

## **REGIONAL ABSORPTION OF COMMON AGRICULTURAL POLICY'S RURAL DEVELOPMENT FUNDS TARGETED FOR SEMI-SUBSISTENCE FARMS IN ROMANIA IN THE 2007-2013 PROGRAMMING PERIOD**

BORÓKA-JÚLIA BÍRÓ<sup>1</sup>

**ABSTRACT** – Land fragmentation and the need for consolidation are major problems of current Romanian agriculture. The transition from the status-quo of an agricultural structure dominated by subsistence and semi-subsistence farms in the view of restructuring, resulting in a more efficient sector – is a must. Present study proposes to evaluate the application of specific measures of the Romanian National Rural Development Programme (NRDP) that sought to support semi-subsistence farms between 2007 and 2013. Three NRDP measures have been identified under which semi-subsistence farms were eligible: Measure 112 “Setting up of young farmers”, Measure 121 “Modernization of agricultural holdings”, and Measure 141 “Supporting semi-subsistence agricultural holdings”. The above measures belong to the 1<sup>st</sup> Axis of the Common Agricultural Policy’s second pillar, thus having a common general goal the improvement of the competitiveness of the agricultural sector, while aiming at restructuring and developing the physical potential and management of generation change - trying to keep the rural population in place. Available data on a seven-year time horizon was analyzed. The absorption level of measures 112, 121 and 141 - under which the Romanian semi-subsistence farms were eligible - on national and subnational scale was mapped.

**Keywords:** Romanian small farms, semi-subsistence agricultural holdings, National Rural Development Programme, measures 112, 121, 141, absorption

### **INTRODUCTION**

The Romanian agriculture can be characterized by a dual farm structure, referred as “one country with two agricultures” (Luca, 2009). The excessive concentration of land ownership before 1989 switched over to an exaggerated fragmentation, as at the beginning of the '90s Romania carried out a land reform that led not only to the land privatization and individualization of agriculture, but also to a high level of land fragmentation. The duality lies in the fact that on the one hand there are more than 1.5 million small farms (<1 ha), which in share values amount to 43.76% of total agricultural holdings and account for 4.72% of the utilized agricultural area, on the other hand large farms (>100 ha), which represent only 0.25% out of the total of agricultural holdings control 37.57% of the utilized agricultural area (own calculations based on NIS data referring to year 2007).

Alexandri (2010) analysed farm consolidation patterns as first signals after accession based on data of the Romanian Farm Structure Surveys from 2005 and 2007, focussing on the evolution of the utilized agricultural area, on leased land (by formal and informal arrangements) and on non-utilized land. She formulated the following preliminary conclusions: the land lease phenomenon increased mainly in the case of farms with over 100 hectares, represented mainly by legal entities; the average size of farms increased both in the case of individual holdings and mainly in the case of legal entities; in the segment of small and medium-sized farms there are consolidation signals in the case of the latter, by ownership transfers; the concession and informal arrangements (land operated under shared cropping schemes) decreased in importance; there are significant areas of non-utilized agricultural

---

<sup>1</sup> Postdoctoral Researcher, Bucharest University of Economic Studies, Bucharest, Romania.  
E-mail: biro\_boroka@yahoo.com

land, mainly in the case of farms less than 10 hectares – mainly due to the landowners who are either too old or live in urban areas and are not interested in farming (Alexandri, 2010).

Otiman (2012) gives a deep and thorough analysis of Romania's present agrarian structure, naming it "a great (and unsolved) social and economic problem of our country". He is giving a deep root analysis of the Romanian agrarian structure, a determinant of the Romanian agriculture and rural area development level, working with data from 1921 – the great agrarian reform – up to nowadays (2011). Regarding farm-size related questions, Otiman (2012) concludes the following: each type of holding has a place in the agrarian structure; each type of holding must have a role (e.g. commercial, technical, scientific extension, subsistence); for each type of holding the most adequate financial support modalities must be found, so as to set it on profitability principles; the most important managerial system must be found for each type of holding; each type of holding must reach the optimum size from the economic and social point of view. We also believe that, besides the accentuation of economic productivity and efficiency issues, social aspects need to be in the spotlight in the agricultural and rural development policy design as well.

### METHODOLOGY

The study contains a general description of the Romanian agriculture in a European context based on statistical data, followed by a conceptual synthesis of small farms' definitions. Regional aspects of the absorption of small farm-targeted regional development funds in Romania are mapped in the final part of the article. Absorption ratios have been calculated on county (NUTS 3) level based on the dataset of the Ministry of Agriculture and Rural Development. We further calculated several compound indicators in order to make county-level data comparable.

### EVOLUTION AND STATUS-QUO OF THE ROMANIAN FARM STRUCTURE

**Table 1.** *Development of the size of the agricultural sector of the European Union due to enlargement processes*

Units	Utilized agricultural area (UAA) (million ha)	Number of holdings <sup>1</sup> (thousands)	Average farm size <sup>1</sup> (hectares)	Number of work units <sup>1,2</sup> ('000)	Total value of agricultural production <sup>3</sup> (million EUR)
EU-15	128	5662	23	5671	274263
EU-10	33	3614	9	3326	34673
EU-2	19	4424	4	2696	17265
EU-27	180	13700	13	11693	326201
% share of new member states in EU-27 (%)	29	59	--	52	16
% change EU-27/ EU-15	41	142	-42	106	19

EU-15: EU members in 2003; EU-10: Members which joined in May 2004; EU-2: Bulgaria and Romania, which joined in 2007; 1. 2007; 2. Agricultural Working Units or full-time farmer equivalent; 3. Economic Accounts for Agriculture at producer price.

Source: adapted from OECD, 2011

Romanian agriculture occupies a peripheral position in the Union regarding the physical size of farms with 3.5 ha per farm versus 12.6 ha per farm in the EU-27 and it ranks second last among all member states (Popescu, 2010). We can draw the conclusion that the current Romanian structure of land offers slight chance for exploiting effectively the benefits of the economies of scale. In a Central and Eastern European context, the Romanian agriculture also occupies a peripheral position regarding the physical size of farms. With 3.5 ha per farm versus 6 ha average in the CEECs, it ranks last in the region (Bíró, 2010). There exists a large gap between the EU average and the Romanian economic size

## REGIONAL ABSORPTION OF CAP RURAL DEVELOPMENT FUNDS TARGETED FOR SEMI-SUBSISTENCE FARMS IN ROMANIA IN THE 2007-2013 PROGRAMMING PERIOD

of farms, the latter being 9.4 times lower (2700.2 EUR SO / farm) than the former (25450 EUR SO / farm) (MADR, 2014).

According to EUROSTAT data, the average farm size in Romania was 3.45 ha/farm in 2010, compared to the previous 3.50 ha/farm in 2007 and 3.27 ha/farm in 2005. If we take a closer look on the average farm size in the group of holdings owned by a sole holder and in the ones having a legal entity, the dual character of the Romanian agriculture is reflected. While the average farm size of a holding operated by a sole holder in 2010 was 1.95 ha/farm, the average value of a farm having a legal entity was 190.77 ha/farm. Consequently, in Romania, farms having a legal entity are on average ten times larger than the small subsistence and semi-subsistence farms having no legal status.

### SMALL FARMS – CONCEPTUAL FRAMEWORK

The debate on small farms has gained importance in the European Union recently, but complete information and reliable statistics are scarce and research in this field is still in an "embryonic form" (Davidova et al., 2014).

The literature highlights the potential roles of small and semi-subsistence farms, such as the provision of environmental public goods, the supply of specialty food, preserving local traditions and culture, but until now, there is little research that would certify these roles (Hubbard et al., 2014).

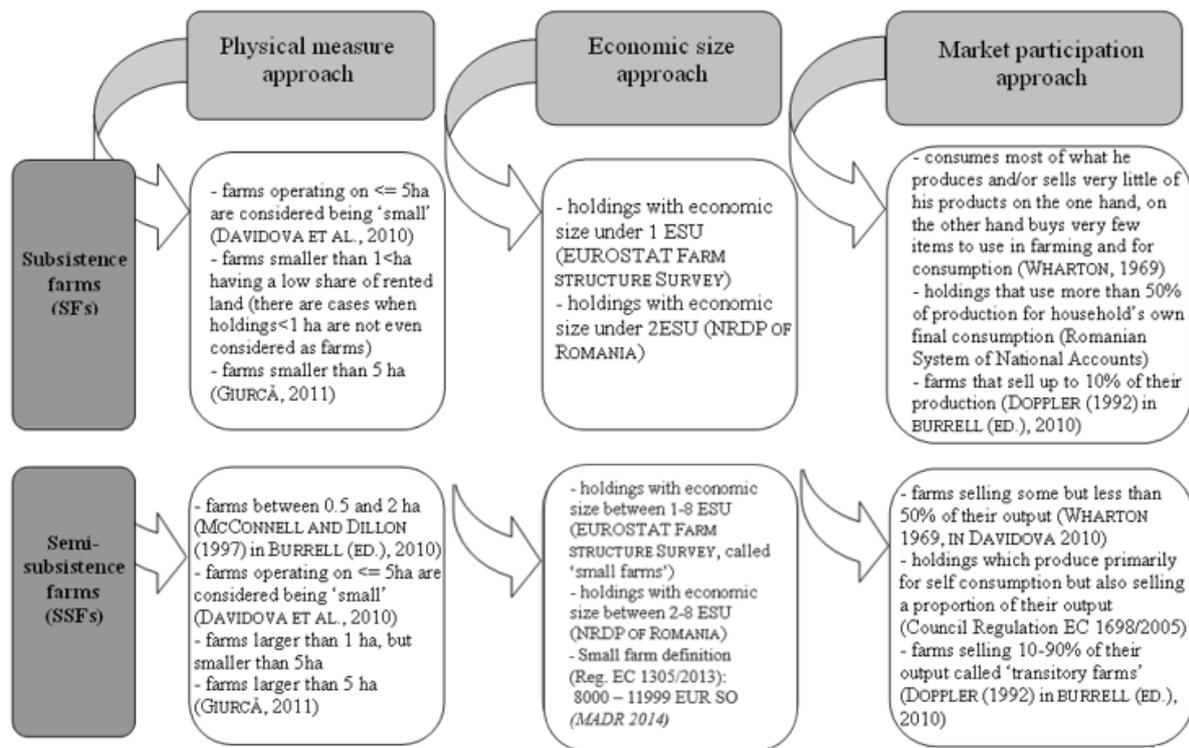
As a commonly agreed, generally accepted definition on the terms of 'subsistence' and 'semi-subsistence farming' does not exist within the field of agricultural economics, we propose to make a possible review on several definitions used (Figure 1). We can group the various definitions of subsistence and semi-subsistence farms along the types of the variables they use in order to specify these groups. This way, three main types of criteria and thus three main approaches can be differentiated as follows: the physical measure approach, the economic size approach and the market participation approach. The *physical measure approach* sets the physical dimension of a farm, expressed in hectares, as a threshold to specify whether it is subsistence or semi-subsistence. The economic dimension of the farm, the agricultural production value measured in ESU (European Size Units) - 1 ESU meaning a standard gross margin of 1200 euro – stand at the base of the *economic size approach*. The *market participation approach* distinguishes farms as being subsistence or semi-subsistence by the shares of household output used as own consumption and the share of sold outputs. If the share of own consumption is relatively high and the selling share is relatively low, then we can say that the farm is mainly producing for itself, consequently it is a subsistence farm. However, if it reaches a certain threshold in its output selling, it may be considered semi-subsistence as it produces primarily for self consumption, but it also sells a certain part of its products.

The European Commission introduced substantial changes regarding the classification of the agricultural holdings by their economic size. Starting with Regulation (EC) No 1242/2008<sup>2</sup>, the economic size of an agricultural holding is measured as the total Standard Output (SO) of the holding expressed in euro. Previously, the economic size was measured as the total Standard Gross Margin (SGM) of the holding expressed in European Size Unit (ESU). The principle of both concepts is the same: the sum of all the SO or SGM per hectare of crop and per head of livestock of each holding is a measure of its overall economic size. The main differences between the two methods are the methodologies applied for calculations (the SO excludes direct payments as well as costs) and the units used to measure the economic size of the holding (the economic size based on the SO is expressed in euro and not in ESU as in the previous SGM classification). Regulation (EC) No 1242/2008 entered into force starting with the accounting year 2010.

Applied within the framework of the new methodology, the Standard Output (SO) means the average monetary value of the agricultural output at farm gate price of each agricultural product (crop or livestock) in a given region. The SO of the holding is calculated as the sum of the SO of each agricultural product present in the holding multiplied by the relevant number of hectares or heads of livestock of the holding. The SO coefficients are expressed in euros and the economic size of the

<sup>2</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1427558114956&uri=CELEX:32008R1242>, retrieved on 11.01.2015

holding is measured as the total standard output of the holding expressed in euros. Holdings may be classified in economic size classes, the limits of which are also expressed in euros.



**Figure 1.** Conceptual framework for the definition of subsistence and semi-subsistence farms

Source: own edition based on Burrell, A. (ed.) (2010), Davidova et al. (2010), EC 1698/2005, EUROSTAT, Giurcă (2008, 2011), National Rural Development Programme of Romania 2007-2013, 2014-2020 (MADR), Romanian System of National Accounts, Wharton (1969) – updated version of Figure 1. from Bıró, B.J. (2011)

### SMALL-FARM RELEVANT MEASURES IN THE ROMANIAN NRDP 2007-2013

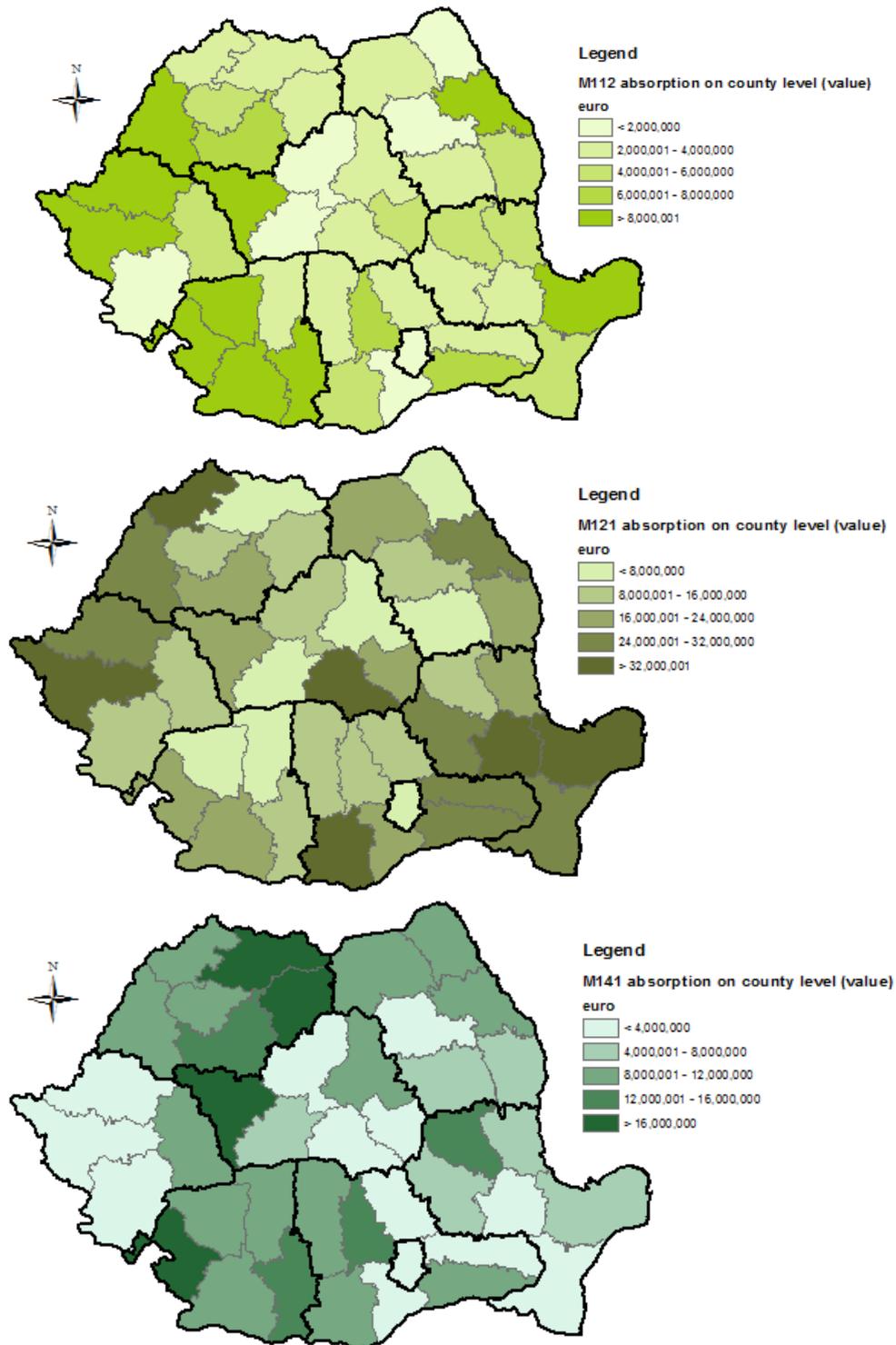
Small farms were supported by three measures of the Romanian NRDP 2007-2013, namely: measure 141 “Support for semi-subsistence farms”, measure 112 “Setting up of young farmers”, and measure 121 “Modernization of agricultural holdings”. The eligibility criteria associated with the above-mentioned measures indicate that they entirely have the Romanian small farms as a target group, or they do support the category of small farms besides larger ones. Under measure 141 “Support for semi-subsistence farms”, farms with economic size between 2 and 8 ESU were eligible. Under measure 112 “Setting up of young farmers”, those young farmers could receive installation support who managed farms with an economic size of at least 6 and no more than 40 ESU. Beneficiaries eligible for support under measure 121 “Modernization of agricultural holdings” were farmers whose farms are located in the country and have a size equal to or greater than 2 ESU. Among all the above, those between 2 and 8 ESU can be categorized as semi-subsistence farms.

Szöcs (2013) analysed the contribution to sustainable development of CAP second pillar, rural development funds on regional level in Romania for the 2007-2013 programming period.

### REGIONAL ASPECTS OF ABSORPTION OF RURAL DEVELOPMENT MEASURES 112, 121 AND 141 IN ROMANIA, IN THE 2007-2013 PROGRAMMING PERIOD

Representation of small farm-targeted measures in the 2007-2013 programming period (Figure 2) shows high regional differences. However, the absolute values of sums absorbed on county level can be misleading when interpreting the results, as these can not be treated separately from the volume of the labour force involved in agriculture sector, the share of rural inhabitants, as well as the share of agricultural area in a county.

REGIONAL ABSORPTION OF CAP RURAL DEVELOPMENT FUNDS TARGETED FOR SEMI-SUBSISTENCE FARMS IN ROMANIA IN THE 2007-2013 PROGRAMMING PERIOD



**Figure 2.** County level absorption of small farm-targeted regional development funds 2007-2013  
Source: own edition in ArcGIS 10.2, database used: www.apdrp.ro

Besides the illustration on county level of the total values of projects financed in Romania between 2007 and 2013 via measures 112, 121 and 141 (Figure 2), we also consider that it is highly important to build several compound indicators in order to get a more realistic view on the performance status of the counties. Therefore, we calculated three types of indicators regarding measure 112, 121 and 141 values:

- total project value per rural inhabitants,
- total project value per persons employed in agriculture, forestry and fishing sector,
- total project value per 1 ha of agricultural area.

We also calculated the:

- number of projects per rural inhabitants,
- number of projects per persons employed in agriculture, forestry and fishing sector,
- number of projects per 1 ha of agricultural area.

All indicators were calculated on county level.

**Table 2.** Minimum, maximum and average values of indicators on county level

		Support value per rural inhabitant	Support value per one person employed in agriculture sector	Support value per 1 ha of agricultural area	No. of projects per rural inhabitant	No. of projects per one person employed in agriculture sector	No. of projects per 1 ha of agricultural area
		EUR	EUR	EUR	No.	No.	No.
		<i>per person</i>	<i>per employee</i>	<i>per ha</i>	<i>per 1000 persons</i>	<i>per 1000 employee</i>	<i>per 1000 ha</i>
<b>M112</b>	COUNTY AVERAGE:	25	94	15	1.12	4.16	0.66
	county level max	119	464	40	4.64	18.07	1.69
	county level min	1	4	1	0.05	0.19	0.06
<b>M121</b>	COUNTY AVERAGE:	91	341	51	0.24	0.90	0.13
	county level max	317	1299	151	1.15	4.49	0.39
	county level min	7	30	5	0.04	0.15	0.03
<b>M141</b>	COUNTY AVERAGE:	41	149	26	5.47	19.82	3.47
	county level max	204	626	96	27.14	83.47	12.79
	county level min	4	23	3	0.57	3.07	0.39

Source: own calculations based on data from NIS and [www.apdrp.ro](http://www.apdrp.ro), retrieved on 01.09.2014

Our results on the application of measure 121 “Modernization of agricultural holdings” in Romania between 2007 and 2013 show that, in the best performing counties, 317 euro per rural inhabitant (Timiș), 1299 euro per person employed in agriculture, forestry and fishing sector (Brașov), and 151 euro per one hectare of agricultural area entered through M121 during the 2007-2013 time horizon. The worst performing counties show very low below-average values: 7 euro per rural inhabitant (Gorj), 30 euro per one person employed in agriculture, forestry and fishing sector (Vâlcea) and 5 euro per one hectare of agricultural area. Sharp territorial differences are noticeable both regarding the absorption of measure 112 and measure 141 (Table 2).

## CONCLUSIONS

We can conclude that mainly rural, less developed counties, namely those more in need of, are less effective in the absorption of rural development-targeted European Funds. In this way, regional disparities are going to deepen, divergence of the regions to increase. There were three measures in the Romanian NRDP 2007-2013 that entirely or partially targeted semi-subsistence farms. All these three

## REGIONAL ABSORPTION OF CAP RURAL DEVELOPMENT FUNDS TARGETED FOR SEMI-SUBSISTENCE FARMS IN ROMANIA IN THE 2007-2013 PROGRAMMING PERIOD

measures belonged to the first axis, thus seeking to contribute to the improvement of the competitiveness of the agricultural holdings through a better use of human resources and production factors, promoting rejuvenation of farmers generations, aiming at restructuring and developing the physical potential and promoting innovation. These measures were measure 112 “Setting-up of young farmers”, measure 121 “Modernization of agricultural holdings” and measure 141 “Supporting semi-subsistence agricultural holdings”. In the current programming period, four special needs are identified in the Romanian NRDP 2014-2020 that are linked to the group of small farms; these are as follows: need no. 004: Adequate level of capital and technology for modern agricultural activities, need no. 006: Rejuvenation of farmers’ generations, need no. 007: Restructuring and modernization of small farms into market-oriented farms, need no. 11: Easy access to adequate financial instruments for farmers, processors and small entrepreneurs from rural areas. Given the low level of equipment, excessive polarization and difficult access to investment, addressing the above-mentioned needs is the central element when talking about supporting the modernization of the agricultural sector, farms, small and medium-sized family farms, which – hopefully – will provide improved structural consolidation by increasing agricultural productivity, quality supply of agricultural raw materials and adapt them to market requirements and standards. In addition, special attention will be given to the installation of young farmers and to the restructuring of small and medium-sized farms.

The definition of small farms has changed in the 2014-2020 programming period as compared to the previous one. The ESU as a unit of measurement of the economic size of the holdings was replaced by SO, Standard Output. The current definition of a small farm referred to in Article 19(1)(a)(iii) of EU Regulation No. 1305/2013 is an agricultural holding with an economic size between 8000 and 11999 standard output value (SO). A medium-sized farm is an agricultural holding with an economic size between 12000 and 250000 SO. According to the studies included in the Romanian NRDP 2014-2020, the average economic size of a Romanian farm is 2700,23 EUR of SO/holding. The situation is that most of the Romanian agricultural farms record low levels of economic development. An extremely large share, 96.7% of the total number of farms, which represent 43% of the farms in the EU-27 from this size class, fall within the “under 8000 EUR” category. The farms with the economic size starting from 8000 SO (127107 holdings, representing 3.29% of the total number of holdings on national level) have the greatest chances to improve their economic performance, particularly by increasing the level of marketing of their products – as stated in the Romanian NRDP 2014-2020. Out of these, the 8000-12000 EUR category accounts for about 61000 agricultural farms (more than 48% of the total number of holdings over 8000 SO) and represent the farms with the highest potential to turn to market oriented farms. It remains an important question however, whether the definition of small farms is set properly in the Romanian NRDP 2014-2020 (that of between 8000 and 11999 EUR), taking into consideration the extremely fragmented land structure of the Romanian agriculture.

### ACKNOWLEDGEMENT

This work was co-financed from the European Social Fund through Sectoral Operational Programme Human Resources Development 2007-2013, project number POSDRU/159/1.5/S/142115 „Performance and excellence in doctoral and postdoctoral research in Romanian economics science domain”.

### REFERENCES

- ALEXANDRI, C. (2010), *Farm Consolidation – First Signal After Accession*, Agricultural Economics and Rural Development, Institute of Agricultural Economics - Romania, New Series, Year VII, no. 2, pp. 239-248.
- BÍRÓ, B.J. (2010), *Land Structure of the Romanian Agriculture in a Central and Eastern European Context*, Conference Natura-Econ II.: Relevanța educației și cercetării în dezvoltarea afacerilor și protecției mediului [The Relevance of Education and Research in the Protection of the Environment and Business Development], 16 November 2010, pp. 151-156.

- BÍRÓ, B.J. (2011), *Semi-Subsistence Farming in Romania in the Context of Land Structure and Agricultural Employment*, International Conference: EAAE Ph.D. Workshop, Nitra, Slovakia, 27-29 April 2011, ISBN 978-80-552-0571-7, pp. 458-467.
- BURRELL, A. (ed.), FRITZSCH, J., WEGENER, S., BUCHENRIEDER, G., CURTISS, J., PALOMA, S.G. (2010), *Economic Prospects for Semi-Subsistence Farm Households in EU New Member States*, JRC IPTS [http://www.eurosfair.prdd.fr/7pc/doc/1288944317\\_jrc58621.pdf?PHPSESSID=2ce624f5abd82bbe99181a0445724577](http://www.eurosfair.prdd.fr/7pc/doc/1288944317_jrc58621.pdf?PHPSESSID=2ce624f5abd82bbe99181a0445724577), accessed on 20.03.2014.
- DAVIDOVA, S., BAILEY, A., DWYER, J., ERJAVEC, E., GORTON, M., THOMSON, K. (2013), *Semi-Subsistence Farming – Value and Directions of Development*, Study prepared for the European Parliament Committee on Agriculture and Rural Development, Brussels.
- DAVIDOVA, S., GORTON, M., FREDRIKSON, L. (2010), *Semi-Subsistence Farming in Europe. Concepts and Key Issues*, *European Network for Rural Development*, [http://enrd.ec.europa.eu/app\\_templates/filedownload.cfm?id=FB3C4513-AED5-E24F-E70A-F7EA236BBB5A](http://enrd.ec.europa.eu/app_templates/filedownload.cfm?id=FB3C4513-AED5-E24F-E70A-F7EA236BBB5A), retrieved on 17.02.2014.
- HUBBARD, C., MISHEV, P., IVANOVA, N., LUCA, L. (2014), *Semi-Subsistence Farming in Romania and Bulgaria: a Survival Strategy?*, Case Study, EuroChoices, vol. 13, no. 1, pp. 46-51.
- LUCA, L. (2009), *O țară și două agriculturi. România și reforma Politicii Agricole Comune a UE*, [One Country with Two Agricultures. Romania and the Reform of the EU's CAP], CRPE Policy Memo nr. 4., [http://www.crpe.ro/library/files/CRPE\\_Policy\\_Memo\\_no.4\\_RO.pdf](http://www.crpe.ro/library/files/CRPE_Policy_Memo_no.4_RO.pdf), retrieved on 11.09.2014.
- EC, AGRICULTURE AND RURAL DEVELOPMENT (2011), *Indicative Figures on the Distribution of Direct Aid to Farmers, by Size-Class of Aid for Financial Year 2009*, [http://ec.europa.eu/agriculture/fin/directaid/2009/annex1\\_en.pdf](http://ec.europa.eu/agriculture/fin/directaid/2009/annex1_en.pdf), retrieved on 01.03.2014
- EC (2008), *Regulation 1242/2008. Establishing a Community Typology for Agricultural Holdings*, <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1427558114956&uri=CELEX:32008R1242>, retrieved on 11.09.2014.
- EC (2013), *Regulation 1305/2013 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) and repealing Council Regulation (EC) No 1698/2005*, <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32013R1305&from=EN>, retrieved on 05.06.2015.
- GIURCĂ, D. (2008), *Semi-Subsistence Farming – Prospects for the Small Romanian Farmer to Choose between a “Way of Living” or Efficiency*, [ftp://www.ipe.ro/RePEc/iag/iag\\_pdf/AERD0804\\_215-230.pdf](ftp://www.ipe.ro/RePEc/iag/iag_pdf/AERD0804_215-230.pdf), retrieved on 25.02.2014.
- GIURCĂ, D. (2011), *Clarificări necesare pentru fermele de semi-subsistență, Profilul Agricol* [Clarification Needed for Semi-Subsistence Farms, Agricultural Profile], *Revista Lumii Agricole*, 16.03.2011, <http://www.agrinet.ro/content.jsp?page=83&language=1>, retrieved on 18.03.2014.
- MADR (2014), *National Rural Development Programme of Romania 2007-2013*, Official version no. 13, [http://www.madr.ro/docs/dezvoltare-rurala/PNDR\\_2007-2013\\_versiunea-consolidata-august2014.pdf](http://www.madr.ro/docs/dezvoltare-rurala/PNDR_2007-2013_versiunea-consolidata-august2014.pdf).
- MADR (2014), *National Rural Development Programme of Romania for 2014-2020*, first official version, [http://www.madr.ro/docs/dezvoltare-rurala/programare-2014-2020/PNDR\\_2014\\_-\\_2020\\_01.07.2014.pdf](http://www.madr.ro/docs/dezvoltare-rurala/programare-2014-2020/PNDR_2014_-_2020_01.07.2014.pdf).
- OECD (2011), *Evaluation of Agricultural Policy Reforms in the European Union*, OECD Publishing, <http://dx.doi.org/10.1787/9789264112124>.
- OTIMAN, P.I. (2012), *Romania's Present Agrarian Structure: A Great (and Unsolved) Social and Economic Problem for Our Country*, *Agricultural Economics and Rural Development*, Institute of Agricultural Economics - Romania, New Series, Year IX, no. 1, pp. 3-24.
- POPESCU, M. (2010), *Physical Size of Agricultural Holdings in Romania. Gaps between Romania and the European Union Member States*, *Agricultural Economics and Rural Development*, Institute of Agricultural Economics - Romania, New Series, Year VII, no. 1, pp. 17-36.
- SZŐCS, E. (2013), *A vidékfejlesztési támogatások területi megoszlásának és a fenntartható fejlődéshez való hozzájárulásának vizsgálata Romániában* [Analysis of the Territorial Distribution and Contribution to the Sustainable Development Supports in Romania], *Erdélyi Múzeum*, vol. 3, pp. 83-98.
- WHARTON, C. R. (1969), *Risk, Uncertainty, and the Subsistence Farmer: Technological Innovation and Resistance to Change in the Context of Survival*, *Development Digest*, vol. 3, no. 2, pp. 3-10