

ALEKSANDRAS STULGINSKIS UNIVERSITY

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**THE EVALUATION OF AGRICULTURAL POLICY AND
SOCIAL TRANSFERS IMPACT ON AGRICULTURAL
HOUSEHOLD INCOME**

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**AGRARINĖS POLITIKOS IR SOCIALINIŲ PERVEDIMŲ
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INTRODUCTION

Relevance of the study. Transfers is one of the measures to ensure welfare of the society, serving for income redistribution among the society groups. Low and unstable farming income is one of the most important reasons for public support to agriculture. Agricultural policy, both the national policy before the Lithuanian membership in the EU, and the GAP, is economic and socially oriented and related to welfare maintenance in the farming community. One of GAP aims is „to ensure appropriate living conditions of the farming community, particularly, by increasing personal income of the individuals involved in agriculture“ (39 article of Rome Agreement (1957)). However, despite the GAP under implementation, the problem of low income in big layer of small farmers still persists.

Empirical research has established that direct payments increase income inequality in the farming community (Allanson, Rocchi, 2008; Mishra, El-O, Gillespie, 2009; Arosynergie, 2011; Vitunskienė, 2011). Allanson, Rocchi (2008) conclude that the reason is uneven horizontal and vertical redistribution of direct payments. Therefore, the European Commission has been expressing concern about incorrect distribution of direct support to producers and restructures the GAP to solve this problem. Previous researches on the impact of agricultural subsidies on farmers' income do not bring to monosemantic conclusions. In some countries the researchers have established that agricultural subsidies diminish differences in farms' income and, thus, the inequality of agricultural household income, in others - increase.

In Lithuania, the household budget survey data shows that before the membership in the EU, the agricultural household income was among the lowest one. Besides, in 1998–2002 this income decreased by 17 %, i. e. from 289 to 237 Lt, to one household member per month, and the break from average income of urban and rural households increased significantly. Implementation of the EU GAP in Lithuania changed the situation, when during the first five years of membership in the EU the real agricultural income rose significantly and the agricultural household income increased more than three times (from 330 Lt in 2003 to 1036 Lt in 2008, on average to one household member per month). However, the described data presents an average statistical situation only. Meanwhile, income differences among the agricultural households are very big. In can be stated *a priori* that the problem of low income in a very numerous layer of small farmers still persists. In should be noted that most researches focus on the effects of agricultural policy in respect to farms' income and only few studies assess these effects in respect to agricultural households. On the other hand, it should be noticed that reformation of GAP in 2014–2020 is related not only with the above mentioned aim to ensure appropriate living conditions of the farming community, but also to the aim to diminish poverty and social exclusion especially of small farmers, who mostly get into the trap of poverty and social exclusion. Thus, this aim of GAP supposes the necessity to evaluate the consequences of agricultural policy reform not only at the level of farms but households.

The relevance of this research is supposed by the reverse connection between agricultural subsidies to agricultural household budgets and the means-tested social benefits revealed in the research project „The impact of agricultural policy on rural population income and its differentiation“, which was conducted in 2010–2011 (author of this dissertation was took part in this research). The research established inverse contribution of both transfers to general inequality of agricultural household income. This brings to the conclusion that probable consequences of agricultural policy reform must be assessed in the context wider than that of farms.

All that show insufficient and mixed scientific knowledge about the impact of agricultural subsidies on farmers' income, while the evaluation of the impact of agricultural policy requires comprehensive knowledge in respect to not only the total community involved in agriculture, but individual household or aggregated groups of households.

The level of problem investigation. Scientific literature emphasizes low and unstable agricultural household income and searches the solutions of this problem. The issue of the impact of agricultural policy on income is the most frequently met one in scientific literature. Such agricultural policy impact on income related problems as incorrect support of income or distribution of transfers are raised.

Abundant literature reveals the following main directions of research on the impact of agricultural policy transfers on farms' or agricultural household income and income inequality:

- the impact of direct support and other agricultural subsidies on farms' income and inequality of income;
- the impact of direct support and other agricultural subsidies on agricultural household income and its inequality;
- the inequal distribution of direct agricultural support payments among the receivers of the support;
- the redistributionary effects of agricultural policy to farms' income;
- the impact of agricultural policy transfers on the distribution of general transfers among farms;
- the impact of alternative agricultural support measures on farms' income;
- the effects of transfers to agricultural households in respect to welfare;
- the impact of agricultural policy transfers on consumption and investment of agricultural households.

Empirical research has established that direct payments increase the inequality of income in farming community (Witzke et al. 2007; Allanson, et al. 2008; Agrarinės politikos ..., 2011, Vitunskienė, 2011). Allanson et al. (2008) conclude that the reason of this is the uneven distribution of payments among farms as well as among branches of agriculture. The research on the impact of direct payments or other agricultural policy subsidies on income distribution in farmers' communities have not come to uniform results. Contrary to the research mentioned before Severini et al. (2013) have established that in Italy direct payments decrease the inequality of farm income, while Mishra, El-O et al. (2009) and Benni et al. (2012) conclude, that agricultural policy subsidies decrease household income inequality in the USA and in Switzerland. Other research (AROSYNERGIE, 2011) presents the conclusion that measures of GAP agricultural environmental protection stimulate development of public wealth and decreases inequality of farms' income. On the basis of the analyzed literature sources it can be concluded that the impact of the agricultural policy on income distribution has mostly been investigated at farms' level, and only in few works – at household level. Empirical research on the efficiency of agricultural transfers usually rely upon quantitative simulation, when description models are used. As it is noted by Thompson et al. (2009), no attempts have been made to assess the efficiency of transfers immediately according to the newest agricultural household data.

Scanty sources by Lithuanian authors analyse the impact of direct payments on farms' profitability (e.g., Jasinskas and Simanavičienė, 2008; Skulskis, 2010). These investigations aim to evaluate not only the contribution of agricultural policy transfers to generation of farms' income (Jasinskas et al, 2008; ESTEP, 2008; Kazakevičius, 2011), but also their importance to the development of ecological farming (ESTEP, 2008; Skulskis et

al., 2011), farms' efficiency (Kriščiukaitienė et al, 2006; Kazakevičius, 2010) and competitiveness (Kriščiukaitienė, 2008). Analysis of the research results has revealed that in Lithuania the effects of direct support to agriculture have usually been estimated with respect to the derivative index „total profit“. Many authors (Kuodys et al, 2007; Jasinskas et al, 2008; Kriščiukaitienė et al, 2006; Kriščiukaitienė et al. 2012; Kazakevičius 2009; 2010; 2011) evaluate the impact of the EU direct support on income in the light of the difference of total farms' profit, calculated „without“ and „with“ subsidies. Only in the final evaluation of Rural Development plan for 2004–2006 implementation in Lithuania the experts analyse the scale of direct and compensation payments' contribution to the increase of the support receivers' income. Thus, the importance of direct support to farm income generation in Lithuania has been little investigated. So, this issue remains important in discussions about General Agricultural Policy reform for the programming period of 2014–2020.

Differently from agricultural policy transfers, the effects of social transfers to agricultural community income have been little investigated. These problems have been analyzed in single works only. The impact of social transfers in the reduction of agricultural poverty was analyzed in the research project „Investigation of poverty spread among farmers and establishment of measures for poverty diminution and prevention“ (Ištirti skurdo... 2002; Vitunskienė, 2003), while the impact on the inequality of agricultural household income – in research project „The impact of agricultural policy on rural population income and its differentiation“ (Agrarinės politikos..., 2011). The latter research has revealed the existence of reverse connection between direct payments to agriculture and social benefits in rural households. When receiving direct payments the families lose the possibility to get social benefits. Besides, the research results show that the social effect of agricultural payments is not adequate to the effect of social benefit. However, the relation between the transfers of both types and their total impact on agricultural household income have not been investigated.

Therefore, **the research problem raised to this dissertation thesis** is the evaluation of the probable impact of agricultural policy and social transfers on agricultural household income, taking into consideration the possible influence of changing direct support to agriculture payments on the social assistance payments that are granted to households following the principle of population income and economic condition testing.

The object of the research – the impact of agricultural policy and social transfers on agricultural household income.

The research aim – to evaluate the impact of agricultural policy and social transfers on agricultural household income with respect to the relation between the both transfers.

The following **objectives** have been set:

1) to reveal theoretical provisions of the transfer principle, and classification and efficiency of the applied transfers for development of theoretical model for evaluation of the impact of agricultural policy and social transfers on agricultural household income;

2) to analyze the evaluation methods of transfers' impact at microlevel, by assessing their applicability in modelling the probable impact of changes in agricultural policy and social transfers on household income;

3) to prepare the methodology for evaluation of impact of agricultural policy and social transfers on household income;

4) to make simulation model for evaluation of the probable impact of changes in agricultural policy and social transfers on agricultural household income;

5) to conduct an empirical study of the impact of agricultural policy and related social transfers on income, to reveal the variation of this impact in different agricultural households;

6) by means of simulation modelling to evaluate the probable impact of agricultural policy reform, according to the expected scenarios of direct support payments under GAP I support, on agricultural household in relation to the influenced cash social assistance payments.

The research methods

– Analysis and synthesis of scientific literature to reveal theoretical peculiarities of agricultural policy and social transfers to agricultural households.

– Empirical evaluation of the impact of agricultural policy and social transfers on agricultural household income employs statistical and simulation modelling methods. One-factor dispersion analysis is used to identify the agricultural household groups by the area of cultivated land. Bootstrap intervals and standard deviations at 1000 repetitions are calculated to evaluate errors of the results. Modelling of the percentage of agricultural subsidies that goes to agricultural household budget involves the Monte-Karlo method and use of mathematical statistics package R. Data simulation according to hypothetic reforms and other calculations use SPSS statistical software package.

– Induction and logical analysis research methods are used in summarizing and comparison of the research results and in formulation of conclusions and recommendations.

The research limitations. The analysis focuses on the current agricultural policy transfers as certain percentage of them can be allowed to household budgets. From all social transfers, the cash social assistance is distinguished for the analysis, as evaluation of the impact of agricultural policy transfers on agricultural household income is expedient in relation only with the social transfers to families of individuals, which are granted as means-tested social assistance. The empirical evaluation focuses on agricultural subsidies and social benefits.

Novelty and significance of the research. Novelty of the research is described by the following results obtained:

1) classification of transfers to agricultural households is prepared and the spheres, where agricultural policy transfers can probably influence cash social assistance payments, and identification criteria are identified;

2) classification of transfers to agricultural households is made, directions and criteria of probable influence of agricultural policy transfers on cash social assistance payments are identified;

3) two new relative indices - Percentage transfer estimate (%PTE) and Nominal transfer coefficient (NTC), are formed by transforming correspondingly Percentage direct aid estimate (PDAE) and Nominal direct aid coefficient (NDAC) adjusted to the level of households or branch of agriculture. The new (%PTE) and (NTC) indices are adjusted to household income sources, which include agricultural policy and social transfers;

4) suitability of household budget research (HBR), which was conducted in Lithuania until 2008, and income and living conditions research, which has been carried out since 2005, files with statistical data on observation units for microsimulation modelling of the impact of agricultural policy reforms on agricultural household income either separately, or both together is checked;

5) microsimulation model is made for evaluation of the effect of agricultural policy reform for agricultural household income by using Monte Karlo method and mathematical statistics package R. This enables the following: 1) evaluation of consequences of alternative scenarios of agricultural policy reform to household income in connection with the influenced social transfers that are granted following the principle of population income

and economic condition testing; 2) modelling of these consequences at individual, i.e. statistical observation data, and aggregated group level;

6) the impact of agricultural subsidies and social benefit on household income is evaluated according to two agricultural households' coverages („broad“ and „narrow“) and four groups, classified by the area of cultivated land, and in each coverage separately;

7) the impact of alternative scenarios of agricultural policy that correspond to the important issues of direct support payments according to GAP I Support for 2014-2020 programming period, on agricultural household income in connection to social benefit changes influenced by this reform, is evaluated by microsimulation modelling method. Elasticity of agricultural household income to changes of agricultural subsidies and social benefits due to possible reform of direct support payments is evaluated.

This dissertation research contributes to scientific discussion about the impact of agricultural policy transactions on agricultural household income with respect to the influence of agricultural policy current transfers on cash social assistance. This aspect has not been analyzed much, although, it is important for the existing reverse connection between agricultural policy current transfers and cash social assistance. In many cases agricultural policy transfers influence agricultural household income and one of the income sources – means-tested social benefit.

Scientific results of this research are important to the participants of the political process, who are involved in modelling reform scenarios of agricultural policy direct support payments to agricultural producers. The research results reveal comprehensive picture of the impact of agricultural policy transfers on agricultural household income. The results allow deep and detailed assessment of the likely consequences of agricultural policy reform at microeconomic level as well as the reveal of the possible social effects not only in respect of agricultural policy reorganizations but also in the context of the social transfers that are influenced changes by these changes.

The research structure. The research aim and objectives reflect logical sequence of the scientific investigation and are presented in three parts of the dissertation. The research work consists of introduction, three parts and conclusions.

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VOCABULARY OF CONCEPTS

ABBREVIATIONS, USED IN THE DISSERTATION

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CONCLUSIONS

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REVIEW OF DISSERTATION CONTENT

1. THEORETICAL ANALYSIS OF AGRICULTURAL POLICY AND SOCIAL TRANSFERS' ASSESSMENT

1.1. Transfers' principle and its application in the assessment of policy impact

The section presents analysis of the peculiarities of transfers' principle and its modifications seeking to substantiate theoretical preconditions for development of assessment model for the impact of agricultural policy and social transfers on household income.

Theoretical origins of transfers and their assessment. The section presents Pigou-Dalton transfer principle and its modifications such as principles of diminishing and strong diminishing transfers, principle of strong diminishing value transfers, proportional transfer principle and multidimensional transfer principle to reveal that the impact of transfers on community or individual welfare, inequality of income, diminution of poverty, etc. can vary significantly depending on various factors e.g. general level of population income, income gap between the provider and the receiver of transfers, etc. Scientists use the principle of transfers as the basis for the evaluation of the impact of income redistribution between the rich and the poor on poverty and welfare of society in general. Analysis of inequality and the impact of transfers on it also is based on this principle.

Classification of agricultural policy and social transfers. The prepared classification of transfers embraces categories of possible direct and indirect transfers to agricultural households. In this dissertation research, the classification of transfers to households by various criteria supposes theoretical provisions that certain percentage of only agricultural policy current transfers can be allowed to household budget. In agricultural household budgets a unilateral relation between agricultural policy current transfers and social transfers is observed – payment of means-tested benefits to a household can depend on the receive sum of agricultural subsidies. On the contrary, social transfers have no influence on the payment of agricultural subsidies. The impact of agricultural policy reform on agricultural household income can be of two kinds – direct and indirect, i.e. due to the change of agricultural subsidies that go to household budget and the influenced change of social transfers.

1.2. Systematic analysis of the research on transfers' efficiency and impact on agricultural income

One of the most important evaluation questions is the problem of efficient income redistribution – aim to maximize the benefit of the support receivers at minimal costs of the tax payers. On the other hand, the field of transfer efficiency problems investigation has been enriched with the evaluation of the impact of transfers on trade distortion, competitiveness, environmental protection, diminishing of poverty and inequality.

Analysis of the completed investigations show that conclusions about the impact of agricultural subsidies on agricultural income have more than one meaning. In some countries the researchers have established that agricultural subsidies decrease differences of household income and inequality of agricultural household income, while in other countries – contrary effect has been established, i.e. agricultural subsidies increase inequality of households or agricultural households. One of the reasons – uneven distribution of subsidies among households due to their assignment following the GAP provisions.

Social transfers is one of the main components of agricultural household income, often it is the second important income from non-agricultural sources. It has been established that social transfers increase low income significantly, especially in the households where head of the family is of elder age and receive pensions. The completed investigations have revealed that social transfers have stronger positive effect to income of the households that are not involved in agriculture, while their effect to farmers' income is weaker as social transfers make smaller part in the disposed household income.

Conclusions of this subunit suppose the theoretical precondition that expedient evaluation of the impact of agricultural policy transfers on agricultural household income should be connected to means-tested benefits to agricultural households, i.e. assignation of which to agricultural households may depend on agricultural policy transfers.

1.3. Systematic analysis of the method used in the investigation of transfers' impact on income

The section presents analysis of the methods for evaluation of the impact of agricultural policy and social transfers on income used in previous research.

Methods of evaluation of the impact of agricultural policy and social transfers on income. Various methods are used for evaluation of the effects of agricultural policy transfers. However, as Merz (1993) stated twenty years ago, micro-simulation models (MSM) are increasingly introduced into quantitative analysis and evaluation of alternatives of economic and social programs. For solution of economics problems simulations can be done at micro-, mezo- and macro- levels. Micro-simulation modelling is the most often addressed as it is oriented to separate units – micro-units, such as individual, family, household, firm or other company, etc. Generally, simulation modelling is the method, that enables investigation of hypothetic reforms and their possible impact on population income. Besides, it is a useful tool for assessment of the effects of income redistribution through agricultural policy (Bourguignon, Spadaro, 2006).

Simulation modelling allows to evaluate effects of hypothetic reforms. The implied effects of hypothetical reforms are useful for politicians in decision making and policy formation. Simulation results make the basis for evaluation of probable development of situation, first of all, in not real world and thus help to avoid mistakes. The analyzed researches suppose that simulation is a universal method, which is complicated in application. Despite its complexity, this method is increasingly applied in assessment of social and agricultural policies. This method helps to understand the work of economic and social processes, enables to foresee the probable effects of hypothetic reforms to various indices.

It has been established that in previous research the micro-simulation method was widely used in the investigation of the effects of political decisions and agricultural policy reforms. Thus, it can be used for the evaluation of the impact of agricultural policy and social transfers on agricultural household income. The completed analysis of literature sources shows that micro-simulation is common in various fields of agricultural research, e.g. in the evaluation of the impact of agricultural policy transfers on the employment outside the farm, saving and investments, competitiveness, efficiency of income transfer, etc. In this dissertation research the micro-simulation method is used for modelling of the probable impact of agricultural policy and social transfers on agricultural household income according to the hypothetic reforms of payment of subsidies to agriculture.

2. METHODOLOGY FOR ASSESSMENT OF THE IMPACT OF AGRICULTURAL POLICY AND SOCIAL TRANSFERS ON AGRICULTURAL HOUSEHOLD INCOME

This part of dissertation presents theoretical model for the assessment of the impact of agricultural policy and social transfers on agricultural household income and makes simulation scheme of the impact of agricultural policy and social transfers on agricultural household income, analyzes the applicability of statistical observation units data for empirical research and describes in detail the methodology for assessment of the impact of agricultural policy and social transfers' support on agricultural household income.

2.1. Theoretical model for the assessment of the impact of agricultural policy and social transfers on agricultural household income

The section prepares theoretical model for the assessment of the impact of agricultural policy and social transfers on agricultural household income (see Fig. 1). Six main sources of income are distinguished: income from hired labour (HI_{HL}), income from business, individual non-agricultural activity (HI_{IA}), income from individual agricultural activity (HI_{AI}), social transfers (HI_{ST}), income from rent, property (HI_R), other income (HI_m). Income from individual agricultural activity consist of agricultural activity income without agricultural subsidies (HI_{RI}), i.e. the income earned in the market or received otherwise, and agricultural subsidies (HI_{AS}), while social transfers – of category (HI_{CAT}) and assigned income or means-tested benefits (HI_{MT}). Theoretical model of the impact of agricultural policy and social transfers on agricultural household income is based on the idea of the income redistribution in society, which is developed in the context of relation of two income sources – agricultural policy and cash social assistance.

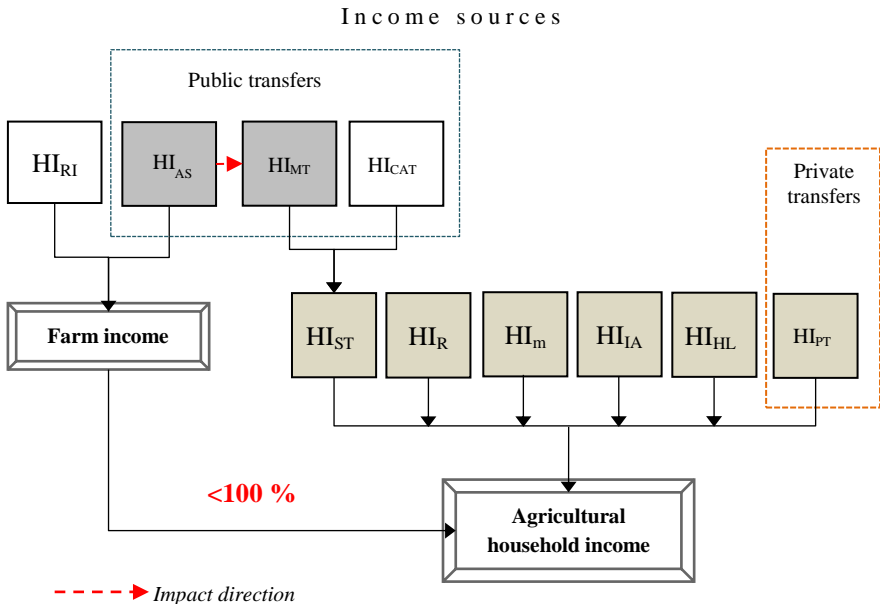


Fig. 1. Theoretical model of the impact of agricultural and social policy transfers on agricultural household income

Mathematically this detalization can be expressed in equation, assuming the existence of the six income sources named above:

$$\Delta HI_i = \sum_{n=1}^k \Delta HI_n = \Delta HI_{HL} + \Delta HI_{IA} + \Delta HI_{AI} + \Delta HI_{ST} + \Delta HI_R + \Delta HI_m \quad (1)$$

After detalization of agricultural income and social transfers, the equation can be rewritten as follows:

$$\Delta N\dot{U}P_i = \Delta HI_{HL} + \Delta HI_{IA} + \Delta HI_{RI} + \Delta HI_{AS} + \Delta HI_{MT} + \Delta HI_{CAT} + \Delta HI_R + \Delta HI_m \quad (2)$$

The model shows that only part of the income from agricultural activity and agricultural subsidies goes to household budget. This dissertation research identifies the percentage of agricultural subsidies that goes to household budget.

2.2. Methodology for the assessment of the impact of agricultural policy and social transfers on agricultural household income

The section presents the methodology for the assessment of the impact of agricultural policy and social transfers on agricultural household income, describes stages of simulation modelling, analyzes the suitability of files with statistical data on observation units of household budget survey (HBS) and income and living conditions survey (ILCS) for the dissertation research.

Data applicability analysis. This section presents the suitability of the used statistical data for the research. Having into consideration the direct dependency of the agricultural subsidies to households on the area of used land, this research is based on two criteria of agricultural household classification:

- *Proportion of the income from agricultural activity in the disposed household income.* Following the size of this proportion, the agricultural households fall to the „narrow“ and the „broad“ coverages. It has been established that according to the „broad“ agricultural households' coverage the research sample corresponds to 95 % reliability in all years of research, while according to the „narrow“ coverage – to 95 % reliability in 2004–2006 and to 90 % reliability in 2007-2010.

- *Used land,* the area of which is the basis for classification of the both above mentioned coverages of agricultural households into four groups (group I – ≤ 1 ha; group II – > 1 and ≤ 10 ha; group III – > 10 and ≤ 50 ha; group IV – > 50 ha). Statistical importance of difference among the income disposed in these groups is verified by one-factorial dispersion analysis and the difference at the importance level $\alpha = 0,01$ is established.

Indices for the assessment of the impact of agricultural policy and social transfers on agricultural household income. Two new relative indices are presented – percentage transfer estimate (%PTE) and nominal transfer coefficient (NTC).

Mathematically the percentage transfer estimate is expressed in the following way:

$$PTE_{AgriP} = 100 \times (\sum_j AgriP / DHI); \quad (3)$$

here: $\sum_j AgriP$ – sum of support subsidies to agriculture except the subsidies to investments (j shows the types of support subsidies to agriculture; DHI - disposed household income;

$$PTE_{ST} = 100 \times (\sum_i SP / DHI); \quad (4)$$

here: $\sum_i ST_i$ - sum of cash social assistance payments or compensations, when i shows the types of cash social assistance payments or compensations; DHI – disposed household income.

Mathematical expression of the nominal transfer coefficient:

$$NTC_{AgriP} = DHI / (DHI - \sum_j AgriP_j) = 1 + PDAE_{AgriP} / (100 - PDAE_{AgriP}); \quad (5)$$

$$NTC_{PS} = DHI / (DHI - \sum_i ST_i) = 1 + PDAE_{PS} / (100 - PDAE_{PS}); \quad (6)$$

PDAE shows the part of the analyzed payments in the disposed agricultural household income. NTC – how much the analyzed transfers increase the disposed income.

2.3. Simulation model of the impact of agricultural policy and social transfers on agricultural household income

The section analyzes the applicability of the simulation model for the assessment of the impact of agricultural policy and social transfers on agricultural household income, presents the hypothetical scenarios of agricultural policy and stages of simulation.

Possibilities analysis of the applicability of simulation method. The main methodological aspects of the simulation method application are presented. In generalization of simulation modelling peculiarities to ensure quality of this dissertation research not only sufficiency and quality of the main initial data massive, i.e. ILCS files with statistical data on observation units used in the research are important but also the rules of simulation. The presumption is made that the more accurate and comprehensive initial data is, the more reliable and important are the results of simulation modelling. The completed analysis of the applicability of HBS and ILCS files with statistical data on observation units brings to the conclusion that these data files are sufficient for statistical modelling of the impact of agricultural policy and social transfers on agricultural household income.

Simulation of the impact of agricultural policy and social transfers on agricultural household income. The following three hypothetical scenarios of agricultural policy reform according to probable alternative scenarios of changes in direct payments to one hectare of arable land, are used:

Scenario I – payment of agricultural subsidies is suspended. In other words, the position of the scientists and politicians, who speak for the elimination of direct support according to GAP I support.

Scenario II – agricultural subsidies to one hectare of used arable land increase 100 % in comparison to ex ante base. This scenario corresponds to the mentioned earlier second reform scenario of direct payments according to GAP I support, when the achieved EU average of agricultural subsidies is 917 Lt/ha in 2020.

Scenario III – agricultural subsidies to one hectare of used arable land increase 30 % in comparison to ex ante base. This scenario corresponds to the mentioned earlier third reform scenario of direct payments according to GAP I support, when in 2020 the achieved prognosticated average of agricultural subsidies to Lithuania is 600 Lt/ha.

In order to investigate the impact of agricultural policy and social transfers on agricultural household income, the simulation model is conducted in two stages. The first stage uses Monte-Karlo simulation model for modelling the percentage of agricultural subsidies that goes to agricultural household budget.

The second stage models statistical data of household budgets according to three alternative political scenarios, which are formed with respect political issues of direct payments' reform according to GAP I support for the period of 2014–2020.

Generalized elements of the impact of agricultural policy and social transfers on household income modelling methodology can be described in general scheme, which is presented in Figure 2.

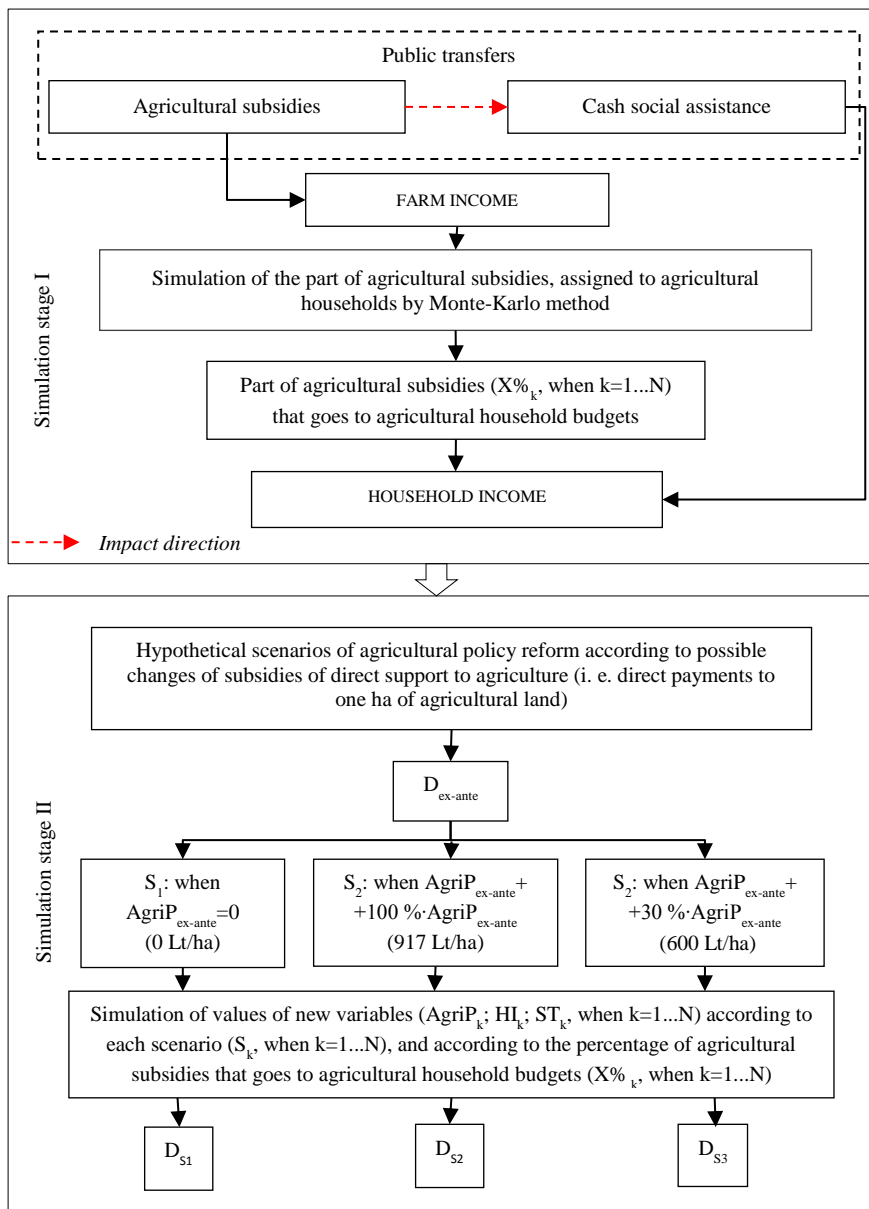


Fig. 2. Logical scheme of empirical research on the impact of agricultural policy and social transfers on agricultural income

3. EMPIRICAL RESEARCH OF THE ASSESSMENT OF THE IMPACT OF AGRICULTURAL POLICY AND SOCIAL TRANSFERS ON AGRICULTURAL HOUSEHOLD INCOME

3.1. The impact of agricultural subsidies and social benefit on agricultural household income

The section presents the average data about all disposed household income and two their components (agricultural subsidies and social benefits), calculated per one member of household per month in Litas, according to two coverages of agricultural households, i. e. *the broad*, when group of farmers includes all households, where members are involved in independent agricultural activity and receive from it some income in cash and in kind; and *the narrow*, when group of farmers includes only those households, where income from agricultural activity make the biggest part of the budget. In the both coverages of agricultural households the average values of the analyzed income indices are also presented by four groups of the used land area (see Fig. 3).

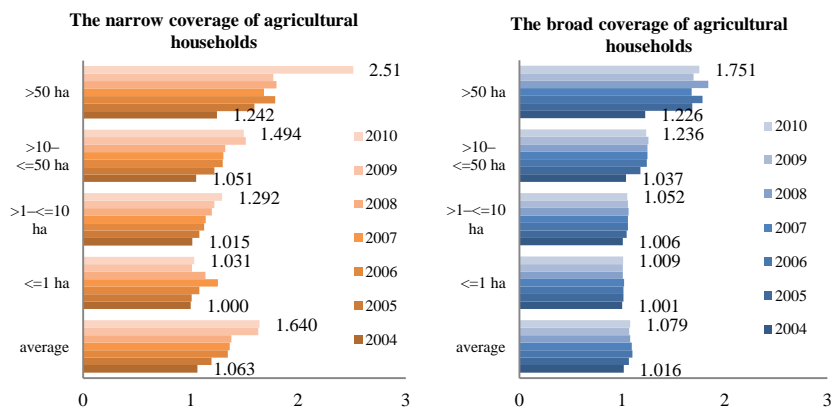


Fig. 3. The increase of household income due to agricultural subsidies and social benefits (NTC)

3.2. Results of simulation modelling of the impact of agricultural subsidies and social benefits on agricultural household income

The section presents the results of simulation of agricultural household income, agricultural policy and social transfers with focus on the impact on agricultural household income in the broad and the narrow coverages.

Results of simulation of agricultural household income, agricultural policy and social transfers. The results of simulation of agricultural household income, agricultural policy and social transfers are presented.

According to the first scenario, when no agricultural subsidies remain, income in both the narrow and the broad agricultural households' coverages decrease, while according to the second and the third scenario – increase. Significant increase in agricultural household income in the narrow coverage is observed (see Table 1).

Table 1. Agricultural household income per capita per month, Lt

Groups of households	Ex ante data	Simulated data according to hypothetical scenarios of agricultural policy		
		Scenario I	Scenario II	Scenario III
<i>The broad coverage of agricultural households</i>				
average	902.27	871.02	1089.55	1182.84
<=1 ha	779.33	790.73	800.70	804.55
>1 and <=10 ha	862.43	807.70	1099.47	1235.14
>10 and <=50 ha	1220.70	978.78	1320.97	1541.47
>50 ha	3120.82	2780.25	3554.41	3712.51
<i>The narrow coverage of agricultural households</i>				
average	947.55	847.27	1285.32	1452.35
<=1 ha	300.16	291.33	822.28	891.86
>1 and <=10 ha	631.42	554.49	1179.13	1397.79
>10 and <=50 ha	1122.61	931.22	1392.50	1648.91
>50 ha	2887.07	2459.72	3210.33	3412.11

Analysis of the impact of agricultural subsidies and social benefits on agricultural household income. Values of three indices – percentage transfer estimate, nominal transfer coefficient and elasticity of agricultural household income – are presented and analyzed. The results show the existing differences of the impact of agricultural subsidies and social benefit on agricultural household income in the case of alternative policy scenarios. Differences of the impact between agricultural households' coverages and among groups of households by cultivated land area are also presented (see Figure 4).

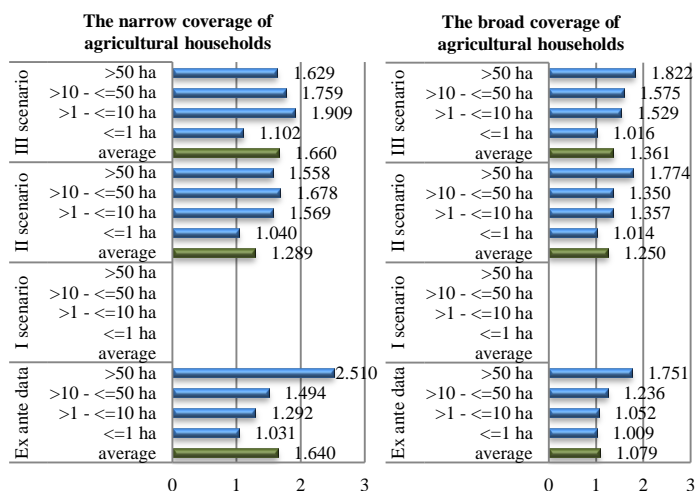


Fig. 4. Agricultural subsidies-based increase of income in the narrow and the broad coverages of agricultural households (NTC)

The elasticity coefficients are analyzed to measure and estimate the elasticity of agricultural household income to the received transfers (agricultural subsidies and social benefit). The analysis is conducted in the context of three scenarios of agricultural policy and having evaluated the impact of agricultural subsidies on the possibility to receive social benefit. It is established that the calculated income elasticity to transfers is not high in both groups of agricultural households' coverages. The coefficient of agricultural household income elasticity is usually measured only in hundredth or tenth parts; stronger or weaker changes in the transfers received by agricultural households, when other income sources do not alternate, have no significant influence on agricultural household income, with exception of few cases.

CONCLUSIONS

1. The completed analysis of theoretical provisions of the Principle of transfers, classification of transfers and survey of previous research on efficiency and effects of agricultural policy and Social transfers have established the following:

- income is not the only source of inequality or welfare differentiation, therefore, a multidimensional approach should be applied to the income redistribution on transfer basis. The conception of multidimensional Pigou-Dalton transfer principle supposes the theoretical presumption for this research that the assessment of the impact of agricultural policy transfers on agricultural household income should be based on more than one welfare criteria, such as disposed household income and the income sources that are directly related to or dependent on agricultural policy transfers;

- conceptions of the principle of diminishing transfers or the principle of strong diminishing transfers suppose the theoretical presumption for this dissertation research that it is expedient to relate the assessment of the differences of the impact of agricultural policy transfers on income to the area of land used for farming. The area of used land is the one main determinant of agricultural household income from agricultural activity, while the contribution of agricultural activity (including agricultural subsidies as one source of agricultural activity income) differs greatly in each unique agricultural household;

- only certain percentage of agricultural policy current transfers can be assigned to household budget. Meanwhile, other category of agricultural policy transfers – investment subsidies – is for the formation of the main farm capital. Therefore, they cannot be attributed to household budget and are not included into this research;

- interaction between agricultural policy current transfers and social transfers in agricultural household budgets is unilateral – payment of means-tested social benefits or other transfers to household may depend on the received sum of agricultural subsidies. Agricultural subsidies can prevent the possibility to get social benefit or, the latter can increase at the decrease of the former. It is important to take this one-sided relation into consideration when modelling the probable impact of agricultural subsidies reforms' on agricultural household income. On the contrary, social transfers make no influence on the payment of agricultural subsidies;

- researchers have not come to common opinion about the aspects of income redistribution among the society groups using various government transfer measures or programs efficiency evaluation. Generally speaking, classical issue of transfer efficiency evaluation is the problem of efficient redistribution of income – the aim to maximize the benefit of the support receivers at minimal costs of tax payers. On the other hand, analysis of

scientific literature has revealed that the field of agricultural policy transfers' efficiency research can be enriched with other issues such as the impact on trade distortion, farms' competitiveness, creation of public welfare, environmental protection, diminution of farms or households inequality or poverty, etc.

2. Analysis of the methods, used in previous research for evaluation of the impact or other effects of transfers, has brought to the following conclusion:

– the method of simulation modelling is increasingly employed in quantitative evaluation of alternatives of economic and social political programs. Simulation can be used in solution of economic problems at micro-, mezo- and macro-levels. Micro-simulation modelling, which is oriented to single units, i.e. micro-units such as person, family, household, farm, enterprise, etc., is used most often. Micro-simulation enables to establish the probable development of the situation in a not-real world, first of all, and, thus, to reduce the number of possible mistakes in political decisions. To evaluate the impact or results of political measures, the simulation modelling of the situation after hypothetic reform is conducted, i.e. the change of index meanings after construction of hypothetic reform and completed simulation of factual situation according to suppositions of the hypothetic reform, is investigated. The completed literature analysis shows that simulation modelling is widely applied in the assessment of various effects of agricultural policy reform, e. g. the impact on farmers' employment outside the farm, investment, competitiveness, efficiency of income transfers, etc.

– The above mentioned peculiarities of micro-simulation method suppose the methodological assumption for this dissertation research – to assess the possible impact of changes in agricultural policy transfers and the influenced social transfers on agricultural household income according to hypothetic scenarios of agricultural policy reform that correspond to the issues of GAP reform in 2014–2020. Micro-simulation modelling can only be used to establish the effects of changes of a single agricultural policy measure (e.g., direct payments according to GAP I support) or system of measures (e.g., compensation payments, according to GAP II support, to one ha of land).

3. Two new relative indices for measuring the impact of agricultural policy and social transfers on agricultural household income are used – percentage transfer estimate (%PTE) and nominal transfer coefficient (NTC), which enable to determine the contribution of these transfers to agricultural household income. PTE and NTC enable to measure the proportion by which each of the analysed transfers increases the disposed agricultural household income, received from labour activity or otherwise. It should be noted that these indices can be applied for measuring the contribution of any other source of household income.

Categorization of agricultural households according to two coverages (i. e. *the broad*, when group of farmers includes all households without exception, which are involved in independent agricultural activity and receive from it some income; and *the narrow*, when group of farmers includes only those households, where income from agricultural activity make the biggest part of the budget), gives the possibility to assess the benefit of agricultural policy transfers received by the households involved in agricultural business (e.g. Farmers' farms, registered according to the Lithuanian legislation requirements) as well as those of the individuals engaged in agricultural activity on a certain scale.

Classification of agricultural households by the area of used land enables to identify the differences of the impact of agricultural policy and social transfers on farmers' welfare, depending on the scale of agricultural activity.

Having evaluated the sufficiency and reliability of HBS and ILCS files with statistical data on observation units in 2004–2008 and 2009–2010, respectively, for this research, the suitability of these files for evaluation and simulation modelling of the impact of agricultural policy and social transfers on agricultural household income is established. Evaluation of reliability of HBS and ILCS files with statistical data on observation units establishes that, according to the broad coverage of agricultural households, the research sample corresponds to 95% reliability in all years of the research. According to the narrow coverage of agricultural households, the research sample corresponds to 95% reliability in 2004–2006 and 90% reliability in 2007–2010. One-factorial dispersion analysis is used to identify four groups of agricultural households on the basis of the area of used land, among which the differences of disposed income are statistically important.

4. The created simulation model for evaluation of the possible impact of changes in agricultural policy and social transfers on agricultural household income has two stages. The first stage – modelling the values of the initial variable – the part of agricultural subsidies paid to agricultural producers that go to the household budget. The second stage – modelling the new values of three income variables, i.e. agricultural subsidies assigned to household budget, income disposed by household, and social benefits, according to the provided hypothetical scenarios of agricultural policy reform. New data makes it possible to establish the changes in agricultural household income due to the provided scenarios of agricultural policy reform.

5. Empirical study of the impact of agricultural subsidies and social benefits on agricultural household income, which employs HBS and ILCS files with statistical data on observation units, brings to the following generalizing conclusions:

- The agricultural subsidies that are received by household budgets are significantly bigger in agricultural households of the narrow coverage in comparison to those of the broad coverage. Besides, since the beginning of the EU GAP implementation in the country, when subsidies to agriculture increased, this break has been increasing;

- Social payments are received only by the households that use small land plots. Social benefit, which is assigned to needy population, is a poor income source for small agricultural households. Besides, this benefit has decreased significantly since the support to agriculture started according to the EU GAP. A reverse connection between agricultural subsidies and social benefit is established in the agricultural household budgets. Most low-income agricultural households, which receive direct payments for the declared land plots over one ha, have no possibility to get the social benefit, assigned to needy families;

- Differences of the disposed agricultural household income are consequently dependent on the area of cultivated land – the bigger this area, the higher income average in the tested groups of agricultural households. The same dependency is characteristic to the distribution of agricultural subsidies. The break of the disposed income between the first (the smallest area of cultivated land) and the fourth (the biggest area of cultivated land) household groups is significantly bigger in the narrow coverage of agricultural households than that in the broad one. Due to public support according to GAP, the break of the disposed income between the first and the fourth groups of agricultural households has decreased in both coverages;

- Subsidies to agriculture give a comparatively little benefit to the household budgets of small farmers, i.e. those who cultivate small areas of land, and a several times greater benefit - to big agricultural households. Besides, the agricultural households, which cultivate big areas of land, experience the several times stronger impact of agricultural subsidies on their income, that is due to the implementation of the EU GAP. Direct dependency has been established between the area of cultivated land and the influence of

agricultural subsidies on agricultural household income. The larger area of cultivated land, the bigger part of disposed household income is made by agricultural subsidies, or the more these subsidies increase the household income from other sources.

6. The possible impact of agricultural policy reform according to hypothetic scenarios of changes in direct agricultural support subsidies on agricultural household income is evaluated by means of simulation modelling. The obtained results bring to the following generalizing conclusions:

- The influence of possible changes in agricultural subsidies (increase by 30 or 100 %) on household income would vary significantly both between the two tested coverages of agricultural households and among the tested groups of households, classified by the area of cultivated land;

- The third scenario of agricultural policy reform, according to which twice bigger agricultural subsidies are assigned to direct support to agriculture (i. e. having reached the EU average in 2020), would make the biggest positive influence on the income increase in agricultural households the narrow coverage. Besides, it is established that agricultural subsidies, that doubled in agricultural households of the broad coverage, would the most increase income of the agricultural households using bigger land area. An opposite effect would be observed in agricultural households of the narrow coverage – the doubled agricultural subsidies would more increase the disposed income in the agricultural households, where the area of cultivated land is more than 1 ha;

- It is established that elasticity of income, disposed in agricultural households of both the narrow and the broad coverages, to agricultural subsidies and social benefits is not high, it is usually measured in hundredth or tenth parts. Therefore, according to the analysed hypothetic scenarios of agricultural policy reform, stronger or weaker changes in agricultural subsidies and the influenced social benefits would have no significant influence on agricultural household income, with exception of few cases.

Results of empirical research on the impact of agricultural subsidies and social benefit on agricultural household income reveal obvious differences of the influence of these transfers according to both the tested coverages of agricultural households (the narrow and the broad) and the tested four groups of households, classified by the area of cultivated land. This supposes the need to apply differentiated subsidies of direct agricultural support depending on the scale of agricultural activity, i. e. for small, medium-size and big farms. As well as the need to apply differentiated approach to income from agricultural activity and area of disposed land criteria application in provision of social benefit and other social payments to small farmers, assigned according to the Law on Cash Social Assistance to the People in Need.

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1. Vitunskienė, V.; Baltušienė, J. Tiesioginių išmokų žemės ūkio veiklai socialiniai padariniai paramos gavėjų subjektyviu vertinimu. *Vadybos mokslas ir studijos – kaimo verslų ir jų infrastruktūros plėtrai*. 2011, nr. 5(29), p. 211-220.

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REZIUMĖ

Temos aktualumas. Pervedimai yra viena iš visuomenės gerovės užtikrinimo priemonių, tarnaujančių pajamų tarp visuomenės grupių persikirstymui. Mažos ir nepastovios ūkininkavimo pajamos yra viena svarbiausių prižasčių teikti viešą paramą žemės ūkiui. Agrarinė politika tiek nacionalinė iki Lietuvos narystės ES, tiek ir BŽŪP, orientuota į ekonominius ir socialinius tikslus, susijusius su ūkininkaujančios bendruomenės gerovės palaikymu. Vienas BŽŪP tikslų – „užtikrinti deramą žemės ūkiu besiverčiančios bendruomenės gyvenimo lygį, ypač didinant žemės ūkyje dirbančių asmenų asmenines pajamas“ (Romos sutarties 39 straipsnis (1957)). Tačiau, nepaisant įgyvendinamos BŽŪP iki šių dienų išlieka mažų pajamų problema gausiam smulkių žemdirbių sluoksniui.

Empiriniais tyrimais nustatyta, kad tiesioginės išmokos padidino ūkininkaujančios bendruomenės pajamų nelygybę (Allanson, Rocchi, 2008; Mishra, El-O, Gillespie, 2009; Arosynergie, 2011; Vitunskienė, 2011). Allanson, Rocchi (2008) priėjo išvados, jog taip atsitiko dėl to, kad tiesioginės išmokos netolygiai paskirstytos tiek horizontaliai, tiek vertikalčiai. Dėl to jau daugelį metų Europos Komisija reiškia susirūpinimą dėl neteisingo tiesioginės paramos gamintojams paskirstymo ir šią problemą bando spręsti reformuodama BŽŪP. Ankstesnių tyrimų išvados dėl žemės ūkio subsidijų poveikio žemdirbių pajamoms nėra vienareikšmės. Vienose šalyse tyrėjai nustatė, jog žemės ūkio subsidijos mažina ūkių pajamų skirtumus, tad ir žemdirbių namų ūkių pajamų nelygybę, kitose šalyse – didina.

Lietuvoje, namų ūkių biudžetų tyrimų duomenys rodo, kad iki narystės ES žemdirbių namų ūkių pajamos buvo vienos mažiausių. Be to, 1998–2002 m. jos smuktelėjo 17 proc., t. y. nuo 289 iki 237 Lt, skaičiuojant vienam namų ūkio nariui per mėnesį, o jų atotrūkis nuo miesto ir kaimo namų ūkių vidutinių pajamų dar labiau padidėjo. Situacija pasikeitė Lietuvoje pradėjus įgyvendinti ES BŽŪP, kai per pirmuosius penkerius narystės ES metus labai išaugus žemės ūkio realiosioms pajamoms, žemdirbių namų ūkių pajamos išaugo daugiau nei tris kartus (nuo 330 Lt –2003 m. iki 1036 Lt –2008 m., skaičiuojant vidutiniškai vienam namų ūkio nariui per mėnesį). Tačiau aprašyti duomenys atspindi tik vidutinę statistinę situaciją. Tuo tarpu tarp žemdirbių namų ūkių yra labai dideli pajamų skirtumai. *A priori* galima teigti, kad iki šių dienų išlieka mažų pajamų problema tarp labai gausaus smulkių žemdirbių sluoksnio. Pastebėtina, kad diduma tyrimų fokusuojami į žemės ūkio politikos efektus ūkių pajamų atžvilgiu ir tik pavienėse studijose šie efektai vertinami žemdirbių namų ūkių atžvilgiu. Kita vertus, reikia pastebėti, kad BŽŪP reformavimas 2014–2020 m. siejamas ne vien su anksčiau minėtu siekiu užtikrinti deramą žemės ūkiu besiverčiančios bendruomenės gyvenimo lygį, bet ir su siekiu sumažinti skurdą bei socialinę atskirtį, ypač smulkių žemdirbių, kurių daugiausia ir patenka į skurdo iš socialinės atskirties sąpaštus. Taigi šis BŽŪP tikslas suponuoja būtinumą agrarinės politikos reformos pasekmes vertinti ne vien ūkių, bet ir namų ūkių lygmeniu.

Šio tyrimo aktualumą taip pat suponuoja 2010–2011 m. vykdytame mokslinių tyrimų projekte „Agrarinės politikos poveikis kaimo gyventojų pajamoms ir jų diferenciacijai“ (tyrime dalyvavo ir šios disertacijos autorė) atskleistas atvirktinis ryšys tarp žemės ūkio subsidijų, tenkančių žemdirbių namų ūkių biudžetams, ir socialinės pašalpos, skiriamos gyventojų materialinės padėties tikrinimo būdu. Tyrimo metu buvo nustatytas abiejų pervedimų atvirktinis indėlis į bendrąją žemdirbių namų ūkių pajamų nelygybę. Tai veda prie išvados, kad galimas agrarinės politikos reformos pasekmes būtina vertinti platesniame nei ūkių kontekste.

Visa tai rodo, kad mokslinės žinios apie žemės ūkio subsidijų poveikį žemdirbių pajamoms yra nepakankamos ir nevienareikšmės, o agrarinė politikos poveikiui įvertinti

būtinis įvairiapusės žinios, ne vien tik visos žemės ūkiu besiverčiančios bendruomenės, bet ir individualių namų ūkio ar agreguotų namų ūkių grupių požiūriais.

Problemos ištyrimo lygis. Mokslinėje literatūroje akcentuojamos mažos ir nepastovios žemdirbių namų ūkių pajamos bei ieškoma būdų kaip šią problemą spręsti. Dažniausiai mokslinėje literatūroje nagrinėjamas klausimas – agrarinės politikos poveikis pajamoms. Keliamos tokios su agrarinės politikos poveikiu pajamoms susijusios problemos, kaip neteisingas pajamų palaikymas ar pervedimų paskirstymas.

Literatūros gausa atskleidžia šias pagrindines agrarinės politikos pervedimų poveikio ūkių arba žemdirbių namų ūkių pajamoms ir jų nelygybei tyrimo kryptis:

- tiesioginės paramos ir kitų žemės ūkio subsidijų poveikis ūkių pajamoms bei jų nelygybei;
- tiesioginės paramos ir kitų žemės ūkio subsidijų poveikis žemdirbių namų ūkių pajamoms bei jų nelygybei;
- tiesioginės paramos žemės ūkiui išmokų paskirstymo tarp paramos gavėjų nelygybė;
- agrarinės politikos perskirstomieji efektai ūkių pajamoms;
- agrarinės politikos pervedimų poveikis bendrųjų pervedimų ūkiams paskirstymui;
- alternatyvių paramos žemės ūkiui priemonių poveikis ūkių pajamoms;
- pervedimų žemdirbių namų ūkiams efektai gerovės požiūriu;
- agrarinės politikos pervedimų poveikis žemdirbių namų ūkių vartojimui ir investavimui ir kt.

Empiriniais tyrimais nustatyta, jog tiesioginės išmokos padidino ūkininkaujančios bendruomenės pajamų nelygybę (Witzke et al. 2007; Allanson, et al. 2008; Agrarinės politikos ..., 2011, Vitunskienė, 2011). Allanson et al. (2008) priėjo išvados, jog taip atsitiko dėl netolygaus tiesioginių išmokų pasiskirstymo tiek tarp ūkių, tiek tarp žemės ūkio šakų. Iki šiol atliktų tyrimų rezultatai apie tiesioginių išmokų ar kitokių agrarinės politikos subsidijų poveikį pajamų pasiskirstymui tarp žemdirbių bendruomenės nėra vienareikšmiai. Priešingai nei anksčiau minėtuose tyrimuose Severini et al. (2013) nustatė, kad Italijoje tiesioginės išmokos sumažino ūkių pajamų nelygybę, o Mishra, El-O et al. (2009) ir Benni et al. (2012) priėjo išvados, kad agrarinės politikos subsidijos sumažino namų ūkių pajamų nelygybę JAV ir Šveicarijoje. Kitame tyrime (AROSYNERGIE, 2011) prieita išvados, kad BŽŪP agrarinės aplinkosaugos priemonės skatina viešųjų gėrybių kūrimą ir mažina ūkių pajamų nelygybę. Išnagrinėti literatūros šaltiniai leidžia daryti išvadą, kad agrarinės politikos poveikis pajamų pasiskirstymui daugiausia buvo tirtas ūkių lygmeniu ir tik nedaugelyje darbų – namų ūkių lygmeniu. Atliekant empirinius agrarinių pervedimų efektyvumo tyrimus dažniausiai pasikliaujama kiekybine simuliacija, panaudojant tai aprašančius modelius. Kaip pastebi Thompson et al. (2009), vis dar nėra bandymų vertinti pervedimų efektyvumą betarpiškai pagal naujausius žemdirbių namų ūkių duomenis.

Negausiuose Lietuvos autorių šaltiniuose nagrinėtas tiesioginių išmokų poveikis ūkių pelningumui (pvz., Jasinskas ir Simanavičienė, 2008; Skulskis, 2010). Tyrimuose buvo siekta įvertinti ne tik agrarinės politikos pervedimų indėlį generuojant ūkių pajamas (Jasinskas ir kt., 2008; ESTEP, 2008; Kazakevičius, 2011), bet ir jų reikšmę ekologinio ūkininkavimo vystymuisi (ESTEP, 2008; Skulskis ir kt., 2011;), ūkių efektyvumui (Kriščiukaitienė ir kt., 2006; Kazakevičius, 2010) ir konkurencingumui (Kriščiukaitienė, 2008). Tyrimų rezultatų analizė atskleidė, jog tiesioginės paramos žemės ūkiui efektai Lietuvoje dažniausiai buvo vertinti išvestinio rodiklio „bendrasis pelnas“ atžvilgiu. Daugelis autorių (Kuodys ir kt., 2007; Jasinskas ir kt., 2008; Kriščiukaitienė ir kt., 2006;

Kriščiukaitienė ir kt. 2012; Kazakevičius 2009; 2010; 2011) ES tiesioginės paramos poveikį pajamoms vertinto per ūkių bendrojo pelno, apskaičiuoto „be“ ir „su“ subsidijomis, skirtumų prizmę. Tik Kaimo plėtros 2004–2006 metų plano įgyvendinimo Lietuvoje galutiniame įvertinime ekspertai analizavo kokių mastu tiesioginės ir kompensacinės išmokos prisidėjo prie paramos gavėjų pajamų didinimo. Taigi, tiesioginės paramos reikšmė generuojant ūkių pajamas Lietuvoje menkai iširta. Tad šis klausimas išlieka aktualus diskusijose dėl Bendrosios agrarinės politikos reformos 2014–2020 m. programavimo laikotarpiui.

Skirtingai nei agrarinės politikos pervedimų, socialinių pervedimų efektai žemdirbių bendruomenės pajamoms menkai iširti. Galima sakyti, kad ši problematika buvo nagrinėta tik pavieniauose tyrimuose. Socialinių pervedimų poveikis mažinant žemdirbių skurdą buvo tirtas mokslinių tyrimo projekte „Ištirti skurdo išplitimą žemdirbių tarpe ir nustatyti priemones skurdo mažinimui ir prevencijai“ (Ištirti skurdo... 2002; Vitunskienė, 2003), o poveikis ir žemdirbių namų ūkių pajamų nelygybei – mokslinių tyrimų projekte „Agrarinės politikos poveikis kaimo gyventojų pajamoms ir jų diferenciacijai“ (Agrarinės politikos..., 2011). Pastarasis tyrimas atskleidė, kad kaimo namų ūkiuose egzistuoja atvirkštinis ryšys tarp tiesioginių išmokų žemės ūkiui ir socialinės pašalpos. Šeimos gaudomos tiesiogines išmokas praranda galimybę gauti socialines pašalpas. Be to paties tyrimo rezultatai parodė, kad agrarinių išmokų socialinis efektas nėra adekvatus socialinės pašalpos efektui. Tačiau ryšys tarp abiejų pervedimų rūšių ir jų suminis poveikis žemdirbių namų ūkių pajamoms nėra iširtas.

Todėl šiam **disertaciniam tyrimui keliama mokslinė problema** – kaip įvertinti galimą agrarinės politikos ir socialinių pervedimų poveikį žemdirbių namų ūkių pajamoms, atsižvelgiant į tai, kad pasikeitusios tiesioginės paramos žemės ūkiui išmokos gali daryti įtaką toms socialinės paramos išmokoms, kurios namų ūkiams skiriamos taikant gyventojų pajamų ir materialinės padėties testavimo principą.

Tyrimo objektas – agrarinės politikos ir socialinių pervedimų poveikis žemdirbių namų ūkių pajamoms.

Tyrimo tikslas – įvertinti agrarinės politikos ir socialinių pervedimų poveikį žemdirbių namų ūkių pajamoms, atsižvelgus į ryšį tarp abiejų pervedimų.

Tiksliui pasiekti buvo įgyvendinti šie tyrimo **uždaviniai**:

1) atskleisti pervedimų principo bei taikomųjų pervedimų klasifikacijos ir efektyvumo teorines nuostatas agrarinės politikos ir socialinių pervedimų poveikio namų ūkių pajamų vertinimo teoriniam modeliui parengti;

2) išanalizuoti pervedimų poveikio mikrolygmeniu vertinimo metodus, įvertinant jų pritaikomumą galimam agrarinės politikos ir socialinių pervedimų pokyčių poveikiui namų ūkių pajamoms modeliuoti;

3) parengti agrarinės politikos ir socialinių pervedimų poveikio namų ūkių pajamų vertinimo metodiką;

4) sudaryti simuliacijos modelį galimam agrarinės politikos ir socialinių pervedimų pokyčių poveikiui žemdirbių namų ūkių pajamoms vertinti;

5) empiriškai iširti agrarinės politikos ir jos įtakojamų socialinių pervedimų poveikį pajamas bei atskleisti jo skirtumus tarp žemdirbių namų ūkių;

6) simuliacinio modeliavimo būdu įverti galimą agrarinės politikos reformos pagal tikėtinus BŽŪP I ramsčio tiesioginės paramos išmokų scenarijus poveikį žemdirbių namų ūkių pajamoms sąsajoje su jo įtakojamomis piniginės socialinės paramos išmokomis.

Tyrimo metodai

– Atliekant tyrimą naudota mokslinės literatūros, siekiant atskleisti teorinius agrarinės politikos ir socialinių pervedimų žemdirbių namų ūkiams ypatumus, analizė ir sintezė.

– Empiriškai vertinant agrarinės politikos ir socialinių pervedimų poveikį žemdirbių namų ūkių pajamoms naudoti statistikos, simuliacinio modeliavimo metodai. Identifikuojant žemdirbių namų ūkių grupes pagal dirbamos žemės plotą buvo naudota vienfaktorinė dispersinė analizė. Rezultatų paklaidoms įvertinti skaičiuoti Bootstrap pasikliautiniai intervalai ir standartiniai nuokrypiai atlikus 1000 pakartojimų. Procentinės žemės ūkio subsidijų dalies atitenkančios žemdirbių namų ūkių biudžetui modeliavimas atliktas Monte-Karlo metodu panaudojant matematinės statistikos paketą R. Duomenų pagal hipotetines reformas simuliacija ir kiti skaičiavimai atlikti panaudojant SPSS statistinį programinį paketą.

– Tyrimo rezultatų apibendrinimui, palyginimui ir išvadų bei rekomendacijų formulavimui naudota indukcinis ir loginės analizės tyrimo metodai.

Tyrimo apribojimai. Iš agrarinės politikos pervedimų nagrinėjami einamieji agrarinės politikos pervedimai, kadangi jų tam tikra procentinė dalis gali būti priskiriama namų ūkių biudžetui. Iš socialinių pervedimų nagrinėjama pinigine socialinė parama, nes agrarinės politikos pervedimų poveikį žemdirbių namų ūkių pajamos tikslinga vertinti sąsajoje tik su tais socialiniais pervedimais šeimoms ar asmenims, kurie skiriami pajamų ar materialinės padėties tikrinimo būdu. Empiriniame vertinime tiriamos žemės ūkio subsidijos ir socialinė pašalpa.

Darbo naujumas ir reikšmė. Mokslinio darbo naujumą nusako šie gauti rezultatai:

1) parengta pervedimų žemdirbių namų ūkiams klasifikacija ir identifikuotos agrarinės politikos pervedimų galimo įtakojimo pinigines socialinės paramos išmokoms sritys ir identifikavimo kriterijai;

2) sudaryta pervedimų žemdirbių namų ūkiams klasifikacija ir identifikuota agrarinės politikos pervedimų galimo įtakojimo pinigines socialinės paramos išmokoms kryptis bei kriterijai;

3) sudaryti du nauji santykiniai rodikliai: 1) procentinis pervedimų įvertis (PPĮ) ir nominalusis pervedimų koeficientas (NPK), transformuojant atitinkamus procentinio tiesioginės pervedimų paramos įverčio (PTPĮ) ir nominaliojo tiesioginės pervedimų paramos koeficiento (NTPK) pritaikytus ūkių arba žemės ūkio šakos lygmeniu. Naujieji PPĮ ir NPK rodikliai yra priderinti prie namų ūkių pajamų šaltinių, tarp kurių yra agrarinės politikos ir socialiniai pervedimai;

4) patikrintas namų ūkių biudžetų tyrimo (NŪB), Lietuvoje vykdyto iki 2008 m., bei pajamų ir gyvenimo sąlygų tyrimo (PGS), Lietuvoje vykdomų nuo 2005 m., statistinio stebėjimo vienetų duomenų rinkmenų tinkamumas agrarinės politikos reformų poveikio žemdirbių namų ūkių pajamos mikrosimuliaciniam modeliavimui arba po vieną atskirai, arba abi kartu;

5) sudarytas mikrosimuliacijos modelis agrarinės politikos reformos efektui žemdirbių namų ūkių pajamoms vertinti naudojant Monte Karlo metodą ir matematinės statistikos paketą R. Jis leidžia, viena vertus, alternatyvių agrarinės politikos reformos scenarijų pasekmes namų ūkių pajamoms vertinti sąsajoje su jos įtakojamais socialiniais pervedimais, skiriamais taikant gyventojų pajamų ir materialinės padėties tikrinimo principą; antra vertus, šias pasekmes modeliuoti individualiu, t. y. statistinio stebėjimo vienetų duomenų bei agreguotų grupiniu lygmeniu;

6) įvertintas žemės ūkio subsidijų ir socialinės pašalpos poveikis namų ūkių pajamoms pagal dvi žemdirbių namų ūkių aprėptis (plačiąją ir siaurąją) ir keturias jų grupes, suklasifikuotas pagal naudojamos žemės ploto dydį ir, kiekvienoje aprėptyje atskirai;

7) mikrosimuliacinio modeliavimo būdu įvertintas alternatyvių agrarinės politikos scenarijų, atliepančių tiesioginės paramos išmokų pagal BŽŪP I ramstį reformos 2014-2020 metų programavimo laikotarpiui aktualijas, poveikis žemdirbių namų ūkių pajamoms, sąveikoje su šios reformos įtakotu socialinė pašalpos pokyčiais. Įvertintas žemdirbių namų ūkių pajamų elastingumas žemės ūkio subsidijų ir socialinių pašalpų pokyčiams dėl galimų tiesioginės paramos išmokų reformų.

Šiuo disertaciniu tyrimu prisidedama prie mokslinės diskusijos apie agrarinės politikos pervedimų poveikį žemdirbių namų ūkių pajamoms, atsižvelgiant į agrarinės politikos einamųjų pervedimų daromą poveikį piniginei socialinei paramai. Šis aspektas menkai išnagrinėtas, tačiau yra aktualus dėl egzistuojančio atvirkštinio ryšio tarp agrarinės politikos einamųjų pervedimų ir piniginės socialinės paramos. Daugeliu atvejų agrarinės politikos pervedimai įtakoja žemdirbių namų ūkių pajamas bei vieną iš pajamų šaltinių socialinę paramą, skiriamą finansinės padėties ir turto tikrinimo būdu.

Šio tyrimo moksliniai rezultatai reikšmingi politinio proceso dalyviams, modeliuojantiems agrarinės politikos tiesioginės paramos išmokų žemės ūkio gamintojams reformos scenarijus. Tyrimo rezultatai atskleidžia išsamų agrarinės politikos pervedimų poveikio žemdirbių namų ūkių pajamoms vaizdą. Jie leidžia giliau ir detaliau įvertinti galimas agrarinės politikos reformos pasekmes mikroekonominiu lygmeniu, bei atskleisti jos galimus socialinius padarinius ne vien agrarinės politikos pertvarkymų, bet ir jų įtakojamų socialinių pervedimų pokyčių kontekste.

Tyrimo struktūra. Mokslinio tyrimo loginę seką atspindi išsikeltas tikslas ir uždaviniai, kurių sprendimas išdėstytas trijose disertacijos dalyse. Mokslinį darbą sudaro šios dalys: įvadas, trys dalys ir išvados.

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AGRARINĖS POLITIKOS IR SOCIALINIŲ PERVEDIMŲ POVEIKIO ŽEMDIRBIŲ NAMŲ ŪKIŲ PAJAMOMS VERTINIMAS

JURGITA BALTUŠIENĖ

Daktaro disertacijos santrauka