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# **The new direct payments paradigm in the CAP 2014-2020: economic effects of “green” and redistributive payments on Bulgarian agriculture**

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**Paper prepared for presentation at the 147th EAAE Seminar ‘CAP Impact on Economic Growth and Sustainability of Agriculture and Rural Areas’, Sofia, Bulgaria, October 7-8, 2015**

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## **Abstract**

The last reform of the Common Agricultural Policy aimed to expand the field of the European agricultural policy so that it could better target the changing societal and budgetary objectives. In order to do that the European commission proposed changes in the way the direct decoupled payments are being distributed between and within the member states. The single payments (single area payment in Bulgaria) were decomposed to several components - a base component, as a form of income support, a “green” component aimed at reaching certain environmental goals and other minor components that require implementation of certain conditions, or existence of certain condition (young farmers, small farmers, farming in disadvantaged conditions, etc). The base component in Bulgaria is organized as an area payment scheme but there will also be a redistributive payment – higher area rate for the first 30 ha land of the agricultural holding. The aim of the analysis was to analyze and present the expected impact of some of the support mechanisms on the farm incomes and economic activity. According to the research results net increase in SAPS subsidy is expected with redistributive payment in farms less than 150 ha (i.e. 95.09% of the SAPS recipients) provided that artificial fragmentation is avoided. The introduction of ecological focus areas and crop diversification would be economically unviable for producers of vegetables and livestock farms.

**Key words:** green, redistributive, CAP, Bulgaria

## **Introduction**

Agriculture in the European Union is non homogeneously developed. The share of employment in agriculture, farms’ size and their organizational forms vary both between the countries in the EU and between the regions of some countries. Quality of products consumed is becoming a major feature and driver of demand in the EU, and hence higher requirements for food safety, quality, environment, and animal welfare are introduced. The specific focus on the environment and the effects agriculture has on it is essential for the broader scope of public goods the sector provides – viable rural areas, fighting the climate changes and providing sustainable development. The Common Agricultural Policy (CAP) of the EU sets the main rules and requirements as well as regulates the agricultural markets within the union. The first pillar is focused on providing fair standard of living for those employed in agriculture through direct payments and providing market support and regulating the trade of the main commodities within the EU.

Since the EU accession in 2007 the Bulgarian agricultural sector operates under the Common Agricultural Policy (CAP). The financial support the Bulgarian farmers have received through First and Second Pillar of CAP led to structural changes, modernization of the holdings and gave more opportunities for development to the farmers (Bachev et al.). The first pillar, and the Single area payment scheme (SAPS) received about 37% of the CAP budget in Bulgaria. However, there are also many challenges and secondary effects that need to be considered. One of the effects of the way the SAPS was organized and implemented in the period 2007-2013 was that the agriculture holdings specialized in horticulture, permanent crops or animal production, were left in disadvantaged position in regard to the public support (Popov & Ivanov, 2012).

The CAP 2014-2020 presented a change of the paradigm, regarding the direct payments. The new organization of the direct payments in Bulgaria marks a new period for the Bulgarian agriculture policy development aimed at more balanced and targeted public support. There are several new elements that were introduced and that are going to be implemented in Bulgaria. These elements of the direct payments are:

- Basic payment, that is organized as a single area payment and that will receive almost 50% of the payments. The cross-compliance rules should still be applied. The base payment, or the SAPS, as we are going to call it further, will be subject to capping. The payments over 150 000 euro will be decreased with 5% and for the payments over 300 000 euro – 100%. Labor costs of the farms are deductible before capping.
- Redistributive payment – about 7% of the total envelope for direct payments. All eligible beneficiaries in Bulgaria could receive a higher rate for the first 30 ha of their land.
- A Young farmers scheme will receive extra 2% of the envelope;
- The Small farms scheme is also introduced and is financed with up to 10% of the envelope.
- “Green” direct payments that will provide support for 'adapting and maintaining farming systems and practices that are particularly favorable to environment and climate objectives'. The budget for these payments is 30% of the national envelope. The three requirements are: crop diversification, ecological focus areas and preserving the permanent grassland.

The **main aim** of the paper is to analyze and present the expected impact of some of the support mechanisms on the farm incomes and economic activity. The main tasks are:

- To study the effects of the redistributive area payment on farm incomes grouped by their size and specialization.
- To calculate the economic effects from the introduction of some of the “green” requirements - the crops diversification and ecological focus areas.

## Methodology

The main methodological tools used in the analysis depend on the concrete research object. The estimation of newly introduced **redistributive payment** is made in following sequential, breaking down farms authorized for SAPS payments by number and area, where:

$$FN_{SAPS2014} = Trend FN_{SAPS 2007-2013} \quad (1)$$

$$FA_{SAPS2014} = Trend FA_{SAPS 2007-2013} \quad (2)$$

$$FNC_{SAPS 2014}^{N=1} = Average \left( \sum_{SAPS 2007-2013}^{N=1} \frac{FNC}{\sum_{SAPS 2007-2013}^{N=T} FNC} \right) * FN_{SAPS2014} \quad (3)$$

$$FAC_{SAPS 2014}^{N=1} = Average \left( \sum_{SAPS 2007-2013}^{N=1} \frac{FAC}{\sum_{SAPS 2007-2013}^{N=T} FAC} \right) * FA_{SAPS2013} \quad (4)$$

$$RDPA_{2014} = \frac{TBRDP_{2014}}{\sum \left( \sum FNC_{SAPS 2014}^{N=1} * \frac{FAC_{SAPS2014}^{N=1}}{FNC_{Saps2014}^{N=1}} < 30 \right)} \quad (5)$$

Redistributive payment per hectare (RDPA) is a function of the total budget allocated to RDP divided into farm number per each class (FNC) by average farm area per each class (FAC) limited up to real size but not bigger than 30 ha set up Regulation 1310/2013.

In order to assess the potential effects of the **redistributive payment** applied in Bulgaria we have implemented three scenarios. The first one presents the situation for the Bulgarian farms without the application of redistributive payments, the second one – with redistributive payments but without any splitting of the farms, and the third one with such splitting incurring.

In order to evaluate the expected effect of the **new “green” payments** in Bulgaria we:

- Calculated the average annual cost of implementing crop diversification requirements, taking into account the typology of the farms;

- Analyzed the effects of the implementation of the Ecological focus areas (EFA) requirements.

To calculate the **average annual cost of crop diversification** we used the approach of DEFRA, UK (2013). The difference between the average gross margin of the group of diversified farms and gross margin of each of non-diversified farms is considered an expense for the introduction of the requirement for crop diversification. The annual gross margin per farm represents the value of gross output minus variable costs of intermediate goods. It does not take into account the fixed costs for land, labor and capital, and depreciation. The calculations are made per unit area for different groups of farms based in specialization.

In order **to evaluate the potential effect from the introduction of EFA** we used a methodology aimed at calculating the net results from the introduction of nitrogen-fixing plants (NFP) as an example of the potential economic effects. We calculated the net effects of choosing the alfalfa as nitrogen-fixing plant for farms that previously grew wheat, maize and sunflower. The equation used is the following:

$$N = SAPS + GP + GMa - GMx \quad (6)$$

Where  $N$  is the Net result from NFP introduction, BGN per ha,  $SAPS$  is the base payment per ha,  $GP$  is the green payment per ha,  $GMa$  is the Gross margin of alfalfa production,  $GMx$  is the gross margin of the crop previously grown on the area in question.

The data used for the analysis is from Bulgarian Agrostistics, Bulgarian FADN for 2011 and the National statistical institute.

## Results

### Redistributive payment

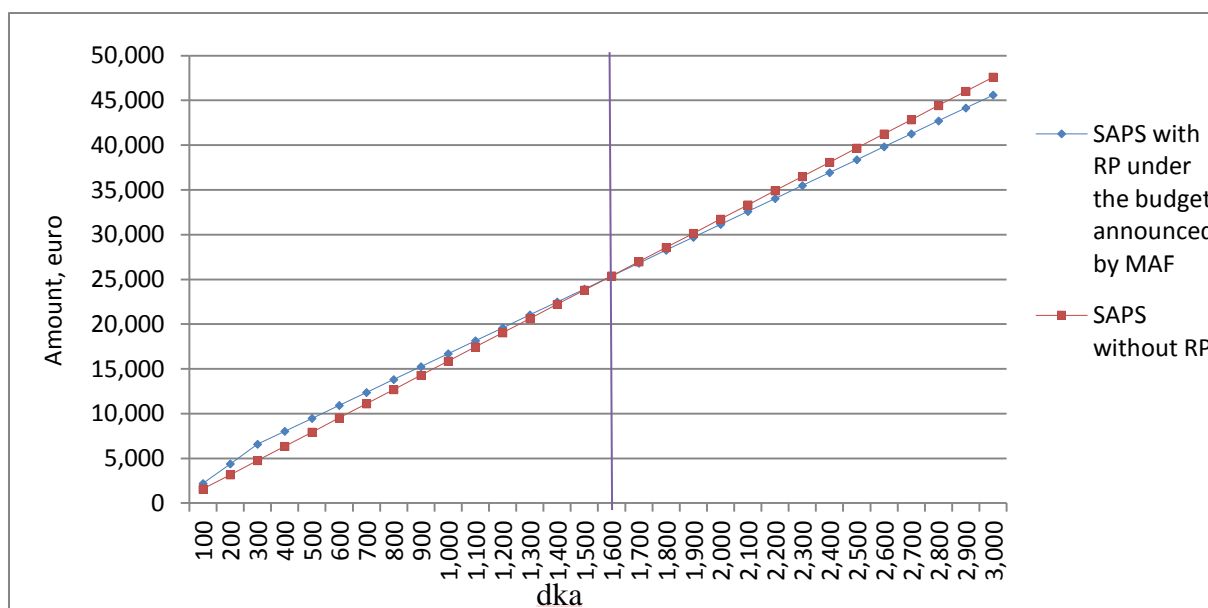
The initial analysis of Bulgarian Ministry of agriculture and food (MAF, 2014) on the redistributive payment (RDP) and the expected rates per ha show that the expected payment would be about 15 lev/ha over the single area payment for the first 30 hectares. The payment will lead to more intensive support for smaller farms, which is among the main priorities in the new CAP. It should be noted that RP applies to all first 30 hectares, whether farm size is 30 hectares or 300 hectares. The basic payment for all hectares is equal, and it is expected to be around 28 levs/ha under the assumption of 3.78 mill. ha eligible area in 2014. We expect the entire area that could be covered by the redistributive payment scheme to be about 715 thousand ha.

The introduction of RP as noted will result in higher support for the smaller farms as compared to scenarios without the introduction of RP. It was calculated that farms with up to 1600 dka<sup>1</sup> would receive higher direct payments per year, compared to the scenario with no application of RP (figure 1).

Respectively farms over 1600 acres would receive less than the scenario without such scheme. About 63,000 farms, which are expected to be smaller than 30 hectares will benefit the most because their area payment will amount to about 43 levs/ha. In comparison, for example, a holding with 10 000 ha will receive an average area payment of about 28.60 lev/ha, and no farm will get below 28 lev/ha. Thus the reduction which farms more than 1,600 dka would suffer; as compared with non-application of this scheme is minimal.

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<sup>1</sup>1 dka=0.1 ha; 1 ha=10 dka



**Figure 1.** Comparison of SAPS payments with and without redistribution, euro/dka

It should be noted that besides the direct impact of higher support on small farms, RP indirectly supports the corresponding production practiced in them. One of the highest levels of support in the implementation of the RP would be received by the intensive sectors - essential oil crops, potatoes, vegetables and fruits that are produced predominantly in holdings with area up to 30 ha. The farms with grass would also benefit and given that these subsidies are obtained from livestock farms where production costs are high, higher levels after the redistribution are not unwarranted.

Assuming the event that all farms over 30 ha decide to take undue division, it will automatically reduce the RP unit rate due to the increase of the eligible area. Following our scenario we calculated that it will come down to about 10 levs/ha. Immediately winners and losers from the fraudulent behavior will change places, such as small and medium-sized farms will receive far less in comparison with the situation in which the rules are followed. However it will once again prove to be unprofitable because a farm of 100 dka instead of receiving 4280 levs SAPS with RP, will receive 3870 lev and holding of 10,000 dka, instead of 286 thousand will receive 285 thousand gross amount. It should also be taken into account that the unlawful splitting will bring extra transaction costs in itself and if anyone wants to win improperly maximum 4380 levs once, they are willing to risk losing few years of opportunity to participate in the aid schemes and thus miss being supported with multiple other schemes. It is almost certainly a losing strategy.

### **“Green” payments**

According to the Bulgarian paying agency in the 2013 direct payments campaign, 64.6 thousand farms with arable land, which will have to observe the “green” requirements, only about 1.8 thousand does not meet the requirements for crops diversification, and will need to make changes in their production practices. According to the provisional calculations, based on the national envelope and the eligible area the “green” payment will move within 49 – 54 euro/ha range. Naturally, its amount will be determined by the size of the total area claimed, which is expected to grow in coming years.

Having in mind the requirements for the farmers that are expected to bring practices that will benefit the environment, the new policy will at least promote changes in the quite devoid of product diversity Bulgarian agriculture. One of the major assumptions is that farmers might meet the Ecological focus areas obligation - by the addition of new lands that

are less productive and currently are not being used actively for production or by setting aside arable land used. Farmers should be aware that different measures will have a different weight for calculating the 5% threshold. The weight for the nitrogen-fixing crops (NFC) it is 0.7. This means for example that farm with 1,000 dka of arable land will have to devote not 50 dka but 72 dka for NFC.

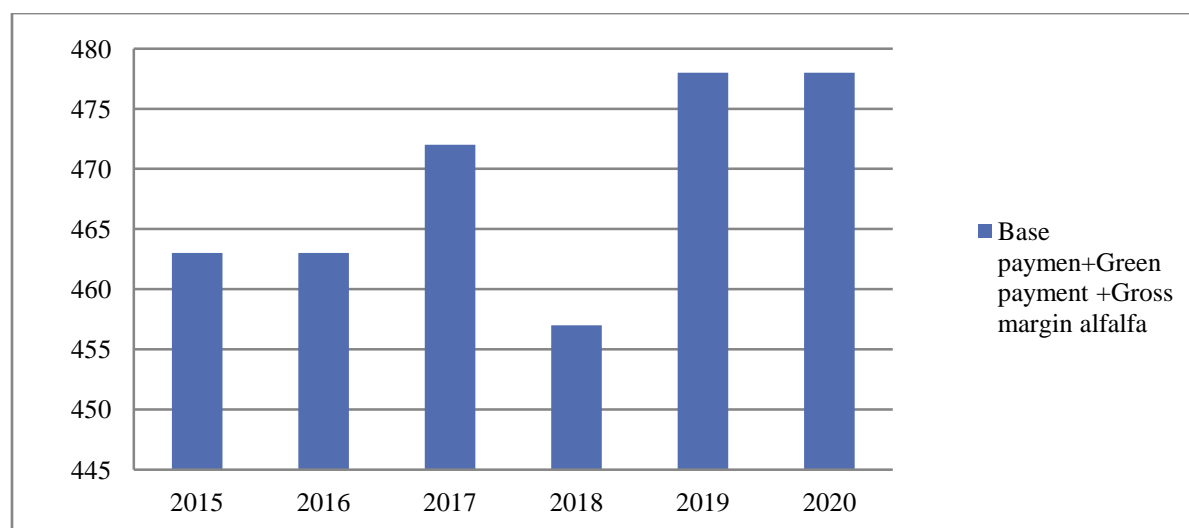
In order to calculate the expected effects of implementation of green direct payments we focused our attention on one of the possible activities – growing nitrogen-fixing crops. We have taken a scenario in which farms with field crops decide to grow alfalfa. Naturally, the implementation of each of these practices will entail lost profits and extra costs to the producers, so the rational aim will be to minimize them. Based on the estimations and the projections made as a part of the CAPA<sup>2</sup> project, the gross margin from growing alfalfa for a 5 year period is 185levs/ha, for a technology without irrigation and expert assessment of the production costs. Figure two shows the total money that a farm is expected to receive from the direct payments and the gross margin of the alfalfa production.

The main field crops produced in Bulgaria are wheat, maize and sunflower. We have calculated that the expected income loss from decreasing their area and substituting it with alfalfa would be between 367.8 lev/ha in 2015 and 388.8 lev/ha for the last two years of the new programming period of the CAP, respectively 2019 and 2020 (Table 1) and thus will have lost benefits of about 180-200 lev/ha. They will be offset by the cumulative amount of the basic payment and the green payment after 2016 that will be about 300 lev/ha.

**Table 1. Lost income from NFC introduction in main field crops production, lv/ha**

	2015	2016	2017	2018	2019	2020
<b>Lost income, lv/ha:wheat, maize, sunflower</b>	367,8	367,8	367,8	367,8	388,0	388,0

Source: own calculation and CAPA project

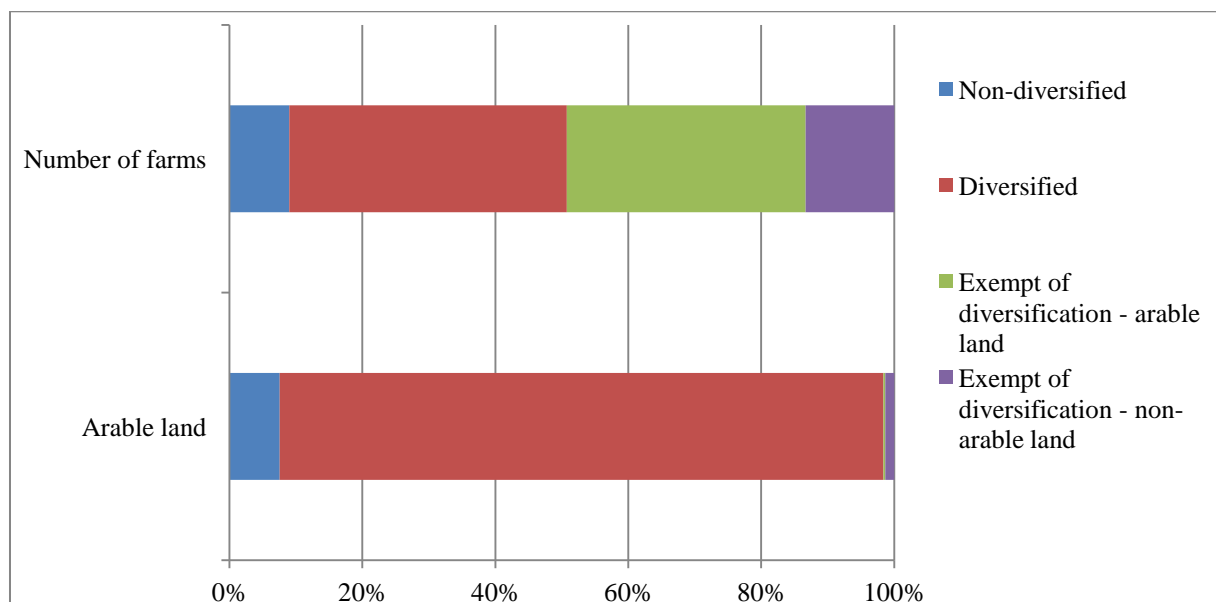


**Figure 2.**Result of the introduction of nfc as efa, weight 0.7 – lev/ha

<sup>2</sup> CAPA stands for a research project called “Establishment of centre for agri-policy analysis – CAPA” financed by the „America for Bulgaria” Foundation. The project focuses on the modeling of the development of the selected sectors from Bulgarian agriculture and is implemented by a team from the Institute of agricultural economics, Sofia in association with Food and Agriculture Policy Research Institute (FAPRI) at Missouri University (USA). The concept of the project is to elaborate the specific agricultural econometric models complying with the local circumstances and conditions and to regularly make projections on the future development of the main sectors of the Bulgarian agriculture.

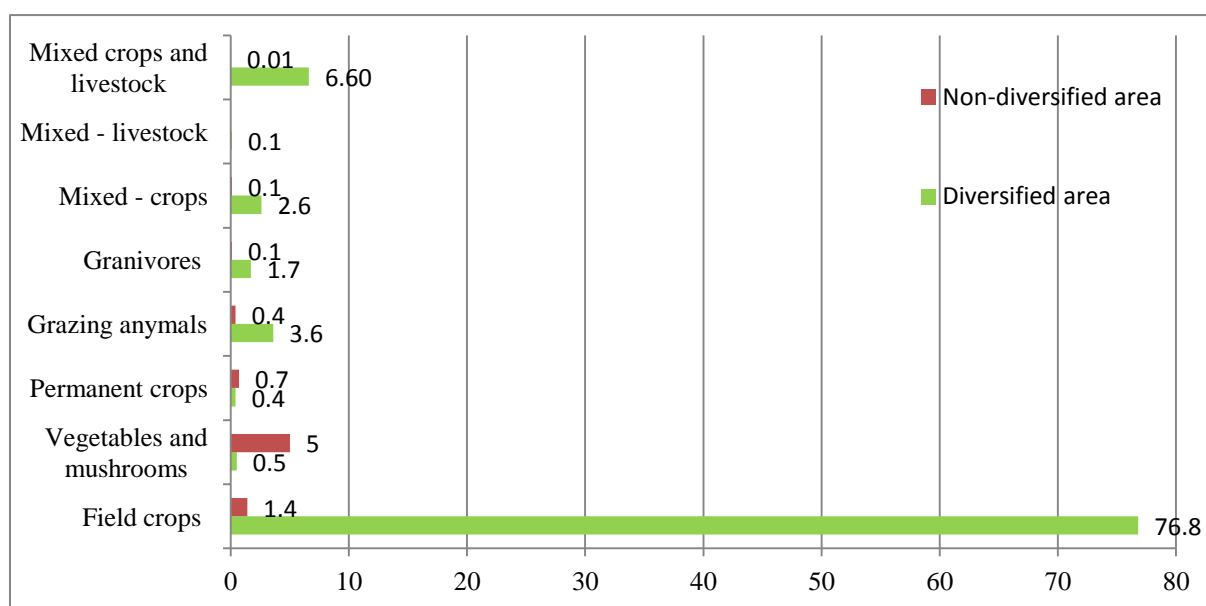
The implementation of the crop diversification will affect production costs and will cause changes in farm incomes. This part of the analysis is based on primary information from the sample of the 2011 FADN sample.

As shown in Figure 3 the majority (over 50%) of the farms are excluded from the requirement of crop diversification. Another significant part (about 42%) of farms already meets these requirements. According to data from the sample, only about 9% of farms that covers about 7.5% of the arable area of the country will need to change farming practices to apply the requirement for crop diversification.



**Figure 3.** Crop diversification, %

The greatest part of the non-diversified areas are part of farms growing vegetables (Fig. 4), which means that one of the vulnerable sectors of the Bulgarian agriculture will be charged with extra costs for crop diversification. This is a potential negative effect of the application of the requirement for crop diversification on the balanced sectoral development of the agricultural industry.



**Figure 4.** Share of diversified and non-diversified area of total arable land, %



The annual cost for crop diversification per unit area is calculated from the data of FADN 2011 with the above described methodology. It should be noted that agricultural prices and production costs are assumed constant, although they will change in the coming years and therefore the results will be different. For this reason, the results are showing only trends, but not specific amounts. However, they give a clear enough idea of the different direction and the extent to which income will be affected in farms with different types of specialization. The table shows that the adverse and highly will be affected the income of pig and poultry farms who have their arable land for fodder production and also the horticulture farms. While arable crops diversification costs are expected to not be substantial.

**Table 2.** Annual costs for crop diversification by farm typology, BGN/ha\*

	Minimum	Mean	Maximum
Field crops	21	731	6468
Vegetables and mushrooms	102	5712	99260
Permanent crops	24	3280	37596
Grazing	37	453	4703
Granivores	111	38186	135084
Mixed-crops	50	1799	5380
Mixed crops and animals	330	617	1098

\*For the farms part of the FADN sample

Source:FADN 2011, own calculation

## Conclusions

The analysis allows us to draw the following conclusions on the economic potential changes of CAP 2014 to 2020:

- The rational behavior by farmers in the view of the analysis is to follow the rules and take no division of their farms. Anyone tempted to do it must remember that there are substantial penalties.
- It can be expected that the RP scheme will give higher support to small and medium-sized farms, hence those industries covered in them.
- The largest part of the non-diversified areas are processed by horticulture farms, which means that one of the vulnerable sectors of Bulgarian agriculture will have to meet substantial costs for crop diversification. This is a potential negative effect of the application of the requirement for crop diversification on the balanced development of sectors of the agricultural industry.
- The income of pig, poultry farms and manufacturers of vegetables will be strongly and unfavorably affected by the diversification requirements while arable crops diversification costs are expected to be commercially viable.
- Almost half of the farms and the majority of the cultivated area should be brought into compliance with the green requirements, regarding EFA. The significant number of farms that will face the need to change farming practices in order to receive subsidies raises the questions about the farmers' information and motivation to apply the practices.
- The farms specialized in the cultivation of field crops will have the largest total cost of implementing the “green” requirements as they cover over 80% of the underlying change to introduce EPP farmland. This means that their behavior will depend on the absorption of EU funds in the next programming period.

- A beneficial effect could be expected due to the introduction of green requirements and the inclusion on previously unused agricultural land in cultivated area.
- Since it is not expected the set aside of land out of production to be common practice or substantial change of the use of agricultural land, it could be assumed that the introduction of green requirements will not cause significant changes in the size of the supply and prices of the relevant product markets.
- The amount of the loss profits gives reason to assume that the removal of production and change of use of agricultural land will be approaches preferred by farmers in order to comply with the green requirements.

## **Acknowledgments**

The research is part of scientific project HTAI-118 (RD 0901/21.03.2013) “Quantification of economic and social effect of income support and rural development policy in the period 2014-2020” (project period 2013-2014)

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