

# ANALYSIS OF THE SUBSIDY STRUCTURE IN THE AGRICULTURE OF VOJVODINA

## ANALIZA STRUKTURE SUBVENCIJA U POLJOPRIVREDU U VOJVODINI

Tihomir NOVAKOVIĆ, Beba MUTAVDŽIĆ, Dragan MILIĆ, Dragana TEKIĆ  
Faculty of Agriculture, 21000 Novi Sad, Trg Dositeja Obradovića 8, Serbia  
e-mail: tihomir.novakovic@polj.uns.ac.rs

### ABSTRACT

*The purpose of this paper is to examine two types of incentives for the agrarian sector: direct payments and rural development support. Accordingly, direct payments for crop and animal production, fuel and/or fertilizer subsidies and investment subsidies were studied relative to the type of agricultural household and its economic size in Vojvodina.*

*The results obtained indicate that the greatest share of subsidies for investments, payments per hectare, fertilizers and/or fuel was allocated to the households specialized for field crop production. The largest share of funds aimed at the subsidization of animal production was allocated to the households specialized for grazing livestock.*

*The largest part of subsidies for investments, direct payments for crop production and fuel and/or fertilizer subsidies was extended to households with the economic size ranging from 25,000 to 50,000 euros. Subsidies for animal production were in mostly allocated to the households with over 250,000 euros of the economic size.*

**Key words:** subsidy, economic size, type of agricultural household, Vojvodina.

### REZIME

*Prema Zakonu Republike Srbije o podsticajima u poljoprivredi i ruralnom razvoju, razlikuju se četiri osnovne vrste podsticaja: direktna plaćanja, podsticaji merama ruralnog razvoja, posebni podsticaji i kreditna podrška.*

*Kako su programske aktivnosti, koje se odnose na direktna plaćanja i podršku ruralnom razvoju, najzastupljenije u strukturi subvencija, u radu analizirana je raspodela navedenih mera podrške poljoprivrednoj proizvodnji. Posmatrane su subvencije za biljnu (po hektaru) proizvodnju, regresi za gorivo i/ili đubrivo, subvencije za stočarstvo, kao i subvencije za investicije. U skladu sa navedenim, cilj istraživanja je predstaviti način na koji su posmatrana sredstva raspoređena prema tipu gazdinstva i ekonomskoj veličini i to konkretno na teritoriji Vojvodine.*

*Utvrđeno je da na teritoriji Vojvodine, Južnobačka oblast u najvećoj meri učestvuje u preraspodeli posmatarnih sredstava. Sagledavanjem strukture raspoređenih subvencija prema tipu gazdinstva, uočeno je da se najveći deo subvencija za investicije i plaćanja po hektaru, za đubrivo i/ili gorivo plasiralo gazdinstvima specijalizovanim za ratarsku proizvodnju, kojih je ujedno i najviše na teritoriji Vojvodine. Među gazdinstvima koja su specijalizovana za neki od oblika stočarske proizvodnje, najviše su se subvencionisala gazdinstva specijalizovana za stoku koja se napasala.*

*Posmatrajući raspodelu subvencija prema ekonomskim veličinama, zabeleženo je da se u najvećoj meri investiralo kod gazdinstava ekonomske veličine između 25.000 i 50.000 evra, dok je gazdinstvima iste ekonomske kategorije plasirano i najviše sredstava namenjenih direktnim plaćanjima. Kada je reč o subvencijama za stočarstvo, one su u najvećem procentu plasirane gazdinstvima čija je vrednost ekonomske veličine preko 250.000 evra.*

**Cljučne reči:** subvencije, ekonomska veličina, tip gazdinstva, Vojvodina.

### INTRODUCTION

The agrarian policy can be defined as an organized activity of the state with the purpose of providing the best possible food system with the optimal use of limited resources. In addition to the food security for all citizens and continual access to food, such system should also provide food at low and affordable prices for the non-agricultural population, nutritiously safe food, as well as the appropriate lifestyle for farmers (Zakić and Stojanović, 2009).

An instance of the contemporary concept of agrarian policy is given by the Common Agricultural Policy of the European countries where two basic types of support to the agrarian sector are clearly divided as follows: support of market-price policy in agriculture and rural development support. One of the basic instruments of agricultural policy in the market-price policy entails different subsidies to agricultural producers. The aim of the subsidies is to bridge the gap between the relatively high costs of production and the relatively low prices of agricultural

products in the market. Accordingly, the producers are economically motivated to stay on their farms and continue with the production to ensure food security for the urban population. (Božić et al, 2011)

### MATERIAL AND METHOD

According to the Law on Subsidies in Agriculture and Rural Development of the Republic of Serbia, we can define certain types of incentives, means of their use, the registry of incentives in agriculture and rural development, as well as the conditions required in order to obtain incentives for agricultural production. Furthermore, the right to incentives is given only to those agricultural households that are registered in the registry of agricultural households.

The Law distinguishes four types of incentives:

1. Direct payment
2. Rural development measures;
3. Special incentives;
4. Credit support. (Službeni glasnik RS, 2016)

According to the Law on the Budget of the Republic of Serbia, the greatest share of the funds is subsidized through the direct payment measure, followed by the rural development measures, credit support and special incentives. The final type can be registered as a special measure in the Law on the Budget only after 2016. The structure of incentives for agriculture and rural development in 2016 was as follows: direct payment (87 %), rural development measures (9 %), credit support (3 %), and special incentives (1%) (Đurić, et al, 2016).

According to the National Program for Agriculture (2018-2020), a similar incentive structure is expected in the coming years, with the plan to increase budget for direct payments by 2.4 % in 2020 compared to 2019. (*Službeni glasnik RS, 2017*)

The Republic of Serbia as an European Union (EU) candidate seeks to adapt its own measures to the measures that are present in the EU, which is conditioned by the membership in the European Union. Consequently, there is an ultimate aim to align the structure of allocated funds intended for subsidizing agricultural production, but it has not been achieved yet. Observing the structure of an EU budget of 408.3 billion euros for agricultural producers for the period 2014-2020, it can be noticed that 75.6 % of the total funds are allocated to agricultural producers as the market-price support, whereas 24.4 % are allocated to the rural development support. Within the market-price policy, direct payments participate with 71.3 % of the total funds, whereas 4.3 % are allocated for market support. The EU shapes their budget for period 2021-2027 and proposes reducing by around 5 %. The objectives of the Common Agricultural Policy are primarily related to the integration of young farmers through increasing the benefits for small and medium-sized producers. (<https://ec.europa.eu>)

As direct payments and support to rural development dominates in the structure of the aforementioned incentives to the agricultural production, the subject of this research are direct payments and support to rural development in the Republic of Serbia, especially the Province of Vojvodina.

According to the official methodology of the Statistical Office of the Republic of Serbia (*Opštine i regioni u Republici Srbiji, 2018*), there are five regions in Serbia: Belgrade, Vojvodina, Region Šumadija and Western Serbia, Southern and Eastern Serbia, and Kosovo i Metohija. As expected, the greatest share of the funds is given to the Region of Vojvodina, so the aim of this research is to show the structure of the direct payments and support to the rural development in Vojvodina relative to the type of agricultural household and its economic size.

As already mentioned, the official methodology of the Statistical Office of the Republic of Serbia distinguishes between 5 regions and 30 areas. A total of seven areas in Vojvodina were under consideration in the present study: Južnobačka, Južnobanatska, Severnobačka, Severnobanatska, Srednjobanatska, Sremska and Zapadnobačka. According to the FADN methodology, the regional division for Serbia implies Serbia - North and Serbia - South. In this regard, the regions observed correspond to the largest part of Serbia - North, with the exception of the Belgrade region which was excluded from the research. (<https://www.fadn.rs/>)

The classification of agricultural households according to the Ministry of Agriculture, Forestry and Water Management corresponds to the Commission Regulation (EC) No 867/2009 and distinguishes between nine basic types of households: households specialized in field crops, households specialized in permanent crops, households specialized in horticulture, households specialized in granivores, households specialized in grazing livestock, households specialized in mixed crop

production (namely mixed livestock production, mixed crop and livestock production), as well as households with no income. As a great number of households perform many activities contemporaneously, the household type is determined on account of the predominant activity, i.e. the activity that claims more than two thirds of the total income structure.

The allocation of subsidies is presented in accordance with the economic size of the agricultural households. The aim is to show how and where the support funds for agricultural producers are extended. According to the Eurostat methodology, the standard output represents the average monetary value of the agricultural output at a farm-gate price in euros per hectare or per head of livestock. (<https://ec.europa.eu>) Therefore, the economic size value of the gross agricultural production which the producer can expect to receive based on their own property, or more precisely the crops produced, long-term crops or livestock in the given region under „normal“ conditions of production (in euros) (Cvijanović et al., 2014).

The data obtained from the Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia were used as the basic source of information. The data were obtained from the Information Technology Sector of the Directorate for Agrarian Payments. A total of three different types of support were analyzed: subsidies for investments (support to rural development), subsidies for animal production and direct payments which include subsidies paid for hectare, fuel and/or fertilizer.

The subsidies for investments include the support to agricultural producers in order to expand production capacities. Investments in the production capacity are aimed at the diversification of income, which provides the more stable forecasting and reduction of risks in the production process. Consequently, agricultural households which receive these subsidies improve their competitive position and ultimately the quality of life in rural areas, which renders investment subsidies part of the measures to support rural development.

Subsidies for animal production include part of direct payments for livestock production, i.e. incentives in cattle farming, pig farming, beekeeping, poultry and fisheries.

Subsidies paid per hectare can be deduced under direct payments as a support to crop production. The amounts paid to agricultural producers vary and depend primarily on the type of crop production. Conversely, subsidies for fuel and/or fertilizer are paid in a certain percentage for the purchased amount of inputs and in the official classification they are recognized as a recourse (*Službeni glasnik RS, 2016*).

The subsidies examined were allocated in the period 2012 - 2016, with the exception of the subsidies for investments and animal production. In the case of the subsidies for investments, the sum of allocated subsidies was observed based on the annual level in terms of the average value for the past three years (2014-2016). Similarly, the subsidies for animal production were shown as the sums of the allocated measures at the annual level, i.e. the four-year average value for the period 2013-2016. Finally, the subsidies related to the direct payments per hectare, fuel and/or fertilizers, represented the five-year average value for the period 2012-2016.

The analysis in this paper was conducted on the basis of the data conceded, i.e. the form in which they were given by the Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia. The data on the subsidies indicate that no major deviations were registered for the given time periods under the influence of uncommon circumstances. Therefore, it was supposed that the given average values would be most representative. The value of the observed subsidies is in RSD,

whereas the economic size is in EUR in accordance with the European standards. In the present study, the available data were processed using the standard statistical instruments of descriptive statistics, which implies the determination of the average values of the long-term time series of the phenomena observed. (Novković et al., 2018)

## RESULTS AND DISCUSSION

Table 1 shows the analysis of the allocation of subsidies in the regions of the Republic of Serbia for the period 2012 -2016. We observed the three-year average value of the funds for subsidies for investments, the four-year average value of the funds for animal production and the five-year average value of the sum of the funds for the direct subsidies that include payments per hectare and payments for fertilizers and/or fuel. The greatest number of the Serbian households is located in the Regions of Šumadija and Western Serbia, i.e. 138.024 agricultural households (41.2 % of the total household number in Serbia). In the territory of Vojvodina, 30 % of the total registered households are recorded, whereas slightly less than 30 % are located in the regions of Belgrade, Southern Serbia, Eastern Serbia, and Kosovo and Metohija. The allocation of the funds for subsidizing agricultural production to regions is not concurrent with the number of the households within the regions. Although there are more agricultural households in the Region of Šumadija and Western Serbia than in Vojvodina, the greatest share of funds is allocated to the the Vojvodina region. Approximately 55.5 % of the total funds for investment subsidies are allocated to Vojvodina, whereas only 26.3 % are allocated to Šumadija and Western Serbia. However, the funds for subsidizing investments (RSD 1.15 billion on average annually) are at a very low level compared to the other two forms of subsidizing. Relative to the subsidies for animal production (totaling RSD 10.7 billion on average), the share of funds allocation between the Region of Vojvodina and the Region of Šumadija and Western Serbia is at a relatively same level. Vojvodina received 38.8 % of the animal production subsidies, whereas Šumadija and Western Serbia received 37.6 % of the funds for subsidizing animal production. The remaining 23.6 % of the funds are allocated to the remaining three regions, where the greatest share was extended to the agricultural households in the Region of Southern and Eastern Serbia.

Table 1. Average allocated subsidies in accordance with the purpose per regions in Serbia (in RSD)

Region	Number of households	Subsidies for investments	Subsidies for animal production	Direct payments
Belgrade	16.277	58.879.460	981.973.751	347.162.717
Šumadija and Western Serbia	138.024	301.885.025	4.020.169.136	3.389.104.420
Southern and Eastern Serbia	74.075	153.829.069	1.597.840.077	1.728.001.072
Vojvodina	100.584	633.501.737	4.100.583.958	7.126.005.315
Kosovo and Metohija	6.424	1.024.000	0,00	110.989.456
Total	335.384	1.149.119.290	10.700.566.921	12.701.262.980

Source: Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia

The largest funds (RSD 12.7 billion on average annually) were extended through direct payments in the following order: Vojvodina 56.1 %, Šumadija and Western Serbia 26.7 %, Southern and Eastern Serbia 13.6 %, Belgrade 2.7 % and Kosovo and Metohija 0.9 %.

According to Table 1, it is evident that the greatest share of the funds for subsidizing agricultural production is allocated to Vojvodina. Table 2 shows the average annual amount of the allocated subsidies in the Region of Vojvodina per areas.

The greatest number of households is located in the territory of the Južnobačka area (22.8 %), whereas approximately the same number of households (about 17 %) was recorded in the territory of Srem and Južnobanatska area. The number of

Table 2. Average allocated subsidies according to the subsidy purpose and areas in Vojvodina (in RSD)

R. br.	Area	Number of households	Subsidies for investments	Subsidies for animal production	Direct payments
1.	Severnobačka	9.508	74.252.741	589.565.019	719.387.301
2.	Severnobanatska	10.526	65.983.649	603.316.491	760.322.873
3.	Srednjobanatska	11.713	68.070.992	550.381.335	995.460.024
4.	Sremska	17.341	105.683.001	525.479.404	1.088.825.140
5.	Južnobačka	22.889	161.921.103	969.598.500	1.392.116.126
6.	Južnobanatska	17.145	90.013.025	394.536.239	1.403.886.243
7.	Zapadnobačka	11.462	67.577.227	467.706.970	766.007.608
Total		100.584	633.501.737	4.100.583.958	7.126.005.315

Source: Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia

agricultural households in other regions under consideration is between 9.508 and 11.713.

Relative to the subsidies per areas in Vojvodina, the Južnobačka area received most of the funds (RSD 2.523.635.728 in total). Compared to other areas in Vojvodina, the Južnobačka area also received the greatest share of the subsidies for investments and the subsidies for animal production. Conversely, the Južnobanatska area received the largest part of direct payments (RSD 1.403.886.243 compared to RSD 1.392.116.126 allocated to the territory of Južnobačka area).

As already mentioned, the Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia distinguishes nine types of agricultural households. Table 3 presents the allocation of the funds for subsidizing agricultural production in the Region of Vojvodina by the household type. There are 100.584 agricultural households in the Region of Vojvodina. The greatest number (58.4 %) is specialized in field crop production. Moreover, there is a considerable number of households without income: 13.630 or 13,6%. The greatest part of the subsidies for investments (59.5 % or RSD 633.501.737) was allocated to the households specialized in field crop production. The households specialized in grazing livestock (14, 2%) received most of the funds for this purpose. Conversely, the smallest funds were extended to the households specialized in horticulture, which claim the smallest share of the total number of households in Vojvodina. This type of subsidizing is especially interesting because it presupposes subsidizing the purchase of new machinery. However, the data furnished by the Ministry do not specify the share of the subsidies allocated to the new machinery purchase. The households specialized in livestock production received the greatest share of the subsidies for animal production.

Table 3. Allocation of subsidies in agricultural production by the household type in the Region of Vojvodina

Household type	Total number of households	Subsidies for investments	Subsidies for animal production	Direct payments
Households specialized in field crop production	58.782	377.176.963	145.141.344	5.033.572.243
Households specialized in permanent crops	3.187	35.454.530	7.170.748	55.737.489
Households specialized in horticulture	540	1.249.627	117.550	3.482.889
Mixed crop production	1.820	12.375.508	4.504.751	92.934.785
Mixed crop-livestock production	9.617	61.335.788	1.174.009.550	994.606.287
Mixed livestock production	2.627	9.413.073	328.696.947	206.292.888
Households specialized in granivores	5.993	42.834.405	881.760.346	303.989.489
Households specialized in grazing livestock	4.388	90.139.739	1.552.224.964	330.910.745
Households without income	13.630	3.522.105	6.957.757	104.478.502
Total	100.584	633.501.737	4.100.583.958	7.126.005.315

Source: Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia

The households specialized in mixed livestock production, mixed crop-livestock production, as well as grazing livestock and the cultivation of granivores claim 96 % of the total sum of the funds for stockbreeders. The households specialized in grazing livestock and livestock claim 37.9 % and 28.6 % of the total sum of the funds for stockbreeders, respectively.

Finally, the greatest share of direct payments, which include subsidies for crop production and fuel and/or fertilizer subsidies, was given to the agricultural households specialized in field crop production (70.6 % of RSD 7.126.005.315). The remainder was allocated to other types of households (it is noteworthy that the households specialized in mixed crop-livestock farming received

Table 4. Allocation of the subsidies in agricultural production based on the economic size of the agricultural households in the Region Vojvodina

Standard output	Number of households	Subsidies for investments	Subsidies for animal production	Direct payments
0-4.000	46.911	24.024.962	37.064.819	450.703.403
4.000-8.000	15.136	33.105.453	56.894.985	670.015.485
8.000-12.000	9.126	28.727.563	79.603.751	654.654.701
12.000-15.000	6.339	28.946.077	72.081.367	656.675.913
15.000-20.000	8.091	76.195.486	140.394.394	1.292.177.760
20.000-25.000	3.994	54.950.124	151.848.117	764.554.826
25.000-50.000	7.115	171.513.415	745.775.399	1.557.938.376
50.000-100.000	2.693	101.230.579	821.388.843	715.030.375
100.000-250.000	833	81.685.927	568.332.928	255.087.383
more than 250.000	346	33.122.151	1.427.199.354	109.163.093
Total	100.584	633.501.737	4.100.583.958	7.126.001.315

Source: Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia

nearly one billion RSD annually.

In addition to the allocation based on the type of agricultural households, Table 4 shows the structure of the allocated subsidies according to the economic size of agricultural households.

The greatest share of the subsidies for investments was allocated to the households with the economic size between EUR 25.000 and 50.000 (27.1 %), whereas the smallest funds were allocated to the households with the economic size less than 4.000 euros. The households with the economic size lower than 4.000 euros claim 46.6 % of the total household number, indicating that the extensive agricultural production predominates in the Region of Vojvodina. Furthermore, the households of a greater economic size are seemingly more daring when it comes to new investments compared to the households with low income. Accordingly, the greater the economic size of the household, the more willing the producer is for new investments.

In the case of the subsidies for animal production, most of the funds were allocated to the richest households with the economic size exceeding 250.000 euros (total 34.8 %). Conversely, the greatest part of the direct payments was allocated to the households with the economic size between 15.000 and 20.000 and 25.000 and 50.000 euros (40 % in total).

Furthermore, it is important to highlight that the allocation of the subsidies based on the economic size is not in accordance with the number of households. The greatest number of households belongs to the category that basically receives the smallest funds, i.e. the category with less than 4.000 euros of the economic size. Conversely, the category of households with an economic size of over 250.000 euros encompasses the smallest number of the registered farmers.

## CONCLUSION

This paper presents an overall review of the allocated subsidies for the agricultural production in the Republic of Serbia, particularly the Region of Vojvodina (which receives most of the funds at the state level). The results obtained indicate the underlying trends in subsidizing the agricultural production in the Republic of Serbia and identify a number of issues to be addressed in further research, thus providing a valuable source of information for the agrarian policy makers.

The greatest share of the state subsidies for farmers, regardless of the subsidy type, was allocated to the agricultural households in the Region of Vojvodina, where the Južnobačka area claimed most of the funds allocated. In addition to the Južnobačka area, the Sremska area also received significant subsidies, whereas the remaining funds were equally allocated to other regions.

Relative to the structure of the allocated subsidies based on the household types, the greatest share of the subsidies for investments and payments per hectare, as well as fertilization and/or fuel, was allocated to the households specialized in field crop production (also mostly

present in the Region of Vojvodina). Of the households specialized in animal production, the households specialized in grazing livestock were mostly subsidized.

The subsidies allocated on the basis of the economic size of households were mostly extended to the households with the economic size between 25.000 and 50.000 through direct payments. The subsidies for breeding livestock were mostly allocated to the households with the economic size exceeding 250.000 euros.

According to the National Agricultural Program (2018-2020), the budget fund for direct payments is expected to increase in the future. The effect of such an increase can only be maximized with additional support measures for improving the competitiveness and rural development as a whole. The National Program for Agriculture of the Republic of Serbia relies on the EU funds, thus the agrarian policy and agricultural production subsidizing have to follow the objectives stipulated by the Common Agricultural Policy of the European Union. The objectives of the Common Agricultural Policy are primarily related to the integration of young farmers through increasing the benefits for small- and medium-sized producers. Moreover, the Common Agricultural Policy proposes a minimum of 2 % of direct support payments allocated to each EU country for young farmers. The ultimate goal is to ensure a fairer distribution of payments.

## REFERENCES

- Božić, Dragica, Bogdanov, Natalija, Ševarlić, M. (2011). *Ekonomika poljoprivrede*, Poljoprivredni fakultet, Beograd
- Cvijanović, D., Subić, J., Paraušić, Vesna (2014). *Poljoprivredna gazdinstva prema ekonomskoj veličini i tipu proizvodnje u Republici Srbiji*, Republički zavod za statistiku, Beograd, Srbija
- Durić, Katarina, Vukoje, V., Tomaš-Simin, Mirela (2016). *Agrarni budžet kao oblik finansiranja poljoprivrede u Republici Srbiji i Hrvatskoj*, Agroekonomika, Poljoprivredni fakultet, Novi Sad
- Nacionalni program za poljoprivredu za period 2018-2020 (2017). *Službeni glasnik RS*, br. 120/17, Beograd, Republika Srbija
- Novković, N., Novaković, T., Mutavdžić, Beba, Vukelić, Nataša, Janošević, M. (2018). *Pokrivenost proizvodnje zrnastih proizvoda skladišnim kapacitetima u Srbiji*, *Journal on Processing and Energy in Agriculture/PTEP*, vol. 22, br. 2, str. 104-107
- Zakić, Zorka, Stojanović, Žaklina (2009). *Ekonomika agrara*, Ekonomski fakultet, Beograd
- Commission Regulation (EC) No 867/2009 (2009). *Official Journal of the European Union*, Brussels
- European Commission: [https://ec.europa.eu/info/food-farming-fisheries\\_en](https://ec.europa.eu/info/food-farming-fisheries_en)
- Eurostat: [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Standard\\_output\\_\(SO\)](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Standard_output_(SO))
- FADN Srbija: <https://www.fadn.rs/fadn-u-srbiji/metodologija>
- Opštine i regioni u Republici Srbiji (2018), Republički zavod za statistiku, Srbija, Beograd
- Zakon o podsticajima u poljoprivredi i ruralnom razvoju (2016). *Službeni glasnik RS*, br. 10/2013, 142/2014, 103/2015, 101/2016, Beograd, Republika Srbija

Received: 24. 02. 2019.

Accepted: 09. 09. 2019.