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## AGRICULTURAL SUBSIDIES IN REPUBLIC OF MACEDONIA AND THEIR IMPACT ON SECTOR DEVELOPMENT

### Abstract:

Agriculture is an integral and important economic activity in every national economy. In the Republic of Macedonia, it has great importance for its economy; it has constant contribution of 10% in the national GDP, includes 19% of employed population and share of 9% from the total foreign currency income from exports of goods.

Despite the problems and crises that Macedonian agriculture went through the transition period, it proves to be a vital and capable sector. Re-introduction of high-value subsidies since 2010, on the amount over 100 million euros have contributed towards confirmation of the role of the sector. The paper analyzes the dynamics of subsidies, in correlation with the change of land structure and the volume of agricultural production in the Republic of Macedonia. It concludes with discussion of possible actions that will enhance development of Macedonian agriculture. The analysis is based on official data obtained from the State Statistical Office, the annual reports on agriculture and rural development prepared by the Ministry of Agriculture, Forestry and Water Management and data from the Agency for Financial Support of Agriculture and Rural Development.

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## **Introduction**

Promotion of agriculture as a significant economic branch and the perspectives of the rural environment is a major challenge that leads to prosperity in all regions in Republic of Macedonia. In order to further develop agriculture, increase labor productivity, improve economic situation of agriculture and agricultural producers, achieve higher level of agricultural production, Republic of Macedonia takes certain measures. Usually the measures are (1) economic, (2) measures to modify or protection of property relations and landscaping territory, (3) technological measures and (4) organizational and administrative measures. Currently, in Macedonian agricultural policy, economic measures are most prominent ones, being that they are considered also to be most effective.

Adapting to European standards and regulations and in order to join the EU, Macedonian agricultural policy starting from 2007 onwards has seen significant changes and reforms, as well as institutional and legal adjustments. Particulate interesting economic measure of the national agricultural policy, undertaken in 2010 was re-introduction of high-value subsidies, that are in the focus of this paper. The subsidies were intended to encourage the production of agricultural products, but also to encourage those who have the conditions to start agricultural production, which will develop the agricultural areas that are abandoned. They meet wide range of goals above all economic and social, so it is important to emphasize the need for their research in terms of what implications they cause. The paper analyze the effects of policies subsidizing agricultural production for the period 2010-2016 (the highest value period) in correlation with the change of land structure and the volume of agricultural production<sup>1</sup>.

The analysis is based on official data obtained from the State Statistical Office, the annual reports on agriculture and rural development prepared by

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<sup>1</sup> Data presented in this paper are part of research project "Agriculture and socio-economic development of the Republic of Macedonia", conducted in Institute of Economics-Skopje, University "Ss. Cyril and Methodius"-Skopje, 2017-2018.

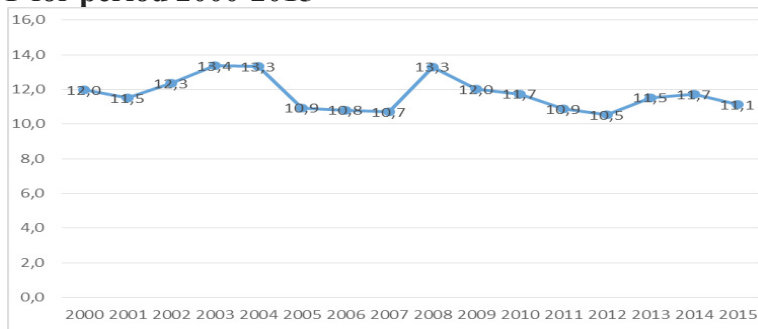
the Ministry of Agriculture, Forestry and Water Management and data from the Agency for Financial Support of Agriculture and Rural Development.

## **1. DYNAMICS OF AGRICULTURAL PRODUCTION IN THE REPUBLIC OF MACEDONIA**

The favorable soil terrain of Republic of Macedonia, i.e. the layout of soil and soil composition, the mild climate and water resources (together with the total annual precipitation), provide a wide range and a diverse composition of agricultural production according to crop and livestock types. In addition, the country has an exceptionally favorable relief, with valleys surrounded by high mountains that have huge surfaces of abundant and lush high-quality pastures for grazing on all kinds of large and small cattle. The water from the numerous watercourses, streams, rivers and the melting of the snow richly and abundantly water the plains in the valley bottom and at the same time protect them from strong winds and aerial influences, which offers exceptionally good opportunities for the development of extensive and advanced agriculture and animal husbandry, as well as vine and fruit.

Agriculture is one of the four dominant sectors that contribute to economic growth in the Republic of Macedonia. The GDP structure by sector gives an overview of the contribution of each sector in the economy. According to the data on the participation of the sectors in the GDP in the Republic of Macedonia, the biggest share has wholesale and retail trade, then the processing industry and the construction industry (in the past, the growth of the construction has made a significant contribution to the economic growth in the Republic of Macedonia). Agricultural sector includes the production of fishery and forestry. Therefore, in sectorial analysis, we should take into account the fact that the data refer to the total annual production of agriculture, fishery and forestry. The share of the agriculture, fisheries and forestry sector in the real GDP in the Republic of Macedonia is shown in Graph 1 for a period of 15 years.

**Graph 1. Participation of agriculture, fisheries and forestry sector in the real GDP for period 2000-2015**



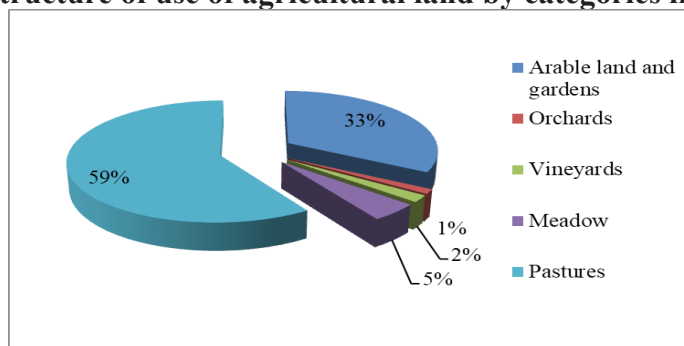
Source: State Statistical Office in Republic of Macedonia, [http://makstat.stat.gov.mk/PX-Web/pxweb/mk/MakStat/MakStat\\_BDP\\_BDPInvesGodisni\\_BDPsporedESS2010/375\\_NacSmA\\_Mk\\_09p2a\\_01mk.px/?rxid=46ec0f64-2992-4b45-a2d9-cb4e5f7ec5ef](http://makstat.stat.gov.mk/PX-Web/pxweb/mk/MakStat/MakStat_BDP_BDPInvesGodisni_BDPsporedESS2010/375_NacSmA_Mk_09p2a_01mk.px/?rxid=46ec0f64-2992-4b45-a2d9-cb4e5f7ec5ef), (accessed on 10.8.2018)

Based on the data from Graph 1, it is perceived that in the analyzed period, the share of agriculture, fisheries and forestry sector in the real GDP is on the average of 13%. In 2008, the share of the sector reaches a peak (13.3%), but then, as a result of the global financial crisis, there is a negative trend in its participation to the national GDP. But with the recovery of the world economy, as well as with the introduction of the economic measure from the Government in 2010 for subsidizing this sector, there is a repeated increase in the share in the real GDP.

### **1.1 Land structure and structure of agricultural holdings in the Republic of Macedonia**

According to the latest statistics, 1.267.134 hectares or 49% of the country's total area is categorized as agricultural land. Dominant participation has pastures (about 60%), while the plowed fields and gardens occupy the leading arable land, followed by meadows, vineyards and orchards. (Graph 2)

**Graph 2. Structure of use of agricultural land by categories in 2016**



Source: State Statistical Office, [http://www.stat.gov.mk/Publikacii/MakBrojki2017\\_mk.pdf](http://www.stat.gov.mk/Publikacii/MakBrojki2017_mk.pdf), 31.7.2018

Graph 3 presents the structure of arable land and gardens in the period from 2010 to 2016 in percentages. It can be concluded that in terms of the structure of the total planted area, the participation of crops is relatively stable over a longer period of time. The cereals are in the first place, one-third of the plow and gardens are left as coal and unprocessed land, and less than 15% are vegetable, industrial crops and fodder plants.

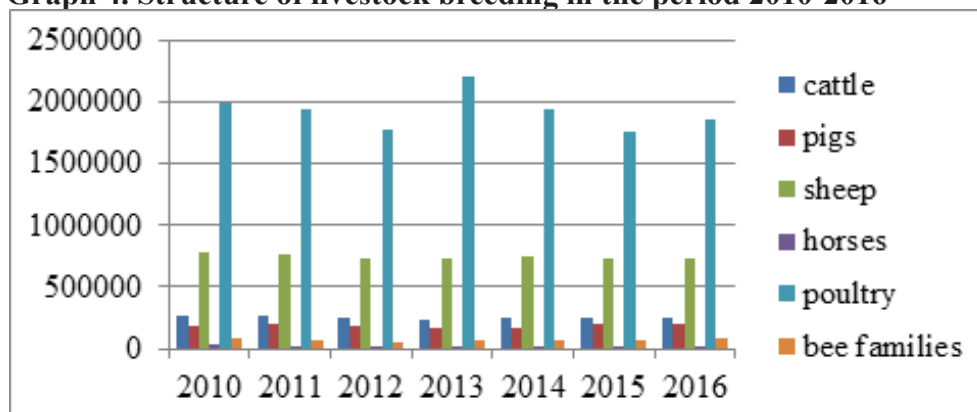
**Graph 3. Structure of arable land and gardens in the period 2010-2016**



Source: State Statistical Office, [http://www.stat.gov.mk/Publikacii/MakBrojki2017\\_mk.pdf](http://www.stat.gov.mk/Publikacii/MakBrojki2017_mk.pdf), 31.7.2018

In animal production, in terms of the number of livestock, participation of poultry and beehives also demonstrates stable share. Graph 4 presents the numerical structure of the livestock sector in the period 2010-2016.

**Graph 4. Structure of livestock breeding in the period 2010-2016**



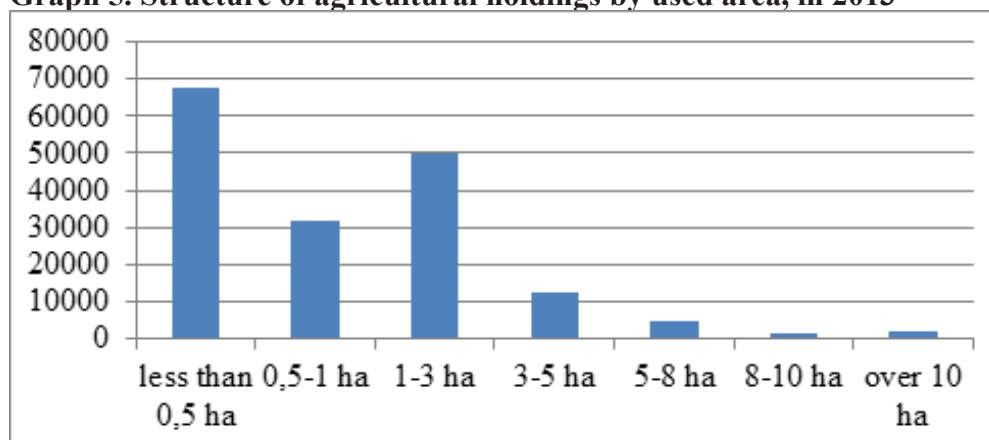
Source: State Statistical Office, [http://www.stat.gov.mk/Publikacii/MakBrojki2017\\_mk.pdf](http://www.stat.gov.mk/Publikacii/MakBrojki2017_mk.pdf), 31.7.2018

Regarding legal entities involved in agricultural production, Macedonian agriculture is characterized by small agricultural holdings. According to the structural survey of agricultural holdings from 2013, the total number of agricultural holdings is 170.885, engaged on total of 315.863 ha. of agricultural land, while the average size of the agricultural holding is 1,85 ha. Majority of them are individual agricultural holdings.<sup>2</sup>

Graph 5 shows the structure of agricultural holdings according to area they cultivate. Presented data clearly show that majority of Macedonian agricultural holdings perform their agricultural activities on less than 0.5 ha. This point out to the conclusion that agricultural production is highly fragmented, which is one of the biggest problems of Macedonian agriculture.

<sup>2</sup> Structure of agricultural holdings, 2013, 5.4.14.01 769, State Statistical Office of the Republic of Macedonia, 2014

**Graph 5. Structure of agricultural holdings by used area, in 2013**

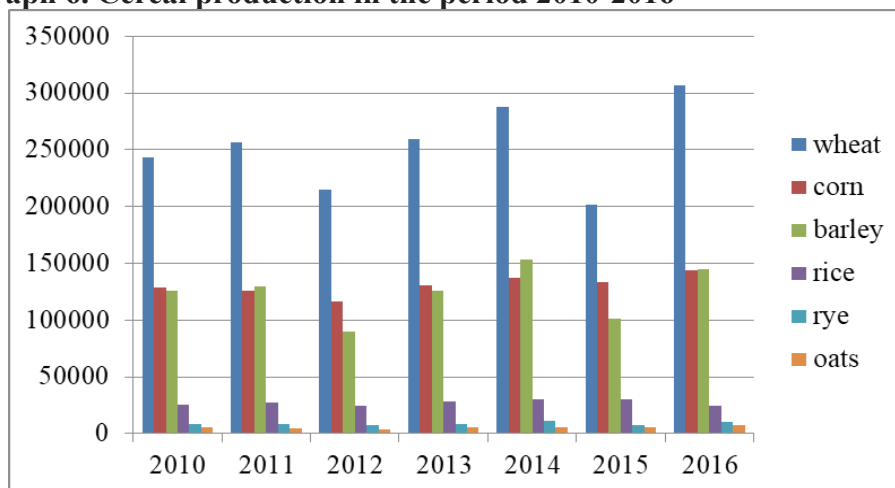


Source: Structure of agricultural holdings, 2013, 5.4.14.01 769, State Statistical Office of the Republic of Macedonia, 2014

Fragmentation of agricultural plots is limiting factor for development of the sector, both from technological and organizational aspect. Namely, on small-size agricultural holdings it is hard to use new technologies in agricultural production, or to apply adequate management approach.

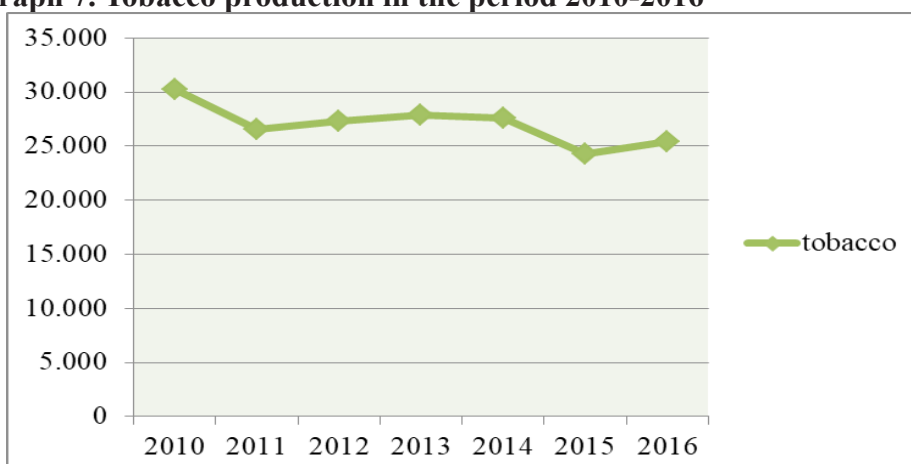
## **1.2 Analyzes of agriculture production in the Republic of Macedonia**

In the production structure of Macedonian agriculture, traditionally leading crops are cereals and they occupy the largest percentage of agricultural land. Most frequently cultivated cereal crops are: wheat, corn, barley, rye, rice and oats. From data presented on Graph 6, it is clear that in the period 2010-2016 contribution of cereals in agricultural production is with no significant differences from year to year.

**Graph 6. Cereal production in the period 2010-2016**

Source: State Statistical Office, [http://www.stat.gov.mk/Publikacii/MakBrojki2017\\_mk.pdf](http://www.stat.gov.mk/Publikacii/MakBrojki2017_mk.pdf), 31.7.2018

Regarding industrial crops, tobacco is the most important one, covering 80% of the total area under industrial crops in the country. Most of the production is located in the Pelagonia region and Southeast region with important social and economic role in sustainability of agriculture and the economy in general. As seen on Graph 7, in the analyzed period tobacco production is stable, with slight decline in 2015, which may result from climate change.

**Graph 7. Tobacco production in the period 2010-2016**

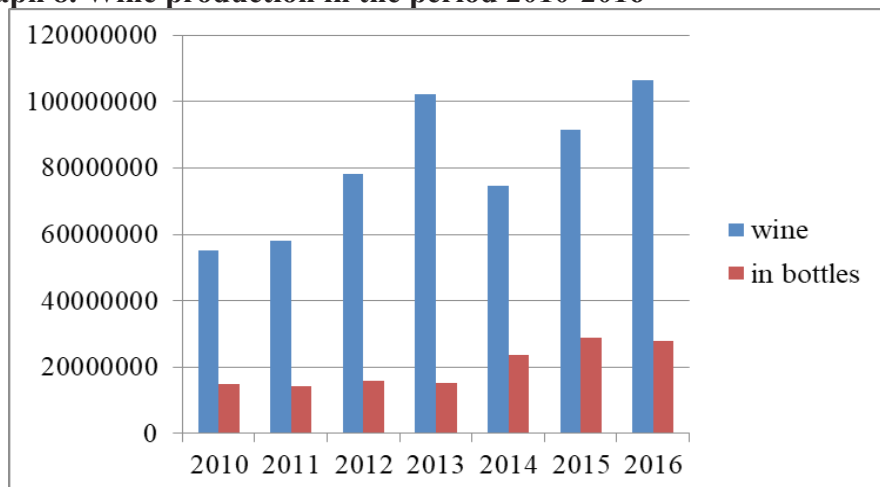
Source: State Statistical Office, [http://www.stat.gov.mk/Publikacii/MakBrojki2017\\_mk.pdf](http://www.stat.gov.mk/Publikacii/MakBrojki2017_mk.pdf), 31.7.2018



Tobacco is also on the first place of exported products from the Republic of Macedonia, the wine is the second. Production of grapes and wine contributes about 20% in the total value of agricultural production. Despite the unfavorable age structure of the vineyards, as well as parcel fragmentation and the long period of low investments, grape production has seen a trend of increase. The production of wine in Macedonia takes place in 81 officially registered wineries mainly located in Skopje, Negotino and Kavadarci. Wineries processed about 65% of the total produced wine grapes, while 35% of the grapes is processed directly by the growers for their own consumption of wine and brandy.<sup>3</sup>

In recent years, more precisely since 2014, there has been an increase in the production of wine in bottles. (Graph 8.) It is the result of rising surfaces of grapes and the opening of small wineries.

**Graph 8. Wine production in the period 2010-2016**



Source: State Statistical Office, [http://www.stat.gov.mk/Publikacii/MakBrojki2017\\_mk.pdf](http://www.stat.gov.mk/Publikacii/MakBrojki2017_mk.pdf), 31.7.2018

In the segment of livestock production and animal products, the biggest percentage goes to milk, followed by meat (pork, beef, sheep and poultry), eggs, wool and honey. Regarding milk production, as the most important Macedonian animal product, we point out that despite evident slight decline in the number of dairy cows, there is a slight increase in yield per cow due to the improvement in the breeding structure of dairy cows. (Table 1.)

<sup>3</sup> Wine in numbers, State Statistical Office, [www.stat.gov.mk](http://www.stat.gov.mk), November 15, 2017

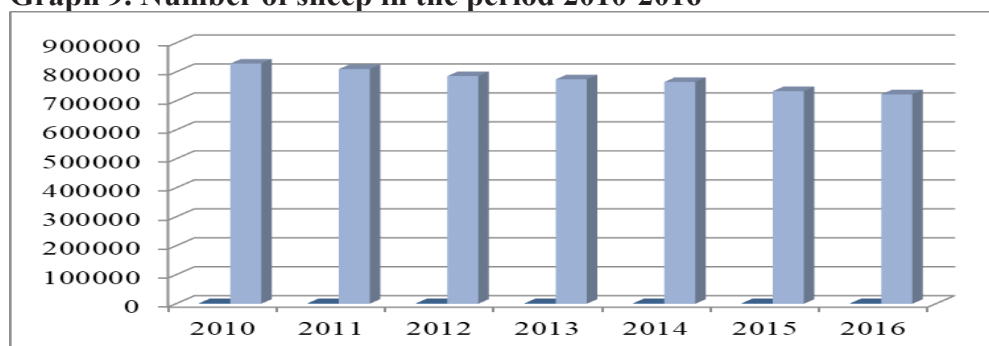
**Table 1. Number of dairy cows and average production of milk per cow in the period 2010-2016**

	2010	2011	2012	2013	2014	2015	2016
Number of dairy cow	135044	164537	161012	15447	155432	156699	160603
Production of milk per cow	2787	2886	2928	3009	3053	2828	3046

Source: State Statistical Office, [http://www.stat.gov.mk/Publikacii/MakBrojki2017\\_mk.pdf](http://www.stat.gov.mk/Publikacii/MakBrojki2017_mk.pdf), 31.7.2018

Republic of Macedonia is a net exporter of lamb, therefore sheep breeding is an important branch of livestock breeding. Unfortunately, despite the favorable natural and economic conditions for development, sheep breeding has seen a declining trend. (Graph 9.) Sheep breeding mainly takes place on family farms and small farms with a herd size of 20-200 sheep.

**Graph 9. Number of sheep in the period 2010-2016**



Source: State Statistical Office, [http://www.stat.gov.mk/Publikacii/MakBrojki2017\\_mk.pdf](http://www.stat.gov.mk/Publikacii/MakBrojki2017_mk.pdf), 31.7.2018

From all presented data we can conclude that in the analyzed period, Macedonian agricultural sector shows generally positive performance. That imply that implemented policies contributed towards mitigation of the negative tendencies regarding the volume of production and stimulated gradually moving towards positive growth trends, especially in the subsectors with comparative advantages.

## **2. FINANCIAL SUPPORT IN MACEDONIAN AGRICULTURE**

The agricultural policy of the Republic of Macedonia is based on five goals:<sup>4</sup>

- Providing stable production of quality and affordable food and providing sufficient quantities of food for the population;
- Increasing the competitiveness of agriculture;
- Providing stable income for agricultural holdings;
- Sustainable development of rural areas;
- Optimum utilization of natural resources with respect to the principles of protection of natural resources and the environment.

These objectives are planned to be achieved through four groups of instruments and measures:

<sup>4</sup>National Strategy for Agriculture and Rural Development for the period 2014-2010, <http://www.mzsv.gov.mk/NSZRR%202014-2020.pdf>, 11.8.2018

- - Regulation and support of agricultural markets;
- - Direct payments;
- - Rural development;
- - State aid as additional support to agriculture.

Direct payments are expressed as subsidies and are provided per unit of agricultural product, per agricultural area or per cattle head. Their implementation is conditioned by cross-compliance requirements (introduced gradually and in accordance with the Common Agricultural Policy) in order to ensure the production of safe and healthy food and preservation of the environment. In the analyzed period (2010-2016) for the purpose of providing subsidies for agricultural production, from the national budget were allocated around 100 million euros. (Graph 10.).

**Graph 10. Allocated funds for agriculture in the period 2010-2016**



Source: Agency for Financial Support of Agriculture and Rural Development, [http://www.ipardpa.gov.mk/Root/mak/default\\_mak.asp](http://www.ipardpa.gov.mk/Root/mak/default_mak.asp), November 1, 2017

Mostly, direct payments for agricultural production are given for crude tobacco, grapes and milk. In terms of direct payment per capacity, the largest percentage of direct payments for livestock production is for sheep and cattle breeding. Direct payments for crop production are intended for cereals, vegetables and grapes. Subsidies for inputs intended for purchase of livestock, insurance premiums, soil analysis and fuel subsidies are almost negligible in size. They are less than 1% of the support budget for the workers.<sup>5</sup>

<sup>5</sup> Agency for Financial Support of Agriculture and Rural Development, [http://www.ipardpa.gov.mk/Root/mak/default\\_mak.asp](http://www.ipardpa.gov.mk/Root/mak/default_mak.asp), 11.8.2018

## **Conclusion**

Agricultural subsidies have always been very interesting for research in terms of what implications they cause. Namely, as subsidy it is a measure of direct support to the agricultural producer intended to meet a wide range of goals, but mostly of economic and social nature. Economic goals are basically related to the turnover of funds from the public to the private sector and vice versa, where it is important to effectively and efficiently allocate limited budget funds in order to achieve the objectives of agricultural policy. They are social because they provide support to the agricultural producer in its efforts to obtain stable and thereby obtain which is security, housing, food and means for settling the cost of living, providing better conditions for education etc.

Despite the existence of a stable policy in financial support for Macedonian agricultural producers, we must point out that agricultural subsidies so far have demonstrated their social component, i.e. create apparent peace among agricultural producers rather than encourage increased competitiveness and creation of new agricultural holdings. Namely, if we compare the data regarding the structure for using agricultural land and the agricultural production, we will see that there are no changes.

In order to foster economic benefits from agricultural subsidies, we believe it is of immanent importance to establish a proper monitoring system that will follow the use of approved subsidies and will provide control of money spending. This mechanism will provide lasting positive results from the direct support, with developing dynamics.

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