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Small scale agriculture as a resilient system in rural Romania

A brief overview of rural Romanian phenomena and processes in modern history reveals that rural areas and small rural households were highly stable systems, providing social and economic security. In all history, except during the communist period, small-scale agriculture was and continues to be the main provider of jobs in the rural labour market in the absence of other non-agricultural employment opportunities. In all times, consumption of self-produced food, supported by small farms, has had a leverage effect against poverty. More than that, the statistical information shows that small farms achieve higher levels of economic performance compared to large farms by diversifying their production structure and, through that, they make an important contribution to national food security. In the post-communist period (i.e. after 1989) in Romania, these functions and roles of the small farms have been restored and are widely recognised. If the meaning of 'socio-economic resilience' is the ability of an individual, of a household, community, region or country to resist, to adapt and to recover quickly after a crisis, shock or change, the economic and social functions and roles assumed in the transition period by small Romanian rural farms give them the attributes of a resilient answer of the entire Romania to the post-communist changes and shocks.

Keywords: rural areas, socio-economic changes, small farms, resilience

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Introduction

In Romania, the transition to a market economy meant a change in the relationship between the users of land resources (who became land owners) and the resource (the agricultural land, the operation of which was divided among the new owners). In the last quarter of a century, the rural areas and the small peasant household farm have represented an economic and social 'safety net' against the changes and shocks generated through the process of restructuring the socialist economy (Gavrilescu and Florian, 2007; Alexandri and Luca, 2008; Pouliquen, 2011). The small household farms in the rural areas became one of the main modalities to meet the subsistence needs of rural household members whose consumption of self-produced food helps them to survive and combat poverty (Davidova *et al*., 2009; Salasan *et al*., 2009; Mihalache, 2010).

The fact that 93 per cent of the agricultural holdings in Romania use more than 50 per cent of their production for own consumption illustrates the extent of the rural population's economic dependence on agriculture. The specialist literature on economic resilience draws attention to one aspect that decisively conditions the capacity of economic systems to face changes, namely the dependence on resources. According to Bailey and Pomeroy (1996), the communities in which agriculture, mining and fishing prevail are typical examples of communities depending on resources. Adger (2000) argues that a change in the nature of the relationship between the users and the resource can affect the population's living standard as well as the resilience of economic and social systems. If resilience[1] focuses on how to achieve and maintain stability, manage resources effectively, control change, pursue economic growth and increased human well-being, and to how to deal with changes, disturbances and uncertainties (Berkes, 2007; Ahern, 2011), it follows that the farms could be analysed in terms of their capacity to be socio-economic resilient systems.

Understanding the nature and extent of people's dependence on resources can provide a perspective on the resource users' capacity to face and adapt to changes in the user-resource relationship (Canan and Hennessey, 1983), to be resilient to changes in the utilisation of resources they are dependent on. Knowing the level and significance of dependence on agriculture and its implications for rural economic and social resilience can help the design and implementation of policies that lead to the development of economic and social systems that depend on them (Marshall *et al*., 2007) for general use.

Research questions and analytical approach

Starting from the above short theoretical and empirical excursus with regard to the dependence on resources, the shocks of changes during the Romanian transition and the resilience of the rural systems to these shocks, a series of research questions is formulated to which answers are sought. These questions are the following: Has the small farm been able to adapt to the changes of the last quarter of a century? Are the rural population's survival strategies transmitted between generations or were the strategies for surmounting the economic and social crises induced by the changes in the transition period after the collapse of communism? Is the small farm a means to ensure social security or an obstacle to the improvement of rural population's living standards? Is consumption of self-produced food on the subsistence and semi-subsistence farms a resilient answer of the rural world to the negative socio-economic effects of transition?

The analytical approach used to seek answers, be they only partial answers, without attempting to address all the problems of small farms in Romania, follows a logical path, starting from the identification of the main causes that led to the present situation of small farms in Romania, next capturing the implications of these evolutions on the rural (and not only) population's living standards and concluding with the analysis of certain aspects targeting the economic and

[1] Resilience has become an important term of many disciplines ranging from psychology to ecology, from economy to sociology. There is no commonly accepted definition of resilience that is used across all disciplines.

social resilience of small farms. The methodological basis of the cognitive approach comprises a review of the specialist literature accompanied by the empirical substantiation of conclusions through the analysis of secondary statistical information from national and international sources.

Results

The small farms between transition and historical determinism

A brief review of the phenomena and processes that influenced the Romanian rural areas in the last 25 years shows that the current stage of rural development is largely the result of transition from socialism to capitalism. The three most important changes that influenced the rural areas in the transition period are: restitution of private agricultural land ownership rights, the restructuring of the other sectors of the socialist national economy and the lack of non-agricultural occupational opportunities.

Restitution of private agricultural land ownership rights means that the land owners regained their right to work (and own) the small land properties on an individual basis. The land reform carried out after the collapse of the communist regime led to the restoration of the post Second World War land situation, in which the structure of agricultural holdings was dominated by small farms. Thus, in Romania in 2003, when the restitution of private land ownership rights was almost complete, there were about 4.5 million agricultural holdings with an average size of 3.1 ha of agricultural area per farm. By 2013 the situation has not changed significantly; there being 3.6 million agricultural holdings with an average size of 3.6 ha.

The restructuring of the other sectors of the socialist national economy generally involved closing down obsolete and economically inefficient socialist enterprises (steel, metallurgy, chemicals, mining etc.). This had two consequences: (a) a significant growth in the size of the inactive population resulting from the application of certain large-scale early retirement measures (Figure 1); and (b) a significant loss of jobs (in the ten years from 1990 the number of employees in Romania fell by half and then stabilised at this level) in the absence of consistent initiatives for the development of new private businesses, on the market economy basis, which could make up for the jobs deficit.

The re-ruralisation, the urban-rural migration (Figure 2a) of a part of the urban population (largely represented by inactive persons and long-term unemployed, discouraged in looking for a job) is the consequence of the first two changes in the Romanian transition (Teodorescu, 2005). The domestic migration of the urban population confronted

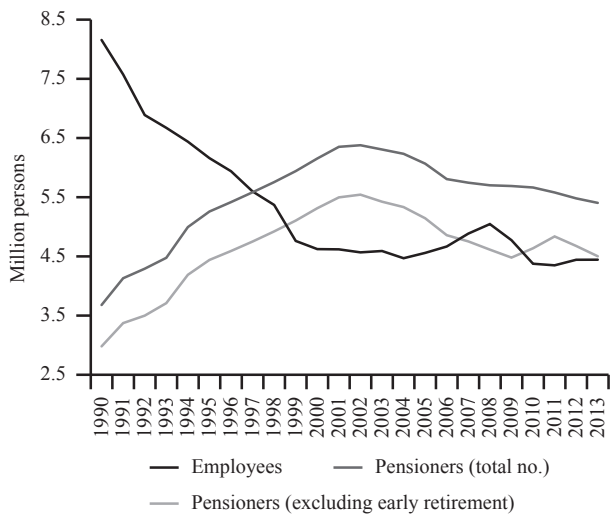

Figure 1: Numbers of employees and pensioners in Romania in the post-communist period (1990-2013).

Data source: NIS-TEMPO on-line database

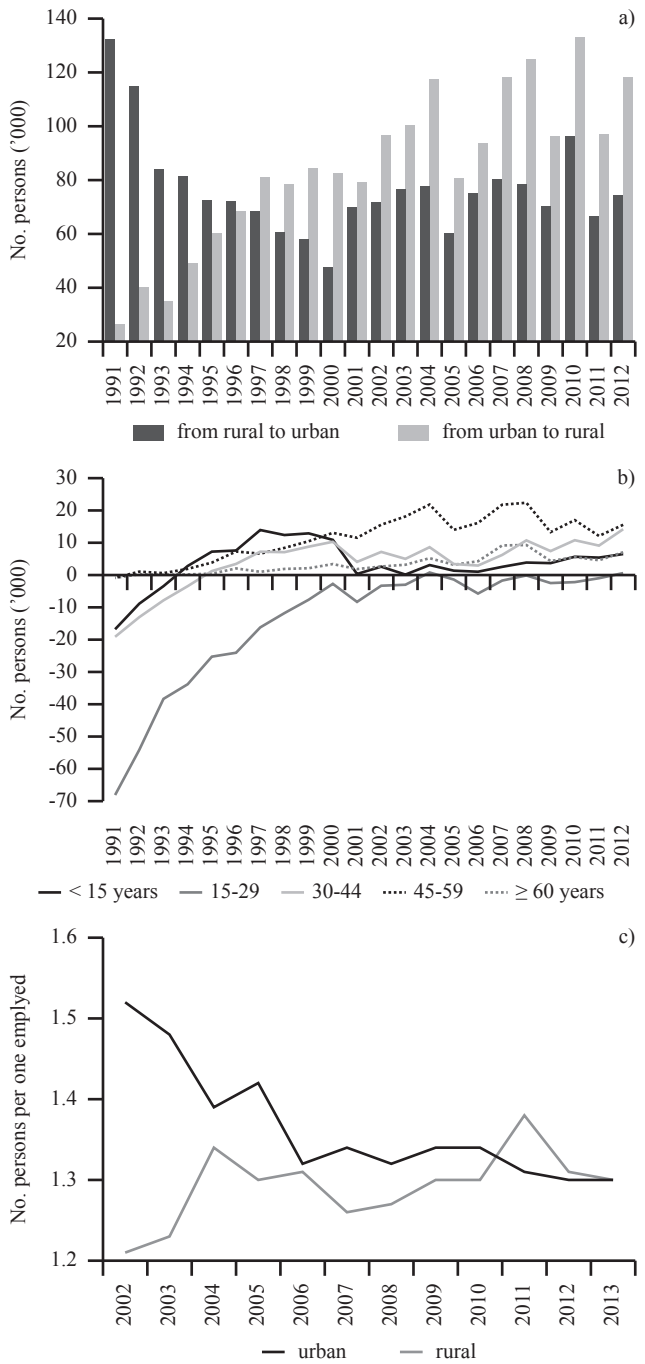

Figure 2: (a) urban-rural internal migration, (b) domicile change balance by age groups and (c) economic dependency by urban and rural residence areas in Romania, 1991-2013.

Data source: NIS-TEMPO on-line database

with severe difficulties in accessing the labour market and the rural withdrawal of the urban pensioners (through early retirement or not) greatly increased the size of the inactive rural population. After 1991, the balance of changes of domicile between the residence areas in Romania (urban-rural 'minus' rural-urban) remained positive in the case of the older population (over 45 years) and negative in the case of young population (15-29 years) (Figure 2b). As a consequence, a significant increase in economic dependency (number of inactive and unemployed persons per employed person) occurred in rural Romania. In 2006 the economic dependency ratio calculated for the rural population reached a level similar to that of the urban population, both being larger than 1 (Figure 2c). The difference between the two types of area lies in the population structure by age and the occupational structure by sector.

The urban-rural population movements accelerated the rural population ageing effect generated by a reduction in the birth rate. Thus, according to Romanian National Institute of Statistics (NIS) data for 2013, 19 per cent of the population in the rural areas is aged over 65 years, compared to 14 per cent in the urban areas. The population of working age is mainly urban, 72 per cent of the urban population being aged between 15 and 65 years, while in the rural area this figure is 63 per cent. In spite of this, rural areas continue to be the main demographic reservoir in Romania, the number of children under 15 years old being 5 percentage points higher than in the urban areas. Another argument in this respect is given by the perception of the occupational status of elderly people. While in rural areas one in five persons over 65 years old continues to work (in agriculture), in the urban areas the share of those who continue their active economic life after 65 years is only 2 per cent.

The lack of non-agricultural occupational opportunities in rural areas, which has been perpetuated in time, maintained the rural population's dependence on agriculture and on the production of small agricultural holdings around the rural households. The occupational structure of the Romanian rural population was and continues to be dominated by the primary sector (mostly represented by agriculture). Although the number of persons working in agriculture decreased by one-fifth in the period 2002-2012, in terms of residence-based data the share of agriculture in labour employment is above 60 per cent in rural Romania (Figure 3). In the analysed period, in the age structure of the population employed in agriculture, decreases were recorded mostly for younger persons (under 35) and seniors (over 50 years). In reality the population working in agriculture is underemployed. According to the data of the 2010 Agricultural Census[2], the average number of days per year effectively worked in agriculture by a person employed in this sector is 47, and most of these people perform agricultural work on their own holding.

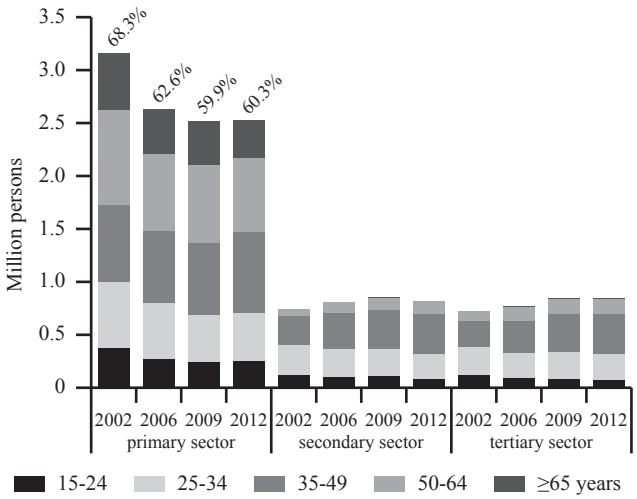

Figure 3: Rural employment in Romania by economic sector and age group, 2002-2012.

xx.x% - share of agriculture in total rural employment
Data source: NIS data-TEMPO on-line database

One of the main factors restricting the ascendant occupational mobility of the rural population is low education level. In 2012 the share of the rural population aged 15 years and over with low educational level (who graduated less than eight schooling years) was 56 per cent and only 3.1 percent of the rural population benefited from higher education[3].

Beyond the processes that marked the post-communist transition period in Romania, another contextual fact, the contribution of which can be considered equally important, is the design and operation of the farm system in Romania at present. According to the *dependency on the past* (as *path dependency theory* element), a stochastic process "evolves as a consequence (function of) the process's own history" (David, 2005, p.19). In other words, the structural and functional changes in the Romanian agricultural system during transition are determined partially by the previous experience of actors from this economic sector. The historical experience largely conditioned the expectations of the sector's exponents, which in their turn determined the result of the agricultural restructuring process.

The assumption is therefore made that the post-communist agriculture bipolarity is a historical fact, an internal structural organisation pattern of Romanian agriculture. Nowadays, more than 90 per cent of the agricultural holdings in Romania are small farms (having less than 5 ha agricultural land), accounting for about 30 per cent of the country's utilised agricultural area (UAA). At the other pole there are less than 1 per cent of agricultural holdings, which operate more than 100 ha each and together account for 50 per cent of the country's UAA. Throughout Romania's modern history (except for the communist period), Romania's agrarian structure was and continues to be a bipolar structure (Figure 4).

It seems that bipolarity is the historical pattern of the country's agrarian structure and its functions (socio-economic security in the case of small farms and the commercial function in the case of large farms) are also a continuation/return to the pre-communist pattern, whose internal operation rationale is the only one known and recognised by the rural world. In fact, the cooperation pattern in agriculture imposed by the communist system was not positively valorised and consequently it was not internalised either at the level of small agricultural land owners. But over forty years of communist cooperative experience in agriculture stopped the possible technical, technological and managerial evolu-

[2] National Institute of Statistics (2012)
[3] National Institute of Statistics -TEMPO on-line database

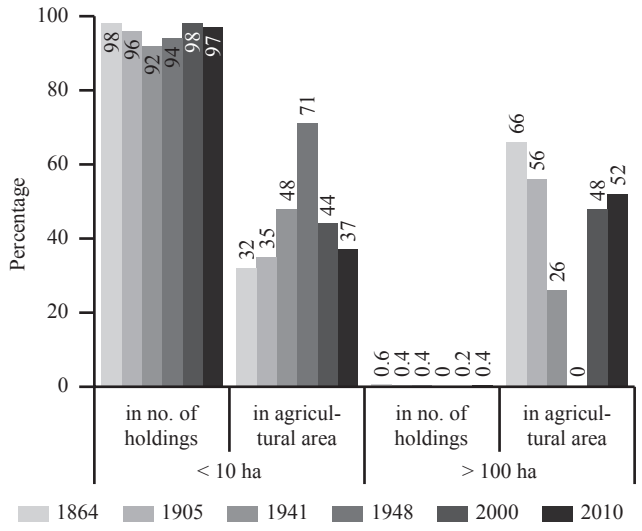

Figure 4: Historical evolution of the farm structure in Romania, 1864-2010*

* In 1948 there were no farms larger than 100 ha because in 1945, in Romania, the first communist government initiated a land reform that set a maximum limit for private agricultural properties (50 ha). At the level of each farm, the agricultural area that exceeded this limit was expropriated and ownership of the expropriated land areas were transferred into the state.

Sources: Axenciuc (1996) and NIS Agricultural Census 2010

Table 1: Importance of cooperation forms in Romania's agriculture, 1993-2010.

Year	Number of cooperation units	% of total agricultural area
1993	18037*	25.0
1999	9837*	15.6
2010	6546**	5.6

* agricultural associations with legal status and family associations without legal status (OECD, 2000)

** agricultural associations and cooperative units, authorised natural persons, individual enterprises (NIS Agricultural Census, 2010)

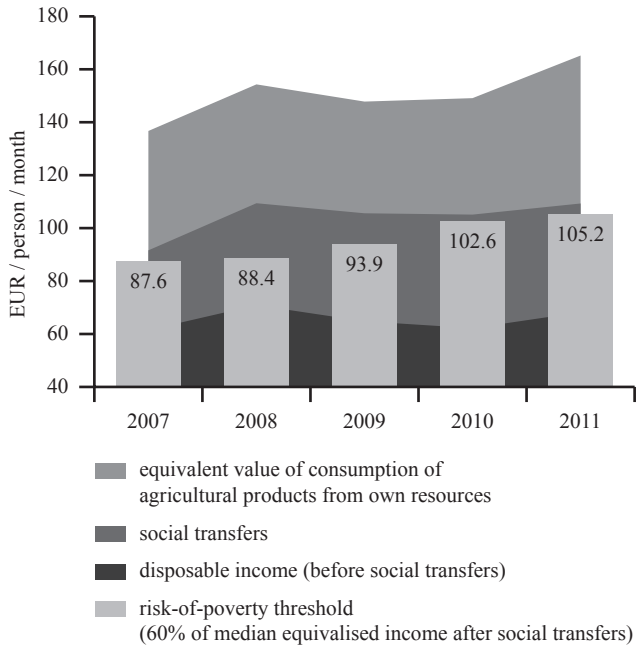

Figure 5: The contribution of own consumption to the welfare of rural households in Romania, 2007-2011.

Data source: NIS data-TEMPO on-line database

tions on the small agricultural holdings and froze their land size. The restitution of land ownership rights was synonymous, at the level of small farms, with a return to the only farming pattern that was known (i.e. the one practiced in the pre-war period).

The attempt to consolidate agricultural land management by supporting the establishment of land owners' associations failed for two reasons. The first reason is related to the lack of support for the consolidation of these organisational forms by increasing their opportunities to become economically viable (support for their capitalisation, creation of the framework for a functional agricultural market, support for managerial performance growth etc.) (Popescu, 2010). The second reason for the land owners' withdrawal from the agricultural associations had a strong social component. The disassociation was produced against the background of the return to rural areas of the land owners (direct owners or their heirs), due to labour rationalisation in the urban socialist industry for which the small rural household farm became an important source for meeting their primary consumption needs. This adds to the poor performance of the managers of the agricultural associations, accompanied by the deficiencies in the ethical conduct of managers who were perceived as acting in their own interest rather than in the common interest of the associated members (Popescu, 2001; Rusu *et al.*, 2011). Thus, while in the early 1990s one quarter of the country's agricultural area was managed through cooperative-type agricultural entities, in 2010 their importance in Romania's agriculture declined to only 5.6 per cent (Table 1).

Small farms versus rural poverty

In the case of small agricultural holdings, the modernisation process evolves slowly, as these entities do not have a solely commercial purpose, but rather a social one (meeting the consumption needs of the family members). The high level of own consumption limits the commercial actions and consequently the possibilities to invest in farm modernisation.

In the conditions in which the remunerated job supply decreased almost by half compared to 1990 (Figure 1), the rural household and the small peasant farm around it became the main means to cover the primary consumption needs for almost half the country's population (45 per cent of Romania's population currently lives in the rural area). Owing to the lack of non-agricultural opportunities in the rural labour market and the prevalence of subsistence and semi-subsistence farms, the welfare of rural households depends very much on the consumption of their own agricultural products (Figure 5).

The statistical data show that, in general, without own consumption, the Romanian rural population would be at risk of poverty. At rural household level, the social transfers allow the rural population to surpass the poverty threshold (in 2011, the disposable income per adult equivalent exceeded the relative poverty threshold by only 4 per cent). The same data show that the value of consumption from own resources significantly contributes to the welfare of rural household members (Figure 5).

Discussion: arguments regarding the resilience of small-scale farming in Romania

If the meaning of 'socio-economic resilience' is *the ability of an individual, of a household, community, region or country to resist, to adapt, and to fast recover after a crisis, shock or change* (Gallopín, 2006), the socio-economic functions and roles assumed in the transition period by the Romanian rural households confer them the attributes of a resilient answer of Romania to the post-communist shocks.

The small farms have a 'social buffer' role (Dumitru *et al.,* 2004), which enabled Romania to go through the difficult period of the 1990s without major social disturbances. The negative effects of long-term unemployment resulting from the process of deindustrialisation were attenuated by subsistence farming (Luca, 2013). In addition, if the high share of own consumption on the Romanian households is taken into consideration these farms contribute to Romania's food security. The small farms make an important contribution to food security not only for the rural population but even for urban households, due to the family relationships on the basis of which the foodstuffs produced on the small farms are transferred to urban relatives. Thus, for a rural household, about half of total food consumption is represented by the value of own consumption, while in the case of an urban household this percentage represents one-fifth of the value of total food consumption.

However, many analysts see these farms as a loss of economic potential for Romania's agriculture (Otiman, 2012), representing an inefficient form of land resource allocation (Gavrilescu and Gavrilescu, 2007) by taking out of the agricultural circuit devoted to market production about 30 per cent of the country's agricultural land area; they also contribute to maintaining land fragmentation, which is a cause of low yields (Steriu and Otiman, 2013). These authors draw attention to the need to reform the agricultural system in Romania in order to operate the land resources with economic efficiency which, in these authors' opinions, should represent a fundamental objective of agricultural policies. The validity of these conclusions and recommendations cannot be denied, yet there are several counterbalancing arguments regarding the existence of the small family farms.

The first argument is linked to the European and world strategies of the *fight against poverty,* in which *self-consumption might have a lever effect* (which is perfectly applicable in rural Romania, as shown above). But supporting this type of farming (subsistence or semi-subsistence) comes into conflict with the objectives of agricultural restructuring. Pouliquen (2011) concluded that there is a need to reach an equilibrium between these two objectives that would allow the commercially oriented farming and that with social protection connotations to co-exist.

The second argument is linked to the fact that the small rural household farms are *the main providers of jobs in the countryside.* Hence, when jobs are scarce not only in the rural areas but also in the urban areas, their contribution to the social sustainability of the rural population cannot be denied. Thus, about 90 per cent of the regular labour force

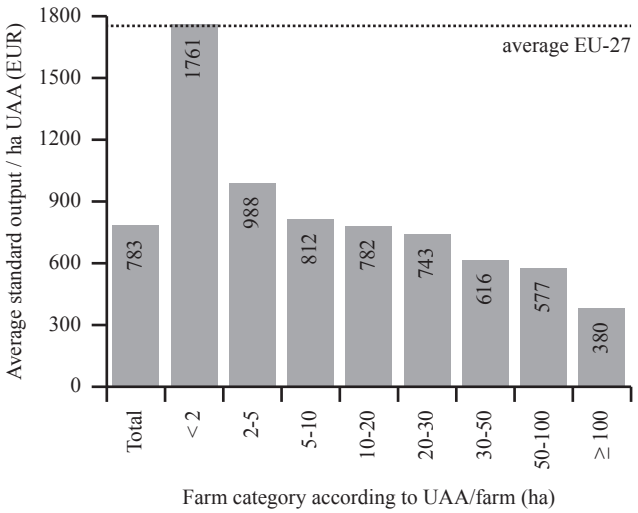

Figure 6: Disparities in farm performance in Romania according to their utilised agricultural area in 2010.

Data source: Eurostat

that performs farming activities in Romania works on farms with UAA smaller than 5 ha and only 1 per cent of them work on farms larger than 100 ha. Furthermore, the farms provide occupational opportunities not only for the farm head's family members but also for other, unrelated persons, thus contributing greatly to the agricultural labour market. According to Eurostat data, in the last five years the regular non-family labour force on small farms – under 5 ha – accounts for about 20 per cent of the total number of these persons in Romanian agriculture.

The third argument is linked to their *economic performance* which, per unit of UAA, seems to be *higher than that obtained on the large farms* on the basis of their production diversification. The data of the Agricultural Census 2010 show that the small farms in Romania have the highest economic performance per unit of UAA, the value of agricultural Standard Output (SO[4]) per hectare of UAA being three times higher for the farms under 5 ha compared to the farms over 100 ha (Figure 6). Furthermore, the farms smaller than 2 ha are the only ones in Romania that reach the EU-27 average of SO/ha UAA value. This efficiency difference in the utilisation of land resources in favour of small farms can be largely explained by the production structure adopted by the different categories of farms to which this article will next refer. In general, very small farms in Romania (i.e. under 2 ha) are not specialised in their agricultural production. They integrate their livestock and crop production, using own-produced crops as feed for their own animals and consequently the per-hectare value of their agricultural production is high. The larger farms, in terms of UAA, are specialised in field crops (cereals and oilseeds) and their yields per hectare are lower than the European average; therefore their SO/ha is lower (Steriu and Otiman, 2013).

The analysis of the same indicator according to farm economic size strengthens the conclusion about the higher economic performance of the small farms in Romania. Thus,

[4] The 'standard output' (SO) of an agricultural product (crop or livestock) is the average monetary value of the agricultural output at farm-gate price, in EUR per hectare or per head of livestock. There is a regional SO coefficient for each product, as an average value over a reference period (five years). The sum of all SO per hectare of crop and per head of livestock on a farm is a measure of its overall economic size, expressed in EUR.

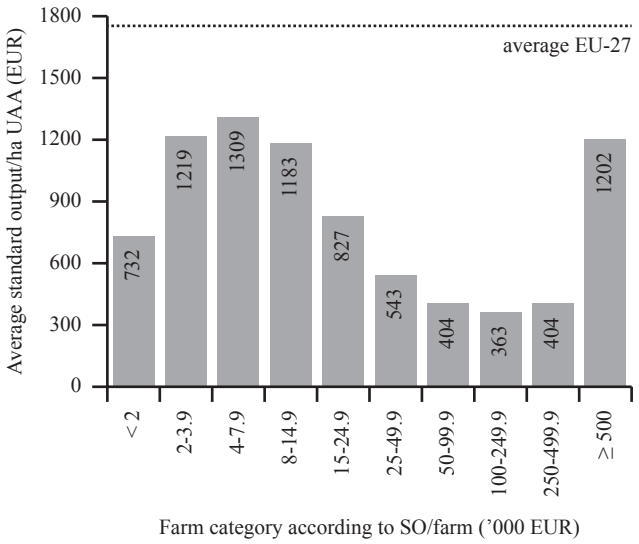

Figure 7: Disparities in farm performance in Romania according to their economic dimension in 2010.

Data source: Eurostat

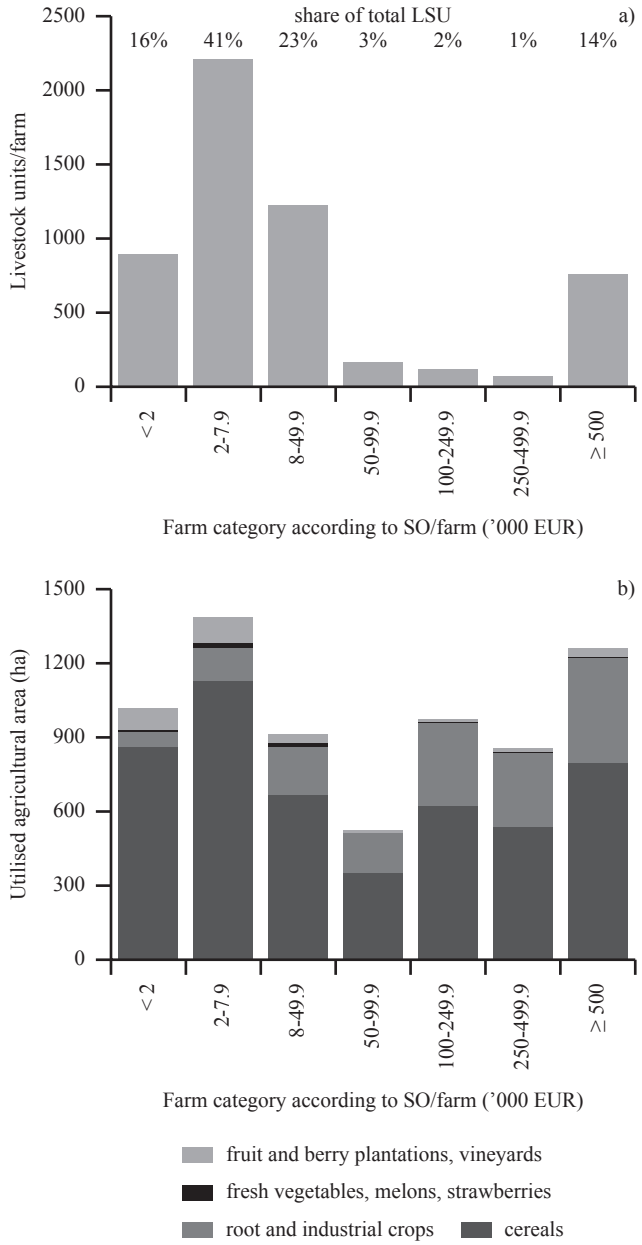

Figure 8: The production structures of Romanian farms according to their economic size – (a) livestock production and (b) crop, in 2010.

Data source: Eurostat

at the level of farms whose standard value of annual economic output is lower than EUR 2000 (generally considered to be subsistence and semi-subsistence farms and representing 70 per cent of all farms and 19 per cent of UAA), the SO/ha is getting closer to the national average. The farms whose annual standard output ranges from EUR 2000 to 8000 (considered to be semi-subsistence farms and accounting for 24 per cent of all farms and 20 per cent of UAA) achieve the highest performance levels per unit of UAA of all size categories (Figure 7). The same data show that only 12 per cent of the country's agricultural area is managed by the large farms (with agricultural production whose standard economic value exceeds EUR 500,000 annually), and these also achieve a high level of productivity.

The fourth argument is linked to the *much more diversified production structure* on the small farms compared to the commercially-oriented farms, which better responds to the final consumption needs of the country's population and implicitly to the domestic food security requirements. Thus, while the small farms have quite diversified production structures, integrating crop and livestock production, as the farm land area increases there is a tendency of production specialisation and orientation towards crop production which can be organised on large fields with minimum technical and technological effort (Tudor, 2014).

The statistical data reveal that most livestock herds (expressed in livestock units[5]) and domestic meat and meat product production are located on what are considered to be subsistence and semi-subsistence farms (Figure 8a); it is also on these farms that the largest part of the production of fruit and vegetables at national level is obtained (Figure 8b). Thus, in 2010, about two-thirds of the areas under vegetables or under orchards and vineyards were operated by farms with economic sizes lower than EUR 8000 per year. The large farms are gearing their production structures more and more towards those activities that maximise economic output with minimum effort. Their almost exclusive orientation towards the large-scale field crops contributes to the scarcity on the domestic market of fruits and vegetables in particular (Figure 8b). The same conclusion can be extended to the livestock production. Following the prevalence of cereal crop production in Romanian agriculture, the agri-food balance of trade, except for cereals (maize, wheat) and industrial crops (soybean) was and continues to be increasingly negative. Significant deficits can be noted in meat, dairy, fruit and vegetables (Steriu and Otiman, 2013; Luca, 2014), products that are mainly produced on the small farms. Without the contribution of small-scale farming to livestock production and fruit and vegetable production, Romania's agri-food trade balance deficit could increase still further. As a result, the role of small farms in the domestic food security cannot

[5] The 'livestock unit' (LSU) represents a conventional reference unit that facilitates the aggregation of livestock herds from different species and ages, by using certain conversion coefficients established on the basis of nutritive or feed requirements for each category of animal in part.

be disputed. Moreover, the recognition and support of these farms is absolutely necessary, taking into consideration their social and economic importance.

Finally, the small Romanian farms are among the last in Europe that still use traditional farming techniques that contribute to the *conservation of archaic agrarian landscapes and biodiversity* that are long disappeared from Western European countries but that are highly appreciated by tourists (Page, 2010). Moreover, the Romanian rural area and its residents *preserve the traditions and culture of the Romanian people*[6] and provide traditional food that is perceived as a 'high quality' product by all Romanians. In this respect Hubbard *et al.* (2014) argue that there is a (conservative) public perception that food produced by relatives from the countryside is 'real' organic food and that, in terms of quality, food from villages is well above the food bought in supermarkets and which is mostly imported. For this reason some urban households prefer to procure their food directly from the producers through semi-formal supply chains, such as rural relatives, free peasant markets, at the farm-gate and roadside buying or through 'local wholesaling'.

Concluding remarks

Over the last quarter of a century the organisational and operational strategies of small farms in Romania have been characterised by inertia and even resistance to change, a situation that continues today. These patterns are well established, being replicated between generations, and were not induced by the changes in the transition period after the collapse of communism. Since 1989, the rural space and the small rural household have represented highly stable systems in Romania. Despite the expectations of some academics and policymakers of a gradual decline in importance of small farms and/or their market integration following Romania's accession to the European Union (EU), the process of structural change has been slow (Tudor, 2014). More than that, during the last economic crisis there was a proliferation of the farms smaller than 2 ha; their number increased from 2.49 million in 2007 to 2.73 million in 2010 before declining slowly to 2.59 million in 2013.

In (post-communist) Romania, the great economic and social changes which occurred for a large part of society were difficult to manage. The main vulnerabilities of the rural population that adversely affect their adaptive capacities are: dependence on agricultural resources, obsolete agricultural technologies, underemployment, lack of occupational alternatives, low level of education and poverty. The small farms and their own consumption have been a resilient response to the negative socio-economic effects of transition, helping to maintain social security by supporting food security, acting as a buffer against poverty and as a supplier of jobs. The last recession, which in Romania was accompanied by big cuts in wages (25 per cent for public sector workers) and increases in taxation (value added tax increased from 19 to 24 per cent for all products), further strengthened the role of small farms as suppliers of economic and social security.

At present, due to the low incomes they generate (production oriented to own consumption rather than to the market) and to the functional inertia, small-scale agriculture has limited resources to support investments, such as in education and life-long learning and/or the fast adoption of innovative practices. But EU membership has not succeeded in changing the role of these farms in the Romanian economy. To those who argued that direct payments under the Common Agricultural Policy (CAP) contributed to the rise in the number of small farms in Romania after EU accession, it should be pointed out that only the farms with more than one hectare are eligible for these subsidies (i.e. just over one million of the 3.6 million farms) and that over 90 per cent of the Romanian beneficiaries received less than EUR 500 per year due to their small agricultural land area (Alexandri and Luca, 2012). Most small farmers have not benefited from financial support through the CAP.

Small farms will not soon disappear from the Romanian rural picture. In fact it is not necessary for them to disappear completely, only for them to become more resilient. In order to face the changes and challenges of the globalised world, of the digital era etc., small-scale agriculture needs to be invested with new abilities to adapt and to find new equilibrium levels. This statement is supported by the conclusions of studies on resilience, according to which resilience is not a fixed characteristic, but under continuous dynamics, having to modify its parameters according to the evolution of human systems (Simmie and Martin, 2010). As a result, small-scale agriculture should be supported in order to overcome its vulnerabilities and the simple condition of 'socio-economic buffer' and to become a factor of progress.

The potential ways to increase resilience are generally subsumed to the intervention need through public policies targeting: (a) increase of the stock of knowledge and professional abilities and their diversification, so as to allow the increasing occupational mobility of the rural population in a modern knowledge-based society and to break up the opacity to technical and technological innovation; (b) support to increase technical performance while maintaining agricultural production structure diversity, which proved to best meet the domestic food consumption needs; and (c) reduced dependence on agriculture through on-farm activity diversification and increasing the value added of agricultural products through processing. The nature of the challenges in Romania means that they cannot only be addressed through the CAP; they should also be the subject of social policies.

There are some 'smart' solutions for turning the vulnerabilities of the Romanian rural area into a comparative advantage. One of these solutions is supported by the fact that these areas preserve the traditional agricultural production techniques and certain archaic agrarian landscapes (in the hilly and mountain areas, which represent two-thirds of the country's area). The Romanian small farms could be supported to become providers of (environmental) public goods and services through the development of 'green' agriculture, agri-tourism services, traditional agri-food products delivered through short supply chains, production of raw materials for 'green' energy and other alternative uses such as slow food etc. The result would be a mixed agrarian structure, economically and socially viable, that includes small farms with cultural, landscape, touristic attributes and capable to

[6] See *Wild Carpathia* series produced by Travel Channel.

provide traditional food (in hilly and mountainous areas, in particular) and large farms that specialise in supplying raw materials for the food industry (especially in plain areas).

Acknowledgements

This work was supported by the project 'Excellence academic routes in the doctoral and postdoctoral research – READ' co-funded from the European Social Fund through the Development of Human Resources Operational Programme 2007-2013, contract no. POSDRU/159/1.5/S/137926.

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