining the current reproduction, improving it in quality and increasing it in quantity. In this, the main goal is to achieve a high degree of satisfying the domestic market with agricultural products and achieving a production surplus intended for intensive exporting. In order to achieve these goals and tasks, it is necessary to:

- unblock private initiative;
- create a modern private sector;
- complete finalisation of the privatisation process in the agricultural combines and collectives;
- activate abandoned and insufficiently used production potentials in plant and animal production;
- change the production structure in accordance with the reforms in crop production, animal husbandry, the milk sector and in accordance with the EU rural policy which is defined in the Agenda 2000 and with the market needs for fresh finished products;

- introduce modern machinery and equipment;
- use raw materials (seeds, nursery plants, fertilisers and protective products) which provide high production of healthy and clean food;
- improve the thoroughbred and breed content of the livestock fund and improve nutrition, etc.

Besides all this, the programmes for agro-environmental research, the development of technological and information technology centres, the development of the professional services for the enhancement of private agriculture in the development and efficient application of the scientific research process in agriculture will also have a positive effect.

The realisation of the production policy and its support by the EU are conditional upon the harmonisation of domestic legislation with EU legislation. Numerous laws and legal acts need to be prepared and implemented which will cover veterinary medicine, the plant world and animal nutrition. Of special importance is the legislation concerning plant protection and animal nutrition, such as measures for health food production and a clean environment. There are, also, a great number of regulations which regulate trade in relation to quality, health condition, preparation (sorting, packing, calibrating, labelling, etc.). This legislation covers all kinds of meat and meat products (lamb, veal, young beef, goat, pork and poultry), as well as eggs, fruits, vegetables, wine and wine-processed products.

It is also necessary to implement a protective policy and institutional support in the following directions: a) abolishing or, possibly, setting a minimal customs rate for finished products, intended for nutrition, for raw materials which are not produced in the country or are produced in insufficient quantities, b) subsidising the imported substance to the level of the real domestic price and c) applying to exports of finished product restitutions linked to the market price of the exports or providing decreased customs protection from the importing country.

The market policy and the price policy are an integral part of the external trade policy. Its adaptation should be based on the most-favoured-nation clause which is granted by the EU to developing countries. This principle should enable:

- free trade with EU and WTO member countries without any customs or barriers;
- export of products competitive on the external markets and supported with restitutions;
- import of products in short supply, raw materials and equipment at lower prices subsidised by the EU;

- support for the adaptation of agricultural production to European and world standards;
- structural relocation of the production function in accordance with the need, demands and tastes of the consumers inside and outside the integrated regions, etc.

The market policy should be constructed in such a way that it will not accept disloyal competition, but will balance the foreign trade balance. For that purpose, it is necessary to:

- turn non-customs barriers into tariffs;
- decrease subsidies and import barriers through gradual elimination of domestic support for farmers;
- define the necessary import of equipment and raw materials;
- protect the agriculture from unnecessary imports which would unjustifiably burden the foreign trade balance;
- implement world quality standards;
- have an intensive export of quality and healthy goods;
- use the price system, the instruments and the measures of the market policy.

The foreign trade exchange policy of the Republic of Macedonia with the EU and the WTO includes the Agreement on the Implementation of Sanitary and Phytosanitary Measures. The goal of this Agreement is to remove discriminatory measures which limit the access to markets because of not meeting the sanitary and phytosanitary conditions for the import of certain products into certain countries. Preference is given to accepting and implementing international standards which are given by: FAO/WHO Codex Alimentarius Commission (for food quality), Office International des Epizooites (for animal health condition) and the International Convention on Plant Protection (plant health condition and plant quarantine).

In the rural areas there should be a broadening of the content with ecological and recreational activities. Concerning this, we should incorporate EU efforts towards:

- the introduction of organic farming;
- maintaining semi-natural habitats;
- raising Alpine cows;
- promotion of systems of farms with low investment in less favoured areas of high natural value;

- introduction of integrated environmental aspects in the common European market by giving direct payments conditioned with environment provisions; and
- coordination of programmes, etc.

The content of the social policy in agriculture should provide security and greater support for agricultural producers and equalisation of business conditions in the region. A great number of the individual agricultural businesses in the Republic of Macedonia require education and following the modern, technological, marketing and management solutions and doctrines.

The technological solutions do not allow the use of elements and components from unhealthy and polluted food. The need to improve quality, choice of products and production preparation regarding design, packaging, size, etc. is strongly emphasised. The realisation of the agricultural policy prefers strong support from the domestic institutions of the system for the subjects related to the agricultural sector and support from the larger integrated systems in Europe and the world.

Domestic institutional support includes active involvement of the institutions of the system and allocating special budget assets for the stimulation of the development of agriculture. In such support it is very important to include the participation of the Ministries of Economy, Agriculture, Foreign Affairs, Finance, as well as the institution which is in charge of investment promotion, the Chamber, the Bureau of Standardisation, the consulting services and the educational institutions.

It is also necessary to make qualitative changes in the content of the primary business of the trade offices, founded abroad, and of the Agricultural Stock Exchange for agricultural and food products. These should be prepared to accept and implement the modern production systems, entrepreneurship and domestic production.

It is especially important for agriculture in the Republic of Macedonia to be supported by the large integrated systems in the elimination of production and sales-related problems. Special interest should be paid to the principles of the EU and the WTO concerning the approval of concessions in the foreign trade exchange and the use of the most-favoured-nation clause for developing member countries, as well as the use of the assets of the Fund for guarantees and directions in agriculture. The assets of the Fund can help in the regulating of the market and prices and in the carrying out of the measures of structural policy and rural development which are of essential importance for the agricultural reforms and for the prosperity of agriculture in general.

IV. STRATEGY FOR AGRICULTURAL DEVELOPMENT

1. Aims and Options of the Strategy for Agricultural Development

1.1. Aims

The general aims of the long-term agricultural development are presented in the National Strategy for Economic Development of the Republic of Macedonia[36] and they also contain aims which relate to the middle-term agricultural development:

- better exploitation of human and natural resources and their maintenance (density of population, agricultural land, waters, etc.), with a medium intensity and an orientation towards a permanent increase in the competitiveness of the agricultural production;
- better satisfaction of the domestic demand for cheap and high-quality food and export of fresh agricultural products and their end-products in the food-processing industry.

These aims are in effect the aims of the agricultural policy of development.

From the general aims the strategic aims can be drawn, and these could be fulfilled in the five-year, middle-term period.

1.2. Options

In the quoted long-term strategy two options for long-term development were considered. The first one was considered as a projection of newer trends of agricultural development in the county, while the other as an option for development according to possible expected changes in the conditions of development in the long-term period of development. It was approached thus because the extrapolations of recent trends of development did not show any increase. This mainly relates to an improper application of the agricultural policy. As a

[36] *National Development Strategy for Macedonia, Development and Modernization,* Macedonian Academy of Scinces and Arts, Skopje, 1997.

result of this, a similar approach is also suggested for the working out of the middle-term development since the trends still do not show any increase in the existing conditions of development of the agricultural complex for the same reasons. Therefore, the charts presented in the study imply only a visual representation of the direction in which production will retreat if the negative conditions for production remain and if the planned production to 2005 is conducted not on them but on the basis of a prediction of possible changes of technology and financial support for the agricultural policy to 2005 (which can be seen from the presented tables of balanced directing of production by products).

On the other hand, the options of the agricultural policy for agricultural development should be also considered as options.

a. The option of maintaining the current agricultural policy (without any significant changes for the encouragement of agricultural development) and
b. The strategic basis of new measures of agricultural policy by which the aims of the development will be substantially supported, but in agreement with the policies of the EU and the WTO and the specificities of Macedonian agriculture.

2. Strategic Aims, Predictions and Limitations of the Agricultural Development

The strategic aims of the middle-term development must be in compliance with the given strategic predictions in the given time dimension and in accordance with:

a. *Changes in the agricultural structure.* Privatisation of the collective farms and their consolidation as well as a certain increase of land property in the hands of individual farmers (regulation of the minimum size of land parcel as a basis against further partition of the land, as well as reaching decisions on collective ownership).
b. *Financing of the development of countryside and agriculture.* A Fund for Encouragement of Agricultural Development should be established for the stable financing of agricultural development, in two parts, one for financing the measures of the agricultural policy and another for financing new projects through credit payment (from larger credit lines for agricultural development).
c. *The system of trade and price policy* should enable the domestic production prices to project the changes on the domestic as well as the

world market and in relation to this a provision of proper protection for domestic production. Therefore, a new law is necessary on the encouragement of agricultural development, in which the necessary measures will be worked out in compliance with the rules of the WTO and the reforms of the agricultural policy of the EU.

d. Further strategic predictions for the middle-term development are all the other middle-term limitations, predictions and measures suggested in the other parts of the strategy for middle-term development. However, the middle-term strategy cannot change the role of the need for conducting regional development programme and projects for agricultural development in the country.
e. The predictions and the limitations are also worked out according to the particular balance directions of the growth of the agricultural production up to the end of 2005.
f. During the planning of the growth of production by 2005, the economic disturbances as a result of the development of instability in the security of the country have not been taken into consideration.

3. Development of Plant Production

In the next five years big changes in the total scope of the agricultural area or serious alterations in the ration of arable land and pastureland cannot be expected (Table 25).

In 2005, 1,280,000 hectares of agricultural land should be counted on, which is 4,000 hectares less than in 1999, because in our opinion the transformation of infertile agricultural land should start, in accordance with the Area Planning of the Republic of Macedonia. Thus in 2005 a decrease of 3,000 hectares is expected in arable land and in pastures of 1,000 hectares.

The expected exploitation of the agricultural and arable land in 2005 by agricultural business (Table 26) causes possible misunderstanding because of the inclusion of the capacities of the "remaining unorganised state-owned land". Therefore, the totals of the data for the past period in Tables 25 and 26 are not compliant. In Table 25 the total capacity is presented (total land) whereas in Table 26 only the land according to 'sector'.

The total exploitation of arable land represents a movement toward more intensive production, since the plantations of fruit gardens and grapes are increased, while a decrease is expected in meadows. The participation of plantations is up from 7.1% to 8.1%.

3.1. Development of Crop Production

Exploitation of Ploughed Land and Market Gardens

527,000 hectares are foreseen for ploughed land and market gardens, which is a decrease of 1.2% since 1999 (Table 28), while an increase in sowing surfaces is expected (375,000 hectares will be sown, while 152,000 hectares will remain unsown and fallow).

Such planning is based on the assumption that efforts will be made to create a greater motivation in agricultural production by means of measures and instruments such as establishing a fund for agricultural support. The passing of the Fund Establishing Law and the Agricultural Support Law is in the final stage of design and will be in force next year. Greater activity is also expected in providing investments in modernising of mechanisation and in the expansion and construction of food-processing capacities, which will result in a necessity to increase the sources of raw materials (sunflower, sugar-beet, kitchen-garden cultures).

Grain will continue to be the dominant input in the sowing surfaces with 60%, or 225,000 hectares, in contrast to the present 219,000 hectares but with 61% of dominance, an average of 62% for the past five years. In accordance with the resolution on greater satisfaction of the domestic demand for edible and fodder grain production, grain will occupy a greater surface. The surfaces under fodder culture are also increased, in order to provide a greater number of cattle and to replace a part of the import of milk, meat and processed milk and meat. Such a calculation enables an increase in the surfaces under kitchen-garden cultures by 1,000 hectares, industrial cultures by 2,000 hectares and fodder cultures by 8,000 hectares, in contrast with 1999.

The expectations for 2005 are a participation in sowing surfaces of ploughed land and market-gardens of 71% (1999 – 67%) while that of fallow and nurseries will be 29% (1999 – 33%).

In the structure of the sowing surfaces, grains will participate with 60%, the industrial and fodder cultures with 12% each, and the kitchen-garden cultures with 16% (Table 29).

Sowing Structure

The sowing structure is observed through the occupied surfaces of 27 field and kitchen-garden cultures, on whose basis the expectation is formed. A surface divided by groups of cultures (grains, industrial, kitchen-garden and fodder) was initially planned, and later, within the groups, surfaces for each

culture. The illustration of the condition is according to 'sectors' but the projection applies to the total surface of agricultural businesses and individual farms.

With regard to the grain cultures, an attempt was made to increase the surfaces under maize (for fodder) in contrast with 1999, while the surface area under other grains is almost the same as in 1999, since the total surface planned for grain cultures is limited to 225,000 hectares.

With regard to industrial cultures the necessity is explained of limiting the surface under tobacco to c. 25,000 hectares (which would provide production that can be sold on the world market), sugar-beet to 3,000 hectares, which could enable approximate satisfaction of the demand of the Bitola Sugar Factory, and an increase in the surface under sunflower to an estimated 15,000 hectares, which would provide raw material and approximate satisfaction of the demands of the fairly big (recently built) capacities. The total estimated surface under industrial cultures limits the production of industrial paprika to 1,500 hectares and of poppy seeds to 500 hectares, for which there are good conditions and existing capacities for final processing.

Kitchen-garden cultures are planned for approximately the same surface area as previously. Considerable regrouping, i.e. radical changes in the surface planned for certain particular cultures, is also impossible. The intentions should be directed towards stabilisation of the surfaces and elimination of great alterations in the future. There would be a small enlargement of surfaces under paprika, tomatoes, beans and potatoes. We expect the present production of pumpkins to be recorded, since official statistics do not exist, and that it will increase, for which we plan the engagement of 2,000 hectares in 2005, since there is a great demand for this product on the world market.

The surfaces for fodder cultures have been increased, which enables planning on increased surfaces for almost all fodder cultures, particularly lucerne, clover and corn for live-stock feed, as basic food cultures for ruminant animals. We believe that there are conditions and surfaces that will be irrigated in order to be employed for lucerne, an approximately 7,000 hectares larger surface, corn for live-stock feed, approximately 2,000 hectares, livestock beet, 500 hectares, etc.

Yields in Crop Production

The yields prediction is based on the fact that the period to 2005 is comparatively short and therefore larger yields than before 1999 cannot be expected. We believe that the yields can be stabilised and realised (realistically) with a 10-15% increase, which is within the limits of the yields that have been realised in

the previous five-year period. The stabilisation of yields can be expected in accordance with the attempts to improve the agricultural policy, i.e. provide support for agriculture, to harmonise the market prices between the inputs and the agricultural complex products, etc. This can lead to greater interest on the part of agricultural producers in the employment of more suitable technology and production methods. The prediction refers to the average yields from both of the 'sectors' since by 2005 the differences between agricultural enterprises and individual farms, in possession of capacities as well as in production technology, will be reduced.

Total Crop Production

The total production is predicted (calculated) and expected as a result of the predicted employment of the surfaces and the expected yields of the cultures (Tables 33 to 37).

The expected production in 2005 of grain cultures is within the limits of the already realised maximum quantities of production in the last five years, except for maize and rice, where the expected production is greater than the utmost realised in 1995, of maize by 84,000 tonnes, while of rice (according to the realisations in 1997) by 400 tonnes. A similar production of maize can be expected if there is maximum exploitation of the conditions that allow realisation of satisfactory yields in Pelagonija, Polog, the Skopje valley, the Kumanovo valley and other areas. Without increasing the domestic production of protein food, an increase cannot be expected in the number of cattle and in the domestic production of milk, meat, eggs, etc.

A comparatively larger production than previously is expected of all industrial cultures, particularly of sugar-beet, sunflower and industrial paprika. The aim of the planned surfaces for industrial cultures, along with the predicted realistic yields is to allow a higher level of satisfaction of the industrial capacities, i.e. substitution of the import of oil and sugar with the export of tobacco, industrial paprika and poppy seed.

The attempt in the case of kitchen-garden cultures is to increase the production of the main cultures such as potatoes, beans, tomatoes and paprika, but also important are onions and watermelons. Thus, the production of onions is expected to rise by over 25% in contrast to 1999, of tomatoes by over 35%, of paprika by approximately 40%, etc. The increased production of kitchen-garden cultures will allow proper raw materials for the canning industry, but also a better supply of fresh products on the market, substitution of potato imports, export of certain fresh products to the neighbouring countries, etc.

With reference to the fodder cultures, in contrast to 1999, a rather substantial production is planned and expected. Thus a great increase in protein food is expected. The expected increased production of bulk and succulent food can result in an improvement in the satisfaction of demands for livestock products of domestic origin and a substitution of a greater part of the import of protein food (hay is also frequently imported) and of the import of livestock products (particularly meat).

3.2. Development of Fruit Growing Increase of Plantations

In the past five years (particularly in the past three) fruit growing has slowly begun to emerge from a deep crisis, i.e. certain fruits began to be revived – modern plantations were created, more by individual farmers and some by agricultural businesses. For example, morello cherries have been planted on approximately 100 hectares more almost every year by agricultural businesses while much less by individual farmers, apple growing by the individual farmers has increased, the same is the case with peaches, but there is a problem with such intensive growing of apricots because of 'apoplexy' but this problem can be easily overcome by good instruction of the farmers in the matter of the agromechanics and protection from diseases and pests. The farmers (who have plantations on smaller surfaces) have achieved high prices for these cultures in the last few years.

Globally, the small berry fruits have reached a production of 5 million tonnes, while in our country they have almost vanished, except for the strawberry which is grown in small plots in the surroundings of Skopje, Bitola and Ohrid and in other places. This fruit is highly appreciated for several reasons – it ripens early (the strawberry is the first fruit on our markets early in the spring), does not need trained workers, is considered a healthy fruit, is not sprayed with pesticides, can be easily frozen in various forms, in blocks or rolled, and reaches a very high price on the world market. These cultures, particularly the strawberry, the raspberry and the blackberry, should be paid more attention in the future. We would like to mention that these cultures already fruit in the first or the second year after their planting, which means that they return the investment rapidly.

According to the presence of fruit sorts by sectors, (agricultural businesses and individual farmers) the presence of the apple will be 90% in individual farms (Table 39). The new surfaces will be populated by new apple varieties demanded by the western market such as golden and red delicious, Golden

Table 71 – Development plan for fruit production in the Republic of Macedonia to 2005

Number	Region	Type of fruit	Total number of trees average 1995/99	New surface 2005 in hectares	Total number of trees 2005	Average yield from 1 tree in kilos	Production in tonnes to 2005
1.	Big Lakes	Apple		350			
2.	Pelagonian		3,039,000	150	3,539,000	34	120,326
1.	Eastern			150			
2.	Pelagonian	Morello		50			
3.	Skopje and	Cherry					10,413
	Kumanovo		857,000	100	1,157,000	9	
1.	Eastern			200			
2.	Skopje and	Plum					
	Kumanovo		1,505,000	100	1,692,000	20	33,840
1.	Mediterra-						
	nean	Apri-		200			
2.	Skopje and	cot					
	Kumanovo		317,000	200	567,000	23	13,041

Jonathan and its coloured mutants (varieties already present in our country), and the prospective varieties such as braeburn, fuji, piln lady, gala and florina.

The morello cherry, as a second fruit sort, should be present in agricultural businesses with 60% and on individual farms with 40%. With reference to the varieties, the cloudy cherry should be present with over 90% while the grafted varieties such as the Hayman conserve, reksele, celeris 14, etc., with 10%.

Plum growing has been neglected for the past twenty years for several reasons; the varieties which were in regular production started to decay as a result of a swift infection with a viral disease *sharka*, and most affected by this disease was the damson, which was also the most frequent variety in our country, thus a new Stanley variety was introduced and promoted as tolerant, but it turned out to be vulnerable, although less so than the damsel. In the upcoming period the damsel (which has excellent qualities for drying as well as for the production of *rakiya*) should be reintroduced but with its clone resistant to the *sharka* infection.

The apricot is considered the most appreciated stone fruit and on top of this there are limited conditions for its spread in Europe. This culture was present in large plantations of the agricultural businesses (combines), but, as a result

of their transformation, the plantations were abandoned to the degree that at present in our country there is no plantation growing apricots but only small plots on individual farms. The larger quantity, if this can be said, is used fresh, while a smaller quantity is processed into juice in *Zora*, Gevgelija and *Ipoz* Prespa, Resen. It should be mentioned that before the 90s, the largest quantity was exported to Slovenia. This culture is in demand both fresh and processed.

With reference to the berries (Table 72) there are statistical data only for the strawberry but that for the total production and not for the surface employed (such fruit is counted by hectares not by number of plants), however, from the present information, the average yield of 1 hectare is approximately 15 tonnes, and therefore, in the chart of surfaces in hectares, 350 hectares have been counted up to 1999. New larger plantations are planned with the most modern varieties of strawberries which produce 20 tonnes per hectare.

Table 72 – Development of berry production in the Republic of Macedonia to 2005

Number	Region	Fruit sort	Area in ha by 1999	Total Production to 1999 in Macedonia	New surface area to 2005	Average yield t/ha	Production in tonnes to 2005
1.	Pelagonia	Strawberry	350	5,000	50	20	8,500
2.	Skopje and Kumanovo				80	20	
3	Along R. Vardar				30	20	
1.	Pelagonia	Raspberry	–	–	20	8	480
2.	Skopje and Kumanovo		–	–	10	8	
3.	Eastern		–	–	20	8	
4	Western		–	–	10	8	

The raspberry is only grown in individual gardens, thus only 60 hectares are expected by 2005.

According to the statistical data for the Republic of Macedonia, there are 20,000 hectares or 2.9% of total arable surface under fruit plantations of all kinds. The total number of hectares under fruit plantations should amount to 21,720 hectares by 2005, with an additional 1,720 hectares that should be planted with five fruit sorts, i.e. 3.14 % of the total arable surface belonging to fruit growing.

Expected Yields and Total Production

The prediction of yields is based on expectations of applying modern technology in the case of all fruits, stabilisation and a relative fall in prices of repro-material, as well as a rational use of fertilisers, protection instruments and other repro-material. The development of yields in the past years, which does not show an increase in all fruit types, has also been taken into consideration. As can be seen in Table 40, the expected yields in 2005 are somewhat higher than those achieved in the past few years or are equal to the maximal achieved yields in that period (apples, pears, plums, etc.).

The total production according to the planning by types is the following: the production of sweet cherries will remain the same – 3,700 tonnes annual production on individual farms. The production of morello cherries will be increased (at present 3,000 tonnes) to 10,000 tonnes, 60% at the agricultural businesses and 40 % at the individual farms. This planning has been conducted on the basis of the fact that the agricultural businesses have their own processing capacities. The production of apricots should increase from the present 3–4,000 tonnes to 13,000 tonnes in 2005, with over 75% of the production on individual farms. Because of the low interest in quince, its production is planned to remain the same, 900 tonnes on individual farms. Pear production will remain at the same level (because of problem with bacterial rust fungus), with over 90% on individual farms. Plum production is expected to increase by 10%, with the greater amount of production (approx. 88%) on individual farms. Peach production is not expected to increase greatly compared to the present, but the larger amount (approx. 66%) is planned for individual farms. Walnut production remains the same with almost 100% production on individual farms. Finally apple production, from the present 70–80,000 tonnes will increase to 120,000 tonnes in 2005, but with changes in the varieties which are in demand on the European and the Middle East markets. Individual farms will produce 90% of the total production.

3.3. Development of Viticulture

Taking into consideration the situation, the need and the potential for development of viticulture and wine production to 2005, it will be necessary to conduct the following measures:

1. Designing an area plan for regionalising of the varieties, establishing a grapevine land register, determining absolute grapevine localities and creating categorisation of the grapevine units according to the climatic zones of production;

2. Intensifying nursery production of grapevine planting material for reproduction. Introduced virus-eliminated clones from varieties and bases will serve as the foundation for further reproduction of the grapevine, i.e. for production of virus-eliminated clonal grapevine planting material. There will be a reduction in imported grapevine grafts and an increase in the domestic production of grapevine grafts;
3. Providing special grapevine mechanisation and prompting its widespread use. There is a necessity for greater investment in agro-technical measures (fertilisation, irrigation, protection). As a result we can expect increased production from the existing surfaces.
4. Increasing surfaces under grapevine plantations, changing the structure and varieties.

Table 73 – Surfaces with grapevine plantation according to projections to 2005

Year	Total		Agricultural Enterprises		Private Individual Agricultural Economies	
	ha	%	ha	%	ha	%
1999	28,732	100	10,315	35.9	18,414	64.1
2005	31,000	100	9,610	31.0	21,390	69.0

An increase is planned of the surfaces under grapevine plantations from 28,732 hectares in 1999 to 31,000 hectares in 2005 (Table 73). The increase will be conducted on the individual farms. Their participation in the total grapevine plantations will be 69%.

As a result of age and exploitation, in the upcoming period 5,732 hectares will be cleared, while 8,000 new hectares will be engaged. This will result in an additional increase of 2,286 hectares to the total surfaces.

An alteration is planned in the production structure (Table 74). Table varieties will be reduced from 35% to 29%, white wine varieties from 35.8% to 31.5%, while the red wine varieties will be increased from 29.2% to 39.5%. There will be a change in the balance of red and white wine varieties from 45 : 55% to 55 : 45%. Thus, the exploitation of the comparative advantages for red wine production will increase.

The new grapevine plantations will be dominated by varieties which provide raw material for high-quality wines. Greater attention will be paid to the location-variety choice. The possibility will be used for introduction of the production of virus-eliminated clone varieties such as *merlot, cabernet, red burgundy, chardonnet* and others.

Table 74 – Structure of varieties according to projections by 2005

	Table varieties		White wine varieties		Red wine varieties		Total
	ha	%	ha	%	ha	%	ha
1999	10,056	35.0	10,272	35.8	8,404	29.2	28,732
Clearing of unproductive varieties 2000–2005	2,056	35.9	1,992	34.6	1,684	29.5	5,732
Building of new plantations 2000–2005	1,000	12.5	1,500	18.7	5,500	68.8	8,000
Situation in 2005	9,000	29.0	9,780	31.5	12,220	39.5	31,000

5. According to the forecasts, in 2005, the total grape production is expected to be 374,140 tonnes. The wine grape intended for processing will be 237,120 tonnes, while wine production is expected to be an initial 1,541,280 hectolitres.

Table 75 – Production of grapes according to the projections by 2005

Grape category	Surfaces with grape plantations			Yields of grape tonnes/ha	Total yield in tonnes
	total ha	bearing ha	non-bearing ha		
For wine	22,000	19,760	2,240	12	237,120
Table – packed	9,000	8,040	960	13	104,780
Table – waste	9,000	8,040	960	4	32,240
Total grapes	31,000	27,800	3,200	13.4	374,140

The increased grape production will result in greater exploitation of the wine cellars.

6. A Construction is planned of three new wine cellars with a capacity of 4,000 hectolitres each, to obtain competition, improved processing and better placement.

3.4 Balance Course of Plant Production

With the intention of a better-observed presentation of the market offer and spending, we have prepared reviews in the form of balances for approximately ten plant products (cultures), from which, quantitatively, besides the ca-

pacity, production, import and export, also the expenses for different purposes, the level of satisfaction of domestic needs, etc., can be observed. (Tables 76–85.)

The issue of the dependence of Macedonia on the import of wheat is well-known in expert circles. The indolence of all former governments is to be blamed for the situation, since sufficient measures have not been employed to improve the production by a slight increase in the surfaces and also by a slight increase in yields. The balance demonstrates that in the recent period, by 2005, the domestic production will meet 90–95% of the needs. However, in order to accomplish this goal, a slight initiative will be needed, but not a neglect of the sole responsibility toward the producers – to reimburse their harvest promptly and to apply the method of price protection.

Table 76 – Balance between supply and demand of wheat

Index	1996	1997	1998	2001	2005
Surfaces (000 ha)	118	115	114	114	115
Yield (kg/ha)	2,292	2,549	2,961	3,000	3,000
Production (tonnes)	269,303	293,762	336,562	342,000	345,000
Import (tonnes)	58,881	156,976	163,172	39,560	45,340
Export (tonnes)	–	–	–	–	–
At disposal (tonnes)	328,184	450,738	499,734	381,560	390,340
Use					
– for seeds (tonnes)	29,500	28,750	28,500	28,500	28,750
– for fodder (tonnes)	33,200	36,200	40,200	17,100	17,250
– losses (tonnes)	4,266	5,859	6,496	6,840	6,900
– for human food (kg per capita)	137.1	190.2	211.2	160	160
Self-sufficiency (%)	82.0	65.0	67.0	89.6	88.4

Maize as a continental culture, in order to provide satisfactory yields, requires relatively higher air humidity as well as proper irrigation. In the Republic of Macedonia, the appropriate conditions with relatively higher air humidity are regionally limited and cannot be found on the whole territory.

However, according to the balance, by 2005, a great possibility exists to provide an almost satisfactory amount for the domestic demand for maize. This is possible only if the annual sowing is done on a surface of approximately 50,000 hectares with highly productive varieties, which will provide an annual yield of approximately 5,000 kilograms per hectare. In that way the total production of maize would be 250,000 tonnes, which, according to the previous highest demands, would be enough to satisfy more than 95%.

Table 77 – Balance between supply and demand of maize

Index	1996	1997	1998	2001	2005
Surfaces (000 ha)	42,000	40,000	39,000	43,000	50,000
Yield (kg/ha)	3,388	3,910	3,593	4,000	5,000
Production (tonnes)	142,421	157,234	140,949	172,000	250,000
Import (tonnes)	22,458	89,438	54,598	39,700	10,500
At disposal (tonnes)	164,879	246,672	195,547	211,700	260,500
Use					
– for seed (tonnes)	1,680	1,600	1,560	1,720	2,000
– losses (tonnes)	3,296	4,933	3,911	4,234	5,420
– for human food (kg per capita)	159,903	240,139	190,086	205,746	253,080
Self-sufficiency (%)	86	64	72	81	96

Table 78 – Balance between supply and demand of rice

Index	1996	1997	1998	2001	2005
Surfaces (000 ha)	4,156	5,261	4,468	4,500	5,000
Yield (kg/ha)	5,359	4,676	5,072	4,900	5,000
Production (tonnes)	22,274	24,600	22,663	22,050	25,000
Import (tonnes)	1,000	12	–	–	–
Export (tonnes)	989	2,783	6,624	2,500	2,760
At disposal (tonnes)	22,285	21,829	16,039	19,543	22,240
Use					
– for seed (tonnes)	748	947	804	810	900
– losses (tonnes)	232	246	227	220	250
– for human food (kg per capita)	11	10	8	9	10
Self-sufficiency (%)	97	113	141	113	112

Lately the production of rice in Macedonia has been problematic due to the lack of water. In our opinion, 5,000 hectares would be the optimum range of engaged surfaces including the genuine rice fields in the Kocani, Vinica and Štip areas. That range of surfaces with a relatively satisfactory (permanent) yield of approximately 5,000 kilograms per hectare, can provide approximately 25,000 tonnes annual production. Such production, taking into consideration the planned relatively high demand per capita, would allow the Republic of Macedonia (by production) to satisfy its demands creating an additional approximate 20%, which would be intended for export. Therefore, new varieties will have to

be introduced, which would compete with the high-quality Italian and Chinese varieties, also competing on our market.

The production of tobacco is distinguished by strongly emphasised differences according to the year of production, the range of surfaces as well as to the amount of total production. It is also characterised by frequent crises on the world market, which results in piling of the stocks of fermented tobacco (which is the topic of our discussion) for a number of years. Therefore, during the creation of the balance, we used data from the yields according to import and export and the domestic demand, expressed in spent raw material for cigarette production.

Table 79 – Balance between supply and demand of tobacco

Index	1996	1997	1998	2001	2005
Surfaces (000 ha)	11,734	19,296	25,001	22,000	25,000
Yield (kg/ha)	1,313	1,312	1,309	1,350	1,400
Production (tonnes)	15,412	25,308	32,746	29,700	35,000
Import (tonnes)	5,446	4,528	5,670	5,600	5,700
Export (tonnes)	11,234	19,286	27,166	23,956	28,934
At disposal (tonnes)	9,624	10,550	11,250	11,344	11,766
Use:					
– losses (kg)	625	895	1,152	1,059	1,221
– (kg per capita)	4.6	4.8	5.0	5.0	5.0
Self-sufficiency (%)	160	240	344	382	336

Our forecast of the balance in 2005 is based on relative stability of the domestic market, by offering certain possibilities for simplifying the act of purchase, along with stabilisation of the purchase price in order to avoid swift annual changes with the producers in the closing production. If the stabilisation of the range varies at about 35,000 tonnes of annual production, besides the import of 6,000 tonnes, it would be possible to export approximately 22,000 tonnes of fermented tobacco annually, thus providing a large amount of foreign currency.

The sunflower balance demonstrates quite inadequate relations in the implications of the possibilities of satisfying of domestic needs. The issue here is actually about the balance of sunflower, i.e. sunflower oil, but one has to bear in mind that other kinds of oil are of absolutely marginal importance in contrast to sunflower oil. The statement refers to the oil made from oil beet (for which the latter has been grown in Macedonia) as well as maize oil and olive oil.

Table 80 – Balance between demand and offer of sunflowers

Index	1996	1997	1998	2001	2005
Surfaces (000 ha)	16,501	13,196	12,522	13,000	15,000
Yield (kg/ha)	1,248	1,129	1,050	1,350	1,500
Production (tonnes)	20,586	14,902	13,148	17,550	22,500
Import 000 (tonnes)	–	–	–	–	–
Export 000 (tonnes)	–	–	–	–	–
At disposal (tonnes)	20,586	14,902	13,148	17,550	22,500
Sunflower oil:					
Total at disposal	26,586	17,169	24,084	28,790	40,070
– from own raw material (tonnes)	6,793	4,918	4,339	5,792	7,425
–Yield from own raw material (t/ha)	0.41	0.37	0.35	0.44	0.50
Percentage of oil	32.9	33.0	32.9	33.0	33.0
Import of oil and crude oil (tonnes)	19,793	12,251	19,745	22,998	32,645
Kg per capita	21.0	16.7	19.2	25.2	34.5
Self-sufficiency from own raw material (%)	26.0	29.0	18.0	20.0	19.0

Many years ago oil beet was grown on large surfaces, but at present the surfaces have been so decreased that the statistics have not registered this culture at all.

Therefore, there are no objective possibilities of increasing the satisfaction of the domestic market with sunflower oil, and the import of raw oil or of sunflower (raw oil being mainly imported) would be a solution.

The balance indicates that in 2005 the increase of surface area could amount to nearly 60%, compared to the average of 1996–99, as well as the production of sunflower which could increase by 40% (on a three year average), but if an increase in demand is expected as a result of improvement in the standard of living, consequently satisfaction with domestic raw material will once again not be more than approximately 20%. Perhaps the future prospects will extend the assortment of oil-producing cultures, since there is no surface for the sunflower any longer, by the production of soya in intensive regions with higher relative humidity, by introduction of the oil-producing "saffron" culture, which has given good results on experimental plots, and possibly by greater replacement of sunflower oil with olive oil when the plantations in the Valandovo and Gevgelija regions ripen, along with the construction of an industrial unit and a production line for olive oil processing.

The balance of sugar-beet, like sunflower, demonstrates negative results and lacks optimistic possibilities for future improvement. Being a continental culture, sugar-beet in the Republic of Macedonia (after the construction of an industrial unit) could not be expanded on a sufficient surface area in order to satisfy the superior demand of the Republic. The satisfaction therefore cannot attain even 50% of the demand. An estimation of greater expansion of sugar-beet from 2,500 to 3,000 hectares would not be objective since, despite certain measures of the sugar factory, so far the surfaces have remained 2,000 hectares.

Table 81 – Balance between supply and demand of sugar beet

Index	1996	1997	1998	2001	2005
Surfaces (ha)	1,998	2,180	1,784	2,300	3,000
Yield (tonnes/ha)	39.2	33.1	32.6	33.0	35.0
Production (tonnes)	78,278	72,249	58,090	75,900	105,000
Import (tonnes)	7,052	–	–	–	–
At disposal (tonnes)	85,330	72,249	58,090	75,900	105,000
Sugar					
Total at disposal (tonnes)	59,666	29,978	30,950	31,495	34,360
– from own raw material (tonnes)	10,176	9,392	7,551	9,867	13,650
Yield from own raw material (t/ha)	5.09	4.31	4.23	4.30	4.60
Import of unprocessed sugar (t)	49,490	20,586	23,399	21,628	20,710
Kg per capita	34.0	27.9	31.7	35.0	40.0
Self-sufficiency from own raw material	17.0	31.0	24.0	31.0	40.0

In order to satisfy approximately 60% of the domestic needs, we consider the import of raw or processed sugar (their price on the world stock exchanges being inexpensive) to be more economical, rather than attempts at engaging surfaces which can be used for the production of more profitable cultures, more specific for our region.

The resulting effects with reference to the satisfaction of domestic needs are not acceptable, even though the surfaces and yields have been increased, since an actual relative growth of all kinds of consumption is expected.

Tomatoes are an advantage of Macedonian kitchen-gardening, not only as a result of the suitable climatic conditions, but also because of the tradition and skill of the producers. Their expansion (in surface) has been limited primarily because of the irrigation requirements, and next because of competition from a

Table 82 – Balance between supply and demand of tomatoes

Index	1996	1997	1998	2001	2005
Surfaces (ha)	8,706	6,946	6,727	7,200	8,000
Yield (kg/ha)	16,782	16,776	18,687	20,000	22,000
Production (tonnes)	146,103	116,527	125,705	144,000	176,000
Import (tonnes)	712	975	365	1,000	2,000
Export (tonnes)	15,205	16,994	15,211	20,552	28,135
At disposal (tonnes)	131,610	100,508	110,859	124,448	149,865
Use:					
– losses (tonnes)	13,160	10,051	11,086	11,314	12,780
– for human food (kg per capita)	60	45	50	55	65
Self-sufficiency (%)	111	116	113	116	117

great number of kitchen-garden cultures which have similar climatic and production requirements. Therefore, in 2005 a larger surface than 8,000 hectares under tomatoes cannot be expected. It is certain that there will be a boost in the production by the expansion of hot-houses (particularly foil), hence an increased yield of 3–4 tonnes is expected. Such an increased total production, close to 180,000 tonnes, will surpass the demand by approximately 30% in 2005, but with a tendency for larger quantities to be put into the processing production of final products (ketchup, juice, instant soups, instant meals, etc.), while less into the export of fresh products.

Table 83 – Balance between the supply and demand of peppers

Index	1996	1997	1998	2001	2005
Surfaces (ha)	8,611	7,949	7,681	8,000	9,000
Yield (kg/ha)	14,030	12,582	14,403	15,000	18,000
Production (tonnes)	120,813	99,985	110,631	120,000	162,000
Import (tonnes)	2,108	2,348	347	–	–
Export (tonnes)	8,010	13,220	22,646	27,480	66,035
At disposal (tonnes)	114,911	89,113	88,332	92,520	95,965
Use:					
– losses (tonnes)	9,193	7,130	7,066	7,402	7,677
for human food (kg per capita)	53.3	41.4	40.4	41.4	41.9
Self-sufficiency (%)	105	112	125	130	169

The paprika is an important product of Macedonian farmers for reasons similar to the tomato. There is no space for larger expansion in the future and in our opinion approximately 9,000 hectares of surface under paprika is a real forecast. However, there is space for an improvement in the variety assortment and the technology in order obtain a yield of 18,000 kilograms per hectare. If these parameters are achieved, an increased production can be expected in 2005, which would be 70% greater than the domestic demand and would provide almost 70,000 tonnes export surplus.

The apple is an important product for Macedonia, since the good conditions in certain areas provide fairly high-class quality. It is not by chance that in the past plantations were built which provided a production twice as great as the domestic demand for fresh apples.

Table 84 – Balance between supply and demand of apples

Index	1996	1997	1998	2001	2005
Number of productive trees (000)	2,544	3,038	3,138	3,120	3,540
Yield per tree (kg)	26	25	20	26	34
Total production (tonnes)	65,399	76,602	61,663	81,120	120,360
Import (tonnes)	–	–	850	–	–
Export (tonnes)	35,622	40,399	19,055	37,980	71,929
At disposal (tonnes)	29,777	36,203	43,498	43,140	48,431
Use:					
– losses (tonnes)	1,489	1,810	2,135	2,157	2,411
For human food (kg per capita)	14.3	17.2	20.2	20	22
Self-sufficiency (%)	220	212	142	188	167

The underdeveloped fruit-processing establishment has not been able to accept the total market surplus for years, hence the producers have been facing difficulties with the realisation of the yield. Focusing on export is the only solution, but often the placement of the apples is totally missing. A proper measure would be to precondition the import of tropical fruit with the export of apples, thus, if the measure was obeyed, there would be no difficulties with the export of apples.

A relatively low increase of plantation trees is expected up to 2005, but with a yield of 34 kilograms per tree, a production of 120,000 tonnes is expected, which, considering the spending of 22 kilograms per capita, provides 70,000 tonnes for export.

Table 85 – Balance between supply and demand of grapes

Index	1996	1997	1998	2001	2005
Productive vines (ha)	27,254	27,300	27,257	27,500	27,800
Yield (kg/ha)	7,871	9,464	8,936	9,000	13,458
Total production (tonnes)	214,513	258,360	243,567	247,500	374,140
Import (tonnes)	–	444	461	–	–
Domestic need for table grapes (tonnes)	17,252	13,580	11,256	12,306	14,455
Export (tonnes)	12,166	19,790	12,640	15,120	75,000
Processed grapes into wine (tonnes)	185,095	225,434	220,132	220,074	284,685
Wine					
Production (000 l)	101,030	95,800	122,710	144,828	154,100
Wine yield (l/ha)	3,707	3,509	4,502	6,266	5,543
Import (000 l)	2,140	923	–	–	–
Export (000 l)	71,414	65,310	102,576	103,688	107,702
Use (000 l)	31,756	31,413	20,132	41,140	46,398
Litres per capita	16.0	15.7	10.0	20.0	22.0
Self-sufficiency (%)	318	305	609	352	332

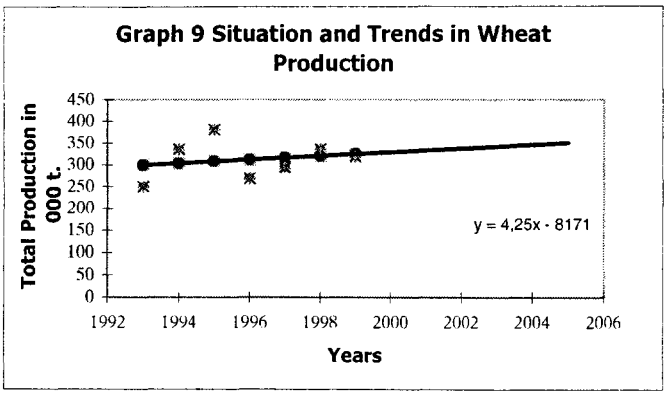
Viticulture, and wine production even more, is of significant importance for Macedonia, since it allows exploitation of the climatic advantages for the creation of major export contingents of grapes, and particularly wine, which could become a recognised feature of Macedonian agriculture on the world market.

In the coming years a systematic increase of surfaces under grapevine plantations is expected, thus in 2005 there will be nearly 28,000 hectares of productive grapevines, or a total of 31,000 hectares. It is obvious that the viticulture, measured in surface area, is returning to the position which it held 10–15 years ago, except this time with a quality-improved assortment and a larger participation of wine-producing varieties.

The balance demonstrates that, if in 2005 a grape production of 370 million kilos and wine production of 150 million litres is accomplished, more than 70 million kilograms of grapes and 110 million litres of wine can be exported. Besides, the production of wine has over-satisfied the demand by 3.32 times, considering 22 litres per capita annually.

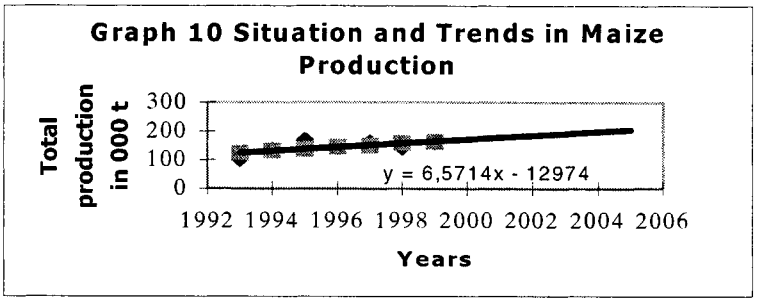
The development chart of domestic production and the expected tendencies for 2005, on the basis of extrapolation of the trends, for the ten or so major cultures demonstrates an expectation of an increase of the greater number of cultures (Charts 9–12).

There is a slight increase in the production of *wheat*, as a result of relatively minor annual variations. The developments from 1992 to 1999 are within the limits of 250,000 to 380,000 tonnes, but most often the production varies around an average of 300,000 tonnes. By accomplishing a wheat production of

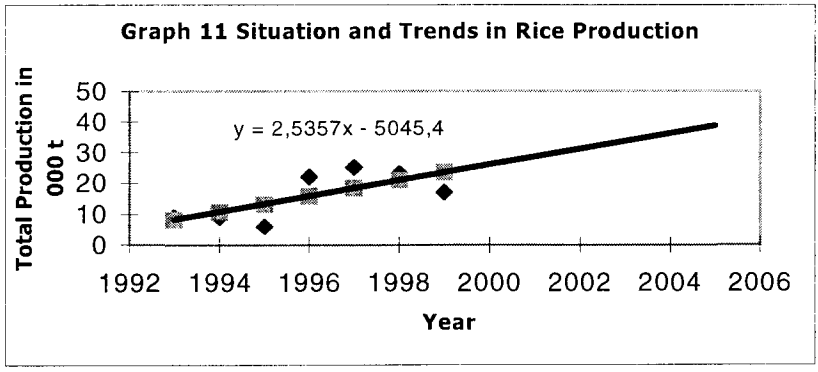


350,000 tonnes annually, there could be provided a 90% satisfaction of domestic demands, which would seriously improve the import-export balance of the agro-complex.

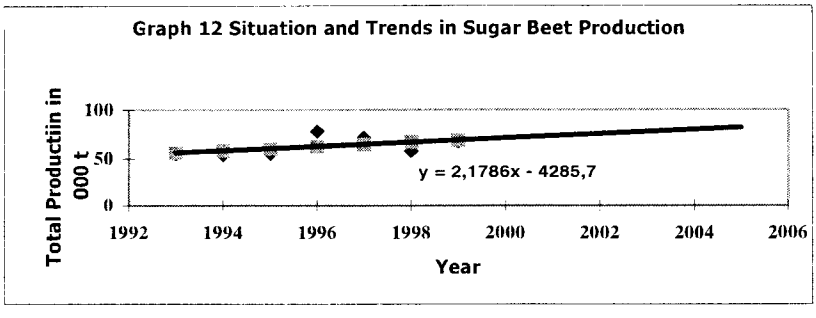
The chart for *maize* production illustrates an emphasised tendency to an increase, since, after the independence of the Republic of Macedonia, the supply of maize on the Macedonian market (and of protein food in general) has become a problem, as a result of which the domestic production has increased, mainly on the basis of an increased range of surface. We expect the tendencies to continue and that the annual production would increase also on the basis of increased yields, as a result of the introduction of new high-productive varieties, improved technology, etc., thus in 2005 a production of approximately 250,000 tonnes could be expected.



In reference to *rice*, the problem of a lack of water for rice production, when the surfaces and the production were seriously reduced, overlapped with the start of our research (the beginning of the 90s). The situation improved after 1996, when the total annual production rose rapidly and by the end of 1999 there had been slight variations with a tendency to an increase which, objectively, by 2005 could not be larger than approximately 25,000 tonnes rice annually. We expect that the surfaces under rice will be pressured by demands for the expansion of fodder cultures for livestock breeding, namely forage maize, lucerne, livestock beet, etc., which are grown on irrigated surfaces, certainly within the limits of a financial profit which would undoubtedly be greater through the production of milk and meat rather than rice.

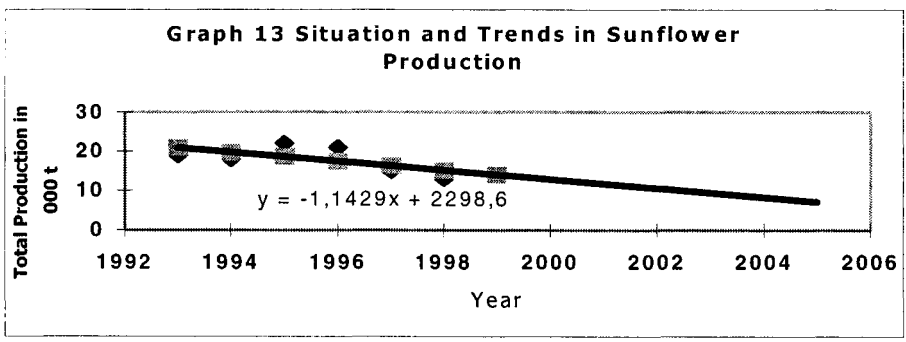


Sugar beet. Sugar beet for the domestic demand of sugar is one of the most important deficient cultures. It is known that we have almost never succeeded in providing raw material for the single sugar factory from primary production, and have always either imported raw sugar or it worked at only 30–40% of its capacity. The prospects seemed good when the factory and the surfaces of

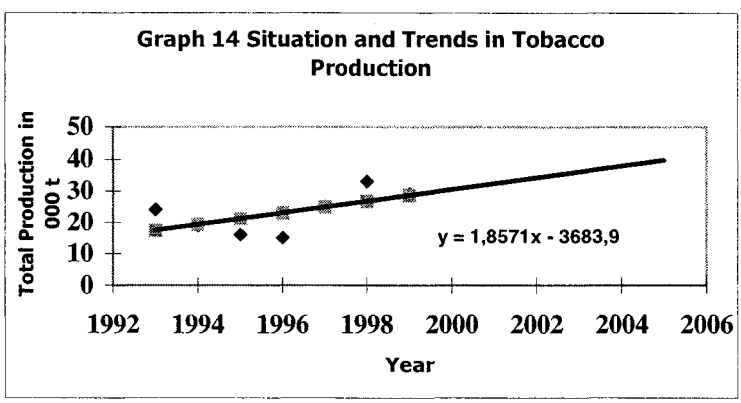


the Bitola agriculture enterprise *Pelagonija* were both part of one enterprise the *Pelagonija* Agricultural and Industrial Enterprise, but since its disintegration, the supply of raw material has become a problem. The tendencies shown on the chart move towards an increase in the total production of sugar-beet.

Sunflower. The trend movement of the total production is highly negative, as can be seen from the chart. The interest in the production of sunflower has been falling, probably as a result of the low price, as well as the import of raw oil, of processed oil and the orientation of consumers towards olive oil, corn oil and other kinds. Nevertheless, we believe that the sunflower processors (there are several industrial units for the processing of sunflower and several workshops for the cold processing of sunflower oil) can establish more secure relations with the producers for a common interest and to provide increased production of raw material from 20,000 to 25,000 tonnes of sunflower oil by 2005.



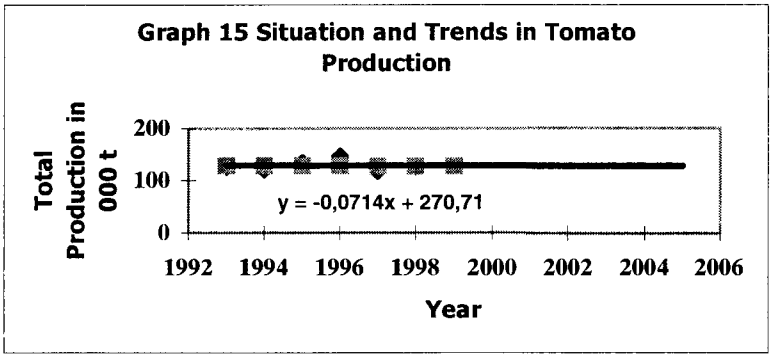
With reference to *tobacco*, despite the relatively considerable changes of the range of production in the last decade, the trend shows a positive movement



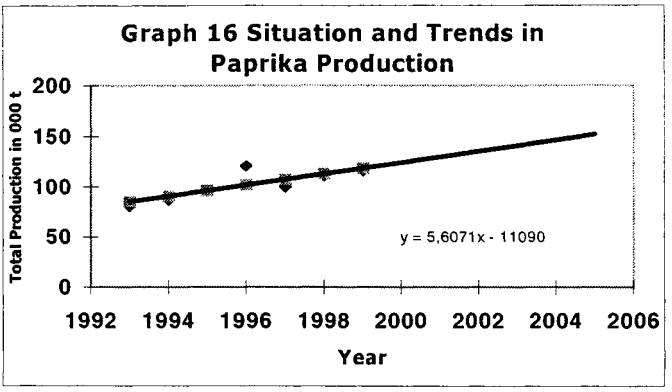
and an increase, which meets our forecasts of producing 35,000 tonnes of tobacco in 2005.

Tobacco is an exceptionally important culture, because both as a raw material for industry as well as semi-processed material for export, it provides the highest value of export in comparison with other agricultural and food products and drinks. Tobacco is one of the products which allows the agro-complex to reduce the disproportion between the value of imports and the value of exports.

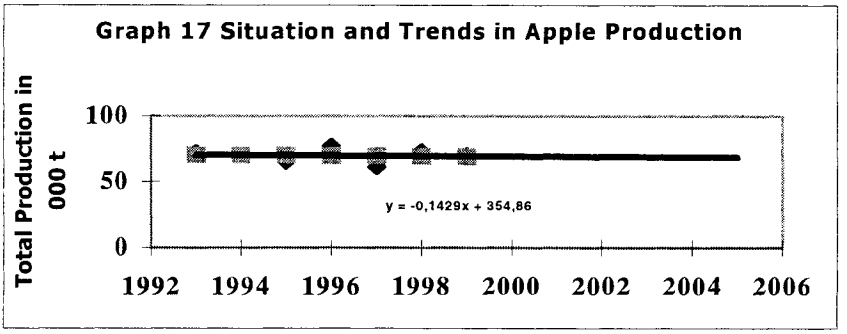
With reference to *tomatoes* the trend demonstrates a slight decrease of production in the future, as a result of the rapid fall in production after 1996, that is from 146,000 tonnes to 116,000 tonnes the following year, and two years after to below120,000 tonnes annual production. We believe that there is an objective basis for an increase in tomato production, since, besides the existing capacities for the processing of ketchup, juice, etc., new capacities based on tomatoes as raw material are being constructed and put into operation, thus an increased demand for tomatoes is expected both fresh for consumption (for export to Serbia, Bosnia and Croatia), particularly the early yield, as well as for processing.



With reference to *paprikas*, the trend demonstrates a rapid growth since, during the period from 1992 up to the present, year by year, the range of production has been increasing, thus in 1999 it was 43% greater than in 1992. Similarly to tomatoes, there will be a greater demand for paprikas for processing, since a development of the processing capacities is expected as an immediate result of the development. The production of paprikas will also be required for fresh consumption, including the export to the neighbouring countries.

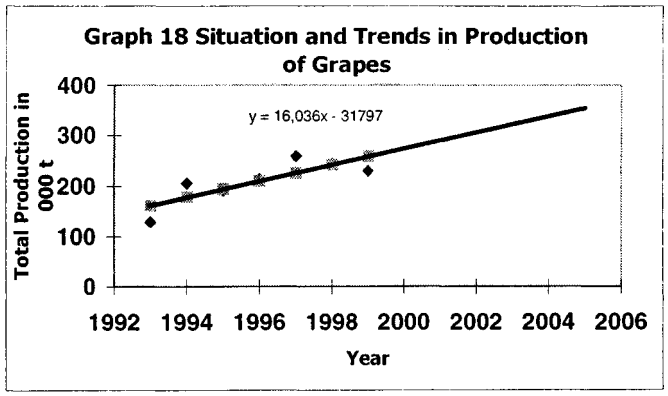


With reference to *apples*, in the last ten years, there has been a relatively steady annual production, but on an inexcusably low level, between 60 and 75,000 tonnes, which is below the conditions and potential of Macedonia. The negative situation has been a result of the problems of irregular export, which is a result of bad advertisement, not of over-satisfaction of the market. There are prospects of an increased production of apples for the processing of juice and other products, since the processing industry is also expanding in Macedonia, therefore in 2005 a production reaching 120,000 tonnes is expected.



With reference to *grapes*, the trend on the chart shows a rapid, emphasised tendency of growth as a result of the low basis in 1992 of only 128,000 tonnes of grapes. A growth of over 200,000 tonnes can be noticed (1994–2005), and finally towards the end of this period, a gradual increase is shown annually. We believe that in viticulture (including wine production) the chances of increased production are relatively greater. New wine cellars are constantly being built, the export of bottled wine is constantly increasing and high-quality raw

material is in ever greater demand. The expectations of production in viticulture are of 374,000 tonnes of grapes in 2005.



4. Development of Livestock Production

When considering the time trends of the most recent mid-term period, with regard to the progress of livestock production, it has been observed that:

- in connection with cattle-breeding there is a positive trend, but only in respect to the production of cow's milk. On the other hand the growth production, i.e. that of meat production, has been falling, and, with this, the deficit of milk and beef in the country has not been reduced;
- in connection with sheep-breeding, there has been a shattering fall in production of milk as well as in the growth production, i.e. the meat production, which is why the survival of sheep-breeding is threatened, and sheep-breeding is one of the necessary businesses in food production, with its use of pastures and its being a means of employment for the population of the underdeveloped regions;
- in connection with pig-breeding there is a cyclical decrease in the growth production, i.e. in the production of pork, in spite of the considerable demand which, for the most part, is being covered by import;
- in connection with poultry production there has been a slight fall in egg production and the production of poultry meat only in regards to butchering and exploiting of the very productive egg-laying-hens, and a lack of organised production of chicken meat, so that here too the demand is being covered by import.

This is why the middle-term strategy for livestock production development has to concentrate on the realisation of the global development programme, and facilitate balanced redirection of production (in accordance with the supply and the demand), presupposing improved conditions and measures in order to provide a boost and to alter the path of the negative trends, putting them on the right track, towards an expanded production of all livestock products. Otherwise livestock production, within some of its branches or as a whole, will continue to decline and to harm the total development of the agro-complex.

Bearing this in mind, the livestock production development strategy for the forthcoming middle-term period, will be based upon the programmed balance of the market supply and demand[37] and the presumed improved conditions for development to 2005, with regard to production of all major livestock products such as: 1) cow's milk, 2) beef, 3) mutton (lamb), 4) sheep's milk, 5) unwashed wool, 6) pork 7) poultry meat and 8) eggs.

4.1. Production of Cow's Milk

The development of cattle breeding is of great importance, not only because they increase the production of meat and milk, but also they have a much wider use. Firstly, the substantial import of milk and dairy products could be decreased, and secondly, the development of cattle breeding contributes to the development of plant production in all regions, with a special engagement of the agricultural producers in the underdeveloped areas of the country.

1. Important Projections for the Production of Cow's Milk

- It has been estimated that, according to the projection in Graph 2 with respect to the expected production of cow's milk to 2005 and the average yield from the two groups of the economy, this can reach a total of 227 mil. litres or 2,400 l per milk cow. This will be realised, mainly through the import of high-milk-yielding heads by private producers and a slight increase of milk cows within the enterprises (whose milk-yielding capability will be kept to 4,300 litres). To increase the milk-yielding capability of the cows, there has to be an implementation of the Programme for Selection of the Holstein-Frisian genotype[38] (Table 86).

[37] As an example taken from the mid-term programmes of the Central and Eastern European Countries (CEEC) – candidates for membership in the EU. (Slovenia has already produced two of these: *Agricultural Situation* and *Prospects in the Central and Eastern European Countries – Slovenia* VI/1995 and V/1998.)

[38] *National Breeding Programme for Cattle-Raising in the Republic of Macedonia – period 2000–2009,* Ministry of Agriculture, Forestry and Water Economy, Skopje.

- The projections on the increase of milk and meat production, are in the same path as the projections for increase in the production of fodder, (except that there will have to be a continuing import of certain quantities of corn).
- In accordance with the increase of the production of cow's milk, there will be a possibility for a decrease in the import of milk and different dairy products, with a special accent on fresh milk and milk powder.
- To create a stimulative and profitable domestic market for milk, the producers have to be suitably protected from disloyal competition in connection with the import of milk and milk powder and to allow for a financial boost of production with proper financial compensation per litre of milk produced (according to the model, the experience and rules of the EU).

2. Projections and Programme of Cow Milk Production to 2005

The balance shows us that the use of cow's milk needs to be stabilised at the level of 1998. We shall see a slight rise of milk yields by the end of 2005 and the number of milk-cows, even by the end of this year, will be stabilised at the level of 94,000, and in accordance with this, there will follow a process of substitution of the used and unproductive breeds of head of cattle within the private farming economies.

Table 86 – Projections and balance of supply and demand for cow's milk

Cow's Milk	1996	1997	1998	2001	2005
Milk cows (000 head)	95.0	95.5	91.3	94.0	94.0
Yield (l per milk cow)	1,406	1,396	1,902	2,150	2,400
Total production (mil. l)	133.5	133.3	173.7	202.1	225.6
Export (ekv. milk) (mil. l)	0	0.6	0.2	2.3	3.8
Import (ekv. milk) (mil. l)	55.5	47.0	69.9	46.3	24.4
At disposal(mil. l)	189	179.7	243.4	246.1	246.2
– for fodder (mil. l)	9.5	9.0	12.2	13.4	14.8
– losses(mil. l)	3.0	3.0	3.0	3.0	3.0
– for processing (mil. l)	24.0	22.0	23.0	25.0	25.0
– for consumption (mil. l)	152.5	145.7	205.2	204.7	207.2
Litre per capita fresh (+ processed.)	77 (89)	73 (84)	102/113	101/113	102/114
Self-sufficiency (%)	71.0	75.0	71.0	82.0	92.0

Source: SG RM/98, 99; MAMA-Project, 2000, Skopje and our own evaluations.

4.2. Beef Production

Once again the production of beef, for the following middle-term period, will largely depend on the development of the milk-yielding herds of cattle, without any special preference being given to milk-yielding cattle or cattle intended for slaughter.

1. Important Assumption on Beef Production

According to the last three years and the current middle-term trend, the total number of cattle is falling slightly (from 295,000 to 267,000 head) and the ratio of slaughtered heads of cattle is very small (approximately 18% of the total number of cattle), and, as a possibility to raise the production of beef, there has to be an increase of the ratio to 24% by the end of 2005.

The average weight of the slaughtered head (maximum 300 kg live weight or 150 kg carcass) is also a small figure, thus it is estimated in creating economic interest among the producers, that this figure could be raised at least to 400 kg live weight, i.e. 200 kg carcass (in hales). To accomplish increased beef production, programmes for fattening the calves of milk-giving breeds and half-breeds need to be conducted among the *busha* and the thoroughbred breeds of cattle. (Table 87)

- This kind of increase could be satisfied by the anticipated rise in forage production, but only if the required corn has been provided by import.
- In accordance with the rise in production of beef it will be possible to reduce the import of meat, on the assumption that the consumption will not undergo any major changes.
- As with the production of milk, for beef also there needs to be formed a profitable market for the producers, more precisely they need to be protected from the disloyal competition of meat imports and they need financial help for the fattened cattle (according to the model of the EU).

2. Programme and Projections for the Production of Beef to 2005

With the achievement of the assumed conditions, the producers from the two groups of agricultural economic sectors will be involved in the increase of the production of beef, so that the import could be significantly reduced, i.e. the self-satisfaction of the needs will increase by means of their own production.

Table 87 – Projections of the balance between supply and demand of beef

	1996	1997	1998	2001	2005
Cattle (000 head)	295	289	267	275	290
Total slaughtered(000 head)	55	57	64	65	70
Average weight per slaughtered head (kg. live weight.)	224	280	338	270	400
Average weight per slaughtered head (kg. of meat)	122	140	169	135	200
Production (000 t)	6.7	8.0	7.1	8.8	14.0
Import (000 t)	7.7	7.9	9.1	8.4	6.1
Export (000 t)	0	0	0	0	0
Consumption (000 t)	14.4	15.9	16.2	17.2	20.1
kg per capita	7.1	8.0	8.1	8.5	9.7
Self-sufficiency (%)	47.0	50.0	44.0	51.0	70.0

Source: SG RM/98.99; MAMA–Project and our own evaluation.

4.3. Pork Production

Pork, as well as poultry meat, regardless of the negative trend in the preceding middle-term period, in comparison to the production of beef, would certainly be much easier to produce, achieving a high degree of self-sufficiency in its consumption.

1. Important Projections for the Production of Pork

- An increase in the production of pork could be easily attained if there is an existing profitable market for the producers as well as a favourable import of corn; insufficient use of pork-breeding facilities incorporated within the agricultural enterprises, which account for nearly 50% of the total growth, and with 95% of the market quantities of fattened pigs in the country; highly-productive breeds of pigs (Landras and the Big Yorkshire); and if professional, trained personnel is employed, i.e. people who know how to put forward very useful ways of producing pork. Here, also, the development of family farms will not lag behind.
- For this reason, there is a need for protection from disloyal import competition in pork, providing duty-free import of corn, crediting and granting financial support of the pig-breeders (in accordance with the model of the EU) (Table 88).

2. Projections and Programme for Production of Pork to 2005

Table 88 – Projections of the balance between supply and demand of pork

	1996	1997	1998	2001	2005
Total No. pigs (000 head)	197	184	197	207	225
Total slaughtered pigs (000)	170	156	107	165	200
Average weight (kg/head)	55	55	82	70	75
Production (000 t)	9.4	8.7	8.8	11.6	15.0
Import (000 t)	4.7	4.3	6.0	3.8	2.0
Consumption (000 t)	14.1	13.0	14.8	15.4	17.0
kg per capita	7.1	6.5	7.4	7.6	8.2
Self-sufficiency (%)	67	67	59	75	88

Source: SG RM/98, 99; MAMA–Project and our own evaluation.

4.4. Production of Sheep's Milk

Viewing the current middle-term trend it is noticeable that, contrary to the other branches of livestock production, sheep-breeding in regard to all its three products (milk, meat and wool) has the highest negative trend. However, conditions for redirection towards increased sheep-breeding production must be made in order to keep the population remaining in the villages and for them to be able to use the riches of the pastures in the country.

1. Important Projections

- Sheep's milk, being a raw material for the making of specific types of cheese (white or regular cheese) deserves special care in order to boost sheep-breeding according to the EU model (Table 89).
- Sheep's milk has almost disappeared from the market, because white and regular cheese is being produced from it even in the sheepfolds and the sheep-pens on the mountains and 93% of the total production is produced by private producers who live in the underdeveloped regions.

2. Projections and Programme for Sheep's Milk Production to 2005

Table 89 – Projections of the balance between supply and demand of sheep's milk

	1996	1997	1998	2001	2005
Milking sheep (000 head)	1,232	1,148	922	968	1,065
Yield (lit/head)	43	43	43	43	43
Production (mil. l)	53.0	49.4	39.6	41.6	45.8
Import for white and regular cheese milk equivalent (mil. l)	4.4	4.0	3.2	3.2	3.6
Loss (mil. l)	1.1	1.0	0.8	0.8	0.9
Processing milk eqv. (mil. l)	56.3	52.4	42.0	44.0	48.5
kg white or regular cheese per capita	7.1	6.6	5.2	5.4	5.9
Self-sufficiency (%)	92	93	93	93	93

Source: SG RM/98, 99 and our own evaluation.

According to the balance sheet we can see that in the forthcoming middle-term period, as a result of an enormous drop in the number of milk sheep (unofficially in 1999 the number dwindled to 848,000 head), sheep-breeding will also face a hard time in relation to milk production. But a general characteristic of the balance is the fact that sheep's milk is commonly used for the production of white and regular cheese, with which the domestic consumption is 93% satisfied.

4.5. Production of Lamb, Mutton and Wool

1. Projection for Production of Lamb and Mutton

With respect to the production of lamb and mutton, along with the mentioned assumptions for increased milk production, support for the organisation of sheep-breeding reproduction, on three levels[39] within the breeding pyramid, has to be made, in order to determine the path and the action, with regard to the development of sheep-breeding, in two courses, sheep-breeding for milk and meat, and sheep-breeding for meat and wool:

- The first level should take two nuclei of pure breeds, each with a number of 1000 sheep and 5 ennobled breeds (Wittemberg for meat and wool, and the Chios-Sardinian breed for meat and milk production);
- The second level should take into consideration domestic flocks of sheep, half-breed F1 Generation: for production of meat-and-wool and milk-and-meat, each having 40,000 sheep and 160 ennobled sheep-breeds, to produce male breeding-sheep needed to cover the flock production.

[39] *Ibid.*, footnote 9.

- The third level consists of dividing the productive flocks of sheep in two equal groups, for meat-and-wool and milk-and-meat production, each consisting of 35,000 male breeding-sheep (75% blood) to artificially inseminate up to 800,000 sheep of domestic origin;
- This Programme was intended to be implemented in 4 years' time, but there are still problems and dilemmas concerning it. Nonetheless, as we possess institutions and professional personnel who can handle its implementation, it can be achieved if not in the following mid-term period, in some longer interval. One of the dilemmas is the possibility of dividing the production flocks in Macedonia into two equal parts – according to courses. For this mid-term period, it is evident that the course of production of milk-and-meat is more profitable to the producers, bearing in mind the influence of the indifference of the textile industry and their indeterminate exploitation of domestic wool, this course of production calls for intervention[40];
- The revoking of the EU prohibition on import of lamb being one of the main reasons for the recent cutback in the number of sheep, also contributes to the producer's decision to choose the course of milk-and-meat production.

2. Projections and Programme for Lamb and Mutton Production to 2005

Table 90 – Projections of the balance between supply and demand of lamb and mutton

	1996	1997	1998	2001	2005
Total sheep (000 head)	1,814	1,631	1,315	1,358	1,380
Total slaughtered(000 head)	950	660	560	520	690
Average weight (kg/head)	10	10	10	10	10
Production (000 t)	9.5	6.6	5.6	5.2	6.9
Losses (000 t)	0.5	0.5	0.4	0.5	0.5
Export (000 t)	2.1	0.9	0.8	2.4	2.8
Consumption (000 t)	6.9	5.2	4.4	2.3	3.6
Kg per capita	3.5	2.6	2.2	1.1	1.7
Self-sufficiency (%)	120	120	117	186	168

Source SG RM/98, 99; MAMA-Project and our own evaluation

[40] The authors of the quoted study have come to the same conclusion – footnote 37, and proposed one other variant in choosing a course towards milk-and-meat production, with the engagement of nucleus-level reproduction with ennobled sheep instead of Chios-Sardinian sheep of the *avas* breed.

When viewing the balance of the supply of lamb and mutton we can notice that domestic consumption is adapting itself to the export of lamb. Therefore, when the export is rising, domestic consumption decreases and, because there is no import, the self-sufficiency is rising by over 100%. However, the bulk of the market supply equals about 70% for lamb, and 30%, for mutton.

3. Projections and Programme for Production and Use of Wool to 2005

Table 91 – Projections of the balance between supply and demand of wool

	1996	1997	1998	2001	2005
Total sheared sheep (000)	1,545	1,385	912	1,630	1,656
Yield (kg/fleeced sheep)	1.6	1.9	1.5	1.8	1.9
Production (000 t)	2,473	2,631	1,732	2,934	3,146
Import (000 t)	749	823	...	800	800
Export (000 t)	158	1,480	...	1,500	1,500
Processing textile industry (000 t)	1,241	1,434	...	1,500	1,500
Domestic processing and reserves (000 t)	325	540	...	734	734

Source: SG RM/99 and our own evaluation.

It is very difficult to compile the balance between supply and demand for domestic wool because there is no relevant information at our disposal. (Table 91) Nonetheless, from the data that can be obtained we can conclude that the domestic textile industry avoids the use of domestic wool, with the excuse that its quality is not fit for their use and that higher-quality wool is preferable. On the other hand there seem to be possibilities for the export of the domestic wool, but, because of its bad quality, only a very low price can be reached (1997 – 0.5 kg/ $, while for example, imported combed wool, costs the domestic industry 6.9/kg $). That is why, the bigger quantity intended for production unavoidably stays on the farms or as material reserves in the Bureau. As a result of this, the worked-out technological resolves for sheep-management have to be implemented.

4.6. Production of Goat's Milk and Goat Meat and Goat-Kid Meat

The number of goats in the Republic of Macedonia is only an estimation on the part of experts without any satisfactory indicators. It is estimated that by 2005 the total number of goats will be c.200,000 head. The production potential of the existing population with the anticipated activities of the National Rearing Programme for Goat-breeding in the planned period will make an increased

goat production possible through crossing the alpine and *Saansk* breeds. This would mean an increase in milk-yield per goat from 150 to 173 litres or a total quantity of 30,000 tonnes of goat's milk per year. Estimating the average fertility rate of the existing population at 1.5 kids per goat, while discounting the servicing of breeding and losses, the annual production of goat meat for the market would amount to c.1,000 tonnes in the projected period.

4.7. Poultry Egg and Meat Production

1. Egg Production

Analysis of the situation in poultry-production in Macedonia shows that the higher place in the hierarchy is reserved for egg-laying hens and for egg-production. Nevertheless, it has to be emphasised that the hens are concentrated within the poultry-farms of the Agricultural Enterprises and that they participate with 50% in the total production, with 100%, however, in the purchase. The private production of eggs has a different character and a different quality, thus the greater part of the production is being used for private consumption and a smaller part sold on the so-called village retail markets.

2. Important Projections for the Production of Eggs

- According to the trend in Graph 7, the production of eggs is slightly falling. This does not mean that the domestic consumption is also falling, but means the export has decreased slightly.
- Therefore egg-production within the poultry farms in the enterprise sector, besides their satisfying the domestic market, is also orientated towards export. This is why there is a need for protection from disloyal competition with regard to the egg-exports of domestic farmers, for providing duty-free import of corn and other ingredients for fodder concoctions, and for providing financial support for the big hen-breeders and egg producers.
- The poultry farms within the enterprise sector will finally be privatised and consolidated, and they will need better conditions to improve their production of eggs, if they have at their disposal insufficient us of facilities and a lack of the personnel to improve the use of them.

3. Projections and Programme for Production and Use of Eggs to 2005

The balance sheet between the supply and demand of eggs shows a growth in the export, in egg-processing (from which, a substantial part could be kept in store for larger exports) and in the domestic consumption of eggs, through which

Table 92 – Projection of the Balance Between Supply and Demand of Eggs

	1996	1997	1998	2001	2005
Egg-laying hens (mil.)	3.06	2.86	2.94	3.00	3.50
Yield (eggs/egg-hen)	142	149	160	170	180
Production – eggs (mil.)	434.6	425.9	470.8	510.0	630.0
Export – egs (mil.)	26.9	24.3	25.6	37.0	50.0
Loss – eggs (mil.)	9.0	8.5	9.4	10.0	13.0
Processing of eggs (mil.)	81.4	49.6	94.1	104.1	194.8
Consumption of eggs (mil.)	317.3	343.5	341.7	358.9	372.2
Eggs per capita	160	172	170	175	180
Self-sufficiency (%)	107	106	105	107	108

Source SG RM/99 and our own evaluation.

the poultry farms, within the enterprise sector, would basically have to increase their production of eggs in the forthcoming mid-term period (Table 92).

The balance between the supply and demand of eggs is the only balance among the stock-breeding products showing a surplus.

4. Production of Poultry Meat

Projections and Programme for Production of Poultry Meat to 2005

Table 93 – Projection of the Balance Between Supply and Demand of Poultry Meat

	1996	1997	1998	2001	2005
Egg-laying poultry in production. (mil.)	3.36	3.27	3.34	3.58	3.65
Egg-laying poultry – slaughtered, number in (mil.)	5.56	4.82	4.96	5.31	5.80
Egg-laying poultry slaughtered for meat (000 t)	5.78	5.01	5.16	5.64	6.03
Broilers slaughtered for meat (000 t)	0	0	0	1.03	5.00
Production (000 t)	5.78	5.01	5.16	6.67	11.03
Import (000 t)	16.73	15.85	16.44	15.47	10.47
Consumption (000 t)	22.51	20.86	21.60	22.14	21.50
kg per capita	11.4/4.5	10.4/4.3	10.7/4.4	10.8/4.6	10.4
Self-sufficiency (%)	26	24	24	30	51

Source: SG RM/999; MAMA–Project and our own evaluation.

When constructing the balance between supply and demand for poultry meat, a contradiction has arisen between the information from the Statistical Institute and that from the MAMA–Project. Firstly, the latter source shows

almost twice as high domestic production of meat (which should be taken into consideration with a certain reserve) and secondly, this same source shows almost three times less import of chicken meat, which is unacceptable, because the Statistical Institute clearly shows the import through the sums incorporated in Table 93. This is why the balance sheet shows two different figures in connection with the kg per capita relation, the first is that which has been recognised and the second one is according to the MAMA – Project. But if we recognise the information with regard to domestic production of poultry meat originating from the Statistical Institute, as that which is more accurate, then the balance would show a certain difference, i.e. the relation per capita would be located between the two pieces of information in the balance sheet.

No matter how we take this information into account the facts show that the production of poultry meat does not, even remotely, satisfy the needs. Only after organising a prompt broiler production of poultry meat in the country will there be a chance of fast meeting of the huge deficit. Within the balance sheet there have been incorporated the primary quantities of broiler poultry meat for 2001 and 2005, according to the information of the PILKO Company. Other than this, a lot can be done if we follow the path of satisfying the domestic market, provided that we have all the conditions (professional personnel and facilities, except for the capital). Certainly, in doing this we have to protect the domestic broiler production from disloyal competition from imports, in order to make the production profitable for the domestic companies.

4.8. Bee-keeping

The bee-keeping, although it shows a declining trend, presents itself as a branch with considerable prospects within the Macedonian agriculture. The natural conditions permit the spread of beehives. The 2005 forecast foresees an increase from 75,000 to 80,000 beehives and 1,250 tonnes of honey production.

4.9. Balance Between Livestock-breeding Production and Fodder

Besides the presumptions that have to be made in the projections in the process of creating a strategy for better livestock-breeding production in the mid-term period to 2005, a special place is given to the balance between a potential supply of fodder, according to its structure, quantity and quality, and the projections for use of farming land.

With a synchronisation of the results from the analysis of the situation and projections for higher fodder production and the strategy for an increase in livestock-breeding production, a conclusion has been reached to what extent

there is a need for fodder to satisfy the projections for the livestock-breeding production (Table 94).

Table 94 – Balance between livestock-breeding production and fodder (000 tonnes)

	1998		2005	
1. Livestock-breeding production	Live s. prod.	Cattle units	Live s. prod.	Cattle units
Beef and (milk)	7.1(174)	282	14 (226)	436
Mutton (milk)	5.6(39,6)	96	6.9(45.8)	115
Pork	8.8	75	15.0	75
Poultry meat and eggs	5.2(23.5)	115	11(31.5)	170
Other (fodder. fish, wastage)		180		210
Total fodder needed		748		1009
2. Production of fodder	Total	Cattle units	Total	Cattle units
Concentrates	329	403	433	564
Bulk	628	257	861	344
Total		660		908
Balance (1–2)		-88		-101
Import (corn and other ingredients)		88		101

From Table 94 it is evident that the current situation, as well as the projected increase in livestock-breeding production (especially in connection with pig-breeding farms and poultry-production facilities) is going to rely on import of corn and other fodder components, which is a normal phenomenon if production, in certain conditions, is profitable to the producers. For example, in these kind of conditions, Slovenia imports 40% of the required corn in order to satisfy livestock-breeding production.

5. Balance of Production and Consumption

The middle-term strategy for development of agriculture has been outlined with the help of the global development programme through balance-redirection of production and in connection with the more important agricultural products, in assumed better conditions and measures to boost producer development by 2005. Stimulating development in relation to these products is the main part of the aims and the strategic priorities in the development of agriculture and the countryside of the Republic of Macedonia (Table 95).

When we compare the balance of 1998 and 2005, there is evidence of major improvement in respect to self-sufficient and deficient agricultural products such as: wheat, corn, beef, pork and poultry meat and cow's milk.

Table 95 – Balance between the more important agricultural products (mil. tonnes)

Products	Pro-duction	Import	Export	Balance (expen-diture)	Index* 2005/ 1998	% self-sufficiency	
						1998	2005
Wheat	345.0	45.3	–	390.3	102	67	88
Corn	250.0	10.5		260.5	177	72	96
Rice	25.0	–	2.8	22.8	114	114	112
Tomatoes	176.0	2.0	28.1	149.9	140	113	117
Peppers	162.0	–	66.0	96.0	146	125	169
Apples	120.4	–	71.9	48.4	195	142	167
Table grapes	89.5	–	75.0	14.5	379	257	617
Beef	14.0	6.1		20.1	197	44	70
Pork	15.0	2.0		17.0	129	59	88
Lamb	6.9		2.8	4.1	123	117	168
Poultry meat	11.0	10.5		21.5	164	24	51
Cow milk	225.6	24.4	3.8	246.2	130	71	92
Sheep's milk	45.8	3.6		49.4	110	93	93
Eggs (mil. No.)	630.0		50.0	580.0	134	106	109
Beet in sugar	13.7	20.7	–	34.1	185	24	40
Sunflower in oil	7.4	32.6	–	40.0	172	18	19
Grapes in wine	154.1	–	107.7	46.4	126	610	332
Tobacco Oriental	35.0	5.7	28.9	11.8	107	343	337

**Index of increased production (1998 = 100)*

In respect of export-orientated products, such as: kitchen-garden products (tomatoes and peppers), the fruit products – apples, grapes (table grapes and those for processing) and lamb, the maximum possible increase of the level of their production by 2005 has been provided for.

V. MEASURES FOR APPLYING THE STRATEGY FOR AGRICULUTRAL AND RURAL DEVELOPMENT

1. Strategic Priorities

The basic tasks and aims of the production policy are the expansion and modernisation of the profitable agricultural production and the improvement of the living standard of the producers. The realisation of the planned aims and responsibilities is directly linked to the amount of profit. The dimension of profit is in correlation to the differentiation between the production price and the market price. The difference is greater, and the possibilities for investment increase, if proper measures are introduced for a reduction of the production price and an improvement of the product quality.

The measures for reducing the production price include the elements of improvement of soil fertility in order to achieve better yields and to improve the livestock production, while the measures for improvement of the product quality include the applying of ecological components, and the design and packing of the final product intended for production.

Besides those measures, a strategic priority is the completion of the transformation of agricultural land into private property.

1.1. Changes in the Ownership Structure of the Land Capacities

The transformation of the political and the economic system, from a planned economy into a market economy, insists on total privatisation of the land suitable for agricultural production. The unsolved problems in that area have resulted in negative consequences in the realisation of the strategic aims foreseen in the production policy. Therefore the *Strategy* deals with the following issues:

1.1.1. Land Which has Previously Been Private Property

The citizens, on basis of the value of their former private properties, obtain compensation coupons. These coupons can be used to purchase comparative or state land. They are used to purchase another state property or they can be transformed into a lifelong annual rent.

1.1.2. Agricultural Collectives

The land that is being used by the existing agricultural collectives, and has not been purchased by those that have a right to compensation, should be divided among the collective's workers. In that way it will become private. Thus, the new land-owners will be those who previously owned the property and the members of the collective.

1.1.3. Productive Land Which Has Not Been Transformed by Compensation

The state-owned land which remains unprivatised should be privatised at the market price, by a system of public auction. Concession is an unproductive financial compensation since for the producer it presents an absolute rent that unrealistically raises the production price.

1.1.4. Application of the Plan for Land Transfer

The application of the plan for land transfer, from state into private ownership, which is the regulation of relations in land ownership, should be conducted through real and objective land trade. The participants include their economic interests and their emotions in that trade. Therefore, the reaching of delicate decisions, during the act of trading, should be mediated by a board for land granting, formed by the affected parties.

The speed of the realisation of the transformation plan is influenced by several factors. Most significant are the lack of assets of the owner of the land, inexperience in the growing of cultures, the need for mass production of certain cultures on complex land surfaces, etc.

The first two factors involve a great number of small land parcels. These farms, which are of small extent, cannot compete with the modern production of cultures of low value (wheat). There the production program will be directed more towards cultures of high economic value (fruit, vegetables, livestock-breeding, etc.) or the land will be rented or sold to the more substantial farmers. The government should participate in the improvement of the competition of agriculture on the transferred land with certain resources with reference to the

condition for renting the land and to the regulation of the rent fee for the farms, to the period of rent and to the labour of the individuals who can own the land.

1.1.5. State-Owned Farms

Some profitable and productive state-owned livestock farms could remain state property, by rent agreements or by forming a common share-holding company, with components which remain state-owned being the major stock holders with 51%. That production should be treated as a state reserve for regulation of the livestock products market. The control of the assets could be conducted by a state-owned holding company. The privatised share of 49% could be left to the employees and foreign investors.

1.1.6. Farms with Total Privatisation

These farms compose the greater part of the producers and processors of agricultural products. Their privatisation should be completed according to different methodologies (entrepreneur initiatives, self-privatisation, etc.) thus obtaining new economic forms based on private ownership. From them we can direct common investments, managing the foreign investment into various segments or sectors of the farm, the new kinds of cooperative or economic corporations, etc.

1.1.7. State-Owned Farms Which Need Immediate Privatisation

These are unproductive agricultural businesses or parts of them which have been, or are about to be, under a bankruptcy proceeding. Their total number in Macedonia is 48. They should be structurally modified and privatised, by liquidation proceedings. During these proceedings, the government must provide the necessary means and the proper institutions, in order to protect publicity and transparency, to provide control over and competition of the participants and because of objective evaluation of the means. The existing land surface should be distributed among the interested agricultural producers, without using concessions. The state can recoup the means planned for concession through taxes, and the sale of the final products intended for consumption.

1.2. Development of Irrigation Systems

Irrigation as an agro-technical measure has several functions. The most important is the function linked to an increase in yields, i.e. the newly-created value, as a product of the profit. There are several plan documents which pres-

ent the possibilities for dam and accumulation constructions in Macedonia, and they include the possibility of enlargement of the irrigation systems. According the JICA study, among the several possible dams, by 2005, the only one planned is the construction of the Kneževo 1 accumulation, on the River Zletovica, for water supply and irrigation. (Table 96). This is insufficient if one bears in mind that in the Republic of Macedonia irrigation is a pre-condition for high agricultural production and steady yields.

Table 96 – Planned construction of dams according to JICA study

No.	Dam - Accumulation	Water current	Volume 106 m^3			Levelling station	Tech. Documentation
			Use	Gross	Use		
1.	Slupčanka	Slupčanka	WS	2.5	1,85		Study
2.	Kneževo phase 1	Zletovica	Ir.	26	24		Chief Project
3.	Orahovička	Orahovička	WS E	6	5		Project idea solution

Therefore, the focus of the *Strategy for Agricultural Development*, in the irrigation part, should permanently monitor the necessity for maintenance, reconstruction and modernisation of the existing systems and the necessity for intensive development of new systems. In the middle-term development, the finances for construction of large accumulations and irrigation systems are low. They should be built permanently in the long-term period. In the short-term, the construction of small accumulations is more significant and productive. In the Republic of Macedonia, almost all water-engineering areas have advantages for the construction of additional micro-accumulations (Table 97).

Their poly-intentional function (water for drinking, for irrigation, for fishing, etc.) is particularly important for the hill-and-mountain areas in which the populated places and the fertile surfaces have been being abandoned primarily because of lack of water.

Table 97 – Possible irrigation surfaces with small accumulations

Systems	Possible irrigated surface (in hectares)		% of total surface area
	Total	Small accumulation	
Polog	28,640	370	1.29
Skopje region	21,593	1,993	9.23
Treska	7,870	370	4.70
Pčinja	27,742	842	3.04
Mid-Vardar	19,593	1,470	7.50
Upper Bregalnica	11,176	280	2.51
Upper and lower Bregalnica	49,069	890	1.81
Pelagonia	109,966	2,540	2.31
Lower Crna River	25,870	420	1.62
Lower Vardar	15,827	1,490	9.41
Dojran Plain	250	250	100.00
Strumica	27,244	670	2.46
Prespa	8,340	120	1.44
Ohrid-Struga	15,260	1,050	6.88
Debar	1,490	190	12.75
Total	369,910	12,945	3.50

Source: Water Economy Co. of the Republic of Macedonia. Seventh Counselling, 1–3 June 2000, Struga, p. 304, and Long-term Development of Agriculture, Forestry and Water Economy in Macedonia for the period 1995-2000, Institute of Economics, Skopje, p. 257.

1.3. Revitalisation of Agriculture and Villages

In Macedonia, as well as in other underdeveloped or developing countries, the countryside has been experiencing a demographic breakdown. The countryside is being abandoned both by its poor landless population but also by the better-off population.

The decay and disappearance of populated places results in a degradation and devastation of the large agricultural surfaces. Empirical research confirms that the countryside is ruined as a result of the decline in its satisfying the elementary necessities of life. The structure of the collective needs of the countryside is dominated by local roads, water-supplying buildings, an electricity network, health and education services.

In order to improve the situation, there should be a return of the process of agricultural production in its natural element an anachievement of circumstances comparable to those in the towns. The *Strategy for Agricultural Devel-*

opment through its regional rural agrarian policy and through the EU Fund for Support and Reconstruction should determine the long-term measures and instruments for the revival of agriculture. It should separately articulate both specific as well as general measures.

Within the specific measures particularly attention should be paid to instruments of tax policy, of the credit and monetary policy, of imports and customs relief, of measures of social policy, of health services, etc.

The details in the specific measures are directed towards uniting the farmers in modern forms of collectives and cooperatives.

The determined national tax policy should have a selective approach. The regions with problematic conditions for agricultural production, and those which have suffered damage from natural disasters, should be subject to tax relief in one form or another.

Support in the development of plant and livestock production for the population in the rural areas with difficult economic conditions for economy should be based on loans rather than on credits.

Loans, conditioned by placing the products in the national reserve, stimulate the rural identity towards a return to the village and towards establishing agricultural businesses, as primary sources of income.

The credit potential of the banks must have a selective differentiated approach by which rural agriculture will use low-interest credits with a longer grace-period.

Because of the relationship of the revitalisation of populated places and imports, import and customs relief is undoubtedly necessary. Items not produced in our country should come under the rule of free imports with customs relief, while the import of goods which are produced only in small amounts should be subject to customs relief or an import-for-export clause.

The social policy, based on family care, should advance in the rural areas. For this reason, it should establish a system of rural centres for social services with a direct relation to the social services of the Republic.

The structural policy should provide an enlargement of small-scale farming. The results of this would be successful if by 2005, the agricultural land, the property of small farms, were to be organised to compose farms larger than 15 hectares, accounting for approximately 25%. This process should be polyvalent, using the possible methods relating to the purchase of land, letting and renting, selling, association, etc.

Modern homogenised co-operative farmers, at a local level, and polyvalent collective farms, at regional and national levels, are the actual subjects which could help agriculture and the countryside the most.

The measures of the structural policy in regions with difficult conditions for agricultural production should consist of prices based on parity, compensation, bonuses, direct payments of compensation for reduced income, co-financing of construction of the infrastructure and stimulation of the development of demographically endangered areas.

During the implementation of the production policy, the state should aid and stimulate production which provides a guaranteed total satisfaction of domestic food demands. Production which competes for placement on the international market should be controlled by special, suitable, previously prepared regulatory measures. Thus, the production policy will offer a variety of supplies of different quality. Variety will be provided by the stimulation of organic agriculture and other alternative products. In that context, special attention should be paid to high productivity and complementary activities that provide a large income to the small farms. The orientation of the production policy will be considered successful if an improved quality of food and a satisfying quantity are achieved.

Therefore, the development of the rural areas needs to be based on a *multi-sectional approach*, but adjusted to the possibilities the area offers.

Firstly, the concept of the rural development should be based on a planned population policy by which the existing demographic and regional imbalance will be removed. It is a matter of a re-distributive policy which would relieve the big urban centres from population influx and would create rural centres of gravitation.

It would be helpful to state that the population policy should be outlined and applied in concert with a policy for general development. Within the shaping of the population policy the policy of bio-reproduction should be synchronised with the migration processes in the area.

Secondly, the concept of development of provincial centres should be abandoned and in its place the concept of development of the countryside should be introduced. In that case the total potential (environmental and human) of a greater area would become apparent. In certain regions more rational and more optimal environmental effects (production of biological food) rather than economic growth (growth of the GDP) would be predominant.

In areas characterised by a great dilution of the rural neighbourhoods it is necessary to determine a local centre of the rural network. The construction of

local or regional centres, i.e. the regional shaping of the rural communities and area is an important model for maintaining the population in the rural areas. Within the outlining of the development policy of the Republic, there should be a serious consideration of the problems in rural communities as well as their revitalisation, in which the complementary relations of all area consumers should be emphasised.

Thirdly, for successful development of agricultural production and the overall revitalisation of the countryside better conditions for education than the existing ones should be provided, not only for compulsory education but also for professional training and qualification of the rural population. Providing conditions for the young in rural areas to attend secondary vocational schools and colleges, and also to qualify the rural population through vocational courses and seminars, would bring about a modern agricultural production and a development of the other economic branches.

Fourthly, Macedonia should pay special attention to primary agricultural production, with the utmost use of the potential available in rural areas.

The rural areas have a future if agriculture has a future.

The programme for development of the countryside should not result in an estrangement between the village and agricultural production, but should influence the transformation of current agrarian production. In agriculture, particularly in the individual sector, there still exist insufficiently exploited potentials, and in a situation of a more productive and more rational exploitation, it would be possible to pursue financial means for development of the countryside.

In the further development of agriculture and its role in the development of the countryside, a planned production programme plays an important role, a *programme* which will provide a higher income and greater financial and social security for the agricultural producer. During the outlining of the rural development policy a selective approach is necessary, i.e. it is effective to stimulate professional agriculture, but also, wherever this is possible, the dual profession of farmer-worker.

One of the most important issues for the development of the countryside is the supporting of the rural population with a *dual profession*, particularly the category of *farmer-worker* or *combined households*.

Fifthly, the actual fact that the socio-economic development of the countryside is causally-consequentially strongly linked points to the basic direction of the influence in overcoming the negative situation in the countryside. Therefore it is necessary to create a concept of economic subjects, of the processing industry and the public services, in which the foreground will belong to small

and medium-sized enterprises. Even though there is a general consensus on the necessity for small and medium-sized industrial units, the issue of their structure is controversial. Therefore, when locating industrial units in the countryside, the features of the area must be carefully analysed, specifically *repro-material, demographic aspect, qualification of the potential work force, infrastructure,* etc.

Sixthly, the regional policy in the forthcoming middle-term period as its basic aim should establish stimulation of initiatives for discovering development potentials in the insufficiently developed areas and villages. In the period up to 2005 there should be achieved a total cover with the *basic infrastructure constructions* (asphalt roads, water supply, quality lighting) in the rural areas in which there are conditions for living and engagement in economic activities.

Seventhly, stimulation of entrepreneurship, tourism, etc., is necessary for a more complete development of the rural communities. In the rural areas it is important to develop micro-economic models, i.e. entrepreneurship in households with a wider range of activities, *from traditional crafts to cooperation with modern industry.* The development of domestic craftsmanship is of interest to rural households, especially if there is an issue of economic interest. Previous research into the possibilities for the development of such activities points out that each of them has a great chance, taking into consideration the insufficient exploitation of the natural potentials in the given environment, the capacities and the time (in the period without agricultural activity).

Eighthly, the development of cooperatives, in the new conditions of the economy, will present an objective necessity for the survival of agricultural households, for their successful economic development and the development of the countryside. Cooperatives have the ability to create objective conditions for organising of intensive, efficient and superior agricultural production and modern development of the countryside.

A successful development of the countryside can be achieved by different kinds and forms of collective association.

Thus, for example, savings and credit collectives are excellent institutions for overcoming the problems of financial support of agricultural production and of rural communities, particularly since their local importance and relation with their members enables them to recognise the needs of the local population and the possibilities for its retention in the rural communities.

Ninthly, in order for this extensively positioned concept to be effective, a *centre for rural development* should be established. The concrete functions of this institution would be:

- Observing the processes and monitoring the situations relevant to the development of the rural area;
- Collecting and formulating different initiatives relating to the development of the rural area;
- Organising scientific and expert discussions with the function of planning and achieving rural development;
- Immediate reviewing of the laws and measures and providing argumented directions to the responsible bodies.

Tenthly, a strategy for development of the countryside in the Republic of Macedonia should be created, which, on the basis of scientific and expert assumptions, would establish which priorities have a comparative advantage and which have a strategic advantage.

Additional Measures

The effects would be achieved if the appropriate institutions in the Government of the Republic of Macedonia and foreign investment organisations helped the public and private initiatives in the rural environments in a proper way. In that context the following necessary measures should be undertaken:

- to provide investments for construction of the basic infrastructures in the areas and rural communities in which there are conditions for living and engagement in economic activities;
- to provide favourable credits for people who seek to return to the countryside, (construction of houses, business structures, purchase of livestock, construction of plantations), which would serve as the basic capital for beginning or increasing their agricultural or other businesses.
- To provide additional stimulations for people who want to start economic activities in the mountainous regions or the economically insufficiently developed regions, such as tax reliefs – personal tax relief for the first few years of production, customs tax relief for equipment from abroad, etc.;
- to provide financial help from the central government for projects in the mountain villages and the underdeveloped regions.

1.4. Financing of the Development of the Countryside and Agriculture

The financing of agriculture is an important segment for every country and consists of production, reserves and development. The financing of Mace-

donian agriculture is a serious problem due to the long-term inadequate developmental performances such as production stagnation, low productivity, inefficient exploitation of the capacity, insufficient and unsuitable technical capability of the labour, systematic and permanent reduction of the accumulating ability of the big (formerly publicly-owned) businesses and collectives, etc.

This situation has made agriculture problematic in relation to its financing not only for its development but also in maintaining basic reproduction.

The serious dimension of the problem of agricultural financing in relation to the previous long experience is a consequence of certain reforms and large institutional changes that have marked the redefining and structural adapting of the financial system with the approach towards the basic aim for a restrictive monetary policy with limited budget expenses.

A further contribution to the growing problem is the stressed fall in the developing performances of the total economy of the Republic of Macedonia, the disintegration of the market, economic blockades, etc.

The financing of agriculture must be in agreement with its specificities such as the slow turnover of capital, the biological character of the production process, which does not coincide with the working period, the low transport value of the production, the limited durability of a large number of products, etc.

Relatively the most severe problem is the financing of investments in the basic means of agriculture in order to maintain an approximate level of the existing capacities such as the basic herd, long-standing plantations, mechanisation and equipment. Therefore, we will deal with the movements of the size of the investments in the basic means in the last few years which the official statistics present (Table 98). Certain data in the statistics are monitored according to sectors (publicly-owned and private).

Table 98 – Total investment in basic assets in agriculture and fishing (in mil. dollars)

Marker	1994	1995	1996	1997
Investments in state sector	379	252	227	436
Investments in private sector	778	1.035	1.204	1.090
Total	1,157	1,287	1,431	1,526

Investment in the basic means in the private sector includes the private enterprises and individuals while the publicly-owned sector includes collectives and enterprises with mixed capital. As seen from the table, the investments in private enterprises were of a much larger amount of capital, which in 1994, in comparison with the publicly-owned, was 1:2.1, while in 1995 15.3, as a result

of the tendencies to stimulate private production. The capital in the private sector has rapidly increased in the last few years, particularly up to 1995 when, in comparison to 1992, it was 7.3 times larger.

In the structure of the publicly-owned sector, the size of the investments in the basic capital is by far the greatest in the enterprises with mixed capital while in the collectives it is the smallest.

That relation, as well as the structure of the investments according to purpose, can be seen from the review of total investments according to the purpose of investing the basic capital. It is shown that private capital was most invested in 1996 in 'cultivated' means (according to the SG of RM, 1998), while in 1997 in machines and equipment. Similar results were achieved with the publicly-owned capital, since in 1996 the greatest part of the investments was intended for machines and equipment, while in 1997 for 'cultivated' means (Table 99).

Table 99 – Investments according to purpose (in mil. denars)

Sector	1996				1997			
	Total	Buildings	Machines & Equipment	Cultivated	Total	Buildings	Machines & Equipment	Cultivated
Agriculture & Fishing Total	1,427	216	486	725	1,523	262	901	360
– state	27	4	21	2	42	3	13	26
– private	1,204	211	325	668	1,087	251	604	232
– cooperative	0.826	–	0.826	–	1,051	1,232	-0.181	–
– mixed	195	411	139	55	393	7	284	102

The impression of the financing of agriculture can be completed if the investment in the basic means for the processing of agricultural products is understood, which could be very stimulating and inspiring for the development of primary production. However, the official statistics presently monitor only the publicly-owned sector, thus one should bear in mind that there have been investments in the private processing capacities as well.

It is very important for primary production which processing capacities have been expanded or newly built. Within this all kinds of constructions are important, no matter whether they are processed food products, tobacco, drinks or fodder. It is interesting that the investments in this activity were rapidly re-

duced after 1994, particularly in 1995 when the amount reached only 44%, i.e. 37% in comparison to the amount in 1994 (Table 100).

Table 100 – Investment according to purpose within processing facilities

(in 000 denars)

Facility for:	1994	1995	1996	1997
Food products	266,864	285,641	228,467	411,440
Drinks	294,003	10,869	64,936	296,809
Fodder	4,097	3,691	2,577	14,661
Production and processing of tobacco	429,508	136,973	68,572	75,787
Total	994,472	437,174	364,552	798,697

A relatively large number of sources for crediting agriculture (farmers) and processing activities have been offered in recent years, being adjusted towards small and medium-sized enterprises according to the procedure for endorsement, but, unfortunately, these have not been adjusted to the main parts. Almost all the sources and all banks have been offering relatively high interest and short settlement periods, while, particularly hard are the complying conditions for guarantees, because of which a relatively small number of farmers and business-people have dared to incur a debt under such conditions, i.e. to provide a guarantee for the credit by placing a specific property under mortgage (a house in a town, business locations, etc.)

According to the advertisement (placed in the 21st January, 2000 *Dnevnik* newspaper), the National Agency for Development of Small and Medium Enterprises, suggests several kinds of credits such as:

– The International Bank for Reconstruction and Development;

– The credit line of the *Možnosti* Association;

– The credit lines of the Open Society Institute;

– The Macedonian Development Foundation.

Apart from these sources, the Ministry of Finance of the Republic of Macedonia recommended a great number of sources and banks (an advertisement in the 14th June, 2000 *Utrinski Vesnik*) which can be used by farmers and agrobusinesses, such as

– The FARE/NEPA credit line for small enterprises;

– The short-term credits of Makedonska Bank;

– The Italian credit line of Makedonska Bank;

– The IFAD credit line of Invest Bank;

– The Fund for International Cooperation and Development of the Republic of China-Taiwan.

We shall mention only the interest rate. It is the lowest (in both groups) in the IFAD credit, 6% annually, while with credit insurance expenses it amounts to 9.5-10%. The other rates are most often 10–13%, but some interests for short-term credits amount to as much as 26% annually (Holding Kreditna Bank Skopje).

In order to improve the financing of agriculture and agro-business hopes are placed in the completing of the reform of the banking system and the rehabilitation of the banks, but the process is relatively slow, the change in conditions has not been manifested, while restrictive monetary measures can still be severely felt.

1.5. Protection and Ecological Aspects of the Agricultural Production

Definition and Situation

As a result of application of chemical devices and fuel-run mechanisation in agriculture, it has become a potential contaminator of the environment as well as of its own products. For those reasons ideas and practical experiences have been developed throughout the world that it is essential primarily, because of the environment and the consumers, that the use of contaminants be controlled and stressing their, as much as possible, reduced use.

Recently, there have been ever-increasing demands on the part of the consumers for ecological (biological) agricultural and processed products on the market.

The expert public is aware of the fact that in the Republic of Macedonia, on average, relatively smaller amounts of mineral fertilisers and protection devices per unit surface are used in comparison to the developed countries. Nevertheless, the use of chemical devices in intensive systems of production and in conditions of irrigation is relatively high even in Macedonia. This does not mean that their use is beyond control and that the products are not healthy. Unfortunately, the control of products of domestic origin is neither regular nor systematic. With regard to imported food, the control is regular and compulsory, except if it is imported through unauthorised channels or with the connivance of corrupt customs officers.

In any case, consumers in Macedonia (including the environment) are not exposed to great danger from negative doses of chemical devices in the primary and the processed European products.

It is known that in the world there are two parallel systems of agricultural production today. The first is production with the usual technology involving application of certain amounts of mineral fertilisers and protection devices by use of additives in the processing industry, etc., by which the world markets are provided with healthy agricultural and processed products. The other system is ecological, biological and organic production (all the three terms have been accepted in the EU) which is particularly developing in Europe, in agreement with the EEC Regulation no. 2092/91, on the basis of which all EU member-states, and other countries (except Macedonia and Albania) passed laws and regulations on ecological (biological) agricultural production, processing, transport, storing and trade. The ecological production is based on strictly determined norms and regulations, without the use of mineral fertilizers, chemical devices, different preservatives, additives, etc. Everyone who wishes to produce ecological production is obliged to sign a special protocol, while the observing of those responsibilities is regularly controlled by an independent inspection service.

In order to be sold as an ecological product, every product should obtain a quality certificate issued by a competent inspection body.

In biological (ecological) agriculture, the soil is not observed merely as a reservoir for nutritious matters. Its fertility is renewed by different supplies of organic matter, compost, green fertilising, etc.

The fight against diseases and pests is waged without the use of chemical devices but by mechanical means, choices of immune varieties and sorts, keeping useful flora and fauna and the application of fruit-sequence.

The transformation to biological (ecological) agricultural production is also a global change in the organisation of production technologies, and the management of human and financial resources, since the realisation of production with the label 'organic' can begin after two years conversion of annual cultures, and in the case of perennial cultures after three years.

In order to compensate for losses in the midterm period, financial support as special help from the government must be approved.

The labelling, transport, packing, place of sale, advertising, etc., of the ecological products is strictly regulated by law and appropriate regulations and norms.

The strongly emphasised tendency towards maintained development and ecological agriculture has resulted in the establishment of an International Federation of Organic Agriculture Movement (IFOAM), which promotes the principles and the demands of this production such as:

– increasing of soil fertility;

– providing of a closed biological chain in the system of agriculture;

– respecting the local conditions in the division of agricultural production by regions;

– breeding domestic animals in biological (ecological) crop production conditions;

– maintaining of the genetic diversity of the agricultural eco-systems and the surroundings;

– increasing the profit of the producers of ecological products.

The International Federation of Organic Agriculture Movement unites about 500 organisations in 79 countries, while in the EU there are more than 10,000 registered organic farms.[42]

Bearing in mind the importance of ecological agriculture and the necessity of its stimulation, in the European Union the *Method of Agricultural Production, in Agreement with the Request for Protection of the Environment and the Country* is applied, thus determining bonuses for the producers who oblige themselves to five-year ecological production, namely 250 Euros per hectare for annual cultures and pasturelands and 700 Euros per hectare for long-lasting plantations.

The situation with the organising of ecological agricultural production is still in its early days in Macedonia. The Association of Agro-Economists of the Republic of Macedonia and *VOKA* – Skopje began an initiative in 1997 for the creation of a ecological agricultural production law. The initiative was accepted in 1999 when the first activities for the creation of the law began under the authority of the Ministry of Agriculture, Forestry and Water Economy. The proposal has been formulated and placed in starting procedures.

Development and Prospects

The prospects for the development of biological (ecological) agricultural production in Macedonia are not bright for several reasons:

– there is not enough conviction and initiative of the competent bodies for rapid passing of the regulations, or for stimulating producers who begin such production;

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[42] Анакиев Б. и др., *Можности и перспективи за организирање на биолошко (органско) земјоделие во Република Македонија.* Животна средина, бр. 1/97. Скопје. (Anakiev B. etc. 1997. *The Possibilities and Prospects of Organizing Biological (Organic) Agriculture in the Republic of Macedonia.* Living Environment, no. 1/97. Skopje.)

– the farmers lack the knowledge of the advantages of biological agricultural production because of the insufficient popularity of that system;

– the limited purchasing power of consumers in Macedonia limits the size of the segment of the consumers for purchasing;

– the long-term process of adjusting Macedonian production to global and European standards in order to achieve a more serious export of biological production.

The activities for the popularisation of ecological agriculture in Macedonia will have to be conducted more rapidly and will have to be planned if we wish to fit into the EU system for ecological production at least by 2005.

Above all, it is necessary to accelerate the process of passing the Law, then to pass additional regulations and standards. At the same time activities should be conducted for locating or forming an institution for certifying the production, i.e. for monitoring and controlling the production process. Nevertheless, that is the easier approach, if the problem of providing funds for the first three years from the budget or the Fund for Agricultural support is not taken into consideration.

Relatively harder is the approach of recruiting agricultural producers interested in ecological production. Therefore, certain advocating is needed as well as education of the farmers with advocacy material, organising free-of-charge seminars as well as visits to areas of countries with developed ecological production. The closest countries whose experiences can be used are Austria, Hungary, Bulgaria and Croatia. In order to conduct this, finances could be provided by foreign foundations in the Republic of Macedonia (VOKA, Land o' Lakes, GTZ, etc.)

Production should begin gradually. Initially it is relatively easier to start with annual cultures. Afterwards, by providing ecological production with a forage and fodder base, it will be possible to obtain ecological live-stock products. While with annual cultures the previous production will have to last two years (conversion time) during which the products could not be sold at a higher price (as organic), this process with the fruit production and viticulture will last for three years. During this period the producers will suffer losses, since they will have relatively lower yields, while the production price will be the same as the mass-production price.

An important moment for greater and faster development of ecological agriculture is the formation of an association of producers of ecological products, in order to have a more convincing performance before the government and other bodies, to exchange experiences, etc. The advantages of organizing

the farmers into associations have been apparent in all of the countries where this kind of production has been conducted.

Our evaluation shows that, because of the relative extensiveness of agriculture in the Republic of Macedonia, (particularly in the hilly-mountainous regions), and because of the use of smaller doses of chemicals, the transition towards ecological production will be much easier, because there will be no big differences in the yields, and lower yields, after the period of conversion, will be replaced and overcome by selling products at higher prices.

2. Fundamental Measures

The achievement of the necessary programmed supply of primary agricultural products does not depend solely on the means of production and the labour force, being traditional factors, or, the encompassment of land, water supply or climatic conditions, being natural factors, but it depends upon the implementation of science, education and technology, and, afterwards, upon agrarian policy and a market approach, being factors for development.

2.1. Agricultural Science

Science plays a major role in connection with agriculture, in the sense that it creates new material values. This is, more and more, characteristic and systematic in regard to promoting the technology of production.

Society acknowledges that the science of agriculture is an organized and social industry established upon modern foundations. This is a result of the immediate connection of science with production. There are no dilemmas as to whether or not science is the leading factor in the development of agricultural production. Science, in relation to agriculture, most recently has been concentrating on identification of the best solutions and on redirection of production in accordance with consumption, and on substitution of final products and raw material.

Science – within the framework of agriculture, agricultural science – in addition to its economic contribution, has a wider social, spiritual and civilisational role. Although this is very hard to measure, the influence of the development of production processes on considerable adaptability and flexibility towards market transformations has been noted. The penetration of the scientific and technological development of agriculture has been expressing itself in a better assortment and productivity of labour.

2.1.1. Education

– The system of agricultural education is reasonably developed in the Republic of Macedonia, serving the purposes of agricultural development.

We have technical high school education – agricultural schools covering 10 towns and cities in Macedonia, where young people between 16 and 18 years of age are educated on several courses on agriculture (crop-production, wine and fruit production and livestock-breeding). A great number of them continue their studies at the Agricultural Faculties in Skopje and Bitola. However, only a small number of them are stimulated to start their own farms, which is the case in many other countries where a large number of students are determined to do so after graduating from agricultural schools. A time is coming for contemporary private farming, when not only the young people who have graduated from agricultural high schools but also university students should take interest in it.

– At the University of Ss. Cyril and Methodius in Skopje, the Faculty of Agriculture provides three basic studies: educational, scientific and research and applicative agriculture. The educational degree is organised so that it would educate students to become graduate, post-graduate and PhD students, within the field of the agricultural science. The under-graduate studies are organised in 4 years of education and in 5 courses of interest, such as: general, crop-production (in two groups), wine and fruit production, agricultural machinery and livestock-breeding.

The scholarly and educational process of the Agricultural Faculty in Skopje is progressing with the help of stable reforms, with respect to the planned curricula and programmes. Even though there is a developed network of courses and groups, there is still a lack of courses in agro-mechanics, a part of agricultural science. The opening of this kind of course was proposed a long time ago, but now is the time to organise Agro-mechanics as a regular four-year study, because this is also conditioned by the system of market economy in the country. Lacking professionals within this field has also been noted by foreign experts who have come to the country to render consulting services on the development of agriculture[43].

At the University of St. Clement of Ohrid in Bitola, the former Agricultural College has grown to become the Faculty of Biotechnological Studies, with the aim of educating professionals in studies lasting four academic terms, in the field of Livestock-breeding Production and another four-term study in Food Industry for Livestock-breeding Products.

[43] *Private Farm Support Project – Republic of Macedonia,* Investment Centre FAO/World Bank Cooperative Programme, Rome 1993.

2.1.2. Scientific and Applicative Research of Agriculture

Scientific Research

At the Faculty of Agriculture, which is organised in 12 departments as scholarly and scientific units, along with the educational work there is scientific and research work and applicative work in the field of agriculture. So far there have been implemented more than 150 projects for the development of agriculture, financed through the Ministry of Education and Science and the Ministry of Agriculture, Forestry and Water Economy.

Along with the professional personnel at the Faculty of Agriculture, in Macedonia there are also many other institutes which conduct scientific and research work and applicative work within the framework of the economy, such as: the Agricultural Institutes in Skopje and Strumica, the Livestock-breeding Institute of Skopje, the Rice Institute in Kočani, the Tobacco Institute in Prilep and the Veterinary Institute in Skopje.

All the above institutions have behind them a great many scientific and applicative projects as well as working on current projects. However, in spite of their professionals and equipment, they are not using their facilities to the full because of lack of financial assistance. They are not sufficiently engaged in the work for the reason that they receive only modest financing from the Ministry of Education and Science. This condition, by all means, will continue in the future, especially since the revoking and merging of the former Ministry of Science with the Ministry of Education.

Applicative Research in Agriculture

The activities in connection with the Project for Stimulating Development of Individual Agricultural Producers[44], with which structural reforms for the development of agriculture are to be conducted in the country, through restructuring the following six segments: a) applied agricultural research; b) counselling services for individual agricultural producers; c) private veterinary services; d) general health-care services for cattle; e) development of agricultural marketing and f) services for rural development. As can be viewed from the above Study (footnote 45), the Republic of Macedonia has received a satisfactory loan for the Project (footnote 46) and, with this, structural changes are evident. Here we shall mention certain things in regard to applied research and

[44] *Private Farm Support Project – Republic of Macedonia,* Credit and Project Summary, WB, 1996.

reforms in the counselling service for individual agricultural producers who are of interest to the mid-term development of the sector covering individual agriculture.

Recently (1980)[45], on-farm research has become a new discipline in the science of agriculture and, when proposed by the participants in the Project, this research was introduced in our country also. On-farm research is adjusted/applicable research whose management requires things such as: a) a sufficient number of repetitions with regard to and with the aim of testing new technologies and their management on the part of individual farmers on plots of their own land, i.e. the farmer is responsible for carrying out everyday activities on the plots and in the stable; b) the testing of the new technology is conducted by the farmer with the help of a multidisciplinary expert-team [agronomic engineer, agro-economist, and an expert from the Counselling Service (the Agency). Along with this type of on-farm research there is a recommendation to conduct research on the systems of agricultural production at farm level, consisting of four main phases: a) descriptive-diagnostic (situation); b) planning (review of solutions); c) experimenting (testing) and d) expanding (transfer of results). All results from the *on-farm research* have to be disseminated in the field by the Agency for the Promotion of Individual Agricultural Producers.

Within the programme of applied research, participants in the Project, with their own research, consisting of a great number of experts from the Agricultural Faculty as well as professionals from the scientific and research institutes in the country, though these will cease to function during the following year for the reason that the credits approved for financing will have been used up already. From the experience of this kind of applied research with individual farmers, it has been shown that the interest in them is great, both with farmers as well as with agricultural experts and employees of the Agency because of the permanent need for their own counselling services. This is why this kind of research has to continue as a permanent activity of a separate Fund for Applied On-Farm Research.

2.1.3. Counselling Services for Farmers

Within the framework of the above-mentioned Project there are proposals for structural reforms in the field of applied on-farm research as well as in the organisation of the work of the Agency (counselling service) for Development

[45] Warner J.: *Participatory Development of Agricultural Innovations, Producers and Methods of On-Farm Research,* GTZ, GmbH, Eschborn 1993, Germany.

of the Individual Agricultural Producers. The Agency, now, according to the new Law, is a separate institution and is not included within the Ministry of Agriculture, Forestry and Water Economy, it is regionally distributed and acts through its organised associations of farmers, mainly according to the principles of different agricultural branches. The main purpose of the work of the experts from the Agency, beside counselling in the field of agronomy, is to direct the work towards the following: a) agro-marketing; b) agro-business management c) dissemination of results from the research and demonstration of experimental trials among agricultural producers.

For the success of the counselling service (especially in connection with the agro-management and agro-marketing) and of the institutions dealing with creation of the agrarian policy for the development of agriculture, the proposed project for "Accounting and Information System for Individual Agricultural Economies" needs to be accepted, with a choice of typical sample-economies from Macedonia according to the FADN[46] system from the member-states of the EU. It is proposed the system be constituted within a separate Agro-business Centre in the Faculty of Agriculture in Skopje (for which there were discussions in the process of reviewing the problems of the previous development problems of privatised agro-facilities).

2.2. Education and Training of Agricultural Managers

The educational programme and management of agriculture have to be conducted through:

1. research centres in rural areas and through the technological corridors;
2. rural entrepreneurial zones;
3. entrepreneurship within the agro-business;
4. governmental and non-governmental organisations;
5. a centre for development of small economies;
6. small-scale centres for industrial services;
7. rural "incubators";
8. rural financial institutions;
9. activities for development of rural entrepreneurship; and
10. educational programmes for rural entrepreneurship.

[46] *FADN – The Farm Accountancy Data Network,* European Commission, Brussels.

2.2.1. Research Centres in Rural Areas

Within the framework of the rural educational system, worldwide, there has been an introduction of research centres.

Practice shows that these research centres in rural areas do not pay much attention to the village entrepreneurs. They are more closely concentrated on the entrepreneurs of the big corporations and factories dealing with agrobusiness. However, if we seriously think about the function of these centres and about the number of private farms in rural areas, then we will see that the contents of the centres should be more concentrated on regions where there is a dominant agricultural business. Macedonia, in this field and in the near future, has also to start thinking about forming this type of research centre for the projection and solution of the problems and needs of the agricultural producers in rural areas.

2.2.2. Rural Entrepreneurial Zones

Rural entrepreneurial zones are small zones with a wide variety of economic activity. Their content and form is equivalent to a small enterprise because working expenses within them are minimal. Their main business is the promotion of things connected with tax-paying and deregulation. In our country the conditions are still not ripe for introducing such zones.

2.2.3. Entrepreneurship Within the Agro-business

Entrepreneurship within the agro-business has been established in developed agricultures (countries), where corporations are dominant in this business. These corporations expect, on the part of entrepreneurship, development of new products and new markets.

2.2.4. Centres for Development of Rural Economy

These centres are aimed towards support of development and expansion of the small-scale economy. In their action they provide the following:

a) free assistance in management of existing and potential small enterprises;

b) free access to information regarding market-direction, technical innovations and other resources, suitable for small enterprises;

c) low-price training seminars, in connection with problem-management in small enterprises; and

d) solving managerial problems of new entrepreneurs and small business managers, etc.

Macedonia has a need to form such centres where functions connected to agriculture will be incorporated in their work.

2.2.5. Small-Scale Industrial Service Centres

Small-scale industrial service centres are formed to eliminate technical problems with which researchers, entrepreneurs and owners of small enterprises are faced.

For Macedonian agriculture, the educational business in the field of technology, course of market and management of small enterprises, the best and the most economical way of their achievement will be through separate centres for development, or through industrial service centres.

2.2.6. Rural "Incubators"

Rural "incubators" create better conditions for rural entrepreneurs, in a long-term period of development of small enterprises. Usually they provide the following:

a) actual space for doing business;

b) expertise for business-development (planning, marketing, financing, etc.);

c) accompanying business-services;

d) ways of fund-raising (capital);

In our country, the process of development of rural "incubators" has begun through the programme of the Agency for Promotion of Investments (TIPA).

2.2.7. Rural Financial Institutions

Rural financial institutions have the task of providing financial means for agriculture, in the shape of loans for buying land, equipment and livestock. They could play a major role in the revitalisation of the Macedonian countryside and in the development of agriculture, especially in the development of livestock-breeding in hilly and mountainous areas. The means have to be directed restrictedly, to avoid unnecessary speculation and risks, and to be aimed at supporting rural entrepreneurs.

2.2.8. Expanding Activities

Linking-and-enlarging services can be of help in connection with activities for expanding agricultural businesses, domestic economies and companies in the field of agro-business and their secondary systems, such as: carpentry,

pottery-making; basket-weaving, knitting handicraft, etc. Their agents should be more focused towards the application of the general business-programmes which will cover accounting, financing, marketing and management. The programmes should be similar to those of the colleges, entrepreneurship and the trade.

2.2.9. Educational Programmes in Rural Entrepreneurship

High schools and colleges can offer the most efficient programme for professional education. This can be achieved by the implementation of primary projects for students in the field of the agro-business, and by applying new ideas on farming and trading.

2.2.10. Agricultural Colleges

Agricultural colleges can play a vital role in the education of future leaders within the agro-business. They can enrich the fund of knowledge of the farmers, in the field of production as well as in the field of management.

2.2.11. Agricultural Experimental Stations

Agricultural experimental stations date from a long time ago. In practice they have proved to be successful in the improvement of production, storage, processing, marketing, management and financing, in the improvement of quality according to demands of the consumers, etc. The experiments are explorations by the people employed in the Experimenting Stations, in the Faculties, in the institutions, in the colleges and in the trade corporations in the field of agro-business.

2.2.12. Private Counsellors

It would be of great use if every farmer had a close and everyday relationship with private counsellors in different fields. The information gathered from them will positively influence the decision-making of farmers in the development of production, marketing, financing and other aspects of market-orientated production.

2.3. Organising Agricultural Production

The agricultural development strategy is especially concerned with issues connected with modern organisation of private farming. Organisational capacities should create a homogenous economic unit of agricultural producers through which, democratically, they will perform their agricultural functions to produce biologically healthy food. Certainly, the most import element should be

the market-aimed making of readymade products. The constitution of the organisation chart should not consist of redundant, and bad forms of organising already proven so in practice. The current practices need radical reforms in transformation, which will make way for high productivity, minimal expense and high profits.

2.3.1. Forms of Organisation for Private Farms

Private farming can be organised in a modern fashion in different ways. Worldwide practice uses the following structures:

1. cooperative farms with partner-ownership;
2. small independent farms with entrepreneur-management;
3. share-holding ownership between the state (51%), the entrepreneur and the workers within the farms (49%);
4. farms with joint investment and participation of foreign capital (machines, storage and processing facilities, real-estate, etc.);
5. cooperative farms where issuing of bonds is controlled by the owners of the association;
6. partnership farms under the management and ownership of individuals (i.e. individuals who jointly use their assets for production and labour);
7. farms owned by individuals, corporations, associations, state-owned or foreign, leased or owned on the basis of generic differentiation.

Which of these will be accepted or implemented in practice depends on the economic effects, particularly on covering reproduction expenses and profit-making.

2.3.2. Transformation of Associations

The cooperation, which is still based upon the socialist system and a planned economy, has to be privatised and has to pass into the hands of its owners, in the form of establishing cooperative share-holding associations and new kinds of private enterprises. Those who will not adopt the new regulations in a certain period of time, have to be closed down by law, or to be deleted from the Company Register. In the meantime, the transformation needs to be preceded by a process of establishing a list of assets for every single member of the associations, followed by a decision with regard to the form of the association's activities. Dominating members need to provide for their membership, to buy shares in the new organisation and to elect new and legitimate administrators. The assets of the Association that have been marked, have to be returned to the association's

membership in the form of shares of the newly-formed enterprise. In this way, the membership can take decisions on the future of the association, on the economic relations of ownership and on the outcome in regard to shares and profit.

In the period of transformation, it will not be surprising if a procedure of worker redundancy is implemented within some associations, firms with no liquidity or unsuitable firms which cannot adjust themselves to the market. For this purpose, there is a need of legislation and an institution which will be in charge of regulating and supervising activities of firms and individuals who wish to be made redundant. For their productive activation, a special programme for the creation of new enterprises, with the help of new individual and collective entrepreneurs, will be needed. The implementation of this is closely related to the use of long-term credits, using capital from development banks and from other financial institutions, as well as assets from the state budget.

2.3.3. Cooperatives and Associations

Within Macedonia's agriculture there is a sector of private agricultural family households (family farms), which differ from the others, even from the sector of the small-scale economies. These are characterised by their small and split plots of land, with an average of 2 hectares of agricultural surface, with a backward technology and without any contacts with the market. These individual agricultural family estates have not been nationalised and have not been affected by processes of change of ownership, but have been affected by the process of *business and technological transformation.* However this process is moving slowly and spontaneously, i.e. without any specific implementation of measures with regard to economic and agrarian policy (satisfactory low-interest credits, tax reductions, subsidies, increase of export). Accommodation and stabilisation of the individual agricultural economies, in the new conditions, cannot be achieved by changing the market conditions and price-policy alone.

In conditions of an open-economy policy and with a system of political democracy, we have to put an accent on the structural agrarian policy and to improve its status in comparison to its current one. In this case there is a necessity for agrarian relations where the following conditions will be met: *abiding in accordance with the rules of a market economy, increase in efficiency and growth of agricultural production and increase in the degree of production-facility-use.* One of the conditions for success in the structural reforms of agriculture, and also for achieving a higher degree of use of agricultural facilities, is the development of different types of *agricultural cooperatives and associations* which, in the sense of their organisation, technology and marketing, will promote their production and the work of the individual agricultural economies.

2.3.3.1. Agricultural Cooperatives

Cooperation, in market-economy countries with developed democracies, presents an unavoidable institution for organising and connecting producers and people. Explicitly, cooperatives make possible *new productive initiatives of the population and of the working people, employment for the unemployed, rapid growth in productivity of labour as well as satisfying the needs of working people and the populace with necessary products and services which cannot be provided by the existing economic and non-economic institutions.*

In the USA, cooperatives participate with 28% of the total sales of farm products. But participation of cooperatives in the market of agricultural products is considerably variable depending on the different types of products.

Approximately 75% of the milk produced for the US market goes through the milk cooperatives, 1/3 of grain and soya is produced through cooperatives and about ¼ of all raw materials are procured by farmers through cooperatives. According to this, cooperatives in the US are relatively more important in selling agricultural products than in the procurement of raw materials for the needs of the farms.

Nowadays, all over the world, there are millions of people who have secured a decent life for themselves and their families through cooperation within cooperative institutions. The cooperative movement covers a variety of activities ranging from *financial services to consulting,* and from *agricultural production to marketing.*

The period 1990–2000 is known as a stagnation period for the Republic of Macedonia, or even a period of neglect of development in agricultural cooperation. Namely, 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 (insufficient and deteriorated mechanisation) and also there is a lack of professionals. In this kind of setting, cooperatives cannot respond to the demands for their products, to the demands of the cooperative workers and other farmers, so that there is a sense of a certain stagnation in the development of agriculture within the sector of individual agriculture.

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 Land (Official Gazette no. 19, 1996) and with this they have lost their business structure. Some of the cooperatives, up to the time of the passing of the Decision of the Constitutional Court on Recognising of Cooperative Property, transformed themselves, as other business entities bonded by law did. Looking after individual agricultural economies, on the part

of cooperatives has become as poor as ever. Because of the above-mentioned weaknesses in the current period, cooperative development in the Republic of Macedonia cannot be positively evaluated.

Agriculture in the Republic of Macedonia is faced with new challenges. The individual agricultural economies are limited because of the high degree of division of plots in the estates, and because of their insufficient access to capital and the market for disposing of their agricultural products.

Although considerable changes in the character of the ownership of land and other means of production are not expected, there is a need for prompt and high-quality changes to be implemented in the economy and organisation of agriculture, particularly in connection with the individual agricultural economies. In conditions of an open economy and free-market relations, the small estates of the individual agricultural economies (on average of 2 hectares) are more of an obstacle with regard to the disposal of agricultural products.

Conversely, the discharging of workers from the non-agrarian sector and the growing decrease of income from work within the non-agrarian sector and the degree of sustainability of households engaging in individual agricultural production is going steadily down.

In this kind of setting, it is certain that the private initiative, such as that for the development of agricultural production through agricultural cooperatives, must come to the foreground. With the development of cooperatives, conditions will be created for activating neglected agricultural resources and, with the establishment of an agrarian structure which would be in accordance with the higher phases of economic development, there will be an easier way to solve the problems of the countryside.

With the help of cooperatives as organisations of farmers, conditions for the implementation of farmers' *economical, social, cultural and other rights and interests* can be secured.

Within the framework of cooperatives the following conditions can be made possible: *specialisation, increase in production, quality control, mutual help and solidarity, employment, economic competition, mobilisation of financial resources, lobbying, etc.*

In all the countries which have market economy systems and a developed democracy, there are different types of cooperatives which, technically or in terms of marketing, tend to promote production and work on the farms. Cooperation within cooperatives is a must within small agricultural economies, providing that it is easy for the big agricultural economies to find the way to dispose of their products on the market, it is also easy for them to follow trends in

technological development, to achieve higher prices for their products, and to have a favourable position in connection with financial institutions and the market capital in general.

For small agricultural economies, which dominate in the Republic of Macedonia, cooperating in cooperatives can be a focal point for major development of: *cooperative procurement and use of mechanisation and equipment, reproduction and processing of agricultural products, production marketing and savings and crediting,* and all this represents a classic associative functioning which can assist in the promotion of agricultural production and the development of the countryside.

The meaning of the small agricultural economies, in a local context, and their contact with the membership, provides, in the best part, identification of the needs of the members of the cooperative. As a matter of fact, working through cooperatives makes it possible for economic democracy to appear.

The big agricultural enterprises have to be stimulated, but this does not mean that the small ones and those that do part-time business should be neglected, and so it is necessary to boost and make way for different forms of pluralistic organisation of agricultural estates.

To accelerate agrarian growth, as well as investment in productive loans for individual agricultural economies, there is a need for forming *savings and crediting cooperatives* that will contribute to the enhancement of the economic and social conditions of farmers.

Bearing in mind that saving money is a problem in the Republic of Macedonia, and that lack of confidence in the financial institutions plays its own important role, the need for mobilising assets through financial institutions which are mutually connected and are owned and managed on the part of their own membership – who at the same time use their services – is becoming more and more evident. The Savings and Crediting Cooperatives, have proven to be an excellent alternative to the existing banking system, worldwide, and one through which people's confidence in them is getting back on track.

The system of self-control which has been implemented by Savings and Crediting Cooperatives has proven to be very successful in this kind of situations. They are established in the same place where their users are located. The small farms, being a fundamental aspect of agricultural business in the Republic of Macedonia, and which are at the very verge of their existence, with the help of the provision of small-scale credits through Savings and Crediting Cooperatives, would manage to overcome the current period of economic and social crisis.

Possible Solutions for Development of Agricultural Cooperatives

Along with the changes in the economic and political systems such as the processes of: *privatisation, entrepreneurship development, making use of foreign capital, decommissioning of land estates of individual agricultural economies, market-economy orientation, etc.*, the basic assumptions for development of cooperatives on new grounds have been made in the Republic of Macedonia.

Rights of association have been guaranteed with the 1991 Constitution of the Republic of Macedonia. Article 20, Paragraph 1 of the Constitution of the Republic of Macedonia says: "*...citizens are guaranteed the right to freely associate with each other in order to achieve or protect their political, economic, social, cultural and other rights and convictions.*"

The passing of the Constitution of the Republic of Macedonia does not mean that the dilemmas in connection with cooperatives have been resolved. The 1990 Federal Law on Cooperatives, with the Constitutional Law of 1991, has simply been renamed as a Law of the Republic. However, the course of organisation of cooperatives has to be in accordance with the laws of the Country and should be subject to a separate law of the Republic, for the following reasons:

Firstly, cooperatives are organisations which are subject to the regulations of law which regulate their establishment and management, which regulations are not implemented in connection with non-associative enterprises;

Secondly, cooperatives are a special kind of institution and are subject to different rules from those governing other enterprises and organisations, which are not themselves cooperatives. This means that the regulations implemented for other non-associative organisations have to be modified and have to adapt to and take their example from the cooperatives, in order for them to recognise the way of associative (cooperative) work, profit division, financing and control of the cooperatives and the relationship among owners.

With a separate Law on Cooperatives on the level of the Republic the following things have to be defined: *definition of a cooperative, establishing a way of organising the business, its establishment, management, division of profit, financing, surveillance, ownership relations, etc.* The definition of a cooperative has to be wide in its meaning, but sufficiently clear for the average farmer. The most acceptable definition would be the following: *A Cooperative is a voluntary organisation of cooperative members who have an equal right to vote, according to which the privileges are used in accordance with the level of exploitation of the cooperative.*

Bearing in mind this definition, we will try to present a wider perspective for the future cooperatives. From current experience and projections it follows that an agricultural cooperative should have the following aims:

- *decrease* in prices of products and services;
- *creating* opportunities for obtaining products and services which are unattainable through other means;
- *increasing* possibilities for expanding the market and providing access to the market;
- *creating* conditions for a better quality of products and services;
- *increase* in profit-making for rural households;
- *improving* living and working conditions of cooperative workers, and wider, in the rural community.

On the basis of the stated aims, it can be concluded that the fundamental reason for the establishment and development of cooperatives is an increase in production and providing access of the cooperative workers to the market. The money from the consumers in this case does not end up in third hands but stays in the hands of cooperative workers.

According to this, the basic aim of a cooperative is to serve the needs of the cooperative workers, through a consistent dialogue between its management and its membership and through consistent reforming, and adapting, of the work within the cooperative.

Furthermore, cooperative workers need to understand that the aim of satisfaction of their own needs must not clash with public interests.

With the new legislation, cooperatives, definitely, have to present themselves as organisations which have all the attributes of a unique business, acting upon the practice and promotion of principles of cooperatives, such as:

- *total transparency,* voluntary beginning and ending of a person's membership within the cooperative, without discrimination against, or restrictions regarding a member's social, political, racial or confessional status;
- *democratic management* – cooperative workers have equal voting and managerial rights, no matter how big the member's capital used in the business is (one member – one vote);
- *division of results from the work according to members' participation in their creation.* This principle provides for the results from the work within the cooperative coming into the hands of the cooperative workers, by means of which they will be stimulated and give their best;

- *limited pay-back of share-holding capital of cooperative workers,* if it is in use for the business;
- *cooperative education;*
- *cooperative collaborating and linking on local, national and international levels.*

If we cast a glance at the global mission of cooperatives we will conclude that a cooperative must:

- be a factor for the activation and development of resources at the disposal, within the individual agricultural sector and the revitalisation of the Republic's countryside;
- present itself as a association through which farmers achieve an increase in profit or a decrease in expenditure;
- give farmers decision-making roles in the division of results from the work;
- link themselves on the national level into a Cooperative Union in order to be successful in the agro-business. This National Association - Cooperative Union will in effect, study and coordinate the work of cooperatives and will represent the interests of the cooperatives and cooperative workers to the authorities.

2.3.3.2. Agricultural Associations

The Agricultural Associations play a very important role in the countryside and in agriculture because the development of agriculture depends on the transfer, and dissemination of technological levels and measures. The agricultural associations contribute, not only to agrarian development, but also to the total economy of rural households, increasing the level of the social and cultural existence of the rural population. The element which give them a character of an association is the fact that they are not constituted on the basis of investments but on that of annual membership-fees and therefore they cannot conduct economic activities. The associations are non-commercial (non-profit-making) organisations, and they should use their gains to support and implement their basic aims and activities, established by the Statute of the Association. According to this, the associations may establish an association of limited responsibility or a share-holding association for the implementation of the aims, interests and activities for which function the association has been set up (Article 7 of the Law on Citizens' Associations and Foundations).

In the Republic of Macedonia there are more than 100 agricultural associations dealing with: sheep-breeding (31), bee-keeping (25), stock-breeding (17), kitchen-garden agricultural production (4), fruit production (4), crop-production and other agricultural branches. A large number of the associations are organised on local, regional and national level. The greater part of the associations (39) have been established between 1996 and 1997.

Course of Action in the Forthcoming Period

The strategic task for agricultural associations in the forthcoming period is above all intensification and realisation of their programmed aims. The most important segment of action for the associations is the problem of the quality of agricultural products. The associations can play an important role in the introduction of European standards of product quality, with activities such as:

- training and preparation of agricultural producers for higher positions;
- providing low-interest credits for farmers aiming to develop profitable production (better quality and access to the market);
- support, in every possible way, for the realisation of every single initiative for a better quality of agricultural products.

Also an important segment, which may contribute to the development of agricultural production, is the support and promotion of social development. Here, above all, we think of activities of associations aimed at timely and quality information (counselling, newsletters), as well as education of rural women.

Existing agricultural associations need to help in the establishment of a National Association of Farmers with an Agricultural Products Marketing Agency. The significance and the role of the Agency for Marketing would be that it would take over the problems of disposal of products which individual agricultural producers are faced with.

The specificity of the agrarian structure of the Republic of Macedonia – individual agricultural economies covering 70% of the total farming surface, 90% of the total number of stock-head and with an average of 2 hectares per estate – imposes a need to take into account special problems, which are specific priorities with regard to individual agricultural economies. Agrarian development and the construction of rural society would be possible only through a successful integration of the individual agricultural economies into it. Therefore, the agricultural development strategy will, unquestionably, need to pay more attention to the specific problems of the farmers, who can be reached straightforwardly through organisations such as *cooperatives and associations.*

2.3.4. Transformation of the Food Industry and the Course of its Future Development

Within the sector of the food industry, the aims have to be directed towards total privatisation. With this, a technical level which will be in accordance with the competition from international markets will be reached. In the course of privatisation it is expected that larger number of organisations will become share-holding organisations with joint investments. The most suitable share-holders would be foreign investors, in possession of highly-developed technology, with their worldwide reputation and abilities for achieving a profitable and technically higher level of production of goods. These criteria can be fully met only by the multinational companies. Full realisation of this is wholly dependent on the passing of positive regulative legislation and on the application of economic and diplomatic preparation of documentation for boosting investments.

Projections of the volume of production by 2005 are based on the assumption that a 20% increase might be expected, starting from the average production realised in the last 5 years (1994–98). In addition to this, the contrast of the most recent year (1998) with the projected year 2005 shows even smaller quantities in connection with certain products, but we have to compare the information regarding the trends in the production-volumes in the last five years (see Summary of Current Production-Volumes and their Projections to 2005). As is evident from the Summary, the volumes of production reached in a certain year do not mean that their growth will continue. This is why the projections to 2005, saying that production may increase by 20% above the average five-year level, can lead to variable relations in connection with the 1998 volumes. In places where there is a relative year-to-year increase or a relatively low fall to the year 1998, comparative analysis shows that there might be a considerable increase by 2005. For example: in respect of flour-production (in comparison to 1998) there is a 20.7% increase, in view of canned food and beer production an increase of 29.8%, fodder ingredients 41.8%, etc. (see Table 60).

With regard to changes in the assortment, we have to base our determinations in accordance with the following standpoints:

– the product's highest possible degree of finalisation and getting as near as possible to outlets for direct consumption;

– use of low, or non-low; thermo-processing of vegetables and fruits, in order to preserve valuable components such as vitamins and minerals;

– using as little preservatives, artificial colouring, aroma, additives, etc. as possible, that is to say, using only types and quantities of additives which have been approved;

– ecologically/biologically-oriented production on the basis of ecologically/biologically-certified primary production (raw material).

The products based on white grain flour have to be represented more and more with different kinds of baked pastries, breads enriched with useful supplements, pasta with supplements, biscuits and sweets, etc.

The canning industry (for processed vegetables and fruits) is of great importance to the agro-complex. The course for action has to be towards production that provides an increase of nutrition values which are contained within the fruit characteristic of our particular climate with a high quantity of flesh, colour, vitamins and minerals. This is why there is more advantage in the production of frozen and sun-dried products. Then, canned products without preservatives. However these kinds of products are produced with a low degree of finalisation. We have to concentrate on juices and ketchup-production as products with a higher degree of finalisation and then products with vegetable and fruit additives such as: mayonnaise, potato chips, margarine, yoghurt, spreading cheese, ready-to-eat meals, dried raw material for spices and other condiments and supplements for meals, etc.

Fruit and vegetable production must enter into competition on the world market, because the domestic market cannot use all its products.

By 2005, along with primary processing of fruits with sugar, the following production is expected: juices approx. 6,000 tonnes, fruit concentrate 1,800 tonnes, fruit mashes – 2,000 tonnes, etc.

Meat and dairy products, no matter what the degree of their finalisation, can be disposed of on the domestic market. However, only if they are prepared to be competitive and to replace the imports of these kinds of products. It is sad that our processed products are neither on that kind of level, nor are they produced in those quantities. With regard to dairy products, the selection of cheeses has to be increased (spreading cheeses with vegetables additions), butter too has to be produced in every single dairy, etc., and with regard to meat processing the course that we have to follow is in connection with sausage-making, adding vegetables to sausages as well as making canned ready-to-eat products and ready-to-eat meals with meat.

In respect of the production of wine, by 2005 three new wine cellars are expected to be produced and built, with which the capacity will increase to 2,495,000 hectolitres of different sorts of wine in comparison to the current

2,350. With this, it is expected that the production of wine, according to the projected production of grapes, will reach 1,540,000 hectolitres, according to the oenologists. Our projections, however, show that the production of wine will be in the vicinity of 1,200,000 hectolitres.

The outlook in wine-growing and wine-production shows that there is an expected increase in sorts, at the expense of table grapes, and within the wine sorts, there will be areduction of white sorts (35.8 % to 31.5%), and the participation of sorts for the production of red wine will be increased. In accordance with this, the selection is expected to improve and to be red-wine-orientated, which is a comparative advantage to us.

As far as wine-production is concerned we need to act faster and be more daring in order to protect the rights of geographical origin, to do market research in order to direct production towards this, but also to direct it towards making renowned international wines.

In the tobacco industry efforts have to be concentrated on producing as many cigarettes as possible, and less production and export of semi-processed products (fermented tobacco).

World globalisation, more and more free international trade, the signing of free-trade agreements between Macedonia and other countries, the closer and closer relationship with the EU, etc. show that domestic production cannot expect protection on the part of the state in connection with imports of the same kind, but it may survive if it fights its competition on the market. The most concrete marker of this is the incoming decrease in custom rates vis-á-vis the EU, which, in a few years time will be totally abandoned, when export of food and tobacco from the most developed European countries into Macedonia will be possible without any limitations (Agreement with the EU, Zagreb, 2000).

What kind of measures should be contemplated? Above all, greater use of domestic knowledge and creation of a selection of products which will be competitive in view of their quality and price. Thereafter, we need to attract direct foreign capital and technology and the entry of the large world-wide systems from the food industry, drinks and wine industry, tobacco industry, etc. In this connection a swift protection of rights of origin of products, declaring national products (Mastika from Strumica, Macedonian Ajvar, Galičnik Cheese), must be accented, along with the preparation of a marketing strategy to conquer other markets, outside Macedonia.

VI. INSTITUTIONAL SUPPORT

Besides the measures that are of strategic significance for the development of production, i.e. the measures which follow up the production function, agriculture has a need for support from the state-run system of measures. Institutional support comes from the Law on Values. With regard to a significant number of products, their market price is far from equal to their production value. Products produced in an unfavourable condition in agricultural production have higher calculated costs which makes the production price equal to the world prices. Conversely, the inputs of the products which are produced in favourable conditions in the agricultural production, and are in a comparatively more advantageous situation, are of a lower value and can attain only a considerably lower price than that of the world market. Products that have lower disparity between production-price and market (world) price, because of maintaining of simple reproduction, have a need of institutional support within the component which is important for formation of the production price, i.e. the costs of work. Thus, systematic measures and institutional financial support, emphasised by stimulating measures, have to be closely related to the production process of primary agricultural production.

1. Support of Production Price

In the Republic of Macedonia there are 176,000 registered agricultural economies. With total privatisation, redistribution of state-owned land and reactivation of abandoned cultivable land, farmer-and-family-orientated production will show a positive trend. Most of the farmers do business in conditions unsatisfactory for agricultural production. They make use of land which has a lower credible value and a low degree of technical and technological development. The production process incurs high expenditure and gives low yields. All this results in low productivity[47]. Because of the low level of the

[47] Macedonia in comparison to Western Europe has twice as large a labour-force for sustaining the degree of self-sufficiency with regard to primary agricultural products. This is certified by the high percentage of employment within agriculture, equal to

production force and production relations, the following processes occur regularly:

a) the level of the realistic price paid by consumers, covering only the costs of production and makeing minimum profit, is equal to the world price;

b) the minimal profit is as high as to cover, almost exactly, the demands of the fiscal policy (fiscal system);

c) the marginal price is equalised with the threshold price;

d) the field of differential rent (the profit) is tight or virtually does not exist at all, which does not provide enhanced reproduction and development.

To eliminate all this, systematic measures should be wholly directed towards an increase in the productivity of labour. There is a need of instruments and measures which will influence a decrease in the production price.

A decrease in the production price, along with the implementation of modern measures and methods, can be attained within the set of systematic measures.

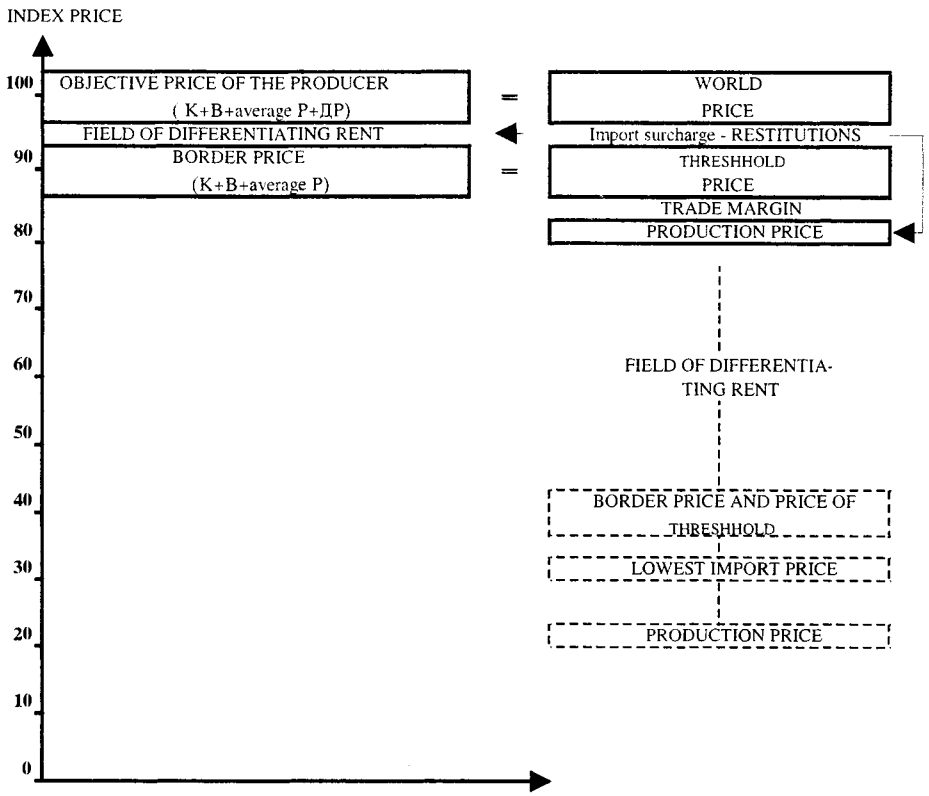
Within these systematic measures of high importance is the regulation of import of inputs used for agriculture. A large number of high-value components within the import sector, being essential for agricultural production, should have the lowest possible import-price, and finished products which are deficient on the national market should have a marginal or threshold price, equivalent to the price within the EU markets. Thus, production price will decrease to the level which will provide cover for work costs and will create far more flexible means for enhanced reproduction.

By moving the level of the marginal price, the threshold price and the lowest import price to a lower level, agricultural producers will produce a very high amount of extra-profit. On this analogy, farmers will be provided with a higher standard of living and a far greater investment cycle for the enhancement and modernisation of agricultural production which will be profitable.

As a part of the total struggle for a decrease in the production price, the tax system plays a very important role, and also the customs, the system of stimulating measures, investment and crediting, market regulations, regulations on the agricultural market, social and health insurance, as well as the support for private farming.

22% of the rural population, lower yields per hectare and a high degree of import of food, etc.

ADMINISTRATIVE (POLITICAL) PRICES IN THE REPUBLIC OF MACEDONIA



1.1. Tax System

The fixed national taxing policy has to have a differentiated approach towards the taxes which are a burden to agriculture. This is especially so in connection with Value Added Tax, which does not take into consideration the classification of agricultural production. Namely this tax is present within all phases of making the final product. It is present within the price to a level of 5%, separately in the phase of primary production, through procurement of inputs, separately in the phase of reproduction (of wheat into flour), and separately in the phase of the processing of final products (flour into bread and bakery products). This means that not only are the new values of final products being taxed but also the components within the final products. Therefore we may

conclude that the Value Added Tax of final products, which is applied both to its basic price and the rate, whose components have been previously already taxed, does not represent an objective form of taxation. Its essence can be epitomised in the following:

1. The Differential Rent I which is a result of natural suitable conditions, should in no case be subject to taxation of the basic price. It is a result of the natural values of the soil and climatic conditions. These conditions have not been created by the use of labour, nor have they been created by invested endeavour or some other kind of human power or activity. We cannot make a distinction with regard to the structure of surplus of value, this being one indivisible whole, a product of nature.

2. Seeds and planting material, herds for insemination and products for internal use (processing), are solely products, and are not goods, because they are not intended to be disposed of on the consumer market, but are exploited as values used in some other production process. Thus, in the primary redistribution of the Gross Domestic Product of home-used domestic products, only participation of means for labour (material expenses) and the value of labour are extracted. The quantity of value surplus is divided among the economic participants. The participation of financial institutions has to be excluded from them because institutional functions (in the market or for agrarian measures, etc.) are not present. On these bases, the integrational processes of future repro-unit linking between primary agricultural production and industry have to be built involving both economic and technological-and-technical aspects. The fragmentation of agro-industrial plants, being a reverse integrational process, in every case, gives a repetitive application of taxation. Taxation is applied to every single product, both in the distribution of profit of primary agricultural production and in the distribution of profit in processed goods, i.e. in the higher phases of finalisation.

Undoubtedly, these kinds of contributions decrease the reproduction capabilities of economic entities in the processing and production industries, and they make the products expensive and uncompetitive.

The products used in processing and for self-production are unreasonably taxed for differential rents I and II. These rents contain the products of the primary agricultural production, which are treated as raw material and necessarily need to be further processed into a final product and the products which are used for renewing the process of primary agricultural production. The segment of processing, presented as an internal market, excludes the possibility of participation of the tax user in the creation of surpluses from the values or from the

differential rents I and II. The emergence of the final product, aimed at the general market, out of the higher phase of production, justifies the state's participation in taxation of the extra-profit, created by conveniences on the market. Thus, the extra-profit from the surrogates of primary agricultural production, all the way through their preparation for direct consumption, has to be treated as an element of stimulus and development in the system of correct establishment of the basic price for levying tax on agricultural business.

3. Finished products, aimed for market exchange, have a value-for-use. Labour is being invested in them, as well as means of labour and the subject of labour. Besides this, in the production of the value-for-use there participate the owner of the means of production and the fiscal institutions, through the creation of conditions for the realisation (retailing) and application of the market regulations through different instruments and measures. The distribution of the total income among the participants must be conducted in accordance with the labour invested, the capital invested, the knowledge, the place and the function designated or executed within the system of distribution of labour, of an individual or an institution, in the process of agricultural production.

All this gives us the right to suggest the following:

- total revoking of VAT with regard to raw material, the substances of products for primary agricultural production;
- total revoking of VAT for the sectional and additional factory mechanisation, for the equipment and other technical means which are not produced in the country or are deficient to a large extent; and
- the Value Added Tax on final products should not exceed 5%.

1.2. Customs System

High customs rates on imported raw material and equipment, which are components of the calculative elements within the establishment of the production price, have a relatively high degree of participation in the expenses of primary agricultural production. Customs on raw materials and repro-materials varies between 2 and 5%, and in the case of mercantile wheat, used as a component in the making of fodder, the customs rate is 16% of the price. In connection with machines and equipment, this levy is 5.84%. It is evident that the customs system, by levying customs on products which are not represented within the national economic structure, or are deficiently represented, designates high customs rates, with which the development component of the overall fiscal system of the state is lost. The state could help the competition of agricultural

products in relation to their price, if it decreased the customs rates on the deficient products, repro-materials and equipment to a minimal level, or to the level of the free-trade clauses. The components used in the process of production, and which contain high levels of toxic matters or elements of unhealthy food, have to be exempt from this.

1.3. System of Stimulating Measures

The most wide-spread system for imposing measures for stimulation is subsidising. Domestic subsidies are of the highest importance for Macedonia because they are used for increasing domestic supply. The most important subsides (premiums and bonuses) are those which participate directly in the outputs (the production). Subsides connected with the purchase or the market price have an unproductive or counter-productive character.

The low development level of crop and livestock production imposes the need, within the agrarian policy, of installing particular measures, along with premiums and bonuses as measures of stimulation, which would enhance conditions of agricultural production. In this context we mean, above all, financing of the realisation of the Programme for Development of Crop-Production, Fish-Breeding and Beekeeping, following the development and support of the individual (private) agricultural sector, for the creation of artificial meadows, as well as for the construction of dams and small water accumulations. In doing so, of great importance is the support for development of crop-production, for the construction of ameliorative systems and for the improvement of the private agricultural sector.

Crop-production has to keep to this course of development, through an increase of basic herds, breeding-stock female head and increase of kids. Within the private sector, along with this, there is a need for the continuation of financing of measures for quality improvement of cattle-breeding and sheep-breeding, with an input of male breeding-stock head of ennobled breeds, with improvement of organisation in the purchase of milk through collection stations, etc.

We see the improvement of private farming also taking place through subsidising measures, such as: artificial insemination of cows, construction of silo-pits, procurement of varieties of seeds for the crop-production and fruit plants for the hilly-and-mountainous areas, as well as the construction of mini-farms for production of milk and meat.

In the context of programmes, it is important to mention the setting-up of new development programmes and their support, within the agrarian policy, as

an element of market and export-oriented agricultural production. These programmes have to be based on free entrepreneurial initiative and on a market approach.

Development programmes should be aimed at making and sustaining stability of conditions in agricultural production. It is necessary that their contents suggest better use of agro-ecological conditions and stimulating producers whose business linking and joint investment, particularly in export projects, will make profits or attract foreign capital. The realisation of the programmes has to be aimed at engaging foreign capital and assets from the people. The results will be made evident through an increase in quality and quantity of supply on domestic and foreign markets and through an increase in the export of agricultural and food products.

On the basis of current analysis of possibilities of development of production, the processing and the placement of certain agricultural and food products, the following programmes have to be realised:

- Programme of production and high level of finalisation of certain varieties of (early) spring vegetables;
- Programme for fresh-water fish-breeding;
- Programme for development of production of soya or tobacco;
- Programme for development of production of seeds and planting material;
- Programme for enhancement of production of wines-of-geographical-origin;
- Programme for healthy food;
- Programme for multi-purpose accumulations;
- Programme for production of quality lamb;
- Programme for production of beef in the hilly-and-mountainous areas, etc.

In view of the demands of the world market, the scientific and technological achievements in the world and the available natural, and productional and working potentials, we can conclude that the implementers of the development programmes will be economic subjects (through finding domestic and foreign capital), with a basic orientation towards an increase in export and towards building up competitiveness towards foreign markets.

1.4. Investing and Crediting

In a market economy situation, the role of crediting in the private sector will significantly increase, both in the current sphere as well as in investment crediting. The small financial potential, particularly the lack of their own accumulation, will direct the agricultural producers towards the banks and towards an increased use of credit, since the equipping of an agricultural producer with modern agricultural machines and technology, as well as the managing of the necessary working capital, requires significant financial means. These greatly outrun the possibilities of providing them from one's own savings, even if it is in the long run.

After the independence of the Republic of Macedonia, the necessity of further use of long-term agricultural credit imposed itself on the agriculture. The long-term agricultural credit in market economy conditions should be outlined as a credit engagement with all its components, such as interest, return deadline, credit risk, etc. However, the production which, due to its specificity (turnover ratio, long term of investing, etc.), is not in a situation to endure and pay the credit, while this is attractive and profitable (in the long-term), should be supported with stimulation and with favouring on the part of the state. Therefore, while establishing the potentials for releasing agrarian credit, an objective interest must be provided. Thus, the basic potential of the agricultural credit should be found in the long-term savings of the population; issuing of long-term bonds (government, fund, etc.); long-term deposits by foreign subjects; establishing restricted funds for agrarian crediting (land fund, fund for revitalisation of the countryside, irrigation fund, etc.); issuing of banking shares; market capital operation; inocredits; international banks and other financial institutions; reintegration fund; the privatisation agency; technical help; contributions; etc.

The support of the development of business subjects, of plant and livestock production, of the population that works in problematic conditions, should be based more on loans, while credits should be differentiated by favourable payment conditions and a longer grace period.

1.5. Market Rules and Regulating the Agricultural Market

The enriched requirements of consumers in countries with a developed market economy, on the one hand, and the sophisticated criteria for high-quality and for designed food products, on the other, are the basic criteria for selective export of specific products that supplement and increase the assortment on the world markets. Therefore, a high level of quality of agricultural products should be established in the turnover, i.e. a high level of quality of all products, espe-

cially those which are an export component. It is essential to conduct an ongoing inspection of the food products (in slaughtering cows, poultry, pigs and fish, of fruit and vegetable processing, etc.). In other words this means that nutritious matters susceptible to decay and which cause diseases should be checked and controlled in order to protect the consumer.

The strict state control of prices and protective measures come into collision with the liberalisation principles, as a positive process in the market mechanisms development. The agricultural producers need protection of their production both on the domestic as well as on the international market, up to the moment when they achieve a high level of productivity, equal to the international productivity and a competitive ability, relating to the quality and design of their products. Therefore, institutional support should be directed towards the production process and the reproduction components.

1.6. Retirement-Disablement and Medical Insurance of the Farmers

The social security and the social protection of the agricultural population present some of the most important factors for the overall development of the rural areas. So far the societal and the economic development has brought about a significant aggravation of the economic and social security of a larger number of the agricultural population, but also, as a result of inappropriate agrarian reform and social policy, an increasing number of agricultural households find themselves on the brink of survival. According to the data from the Statistics Institute of the state, rural households are among the most vulnerable population groups. For instance, 20.9% of the rural population was poor in 1999. The indicated data gives us the right to conclude that the agricultural households, especially those consisting of elderly people, are in an exceptionally hard social and communal position, with the present elements of disturbed social security.

1.6.1. Retirement and Disablement Insurance

The material and the social protection of elderly farmers in the Republic of Macedonia is conducted according to the Law on Farmers Old-Age Insurance (Official Gazette no.15, 1978) and according to the Law on Retirement and Disablement Insurance (Official Gazette no.4, 1989; no. 80, 1993; no. 14, 1995).

According to the Law on Retirement and Disablement Insurance, the individual farmers, taxpayers on their agriculture income, are obliged to pay a fee for retirement and disablement insurance. The fee rate is 20.64%. The lowest base for fee payment of retirement and disablement insurance is 30% of the average salary realised in the Republic of Macedonia in the last three months. By

this law, the farmer-taxpayers have been formally levelled with the rest of the employees.

The average farmer's pension is 30% lower than the average pension in the Republic of Macedonia, while the pension of retired farmers according to the Law on Farmers Old-Age Insurance is even 50% lower (Table 101). The essential living necessities of the retired farmers are much harder to meet with such an income.

Table 101 – Pensions according to farmers insurance Situation October 2000

	Users		Amount in Denars	
	Number	%	Total	Average pension
1. Family pensions	3,409	20.0	13,843,662	4,061
2. Disablement pensions	1,025	6.0	4,389,947	4,283
3. Old-age pensions	12,639	73.0	54,808,655	4,336
Total	17,073	100.0	73,043,265	4,278

Source: Retirement-Disablement Fund

Regardless of the basis on which farmers obtained the right to a pension, the achieved income is low. This income can hardly satisfy the living needs (food, fuel, health services) of the farmers, who, of course, are elderly.

Such a treatment of the farmers by the society is literally offensive and the modern social policy must not tolerate such a situation.

1.6.2. Health Protection

According to the fundamental determinations of the Constitution of the Republic of Macedonia and the Health Insurance Law (March, 2000), a compulsory health insurance was established including also individuals who work as farmers, with an obligation to pay health insurance tax. According to the health insurance of the insured individual, the right to health protection is also given to the members of the close family (spouse, if not insured on a different basis and children under 18). Those farmers who are taxpayers of the agricultural income tax have access to health insurance. The tax rate of the compulsory health insurance is 15% of the determined land register income.

The data (Table 102) demonstrate that the number of health-insured farmers has been continually declining. Also the proportion of the agricultural population that is not insured is considerable, i.e. two-thirds of the agricultural population are not able to use the basic package of health services (primary health protection, expert and consultant health protection and hospital services).

Table 102 – Dynamics of health-insured farmers

Year	Insurers	Family members	Total	Participation within agricultural population
1994	36,481	43,365	79,846	35.3
1995	36,205	38,905	75,110	33.2
1996	35,987	37,255	73,242	32.3
1997	31,052	35,872	66,930	29.5
1998	29,338	33,440	62,778	27.7

Source: Annual Statistical Review of the Republic of Macedonia 1997, 1999, National Statistical Institute, Skopje

Within the current unfavourable economic and social reform of living, the greater part of the rural population faces, also, an insufficient number of general practice physicians and unsatisfactory deployment of health facilities.

Suggested Activities

1. Reinforcing measures and activities created with the aim of enhancement of social protection in rural areas;
2. Providing conditions for implementation of rights to social protection (retirement-disablement insurance) of all individuals with an agricultural occupation;
3. With regard to retirement-disablement insurance, farmers have to have a position equal of that of employers in other businesses. The retirement-disablement insurance must include all the members of the household with an agricultural occupation, no matter whether or not they are liable for taxation;
4. Establishment of a more accessible and more efficient health protection system in the rural areas (private practices, suitable equipment and distribution of health facilities, etc.);
5. Increase in the amounts of all the types of agricultural pensions, while pensions of agricultural pensioners who have retired according to the Law on Old-Age Insurance of Farmers should increase by at least 50%.
6. Providing assets on the part of the state for paying premiums within the retirement and disablement fund and health insurance fund for farmers in hilly-and-mountainous regions, along border-lands and in compact and backward areas.

1.7. Support for Private Farming

The market-oriented economy, in radically different conditions of doing business, needs support on the part of the state with a view to providing assets for various investments, of the type of individual and public (collective) goods. Within this framework, agricultural research must meet the needs of farmers and of consumers, and together develop a market-orientated programme and a project for the instruction of personnel.

The counselling services on products of plant and animal origin, including business and development services, should provide information to farmers concerning the results of research, regarding technology, marketing and business practice.

Within the framework of the measures of the general livestock breeding development, a special place has to be designated for veterinary medicine. Material support is of considerable importance for the prevention of diseases and parasitic infections of domestic animals, for milk, meat and their processed products' quality control, as well as protective food and its influence on the production growth per stock head, etc.

The need for the reproduction of domestic and economically useful animals requires specific management measures of modern computer-based bookkeeping for selecting animals, artificial insemination and embryo-transfer, as well as other activities connected with the business.

The basic sources of profit have to be the following:

1. Budgetary assets (transformation and subsidies);
2. Income from import of agricultural products (customs);
3. Rent income and income from concessions of the state agricultural surfaces;
4. Loans and credits from international institutions.

The assets that have been set aside for support have to be rewarded as loans or as credits.

The loans have to be used exclusively for production lines that seek to cover domestic demand for deficient products and products which are aimed at external-trade exchange on the convertible market. Also they have to furnish strong support for research on the needs of the producers and their affirmation.

Besides this, the basic function of these assets consists of support for the satisfactions of collective needs. Thus, a considerable participation within the complete revitalisation of the countryside and its function has to be provided,

particularly in view of the development of agriculture, cooperative work and countryside living in general.

The distribution of means has to be done exclusively through legal acts, through highly-industrious production programmes, reviewed and controlled by the Ministry of Agriculture, Forestry, and Water Economy, with mortgages provided for the equivalent amount of assets rewarded, and in connection with agriculture.

1.8. The Price of Land

The engaging of an agricultural producer, i.e. a holder of capital and of assets, in any kind of relation with the landlord for the purpose of production of agricultural products brings about a relation of leasing. The amount paid by the holders of the capital (agricultural producers) for the use of somebody else's land, represents a lease or concession. The lease, however, is land rent and represents a part of the surplus of the value. The economic expression for having a right of ownership of land is called absolute rent. This rent, for the producer, has no productive character, since it is not connected with the profit-making and the extra-profit. Thus, the natural value of the land has to be treated as an element which creates newly-made values. The state has to give up the right of money compensation for the distribution of agricultural land, and to pay its part through positive instruments and through measures of the tax system, applied to the finished products. As a result, the state will contribute towards the elimination of concessions as expenditure components, and in the establishment of the production price of agricultural products for disposal on the market.

1.9. Price of Irrigation Water (water compensation)

Additional investments in the process of agricultural production through irrigation are economically justifiable only if they cover the compensation rate for water and if they make a differential rent II (extra-profit). Thus, in conditions of irrigating surfaces, lucrative cultures are those that, by irrigation, make a higher extra-profit. Starting from these economic principles, the average compensation rate for water, which in the Republic of Macedonia amounts to over 18,000.00 denars per hectare, to a high degree overburdens the production price. This high value (of the price) considerably decreases the possibilities for development and modernisation of the technological process within the sector of plant-origin production. Current research confirms that compensation for water, deducted from the price of electricity compensation and the prices of other functions of water before it is used for irrigation, is an additional institutional support for decreasing the production price.

2. International Technical Assistance

For total realisation of the *Agricultural Development Strategy in the Republic of Macedonia,* international organisations and institutions need to be included. There are many international organisations which, directly or indirectly, deal with the development and promotion of agricultural production. Some of them are of a general character, and some of them have a purely specific scope of business. Important for our subject of research are international organisations which pay attention to the development of the entire agriculture and food business and which give adequate technical assistance in regard to it.

2.1. UNO Food and Agriculture Organisation

The objectives of the Food and Agriculture Organisation (FAO) are concentrated on the increase of the level of food for people, as well as the increase of the standard of living of producers. This organisation works continually on the promotion of agricultural production worldwide and on the enhancement of nutrition. It finds ways to distribute producing potentials and establish stability on the world market for agricultural products. This organisation can be useful for Macedonia in giving the following:

- information and statistical data on food and nutrition, agricultural production and the turnover of agricultural-food products, in the form of annual reviews on the world food and agriculture situation;
- help in preparing national scientific and research programmes in different fields, for protection of natural resources and for the spread of contemporary methods of agricultural production;
- technical and financial aid for the crediting of particular projects, useful for the development of agriculture, through the International Bank for Reconstruction and Development and through the International Monetary Fund (IMF).

FAO is an executive organisation of the United Nations Organisation (UNO) for the realisation of projects worldwide. Therefore it has other functions which can be of use for the Macedonian agriculture. Thus, it:

- awards scholarships for the education of experts from developing countries, for work in agriculture, organises courses, seminars, counselling, symposia and conferences on particular questions and sends its own experts to certain countries;
- analyses the situation on the markets for agricultural and food products and makes draft proposals, i.e. work agreements for particular agricultural and food products;

- organises and conducts worldwide censuses of agriculture;
- carries out research on particular questions with regard to agrarian structure, agrarian reform, functioning of cooperatives, etc.;
- supports the establishment of as many as possible independent international organisations working in particular fields and for the enhancement of agricultural production.

FAO credits its activities through contributions of its member-states. The amount of contribution is determined by an established scale, based on the level of the Gross Domestic Product of the member-state.

2.2. Economic Commission for Europe (ECE)

The ECE is a regional economic commission of the UN for Europe. It comes under the protection of the European-Social Council of the United Nations. Almost all European countries, Canada and the USA are members. By strengthening trade and scientific and technical cooperation among its member-countries, the Commission is devoted to the promotion of economic cooperation among European countries and their economic cooperation with other countries of the world. The ECE consists of 30 committees among which is its Agricultural Committee.

The aim of this Committee is to monitor agricultural development in the member-countries. Also, it gives instructions on mutual cooperation and actions with the FAO organisation. It extends and expands scientific and technical achievements in agriculture.

The tasks of the Agricultural Committee are:

- To monitor the agricultural development of its member-countries and publish periodical reviews with reports on agricultural product prices and mineral fertilisers, and to prepare reports on the agricultural products markets in Europe;
- To monitor the promotion of trade exchange, by determining standards for easily decaying products and by determining a single set of conditions and criteria on the turnover of a group of agricultural products (grains, fruit, vegetables, agrumes, etc.);
- To promote the exchange of the scientific and technical information on agriculture through publishing, organising seminars, student exchange, etc.
- To organise its work into different work groups for agricultural mechanisation, agricultural products rationalisation, agricultural statistics, agricultural development, technical exchange and the agricultural products trade.

2.3. Organisation for Economic Cooperation Development (OECD)

The OECD gives material, technical and organisational help to developing countries, in order to allow them to achieve a higher level of economic development, an increase of the level of employment and an improvement of living standard.

The Agricultural Committee, within the OECD, conducts its activity through work groups on agrarian policy, on milk and dairy products, on meat, on fruits and vegetables, on standardisation of fruits and vegetables, on acceptance of new varieties of seeds, on use of reproductive material and on a work group for agricultural research projects.

Also, the OECD organises counselling, seminars, agricultural courses and finances a great number of agricultural development projects and grants scholarships for the creation of agricultural experts.

2.4. International Federation of Agricultural Producers (IFAP) Federation international des producteurs agricoles (FIPA)

This Federation is the most complete international non-governmental organisation. In terms of organisation, it is divided into two parts, which are actually two regional organisations - American, with headquarters in Washington, and European, with headquarters in Paris.

The tasks of FIPA are:

- Expansion and new ideas;
- Informing producers, and the prosperity and standard of agricultural producers;
- Exchange of world experiences with the latest scientific achievements.

The FIPA also protects the interests of the agricultural producers in the international organisations; works on the promotion and association of agricultural production; studies and recommends measures for placement improvement of agricultural products; collects and publishes information on world problems significant for agricultural producers; organises exchange of agricultural experts on different issues; cooperates with the expert committees and other UN bodies and international institutions.

2.5. International Cooperative Alliance (ACI)

The International Cooperative Alliance is the most significant organisation of the world cooperative movement.

The tasks of the ACI are to develop cooperatives in all countries in the world, particularly in the underdeveloped ones; to propagate cooperatives principles and to protect the interests of cooperative organisations. The aim of these activities is a linking of the national cooperative organisations and rapid expansion of the cooperative ideas as a form of cooperation in agriculture.

2.6. Confederation Internationale des Ingenieurs et Techniciens en Agriculture (CIIT)

This organisation is a professionally structured organisation. It makes a contribution to care for the promotion and protection of the agricultural profession and the agricultural experts in Macedonia.

2.7. European Association of Agricultural Economists (EAAE)

The Macedonian agro-economists, through this association, can develop mutual cooperation and can exchange opinions on problems related to the agricultural development in Macedonia.

VII. FOREIGN TRADE POLICY

The development and improvement of the balance-of-payments position of agriculture with partners abroad, should be carried out through the market policy and price policy. It should incorporate the state reserves, issues concerning competition and promotional approach.

Price policy, in accordance with the market rules of international relations, especially those of the EU and the WTO, should basically provide a significantly lesser fluctuation of domestic prices compared to the prices in international trade. The set of instruments of the protection policy should, mainly, be based on guarantees and indicative prices. For the primary agricultural products there will have to be an introduction of protective prices that the state will use to purchase quantities equal to the required state reserves. The essence of this determination is incorporated in the purchase, the reflections of which provide a stable income for the producers and stable prices for the consumers.

Adapting the agricultural policy in the parts of market policy and price policy to the conditions set by the EU and the WTO can reflect on an increase of the budget assets. However, the agreement on associative membership, based on the most-favoured-nation clause and asymmetric trade, should alleviate or completely eliminate the differences in the input import prices and in the output export prices, through the assets of the EU Fund for Guarantees and Directions and through the provisioned possibility for autonomy of developing countries in the determination of the degree of lowering customs on individual products and support of production. Deviation from the provisioned possibilities leads to an over-precipitate market liberalisation which, with certainty, will have catastrophic consequences on agricultural development.

The positive movement of competitiveness should be achieved through adequate structural changes (larger farms), higher modern education of farmers, improved technique and organisation, etc.

The promotional approach should use all possible elements of product transparency, readiness and the competition on the foreign market.

1. Export Policy

In the former Yugoslav Federation, the protection policy for the foreign trade in agricultural products was defined on a federal level. There was a regional allocation carried out as part of it. The current situation brings about the need for redefining the protection measures. Agricultural protectionism, as shown through classic customs, contingents (quotas), norms for quality and through other performances of goods, export taxes and administrative measures, does not completely integrate Macedonian agriculture. The total quantity of several of the more significant products intended for export does not fit the contingents of the world trade economy. The hyper-production in Macedonia of lamb, vegetables, fruit (apples), wine, tobacco, and, in some years, of rice, is hard to realise on the deficient European market. Germany feels a need for importing vegetables, fruit, wine, veal and pork, the Italian and the Greek markets suffer a lack of young beef, veal, lamb and pork, while the Netherlands, Luxemburg, Ireland and Denmark lack wine, fruit and vegetables.

Regarding specific products, special importance lies in the export of tobacco, lamb and wine, and, a little less of fruit and vegetables – fresh and canned.

Regarding tobacco, which represents a very characteristic export product of Macedonian agriculture, the EU provides preferential treatment, especially for the "Prilep" type, but only in a contingent up to 15,000 tons, while the "Jaka" type is exported to Italy. Efforts should be directed towards the secure maintenance of these relations, as well as to their increase concerning quality and distribution of sales in other countries. The finished products of the tobacco industry – cigarettes – represent a special aspect due to the different conditions for their production (they are industrial, not agricultural products).

Concerning lambs (live and slaughtered) and wine, Macedonia has the leading role among former Yugoslav Republics both as producer and exporter. This suggests that Macedonia should be given a high individual participation in the EU contingents for lamb and wine.

The increase in the export orientation for other surplus products can be achieved if positive elements for the stimulation of quality agricultural production are incorporated into the agricultural policy, in accordance with consumer tastes. Primarily, this concerns export subsidies to help equalise our standards with the standards and regulations of the EU and the rest of the world and to harmonise the foreign trade regime and the conditions for importing raw materials.

The export subsidies for agricultural products should cover, primarily, products in the higher phases of processing and products with a high content of domestic substances. The subsidy level should be determined selectively and it should be adjusted depending on the long-term balance forecasts and conjectural movements on the domestic and foreign markets, as well as the level of protectionism on the export market. The volume is determined by the material capacities.

Equalising standards is necessary in order to remove technical obstacles in trade and to carry out the adaptation to the EU internal market. This concerns especially the fields of new technology, veterinary and phytosanitary control, the hygienic and sanitary correctness and quality of the products, the norms concerning the quality of production and trade in seed and planting materials, as well as agricultural machinery, the food industry, etc. In principle, the intensive application of scientific achievements in agricultural production can have a great influence, most of all, on the improvement of the quality performance of Macedonian agricultural products. Also of great importance is the detailed examination of the normative regulations of countries that are actively involved in the international trade in agricultural products. This is followed by the standardisation and codification of products.

Seen from a long-term perspective, the enhancement of the export orientation should also be observed through the restructuring of the export range of products in accordance with the specific demands of our target markets. It might be the case that Macedonia is awarded a relatively high export contingent. However, because of the weaknesses in the area of non-price factors linked to competitiveness, there is a belief that larger part of the export will not be realised. In practice, because of these reasons, the existing comparative advantages have not been turned into acquired competitive advantages in exporting agricultural products from Macedonia. In order to overcome the barriers set up by countries in the foreign trade in agricultural products, with which, at the same time, we will achieve the stability of the conditions for agricultural producers, the achievement of a high non-price competitiveness of exports might well be of dominant importance.

Protectionism in the foreign trade in agricultural products is gradually abandoning the system of protection through the price factors of competitiveness. This, primarily, concerns customs. Subsidies, especially incentives, are the most frequently implemented measure of price protection of primary influence.

The set of instruments for subsidising exports depends on the material capacities of the state. It would be ideal if Macedonia could subsidise the entire

agricultural production, which would be exported at the world price, which is lower than the domestic production price. The list of products that compete for export is extensive, but these have low labour productivity, high costs and a high production price. Their competitiveness on the international market, which means the equalisation of the domestic with the low world price, demands a high level of participation. The use of subsidies in the export of agricultural products allows equity, reality and cost efficiency only in conditions of satisfactory state financial reserves and hyper-production that endangers the standard of the producer, and the economic and political system of the state.

Macedonia, as a country with limited financial capital, can afford subsidising directly in the agricultural production process through premiums, direct payments and compensations. The choice or the combination of participation makes sense if it serves as a compensation for the production costs covering the imported inputs.

The best thing is for the participation in the export component to be carried out through subsidising transport costs and energy, through cutting taxes, and mostly through approving consumer credits to the country importing Macedonian agricultural products.

The incentives that the EU exploits the most in its practice should occasionally be used here, too. They represent the difference between the higher domestic and the lower import price. This difference is paid by the importer. This protects the domestic agricultural producers from foreign competition at the expense of the domestic consumers. In the cases where incentives are used in the foreign trade, Macedonian agriculture should reach a decision and reduce the protection to an agreed amount. This should not mean an agreed customs rate, but an agreement for a lowered incentive by the foreign partner for a certain number of products.

Regardless of whether we are talking about export to the EU or to other groupings and countries in the world where there is, basically, a similar way of regulating foreign trade, the agricultural policy should be directed towards minimising the barriers imposed by other countries which are target markets for Macedonian exports. The approach should be oriented towards decreasing the increasing role of the instruments of primary influence through the quantity and instruments of secondary influence expressed through the non-customs barriers.

Of the list of quantitative protection measures, quotas (contingents) are the most often implemented, while of the non-customs limitations, most frequently present are the qualitative performance of the product and the customs

procedure. This concerns the influence of the non-price factors of export competitiveness.

The foreign trade in agricultural products from Macedonia should pay special attention to the non-price factors of competitiveness. In that context, quotas, as a protective measure, are of priority importance. Good business relations with the partners should provide bigger quotas for Macedonian agricultural products intended for the importing countries that suffer from a lack of those products. However, in the case where' the importing countries apply limitations to the contingents during the period of full maturity of its own agricultural production, we should use the agreed quotas for the simple reason that a limited small contingent means complete prevention of bigger sales.

The agricultural policy should, also, view objectively the concrete barriers regarding the provision of certificates and norms for quality. The requirements for submitting documents concerning the origin of the product, the quality, health condition, etc., should be met and respected. This guarantee would suggest the issuing of a state document.

The customs procedure in Macedonia is very complex. It is therefore necessary to simplify it. This is especially important for agricultural products with short expiry dates intended for export.

In order to improve the influence of the non-price factors relating to competitiveness, it is necessary to require the acceptance of a relatively new orientation for Macedonia in the overall foreign trade. The selection should be based on higher and more modern forms of export. Macedonian agriculture should gain through them, in the long term, a dominant orientation and a dominant participation. The basic logic behind these higher forms of foreign trade lies in direct links with foreign partners through various forms of cooperative and similar types of collaboration.

With those cooperative relations, the foreign trade of the agricultural sector in Macedonia can most efficiently achieve the specific performances (primarily the non-price ones). These enable lasting relations and amounts in the international trade, stability of conditions for business for agricultural producers and they attract interest among foreign companies to enter into cooperative arrangements.

Regarding the possibilities of an increase in the export of those products with a higher degree of processing (e.g. cigarettes), which is one of the orientations in the foreign trade policy, the cooperation can certainly be more efficient.

2. Import Policy

The import of agricultural and food products can be:

a) free;
b) using contingents (according to quantity and value);
c) seasonally limited.

Free import, by rule, applies to those products not produced in the country or that are produced in insufficient quantities (i.e. permanently short in supply).

The establishment of harmonisation in the free import is very important as part of the foreign trade regime which is different depending on the products.

The import of finished products which are occasionally in short supply (wheat, oil, sugar, milk and dairy products, meat and meat products) should be included in the customs protection regime. The basic logic of the protective customs system lies in the equalisation of foreign with domestic prices. The burden of the difference in price is transferred to the consumer, but in this way the producer is protected. Concerning the possible import of agricultural products into Macedonia, conditioned by the export of agricultural products from Macedonia, the policy should basically be directed towards a restriction of the import contingent or towards a partial lowering of its own import protection.

The raw material and components necessary for the production of fertilisers, products for protection of animals and plants, the protein components for cattle feed, packaging, equipment and machinery should be covered by an import policy directed towards liberalisation and lowering of import taxes in accordance with the minimal customs taxes regime. This is essential for the simple reason that customs taxes increase the price of the imported production component and decrease the profit rate of agricultural production.

Acceptable measures are, also, importing for the sake of exporting and importing with the obligatory relative use of a substance in the exported finished product.

The given products and substances which are in short supply on the domestic market should be subject to subsidy when the export price is lower than the indicative one. The amount of the stimulating component (the subsidy) should be, at least, the amount of the difference between the achieved export price and the indicative price.

The liberalised contingent import, practically, covers agricultural products and their processed products for which a special form of the price is determined, as well as products that can be produced in sufficient quantities in the

country. It covers the regular import on the basis of long-term production cooperation, import for the sake of ennobling and production for export and import for intervention on the domestic market.

In fact, the import should be based on the protective measures connected to the quantities (quotas), on the import calendar, on state trade and state interventions and on import for the sake of export. The global contingent is determined at the beginning of the economic year on the basis of the forecast balance, while its allocation is carried out dynamically, quarterly throughout the year in accordance with the movement of supply, demand and other conditions on the domestic market.

The seasonal limitation of import, primarily, concerns products for which a special price is determined in the harvest, gathering and purchasing season, as well as other products in the season when they arrive on the market. The quotas, permits and the import calendar are used as qualitative measures of protection.

3. Foreign Trade Policy Concerning the Former Yugoslav Republics

The changes in the system measures have changed the conditions and the surroundings in which Macedonian agriculture exists. The exchange of agricultural products with the former Yugoslav Republics falls under foreign trade. That is why directions of the foreign trade with them, nominally, are moving within the principles of any country in the foreign trade. In such a constellation, it is completely opportune to direct the foreign trade policy with the former Yugoslav Republics towards maintaining the quantity and degree of freedom of the past exchange. Because of this advantage, the suggestions tend toward expanding this exchange. Its economic efficiency is based on the existence of the agricultural structure. The making up of insufficient qualities of certain agricultural products will still be carried out through favourable foreign trade. This is especially important for the export of rice, vegetables, fruit and grape products, but also for other surplus products, as well as for the import of meat, milk, cattle feed, wheat and other products lacking on the Macedonian market.

Bilateral and multilateral arrangements, which are part of the foreign trade regime, should be maintained and deepened. The mutual interest in cooperation in international trade, with an emphasised optimism for liberalisation, will create possibilities to reduce as much as possible the existing illegal trade that is carried out through the smuggling of meat and milk into Macedonia, as well as of rice, vegetables and other agricultural products from Macedonia into Serbia and other former Yugoslav Republics.

More rarely, for certain products which Macedonia exports, because of high prices, the determination of the other Republics may be directed towards purchasing from third countries. In that case, the agricultural policy should show its flexibility. Through negotiations, with bilateral compensation or application of some other mechanism, the foreign trade policy should achieve favourable exchange conditions.

4. Foreign Trade Policy towards the EU and the World Trade Organisation

In the complex system of international trade, the most essential thing is how to establish a higher degree of liberalisation of the protectionism regime of the EU. Even though Macedonia is not a permanent member of the EU, it should strive, through the incorporation of instruments and measures, to gradually adapt to the criteria of foreign trade with the EU and the World Trade Organisation (WTO), because the integration of Macedonia into the World Trade Organisation and the European Unions besides other things, is conditioned by the adaptation of agriculture within the framework of the Uruguay round of negotiations. The adaptation, primarily, concerns the limitations regarding the markets, prices of agricultural products and export. For that purpose, two groups of allowed measures have been formed.

The first group, which is called the green group of allowed measures in foreign trade, includes those measures with minimal influence on free trade, such as, for example: social insurance for farmers, advisory services, educational programmes, environmental programmes, providing free food for the poor, decreasing production areas for certain cultures, etc.

The second group, called the blue group, includes measures linked to direct payments to producers whose goal is to decrease production. These measures concern fixed areas, number of livestock and fixed yields.

Macedonia's foreign trade policy towards the EU and the WTO includes the Agreement for the Application of Sanitary and Phytosanitary Measures. The goal of this Agreement is to remove discriminatory measures that limit the access to markets, because of unrealistic sanitary and phytosanitary conditions for exporting products to certain countries. It prefers the acceptance and implementation of international standards set by : FAO/WHO Codex Alimentarius Commission (food quality), Office International des Épizooites (animal health condition) and the International Convention on Plant Protection (plant health condition and plant quarantine).

The customs rates, instead of the current import protective measures, should be lowered by 10%, or 1% annually, in accordance with the EU requirements for developing countries.

The use of the state reserves to maintain the protection price, in conditions of a high degree of openness to customs protection, should be limited and gradually abandoned.

The EU common agricultural policy is moving towards a maximum possible limitation of tobacco import. A good deal of the areas under crop cultures are redirected towards the production of short-stem vegetables.

Still, the West European markets represent a challenge for Macedonian agriculture. There, the foreign currency effect is much higher than on other markets. The efforts of integrating Macedonia into the EU should be accompanied by attention and respect for the market conditions, sharpened criteria concerning prices and quality, with all the elements to monitor the marketing mix. The efficient approach increases the chances for the acceptance into the Common European market of the Macedonian hyper-production of tobacco, as well as of vegetable crops, fruit products, grape products and animal husbandry products and a supply of raw materials, equipment and finished products at relatively lower prices.

5. Foreign Trade Policy towards other Countries

Contemporary changes in international economic relations open up room and possibilities for a stronger approach in the foreign trade in agricultural products with the SEV countries. Until recently, the East European political and economic integration – SEV, was based on integration relations that, to a large extent, prevented the export of agricultural products from Macedonia into them. In SEV, especially in relation to certain agricultural products (vegetable products, fruits etc.), Bulgaria, practically, had the monopoly both in production and in trade. The breaking apart of the SEV completely changed these positions. The markets for certain agricultural products, especially of some countries – former members of SEV (e.g. Russia, Poland, the Czech Republic, Slovakia) – are now unsatisfied. As such, they open up paths for competition and sales. Thus, it is logical that the trade with agricultural products from Macedonia intensifies. Through bilateral and multilateral compensation engagements, the foreign trade policy in agricultural products can make efforts to include certain agricultural products which could be in demand on those markets. First of all, this would include vegetable crops and fruits – fresh frozen or canned - but also other products.

Finally, certain opportunities, primarily for sales of agricultural products from Macedonia, are offered by the markets of the Middle East (Arab) countries. Compensation principles are not the most typical in trading with these countries. However, potential opportunities for Macedonian agricultural products can be found, mainly for the export of lamb, vegetables and fruits.

6. The Influence of Customs Protection and the Degree of Openness

The import of agricultural and food products is carried out in order to establish a balance between supply and demand, to improve the choice of products, to strengthen competition on the domestic market and to introduce technological innovations. The import under favourable conditions should provide essential production inputs to supplement and support production intended for export and for other special purposes. Import protection is introduced for agricultural and food products whose production in the country is rational, of good quality and in sufficient quantities. At the same time, the protection of domestic agricultural production should be quite elastic and selective.

During the stimulation of exports, as is the case with import protection, the principle of flexibility and selectivity must be followed. Active monitoring of market conditions is also necessary.

Stimulation of the export of agricultural and food products will be applied as long as there is agricultural protectionism on the world market. The assets for stimulation of agricultural export will be selectively directed to the higher phases of processing and will be expressed through knowledge and services. The sources for subsidising-export should be based on the assets allocated from the state budget. It is necessary for these assets to be directed selectively to products depending on the net foreign currency effect and the degree of finalisation of agricultural products. The focus should be on the products in a higher phase of processing in accordance with the market conditions and the level of agricultural protectionism on the international market. Using these criteria as a starting-point, we expect an increase in the level of additional incentives. This is conditioned by the production growth, production restructuring and improvement in the quality of products in accordance with the demands of the world market.

The extensive agriculture production in certain parts of the country, as well as the low productivity, still impose contingent liberalisation in the import of certain agricultural products. There is a need for the existence of a liberalised

import of equipment and machinery for the agricultural and food industry, as well as the import of fertilisers, products for plant and animal protection and certain components of cattle feed.

In order to carry out the import of raw materials and components for the production of fertilisers and packaging, as well as the protein components for the production of cattle feed, it is necessary to lower customs and import taxes.

Bearing in mind the seasonal character of agricultural production and its protection, it is desirable to introduce seasonal import limitation (for time and quantity), with special import taxes on agricultural products intended for wider consumption.

In the structure of the agricultural production there remain a great number of products which have specific supply and demand and the flexibility of which is most often invisible. This group of products includes fruits, vegetable crops, table grapes and others. These products are very important according to their volume and participation in nutrition. In order for these products to be offered not only seasonally, but throughout the consumption period and to alleviate the inflexibility of supply, a good quantity of them should be processed and transformed for an extended period of consumption. For that purpose, as part of the protective policy for these products, the first thing to consider is the permit for the import contingents at the time when domestic products are offered on the domestic market. In any case, the import taxes on those products should be set in such a way as to equalise the prices of the imported products with the domestic price. The difference accomplished from the import until the realisation on the domestic market should serve as one of the sources for determining the subsidy for the domestic production intended for export. In this way, the export of fruit and vegetable products and their processed products intended for the outside markets will be stimulated. The subsidising of the highest quality products for export should be at a level that will provide equal competition with the same type of products from other renowned countries present on the market. We suggest this because the additional export stimulating measures for the maintenance of a competitive position for our products in the export has not provided, in the past, an equal competitive ability for our products on the outside market. The reason for this lies in the fact that the other countries activated mechanisms for protection of their domestic agricultural production from imports.

The criteria for the introduction of measures for import protection are as follows:

1. Movement of production and consumption of agricultural and food products;

2. Realisation of the programmes for development of agricultural production and the most important agricultural and food products;

3. The market conditions on the domestic and foreign markets.

The need to realise the domestic economy imposes itself also in the field of agriculture. The changes on the international agricultural markets, especially on the single European market, impose the need for several significant adjustments.

First, we should adopt programmes for the adaptation of the activities on the domestic market in accordance with the world market demands, such as: norms and standards, veterinary and phytosanitary control, sanitary correctness, introduction of agricultural machinery and equipment in the food industry, as well as environmental protection, new technologies, services, etc.

Second, we should organise a constant and systematic exchange of information on technical, technological, scientific and other achievements in order to increase productivity in agriculture and to have a more organised approach to the world market.

Third, we should adopt programmes for short and long term activities in order to adapt to the World Trade Organisation for the purpose of increasing foreign trade.

VIII. DEVELOPMENT, EXPORT AND IMPORT POLICY-MAKERS

The development, export and import policy-makers in agriculture and the agro-complex, by and large, can be divided mainly into three groups:

a. government institutions,

b. agencies and expert services,

c. economic subjects.

The elaboration of the functions and the importance of the agencies and the expert services are incorporated in the government institutions group, as a constitutive part of the institutions of the system. Therefore, the makers of the export policy have been located in two groups a) the institutions of the system; and b) economic subjects.

1. The Institutions of the System

The institutions of the system, as leaders of the development, of export-import policy, mainly consist of certain government institutions (Ministries) and the assisting expert services, tied to the state bodies and organisations.

With reference to the Ministries, it is important to include the Ministry of Economy, the Ministry of Agriculture, the Ministry of Foreign Affairs and the Ministry of Finance in the export-import policy of the agro-complex products.

With reference to the state expert services, as constitutive components of the Ministries and the state in the development, export and import of the agro-complex products, a significant part should be played by:

- The Agency for Investment Promotion,
- The Economic Chamber,
- The Standardisation Institute,
- The Farmers Association,
- Educational institutions, etc.

1.1. The Ministry of Agriculture, Forestry and Water Economy

The main institutional support for agricultural development is provided by the Ministry of Agriculture, Forestry and Water Economy. The Ministry is in charge of proposing, applying and monitoring the necessary legal regulations and certain expert responsibilities in agricultural development and other agriculture-related activities. Those are activities and legal obligations which, currently, refer to agriculture, fish-farming, the food-processing and tobacco industries, veterinary medicine, the water economy, agricultural and forest land and the relevant inspection responsibilities for their application.

The Ministry is organised in separate sectors in order to perform its responsibilities, a) agriculture sector (with departments for crop-production, livestock breeding and agro-economy); b) veterinary service; c) inspection service; and d) water economy sector (with departments for hydro-ameliorations and their exploitation). Some time ago the Agency for Individual Farming Promotion was also included in the Ministry, and, despite its being an individual institution, it plays a coordinative part.

However, although the Ministry possesses a department for agro-economy, agro-marketing matters, the computer programming and the critical analysis of the agrarian policy are not sufficiently well performed. Therefore, we suggest the establishing of an Agro-business Informative Centre, within the Faculty of Agriculture, which will greatly assist the more efficient creation and application of the agrarian policy in the agricultural and agro-processing industry sectors.

1.2. Other Significant Governmental and Non-governmental Institutions

Besides the Ministry of Agriculture, Forestry and Water Economy, other Ministries and bodies participate in the creation of the agrarian policy. Thus, for example, the Ministry of Agriculture, Forestry and Water Economy suggests financial stimulating measures, while the Ministry of Finance and the Ministry of Economy determine the customs taxes, the export stimulations, the import quotas and the other limitations. With reference to foreign trade, the Ministry of Foreign Affairs plays an important role.

Within the Ministry of Economy there is a Material Reserves Bureau, responsible for keeping the strategic reserves of the chief agricultural products.

However, it would seem that the Ministry of Agriculture, Forestry and Water Economy is not given the necessary leading role with reference to creat-

ing and applying the agrarian policy. Frequently, the Ministry of Finance imposes itself on the primate of the Ministry of Agriculture, Forestry and Water Economy with reference to establishing the agrarian policy and the monitoring of the domestic and the international markets. Therefore, the establishing of a Council of the indicated competent Ministries, headed by the Ministry of Agriculture, Forestry and Water Economy, is a constructive idea.

Besides the governmental institutions, the role of the non-governmental institutions, such as the Economic Chamber and the Farmers Associations, must not be underestimated. Within the Economic Chamber, active are the groupings for agriculture, the food-processing and tobacco industries, with representatives both from the sector businesses as well as the individual farmers from the agricultural groupings in agriculture. It seems that, after the reorganisation of the former agro-plants, they will need a special association for protection of their economic interests, something which, for example, the individual farmers achieve through the Individual Farmers Associations.

In conclusion we should mention that there is a current necessity for greater cooperation between the Ministry of Agriculture, Forestry and Water Economy and the Economic Chamber with reference to applying the new agrarian policy for achievement of the middle-term aims in the agro-complex development.

2. Economic Subjects

Several organisations and institutions may be included in the development and the placement of the primary agricultural production and the processed products. The most significant are:

a. The trade missions of domestic export-import subjects, founded abroad;
b. The agro stock exchange of agricultural and food products.

2.1. Trade Missions of Domestic Subjects, Founded Abroad

One of the most important factors in the development is trade. The economic foreign exchange, as a trade component, represents a constitutive part of the economic development. The promotion of goods exchange on the international market requires a continuing presence of the production subjects. This is achieved by a mission network abroad. In other words, the promotion of the Macedonian export of agricultural and food products is possible by modernisation and adaptation of the foreign trade organisation.

The Republic of Macedonia has a great number of subjects whose activity is foreign trade. Nowadays, the network is characterised by minuteness and fragmentation. No mutual internal coordination exists, which leads to unfair competition on the international market. The consequences are reflected in the low prices and the loss of a significant influx of foreign currency. These defects, accompanied by more non-cost-related factors of competitiveness, result in the necessity for establishing an efficient network of national missions abroad. So far, the Macedonian economy has established 21 missions abroad, on certain close markets. This is insufficient, particularly in the case of the markets of the EU countries, the USA and Asia.[48] In view of the fact that there is interest in establishing missions of the Macedonian economic subjects, it is logical to establish them by bilateral and multilateral agreements, with a common interest in mutual relations (cash flow, investments protection, avoiding double taxation, regulation of traffic, i.e. transport, etc.).

The established missions abroad should provide an overall contribution and support in the export of agricultural and food products. This can be achieved if they are based on:

- A concept of long-term development and promotion of export and other foreign exchange of goods;
- Long-term cooperation;
- Modern scientific-technical and production-financial doctrines;
- A dynamic investment policy;
- A plan and programme for common participation on external markets; etc.

Based on those fundamental principles, the missions should monitor the situations on the foreign markets; conduct affirmation and promotion of the domestic supply intended for export; coordinate the foreign presentation of domestic businesses and prevent the occurrence of unfair competition in order to maintain and promote their own and the country's reputation completely. An important role of the missions is also that of determining the credibility of the foreign firms and business partners in the international turnover.

The mission, in its basic activity, should develop an informative role on market trends in the country where it is functioning; find and collect relevant data in reference to goods quality claims and services with an edifying content for our producers.

[48] Austria has a total of 87 missions, of which 32 are located in Europe (Source: Economic Chamber of Macedonia).

The development and intensification of the export of agricultural and food products also depends on the role of the missions in the expansion of the foreign cooperation, by other forms and by promotional activity.

All that points out that the trade missions of the domestic subjects, established abroad, represent a segment of the foreign-trade network, which through its number, structure and activities, reflects the interest in participation on the foreign markets and the possibilities for export.

2.2. Agro-stock Exchange of Agricultural and Food Products

The Macedonian agro-stock exchange of agricultural and food products is exceptionally significant for the export segment of the agricultural products, as well as the agro-complex in general, intended for the international market. This market institution has the responsibility to provide an undisturbed concentration and linking of the supply and the demand, i.e. the sellers and the purchasers. Also, depending on the demand trends, it allows directing the production function of certain varieties of agricultural cultures and approximately forecasts the price level, separately. The basic activity of the stock exchange is the sale of excess agricultural and food products and the supply of repro-materials deficient on the domestic market.

The fundamental feature of the agro-stock exchange, which simultaneously distinguishes it from the general trade features, is its organised approach in linking the supply and demand concentration of the agricultural products in a certain place and at a certain time. The purchasers and the sellers regularly meet at a certain time to sign trade agreements. Instead of to them, the traders refer to special variety marks, the quality and the origin of the goods. The work is conducted according to pre-determined rules, conventions and standards.

IX. MATRIX OF MEASURES FOR IMPLEMENTATION OF THE STRATEGY

Aim	Measures	Implementer
1. Expansion of market Liberalisation of foreign-trade exchange Support from funds of the EU for development of agriculture	1.Most-favoured-nation clause 2.Asyimmetrical trade 3.Reforms within agrarian policy	Ministry of Agriculture Forestry and Water Economy
2. Completing privatisation and consolidation of agricultural enterprises which have emerged from the privatisation of the agro-plants	1. Formation of an Agro-Business Centre for providing services in connection with agro-management, marketing and bookkeeping monitoring for agricultural enterprises and family-owned agricultural economies. 2. Reform consolidation of formal and judicial process of privatisation of enterprises. 3. Analysis and modification of the privatisation for 10% of the land used by agricultural enterprises. 4. Organising repro-unit cooperatives (associations).	– Faculty of Agriculture – Ministry of Agriculture Forestry and Water Economy – Agro-Business Centre – Agency for Privatisation and Transformation of State-Owned Capital – Land Register – Ministry of Justice and Ministry of Finance
3. Individual (family) agricultural economies and increase of cultivable surface areas	1. Passing a Law on Prevention of Decrease of Agricultural Estates and Fragmentation of Plots. 2. Redefinition of Family Economies according to	– Ministry of Agriculture Forestry and Water Economy – Ministry of Justice – National Statistical Institute

	EUROSTAT and such as their registration in the forthcoming census of population. 3. Training of individual farmers in management and agro-marketing. 4. Monitoring of individual economies according to FADN	– Agency for Development of Individual Farming – Agro-Business Centre
4. Establishment of new types of cooperatives and associations of individual farmers.	1. Passing of new Law on Cooperatives in conditions of market economy. 2. Law on specific associations of farmers (general, according to branches, for users of Hydro-Ameliorative Systems, etc.)	– Ministry of Agriculture Forestry and Water Economy – Ministry of Justice
5. Development of financial institutions which will provide favourable assets for turnover, mid-term and long-term credits for development of individual economies and agricultural enterprises.	1. Establishment of revolving fund for development of agriculture with establishment assets from: the budget, the capital of business banks and international institutions, income from renting and concessions of agricultural land, etc.	– Ministry of Finance – Ministry of Agriculture Forestry and Water Economy – Ministry of Justice – Agricultural and other Commercial Banks
6. Reforms of price, tax and trade policy and adjustment of agrarian policy towards the standards of the WTO and the EU	1. Abandoning of direct financial compensation as elements of intervention price for the more important agricultural products and switching to direct incentive payments to producers according to the model of the EU. 2. Establishing a Fund for Support of the Development of Agriculture for financing of financial compensations which will emerge from Aim no. 1, being one of the justifiable subsidies for our developing country, according to the rules of the WTO and the EU.	– Ministry of Agriculture Forestry and Water Economy – Ministry of Finance – Bureau for Strategic (Market) Reserves – Ministry of Economy – Ministry of Foreign Affairs

	3. Reforms in the Bureau for Strategic Reserves. Purchase of strategic reserves in the course of the year in accordance with the balance of demands for the more important products in connection with protective pricing and providing of needed reserves. 4. Maintaining of import-export customs rates on a a level of protection which is tolerated for developing countries in the rules of the WTO and the EU. 5. Decreasing of import customs rates for inputs into agriculture. 6. Correction in the taxation policy with an aim to decrease VAT on inputs into agriculture.	
7. Establishment of a price system approximately equivalent to world prices, which would be able to provide adequate protection of domestic production, without any trade barriers and acceptable to the consumers, in accordance with the standard of living	1. Revoking of partnership prices. 2. Decrease in import customs rates to a minimum level, in connection with inputs. 3. Decrease, with a possibility of total revoking, of the Value Added Tax on deficient agricultural products and for imports not produced in the country. 4. Setting up of annual protective prices, on the level of world prices. 5. Discounts and benefits for producers in unfavourable economic conditions and in cases of natural disasters. 6. Decrease of price of water compensation 7. Probable revoking of concessions on purchasing of agricultural land.	– MAFWE – ME – MF

8. Intensive export of sufficient products	1. Decrease in production price 2. Use of restitutions in export, in accordance with the principles of the EU and the Most-Favoured-Nation Clause. 3. Putting into use and standardisation of the regulations of the EU and the WTO	– ME – MF – MFA – TIPA – Institute for Standardisation – Agro-Stock Exchange
9. Decrease in import of primary and strategic agricultural and food products and import of repro-material, mechanisation and equipment with lower prices.	1. Asymmetrical trade 2.Contingency liberalisation 3. Minimal customs rates 4. Subsidising of import of differentiating inputs	– ME – MF – MFA – TIPA – Institute for Standardisation – Agro-Stock Exchange
10. Regional agricultural development	1. Special direction of assets from the Fund for Development of Agriculture in the rural hilly and mountainous areas 2. Transformation of the Agency for Economically Underdeveloped Areas and locating specific rural hilly and mountainous areas of Macedonia. 3. Feasibility Study to locate hilly and mountainous and rural areas and their development.	– MAFWE – MF – ME – Agricultural Faculty – Agro-Business Centre
11. Reforms in the role of the Agency for Improvement of Individual Farmers	1. With implementation of the Project for Stimulating Development of Private Agricultural Economies, the Agency, besides its appropriate work in the field of agro-technology, should qualify itself to train agricultural producers in agro-management, agro-marketing and carrying out of primary research with regard to technologies of agriculture which would give good results.	– Agency for Improvement of Individual Producers – Agricultural Faculty – Agro-Business Centre – MAFWE – MF

	2. The Fund for Applied Research, to continue its function even after the termination of the Project. 3. Participation in monitoring processes together with the Agro-Business Centre, for tracking business results of the selected most common sample of individual (family) agricultural economies, in accordance with the system of FADN and the EU.	
12. Education and Science	1. Analysing and revising curricula and programmes in high schools and higher agricultural education with the aim of providing future experts with agro-economic knowledge which will contribute to the development of market-orientated agriculture. 2. In connection with the latter proposal, an oft-times proposed separate agro-economic department within the four-term studies at the Agricultural Faculty in Skopje is very credible. 3. More engagement of scientific and expert personnel within scientific and research projects in the field of agriculture.	– Ministry of Education and Science – MAFWE – Agricultural Faculty – Scientific and Research Institutes in the field of agriculture.
13. Establishing of a stock exchange for primary agricultural products and food products, with regional collection and distribution centres, according to the principles of the global standards of auctioning.	1. Organising agricultural producers in stock-exchange associations. 2.Creating and training of selling brokers. 3. Establishment and modernisation of the gross and retail selling network.	– Public Enterprise for Stock Exchange – Agro-Stock Exchange

	4. Introducing modern preparation of market-orientated products. 5. Introduction of a unique stamp stating the origin and quality of the product.	
14. Revitalisation of the existing, and construction of new, Hydro-Ameliorative Systems	1. Completing the revitalisation, i.e. with investment activities of reconstruction and modernisation of some, continuing with the remaining ones and starting of new Hydro-Ameliorative Systems. 2. Organising Associations of Consumers of Water from Hydro-Ameliorative Systems for better use of water intended for irrigation, and the paying of compensation for water.	– MAFWE – Ministry of Environment
15. Reforms in the current Retirement and Disablement and Medical Fund for farmers	1. Analysis of the needs of the Fund for assets and finding out ways for its securing normal Retirement and Disablement and medical Insurance for Farmers	– Ministry of Social Policy and Labour – Ministry of Health
16. Ecological (biological) agricultural production	1. Passing of a Law and its accompanying Acts	– MAFWE – Development Agency – Agricultural Faculty – Associations
17. Reinforcement of trade, scientific and technical cooperation with international organisations which deal with the development and the turnover of agricultural production; Higher level of economic development; Increasing the level of employment; Enhancement of living standards of producers.	1. Technical and financial aid for crediting of profitable projects. 2. Exchange of world experience and new ideas. 3. Application of most current scientific accomplishments.	– MFA – MAFWE – ME – MF

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