

## THE DEVELOPMENT OF THE AGRICULTURE AND THE VILLAGE IN INDEPENDENT MACEDONIA

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### Abstract

As part of the economy in Macedonia, the agriculture could have and should have (it was expected) to contribute for the development of the overall economy. There are well relevant indicators for agriculture from which it is concluded that it has given a certain contribution in the overall economy such as: real value of increased GDP, increased export, increased crop per unit capacity etc. However, the key indicators point to unsatisfying realization where the most important are: decreased basic production capacities, an increase of import rather than the increase of export especially for food and others. The comparison among the key indicators for the development of agriculture is made through natural and financial data, by previous comparison of the production capacities, their usage, the change of the production structure and comparison of the crop according to published official data.

This paper analyses the socio – economic processes in the Macedonian village and the assumptions and limitations for preservation of the valid agricultural household – analysis of the basic features of the life of the village population, as a significant segment in the lifestyle of the contemporary village. This paper should encourage a creation of model for development and realization of the agricultural policy in Macedonia.

Key words: agriculture, development, export, village, farm.

### Introduction

After twenty years of independent Macedonia, it is very common that there is a need for analysis of the past road and estimation for the comparative indicators for the movement of the Macedonian economy. In the context of such analysis, we think that the agriculture as its important segment deserves to be thoroughly perceived of the past twenty year road not only as a proof for vitality with positive movements, but as a way to understand the mistakes and the negative indicators so that we „can learn from our mistakes“ and to realize better results in the future. Macedonian agriculture still has a relatively high participation in the GDP of the country (almost 10%), and that is why it deserves to be more present in the future and to be supported in any way so that it can face the upcoming challenges in the production of safe, economic and competitive food and goods, as well as to provide a higher standard of the farmers.

### Aim of the paper

The aim of this paper is to trace the key aspects in the development of the agriculture and the village throughout the key indicators, beginning with the movement of the disposable capacities, the way of usage of the agricultural capacity, the structure of the prevalent productions, the trends of the overall production, the trends of the value of the export and the import, as well as the financial results through the economic accounts in the last five years. These aims are realized by implementation of the indicators in the road of development monitoring a twenty years period through 5 five years data at the level of the country. It was not our aim to analyse the agricultural policy, because it was reflected in the results, but we will point out that for these 20 years it was improper for the problem about the village.

## Material and methods

The method is based on the view and the comparison of the official statistical indicators as well as our calculations. As a base year we use 1991, when Macedonia is becoming an independent, and then we monitor the movement of the indicators for every 5 years like in 1996, then in 2001, then again in 2006 and the last year is 2011. The table display and the graphic display are applied for the more important data so that the trends of the development stage can be clearly viewed.

## Results of the findings

*The production capacities* with which the Macedonian agriculture had at its disposal are: relatively limited scope of agricultural and cultivated land which permanently decrease (table 1), so in 2011, the agricultural land is decreased by 175.000 ha, and the cultivated land by 153.000 ha, which should seriously worry us, and more because there not almost any actions taken for protection especially for the cultivated land located in the most fertile areas for the competitive production. The livestock fund expressed in the numbers of the livestock unit in the last 10 years is decreased by the number of 27.000, for which the import of livestock products is increased, and especially meat. The importance of irrigation for the Macedonian agriculture is well known, but instead of an increased irrigated areas (as an indicator for development), in the last years it reached only 34% of the built irrigation systems before 1991 (127.000 ha), and 64% from the irrigated ones in 1991. The number of tractors is continually growing, but the decrease of the cultivated land led to the fact that today one physical tractor cultivates only 7,3 ha, and because of this the tractor is not effective. The number of the individual agricultural holdings, but the companies as well, continues to grow which has led to a smaller farm size of land, and thus in 2011 in a production subject on average there is only 2,7 ha agricultural land.

Table 1 Major production capacities

Indicator ('000)	1991	1996	2001	2006	2011
Agricultural land (ha)	1.295	1.291	1.244	1.226	1.120
Cultivated land (ha)	664	658	612	537	511
Pastures (ha)	629	632	630	688	608
Number of livestock (no.)	325	337	305	286	278
Tractors (no.)	46	54	61	66	70
Irrigated area (no.)	67	52	48	21	43
Individual agricultural holdings (no.)	163	168	159	178	192
Agricultural companies and cooperatives (no.)	211	191	160	128	297

*Cultivated land by category of use*, in accordance with its decrease, the arable land and the gardens, the orchards and the vineyards were decreased, and the area with meadows was increased (table 2). Such structure of the usage of the cultivated land, points to the fact that in 1991 in the Macedonian agriculture the intensive systems had a bigger participation, that is, the orchards and the vineyards with share of 8,8%, meadows 8,1%, while in 2011, the orchards and vineyards participated with 6,8%, and meadows with 11,9%.

Table 2 Cultivated land by category of use

Indicator (in '000 ha)	1991	1996	2001	2006	2011
Arable land and gardens	552	554	512	439	415
Orchards	23	20	17	13	14
Vineyards	35	29	28	26	21
Meadows	54	55	55	60	61

The usage of the arable land and the gardens, in accordance with their overall constant decrease from 1991 to 2011 is manifested with a decrease of the areas of all groups of crops (table 3). The cereals have the highest participation which from 42,9% in 1991 fell down to 39,3%, and the sowed areas with wheat in the same period were decreased by 31,2%. However, the sowed areas with industrial crops from 1991 to 2011 are decreased by 125%, as a result for which there is no more sugar beet production, there is a minimum representation of the sunflower, and only the tobacco remains within a stable scale of areas. The areas with vegetable crops from 61.000 ha have decreased to 51.000 ha in 2011. These two groups of crops are considered as a national advantage, because they traditionally use the Mediterranean influence of the climate in Macedonia at best. The maintenance of the forage crops is positive at the level from 34 to 39.000 ha. The most negative is the maintenance of the fallow and the uncultivated arable land at a high level of areas with several times bigger scope of sowed areas of the industrial, vegetable and fodder crops, and with the participation of 33% from arable land and gardens and 27% from the cultivated areas (in 2011). This scope of arable land and gardens as well as a high participation of fallow and uncultivated arable land must seriously concern us. The insistence for an increase of the areas of any group because of the increased production is reflected on decrease in other groups, and as can be seen they are with a limited scope. The increase in the production of the current crops as well as an eventual broadening of the range is possible just by providing conditions for activation of a part of the uncultivated arable land (it is considered that around 50% from it can still be activated), but also faster implementation of new varieties, higher technologies and increase in the scope of the irrigated areas.

Table 3 Arable land and gardens by category of use

Indicator (in '000 ha)	1991	1996	2001	2006	2011
Cereals	237	222	220	290	163
Industrial crops	63	40	31	23	28
Vegetable crops	61	61	56	51	51
Fodder crops	36	39	36	34	35
Fallow and uncultivated arable land	163	194	169	140	138

*The area of the major annual crops* has a similar tendency, the same as the groups of cereals, industrial, fodder and vegetable crops. From the nine chosen annual crops (table 4), it can be seen that the areas with wheat, are decreased by 39,1% in 2011 in comparison to 1991, and in the last 5 years by 21,1%. It is obvious that with such scope of areas (78.000 ha) with wheat, we will be more dependable from the import, if the crop is not greatly increased by implementation of high quality certified seeds and an appropriate technology, because the horizontal extension of production (the areas) lead to decrease in the areas with other also very important crops for the Macedonian agricultural complex. The same referees to the sunflower whose scope of areas in 2011 is smaller for nearly 5 times in comparison to 1991. The areas with rice, the decrease in the analyzed period is nearly 50%, with the corn by 33%, whereas with the vegetables, the tobacco, the alfalfa and the fodder maize, the scope of the areas is maintained throughout the whole period nearly at the same level.

Table 4 Area of the major annual crops

Indicator (in '000 ha)	1991	1996	2001	2006	2011
Wheat	113	118	115	98	78
Corn	43	42	33	32	29
Rice	9	4	2	3	5
Tobacco	18	19	20	17	20
Sunflower	29	16	6	4	6
Tomatoes	9	9	6	6	6
Peppers	9	9	7	8	9
Alfalfa	19	20	19	18	19
Fodder maize	2	2	3	2	2

The orchards in relation to the scope of certain types (table 5) are presented with the number of fruit-bearing trees (in accordance with the official statistics). As can be seen, with all fruit types the number of fruit-bearing trees decreased in the analysed period, except the number of the apples trees increase by 65,7%. This increase led to the fact that in 2011 with over 57% of the total amount of all types of fruit-bearing trees, made the apple trees to participate (Statistical Yearbook 2012). This has led to difficult selling of apples, and has led to deficiency of the domestic market and import of pears, peaches, apricots, walnuts, and berry fruits. Unfortunately this is a result of inappropriate financial support of the fruit types.

Table 5 Number of fruit-bearing trees

Indicator (in '000 no.)	1991	1996	2001	2006	2011
Apples	2.593	2.515	3.203	3.803	4.281
Pears	1.091	707	649	417	361
Plums	1.515	1.470	1.472	1.348	1.489
Sour cherries	1.326	771	758	765	606
Apricots	536	286	189	145	140
Peaches	776	490	511	435	413
Walnuts	164	160	167	163	162

The vineyards, as it was shown in table 2 from 35.000 ha in 1991 continually decreased so in 2011 there are only 21.000 ha. A serious problem in the viticulture is the inadequate presence of the species (wine grapes, table grapes) but the grape variety as well. Unfortunately, the financial support in viticulture was inappropriate, with insufficient support of the table grapes in a time when the wine varieties were not required due to serious problems in the global market of wine, and wine grape varieties was supported with higher amounts, which had reflection on the overall price policy.

Livestock, poultry and beehives in relation to its capacity is represented through the breeding number of the cattle, sheep and pigs and the total amount of poultry and beehives (table 6). It is well known that sheep breeding is considered as a priority in the livestock sub-sector because of the particularly appropriate conditions presented with vast and quality pastures, but as well as with the tradition of the Macedonian sheep breeding. However the strong migration village – city, as well as the inappropriate policy of many years, has led to a constant decrease of the number of sheep which are only 33,6% of the total number of the ewes for breeding 20 years ago. With the total number of sheep (767.000 in 2011), not even 20% of the pastures are used, which Macedonia has at its disposal. The number of the cows and heifers in calf is maintained at nearly the same level in the last five years as well as in 1991, but from 1996 to 2011 the number was bigger for ten thousand of heads. The number of the sows and first farrow sows had a similar tendency, while the number of poultry is constantly decreased, and today it is only 42,6% compared to the one in 1991.

Table 6 Number of livestock, poultry and beehives

Indicator (in '000 no.)	1991	1996	2001	2006	2011
Cows and heifers in calf	164	176	174	164	164
Ewes for breeding	1.623	1.233	897	859	545
Sows and first farrow sows	23	29	27	28	24
Poultry	4.562	3.361	2.750	2.585	1.944
Beehives	77	68	67	68	65

The overall production of the most important products mainly corresponds to the trends of the capacities, which indicates that the decreased areas of certain crops and the number of livestock heads mainly is not compensated with the increased production per unit capacity. A relatively small number of agricultural products are with an increased production in the last years in relation to 1991, and those are the alfalfa, apples, cow milk and honey (table 7).

Table 7 Production of major products

Indicator (in '000 tons)	1991	1996	2001	2006	2011
Wheat	341	269	246	393	256
Corn	135	117	141	147	126
Rice	38	22	9	14	27
Tobacco	25	15	23	25	26
Sunflower	37	21	5	6	8
Tomatoes	169	146	126	142	166
Watermelon	152	116	130	130	127
Alfalfa	114	107	104	126	129
Apples	48	65	38	96	125
Grapes	264	215	230	254	235
Cow milk (mil.litres)	119	134	201	295	376
Meat total	35	28	26	28	22
Eggs (mil.no.)	574	435	395	331	196
Honey (tons)	918	1.352	928	868	1.105

*The economic accounts* with prices from the previous year according to official statistics in the last five years (from 2006 to 2010), despite the fact that it is not in accordance with the analysed period, point to significant trends in the Macedonian agriculture. The value of the crop output is increased by 3,6%, and of the animal output by 25,8% (table 8). This difference does not derive from the big differences of the crop and animal output, here it is a result of a various increase of prices (according to the methodology applied “quantity x price”). The value of the crop and animal output—the agricultural goods output from 2006 to 2010 is increased by 8,6%. The value of the services in agriculture is increased, while the value of the “secondary” activities is with a decreased value, but the value of the “subsidies of agricultural products” is increased by 313% and as a result of that, the value of the agriculture as an “industry” is increased by over 12,9%. The gross value added in the last 5 years was constantly increasing and in 2011 it is higher from the one in 2006 by 29,4% as a net value added, because in the value of consumption of fixed capital there was not any significant increase.

Table 8 Changes in the economic accounts in the last 5 years

Indicator ('000 000 denars)	2006	2007	2008	2009	2010
1. Crop output	49.460	46.293	47.613	50.079	51.259
2. Animal output	14.356	15.721	18.448	21.719	18.058
3. Agricultural goods output (1+2)	63.816	61.954	66.061	71.798	69.317
4. Agricultural services output	171	259	248	201	361
5. Agricultural output (3+4)	63.987	62.213	63.309	71.998	69.678
6. Non-agricultural secondary activities	1.479	1.462	1.070	925	1.325
7. Subsidies on products	977	901	1.693	3.339	4.214
8. Output of the agricultural “industry” (5+6+7)	66.443	64.576	69.072	76.262	75.217
9. Total intermediate consumption	34.372	31.831	34.936	34.926	33.719
10. Gross value added (8-9)	32.071	32.745	34.136	41.336	41.498
11. Consumption of fixed capital	2.637	2.669	3.017	3.184	3.425
12. Net value added	29.434	30.076	31.119	38.152	38.073

*The export of agricultural products* is an especially significant indicator through which we can see the participation of the sector in the international division of the labour on the one hand, and on the other, as a possibility for our products (fruit, vegetable, tobacco, sheep products, grapes and wine), which exceed the domestic expenditure to be exported and to prove their competitive ability. In the first 10 years after the independence of Macedonia the value of the export was increased by several times, but in 2001 was decreased by 35% (due to the war conflict) in relation to 1996. In 2006 the export was increased by 99% compared to 2001, and in the last 5 years (from 2006 to 2011) by 60%, when the value of the export in 2011 exceeds half a million dollars for 126 million (table 9). The structure of the overall value of the export has changed very interestingly, namely while in 1991 the value of the

exported food participated with 44,5%, and the tobacco with 49%, in 2011 the export value of food participates with 59,6%, and the tobacco with 24,5%. The participation of the beverages was increased for more than double. While the value of the export of the food in the last years is increased by 484%, the value of the overall export is increased by 338%, which is appreciated as a positive trend, and especially the high participation of the value of food in the overall export in 2011 by nearly 60%.

Table 9 Value of the export according to Standard International Trade Classification - SITC

Indicator ('000.000 \$)	1991	1996	2001	2006	2011
Food	63,6	95,4	65,3	191,8	373,2
Beverages	7,8	40,4	46,5	80,3	81,5
Tobacco and processing	70,1	114,5	75,0	111,7	153,5
Other	1,5	7,5	9,8	7,4	17,8
Total	143,0	257,8	196,6	391,2	626,0

*The import of the agricultural products* is characterized mainly with a higher total value from the export, and that is especially expressed with the food (table 10). While, in the export of food dominate the value of fruit, vegetable and other processing, in the import of food dominate the meat, the maize, the milk, the edible oil and the sugar. In the years from 1991 to 2001 the import grew, then it decreases in 2001, but in 2006 the value is increased by 83,5%. The high increase continued so in 2011 in relation to 2006 it is increased by 94,3%, which value (in 2011) reaches over 800 million dollars. Thus the high value of the import exceeded the overall export for over 190 million dollars, that is, the coverage is 76,6%. The participation of the value of food in the overall import in 2011 is 82,3% (in export 59,6%). The imported food by the value dominates in the whole 20 year period (1991-71,2%, 1996 – 83,2%, 2001 – 84,8%, 2006 – 87,9%). Despite the relatively high non-coverage of the import with the export, what is more concerning is the higher trend of the import than the export. Namely, from 2006 to 2011 the export is increased by 60%, and the import by 94,3%. This shows that we did not have a competitive production for export and also insufficient production for substitution for imported products for the domestic market.

Table 10 Value of import according to the Standard International Trade Classification - SITC

Indicator ('000.000 \$)	1991	1996	2001	2006	2011
Food	124,3	218,2	194,1	396,6	672,0
Beverages	11,5	3,8	4,7	18,2	38,8
Tobacco and processing	32,3	13,6	13,4	13,9	30,1
Other	6,1	26,4	16,7	18,5	75,6
Total	174,2	262,0	228,9	420,2	816,5

*Unequal social and economic development of the village.* The current economic, social and agricultural policy in Republic of Macedonia has positive reflection to the development of the bigger villages and those closer to the cities and on the villages which are well connected with traffic with the city environment, as well as in the villages where economical and infrastructural facilities are built. On the other hand, the population in the hilly and mountains villages and in the economical and social provincial areas, because of improper road communication and deprived basic infrastructure (communal, social activities) permanently migrate and leave their village.

The village population, and especially the young population is still not satisfied with the services of certain life areas in the country. This especially refers to the services in: education, health care, local self government and the culture. The level of dissatisfaction from the services of the institutions of the system rises with the rising of the altitude and the distance from the villages and the municipality centres.

*The unfavourable age structure of the village population.* The migration movements contribute to flowing of the young and hard-working population and the demographic ageing of the village. These migratory movements greatly led to growth of the regional difference in the age structure of the village population. Namely, the population in the village areas of the municipalities Demir Hisar,

Kratovo and Resen in 2002 is in a deep demographic old age. In one third of the municipalities in Macedonia, the village population is in a demographic old age (Berovo, Bitola, Gevgelija, Kavadarci, Kocani, Kriva Palanka, Ohrid, Prilep, Probistip, Sv. Nikole and Stip), and the municipalities Skopje, Gostivar, Debar, Struga and Tetovo are characterized with a young village population.

The unfavourable age structure in relation to the average at the state level (10.9%) is noticed in the villages in the Pelagonia Region (18,8%), Eastern region (15,5%), Vardar region (12,9%) and Northeastern region (12,7%) according to the census in 2002.

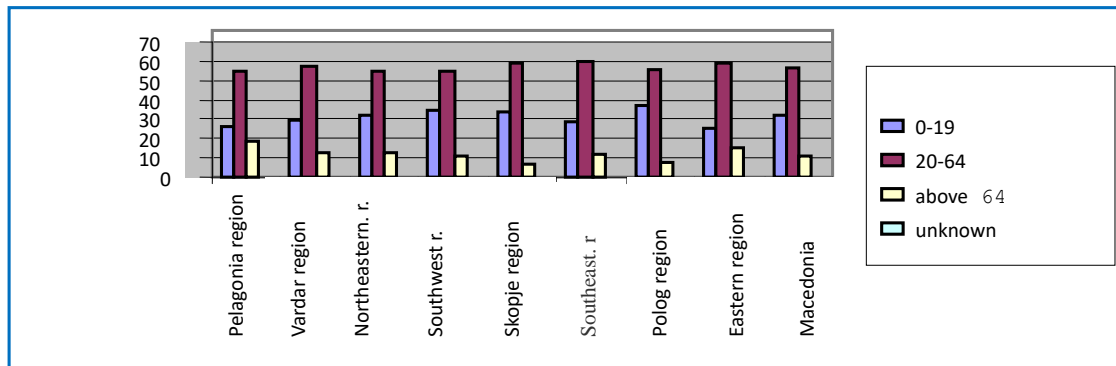


Chart 1. Age structure of the village population by regions

*The extended poverty with the village population.* In Republic of Macedonia the village population is facing with small incomes and unsolved basic infrastructural needs of the village community. The income of the village households are at a low level and insecure. The agriculture still has a dominant part in the village economy. In the countryside, 38,4% of the children from 0-17 years live under the official boundary of poverty (situation in 2011). Among the most poor households are the households in the hill and mountain areas. The serious economic and social problems are retained and cause decrease in the real life standard of the population which affects the development of the children. The decrease in the life standard does not have an equal influence on the way of life of the different social categories. So for example, with some, the possibility for realization of the purchasing power is limited, with the others, which are in a great number it is necessarily decreased to an already minimal financial resources for food, clothes, education of the children etc.. In that sense, their dissatisfaction from the effects of the economical transition is not in the same nature and with the same intensity and does not cause an equal willingness for a change of the situation in a certain direction.

## Conclusion and discussion

The development in the Macedonian agriculture after the independence of the country is unquestionable, however it is not sufficiently high enough having in mind the natural conditions, the locality, the tradition and the relatively stable macro-economical conditions and the relatively free market. The decrease in the key production factors such as agricultural and especially the cultivated land, then the number of livestock, the decrease in the irrigated areas, the perennial crops, and others, had a strong reflection which is shown in the stagnation of some elements of the development. Despite the increase of the extensive usage of the cultivated land (12% of natural meadows), the percentage of the uncultivated land is also high (27% of cultivated land). Despite the big deficiency of the domestic offer of cereals (especially wheat and maize), the areas with cereals in 20 years are decreased by 42%. In the orchards there is a discontinuity and a decline of the number of fruit – bearing trees at the stone fruit and pears, and the apple orchards are in a strong growth whose crop is already facing problems in the market. The situation with the viticulture is similar where the table varieties of grape are neglected and the wine varieties are forced with unreasonably high financial support. Inappropriate relation towards sheep breeding and the pastures led to the decrease in the number of sheep. While the number of cattle breeding and pig-breeding is at the same level as 20

years ago, the poultry farming is significantly in a decrease. The movement of the overall production with the 15 most important productions is a result of the used capacities, and because of this only 4 products have an increased production in 2011 in relation to 1991. According to the economic accounts, in the last 6 years the crop output has a relatively small increase despite the little increase in the production, while with the animal output, the increase is much higher, as a result of a higher growth of the prices in this period. The value of the export and import in the last 20 years is greatly increased, more with the import than with the export, and in 2011, the value of the export and import reached 1,44 billion dollars which is 4,5 times more than the one in 1991. And yet, one of the main aims of the future agricultural policy must be growth in the production by implementing highly productive varieties and species (because there are limited possibilities for horizontal expansion unless the unused arable land is activated) and high technology, together with a higher degree of finalization of the primary production.

*Directions of action for the development of the village:* The major participation of the non-agricultural economy in the village community will contribute for the economic and social demographic stability of the village. The agriculture and the village population in the modern village community are closely related to the other activities and occupations outside and also inside the household itself. That is why today every isolated approach and solution of problems in the village does not give successful results.

The integral development of the village community, where it is referred to the overall economic, social and cultural progress of the rural areas and the community, has proven to be a successful model for revival and progress of the village communities in Western Europe.

Such a concept of development requires special conditions and not only in maximization of the economic sizes (profit) but also optimization of the natural and human resources. This approach implies multi-sectoral, and not mono-sectoral development (agriculture) as it was until now in Republic of Macedonia.

The village needs a development of the infrastructure as a prerequisite for a lively economic, social and cultural development, which will provide a better life standard for the population. A special attention should be turned to the development of the small enterprises in the rural communities and areas where there are unused capacities and human resources.

*Measures for integration or re-integration of population in the hills or mountains and the socially provincial areas* by investment for development of infrastructural objects, credits for returners in the village, tax relief etc. has to be taken.

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