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THE IMPACT OF AGRICULTURAL REFORMS ON RURAL FAMILIES IN ROMANIA

Eliza Gheorghe, Nicoleta Marin Ilie, Vlad Constantin Turcea Mahmoud Tarhini, Alexandra Rusú

Abstract

Assessing the socio-economic and demographic impact of the reforms in Romanian agriculture, since 1990, on rural families, is one of the important components in the new context of the CAP, which includes new perspectives on the concept of rural family. From subsistence to sustainability, it implies the medium and long term objective of the main reforms in Romania's agriculture after the December 1989 Revolution, which were mainly represented by the start of the process of transition to market economy, by benefiting from the advantages of land rent and maybe the most important reform is Romania's accession to the EU. This paper aims to conduct an analysis of the evolution of the Romanian rural area in its many facets, focusing on the main reforms in post-December Romania agriculture, as well as the concepts of rural development in terms of sustainability and multifunctionality. In the context of a Romania that, since the accession of the EU, being considered perhaps the most important reform is the reform of agriculture, which is in the process of implementing the European model of agriculture and rural development. In order to demonstrate how the rural areas have been changed across the years, an empirical study has been assessed. It shows that there is a representative relationship between the farmers' productivity and incomes, proving how the economic prosperity of the rural citizens is determined by labour effectualness, while multiple reforms have been reshaped families' welfare.

Key words: reform, rural families, agriculture, CAP, migration.

JEL6: 018, Q01, Q14

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Introduction

The impact of agricultural reforms on rural families initiates high interest of researchers. Transition to market economy (after 1990), as well as the process of integration of Romanian agriculture into the EU (since 2007) have been produced numerous agricultural reforms with an impact on rural families.

The Common Agricultural Policy (CAP) has a very important role in fostering a more equitable society and improving rural living conditions. Retaining individuals in rural areas, particularly young people, and tackling social concerns, necessitate, or favourable conditions such are access to economic opportunities, information, and basic amenities.

Agriculture also has an important social function for the economic growth of other branches of national economy, as it provides labour. Although there have been huge changes in the structure of population employed in different sectors in Romania (e.g. the share of active population in agriculture has been increased from 28% in 1989 to 34.5% in 1996, so agriculture along with industry will provide labour resources for the provision of services in both urban and rural areas).

In the last 30 years, there come to decrease in population in Romania, mainly caused by the negative natural increase and expressed migrations. The evolution of demographic phenomena in Romania has been influenced by economic, social, political, cultural, and health factors, which have directly affected the level and trends of demographic factors. Decrease in birth rate in Romania is part of trend specific to the European demographic model, while derived demographic aging is a normal process that has developed and will continue to evolve in line with the specificities of overall European model.

The downward trend for the young rural population (0-41 years) and the upward trend for the rural population over 42 years, demonstrates the aging phenomenon of the rural population, but also the disinterest of young people to settle in rural areas.

In the mountainous area of Romania, due to natural constraints, the demographic decline becomes even more pronounced, by giving up economic activities which led to labour migration and the exacerbation of the poverty. Young people are gradually and permanently leaving the mountainous area in search for better living conditions and higher incomes in urban areas or abroad. This phenomenon, with serious medium and long-term implications, has also been reported in developed countries in Western Europe, initiating considerable efforts to reduce the migration from mountains and keep viable their farms and households.

In addition to the fact that emigration trends are upward in both cases, it is important to emphasize that the trend of permanent emigration of young people is twofold, what is a worrying aspect in terms of their chances of returning to Romania. Share of unemployed young people without education and training (NEET) among young people living in rural areas (15-24 years) is almost three times higher than those living in urban areas (18.1% compared to 7%), affecting the lack of jobs, low productivity and rural prospects.

Agriculture has become a workforce absorption sector after the Communist regime fallout in Romania (Dachin, 2008; Vincze, Kerekes, 2009). Farmers have been faced with high scarcity of arable land and unstable incomes, emigration and non-agricultural opportunities have amplified (Copus et al., 2006), so as direct measure was generating the rural labour diversification.

As the 2008 financial crisis caused multiple rural mutations, citizens from the rural areas that were previously forced to relocate have recently returned from urban areas and partially addressed the rural unemployment issue (Vincze, Kerekes, 2009). Mentioned authors point out that due to the gradient arable surface concentration, non-agricultural entrepreneurship has flourished mainly with activities such as agro-tourism and different projects funded through the European Agriculture Fund for Rural Development (EAFRD).

For the member states that have recently ascended at the EU, rural communities have confronted with reverse intensive migration and economic diversification, strengths that have diminished social gaps and economic disparities (Vincze, Kerekes, 2009; Kasimis, 2010).

Financial stimulus underlying the nature of subsidies assigned through the Direct Payments pillar of the CAP had played a key role in workplace creation especially in creating the jobs for young farmers with satisfactory level of knowledge and skills. Two major impediments that are in the path of creating work opportunities in the rural areas have been identified: a) First refers to land fragmentation across multiple communities with fluctuating infrastructure, and b) Second addresses the level of farmers' education and their ability to leverage their knowledge into a competitive market. But even if subsidies have been widely responsible for attracting young talents in the agrarian business, the large-scale industrialized farms have absorbed the majority of Direct Payments funds in the 2007-2013 multi-annual financial framework for further technological investment (Galuzzo, 2017).

Today's CAP is more engaged in employment side than it was focusing prior to the 21st century, but how the strategy is implemented through measures, instruments and priorities varies from state to state and even at regional level. The second pillar of

the CAP has been recorded in scientific literature that contributes to socio-economic disparities unifying in rural communities, tackling the social exclusion and increasing the quality of life throughout the social capital attraction.

Multiple initiatives have gained popularity, including social farming. They have reduced the rural dependency of core agrarian businesses. Furthermore, the social aspect of the financing policies has gained increased attention from the EAFRD. Another positive impact derived from focus on the social aspect of traditional agrarian orientation. It has also contributed to meeting social objectives in rural areas. It is evidencing possible gaps that have to be overcome for the rural communities what could be financed through any European Structural Investment Fund (European Commission, 2020).

In Romania, the established NRDP for 2007-2013 had a favourable impact on job growth. Axis 3 directly contributes to job creation and indirectly to the variation of rural economy, creation of new local services, and enhancement of natural resources and cultural assets. Majority of new jobs were produced as a result of M312 and M313, aiming the age population of 25. M313 is a measure that creates more jobs for women (61% of new positions are for women) and young people (those under 25-year-old account for 20% of newly created jobs). Nevertheless, M312 has generated more jobs for youth (890) and women in general (2,034).

The European financing through various axes of the CAP has effectively supported the bottoms-up implementation of various initiatives in rural areas and have also stimulated the communities through the LEADER approach. Together mentioned methods have continuously supported the rural areas' revitalization across the EU. New jobs have been created in diverse non-agricultural activities, while agrotourism has also become more popular together with artisan craftsmanship activities (Galluzzo, 2015).

The LADER programme has affected the level of development of rural communities, rather as inclusive axis of improvement than a particularly designed instrument. Even though the LEADER assets have been stimulated rural disparities diminishment in a small sums (Opria et al., 2021), their contribution jointly with reforms positively impact rural families in Romania.

The literature research has pointed out that subsidies directly impacts opportunities creation in rural areas, while differences have been noted between Member States, as well as divergences from employment to economic development. For the Romanian countryside, subsidiary obtained directly from 2014-2020 multi annual financing framework has positive impact on job stimulation and socio-economic development.

Positive aspects have been noted as a direct result of both European grants and non-reimbursement funds, aspects that have improved the living standards, the sustainable development of the respective areas and also the economic situation (Pirvu et al., 2022).

In 2016, the European Parliament has highlighted that boosting workplaces in the rural space together with increase in entrepreneurial initiatives must be accomplished through the National Rural Development Programs.

One of the three CAP objectives that were established in 2021 is to strengthen the socioeconomic fabric of rural areas, along with goals for recruiting young farmers, sustainable rural business development, social inclusion, gender equality, local development, employment, and growth.

As a result, socioeconomic impacts can be defined as CAP results, which are in line to social and economic circumstances of rural areas and are not exclusive to agriculture (Lillemets et al., 2022).

Problem statement

This paper aims to highlight the impact that agricultural reforms had on Romanian families through empirical systemic statistical review of the actual indicators that describe the best rural Romania. Sustainable development of the rural communities represents the key priority of both national and EU strategies while the spotlights point towards agricultural broader scope in current society being a key player in the rural space.

The research hypothesis is that families in the rural areas have confronted with multiple beneficial changes throughout the reforms, while the socio-indicators have been improved. The research objective is to highlight if the rural Romanian families have changed in better, and what are the implication directly reflected in socio-economic indicators.

Paper also focuses on analysis of evolution of Romanian rural space in its several facets, focusing on key reforms in post-December Romania agriculture, as like to concept rural development in terms of sustainability and multifunctionality.

Referring to the main reforms in Romanian agriculture after 1990, the change was started from the moment of initiation the process of transition to a market economy in Romanian agriculture. This process was enabled by the entry into force of Law no. 18/1991 regarding the land fund.

This legal document at that moment had different extremely important roles for the rural families, e.g. the role in restitution of land ownership, according to which property titles were issued for the members of cooperative who participated with land contribution to its establishment (maximally 10 ha per family, as arable equivalent). Another important role was to establish the property, where property titles of max. 0.5 ha of arable equivalent for the workers who have carried out their activity in the last 3 years in the cooperative but did not have a contribution in land during its establishment.

Perhaps the most important role played by the Land Fund Law (18/1991) was the dissolution of agricultural production cooperatives. As can be seen from the nest table (Table 1.), application of law initiated excessive fragmentation of properties (almost 5 million agricultural holdings), predominantly becoming peasant households, entities with minimal openness to progress.

Agrarian reforms were complex actions, which deeply marked the history of Romanian economy, being inspired by the pressure of poor social categories from rural zones and carried out under the public authority. The reforms in 1991 and 2000 replaced the old property relations, of totalitarian type, with those specific to democratic economy, having as affect the abolition of socialist property in Romanian agriculture. Important fact is that the agrarian revolution did not end with the last reform in 2000s, so it continued and will certainly go on as long as there will be property relations (Popescu, 2017).

Farm size	Nun	ıber	Surface		
F at itt size	in 000 %		in 000	%	
< 10 ha	4.410,6	98,4%	6.953,5	44,3%	
10-100 ha	63,9	1,4%	1.194,9	7,6%	
>100 ha	10,4	0,2%	7.559,5	48,1%	
total	4.484,9	100,0%	15.707,9	100,0%	

Table 1. Evolution of the structure of private agricultural holdings after the reform in 1991

Source: INSSE, 2022.

So called Lease Law (16/1994) represents the completion and continuation of the provisions from the Land Fund Law. The context of its appearance was the condition of new landowner, who was generally old, without the financial and material assets necessary for production process, as well as impoverished after the long communist period. The promulgation of Law 16/1994 offered the possibility for the owners to benefit from the advantages of the land rent (through rent), defending the premise of

increasing the annual agricultural production. Under these conditions, the lessee is characterized as an active person, with financial and material possibilities, directly interested in obtaining a good agricultural production, moreover the land lease being his only possibility to obtain income. Romania's entrance to the EU is likely the strongest pressure element initiating the rapid reform of agriculture and rural economy in Romania, matching the requirements for effective integration into the European rural economy.

Agriculture in Europe is founded on a competitive, market-oriented industry that also serves additional public duties such as environmental protection, creating more convenient residential settlements for rural residents, and incorporating agriculture with the environment and forests.

The rural economy of Romania, which is dominated by agriculture, has always been inadequately absorbed into the market economy. The understanding and execution of marketing tactics are critical in the present market economy for the well-being of rural and urban inhabitants, as well as agricultural producers.

European measures clearly impacted quality of life in rural areas, so making the study objective in presenting how the rural families have changed during the time in accordance to the socio-economical context, analysis points out the major events' implications and how to quantify the improvement.

Around 46% of Romania's population lives in rural areas, compared to around 23% in EU member states. The population living in rural Romania has been decreased from 10.6 million (in 1990) to 8.9 million inhabitants (in 2020). However, the share of the rural population in the total population increased from 40.08% in 1990 to 46.03% in 2020 (Table 2.), as there come to much expressed decreasing of population from urban areas.

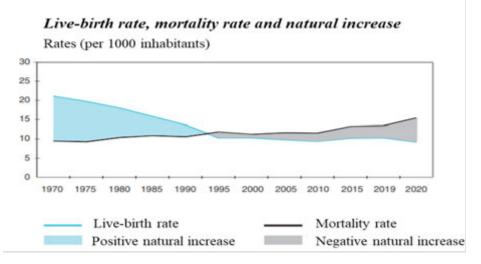
Table 2. The evolution of the population living in rural areas in Romania, in the period 1990-2020

Indicator	U.M.	1990	2000	2010	2020
Population living in	inhabitants	10,6 millions	10,2 millions	9,3 millions	8,9 millions
rural areas	% of total population	40,08%	47,15%	46,05%	46,03%

Source: INSSE, 2022.

Since 1992, the trend of two components of demographic change (natural growth and migration) in Romania is negative, deriving the general change. Natural growth, as can be seen in Figure 1., since 1992 is negative and in a continuous decrease, primarily caused by low birth rate and high mortality. In the long run, negative natural growth can have the following consequences: negative effects on the pension fund, or even decrease in national GDP.

Figure 1. Birth rate, mortality rate and natural population growth



Source: INSSE, 2021.

The phenomenon of migration (generally young people and adults) is the second factor that led to demographic decline in Romania. The main moments that determined the increase in migration is 1990 and post-December emigration, 2002 and abolition of visas for entry into the Schengen Area, and 2007 and Romania's accession to the EU.

The upward trend of migration from Romania into the different countries can be seen in next Table 3. and Figure 2. Romania remains one of the most important labour suppliers for the EU labour market, while the most of emigrants are being young, and emigration becomes permanent.

Table 3. Temporary migrants from rural areas in the period 2012-2020.

Indicator/year	2012	2015	2017	2020
Temporary migrants from rural areas (in 000)	80,2	91,2	112,8	93,7
% of total population rural area	0,9	1	1,3	1,1

Source: INSSE, 2022.

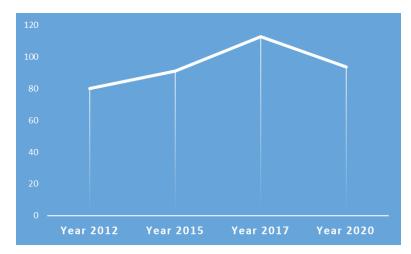


Figure 2. Evolution of rural emigration in the period 2012-2020.

Source: INSSE, 2022.

Labour force and the aging population in agriculture

The EU's population has upward aging trend, derived from increased life expectancy at birth, coupled with low fertility, and the retirement of the generation born during the post-WW II demographic explosion.

Aging of population has been also occurred in Romania, affecting the shortage in labour. Aging of rural population and farmers in Romania is happening too, where only 14.8% of farmers are under 44, while 44.3% are over 64 (Table 4.). Two of vulnerable segments of Romanian agriculture remain the aging of farmers and poor theoretical and practical training of population engaged in agricultural sector.

A ~~	20	10	2016		
Age	total	%	total	%	
<35 years	280,440	7.3%	105,590	3.1%	
35-44 years	609,610	15.8%	399,850	11.7%	
45-54 years	636,370	16.5%	632,780	18.5%	
55-64 years	868,910	22.5%	765,450	22.4%	
>64 years	1,463,720	37.9%	1,515,570	44.3%	

Table 4. Holdings in Romania by owner's age

Source: INSSE, 2022.

Agriculture has a very important role in Romania related to the number of rural population and level of employment. In 2019 compared to 2010 number of people working in agriculture, forestry and fishing decreased for 560 thousand, or for 10.69% of the total employed persons (Table 5. and Figure 3.). Drastic reduction of agricultural labour together with low supply in specialized personnel leads to significant problems at national farms.

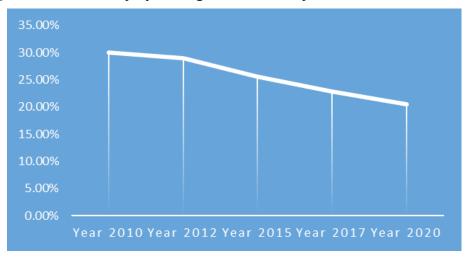
Romania has the largest share of population employed in agriculture in EU. For example, in 2015 Romania has registered 25.6% of them, compared to the EU average of 4.4%.

Specification	2010	2012	2015	2017	2020
Total employed population (in 000)	9.240	9.263	8.535	8.671	8.521
Population employed in agriculture, forestry and fishing (in 000)	2.780	2.682	2.184	1.975	1.747
% of the employed population	30,08%	28,95%	25,60%	22,8%	20,50%

Table 5. Evolution of employment in agriculture during the period 2010-2020.

Source: INSSE, 2011, 2013, 2016, 2018, 2021.

	- 1 0				. 1		
Figure 3. 7	Frend of	employed	in agri	culture ir	n the i	period	2010-2020
		••••••					



Source: INSSE, 2011, 2013, 2016, 2018, 2021.

Analysis of rural households' quality of life

Quality of life is a multifaceted concept, especially when applied for rural households. Specific research papers have noted that quality of life in the countryside is highly dependent on the level of economic development (Burja, Burja, 2014).

Analysing the affordable expenses for the rural population (Figure 4.) it could be easily seen that a full week of vacation is highly improbable to be booked by a rural family. Constant trend of rate has been seen for the meat or fish availability at least once per two days. Around 88.5% of the rural population could afford to keep the heating in adequate level in 2019, while 30.9% of the rural population could afford one full week of vacation, or 78.4% of them could achieve serving of meat or fish once in two days. So, it's underlined that in 2019 was the highest share of population that could fit the life expenses.

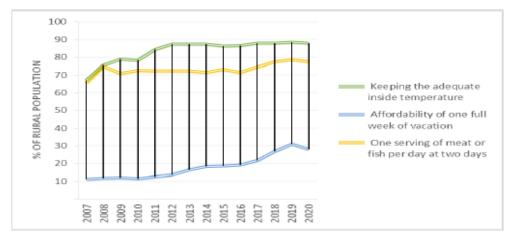


Figure 4. Share of affordable expenses for rural population (household)

Source: INSSE, 2022.

If we analyse the farms (Figure 5.) there are slight changes, but still a significant share of population (farmers) can't afford a full week of vacation. House heating is adequate for 91.2% of farmers in 2017, while 74.2% of them in same year could have meet or fish as a meal at least once in two days, or 17% of them could afford one-week vacation in 2019. Comparing 2020 with 2007, the largest increase has been seen in affordability of vacation, for 119%, followed by the heating of facilities, around 15%, or by availability of meat or fish for 3%.

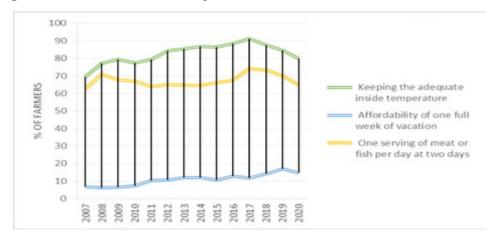


Figure 5. Share of affordable expenses for farmers

Source: INSSE, 2022.

Analysis

Research of available literature shows that increase in share of GDP originated from agriculture represents clear competitive advantage situated in agriculture. So, agriculturally based countries also have their poor population in rural areas (de Janvry, Sadoulet, 2010). The movement of industrial capital is a representative instrument in rural poverty reduction, alongside with the R&D, technological or agricultural investment (Foster, Rosenzweig, 2003). Developing countries have been faced strong and unusual correlation between the industrial and poverty growth (Hasan, Quibria, 2004). Also, an important remark is that agriculture has been constantly changing due to population growth and increasing consumption. Production growth should be sustained by distribution and food access improvements (Foley et al., 2011).

According to next figure (Figure 6.), agricultural value-added share of GDP has been continuously deceasing across Europe regions. The highest peak discrepancy between the Romania and average of other EU regions was in 2001, around 3.7 times. A 68% decrease in 2019 compared to 2001 has been recorded for Romania, showing the increase in share of other sectors in national GDP. The average annual decrease of 5% was the largest drop across the Europe, where in Eastern Europe has been recorded in average 2% decrease for the period 2001-2019, while in Northern Europe it was 1%, or in Southern and Western Europe around 2%.

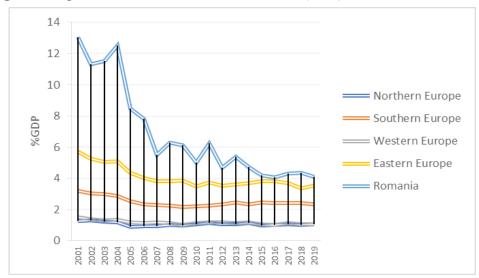
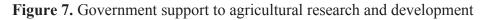
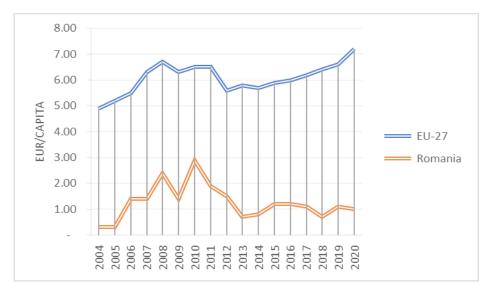


Figure 6. Agriculture value added share of GDP (in %)

Source: FAOSTAT, 2022.





Source: Anon., 2022c.

Governmental support to agricultural R&D is essential for industry growth and farmers quality of life improvement (Figure 7.). EU-27 amount per capita clearly indicates the existing gap in agricultural performance as compared to other European agricultural systems. The average annual growth in Romania is set at 29%, while for the EU-27 it is only 3%.

As current paper is focusing on indirect socio-economic indicators to directly observe the rural welfare, other research work has pointed out land ownership as a different representative indicator for these families, agrarian reforms directly influencing the rural quality of life and determining population's ownership (Tara, 2020).

Research method and results

In order to closely observe how the socio-economic context in rural families of Romania has been evolved, the following section of paper addresses the key aspect of any family, achieved income and productivity, and through detailed empirical approaches how they mutually affected one into another. In order to assess how the reforms have changed the rural lifestyle, in previous research chapters, several qualitative and quantitative indicators have been reviewed.

Similar approaches have been already adopted in researched literature, showing how rural infrastructure development affects improving of socio-economic aspects of livelihoods, agricultural output and several other key metrics used as regression coefficients (Ghosh, 2017). Besides, revealing the contribution of several income types over farm development, there is a conclusion that farm performance improvement through better efficiency and competitiveness could be a key for low income families in the rural areas of Moldova, a country with several similarities to some of Romania's rural regions (Cimpoies, Semenova, 2017). In same time it is evident that financial wellbeing is a key goal for rural development, as it results from efficient economic system within decent social and national rural conditions (Dema et al., 2019).

The coefficients used in model area refer to: 1) Agricultural factor income (AFI), that represents the income generated by farming, used to pay for the factors of production (capital, wages or land). The monetary valorisation corresponds to the real net value added at agricultural factor costs. 2) Labour productivity in agriculture is expressed through the total gross value added in agriculture at basic prices. Both variables are measured in EUR per annual work units (AWU) and they represent the full-time employment equivalent of a similar job (in this case agriculture) divided by the average annual number of hours of work in full-time jobs in Romania.

The historical datasets have been retrieved from international open-access databases and further processed to become comparable and suitable for econometric model and variables for the 10 years period (2005-2019), including both national and international fluctuations and explicitly covering Romanian agrarian reforms.

It can be seen in next figure (Figure 8.) that the maximal results have been recorded in 2019, for both Romania and the EU-27. Compared to 2005, in 2019 comes to increase for Romania for around 70% while for the EU-27 it was around 59%. The average annual increase was set to 6% for Romania and 4% for the EU-27. This ascending trend is revealing significant improvement but how representative is the Romanian agricultural factor income growth compared to the European average. In fact, the data provides a materiality of the difference between the two realities, i.e. Romanian AFI is in analysed period set in average at 24% of the EU-27 value.

The Labour productivity in agriculture (LPA) points to ascending trend, with the highest value reached in 2019, around 5,600 EUR/AWU, or increase of around 127% compared to 2005. Unfortunately, data that will enable comparison with EU-27 are not available (Figure 9.).

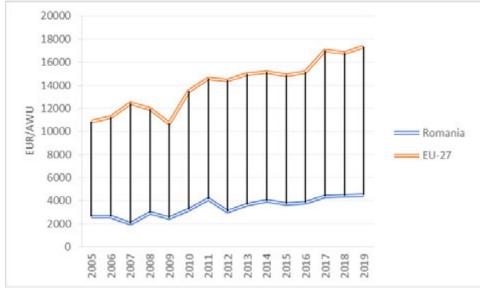


Figure 8. Agricultural factor income per full-time worker (AFI)

Source: Anon., 2022a.

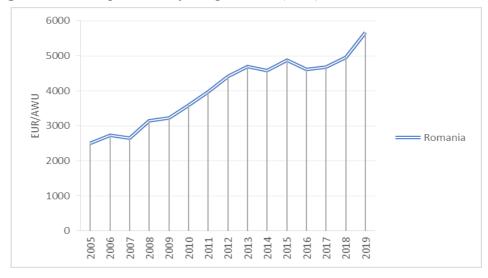


Figure 9. Labour productivity in agriculture (LPA)

Source: Anon, 2022b.

The annual increase in average is set to 6%, where in period 2010-2012 is marked two-digit consecutive annual growth. Productivity represents efficiency, while overall improvement in agricultural sector represents optimized resource use and reliable output (Figure 9.).

It is quite frequent that the following method is used in the research literature, as proven by Sibuea and Sibuea (2018) the regression equation is suitable for assessing income levels for farmers, therefore the following model proposes an empirical regression analysis to demonstrate how the economic indicators for rural Romanian farmers have been influenced using the previously mentioned variables.

Figure 10. I	Regression	statistics	and	coefficients
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		Reg	gression Sta	itistics				
		Ì	Multiple R		0.88			
			R Square		0.78			
		Adjusted R Square		0.76				
		Stand	lard Error	38	8.70			
		Ob	servations	1	5.00			
		Standard	t Stat	P-value	Lower	Upper	Lower	Upper
	Coefficients	Error			95%	95%	95.0%	<i>95.0%</i>
Intercept	584.91	437.20	1.34	0.20	-359.61	1,529.43	-359.61	1,529.43
Labour productivity -	0.71	0.11	6.70	0.00	0.48	0.94	0.48	0.94
Romania								

Source: Calculated according to Anon, 2022a,b.

Figure 11. ANOVA F Statistic

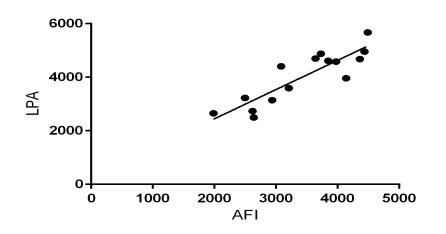
	df	SS	MS	F	Significance
					<u>r</u>
Regression	1	6,791,638	6,791,638	45	0.00
Residual	13	1,964,125	151,087		
Total	14	8,755,763			

Source: Calculated according to Anon, 2022a,b.

The regression F-stat value indicates a representative statistical value below 5% confirming the research objective and the positive influence that LPA has over AFI. The coefficients analysis highlights the following equation: AFI = 0.71 LPA + C indicating that for a 1 EUR/AWU increase in farmers' agricultural factor income, there is required a 0.71 EUR/AWU increase in farmers' labour productivity and adding the constant.

The ability of the model to explain 78% of the database indicates several other factors that can contribute to income growth besides labour efficiency. This represents a real strength of the analysis as research literature points out different factors that directly influence the rural family's incomes.

Figure 12. Linear regression slope



Source: Calculated according to Anon, 2022a,b and GraphPad visualization

Ascending trend of both variables was expected, but the exponential growth being rather independent of direct productivity and possible generators of such an amplified growth could be found within technological and R&D break-through, high-end skills development of the rural workforce and continuous learning opportunities.

Conclusion

Rural development remains one of the most ambitious and complex topic of today's political strategies. Its fulfilment would require the perfect balance between the economical, ecological, rural socio-cultural preservation and the rural life modernization.

Through various standard statistical analysis, throughout the research it has been shown that rural families found themselves in better living conditions in recent years, while the situation has been constantly improved. Through the econometric simulation it has been proved how the incomes of these families have grown as a direct result of multiple reforms, validating the research hypothesis and main paper's objective has been confirmed.

Population mobility, together with R&D research, education and agricultural technological improvement need to be the focus points in strategies' development. The development and flexibility of the rural labour market, by increasing the share of non-agricultural activities, promoting the entrepreneurial culture and attracting the people from subsistence farming to non-agricultural activities, are new key elements that can contribute to the impact of agricultural reforms on rural families.

Promoting specific forms of inclusion of rural people in the labour market, by increasing and diversifying employment opportunities in non-agricultural activities in rural areas, are defined as fundamental needs of rural families in Romania, in the context of new EU regulations and CAP. A strong incentive is to continue to support entrepreneurship among young people, to facilitate access to information, and to establish measures that consider the specificity of this category of the population.

Standalone numbers reveal significant improvements for both agricultural workers and rural communities, but the rural and agricultural autochthonous-European divide is still present and represents and improvement opportunity for present and future period.

Pure economic growth in rural families is seen to be generated by efficiency but other factors still are development factors. The made analysis emphasized that rural families have met improved life standards in the current periods.

Further studies should also take into consideration how different facets of the Romanian quality of life have changed across multiple reforms including land ownership, access to education and public services, etc.

Literature

- 1. Anon (2022a). *Agricultural factor income per annual work unit (AWU)*. Eurostat, DG AGRI Products Datasets, Brussels, Belgium, retrieved at: <u>https://ec.eu</u>ropa. <u>eu/eurostat/web/products-datasets/-/sdg_02_</u>20, April 2022.
- Anon (2022b). Labour productivity in agriculture. Eurostat, DG AGRI Products Datasets, Brussels, Belgium, retrieved at: <u>https://agridata.ec.europa.eu/Qlik_</u> <u>Downloads/InfoSheetSectorial/infoC14.htm</u>, April 2022.
- 3. Anon (2022c). *Government support to agricultural research and development*. Eurostat, DG AGRI Products Datasets, Brussels, Belgium, retrieved at: https://ec.europa.eu/eurostat/web/products-datasets/-/sdg_02_30,th Wpril 2022.
- 4. Burja, C., Burja, V. (2014). Sustainable development of rural areas: A challenge for Romania. *Environmental Engineering & Management Journal (EEMJ)*, 13(8):1861-1871.
- Cimpoies, L., Semenova, E. (2017). The individual sector of agriculture in Moldova and its contribution to the development of rural areas. In: VIII International scientific conference "Rural development", proceedings, Aleksandras Stulginskis University, Kaunas, Lithuania, pp. 955-959.
- Copus, A., Hall, C., Barnes, A., Dalton, G., Cook, P., Weingarten, P., Baum, S., Stange, H., Lindner, C., Hill, A., Eiden, G., McQuaid, R., Greig, M., Johansson, M. (2006). *Study on employment in rural areas (SERA)*. European Commission, Directorate General for Agriculture, Brussels, Belgium, retrieved <u>at: https:// dspace.stir.ac.uk/bitstream/1893/17677/1/sera_report1%20FINAL%20on%</u>20 web%20181206.pdf, 2 April 2022.
- 7. Dachin, A. (2008). Rural development: A basic condition for narrowing regional disparities in Romania. *Romanian Journal of Regional Science*, 2(2):106-117.
- 8. Dema, D., Abramova, I., Nedilska, L. (2019). Financial and economic conditions of rural development in Ukraine. *Eastern Journal of European Studies*, 10(1):199-220.
- 9. de Janvry, A., Sadoulet, E. (2010). Agricultural Growth and Poverty Reduction: Additional evidence. *World Bank Research Observer*, 25(1):1-20.
- 10. European Commission (2020). Evaluation support study on the impact of the *CAP on territorial development of rural areas: Socioeconomic aspects*. European Commission, Brussels, Belgium.
- 11. FAOSTAT (2022). Macro Indicators Romania. Food and Agriculture Organisation of the United Nations (FAO), Official Statistical Database, retrieved at: <u>www.fao.org/faostat/en/#data/MK</u>th, April 2022.

- Foley, J., Ramankutty, N., Brauman, K., Cassidy, E., Gerber, J., Johnston, M., Mueller, N., O'Connell, C., Ray, D., West, P., Balzer, C., Bennett, E., Carpenter, S., Hill, J., Monfreda, C., Polasky, S., Rockström, J., Sheehan, J., Siebert, S. and Zaks, D. (2011). Solutions for a Cultivated Planet. *Nature*, 478:337-342.
- 13. Foster, A., Rosenzweig, M. (2003). *Agricultural Development, Industrialization and Rural Inequality*. Unpublished study, Harvard University, Cambridge, USA.
- 14. Galuzzo, N. (2017). The Common Agricultural Policy and employment opportunities in Romanian rural areas: The role of agritourism. *Bulgarian Journal of Agricultural Science*, 23(1):14-21.
- 15. Galluzzo, N. (2015). Technical and economic efficiency analysis on Italian smallholder family farms using farm accountancy data network dataset. *Studies in Agricultural Economics*, 117(1):35-42.
- 16. Ghosh, M. (2017). Infrastructure and Development in Rural India. *Margin: Journal of Applied Economic Research*, 11(3):pp.256-289.
- 17. Hasan, R., Quibria, M. (2004). Industry Matters for Poverty: A Critique of Agricultural Fundamentalism. *Kyklos*, 57(2):253-264.
- 18. INSSE (2011, 2013, 2016, 2018, and 2021). *Romanian Statistical Yearbook for certain year*. National Institute of Statistics (INSSE), Bucharest, Romania.
- 19. Kasimis, C. (2010). Demographic trends in rural Europe and international migration to rural areas. *Agriregionieuropa*, 21(6):1-6.
- 20. Lillemets, J., Ferto, I., Viira, A. (2022). The socioeconomic impacts of the CAP: Systematic literature review. *Land Use Policy*, 114:105968.
- 21. INSSE (2022). *Employment and other indicators linked to agriculture*. National Institute of Statistics (INSSE), Bucharest, Romania, retrieved <u>at: http://stat</u>istici. insse.ro:8077/tempo-online,th4April 2022.
- 22. Opria, A., R**Ģ**u, L., I**ậ**u, C. (2021). LEADER Program: An Inclusive or Selective Instrument for the Development of Rural Space in Romania? *Sustainability*, 13(21):12187.
- 23. Pirvu, R., Dragomir, L., Budica, B., Bratu, R., Dinulescu, Stenea, L. (2022). The Impact of RDP Measures on the Rural Development: The Case of Romania. *Sustainability*, 14(8):4857.
- 24. Popescu, G. (2017). *Agricultura pe scara timpului*. Romanian Academy Publishing House, Bucharest, Romania.
- 25. Romanian Law no. 18/1991 related to Land Policy, Romanian Parliament, Official Monitor.
- 26. Romanian Law no. 16/1994 related to Lease Law (Agricultural land), Romanian Parliament, Official Monitor.

- 27. Sibuea, M., Sibuea, F. (2018). *Contribution of village cooperation unit in improving farmers incomes*. IOP Conference Series: Earth and Environmental Science, 122:012021, https://doi.org/10.1088/1755-1315/122/1/012021
- 28. Tara, S. (2020). Romanian agrarian structure after thirty years. *Journal of Community Positive Practices*, 4:3-24, doi: 10.35782/JCPP.2020.4.01
- 29. Vincze, M., Kerekes, K. (2009). Impact of CAP's pillars on Romanian rural employment. *Applied Studies in Agribusiness and Commerce*, 3(5-6):75-80.