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COMPETITIVENESS OF AGRO-FOOD AND ENVIRONMENTAL ECONOMY

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CONTENTS

Rurality: the impact of social capital	9
James MacASKILL PhD, MBA, FRSA, FCMI, FGMN	
Evaluation of climate change effects on the wine industry: an interdisciplinary approach.....	14
PhD. Diego BEGALLI	
PhD. Roberta CAPITELLO	
PhD. Maria DE SALVO	
Enhancing competitiveness of Serbian rural tourism through the process of clustering	27
Principal Research Fellow Drago CVIJANOVIĆ, PhD	
Research assistant Predrag VUKOVIĆ, M.A.	
Researcher assistant Vladan UGRENOVIĆ, M.Sc.	
Comparisons regarding the accession degree of the structural funds in the European Union member states	35
Professor Nicolae ISTUDOR, PhD	
Lecturer Irina Elena PETRESCU, PhD	
Organizations of social economy within market relationships – theoretical approaches.....	40
PhD Professor Gabriel POPESCU	
Evaluation of achieved investments within the Danube Region in the metropolitan area of Vojvodina province	43
PhD Jonel SUBIĆ	
PhD Marko JELOČNIK	
PhD Marijana JOVANOVIĆ	
Changes And Trends On Wine Market In Romania.....	50
Roxana STOIAN, PhDs	
Professor Dan BOBOC, PhD	
Professor Mirela STOIAN, PhD	
A theoretic model for defining complementarity links among regional development interventions in Romania	59
Cristina CIOCOIU, PhDs	
Professor Victor MANOLE, PhD	

Characteristics and strategies for the development of pig meat sector in Moldova and the European Union	69
Associate professor Grigore BALTAG, PhD Lecturer Elena BARANOV, PhDs	
Tradition and transition in the Romanian agricultural management as neo-factor of competitiveness and economic performance	75
Professor Radu VOICU, PhD Associate professor Carmen Valentina RĂDULESCU, PhD	
Possibilities and limits of valuing labor productivity in agriculture	85
Professor Costel NEGREI, PhD	
Food security and sustainable development	91
Professor Angelica BĂCESCU-CĂRBUNARU, PhD Professor Monica CONDRUZ-BĂCESCU, PhD	
Food security: changes and trends on world agricultural markets	96
Assistant Professor Raluca Andreea ION, PhD Lecturer George Cristian POPESCU, PhD	
Sustainability education within universities	104
Professor Florina BRAN, PhD Associate professor Ildiko IOAN, PhD Associate professor Carmen Valentina RĂDULESCU, PhD	
The importance of harnessing natural resources through health tourism in Romania	118
Alina-Cerasela ALUCULESEI, PhDs Professor Puiu NISTOREANU, PhD	
Factors requiring performance implementation in Romania	128
Professor Maricica STOICA, PhD	
Corporate governance through environment protection conditions applicable for Aeroflot Company.....	136
Associate Professor Andreea Gabriela PONORÎCĂ, PhD Associate Professor Adriana Florina POPA, PhD Associate professor Georgiana Oana STĂNILĂ, PhD	
Ecological terrorism - from definition to methods of fighting globally against it.....	146
Associate Professor Anca ROTMAN, PhD Associate Professor Camelia SLAVE, PhD	

Rural culture in transition.....	152
Professor Toma Dorin ROMAN, PhD	
Study regarding management of technological systems in agriculture	161
Professor Mariana BRAN, PhD	
Associate Professor Iuliana DOBRE, PhD	
Lecturer Irina Elena PETRESCU, PhD	
Integration And Competitiveness In The Governance Of Rural Development	170
Professor Irina-Virginia DRAGULANESCU, PhD	
Agricultural market crisis and globalization – a tool for small farms.....	189
Lecturer Ionela Carmen PIRNEA, PhD	
Professor Maurizio LANFRANCHI, PhD	
Professor Carlo GIANNETTO, PhD	
Structural changes in the Polish agriculture after accession to the EU in the light of the sector’s competitiveness and efficiency.....	197
Professor Marek WIGIER, PhD	
The hydroponic system – a way to get vegetable crops through performance methods	213
Associate professor Marcela ȘTEFAN, PhD	
Alina-Elena ȘTEFAN	
Interdependencies regarding the evolution of greenhouse gas emissions and agricultural activities of Romania	218
Cristian TEODOR, PhD	
The milk market trends in Romania	224
Lecturer Raluca-Georgiana LADARU, PhD	
Petre-Florian DINU, PhDs	
Environmental cost-benefit analysis on a wind farm	231
Alina ZAHARIA, PhDs	
Aurelia Gabriela ANTONESCU, PhDs	
Providing the quality of agro-food products through the research and technological development	241
Bogdan BAZGĂ, PhDs	
Laurențiu REBEGA, PhDs	

European Innovation Partnership – an instrument for sustainable development in a knowledge-based society	247
Mihaela Valentina DRĂCEA, PhDs	
Alexandru Costin CÎRSTEA, PhDs	
Ramona DOBRE, PhDs	
Funding opportunities on the stock exchange for agricultural companies	251
PhDs. Francesca RAINOF	
Professor Victor MANOLE, PhD	
The main objectives of the EU rural development policy for 2014-2020	256
Mihai DINU, PhDs	
Sustainable Forest Management: Case Study	262
Aurelia Gabriela ANTONESCU, PhDs	
Alina ZAHARIA, PhDs	
Inventory management within a food factory	269
Daniela Magdalena DINU, PhDs	
The polarization of the exploitation structure and its impact on the agricultural performance	275
Ramona DOBRE, PhDs	
Alexandru Costin CÎRSTEA, PhDs	
Mihaela Valentina DRĂCEA, PhDs	
The economic and environmental integrated analysis scheme - instrument for evaluating the power generation techniques.....	282
Paul CALANTER, PhDs	
Progresses of Romania in the field of traditional products.....	292
Dan Cosmin PETRACHE, PhDs	
The rural space and the human factor	298
Sorin ANGHELUȚĂ, PhDs	
The disparities analysis of the Bucharest-Ilfov region.....	305
Dan-Cristian POPESCU, PhDs	
Renewal of railroads, the first step towards ecological reconstruction	311
Cristina Emilia CIOVICĂ, PhDs	

Market oriented measures for semi-subsistence farms	318
Andrei Marius SANDU, PhDs	
Culinary Tourism - a key-aspect of Romanian tourism development	325
Cristian FLOREA, PhDs	
Agriculture over large areas, agriculture modernization premise of Călărași County	332
Emil MUȘAT, PhDs, Rareș Alexandru IONESCU, PhDs	
Development of the health service infrastructure in rural areas	339
Arghir CIOBOTARU, PhDs	
The role of local government in rural development over the current period of time	343
Cristina FILIP MAVRODIN, PhDs	
Environmental impact of rural tourism in the Mehedinti County	348
Florentina Daniela MATEI, PhDs	
The present and future of small farms in Romania	353
PhD Cecilia ALEXANDRI	
Romanian Milk Chain within Abolishment on Quotas' background – EU 27 comparisons regarding competitiveness	363
PhD Mariana GRODEA	
Intra-sectorial analysis and evaluations on Romania's food processing foreign trade	369
PhD Mirela-Adriana RUSALI	
Modern management principles applied in leading and organization of agro-tourism farms and guesthouses	376
PhD Vergina CHIRITESCU PhD Mihaela KRUSZLICIKA PhD Mihai Sorin COSNEANU PhD Gina Pusa PIRVU PhD Ruxandra Daniela ANDREI	

An estimation of the EU integration effects upon some agricultural markets from Romania.....	382
PhD Lucian LUCA	
Adapting the learning process to the present requirements. Changes and new ways.....	387
PhD Simona BARA, research associate Lecturer Claudia STANCIU, PhD	
Analysis of consumer choice between intern and foreign agrifood products in Romania	394
Lecturer Georgiana-Raluca LĂDARU, PhD Costin-Alexandru CÎRSTEA, PhDs	
Gains and loses of Romanian agrifood products on EU intra-trade market	401
PhD Dan-Marius VOICILAS	
Use Of Satellite Imagery In Monitoring Agricultural Areas	410
Camelia SLAVE, PhD Anca ROTMAN, PhD	
Preparing Of Compost By Using Different Types Of Substrates.....	417
Dimitar YAKIMOV Mariana IVANOVA Svetla DIMITROVA Elena NIKOLOVA Teodora ILIEVA Yubomir LALEV	
BOOK Review	
<i>Old issues, new relations in agriculture</i>	423
PhD. Simona BARA	

Rurality: the impact of social capital

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ABSTRACT

Rurality and the development of vital, vibrant and viable rural economies is potentially a major dilemma for the future use of available land in terms of loss of the productive heart of an economy. Urbanisation has now reached to a level where globally more people live in urban environments than in rural. In more developed regions this is projected to reach 80% and above. This paper explores the Harris-Todaro migration model and its interpretation during economic recessions and thus the potential to reverse the traditional march towards urbanization. A key element of this hypothesis is the role of social capital and the ability to develop or more effectively harness existing social capital parameters to raise the level of investment, opportunity and lifestyle potential of rural economies over the next 50 years. It also re-assesses the potential consequences of social capital development in the transformation of rural economies through its impact on the relative nature of poverty between urban and rural environments.

Keywords: rural development, social capital, urbanization, migration, economic development

INTRODUCTION

It appears that much of the macro-economics of political debate between central government and regional governments at a domestic or European level concerning the impact of rural deprivation on society and more important on the social capital of communities and society in general is that they conceive of rural as meaning agrarian and urban as industrial. When coupled with migration of individuals from rural communities to urban communities or from impoverished economies to wealthy economies these societal dilemmas appear not to be reconcilable. Thus urban migration continues to grow and the hopes and aspirations of rural poor are replaced by even more impoverished urban poor.

MacAskill (2012) argued that during a process the author called rural renaissance three essential components are in play. First, a requirement for a parallel process the author calls renaissance economics that has as its core driver the creation of a viable, vital and vibrant rural economy that provides economic opportunities across all age and skill groups. Through this approach rural economies need no longer be defined by farm based economies but liberated to comprise rurally based businesses. This is a highly significant shift in attitudinal and intellectual framing of the issues faced by rural economies and begins the process of questioning the need to move to urban economies and the types of businesses that may in the future make up rural economies. Bloom (1970) noted the potential of what was called “rurbanisation” of Jamaica in a process that attempted to create an urban type economy in rural areas while maintaining its essential rurality. This work followed the findings of Hauser (1961) when considering the urbanisation of Latin America. Second, the development of social capital in communities to promote the underpinning ecosystem that encourages the necessary investment or promotes new uses of investment resources in the rural economy to support employment opportunities for the young. This component relates to the dependency individuals place in trust and trusting relationships when creating and building their ideas into a profitable, socially or financially, activity. In Rural Renaissance this simply means that

individuals working together for a common vision and doing so unconditionally. While the vision may be realised into a profitable activity and may be sufficient motivation for some, social capital is dependent on the unconditional element of the journey. Through this concept of participation and the acceptance of the common vision being unconditional, social capital is not only exploited but can be developed or re-built in communities. Third, by diversifying businesses and refining value chains it is possible to invert the market dynamic that shifts the negotiating power from the intermediary to the producer and thus increase the rate of return available to rurally based businesses from their product range. This increased value from the outputs from rurally based business activities promotes opportunities for employment and further investment and development in new products and activities.

These basic parameters of the rural renaissance programme have been refined and developed over some 20 years of development work in promoting rural economic development through business diversification and development models. Yet several major hurdles still present themselves: education and skills do not match the needs of employers and thus the economy; investment into new businesses and start-up initiatives remains extremely difficult despite a range of programmes to promote easier access to investment funds; a belief that by migrating from one situation to another you will leave behind your troubles and overcome them and be able to create a new life.

The OECD inequality review (2013) demonstrates that Gini for a range of coefficients are increasing demonstrating greater inequality between social strata rather than less. At the same time there has been an unprecedented migration of people from rural economies to urban environments over the last 20 years such that in Scotland the national Records of Scotland (2013) state that over 70% of people now live in settlements over 10,000 people. Globally, more people now live in urban environments than do rural ones. This is reflected in similar statistics for Europe and the probability that by 2050 some 82% of the population will live in urban environments. While this places scales of economies in the system for industry and potentially for carbon efficient living it still does not resolve issues of over crowding, inadequate public services and an increasing dislocation from consumption from production and thus the potential for oversupply of commodities in certain economies and under supply in others depending on wealth and logistic infrastructure. Yet one aspect appears constant despite this: migration from rural economies to urban ones.

MIGRATION MEASURES

One of the classical models developed to investigate urban and rural migration was developed by Harris and Todaro (1970) and they identified that the key drivers for migration were the obvious ones: The key hypothesis is that migrants consider the probability of getting a higher paying job at their destination is greater than if they stayed where they were.

In a practical sense this means that their model will be in equilibrium where the risk of not getting job is higher than the relative comfort of having your family and friends around you and your ability to grow or access easily the food you require. In otherwise you are foregoing social capital benefits for financial capital benefits. In the model this is normally expressed as the rate of unemployment in the two economies. Using computer models Espindola et al (2005) and Silveira et al.(2005) confirmed the robustness of Harris and Todaro (1970) hypothesis on the use of wage differential between rural and urban migration as significant. Espindola et al. (2006) followed this by demonstrating that the hypothesis around the equilibrium of employment is not dependent on wages although the differential value of these wages does influence the equilibrium by withdrawing migrants moving to the urban environment. Day et al. (1987) comment on the Harris Todaro model in terms on not simply urban to rural migration but also the reverse effect. This reverse migration provides some

insight into the instability of any migration model and thus the potential to indeed set up a policy initiative that set up a political and market economy that promoted rural migration rather than urban.

One can consider many anecdotal situations where reverse migration occurs as a consequence of political turmoil or economic austerity. During the mid 1990's the Baltic States experienced a radical shift towards a market economy and this resulted in an internal regional migration effect. In consequence the migration model was reversed as people who could not find employment or afford to stay in an urban environment migrate back to a subsistence living off their family farms. Similar situations may occur in a transnational migration as occurred following the enlargement of the EU that resulted in mass movements of people across Europe. Within the UK a large migration from Poland and other accession states occurred at the beginning of the 21st century to take up the enormous number of job opportunities in the building and hospitality sectors as a result of the booming economy. This phase was categorised by the traditional model conditions of high availability of work and a large differential in wages from their home country thus making the risk of migration small. However, during the 2007 financial crash a similar reverse migration occurred as the differentials between work availability and wages reduced and social capital benefits and indeed the spending power of the accrued income saved while working as migrant labour.

Thus it is possible to reverse the model to create situations where migration makes more sense from urban areas to rural areas. This is sometimes easier to demonstrate during periods of economic turmoil however, given the budget available from the regional development budget of the EU and through CAP measures one must ask the question about whether it is possible to reverse the urban migration through more appropriately targeted use of these enormous budgets. Barrell et al. (2007) carried out a study on migration across the EU and noted that along with others that those countries allowing free movement of new member states across their borders, as opposed to the majority of member states who did impose restrictions, resulted in a diversion of migrants away from the traditional migration countries. The United Kingdom saw an annual rise of 50,000 migrants a year rise to 150,000 per year over the last decade. While these changes can have a host of macro-economic consequences such as distorting labour costs which both impacts on unemployment risk as well as reducing the wage disparity between the host and home country. Reverse impacts on the home country can be the effect of remittances into the local economy and the risk of dependency or more positively the use of remitted funds to invest in local activities which may radically improve the lifestyles of families. Such experiences can persuade or dissuade migration depending on the relative differentials they create in earning power and disposable income.

CONCLUSIONS

The result of migration can be seen to be influenced by government policy, fiscal incentives and social capital benefits. It is therefore necessary to consider the impact of rural renaissance in the context of these macroeconomic effects. MacAskill (2012) commented on the consistent proportion of the EU budget set aside for CAP being consistent around 25 to 30% across the period 1980 to 2009. That is three cycles of the CAP and associated reforms, yet urban migration has continued if not accelerated and the rural countryside continues to be de-skilled. The thrust of the argument there was that CAP is maintaining the farm centric nature of rural economies rather than one based on a diversified rural business approach. Some CAP reforms have placed funds against ecological land use and farm business but in reality they simply subsidise traditional approaches. If social capital is to be developed and vibrant and viable rural economies to be created people must want to live and create businesses with local and global reach. Urbanisation has the power of providing cheaper social welfare programmes and public

services as population size makes these affordable. Rurally isolated villages are expensive to maintain and thus services and amenities become eroded until inhabitants need to go to the next village for basic services which may mean they must have their own or access to transport to take them there. This commonality of struggle maintains a strong community and associated social capital. However, current policies leading to the same effect as the land clearances in the Scottish highlands between 1800 and 1850 when hundreds of thousands of people were moved off land and many of them immigrating regionally or nationally. While policies are not actively forcing people to migrate there are passively doing so. While the CAP and other regional development do not support or reward innovation and entrepreneurial approaches to establishing rural businesses the scaling up of these businesses to support the formation of business clusters from which other business can develop and expand there is little chance of reversing the migration model for positive reasons.

The author's experience of building social capital projects (Macaskill, 2011) has been that establishing the common vision supported unconditionally while hard to establish, once established is a powerful tool from which to generate income and job opportunities. In the Baltic QUEST project a small consortium was formed of 10 mixed food and beverage manufacturers. This group once stabilised were able to share resources, help smaller companies grow and professionalise, access funds to develop the asset base of their businesses. Similarly, in Romania the formation of a rural development consortium has enabled a group of farmers form a small commune in Calarasi to expand their own vision and make sound use of accession pathway funds to build the capital asset base of their consortia and their individual businesses.

Key to any plan to reverse migration has to be a hub around which participants can use to focus their ambitions and from which the deployment and development of social capital can be harnessed. This can be a single individual, as in the Romanian projects who was able to work with people to sell the vision. In most contexts this hub is supported by an educational establishment well focused on the application of subject knowledge not simply the gaining of it. These clusters and hubs of innovation and support have their most famous example, is by Stanford University in the US (Eesley & Miller, 2012). Their impact study demonstrated that forty percent of Stanford students find jobs through some form of networking, and the men and women who lead Silicon Valley's most innovative companies interact regularly by visiting campus to lecture, collaborate with faculty, and share ideas with the next generation of entrepreneurs currently filling classrooms.

The study showed the immense power of the hub and spoke approach to building financial capital as well as social capital. Some 18,000 firms created by alumni generate circa \$1.27 trillion and employing more than 3 million people. Since the 1930s 39,900 active companies can be traced to the institution and those companies have created 5.4 million jobs and generate annual world revenues of \$2.7 trillion. Among those who graduated after 1990, 25 percent of the responding entrepreneurs formed their companies within 20 miles of the university. Thirty-nine percent of all alumni founded firms located within 60 miles of Stanford—or roughly a one hour's drive and 15 percent (2,600) of graduate students from outside the United States stayed in the area and contribute to the region's robust infrastructure and entrepreneurial spirit. Since 1984, almost 44 percent (17,265) of Stanford's graduate students have come from outside the United States. That percentage has increased in recent years to 56 percent in 2010. In the 2000s the largest proportion of non-U.S. national founders came from Asia, comprising nearly 8 percent of all company founders and 41 percent of all non-U.S. founders.

These are immensely powerful statistics for the EU to consider not just in terms of high tech and Silicon Valley business start-ups but in the dynamic creation of social capital to promote

economic impact far beyond the funds applied in the first instance. For Rural Renaissance and programmes of a similar construct to be even more successful they need to lead the debate on CAP reform not respond to traditional arguments.

Rural Renaissance and Renaissance Economics are model that have a track record of success and are capable of being scaled to support the development of regional comparative advantage and thus a hub and spoke of rural incubators to support and guide rural entrepreneurs. Only through re-thinking direct intervention will farm based businesses survive from global competition and be able to re-direct the power of the consumer pound into rurally based businesses capable of trading worldwide.

The Rural Renaissance approach also provides the focus for ensuring the region has sufficient digital technology and broadband communication systems to support businesses interact with the local, regional and international markets it seeks to develop.

The core to any rural economic development programme is to support the transition of businesses to tackle areas of expansion and to become responsive and agile not simply preserve them to address markets that are declining and perpetually niche..

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Evaluation of climate change effects on the wine industry: an interdisciplinary approach

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ABSTRACT

In this study, the relationship between viticulture and climate change is widely investigated and different approaches are proposed. However, a deficiency of applications emerges, considering the numerous and varied effects of this phenomenon. This paper aims to propose an innovative approach to estimate climate change effects on wine production. It integrates various scientific competencies via the construction of a framework that connects the effects of climate change with a farm's profitability and structure, entrepreneurs' characteristics and agro-meteorological, phenological, eco-physiological and oenological data. A new interdisciplinary model is formulated using the Romanian wine industry as a case study.

INTRODUCTION

During the past decade, the increased occurrence of climate change events in Romania, including drought and flooding, has generated a negative effect on crop production, which has limited farming profitability and competitiveness.

Dragomir (2007) estimated that approximately 7 million hectares (48%) of farming land are affected by droughts, while approximately 6 million hectares are vulnerable to flooding. These extreme climatic events could diminish crop yield by up to 30–50% (Dragomir, 2007). The Romanian situation appears particularly serious because projections of global scenarios reflect an increase of 2° C in average air temperature in winter, while, during the summer season, global warming is likely to increase temperatures by 4.3° C and 3.5° C in south and north Romania, respectively. Forecasts are also negative for rainfall changes, as deficits will be recorded during summer and winter, especially in the southwest region (Dragomir, 2007).

The Romanian wine industry is particularly involved in the controversial effects generated by climate change. Although the overall effects of climate change on Romanian viticulture are uncertain, it is known that grapevine yields diminish with the occurrence of abiotic stress, such as freezing temperatures, an increase in soil salinity and drought because of the varying effects on grape quality. According to Paltineanu, Mihailescu, Secoleanu, Dragota and Vasenciuc (2007), aridity would likely affect Romanian viticulture, especially during the crop-growing season.

Global warming could lead to modifications of the viticultural regions map, and vines could be grown from the southern to northern regions of Romania. The interim results of a research project in progress at the University of Agricultural Sciences and Veterinary Medicine of Iasi show that the favourable area for grapevine growing has shifted towards the north. Moreover, higher sugar content in ripe grapes and improvement in wine quality were observed. In addition, a long, warm autumn favours good harvests by stimulating differentiation in grapevine buds and shoot maturing (Jitarita, 2006).

Positive effects were more recently demonstrated by Baduca Campeanu, Beleniuc, Simionescu, Panaitescu and Grigorică (2012). They observed the effects of ongoing climate change on vineyards in Oltenia (Romania), highlighting an anticipation of 10 to 15 days of grape absolute maturity and a variation in bud composition affecting wine quality. The grape sugar content at absolute maturity increases, while the total grape acidity decreases. This implies a positive effect on red wine quality and a negative effect on the taste balance for white wines.

These studies only consider some aspects of the problem. It is difficult to give robust previsions of the final effects on winegrowers' income because effects could be negative in terms of production quantity and positive in terms of wine quality. Moreover, it is important to consider the efficiency of strategies adopted by farmers to cope with climate change, their risk perception of climate change and other social and political aspects to design adequate mitigation and adaptation policies.

The aim of this research is to propose an interdisciplinary approach to estimate the effect of climate change on the Romanian wine sector. Effects are assessed in terms of productivity and profitability, considering changes in grape physiology and phenology, berry characteristics and wine quality.

An integrated model is proposed to connect structural, social and economic farming data with agro-meteorological, phenological, eco-physiological and oenological variables. It is a first step towards examining all direct and indirect effects of climate change on viticulture.

From here, the paper is organised into various sections. The second section illustrates the findings of previous studies on climate change and wine production, the third section explains the formulation and data source of the proposed interdisciplinary approach and the fourth section concludes.

LITERATURE REVIEW

The effects of climate change on wine production were widely detected in the literature because of the role played by this industry in the world agro-food economy, the spread of viticulture in new areas where it was not previously practised and the various effects of global warming and weather fluctuations on cultivation (Schultz, 2000; Tate, 2001).

Effects were numerous and were classified as direct and indirect in the literature (Marta et al., 2010). Climate change influences the onset and duration of each phenological phase and, consequently, it affects grape production in terms of quantity and quality. However, climate change also affects viticulture, modifying the relationship between plants and pests, that between pathogens and weeds and the short-term responses of farmers. Further, changes can arise because of farmers' long-term responses: they could change varieties or cultivate crops and adopt new technologies in the attempt to contain losses. In situations of economic inefficiency, they could also decide to abandon agriculture.

These phenomena, accompanied by the shifting of suitable areas for grape cultivation caused by climate change, are the main forces that lead to changes in soil usage in a long-term scenario. The literature review found that previous studies on climate change and grapevine growing focused on specific aspects of this change (Holland & Smit, 2010).

Various studies were devoted specifically to analysing the effect on grape quantity (Gouveia, Liberato, DaCamara & Trigo, 2009; Bindi, Fibbi, Gozzini, Orlandini & Miglietta, 1996; Caprio & Quamme, 2002; Santos, Malheiro, Karremann & Pinto, 2011) or on grape quality (Laget, Tondut, Deloire & Kelly, 2008; Webb, Whetton & Barlow, 2008a; 2008b), whereas other studies focused on the effect on wine quality (Nemani et al., 2001; Webb et al., 2008b; Jones, White, Cooper & Storchmann, 2005; Ashenfelter & Storchmann, 2010; Shanmuganathan, Sallis & Narayanan, 2010; Bock, Sparks, Estrella & Menzel, 2011;

Nicholas, Matthews, Lobell, Willits & Field, 2011; Moriondo, Bindi, Fagarazzi, Ferrise & Trombi, 2011; Alonso & Liu, 2013).

Numerous studies addressed grapevine phenology (Webb, Whetton & Barlow, 2007; Duchêne, Huard, Dumas, Schneider & Merdinoglu, 2010; Marta et al., 2010; Baduca Campeanu et al., 2012; Cunha & Richter, 2012; Webb et al., 2012; Santos, Grätsch, Karremann, Jones & Pinto, 2013), also considering the vine's vigour and precocity (Coulon-Leroy, Charnomordic, Rioux, Thiollet-Scholtus & Guillaume, 2012), and others analysed changes to the grapevine harvest date (Falcão et al., 2010; Koufos, Mavromatis, Koundouras, Fyllas & Jones, in press; Moriondo et al., in press).

Some studies modelled the effect of climate change on the interaction between the grapevine and its pests and pathogens (Martín-Vertedor, Ferrero-García & Torres-Vila, 2010; Steffek et al., 2011; Caffarra, Rinaldi, Eccel, Rossi & Pertot, 2012), while others studied changes in soil usage (Hannah et al., 2013) and geographical distribution of grapevine varieties (Sasek & Strain, 1990; Malheiro, Santos, Fraga & Pinto, 2010).

Finally, numerous studies addressed winegrowers' perceptions of climate change and their adoption of strategies to cope with it (Webb et al., 2008a; Battaglini, Barbeau, Bindi & Badeck, 2009; Hadarits, Smit & Diaz, 2010; Diffenbaugh, White, Jones & Ashfaq, 2011; Rauh & Paeth, 2011; Bernetti, Menghini, Marinelli, Sacchelli & Alampi Sottini, 2012; Nicholas & Durham, 2012; Vink, Deloire, Bonnardot & Ewert, 2012; Lereboullet, Beltrando, Bardsley & Rouvellac, in press).

Several considerations arise from the literature analysis. The first concerns the deficiency of applications that imply an integrated approach involving all relevant aspects able to determine positive and negative effects contemporaneously. For example, wine quality could increase; however, grape quantity could decrease simultaneously. What is the final effect on the price of wine? How does winegrower income change? Do winegrowers perceive losses and, consequently, adopt strategies to cope with climate change? Are these strategies efficient?

The study of interactions between climate change and grapevine cultivation also needs to consider the dynamics of physiological, phenological, social and economic aspects. Only a few previous applications estimated the economic effects of climate change on winegrower profitability, also considering changes in price (Webb, Whetton & Barlow, 2005; Ashenfelter & Storchmann, 2010).

Moreover, the literature review highlights that estimated effects are extremely uncertain and change according to the applied method, the location of the studied area and the grapevine variety. These aspects mean that the research topic is extremely diverse and stimulate new models that are able to undertake the diverse effects of this phenomenon.

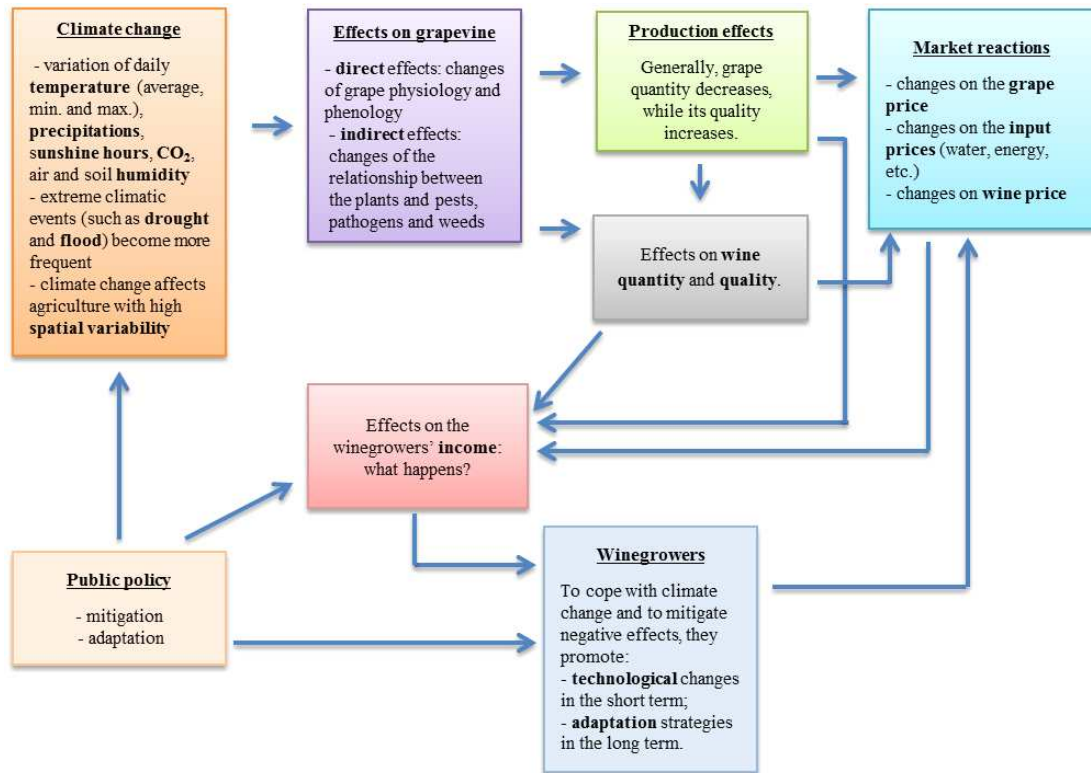
PROPOSAL OF A NEW INTERDISCIPLINARY APPROACH

Figure 1 summarises the effects of climate change on the wine industry. The figure was created by integrating findings observed by various scholars in the literature review into a framework. The final effect on winegrowers' income is uncertain because of the opposite effects of climate change on wine quality and quantity. Winegrowers adopt technological changes and adaptation strategies to decrease losses. Moreover, economic losses depend on the effects of climate change on the wine market where they cause grape prices to increase because of decreased supply and quality improvement.

In light of this scenario, the study proposes an interdisciplinary approach to assess the effects of climate change on the Romanian wine industry. The aim is to build an econometric model specifically designed to account for the diverse factors that are involved in wine production and the specificities of the case study area. These factors concern interdisciplinary research topics: agro-meteorology, grapevine phenology and eco-physiology, grapevine growing and oenology techniques and performance, business strategies and economic results. A case study

area was chosen in the Moldavia region, the largest Romanian wine region, comprising of a third of all national vineyards.

Figure 1: Climate change and its implications on the wine industry



Source: Authors' elaboration on findings

The formulation of the econometric model begins with the identification of the unit of observation, which is the vineyard (Y) specified through:

- the wine region (zn)
- the grape variety (cv)
- the farm's characteristics (frm)
- the harvest year (yr).

The function can be formulated in the following way:

$$Y_{zn, cv, frm, yr} = f(x)$$

The dependent variable identifies the vineyard. Focusing the analysis on the vineyard, rather than the farm, gives different advantages. Estimations can take into account the various aspects that generate variability inside the farm as spatial variation linked to vineyard location, differentiation in varieties' sensitivity to climate change, farm characteristics to include the farmers' aversion/propensity towards risk and the farmers' adoption of mitigation/adaptation strategies among the explicative variables and the use of panel data to reduce the year effect.

The dependent variable is quantified using a farm productivity index expressed through the output value (Y). This allows the analysis to consider simultaneous changes in grape supply and price, which is important because price is extremely reactive to quality and quantity variations and some of these variations are directly connected to climate change. In fact, it is

possible that the price increases in years characterised by production loss because of climate change. Consequently, in these situations, production losses are compensated by the increase in grape prices, and a decrease of farms profitability is not observed. Moreover, the grape price is directly connected with the quality of the grape. Consequently, the dependent variable also considers, implicitly, wine quality variations that are due to climate change.

The independent variables include the main factors that are subject to influence from climate change and farmers' responses to cope with this. It is hypothesised that these variables affect the farmers' production value. Variables include climate conditions, vineyard characteristics, grape physiology and phenology, variations in wine quality parameters, farmers' technological choices and short-term adjustments and farmers' perception of climate change and the propensity to modify the production function to face or adapt to climate change. Table 1 summarises these variables. For each, the time variant/invariant characteristic in relation to the reference period (harvest years 2009–2010, 2010–2011 and 2011–2012) is specified, as well as factors in terms of which variables are constant (farm, grape variety or wine region).

Data represented in Table 1 by variables included in Groups 1–6 were obtained via a survey of winegrowers carried out from 2010 to 2012. For this purpose, a questionnaire was designed to collect farms' structural characteristics, farmers' perceptions of climate change and adaptation strategies and business performance. The survey was conducted through face-to-face interviews with winegrowers. A sample of 65 winegrowers with 280 vineyards located in the Moldavia wine region was analysed. Figure 2 shows the winegrowers geographical distribution. The sample was selected by considering all winegrowers enrolled in the Romanian Association of Wine Producers and Exporters.

The grape production and market price data necessary to calculate the dependent variable were obtained through the survey, which also allowed for the collection of information needed to define dependent variables concerning the following farm factors:

- vineyard specifics, such as characteristics of cultivated surface, variety, planting year and density
- farm specifics, such as geographical location, use of labour factor and role of the family irrigation practices
- winegrower specifics, such as age and education, business strategies, investment choices, processing activities, role of public support, expectations of profitability and perception of climate change effects.

Regarding weather conditions, data collection aimed to catch various microclimates.

Data came from three main meteorological stations located in the study area (see Figure 2). Weather variables at the vineyard level were spatialised by considering spatial coordinates and calculating the great-circle or orthodromic distance with respect to the three meteorological stations for each vineyard. For each climatic variable, the average value with respect to the three observed values (at the station point) was calculated, weighting the distance between the farm and each meteorological station.

Table 1 Description of the variables included in the econometric model

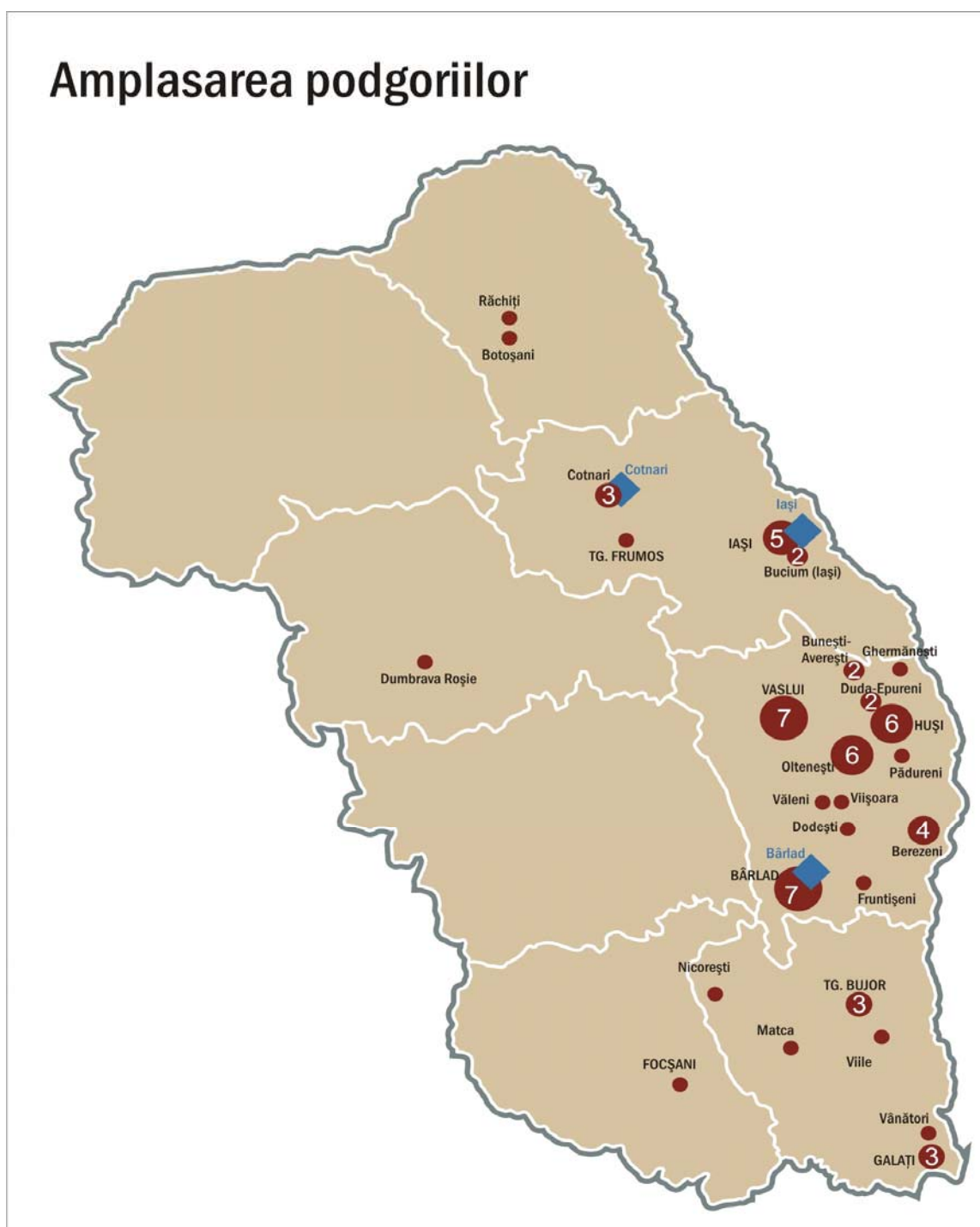
Variable	Type of variable	Unit of measurement	TV v. TINV*	Related to:
<i>1) Climate change effects in terms of:</i>				
Quantity of grape	Continuous	q/ha	TV	Vineyard
Price	Continuous	€/q	TV	Vineyard

Value of grape	Continuous	€/ha	TV	Vineyard
<i>2) Farm's structure:</i>				
Cultivated surface	Continuous	ha	TV	Vineyard
Altitude	Continuous	m	TINV	Vineyard
Age of plants	Continuous	years	TINV	Vineyard
Number of plants	Continuous	plants/ha	TINV	Vineyard
Soil type	Dummies	5 types of soils	TINV	Vineyard
<i>3) Farmer's profile:</i>				
Education	Continuous	Years	TINV	Farm
Age	Continuous	Years	TINV	Farm
<i>4) Farmer's climate change perception:</i>				
Climate change is problematic	Dummy	yes/no	TINV	Farm
Climate change increases costs of production	Dummy	yes/no	TINV	Farm
<i>5) Farmer's strategies:</i>				
Grape's processed at the farm	Dummy	yes/no	TINV	Farm
Bottling at the farm	Dummy	yes/no	TINV	Farm
Variety reconversion	Dummy	yes/no	TINV	Farm
Received subsidies	Dummy	yes/no	TINV	Farm
Investments in the vineyard	Dummy	yes/no	TINV	Farm
Other types of investment	Dummy	yes/no	TINV	Farm
Value of investments	Continuous	€	TINV	Farm
<i>6) Farmer's strategies able to cope with climate change:</i>				
Use of the labour factor	Continuous	hours/ha	TV	Farm
Irrigation	Dummy	yes/no	TINV	Farm
<i>7) Climate conditions:</i>				
Total precipitations for each phenological phase	Continuous	Mm	TV	Wine region
Average temperature for each phenological phase	Continuous	°C	TV	Wine region
Total hours of sunshine for each phenological phase	Continuous	Hours	TV	Wine region
Global thermic balance	Continuous	t°g	TV	Wine region
Active thermic balance	Continuous	t°a	TV	Wine region
Useful thermic balance	Continuous	t°u	TV	Wine region
Average annual wind speed	Continuous	km/h	TV	Wine region
Average annual air relative humidity	Continuous	%	TV	Wine region

Nebulousness per year	Continuous	Index	TV	Wine region
No. of days with maximum temperature > 30° C per year	Continuous	Days	TV	Wine region
Length of bioactive period per year	Continuous	Days	TV	Wine region
Real heliothermic index per year	Continuous	Index	TV	Wine region
Hydrothermic coefficient per year	Continuous	Index	TV	Wine region
Bioclimatic index per year	Continuous	Index	TV	Wine region
Oenoclimatic index per year	Continuous	Index	TV	Wine region
Annual index of aridity	Continuous	Index	TV	Wine region
<i>8) Physiological indexes:</i>				
Chlorophyll (at the end of flowering, grape maturation and bachelor growth phases)	Continuous	Chlorophyll Content Index	TV	Wine region and variety
Photosynthetic pigments (at the end of flowering, grape maturation and bachelor growth phases)	Continuous	Index	TV	Wine region and variety
Amount of starch (during the deep sleep phase)	Continuous	%		Wine region and variety
Amount of carbohydrates (during the deep sleep phase)	Continuous	%	TV	Wine region and variety
Amount of protein (during the deep sleep phase)	Continuous	%	TV	Wine region and variety
Amount of dry matter (during the deep sleep phase)	Continuous	%	TV	Wine region and variety
<i>9) Oenological index:</i>				
Wine quality	Continuous	index	TV	Wine region and variety

* TV: Time Variant; TINV: Time Invariant.

Figure 2: Location of interviewees and meteorological stations



Weather variables mainly affect duration and temporality of phenological phases, grape production and wine quality. These variables were determined for the main phenological phases that characterise the most relevant grape varieties in Romania, such as the deep sleep period (from October to February), recovery and vegetative development (March to April), flowering and bunch formation (May to June) and bunch maturation (July to September). The model assumes the hypothesis of a quadratic relationship between production value and weather variables, and the significance of the interactions between temperature and precipitations is tested.

Physiological and oenological variables came from analyses carried out by experts in these fields on some investigated varieties grown in experimental vineyards located in Iasi, Cotnari and Târgu Bujor (see Table 2). This information relates to the Chlorophyll Content Index and the dynamics of chlorophyll content, which was measured with the spectrophotometer at 320–325 nm, 431–432 nm and 662–663 nm at the end of the flowering, grape maturation and bachelor growth phases. Information on the percentage of starch, carbohydrates, proteins and dry matter, measured during the grapevine deep sleep phase, is also available. Through these parameters, it was possible to evaluate the effects of climate change on the physiological phases schedule in relation to the activation and length of each phase, as well as the output quantity and quality. Wine quality variations were evaluated by oenologists. These evaluations were based on the analysis of wines processed using the grapes harvested from the experimental fields in the periods 2009 to 2010 and 2011 to 2012. They estimated the wine quality index (ranges between one and five) by considering chemical and physical parameters, such as alcohol concentration, total acidity, volatile acidity, relative density, sugar and free SO₂.

Table 2 Varieties analysed by each experimental field

Grapevine variety	Iasi	Cotnari	Târgu Bujor
Fetească albă	X	X	X
Fetească regală	X		X
Frâncușă	X	X	
Grasă de Cotnari	X	X	
Tămâioasă românească	X	X	
Riesling italian	X		X
Băbească gri	X		X

CONCLUSION

This paper proposes a new approach to estimating the effect of climate change on the wine industry, using the Moldavia wine region as a case study. The main novelty concerns the interdisciplinary approach adopted for the analysis that allows the model to integrate several aspects of climate change. These include agro-meteorology, grape phenology and eco-physiology, grapevine growing, oenology techniques, wine quality, business strategies and performance.

The literature review highlights a lack of studies that were able to incorporate the numerous and diversified climate change effects into an integrated model, distinguishing between positive and negative effects. Further, only a few previous studies estimated the effects on winegrowers' profitability by considering changes in price. The winegrowers' perception of risk and their mitigation/adaptation strategies were not treated in-depth by the literature.

In this study, the methodological approach proposed aimed to overcome this gap using a model specification that is able to explain the variability of the dependent variable (the vineyard's output value) in relation to the vineyard's location, the cultivated variety, the farm's characteristics and the harvest year. Using this formulation, the econometric model should capture a higher proportion of the variability generated within the farm because it considers sensitivity to climate change, which is territorial and crop specific (as highlighted in the literature), as well as effects on the farm's economic performance.

The data for the specification of dependent and independent variables were collected through a primary source to reach the desired level of detail. The winegrowers' survey had the advantage of obtaining detailed information concerning the qualitative aspects of farmers' responses to climate change. The other variables were obtained by integrating different capabilities to represent the most significant elements concerning climate conditions, grape physiology and phenology and wine quality parameters.

This approach allows the study to consider the following aspects not previously analysed in an integrated model: the effect of grape physiological modifications on farm productivity, the relationship between grape and wine quality changes and market prices, the effect of wine quality and grape physiological parameters on marginal product value, the relationships between output values and weather conditions, the explanatory power of farmers' characteristics (such as production choices, entrepreneurs' culture, perception of risk and business strategies), the suitability of technological innovations to climate change and the effect generated by these factors in the presence of alternative climate change and market scenarios.

In addition, by carrying out the analysis by grape variety and wine region, the model was able to provide evidence of the effect of geographical variability and to contribute to addressing businesses strategies and public policies that enable farmers to cope with climate change to mitigate its negative effect on the Romanian wine industry.

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Enhancing competitiveness of Serbian rural tourism through the process of clustering

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ABSTRACT

The rural areas of the Republic of Serbia cover more than 80% of the territory and the results of the Census of population 2011 shows that on in these areas living approximately 44% of the total population. From these data it can be concluded about the importance that rural areas can have for the overall economic development of the country. However, rural area are still burdened with many problems (depopulation, migration to urban centres, reduced the volume of investments, etc.). Rural tourism has seen as an economic alternative which can run these negative trends to the opposite direction. Intensive development of rural tourism in Serbia started in the nineties and in different parts of the territory it took different forms. Priority question is how to strengthen the competitiveness of rural tourism destinations. Given the fact that the tourist industry includes a large number of different factors which is necessary to make tourist product, solution has seen on better way how to organize it and make better connections between all stakeholders in order to enhance tourist competitiveness. In this sense, strengthens the role of the clusters. This paper highlights the potential of development rural tourism in Serbia using clusters and indicates the possibility of strengthening the competitiveness of rural tourism destinations.

Keywords: rural area, tourism, cluster, destination, agriculture

INTRODUCTION

The reason why rural tourism in Serbia didn't gets the role which belongs to it, is the fact that it not organized on the way that it is in countries that achieve far better results. One of the ways that can improve the organization and significantly affect the positive development of rural tourism is the process of clustering.

The concentration of clusters is highly instrumental in encouraging small and medium businesses. Expected that the implementation of the clusters will foster the development of SMEs and eliminate all negative trends plaguing the life in rural areas.

DEFINITION, CHARACTERISTICS AND CONDITIONS FOR CLUSTER DEVELOPMENT

Clusters represent a relatively new model of economic development. It is a development that provides networking, business and non-economic factors in one a geographic area in order to

achieve common and individual goals. The aim of the cluster merger is to create additional value per unit.

More intensive research on the geographical concentration of enterprises and connection in a given geographic area has caught the attention of scientist after work of Porter M. E., in 1990 (Porter, 1990). According to Porter, the cluster is:

„Geographic concentrations of interconnected companies and institutions in a particular field or activity, however, as a critical mass of companies and institutions in one place of unusual competitive success in particular fields of activity“(Porter, 1998).

In the literature, are now widely used other definitions. So, for example, about Solvell, (Solvell at al. 2008) defined cluster as:

„ ... group of companies and institutions located in a specific geographic area that are linked to the production of similar products and / or services..“

According to the definitions can be derived and the basic characteristics of the cluster:

- 1) location in a specific geographic area,
- 2) mutual cooperation among member,
- 3) the concentration in one or more economic sectors in the region,
- 4) have a width (horizontal links among the participants) and have depth (vertical connections between members)
- 5) successful clusters are characterized by the existence of so-called social cohesion - "social adhesive"
- 6) there is intensive cooperation but also competition among members.

It is important to note that clusters:

- helping to reduce production costs and ensure productivity growth (based on the high specialization, the presence of specialized suppliers, better access to inputs and markets, etc..)
- allow achieving better prices in the market;
- improve the quality of products and services;
- improve promotional activities;
- contribute to the growth of innovative enterprises engaged in cluster;
- encourage the development of entrepreneurship, the creation of new businesses and provide employment growth in the region, or the geographical areas in which it operates;
- allows the use of government programs: building and improving physical and information infrastructure, the development of public institutions, technology transfer and development laboratories, construction of cargo logistics centers, organizing training programs, organizing joint participation in fairs in the promotion of exports and so on.;
- contribute to increasing the competitiveness of the market and so on.

Speaking about competition among enterprises within a cluster, it can take place on two ways: directly and indirectly. In most cases, it is the indirect competition, which takes place over horizontally networked entities involved in the different markets.

The assumption is that the development of clusters should be based on the initiative of companies, respectively that it should start by clearly trimmed their needs and desires for

joining the cluster, as well as their commitment to the organization, cooperation and teamwork.

As the most important support for clusters in government policy should be eliminated all unnecessary restrictions in the growth and development of SMEs. The most important role of the state in the creation of such conditions, or creating simultaneously microeconomic business environment includes:

- developed public sector, which are a prerequisite for building trust, respect and security contracts, property rights, joint ventures and the like.
- stimulating investment and innovation policy;
- stimulating tax policy and developed financial market and the labor market;
- developed a policy of competition protection in the market (regulation of monopoly, a company with a dominant position in the market and so on.);
- развијену пословну инфраструктуру
- developed business infrastructure.

CLUSTERS IN THE TOURIST DESTINATION

By learning the Porter, the famous "*diamond model*" includes four groups of forces, which in their relations, which determine competitiveness: 1. demand conditions; 2. market structures/organization/rivalry/strategy/tourist companies; 3. sector support; 4. factors conditions. Can be considering that the most competitive cluster provides the best conditions for the realization of the above.

Management of tourist destinations includes the interconnection of different subjects on different levels, which is consistent with the definition of clusters and their development. Destination marketing organizations can and should take the task of creating conditions for strengthening cooperation and coordination of all stakeholders which contribute to the development of tourism in a particular geographic area respectively region.

In this regard it is important to establish cooperation between the public and private sectors, to ensure this kind development and promotion of tourism specific area. As a condition for cooperation is necessary and appropriate budgetary support.

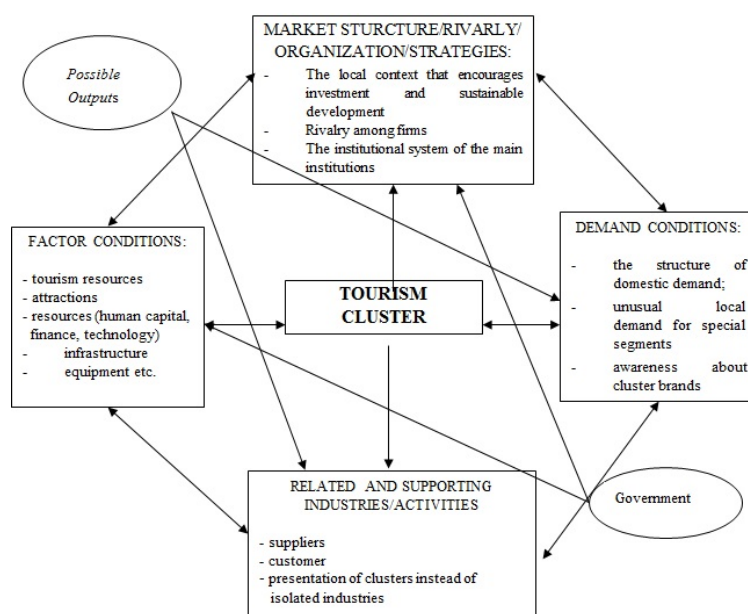
Study by the *World Tourism Organization* – UNWTO (2006) suggests the cooperation of private and public sector, which is based on four key areas: 1 improvement of conditions for destination attractiveness; 2 improving destination marketing; 3 productivity growth; 4 improving the management of tourism system.

The assumption is that with the cooperation in these four areas will increase competitiveness of the destination. In the same study, in this context, was presented definition of competitiveness:

„Destination ability to successfully compete to their rivals, to create wealth above the average, to hold it in long term, with minimum social and ecological price.“(UNWTO, 2006).

The cluster in tourism can be seen as a necessary connection between group companies (private sector), and other factors in order to become competitive in certain destinations. These factors include tourism infrastructure, superstructure, and other elements of which are written in detail Ritchie and Crouch in his model in 2003 (Ritchie, 2003) in their model of competitiveness.

Figure 1 „Model diamond“ Porter, M. E. applied to the tourism cluster



Source: Djurašević S., (2009) „Relation between tourist destination and clusters“, in „Management of tourist destinations“, University of Singidunum, Belgrade

Elements which determine "diamond model" are also the elements that determine destination competitiveness. It can be said that the most competitive tourist cluster is in a position to most effectively "realize" its constituent elements. If we consistently understand Porter's study, it assumed that the elements of the model are in strongest connection in clusters where the highest level of specialization recorded.

Djurašević (Djurašević, 2009) states the benefits brought by tourism clusters:

„ ... in the context of tourism supply chain, clusters provide focus which is needed entrepreneurs, governments and institutions to align their efforts to specific competitiveness, added value and its conservation, as well as targeted export performances.

A tourism enterprise, as integral parts of the cluster provides a number of benefits:

- easier to increase their commercial expectations by taking advantage of quick access to market information;
- the ability to obtain specialized inputs and technical support is much simpler and more cost-effective;
- participation in consortia during large orders;
- enables the strengthening of market development and promotional expenses;
- use group transport in order to minimize transportation costs;
- cost-sharing for ISO certification etc.... etc.

...In short, the clusters in tourism would allow companies to tend to new efficiency and to keep value-added in framework of its own tourism supply chain.“ (Djurašević, 2009)

TERRITORIAL APPROACH TO THE DEVELOPMENT OF RURAL TOURISM CLUSTERS IN SERBIA

In the "Tourism Development Strategy of Serbia" (2007) assumed territorial approach. Serbia is divided into four tourism clusters: Vojvodina, Belgrade, Serbia South-West, South-East Serbia.

The proposal emphasizes that "is not based on administrative boundaries that currently exist within the country, but primarily based on rational footings in different forms of economy experiences that in some parts of the country can develop clusters." (Tourism Strategy of the Republic of Serbia, 2007).

In this sense, based on a census tourist factors and attractors in table is suggests which activity of rural tourism can be developed in suggested clusters (Table 1).

Table 1 Territorial distribution of rural tourism clusters in Serbia

Rural tourism	Tourist clusters			
	Belgrade	Vojvodina	Southwest Serbia	Southeast Serbia
Rural experience	*	***	***	***
I. Activities in nature				
a) Hunting	-	-	-	-
b) Fishing	*	***	**	-
c) Bicycling	*	***	*	*
d) Riding	*	***	**	**
e) Walks	*	**	***	***
f) Bird watching	*	*	*	*
g) Other	-	*	***	-
II. Activities related to culture				
a) Tours of the cultural heritage	-	**	***	***
b) Food tour	***	***	***	***
c) Tours religious heritage	-	**	**	**
d) Other	-	-	-	-
A high priority *** Medium priority ** Low priority *				

Source: Tourism Development Strategy of the Republic of Serbia (2007), Second Phase Report, p. 91st Horwath Consulting Zagreb and the Faculty of Economics, Belgrade

In *Master Plan to sustainable development of rural tourism in Serbia* (2011) is given strategy of cluster development of rural tourism. As in the "Strategy" and also in the "Master Plan" was kept a territorial approach. Clusters were developed by the Census of attractor factor present in a particular territory and the Master plan made their grouping according local "Master Plans" for tourism development in appropriate areas of the Republic of Serbia...

In this sense, it is suggested that the existence of 12 clusters of rural tourism (CRT), which represent the potential for tourism development in certain geographic areas. The same are present in Table 2.

Table 2 Clusters of rural tourism developed throw on the territorial approach of the "Master Plan for sustainable development of rural tourism in Serbia", 2011.

Cluster Development Strategy of Rural Tourism in Serbia	
Group CRT 1.	CRT 1. Golija
	CRT 2. Zlatar, Zlatibor
	CRT 3. Kopaonik
	CRT 4. Central Serbia

Cluster Development Strategy of Rural Tourism in Serbia	
Group CRT 2.	CRT 5. Lower Danube
	CRT 6. South Banat
Group CRT 3.	CRT 7. Sokobanja
	CRT 8. Eastern Serbia
	CRT 9. Southeast Serbia
Group CRT 4.	CRT 10. Fruška gora
	CRT 11. Upper Danube
	CRT 12. North Vojvodina

Source: „Master Plan for Sustainable Rural Tourism Development in Serbia“, p. 87-88.

The rationale explanation of the territorial division of the "*Master Plan for Sustainable Development of Rural Tourism*" means:

- „These 12 CRT are territories appropriate to be developed for rural tourism.
- These 12 CRT are the result of diverse and rich resources (including natural, cultural and other, which is given in detail in section FAS Diagnostic Report), which are closely linked with the development of rural tourism experience.
- Of the 12 CRT, 10 had already been identified for development under the terms of the master plan for development of tourism that are already defined.
- These CRT showed a high degree of variety of resources across the territory, including various types of attractors (mainly natural and cultural) and natural factors. In certain areas there is a relatively high concentration of attractors and factors. However, the attractors in the form of centers of activity is relatively small compared to the natural and cultural attractors.
- If the budget allows, all these 12 CRT must be developed.
- However, given that the implementation of the Master Plan for the development of rural tourism have budget limitation, these 12 CRT are still ranked for investment.
- CRT includes four target regions of the project: the Lower Danube (CRT5), southern Banat (CRT 6), central Serbia (CRT 4) and eastern Serbia (CRT 8).“(Master Plan for Sustainable Rural Tourism Development in Serbia)

Hereinafter referred to as the "Master Plan" to give an explanation for this territorial division and ranking priorities for future development.

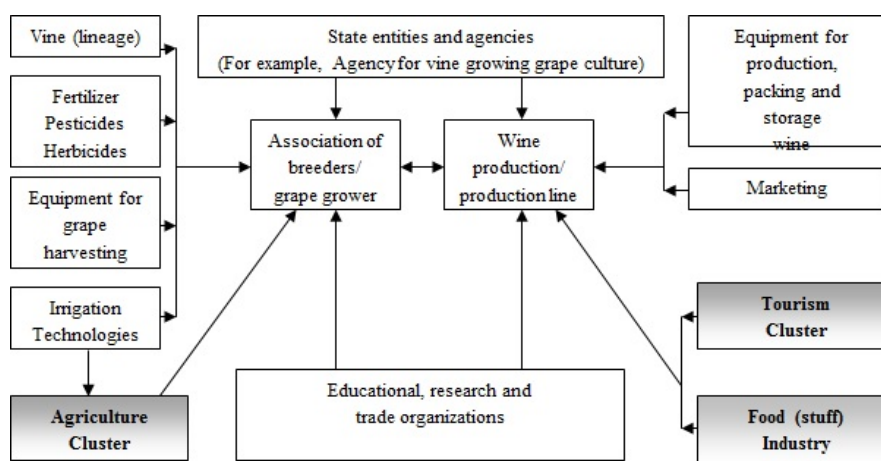
MODEL OF FUNCTIONAL CONNECTIVITY TOURISM AND AGRICULTURE THROUGH CLUSTERS

The rural tourism based primarily on the complexity which can be describe by its definition, it is possible to connect two or more clusters to provide tourists' rural destination experience. In this way, the basic marketing and managerial roles are done, and that is throw the satisfaction of the final consumers (tourists) it can be realize interests of all stakeholders in the tourist value of chain, and that is to create profit.

Example of "cluster functions" of agriculture and tourism will be presented through the "wine tourism". The wine represents a great opportunity which stands in front of the Republic of Serbia, based primarily on its resource capabilities to produce the same (Fruška gora, Vršac, Župa, Negotin, Prokuplje etc.).

Otherwise, the model can be interpreted, or moving construed through other forms of agricultural production, which is closely related to the development of tourism in some of the rural areas.

Figure 2 Cluster Model in the Functional Linking Agriculture and Tourism



Source: Porter, M. E., (2008): „On Competition“, Harvard Business School press, p. 204.

The cluster of wine production involves a large number of factors. They can be divided into primary and secondary activities. They are complementary and as more members are connected through common interests, achieved a higher degree of cluster networking. In this way we achieve greater compactness and create better conditions for specialization in the production and provision of appropriate services for tourists who are interested.

Viticulture and wine production process are directly related. As a rule, there is a strong link with the agricultural cluster. Tourism and hospitality respectively tourist clusters can, and in many cases find their interest in connection with these types of agricultural clusters.

States that have so far achieved the best results in the development of wine tourism are France, Italy, Spain, Portugal, California, Georgia, and so on. Given the potential that Serbia has, it should follow the practices of successful countries worldwide. This applies not only to the production of wine (wine tourism), but can also refer to other forms of connectivity of Agriculture and Tourism.

Given that the highest degree of correlation between tourism with agriculture achieved through the sale of agricultural and food products to tourists, tourists placement of these products can be carried out in direct and indirect ways.

CONCLUSION

The problems plaguing the life in rural areas require finding ways to overcome the present negative trends. Alternatives are in the development of the rural non-agricultural economy and rural tourism. Expectations are that rural tourism is enabled:

- absorb the surplus labour force and reduce unemployment,
- reduced risk for agricultural producers,

- ensure the survival of farms at a time when agricultural production is threatened or destroyed,
- contributed to the increased use of the comparative advantages of rural areas (natural, physical resources, location, labour costs, etc.).
- contributed to the acceleration of economic growth in rural areas,
- improve the overall quality of life etc..

In that sense, it is necessary to carry out the organization of all holders of tourism and concentration of interconnected companies in order to create a critical mass of institutions and companies in one place, in order to increase competitiveness. In that sense, playing important role cluster connectivity. Developing clusters should be based on the initiative of companies, that is, it should start by clearly trimmed their needs and desires for the merger, as well as their commitment to the organization, cooperation and teamwork.

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Comparisons regarding the accession degree of the structural funds in the European Union member states

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ABSTRACT

Every country, regardless of the economic and social development is facing problems with the balanced economic development of the territory, determined by a number of objective and subjective factors that determine the uneven development of economic zones. This paper is an extensive analysis of the degree of accessing structural funds in the period 2007 - 2013 in the Member States of the European Union. Importance of the analysis is that the success of implementation of structural funds for Romania in the next programming period (2014 - 2020) is conditional on a thorough analysis of the current programming period (2013 - 2020), to assess the strengths, weaknesses, opportunities and, not least of which constraints faced by all actors involved in the management of these funds.

Keywords: *structural funds, European Union, gaps*

INTRODUCTION

Every country, regardless of the economic and social problems is facing the problems in balanced economic development of the territory, determined by a number of objective and subjective factors that determine the uneven development of economic zones. Inequalities between the development levels of regions within a country are due mainly to the action of the following factors:

- Changing economic conditions by developing new economic sectors or declining entry of old;
- Concentration of economic growth in some regions;
- The existence of sparsely populated areas or production arising largely from primary sectors;
- Population migration to developed areas.

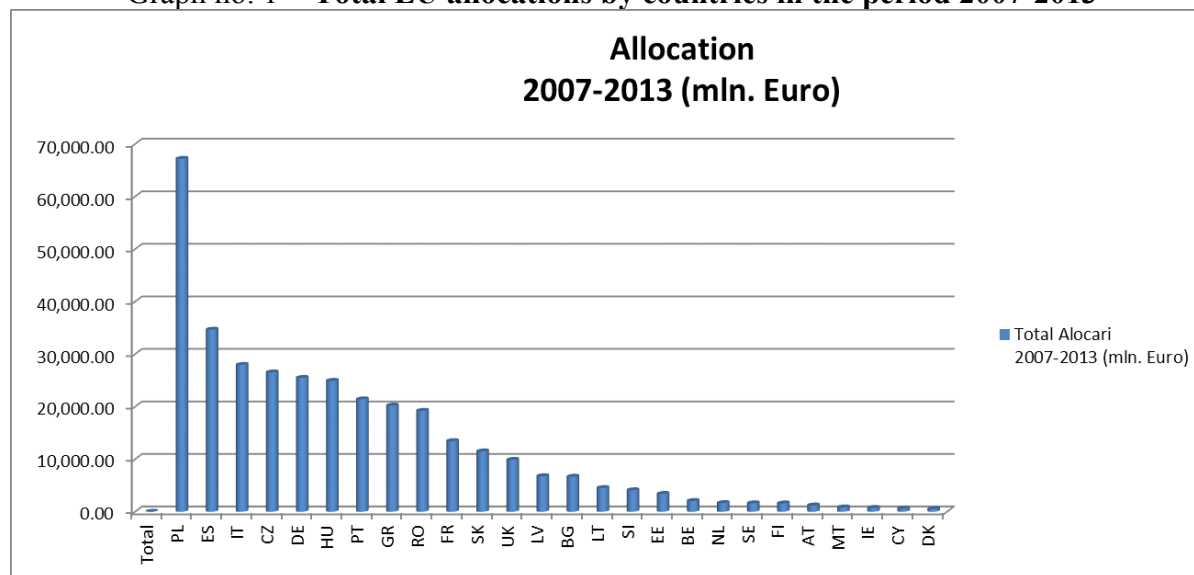
In the reform of cohesion policy were established five principles underlying the allocation and management of financial support for the development of regions lagging behind in terms of socio-economic concentration, programming, partnership, additionally and monitoring.

In order to reduce the gaps between countries and regions, the EU allocates significant funds over the period 2007-2013, totaling 338 billion. Romania has available structural funds totaling 19.2 billion euros or 81 billion (representing 5.6% of the EU total), amounts that should attract no later than 2015 (this amount does not include funds agriculture).

Functional Structural Funds in the European Union have contributed and contribute to economic and social development of member countries are: the European Regional Development Fund (ERDF), European Social Fund (ESF), the European Agricultural Fund for Rural Development (EAFRD) and the European Fisheries Fund (EFF), the Cohesion Fund (CF).

The main purpose of the Structural Funds is to achieve social and economic cohesion within the European Union. Financial resources are directed towards activities aimed at reducing disparities between the more developed regions and less developed to promote equal employment opportunities between different social groups.

Graph no. 1 - Total EU allocations by countries in the period 2007-2013



Source: European Commission

Structural Funds actions are focused in particular on the following three priority objectives:

- *Objective 1* – development and structural adjustment of regions whose development is delayed, these regions have a GDP per capita below 75 % of the same indicator registered in EU countries (it is said that there are very few such areas in EU 15).
- *Objective 2* – aims at economic and social conversion of areas experiencing structural difficulties. Covering a total of 18 % of the European population is considering four areas: industrial, rural, urban and fisheries dependent areas.
- *Objective 3* – covers the whole European Union, which is outside the Objective 1 areas. It refers to the adaptation and modernization of national policies and systems of education, training and employment, taking into account the European strategy in the field of employment.

European Union allocates significant funds, in the period 2007-2013, totaling 338 billion. Romania has available structural funds totaling 19.2 billion Euro or 81 billion lei (representing 5.6% of the EU total and placing Romania on the 9-th rank), amounts that should be used no later than 2015 (this amount does not include funds agriculture). The highest amounts are allocated to Poland, namely 67.18 billion euros, representing about 19.8% of the EU total.

Table no. 1 - Allocation and absorption of structural funds in EU member states – June 2013

	Total Alocari 2007-2013 (mln. Euro)	Total plati intermediare ale CE pana la 01.06.2013 (mln. euro)	Rata absorbtie %
Austria	1,204.48	601.60	49.95%
Belgium	2,063.50	982.50	47.61%
Bulgaria	6,673.63	1,952.30	29.25%
Cyprus	612.43	243.10	39.69%
Czech Republic	26,526.38	7,925.30	29.88%
Germany	25,488.62	13,407.20	52.60%
Denmark	509.58	216.30	42.45%
Estonia	3,403.46	2,002.80	58.85%
Spain	34,657.73	17,735.60	51.17%
Finland	1,595.97	808.50	50.66%
France	13,449.22	5,909.00	43.94%
Greece	20,210.26	9,950.40	49.23%
Hungary	24,921.15	9,044.20	36.29%
Ireland	750.72	450.80	60.05%
Italy	27,957.85	9,091.60	32.52%
Latvia	4,530.45	3,606.70	79.61%
Luxembourg	50.49	23.30	46.15%
Lithuania	6,775.49	2,127.00	31.39%
Malta	840.12	263.40	31.35%
Netherlands	1,660.00	766.70	46.19%
Poland	67,185.55	32,931.00	49.02%
Portugal	21,411.56	12,847.00	60.00%
Romania	19,213.04	2,927.10	15.23%
Slovenia	4,101.05	1738.6	42.39%
Sweden	1,626.09	895.60	55.08%
Slovakia	11,498.33	4,067.10	35.37%
United Kingdom	9,890.94	4,494.40	45.44%
	338,808.09	147,009.10	

Source: European Commission

Regarding the degree of absorption of these funds, the EU average stands at 44.87%, Latvia being the first place (79.61%), followed by Ireland (60.05%) and Portugal (60%). In contrast, the last places are countries like Bulgaria with a grade of 29% and Romania, which recorded the lowest of all Member States, only 15.23% until 1 June 2013.

At this moment Romania has effectively attracted almost 2.9 billion euros. In order to spend the entire amount would be required by 2015 to make payments worth about 17 billion euros (ie two and a half years remaining until the completion of payments, 2.5 times more than I realized since 2007).

In the period 2007 – 2013, Romania benefits for almost 19,2 bil. Euro at which is added almost 5,6 bil. Euro representing the national co-financing. Within the convergence objective, Romania has to implement 7 Operational Programmes, as follows:

Regional Operational Programme (POR), Environment Operational Programme (POS Mediu); Transport Operational Programme (POS Transport); Increasing the Economical Competitively Operational Programme (POSCCE); Human Resources Development Programme (POS DRU); Administrative Capacity Development Programme (PODCA); Technical Assistance (POS Asistenta tehnica). These 7 operational programs are financed by 3 European Funds with the following allocations:

European Found for Regional Development – 8,976 mld. Euro
 European Social Found – 3,684 mld. Euro
 Cohesion Found – 6,552 mld. Euro

Tabel no. 2 - Allocation and absorption of structural funds in Romania by operational programs - June 2013

Programe operationale	Alocari financiare	Grad de absorție - contractare %	Grad de absorți - plăți către beneficiari %	Grad de absorție - rambursari UE
POR	3,726,021,762	106.47	41.68	29.56
POS Mediu	4,512,470,138	102.03	25.23	15.7
Pos Transport	4,565,937,295	79.56	9.83	6.46
POS CCE	2,554,222,109	75.84	25.58	6.77
POSDRU	3,476,144,996	83.14	40.85	16.62
PODCA	208,002,622	114.05	33.17	24.63
POS asistenta tehnica	170,237,790	67.32	20.24	18.93
TOTAL	19,213,036,712	90.47	27.67	15.3

Source: Ministry of European Funds, Romania

Regarding the absorption degree by operational programs in Romania, transportation sector is has the absorption of only 6.77%, which in absolute mean that they were actually paid in the amount of 295 million euros, while allocations are 4, 5 billion.

On the other hand, in terms of absorption by the amounts repaid by the European Union, the best program stands for financing sustainable development policies of the eight regions (absorption rate of 29.56% about 1.1 billion of the 3.7 billion euros made available by the European Union) and the Operational Programme Building Administrative Capacity with a percentage of 24.63% (I had about 51 million euros from 208 million euros). However, in Romania, if we analyze the degree of absorption by contracts, we note that the rate is good and is at 90.47%.

CONCLUSIONS

Among the most important causes that led to the low level of accessing structural funds in Romania compared to other Member States are:

- Sharp and prolonged economic crisis in our country;
- The length of the evaluation process and selection;
- Lack of qualified staff in the local authorities;
- Procurement system involving long due to cumbersome procedures;
- Fluctuations in the euro-lei exchange rate;
- Long activities of control and audit;
- Responsibility of beneficiary of the funds;
- Fundamentation and preparation of the projects;
- Additional costs for project applications (approvals, certificates) etc.

Among the measures aimed at increasing access to structural funds, we believe that the most important are:

- ensure public funds from the national budget for project implementation;
- providing state guarantees for loans taken by public authorities to implement projects;
- increase accountability of organizations specializing in consulting in the field to handle not only the project design, but also the implementation, to the final phase of projects;
- expedite the implementation of technical assistance projects focus, especially on the training that will contribute to enhancing the expertise of personnel involved in such projects;
- revision of the eligible costs;
- improving the budgetary legislation;
- minimizing project evaluation period, accompanied by continuous monitoring of the implementation status of projects etc.

Public authorities managing Structural Funds are designed to ensure the equitable distribution of these funds to contribute to the balanced development of Romania and pursue their efficiency so as to achieve impact indicators as specified in the program. The success of the implementation of EU funds for Romania in the next programming period (2014 - 2020), is conditional on a thorough analysis of the current programming period (2013 - 2020), to determine the strengths, weaknesses, opportunities and not least of which constraints faced all actors involved in the management of these funds. Consulting firms must substantiate with maximum responsibility investment projects to help increase their success and project beneficiaries consider very carefully whether any investments to increase economic efficiency and to raise living standards in Romania.

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Organizations of social economy within market relationships – theoretical approaches

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ABSTRACT

The paper brings into discussion the issue of cooperative society and its place within other organizations of social economy. The debates in literature and personal views are emphasized and the features of civil society, cooperative society and commercial society are compared. The results show that the key of causality relationships for which cooperative societies are less representative in economy belongs to manufacturing sector, especially the industrial one. In addition, cooperative societies do not have a real potential of development without a dynamic industrial sector.

Keywords: *civil society, cooperative society, commercial society*

INTRODUCTION

Social economy of exchange is a concept that belongs to Christian Democratic doctrine according to which both economic and social criterion are important (Popa, M.et all., 2009). The organizations of social economy are economical and social players who are active in all branches, and who have specific features according to their purposes and their specific form of entrepreneurship. Social economy includes organizations such as: cooperatives, associations and foundations. These are very active in certain fields: social protection, social services, health, banking, insurance, agricultural production, local services, education, culture, sports and leisure activities (Carta Principiilor Economiei Sociale, 2002).

All organizations of modern economy, grouped in civil societies, cooperative societies, and commercial societies (Figure no.1), are based on the associative spirit of those who represent them and who are their members, regardless of issues that these become entities from juridical, economical point of view or in relation to markets. In other words, association is the process that, in horizontal approach, means the common thing linking the three categories of organizations. It express the attitude of organizations' members, attitude that brings together the members to a common purpose and make them to respect the principles and rules both general and particular, institutional.

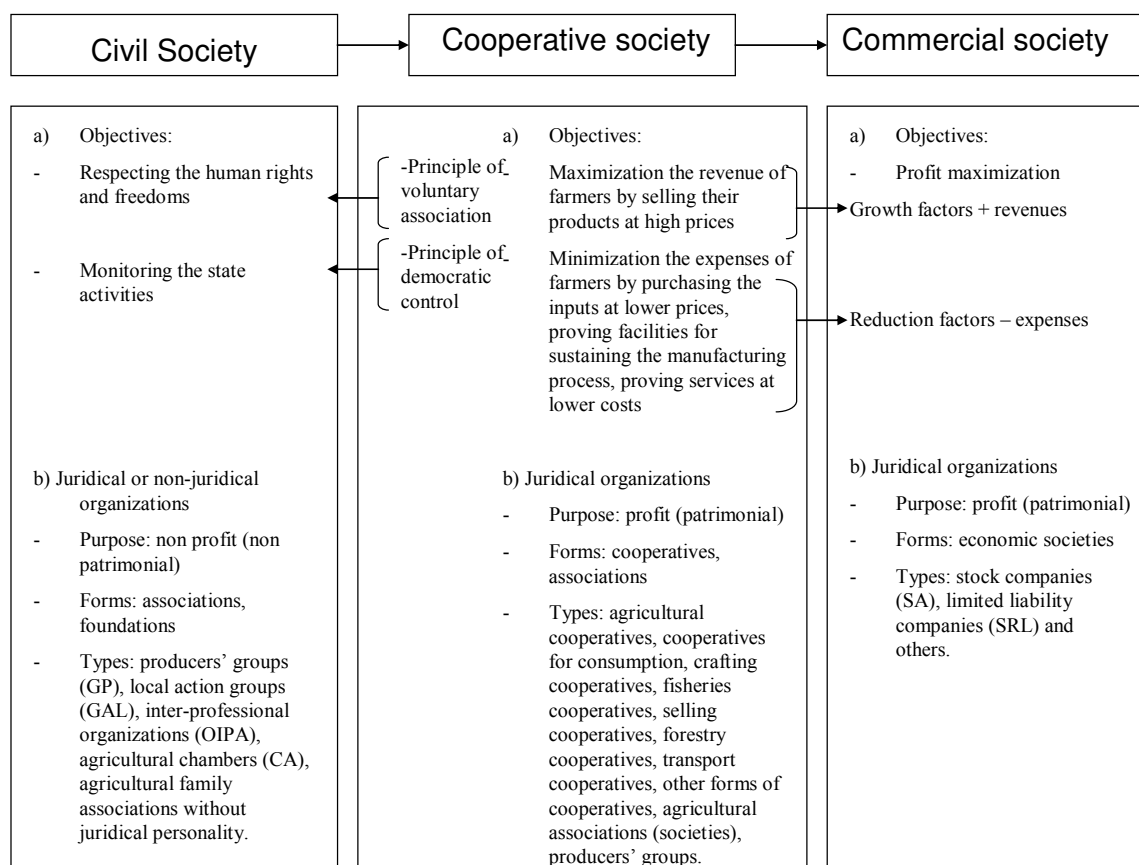


Figure no. 1 – The place of cooperative in society and economy

The three categories of organizations represent the key elements in structural approach of economies of developed countries. Their role within the general economic mechanism is well defined and personalized. For example, the commercial societies have the main target the profit maximization which ensures, in a hedonist (egoist) manner, the engine of their development. As a result, commercial societies activates exclusively only in economic field. At the opposite pole, the are organizations in the domain of civil societies, which gain the power, considering the degree of their responsibilities, imply and defend human rights and freedoms, in ethical manner in which generosity, mutual aid, tolerance, civic commitment are dominant. Because they are non profit, their activity does not imply direct economical effects. However, through all activities, these structures contribute to achieving peace and social stability, so needed for good functionality of other sectors, and, mostly, for economical ones.

COOPERATIVE SOCIETIES

Cooperative society has three main categories of organizations, lucrative, which activate in agriculture, namely: cooperatives, associations and producers' groups. These organizations represent, in a doctrinaire approach, the subject of social economy.

In European view, the cooperative society manifest itself as a private economical agent, being considered somewhere between civil society and commercial society. In relation to commercial society, the cooperative activate in double direction. Firstly, it contributes to decreasing the expenses for input purchasing at lower prices, or providing facilities to the production process through delivering services at lower costs etc. Secondly, the cooperative

society may contribute to income maximization for farmers by selling their products to higher prices. Compared to civil society, cooperative society must take actions actively for respecting human rights and freedoms and monitoring state activity. This is the reason why the cooperative society is, in equal measure, an exponent of both civil and economical, respectively commercial, societies. The transition to post-industrial society in which the energy of development will come through knowledge requires new formulas of society functionality, as a whole, for all EU member states, because knowledge based economy belongs to the strategic visions of this multinational structures. As Paul Dobrescu (Dobrescu, 2013) says, the quality leap in the case of new societies, regardless their content and nature, determined as a result of high technologies, brings, in an objective manner a new wave of invention system. The same author affirms that, for industrial society the main invention system was private propriety. In post-industrial society, there is no such a thing definitely defined. The market of knowledge can be put into the light, with their structural element that belong to agriculture and rural environment and, by extension, cooperative entities with key roles in managing informational streams from producers to consumers of information.

Between the three types of organizations, but also within them, proportional relationships must exist. They facilitate the normal functionality of economic mechanism. In the case when one or several organizational segments go dysfunctional, usually below the others, potential assembly aligns itself to the one with the weakest results. This is the typical situation of Romanian economy, which, after two decades of capitalist relationships, has not yet found nor the way, or the rhythm of normal functionality. Obvious, the main reason is the incapacity of industries, as process and distinctive activities of commercial societies, to recover themselves after the hick of reforms taken in '90, doubled by the current economic crisis.

In these conditions, cooperative sector become a victim of industry's unfulfillments. So, the key of causality relationships for which cooperative societies are less representative in economy belongs to manufacturing sector, especially the industrial one.

Sententious, we may consider that the revival of the cooperative sector is a direct result only in the conditions of industrialization process' recovery in economy. Without industries, without a dynamic industrial sector, cooperative societies do not have a real potential of development. In the process of cooperative sector's recovery and consolidation, new organizations have issued, following the European model; they act in the field of civil society, such as: local action group (GAL), inter-professional organizations (OIPA) and part of producers' groups (GP) – meaning those juridical entities set up as producers' groups, but with non patrimonial purpose, such as foundations and associations. But all these structures are not, yet, actors with experience needed to influence the good functionality of economy, in general, and of agro-food market, in particular. As a result, for accelerating the development of cooperative sector, considering the rural and agricultural ones, a new thinking in clever and innovative approach of all institutional and relationships system in economy is needed.

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Evaluation of achieved investments within the Danube Region in the metropolitan area of Vojvodina province

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ABSTRACT

Since second half of last decade Republic of Serbia is in phase of transition, which represents milestone towards its future development. Significant role in its orientation, except economy and its stakeholders, has the agriculture as well. Therefore, the process of investing in new business entities, recapitalization of existing business entities and consolidation of financial system are among the measures that can speed up the development of the market economy. At many economic entities exists unfavourable business performances, which can be seen through decrease of market share and total profitability? It has to be systematically focused on the reduction of high investment risks, mostly caused by political instability and problematic business ambient, which would increase the attractiveness of investment and stimulate domestic and foreign investors (they usually evaluate different combinations of risks and profits). In paper will be presented former level of realized investments within the economy, with special attention to the evaluation of realized investments in agriculture on the administrative area of Danube Region in Metropolitan area of Vojvodina province.

Keywords: *investments, economy, agriculture, Danube region, Vojvodina province, Serbia.*

INTRODUCTION

Territory of Danube region in Vojvodina is characterized with many factor advantages that enable the development of multifunctional agriculture, as well as development of intra-urban, peri-urban and rural agriculture. Natural characteristics of Danube region (soil, climate), gravitation towards Danube river, geostrategic position, presence of educational and research institutions, level of market development, accessibility of labour force, etc., are just some of the characteristics by which we can expect future development of municipalities within mentioned area.

For research purposes, the administrative area of Danube region within the Metropolitan area of Vojvodina province, territorially includes: city of Novi Sad (municipalities Novi Sad and Petrovaradin), city of Pančevo and municipalities Sremski Karlovci, Beočin, Irig, Indija, Ruma, Pećinci, Stara Pazova, which are interconnected by infrastructure and as such have an certain advantages for future sustainable development.

Orientation of Serbia towards European integration requires a new defining of the role and importance of the agricultural sector, as well as establishment of highly accurate conceptual framework and Strategy that will answer to key questions from the field of sustainable development. In accession process to the EU is expected to pass a many newly established reform regulations. For investors the most important will be laws concerning land and construction, as well legislative that regulates functioning of industrial and technological parks (Subić, 2012).

Investments represent the basic corporeal factor of economic and social development. From volume, structure and efficiency of investments, largely depends how and to what level will be resolved main issues of economic and social development of any country, region or local

community (economic growth, balance of economic development, employment, level of standard of living, etc.), (Subić, 2010).

One of the adopted classifications in literature divides all investments on *economic* and *non-economic*. Main function of economic investments is that it assures continuity of the production process at the same level, i.e. simple reproduction. Accordingly, their role is to by providing of replacement of deteriorated fixed assets allow the simple reproduction of production process. Also, economic investments serve to enable the reproduction of the social process of production at higher level, i.e. expanded reproduction. Investment activity is necessary element of reproduction process and main precondition for efficient material production in long-term period (Subić, 2007).

Significance of establishment of favourable business environment for all economic entities lies in dynamic investment, or in investment in new legal entities, recapitalization of existing legal entities and consolidation of financial system as one of the measures that can be used for reinforcement of the market economy development (Subic et al., 2011).

In order to create a more realistic picture of the previous course of the totally realized investments in fixed assets, in table are shown investments on the territory of the Republic of Serbia, Vojvodina province and the Danube region. Analysis covers period of ten years (2002-2011) for all mentioned regions (*Table 1*).

Table 1. Realized investments in the economy* (in 000 RSD)

Year	Serbia**	Vojvodina Province		Danube Region	
	RSD	RSD	% of total investments in Serbia	RSD	% of total investments in Serbia
2002	102.860.663	23.302.691	22,65	9.934.998	9,66
2003	115.662.223	25.682.814	22,21	8.765.018	7,58
2004	152.929.464	29.484.398	19,28	12.169.686	7,95
2005	163.549.507	29.773.399	12,20	14.058.357	8,59
2006	340.795.050	94.317.316	27,68	36.023.621	10,57
2007	482.340.888	115.475.861	23,94	40.932.479	8,49
2008	472.746.680	112.428.685	23,78	52.357.819	11,08
2009	369.438.089	88.495.250	23,95	43.239.065	11,70
2010	425.400.001	100.024.608	23,51	46.804.147	11,00
2011	493.100.031	124.208.129	25,19	76.248.636	15,46

**Investments in fixed assets;*

** *Without data for Kosovo and Metohia (with the exception for 2010).*

Source: *Municipalities in Serbia 2003-2011; Municipalities and regions in the Republic of Serbia 2012*, Statistical Office of the Republic of Serbia, Belgrade.

On the territory of the Republic of Serbia and Vojvodina province, within the observed period, from 2002 to 2007 has been achieved increscent trend of investment, while in 2008 was recorded the decline compared to 2007. Decrement of investment was the result of the global economic crisis (in 2009 it has been reached the lowest level within the period 2007-2011), while the last two years of observed period were characterized by more pronounced increase of investment within the economy in compare to 2008 and 2009. Process of the legislative reforms harmonized with the European Union (EU) legislation has led to the simplification of business operations and safeness of investment (i.e. to regrowth of investments in 2010).

On the territory of Danube Region, realized investments in fixed assets were recorded a slight decrease in 2003 (in compare to 2002), since then they have been in constant increase until 2009 when was come to decline in investment, what could be interpreted as consequence of global economic crisis (as like on national and province level). Decrease of investment was continued in 2010, while in the last researched year was recorded the most intensive investment within the

economy, which can be also presented by average growth rate of investment of 25,41% (mentioned rate for Serbia was 19,02% and for Vojvodina was 20,43%).

Having in mind the EU enlargement process, it can be said that in the future development of agricultural husbandries in Serbia significant place will belong to investments in fixed assets. They have an important role in realization of the goals and priorities of the agricultural and rural development, as they are primarily initiating instrument of quantitative and qualitative growth of all agricultural production factors and production (plant and livestock production), as well as of creation of conditions for better life in rural areas. Increase of investments in agriculture is the condition of its technical and technological modernization, but also an important factor of economic and social stability of Serbia (Subić, 2010).

Without adequate volume and well-designed structure of investments cannot be provided growth of fixed assets and permanent working capital, employment, better efficiency of the working equipment, better productivity, diversification of production, etc., on any regional agricultural and rural level, as well as at the national level (Subić, 2007).

Multifunctional approach to agriculture and rural economy development could be a good solution for Serbia, as it combines agricultural production, processing (manufacturing) activities on the farms, rural tourism and local infrastructure development, along with implementation of environmental protection measures and preservation of nature and rural heritage. So, multifunctionality provides, beside food production and contribution to food safety, different environmental, economic and social functions as well (Subić et al., 2012).

Considering realized investments in agriculture, on the territory of the Republic of Serbia, can be noted significant periodical oscillations within the entire period. The most visible variations were recorded in 2003 (decrease of 37,38% in compare to 2002) and 2011 (increase of 32,45% in compare to 2010). Having in sight Vojvodina province, it can be also seen cyclical variation of realized investments in agriculture, which was particularly expressed in 2003 (reflects a decrease of 39,39% in compare to 2002) and 2011 (increase of 296,69% in compare to 2010). Throughout the whole analysed period (2002-2011), on the territory of Danube region in Vojvodina, it was recorded very uneven trend of realized investments in agriculture. Their growth were most pronounced in 2006 (424,29% in compare to 2005), while the most expressed decline was marked in 2010 (59,61% in compare to 2009). All investments realized in agriculture within the observed period are presented in next table (*Table 2*).

Table 2. Investments realized* in agriculture (in 000 RSD)**

Year	Serbia***	Vojvodina Province		Danube Region	
	RSD	RSD	% of total investments in Serbia	RSD	% of total investments in Serbia
2002	5.206.654	2.012.596	38,65	336.822	6,47
2003	3.260.612	1.219.717	37,41	639.656	19,62
2004	3.721.166	1.702.354	45,75	321.606	8,64
2005	5.028.793	2.881.800	57,31	266.016	5,29
2006	13.250.369	5.170.798	39,02	1.128.685	8,52
2007	14.384.811	5.736.605	39,88	2.845.100	19,78
2008	21.357.929	5.306.541	24,85	5.712.181	26,75
2009	14.174.921	4.376.208	30,87	2.394.352	16,89
2010	9.219.328	2.535.698	27,50	967.014	10,49
2011	12.211.147	10.058.973	82,32	1.258.676	10,31

*Investments in fixed assets; **Agriculture, hunting, forestry and water management;

*** Without data for Kosovo and Metohia (with the exception for 2010).

Source: *Municipalities in Serbia 2003-2011; Municipalities and regions in the Republic of Serbia 2012*, Statistical Office of the Republic of Serbia, Belgrade.

Using the absolute values of realized investments in agriculture, it can be come to the average annual growth rates for the observed territories. Average growth rates in agriculture, for all three areas, are positive, where the rate achieved in Vojvodina province is higher than this one achieved on the territory of Serbia (19,58% in compare to 9,93%).

Although investment activity in agriculture on the territory of Danube Region is characterized by cyclical variation within the complete period of observation, growth rate is positive and higher than this one achieved on national level (15,77%).

MATERIAL AND METHODS

In order to conduct complete research, it was necessary to identify data/information from few sources (scientific literature and statistical publications) that are primarily related to next issues: investment, economy, agriculture and demography.

With goal to evaluate the total sum of realized investments within the economy of the Danube region in Vojvodina province, it was used the methodology which considers calculation of the volume of financial investments in fixed assets by next indicators:

- realized investments in the economy per inhabitant;
- realized investment in the economy per employed person.

In order to evaluate the total sum of realized investments in agriculture on the territory of Danube region in Vojvodina province, it was necessary to change (complement) used methodology by following indicators:

- realized investments in agriculture per employed person;
- realized investments in agriculture per unit of agricultural land;
- realized investments in agriculture per unit of arable land;
- realized investments in agriculture per unit of plough land.

As one of the indicators for determination of the investment dynamics can be used indicator investment activity per registered agricultural husbandry, according to data from affiliates of the Treasury (Ministry of Finance), as at the level of Serbia, as well as at the level of Vojvodina province and Danube region.

Way in which research follows the volume of realized investments within the territory of Danube region in Metropolitan area of Vojvodina province, can be useful for evaluation of investments in any spatial segment of the Danube region in Serbia (*Special Nature Reserve of Upper Danube Region*, which includes administrative area of the municipalities of Sombor, Apatin, Bač and Bačka Palanka, as well as the *Carpathian region* in Serbia which includes municipalities: Golubac, Kučevo, Majdanpek, Kladovo and Negotin), as like it can be significant tool within the decision making process at macroeconomic level.

RESULTS AND DISCUSSION

In order to get more realistic estimates of realized investments in the economy on the territory of Danube region indicators that relate to the territory of Serbia and Vojvodina were also used. For research were considered two years (2001 and 2011), (*Table 3*).

Table 3 Evaluation of realized investments* in economy

Indicator	UM	Year	Serbia**	Territory Vojvodina province	Danube region
Realized investments in the economy per inhabitant***	RSD	2002	13,72	10,12	14,99
		2011	68,61	64,29	110,88
Realized investment in the economy per employed person***	RSD	2002	70,52	60,96	73,59
		2011	367,19	350,57	498,35

Investments in fixed assets; **Without data for Kosovo and Metohia (with the exception for 2010); *Data were taken from the census in 2002 and Statistical yearbook 2012 (first and last year of research).*

Source: Municipalities in Serbia 2003-2011; Municipalities and regions in the Republic of Serbia 2012; Census of population in 2002 (total and agricultural population in Serbia), Statistical Office of the Republic of Serbia, Belgrade.

According to data from table above, it can be concluded that higher volume of investment in economy per inhabitant was achieved at the level of Danube region in both observed years, 2002 (1,09:1 in compare to national average; 1,48:1 in compare to level of Vojvodina province) and 2011 (1,62:1 in compare to republic level; 1,72:1 in compare to complete Vojvodina), while the lowest volume of investment per capita was achieved at the level of the province of Vojvodina.

The same results were gained if in focus is volume of investment per employed person, where in both years the largest volume of investments were made at the level of Danube region, and the smallest at the level of Vojvodina. It can be also noticed that investment activity increased in 2011 in compare to 2002, what can be explained by establishment of better conditions for business and investment (both domestic and foreign).

For more realistic estimate of realized investments in agriculture within the Danube region in Vojvodina, there were used indicators as for provincial as well as for national level (Table 4).

Table 4 Evaluation of realized investments* in agriculture**

Indicator	UM	Year	Serbia***	Territory Vojvodina province	Danube region
Realized investments in agriculture per employed person****	RSD	2002	71,84	47,46	47,16
		2011	350,74	486,81	373,83
Realized investments in agriculture per unit of agricultural land****	RSD	2002	1,02	1,13	1,18
		2011	2,45	5,65	4,43
Realized investments in agriculture per unit of arable land****	RSD	2002	1,22	1,22	1,25
		2011	2,89	6,11	4,71
Realized investments in agriculture per unit of plough land****	RSD	2002	1,55	1,27	1,31
		2011	3,71	6,38	4,93

** Investments in fixed assets; **Agriculture, hunting, forestry and water management; ***Without data for Kosovo and Metohia; **** Data were taken from the census in 2002 and Statistical yearbook 2012 (first and last year of research).*

Source: Municipalities in Serbia 2003-2011; Municipalities and regions in the Republic of Serbia 2012; Census of population in 2002 (total and agricultural population in Serbia).

After a look at the indicators in table above, it can be concluded that the greatest investment activity in agriculture per employed person in 2002 was achieved at republic level. Investment activity is almost twice time higher than investment in Vojvodina and Danube region. If other parameters are observed, it can be seen that achieved investments per unit of agricultural land, or per unit of arable land, or per unit of plough land were slightly higher in Danube region, while they are somewhat lower on other two observed levels.

On the other hand, in 2011, the largest investment activity per person employed in agriculture was recorded in Vojvodina province, while the lowest one was at the national level. For other parameters, it can be seen that the volume of investments leads in Vojvodina province.

Based on indicators of investment activity per registered agricultural husbandry, according to data of the affiliates of the Treasury, it can be concluded that the highest level of investments was realized on the level of Vojvodina, while the lowest one was achieved at the national level (2,27:1 in compare to Danube region; 2,91:1 in compare to complete Serbia), (*Table 5*).

Table 5 Realized investment per registered agricultural husbandry*

Indicator	UM	Year	Serbia (34 affiliates)	Vojvodina province (9 affiliates)	Danube region (2 affiliates)
Realized investment per registered agricultural husbandry (depending to affiliate it belongs)	RSD	2011	26.980	78.480	34.480

** Term agricultural husbandry includes legal entities and family husbandries.*

Source: According to authors' calculation. Number of registered agricultural husbandries by affiliates of the Treasury, Treasury, Ministry of Finance of the Republic of Serbia, Belgrade, 2011. Municipalities and regions in the Republic of Serbia 2012.

According to presented data, it can be concluded that the investment activity at registered agricultural husbandries is significant, as on the sub-regional, as well as on national level, and represent an important precondition for further development of agriculture.

CONCLUSION

Based on gained results of observed indicators can be concluded that investment process in complete economy and specifically in agriculture, within the territory of Danube region has positive trend in defined period. Share of total investments in economy within the mentioned region in compare to national and provincial level is characterized by linear growth, as well as it was recorded the highest average growth rate (25.41%).

Share of gained investments in fixed assets within the agriculture in part of Danube region in Metropolitan area of Vojvodina province had in last three observed years sharp decrease in total investments on national level, what can be explained by uneven trend of investment in agriculture.

According to evaluation of observed indicators it can be indicated that in next period may be expected increment of investment activities within the territory of Danube region, what can be connected with a number of factorial advantages that enable the development of multifunctional agriculture, as well as development of intra-urban, peri-urban and rural agriculture, by establishment of favourable environment for investment.

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Changes And Trends On Wine Market In Romania

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ABSTRACT

In the attempt of a wide analysis of wine sector, with accents over specific marketing particularities of this domain, this paper work wants to emphasize the following: an analysis over the economic potential of winery and the importance in the Romanian agriculture frame, the techniques and marketing approaches of a more and more competitive activity on an European and global market, but also the influence of marketing strategies in consumption decision. From this perspective, the target of the research is to find if this domain, considered by most specialists as being one of „royal blood” (in Romania) it’s really an important economic sub branch or the results of it activity are products with a high percentage of marketing in the consumption equation.

Keywords: *viticulture, winegrowing region, vineyard, export, import, demand, offer*

INTRODUCTION

Through the reasons which led to choose this research theme, we consider most relevant: Romania’s great resources regarding the agricultural surface and mainly the winegrowing (we mention here al those 8 winegrowing zones, 37 vineyards and 171 winegrowing centres, together forming a great potential), the support and attention of Romanian laws (through 244 Law from 2002 named th law of grape vine and wines), but also of the European Union’s and last but not least examples of producing wine countries such as Spain, Italy and France which made drinking history and lifestyles from wine.

These arguments encourage the wine’s research reason together with the advantages brought by the activity of obtaining grapes and wine because this culture brings benefits such as: using lands almost unproper to agriculture, very low expanses of obtaining, a product with high plus value through it’s cultural marketing elements, export and country promoting potential.

SHORT ANALYSIS OF ROMANIA’S WINE SECTOR

Romania’s agriculture, either we talk about field cultures, vegetables, viticulture or even apiculture, once with Romania’s stick to European Union, it suffered various transformations, in positive and competitive directions, we hope. We reffer here to harmonization with EU directives which can direct Romanian agriculture to higher and higher quality products, shapping and absorbing products in the commun market and supporting these on international market segments, taking into consideration the agriculture potential of the country.

In a market economy, especially emergent as Romanian’s, marked by permanents changes, analysing the wine sector represents a sine qua non condition for the existance of a lasting activity in this domain.

Starting from the fact that all variations that act over the market influences the way how the domain organizes its production, marketing and (inter)national distribution activities, thing that constitutes another strong argument in realizing the analitical frame of wine sector.

Regarding Romania's potential, below there are relevant information about the grape growing surface, almost 1,45% in 2011 from the entire agricultural surface, most of this land being private properties.

Table 1 Agricultural and vinicultural surfaces evolution in Romania between 2009-2011

Indicator	u.m	Year		
		2009	2010	2011
Total agricultural surface, in which:	ha	14.684.963	14.634.436	14.590.929
vineyards and viticultural nurseries	ha	215.382	213.571	211.347
Percentage from total agricultural surface	%	1,47	1,46	1,45
1. public property	ha	7.653	8.090	8.042
Percentage from viticultural surface	%	3,55	3,79	3,81
2. private property	ha	207.729	205.481	203.305
Percentage from viticultural surface	%	96,45	96,21	96,19

Source: Romanian Statistical Yearbook, 2013

Although Romania has today little over 210 thousands ha of vineyard, it's advantaged by the terrain's proportionality with features regarding the climate conditions. In this way, it's possible to obtain a variety of wines with different qualities. This diversity led to eight main important vitis vinifera wine growing zones such as:

- Transylvania's plateaux considered to be first vinicultural area with a surface of 14.000 ha and a medium altitude of 411 metres;
- Moldavia's plateaux or the second area with a surface of 57.000 ha which means 30% from the country's viticultural surface;
- Muntenia and Oltenia's hills or third and fourth areas where the entire surface covered by grapes for wine is of 60.000 ha, meaning 31% of the total viticultural surface;
- Banat's hills, fifth area;
- Crisana and Maramures's hills, sixth area;
- Dobrogea's hills or seventh area know through Murfatlar;
- Danube's cliffs or eighth area.

In order to understand better this areal distribution, we attached the Romania's viticultural map which reveals the fact that the most exploited area is Muntenia, followed by Oltenia and Dobrogea. The reason why is this the top 3, is because of proper pedo-climate conditions such as rich soils, the critical thermic interval in June, July and August, but also the lasting vegetation good for improving the grapes' quality.

Figure 2 Romania's viticultural map



Source: <http://vinul.ro/vinuri-romanesti-recomandate>, accessed on 20.03.2013

Nowadays, on Romania's ground are cultivated two types of vine, autochthon and foreign. Few examples of autochthon vine are: white wines (Grasă de Cotnari, Fetească Albă, Fetească Regală, Galbenă de Odobești), red wines (Fetească Neagră, Băbească Neagră) and flavoured (Tămăioasă Românească, Busuioacă de Bohotin) on the one hand and on the other hand foreign ones (white wines: Riesling Italian, Sauvignon, Pinot Gris, Chardonnay, Traminer Roz, Aligoté, red wines: Cabernet Sauvignon, Pinot Noir, Merlot, Burgund Mare, flavoured wines: Muscat Ottonel).

MARKET

Accord to a recent study of Romanian Financial Newspaper, Romanian wine's market is estimated at 350 mil. Euros, foreseeing a falling due to the decrease of customers' purchasing power which will be refocus on alcoholic substitutes such as beer.

The regulated market of bottled wine, from Romania, felt in 2011 at almost 350 mil. Euros, (bottled and unbottled wine), in comparison with 2008 and 2009 when the market was estimated at 450 mil. Euros. Special wines from premium and super premium assortment has 52% of the volume and 80% market share of bottled wine. The decrease of bottled wine market, as the consequence of the unfavorable economic context, led to an increase in the bulk segment, more affordable. Currently, there is an increase in the price of bottled wine, mainly thanks to the changing climatic conditions in Europe in recent years, which has resulted in doubling the cost of raw materials, grapes, harvest the last three campaigns. In 2012, in Romania, grape production was less than 40% of the country's wine potential.

It is envisaged by specialists that tends towards a mature wine market in the next 4-5 years due to increasing consumer interest in wine quality, better quality of Romanian wines and market fragmentation that increased market competition. Romania is ranked 10 in the world in the consumption of wine after France, Italy, USA, Germany, Spain, China, UK, Argentina, Russia, and is followed by Portugal and Australia. Statistics show that Romanians consumes 24 liters of wine / capita at half the developed countries where the consumption is 50 liters / capita / year. Romanian consumer profile is segmented according to the type of wine consumed, being classified as table wine consumer PET and of controlled origin. The latter is the core urban male consumers with average incomes and above average.

While European trend of dry red wine consumption is increasing in Romania, consumers prefer white wine, which owns about 67% of the market. Regarding the type of wine consumed, sweet and semi-dry wines are preferred, holding 85% of the wine market. The explanation is that the semi-dry wine is more accessible to a wider range of consumers, while rather dry wine is consumed by connoisseurs, and the semi-sweet and sweet is preferred by women. Estimates for the next period semidry consumption growth on the medium, and the dry super premium segment. Another trend is the increased consumption of rosé wine especially in the warmer seasons.

Regarding the potential capacity of the wine market in Romania, a simple calculation, taking potential demand adult population of 16,902,930 people, which according to the dietary recommendations should consume approx. 2 glasses of wine with every meal and 200 ml/day 6 times a week, get potential market capacity 9,736,087.68 hl per year, that individual consumption of 57.6 liters / person / year.

However, things are slightly different from the actual market of Romania, because currently consumes is 24 liters / person / year, which translates into a domestic sale of 4.056.703,2 hl / year which means drinking a glass of wine/day, 5 times/ week. At a superficial analysis, we can clearly see that although the market potential is approximately 9.7 million hl of wine per year, Romania recovered only half of these and 4 million hl, which means that the market is unsaturated and needs a hedging strategy. Employers According to National Vine and Wine, statistics on the trade balance of the wine is as presented in table 3.

Table 3 Romania's wine import and export evolution

Year	Import		Export		Trade balance	
	(2011 first 10 months)		(2011 first 10 months)		(2011 first 10 months)	
	Thousand Euro	HL	Thousand Euro	HL	Thousand Euro	HL
2007	29.045,11	388.577	12.005,21	149.363	-17.039,90	-239.214
2008	35.644,42	378.828	15.752,91	139.420	-19.891,51	-239.408
2009	14.813,70	134.641	13.726,75	108.949	-1.086,95	-25.692
2010	20.706,06	224.913	12.844,13	98.124	-7.861,93	-126.789
2011	38.134,46	734.650	12.629,30	87.250	-25.505,16	-647.400

Source: Employers National Vine and Wine

We see from the table above that the wine trade balance was negative in 2007 and now, noting that in 2011 wine imports exceeded 25.505,16 thousand euros or 647 400 hl. One question of this phenomenon could be considered very poor harvest in 2010, which led to wine producers to import bulk wine from Spain and Italy that have mixed with local wine which was sold under the label "made in EU" as PNVV. Regarding the origin of imported wine in Romania, table 4 provides relevant data.

Table 4 Provenance of wine imports in 2011

Country	Quantity (tones)	Value (thousand Euros)
Spain	61.627,10	22.688,70
Italy	13.603,40	9.625,40
Bulgaria	5.550,40	2.047,90
Moldavian Republic	3.190,60	2.172,40
Germany	2.126,90	3.026,10

Source: National Institute of Statistics, National Customs Authority

Thus, it is evident that the highest values of the Romanian market of wine imports from Spain and Italy EUR 22.688 million and 9.625 million respectively euro. What is surprising, is that Moldavian Republic is an exporter for more than 2 million (on Romanian market), although its wine producing potential is significantly reduced.

Demand

Wine consumers can be distinguished, in the first instance, from the wine category they prefer; table wine often consumed at home, social events or top-quality wines that are found HORECA division, where specialists are encouraged to have an educational and unintimidating attitude in front of their customers. So, we can simply say that the wine is a beverage for adults (over 18 years), in Romania are estimated at 16,902,930 persons as NIS, and they can be individual or domestic consumers and those that take the form of legal personality.

Based on the duality of table wine, enological marketing specialists have managed to develop over time profile of the types of consumers who prefer Romanian wines, European quality wines consumers who raises the quality bar, consumers of wine with a higher concentration of sugar or alcohol, with an income less than or greater than they are willing to allocate for purchasing wine, based on consumption moments or important events etc.

So the wine sector clients are from specialists point of view of strongly segmented by age, area, education and occupation, sex, culture, food habits etc.

Offer

The main producers representing national offer of Romanian wines are divided by geographical areas of production, according to www.producatori-vinuri.ro as follows:

- in Dobrogea: Murfatlar România, Karom Drinks, Vinvico Constanța, Fruvimed, Viticola Sarica Niculițel, Alcovin SRL, Ovidius Mercado;
- in Banat: Cramele Receaș, SCDVV Minis;
- in Transilvania: Jidvei, Prescon Mureș;
- in Oltenia: Carl Reh Winery, Vie Vin Vânu Mare, SD Banu Mărăcine, Domeniul Coroanei Segarcea, Viticola Corcova;
- in Moldova: Bucium Iași, Cotnari, Vinia, SCDVV Iași, Vincon Vrancea, Veritas Panciu, Vinuri Nicorești, Prowine International, SCDVV Odobești, Ramex, Bachus, Casa de vinuri Huși, Crama Gârboiu, Roni Vin;
- in Muntenia: Provinum, S.E.R.V.E., Vinterra International, Cramele Halewood, Budureasca, Videlmar, DVFR, ICDVV Valea Călugărească, SCDVV Stefănești-Argeș, Tohani, Cramele Rotenberg, Rovit, Fontana di Vini, Davino.

It is noted that large number of wine producers is in Moldova and Muntenia, and the reasons for this have in mind the case of Moldova, where the surface area of almost 68 000 ha is planted with grape vines, and Muntenia's very favorable climate which helps to achieve high-quality crops.

Also, the national supply of wine includes and wine importing companies on the domestic market (see table below); they were significantly reduced in numbers, as it should be normal in a country with a long tradition in the viticultural production. The problem is where this small number of importers are those that bring the greatest quantities of wine on the Romanian market, which strengthens the statement "Romania, importing wine country" and not "Romania, producing wine country", but this is difficult to quantify with no relevant data.

Table 5 The main importers of wines on the Romanian market

Dobrogea	Banat	Transilvania	Oltenia	Moldova	Muntenia
VINIMONDO Import SRL	Everest Management Group SRL	Nuestra Enora de la Cabeza S Coop	Vina Vera Impex SRL	Vino Vero SRL	Zarea SA
BDG Import SRL	Cramele Recas	ValpratoVini	DupontVins	Iceburg Distributie	Lerida International LeManoir
Cramele Halewood SA					

Source: <http://www.producatori-vinuri.ro/>, accessed on 15.04.2013

From a quantitative point of view, we can say, based on information provided by MAPDR, that the offer intended for consumption on the market is shown in the data below, but even here we can make sure that the total quantity of wine imported was intended only Romanian consumption. It can take into account the version that massive imports were made for bottling and calibration to take the road to other markets, especially foreign.

Table 6 Balance supply situation in 2011

2011 import		
Country	Quantity (tones)	Value (thousand Euros)
<i>Spain</i>	61.627,10	22.688,70
<i>Italy</i>	13.603,40	9.625,40
<i>Bulgaria</i>	5.550,40	2.047,90
<i>Moldavian Republic</i>	3.190,60	2.172,40
<i>Germany</i>	2.126,90	3.026,10

Source: MADR 2011

The balance of supply provided by MADR shows that wine export leader on the Romanian market is Spain with a quantity of more than 61 500 tons of wine, worthing 22.688 million of euro. We also note the absence of France from the table, which could be translated into a lack of interest of Romanians for the culture of French wines, lack of revenues or a decrease, or the wine quality that influence its price upside.

It is also worth noting the presence of Moldavian Republic in the wine list of exporters in Romania, given the country's resources, production technology, logistics and integrated services. We can mention here that although Moldavian Republic has a very deep tradition in viticulture and no significant resources, "plant" Cricova is already a brand of country through which the state can retread the place of wine in the European market.

Price

With regard to the production cost of a liter of wine, things are more complicated since a large extent contributes to the variety of grape the wine is produced, if obtained from a single kind or a coupaj, if is from the recent harvest and enjoyed a period of growing. This is why the values vary from one farmer to another, from one process to another, depending on many factors.

Ministry of Agriculture provides a number of statistics regarding average purchasing price of a kilo of grapes in the post EU accession.

Table 7 Average purchasing prices of grapes

Specification	UM	2007	2008	2009	2010	2011
Average purchase price for wine grapes	lei/kg	0,89	1,28	1,08	1,54	1,36

Source: MADR

If we consider the hypothetical principle of obtaining wine, namely that an average of two pounds of grapes to obtain a liter of wine, a simple calculation, we can deduce that the average purchase price of a liter of wine was in 2011 approx. 2.72 lei/l, 36 money down from 2010 when the price of a liter of wine was 3.08 lei. This share calculation is useful in assessing the value added chain that can be found on wine so that the price of wine average quality is on the shelf of a supermarket to an average of 15-20 lei / bottle.

Competition

Romanian wine sector competitors are grapes and wine large producing countries such as the EU, America, Australia, Oceania, noting that the major competitors of Romania in this market are France, Italy, Spain, Germany.

Among the most representative producer of these countries, we can include:

- *in France*: Baron Philippe de Rothschild Mouton Cadet, Laurent Perrier, Louis Jadot, Clement Kur, Chateau Naudon, Chateau Pierrail, Cattier, Cordier Mestrezat&Domaines, LesVignerons de la Mediterranee Cuvee Mithique, LesVignerons de l'Enclave des Papes Chateauneuf du Pape, Cellier des Dauphins Prestige, Les Dorinnes, Coeur Mediteranee, Fleur des Barronies, Tassee Maison Chardonnay, St Jean Vieux Cellier, Martin Laurent Brut, Vin mousseux Montparnasse Brut, Vin mousseux Pol Clement Brut, Vin mousseux Duc de Paris Brut, Andre Lurton, SC VINLUX SRL;
- *in Italy*: Pasqua, Piccini, Valiano, Ca' De' Medici, Principe di Pratameno, Colledegli Aranci, Curria Rosso, Curria Bianco, Nero d'Avola, Oronero in barrique, Zibibbo (vino liquoroso), AntinoriSolaia, AntinoriTignanello;i
- *in Spain*: Mas La Plana Cabernet Sauvignon, Fransola Sauvignon Blanc, GransMurales, Reserva Real, Vina Esmeralda, Gran Vina Sol, Gran Coronas Cabernet Sauvignon, Gran Sangre de Toro, Atrium Merlot, Vina Sol, San Valentin, Castell del Remei, Principe de Viana, Vina Roniel, Oak Vina Roniel, Lagar Divino, Freixenet Carta Nevada, Cordon Negro, Brut Barocco si RosadoSeo;

Strengths relative to competitors:

- High pedoclimatic potential favors vine cultivation throughout the country;
- Areas planted with noble grape vines already occupy large areas of land that determines the integration activity of grape production, processing, bottling and marketing it.

Weaknesses in relation to competitors:

- Most of the surface structure of hybrid varieties cultivated grape-vine (89 100 ha vineyard vines hybrid of the total 181 300 ha) which influence the quality of wine obtained;
- Atomicity areas cultivated with hybrid varieties;
- High productivity gap, the average yields per ha of the country are at the middle values of the EU;
- Reduced acreage, although it is a perennial crop, grape-vine was cleared in a fast rythm.

WINE MARKETING'S INFLUENCE OVER CONSUMPTION

In order to obtain a panoramic situations wine consumer preferences, it must "communicate" with them through various means such as interview, questionnaire, telephone dialogue or during a short tasting etc., provided that the information collection strategies must be initially homogeneous to outline a general profile of Romanian wine consumer, and then in increasingly customized in order to divide consumers into specific categories.

The analytical part of this paper is based on a questionnaire of 25 questions that seek to identify the role that marketing plays in the puzzle of wine consumption, taking into account the variety of products on the market and competition.

Interest is manifested especially on high quality wine consumers and not to those who consume table wine because we believe most challenging analysis of a socio-cultural profile of the consumer who understands the phenomenon of consumption as a gesture, not an instinct. In this respect, opting for adults over 30 years because it takes into account preference youth consumption of spirits or beer in space club/terrace, with a net monthly income exceeding the average income, highly educated.

We consider these criteria as priority for research is to identify highly sensitive border between sporadic and consumer reasons its transformation into a sustainable, conscious of the benefits of this product.

Also, the target of this study is to determine the role of marketing and what types of strategies could have a significant impact on the growth of wine consumption in Romania, especially the consumption of autohtone. Therefore be intended to induce the mind consumer consumption of wine as a symbol of the state individual socio-cultural scale, the connection between wine and religion wine as a cultural and artistic element, part of the tradition and history, and pioneer gnoseologic. So, a marketing strategy leading to positive results in terms of consumption levels should be based on these landmarks of cultural and psychological.

In the final report, due to the previously analyzed, we can say that marketing plays an important role in increasing the consumption of wine, but this segment of red wine consumers are more reluctant, and strategies need to be adopted so as not to be aggressive because the result consumer may be reject.

CONCLUSIONS

In conclusion, the role of marketing is to increase brand value, to make it more than worth the time, energy and money. It requires a clear vision, a good understanding of the rules of marketing, dedication and discipline to avoid mistakes that can affect the image and brand value. Mark must stand out from the crowd and have a distinct place in the consumer's mind. All wine producers should be able to answer the following question: Why is their wine so different and should be consumed? Unfortunately, many do not know where or how to start and repeat the mistakes of a few tens or hundreds of other manufacturers and is expected to result in something unique. In time, they realize that they only mimic what is already on the market.

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A theoretic model for defining complementarity links among regional development interventions in Romania

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ABSTRACT

The year 2013 marks a key milestone for the regional development of Romania, being at the same time the final year of the first programming period of the nonreimbursable assistance received by Romania as a fully-fledged member of the European Union and also a decisive year for the preparations for the future 2014 – 2020 programming period. This is the moment when both accomplishments and obstacles encountered in the last seven years should be analyzed in order to identify the lessons learned and to improve the future regional development process of Romania. In this context, this paper focuses on the concept of complementarity in the field of regional development. The purpose of the paper is to propose a theoretical model for identifying the complementarity links among regional development interventions, introducing a definition and a typology of this concept, along with some implementation means.

Keywords: *complementarity, regional development, e-cohesion, structural instruments, double financing*

INTRODUCTION:

At a first glance, the concept of complementarity seems easy to understand, but finding a comprehensive definition for it, in the context of regional development is a challenging task, taking us back to the year 1975 and forward to the year 2020. In this paper, we will follow this path in time, starting from the relevant literature in the field, in order to build a theoretical model for defining the complementarity links among regional development interventions in Romania.

Due to the fact that the concept of complementarity is a requirement of the European Union regulations in the field of regional development, the first step will be to analyze how this concept is approached and used in these regulations. The evolution of the different meanings that were associated to it and the other related concepts will be scrutinized. The second step will be to identify the views on this subject of other European Union member states and national institutions, by analyzing several documents and studies covering this topic.

Finally, on the basis of the findings from the previous steps, the paper will introduce a definition of the complementarity concept in the field of regional development and a classification of the main types of the complementarity links identified, with examples of Romanian projects.

COMPLEMENTARITY – REQUIREMENT OF THE EUROPEAN UNION REGULATIONS IN THE FIELD OF REGIONAL DEVELOPMENT

The concept of complementarity has been mentioned since the very first European regulations establishing the funds that the European Community was setting up for promoting a balanced development of the European regions. As such, Council Regulation no. 724/75 of 18th March 1975, setting up the European Regional Development Funds (ERDF), mentions in the preamble that "the Fund's assistance should not lead Member States to reduce their own regional development efforts but should complement these efforts" (The Council of the European Communities 1975, page 2). This type of complementarity is explained in the first annual report for ERDF by the fact that the amounts provided by the European Community were meant to be added to the ones the member states would have allocated in the absence of the Community assistance. As such, the report equals complementarity with additionality, the section dedicated to the complementary character of the ERDF and of the national measures focusing exclusively on additionality and topping-up.

Council Regulation no. 2052/1988 includes for the first time the term complementarity in the title of a separate article, article 4 – *Complementarity, partnership, technical assistance*. This article mentions that „Community operations shall be such as to complement or contribute to corresponding national contributions" (The Council of the European Communities 1988, page 12). In this context and related to the aspects of complementarity, the regulation introduces the partnership principle, according to which the Community interventions must be made following consultations between the European Commission, the member state and other national, regional and local authorities, acting as partners in this process. Mentioning complementarity and partnership together in the same article is not accidental, given that the partnership plays an important role in ensuring that the different interventions financed by national or European funding sources complement each other, because it implies large consultations, involving many actors relevant for the setting-up and the implementation of the programmes financed by the European funds.

Council Regulation no. 1260/2006 separates for the first time the concepts of complementarity and additionality, dedicating a separate article for each concept. Article 8 – *Complementarity and partnership* mentions that „Community actions shall complement or contribute to corresponding national operations", while article 11 – *Additionality* introduces the requirement that „the appropriations of the Funds may not replace public or other equivalent structural expenditure by the Member State" (The Council of the European Union 1999, pages 12, 14).

As far as the current programming period 2007 – 2013 is concerned, Council Regulation no. 1083/2006 continues to approach complementarity and additionality in a distinctive manner. As opposed to the previous regulation, the complementarity concept is included this time together with notions such as consistency, coordination and compliance, the partnership principle being presented in a separate article. As such, article 9, named *Complementarity, consistency, coordination and compliance* mentions the fact that „the Funds shall provide assistance which complements national actions, including actions at the regional and local levels, integrating into them the priorities of the Community" (The Council of the European Union 2006, page 38). Also article 9 includes the obligation of the European Commission and of the member states to ensure the coordination of the financial assistance provided by the EU funds, namely the European Regional Development Funds (ERDF), the European Social Fund (ESF), the Cohesion Fund (CF), the European Agricultural Fund for Rural Development (EAFRD) and the European Fisheries Fund (EFF) and other existing financial instruments. Commission Regulation no. 1828/2006 mentions complementarity with other financial instruments as a dedicated chapter within the annual implementation report, requiring the member states to briefly present the procedural and institutional measures taken

in order to ensure the „ demarcation and coordination between the assistance from the ERDF, the ESF, the Cohesion Fund, the EAFRD, the EFF, and the interventions of the EIB and other existing financial instruments” (European Commission 2006, page 90). This is the first time the notion of demarcation is mentioned in the context of complementarity, in the sense of avoiding the overlap between the investments made by these funds.

The complementarity concept is mentioned also by the draft regulations covering the future programming period 2014-2020. The general principles mentioned in article 4 still include the requirement that „the Funds shall provide support, through multi-annual programmes, which complements national, regional and local intervention” and that both the European Commission and the member states must ensure that the support from the Funds „is consistent with the policies and priorities of the Union and complementary to other instruments of the Union.” (European Commission 2012, page 32). In Annex 1 of this regulation, the concept of complementarity is widely approached, being mentioned for the first time together with the notion of synergy. As such, in the section dedicated to the coordination mechanisms of the funds, the regulation stipulates that the member states and the managing authorities have to identify „areas of intervention where the CSF Funds can be combined in a complementary manner to achieve the thematic objectives”. Also, as far as the coordination of the EU funds with other Community policies and instruments is concerned, member states have to „identify and exploit complementarities among different Union instruments at national and regional level, both in the planning phase and during implementation” (European Commission 2012, pages 124 -125).

Some conclusions can be drawn from the analysis of the way the EU regulations approach the concept of complementarity (see the synthetic presentation in Table 1). First of all, it is important to notice that these regulations do not provide a clear definition of complementarity, although it is mentioned as a requirement for both the European Commission and the member states. Secondly, there are other concepts related to the concept of complementarity (see Fig. 1), such as additionality, seen initially as an equivalent for complementarity, coordination with other financial instruments, partnership, potential means of ensuring the complementarity of the funding sources, demarcation, to avoid the double financing, and synergy in order to multiply the effects of the financial instruments.

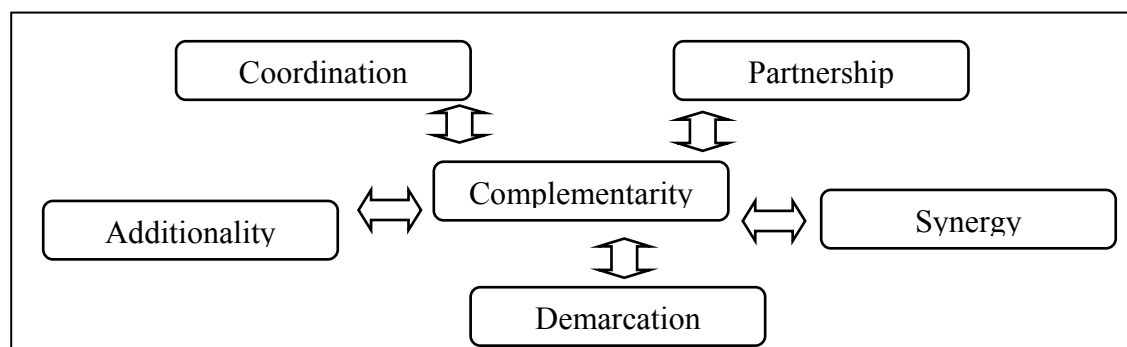
Table 1. Synthetic presentation of the way the EU regulations approach the concept of complementarity

Timeframe	Reference to complementarity	Regulation
1975 - 1987	Ensuring complementarity of Community and national resources. <i>Complementarity = Additionality</i>	Council Regulation no. 724/75 of 18 March 1975
1988 - 2006	The concept of complementarity appears in a separate article (article 4 – Complementarity, partnership, technical assistance). The partnership principle is introduced next to complementarity.	Council Regulation no. 2052/1988 Council Regulation no. 2081/1993
2007 - 2013	Distinction is made between complementarity and additionality, each one being the subject of a different article. In the context of complementarity, appears the notion of demarcation.	Council Regulation no. 1260/2006

Timeframe	Reference to complementarity	Regulation
2014 - 2020	Special attention is granted to the concept of complementarity. The notion of synergy is introduced. Combining funds in a complementary manner. Complementarity among activities.	Proposal of regulation of the European Parliament and the Council COM(2012) 496 final

Source: Authors' adaptation

Fig. 1 Notions related to the concept of complementarity



Source: Authors' adaptation

THE CONCEPT OF COMPLEMENTARITY IN OTHER DOCUMENTS AND STUDIES PREPARED ON THIS TOPIC AT NATIONAL AND INTERNATIONAL LEVEL

The concept of complementarity has been approached by several studies and documents at the national and internal level. As such, according to a study elaborated by the Polish Ministry of Regional Development regarding the complementarity and synergy among the projects financed by the structural and cohesion funds and the ones financed by the European Agricultural Fund for Rural Development, the concept of complementarity can be approached on 3 different levels: that of policies, of programmes and of projects. Focusing on the last two, the study defines complementarity as "mutual complementing or completing of types of projects or projects" (EGO 2010, page 20). At the programme level, the study analyzes the possible complementarities among the different types of projects. At project level, taking into consideration their specificities, the study suggests 3 features of projects that could generate complementarities: project location (**spatial complementarity**), thematic scope of the projects (**thematic complementarity**) and the process of preparation and implementation (**process or institutional complementarity**) (EGO 2010, page 20). Trying to define complementarity, the study uses a basic economic concept – the complementary goods. As such, 3 types of complementarity links can be identified between projects (EGO 2010, page 20):

- type A – two projects thematically or spatially complementary that can achieve their results independently from one another;
- type B – two projects thematically or spatially complementary out of which only one can achieve its results independently from the other;
- type – two projects thematically or spatially complementary out of which none can achieve its results independently from the other.

Another study approaching the complementarity concept, this time from a sectoral perspective, focused on the transport infrastructure projects from Poland. The study aimed at

verifying the level of the **internal complementarity** (i.e. among road infrastructure projects financed from the Integrated Regional Operational Programme) and of the **external complementarity** (i.e. among the road infrastructure projects financed from the Integrated Regional Operational Programme and the projects finalized or in implementation financed from other financial sources, such as the pre-accession assistance – PHARE, ISPA and SAPARD, the post-accession assistance – Transport Operational Programme, Interreg or the ones financed exclusively from the national budget).

The definition of complementarity used by this study is specific to the road infrastructure field: „Complementarity is a feature that is revealed by the coexistence of roads in the same area. Particular attention should be paid to whether the road projects are linked or otherwise form a coherent road network” (KANTOR Management Consultants 2008, page 20). The study identifies 3 components of complementarity: **functional complementarity** – given by the positioning of the roads in relation to the passenger and freight flows from a given region; **geographical complementarity** – given by the proximity of the roads; **operational complementarity** – given by the category that the roads belong to.

Another study approaching the concept of complementarity, also from a sectoral perspective, focuses on the social infrastructure projects from Poland. The study defines complementarity as a link between projects or activities, which generates, in most cases, synergy effects, approaching the concept both at the level of individual projects by means of case studies and at the level of 840 projects by means of a quantitative analysis. The study identifies 3 types of complementarity links that can occur between two social infrastructure projects (Policy & Action Group Uniconsult 2009, pages 100-102): **operational complementarity**, regarding the implementation process of projects; **functional complementarity**, regarding the results of the projects and **network complementarity**, between projects that are operationally and functionally independent but cover uncovered areas in a network of services, completing the available services.

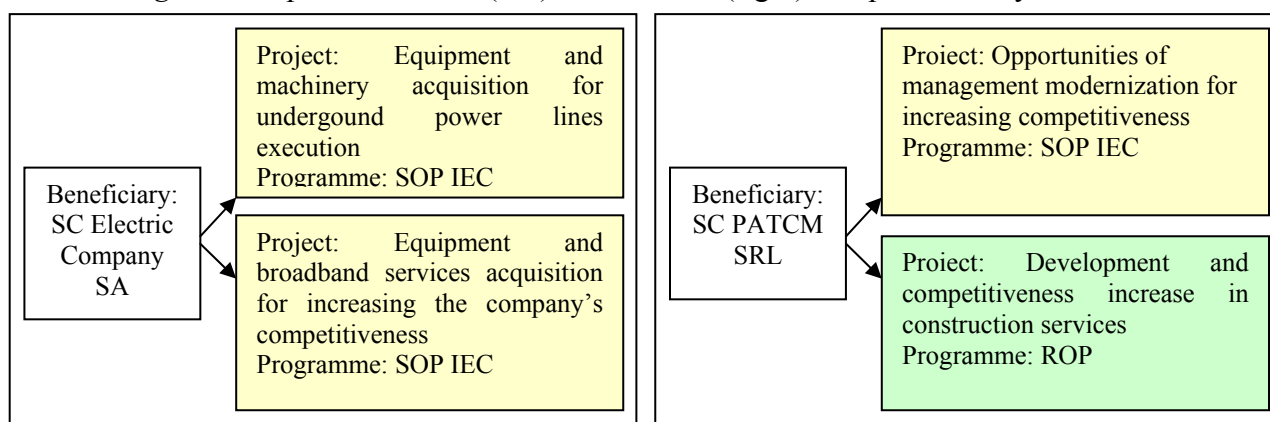
Also, within the 2007-2013 National Strategic Reference Framework of Romania, there is a dedicated chapter to implementation and complementarity which highlights the importance and necessity of setting up clear criteria for demarcation and complementarity in order to ensure the successful implementation of the programmes financed by the European Union both by the structural instruments (ERDF, ESF and CF) and by the funds dedicated to the fisheries and rural development. Within this document, the concept of complementarity is approached in 3 ways: among the programmes financed by the structural instruments, among the programmes financed by the structural instruments and the ones financed by EAFRD and EFF, and among the programmes financed by the structural instruments and the funds provided by the European Investments Bank or other financial institutions. Several demarcation/complementary principles are mentioned, such as the relevance for the national or regional development (for instance national or regional roads), the purpose of the intervention (infrastructure, services, etc.), the economic sector concerned (support for companies in a specific economic field completed by the training of the workforce) (Government of Romania 2007, pages 163-164). Just to mention a few examples: the national roads and the motorways are financed by the Sectoral Operational Programme Transport, while the county roads are financed by the Regional Operational Programme. The business infrastructure (other than the scientific and technological parks) of national and international level is financed by the Sectoral Operational Programme Increase of Economic Competitiveness whereas the infrastructure of regional or local interest is financed by the Regional Operational Programme.

A THEORETICAL MODEL FOR DEFINING COMPLEMENTARITY LINKS AMONG THE REGIONAL DEVELOPMENT INTERVENTIONS FROM ROMANIA

On the basis of all the aspects mentioned above, we propose the following definition of complementarity among the regional development interventions: *complementarity represents a characteristic of the interventions having an impact on regional development, implemented in a given location or geographical area, which, regardless of their funding source and without overlapping, either cannot achieve their expected results if they are not both implemented or the result of implementing them both is higher than when only one is implemented.* This definition implies that the more the complementarity links between projects are identified and promoted, from as many financial sources as possible (national, regional, local, European etc.), the more impact they will have on the development of the regions of Romania.

The complementarity links can be identified at different levels, between funds, programmes, types of interventions, projects and activities. These links can be classified according to several criteria. A first such criterion is the funding source, depending on which we can distinguish between internal complementarity, among projects financed by the same programme or financial instrument, and external complementarity, among projects financed by different programmes or financial instruments (see examples in Fig. 2). The internal complementarity is easier to identify as in most cases a programme or a funding opportunity is managed by a single authority. Identifying the links of external complementarity is more challenging as it implies an efficient collaboration and communication among several institutions and authorities, responsible for those programmes or financial instruments.

Fig. 2 Examples of internal (left) and external (right) complementarity links



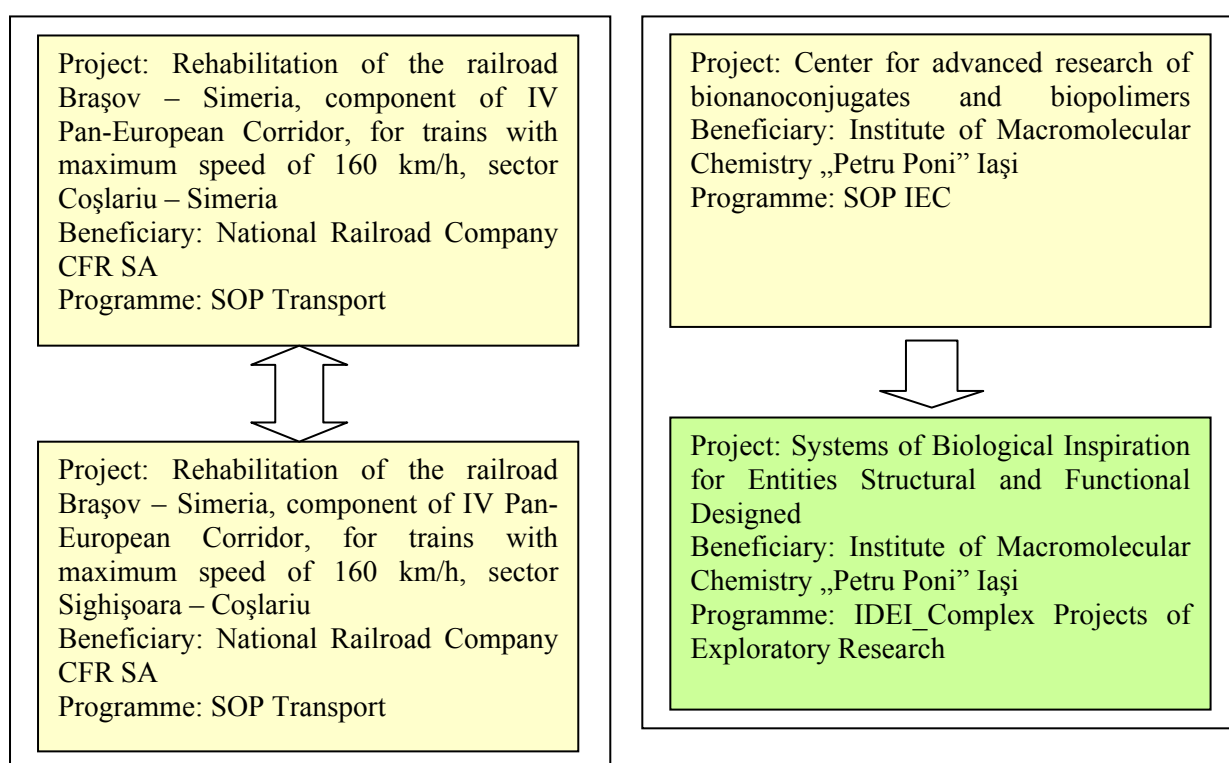
Source: www.fonduri-ue.ro (section List of contracted projects 31 July 2013) accessed on 24.08.2013

Another criterion is the intensity of the complementarity links, depending on which we can distinguish between general complementarity (between types of projects) and specific complementarity (between individual projects). As such, general complementarity links can be identified among strategies, programmes etc., as for instance among the training projects for the small and medium size enterprises financed by the Sectoral Operational Programme Human Resources Development and the productive investments made for these enterprises by the Sectoral Operational Programme Increase of Economic Competitiveness in the same activity fields. The specific complementarity can be identified at the level of a specific project.

Another classification criterion is the impact of the complementarity relation on the expected results of the interventions, depending on which we can identify 3 types of links: bilateral conditional complementarity, when none of the projects can achieve its results independently (for instance when financing via separate projects a complex investment objective), unilateral

conditional complementarity, when one of the projects in question cannot achieve its results if the other project is not implemented (for example the extension of an investment) and unconditional complementarity, when both projects can achieve their expected results independently but the overall result is higher than the results obtained if only one project was implemented. Examples of bilateral and unilateral conditional complementarity are presented in Fig. 3.

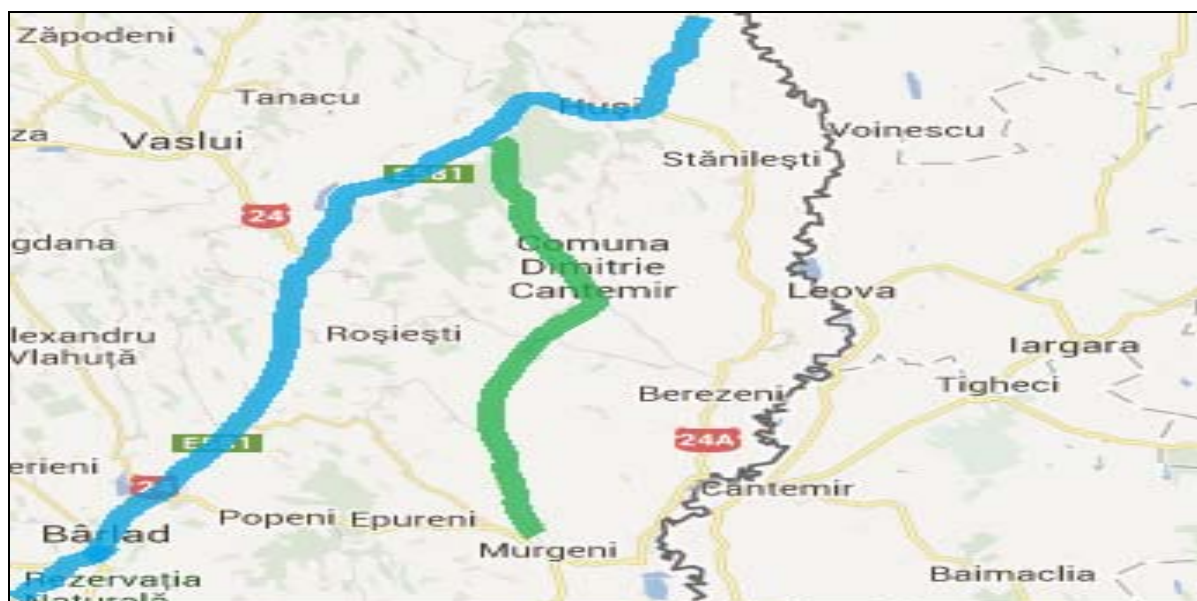
Fig. 3 Examples of links of bilateral (left) and unilateral (right) conditional complementarity



Source: www.fonduri-ue.ro (section List of contracted projects 31 July 2013) and www.intelcentru.ro, accessed on 24.08.2013

Another classification criterion is the content of the interventions, depending on which we can establish spatial complementarity, based on the geographical location of projects (for example between transport infrastructure projects from the national, regional and local levels – see example in Fig. 4), thematic complementarity based on the content of the projects – objectives, activities, expected results (for instance between equipment acquisition projects and training projects) and process complementarity, generated by the fact that the projects are implemented by the same beneficiary.

Fig. 4 Example of a spatial complementarity link between two road infrastructure projects



Source: Authors' adaptation of information available at www.proiecte.inforegionordest.ro/ and www.infrastructura-rutiera.ro, accessed on 24.08.2013

The complementarity links between projects can be also classified by the effect of the complementarity relation on projects. As such, we can distinguish direct complementarity, when projects are directly affected by and indirect complementarity, when projects are indirectly influenced. For instance, the transport infrastructure projects implemented in an area have an indirect positive effect on the other projects implemented in that area. The different types of complementarity links among the interventions that have an impact on regional development are synthetically presented in Table 2.

Table 2 Typology of complementarity links

Classification criterion	Type of complementarity link	Explanation
1. the funding source	internal complementarity	among projects financed by the same programme or fund
	external complementarity	among projects financed by different programmes or funds
2. intensity	general complementarity	among types of projects
	specific complementarity	among specific projects
3. impact on expected results	bilateral conditional complementarity	none of the projects can achieve its results independently
	unilateral conditional complementarity	one of the projects cannot achieve its results if the other project is not implemented
	unconditional complementarity	both projects can achieve their expected results independently but the overall result is higher if both implemented

Classification criterion	Type of complementarity link	Explanation
4. content	spatial complementarity	based on the geographical location of the projects
	thematic complementarity	based on the content of the projects: objectives, activities, expected results etc.
	process complementarity	generated by the fact that the projects are implemented by the same beneficiary
5. effect	direct complementarity	with a direct effect on projects
	indirect complementarity	with an indirect effect on projects

Source: Authors adaptation

CONCLUSIONS

The theoretical model for defining complementarity links among regional development interventions presented above can be used for a double purpose. First, it allows a better identification of possible cases of double financing (requesting and financing an item of expenditure from more than one funding source – EU budget, national, regional or local funds), especially at the level of the appraisal of financing proposals, by highlighting the potential overlap of interventions. This kind of verification could be added to the ones performed on the expenditures declared by beneficiaries. Going further than just avoiding double financing, by identifying the links among the projects, synergy effects could be obtained, which would increase the impact of interventions on the development of the regions. The implementation of projects that do not complement each other, although justifiable by existing needs or by the necessity of ensuring a minimum level of investments in all regions and areas of a country, could be progressively replaced by the implementation of projects that are linked to one another, creating a more consistent impact.

Nevertheless, the applicability of the model depends on the availability of accurate and complete information about regional development interventions, financed by the different existing financial sources (structural instruments, national budget, local budget, etc.). An important step in gathering this kind of information in a format that allows processing will be most certainly made in the future 2014-2020 programming period, for which the proposed regulations include the so-called “e-cohesion” requirement, according to which the member states have to provide to the beneficiaries the possibility of exchanging all information with the authorities responsible for managing the structural instruments solely by electronic means.

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Characteristics and strategies for the development of pig meat sector in Moldova and the European Union

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ABSTRACT

Currently, the countries of the world are bred several hundred different breeds of pigs on color as well as the direction of productivity, and they are bred by crossing a number of species, reasonable selection of the best animals, the selection for the desired type and direction of growth of new generations. The greatest influence in the process of formed played a large white breeds formation, and is now widely used by Yorkshire, Landrace, Duro, Hampshire, specialized in meat production. Recently, there has been a pronounced tendency to increase the production of pork meat that are in high demand among the population. In addressing the problem of pig meat in the world has a leading role in the meat and pork balance steadily ranks first (36%).

Keywords: *meat production, food demand, pig breeds, productivity*

INTRODUCTION

Currently, the countries of the world are bred several hundred different breeds of pigs on color as well as the direction of productivity, and they are bred by crossing a number of species, reasonable selection of the best animals, the selection for the desired type and direction of growth of new generations. The greatest influence in the process of formed played a large white breeds formation, and is now widely used by Yorkshire, Landrace, Duro, Hampshire, specialized in meat production.

Recently, there has been a pronounced tendency to increase the production of pork meat that are in high demand among the population. In addressing the problem of pig meat in the world has a leading role in the meat and pork balance steadily ranks first (36%).

MATERIAL AND METHOD

To analyze the specificity of development of pig meat sector were used official data from the National Bureau of Statistics of the Republic of Moldova, Statistical Abstract of the United States, FAO, FARPI, EUROSTAT. To study these processes have been studied scientific works of national and international specialists in the field.

During the investigations have used the monographic description of economic performance, comparison results, induction and deduction in drawing conclusions and proposals. The paper used the method of economic monographic studies using elements of deduction, observation, analysis and synthesis.

RESULTS AND DISCUSSION

On average, the share of the world total consumption of pork meat on average 36%. The highest proportion in the total consumption of pork meat seen in China - 71%, in EU - 58%, and in Philippines - 57%. This indicator in the Republic of Moldova is 40%, compared with the average world data on more than 4 percentage points.

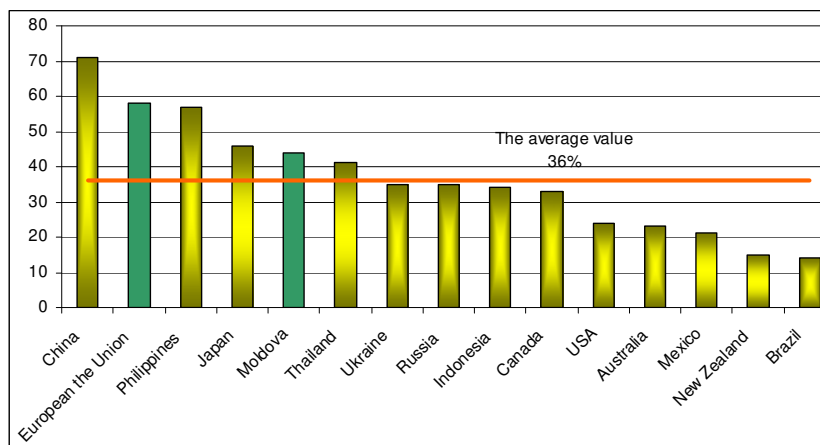


Fig. 1. The proportion of pork in the total consumption of meat, %

Source: FAO; FARPI.

The recommended rate of meat consumption per capita (biological norm), which is typical for developed countries with high incomes and simply needed to maintain the normal functioning of the human body is considered to be the average value 57 kg / year. In the world of consumption of pork per person per year is 19 kg. The highest consumption of pork in Hong Kong - about 70 kg / year, Belarus - 42 kg / year, in the European Union - about 40 kg / year. At the level of pork consumption per capita Republic of Moldova lags behind comparable countries, amounting to 15.2 kg / year per capita (the total amount of the total consumption of meat - 28 kg / year per capita, using 2,8 times less meat products than European).

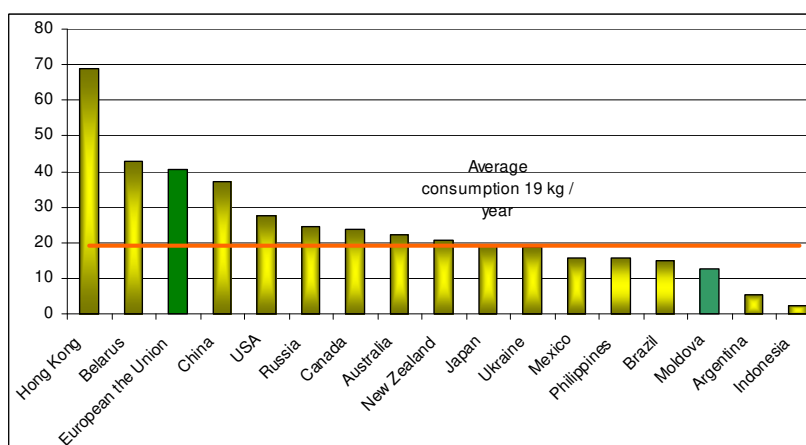


Fig. 2. The consumption of pork per person, kg / year

Source: FAO; FARPI; Statistical Abstract of the United States 2012; ROSSTAT.

Hours Last 7 years, from 2006 to 2012, the EU pork production declined by 0,15% while reducing the number of pigs is 8,9% - the process is carried out through a more intensive use of animals.

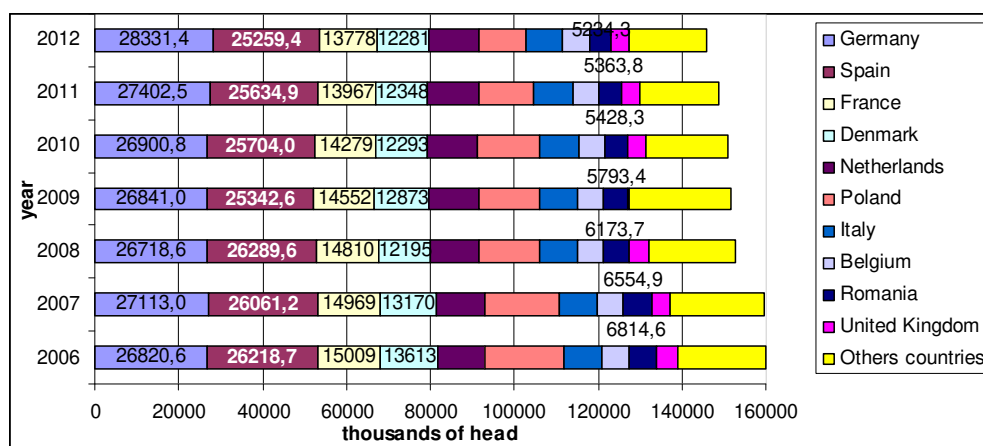


Fig. 3. The number of pigs in the European Union for the period 2006-2012

Source: EUROSTAT.

During the analyzed period is contracting the number of pigs in the European Union with 160046,2 thousand units in 2006 to 145828,6 thousand goals in 2012..

Table 1 The production of pork in the European Union for the period 2006-2012, thousand tons

Country	2006	2007	2008	2009	2010	2011	2012
European Union (27 countries)	21948,470	22819,236	22573,744	21279,458	22009,208	22387,294	21915,649
Germany	4662,221	4985,367	5114,319	5241,355	5443,166	5598,000	5459,000
Spain	3235,241	3439,442	3484,363	3290,571	3368,921	3469,345	3466,324
France	2262,789	2281,239	2276,678	2004,185	2010,326	1998,317	1597,359
Poland	2071,355	2090,618	1888,035	1608,238	1741,425	1810,778	1695,200
Italy	1556,059	1603,279	1606,013	1588,444	1632,715	1570,225	1620,719
Denmark	1748,576	1802,195	1707,400	1583,200	1666,300	1718,400	1603,700
Netherlands	1264,897	1289,935	1317,705	1274,980	1288,274	1347,165	1331,731
Belgium	1006,217	1063,277	1056,169	1082,036	1123,769	1108,255	1109,610
United Kingdom	696,549	738,984	739,602	720,253	772,346	805,679	824,637
Romania	468,100	491,300	455,100	222,070	234,195	263,329	282,094
Others countries	6603,880	6727,497	6655,438	5860,808	6101,911	6078,804	6241,194

Source: EUROSTAT.

During the 2012 the EU was produced 21915,649 thousand tons of pork, compared with 2006 and 2011 lower by 1,2 percentage points and by 2,1 percentage points. The largest pork producers in the EU are Germany, Spain, France, Poland, Italy, Denmark, Netherlands, Belgium.

The main trade partners of the Republic of Moldova on the import of pork are mainly: Belgium, Germany and Poland. Also worth noting is that the Republic of Moldova pork exports mainly to the United Kingdom and Russia.

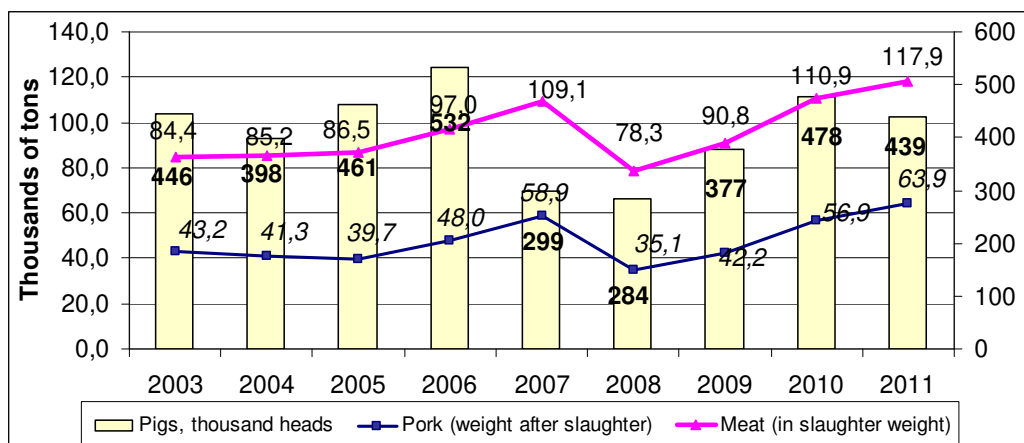


Fig. 4. The number of pigs and pork production in the Republic of Moldova

Source: National Bureau of Statistics of the Republic of Moldova.

According to the National Bureau of Statistics of the Republic of Moldova may be noted that as of 01.10.2012 in the Republic of Moldova, the number of pigs on farms of all categories was 439 thousand units, a decrease compared to the previous year by 8,2 percentage points (or 39 thousand units), with the volume of production of 63,9 thousand tons.

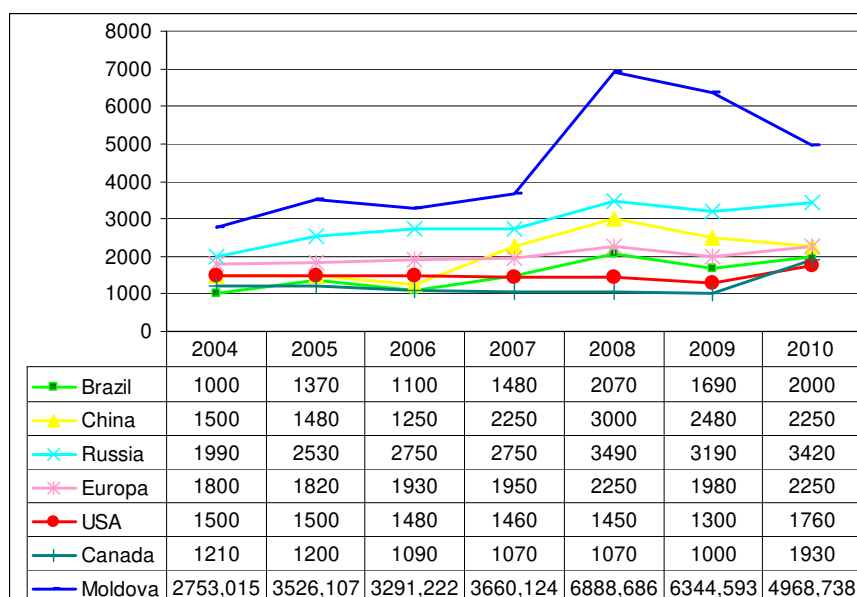


Fig. 5. Changing the the price of pork in the period 2004-2010, U.S.A \$ / ton

Source: Statistical Abstract of the United State; ROSSTAT, EUROSTAT, National Bureau of Statistics of the Republic of Moldova.

Analyzing the cost of 1 ton of pork the manufacturer, it may be noted that the domestic price of pork is slightly higher than the European or worldwide. This is due to increased volumes of products, losses in production, the high cost of feed and increasing import trade.

In 2007, restraining the growth of agricultural production on the background of the exhaustion of intervention stocks for the first time in many years has led to a marked reduction of such security, and a sharp rise in prices on the world market and the meat at the meat market of the EU (30% pork).

Fundamental differences in the technologies of growing pigs between the Republic of Moldova and the European Union do not. With respect to the EU have the same climate, the conditions for the animals and forage base. In Europe, the main diet feeding are cereals (70 percent), the rest – schroth oilseeds, vitamin group. But we have very different amounts of financial resources and fundamentally different rate of return. In Europe, the farmer can raise working capital is two to three times cheaper. And in our country, few businesses can afford to have an operating profit of more than 25 percent. The average loan rate in Moldova is as follows.

Of course, in South America, weather and climatic conditions allow to save on energy resources. In addition, there is a specific food base, based on the use of processed soybean products, corn, and sugar cane bagasse.

For stimulating agricultural producers the EU has powerful scheme. EU budget in 2012 amounted to 150 billion euros. To subsidize farmers spent about 50 billion euros of the EU budget (30%). And before 2000 was spent on subsidies to farmers and does up to 70 percent of the EU budget. Poland since joining the European Union is the largest recipient of European subsidies. In addition, still exist national programs to support agriculture. And the Republic of Moldova is simply not enough of GDP and the state budget revenues.

Pig production industry will continue to be a priority because of the important biological characteristics of animals as high precocity, fertility and feed efficiency per unit of production.

The production of pork is planned to increase in all categories of -130000 to 150000 ton in the Republic of Moldova and the European Union before 83519 thousands tonnes in the number of pigs before 641938 thousand. Half of these volumes of production appropriate to provide primarily through the use of production capacity kept specialized pig farms, increase their capacity on the basis of the reconstruction and modernization of shops and sites. Great attention will be given to the introduction of resource-saving technologies.

The strategic direction of the industry should be the creation of integrated agro-complexes, with completed cycle - the production of grain and feed, fattening pigs, processing and sale of finished products. This form of integration will alleviate the problem of supply relatively cheap complexes concentrated feeds.

One of the first tasks in the industry is to recover the genetic resources of pigs that will allow for the production of meat in accordance with the current requirements of the market. The main role of this will belong to the public on scientific enterprise selection and hybridization of pigs «Moldsuinhibrid», created in 2003 by Government Decision. Its mission - to preserve the genetic resources of pigs world-class, use them to improve the productivity and breeding qualities of local breeding populations of pigs, as well as to produce, at the same time.

It is necessary to create a complete tribal structure of farms (breeding center, breeding plants, breeding reproducers), which should contribute to the preservation and development of a resource pig.

CONCLUSIONS

From the investigations on the specificity and development strategies of swine meat sector in the Republic of Moldova and the European Union we can conclude the following factors that contribute to the future development of pork production:

- The high level of competitiveness of the primary phase of pork production (competence of the personnel and sufficient number of local and imported piglets for fattening);
- The use of modern technology and health standards at slaughter animals;

- The veterinary agreements with importing countries pork;
- Implementation and continuous improvement of the system to ensure the quality of products from primary production to its sales;
- The creation of economic conditions for the integration of pork producers and meat processing enterprises;
- Cooperation economic agents in order to create a functioning and processing facilities and fodder production.

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Tradition and transition in the Romanian agricultural management as neo-factor of competitiveness and economic performance

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ABSTRACT

The modern economic life reveals the contribution of management to the improvement of performance in various fields. It could be considered as a factor that support progress and influence the activities by establishing how are them organized and co-ordinated, how resources are used and how cultural values guides the work of the employees engaged in operational and functional processes within and organization. Management also enables the change needed to adapt to the dynamic of the environment. A challenge for Romania was the state of the agriculture along time. In this context, it is useful a better knowledge regarding agricultural management. The paper focuses on a review, analysis, and pursues the steps to be followed by a performing agricultural management. The authors envisage both the experience from Romanian agriculture, and the experience from the EU Member States. The latest ones were considered because in their case the use of the agricultural policies' advantages combined with good management resulted in large production and exports of agricultural products.

Keywords: *agriculture, management, agricultural management, knowledge.*

INTRODUCTION

In the modern economy, management manifests, widely accepted, as a new factor of competitiveness and performance. The relevance of agriculture to the economy in general and the Romanian one, in particular, requires increasingly strong orientation towards management, generating new dimensions and ensuring its scientific aspect as predominant, being also needed a different attitude and a different mood based, inter alia, on the involvement and proactive thinking on the part of those managing farms, particularly when they have a commercial character, being so connected to national and even international economic flows, authority and responsibility being full based on private property.

Such a way of looking at things involves conducting training processes, enriching the knowledge and training, and consulting, as a result of the numerous problems facing farmers in the market economy. However, it is not without interest to know what was under the managerial aspect in various stages of relatively recent history of our country, with reference to tradition and transition of management as a result of fundamental changes in the nature of social and political regimes. Moreover, Romanian agriculture, in the interwar period and in the postwar until 1991 and beyond was the "case" for the management approach. Every time it was considered a matter that fall within either empirical or scientific management.

METHOD OF OPERATION

The development of this work was preceded by the formulation of its objectives, found inside of it and the choice of methods for investigating specific management processes and phenomena of the reference period.

Given the theme title and the period investigated, considered relatively long, it was necessary to perform an extensive documentation, using various bibliographic sources and observation and interpretation of contemporary management issues in agriculture to try to capture its specificity (what was done, by whom, how, etc.) from various periods, nature of the economy, driven by property type, putting his mark on managerial behavior of those with agricultural occupations, as appropriate: small producers, owners and administrators of estates managers (directors of agricultural enterprises, agricultural cooperatives presidents) that have holdings in the years of socialism or those created after 1991, having the status of companies or agricultural (associations). It is a very diverse "world" in many ways, general education, professional and managerial, distinguishing them greatly. Since it could not been achieved a comprehensive approach of the thematic area, given the size of the paper, were emphasized the trends considered essential. For this was used synthesis, operating it in the case of the final conclusions too.

RESULTS AND DISCUSSION

It is known that agriculture in Romania has known different regimes of land (property types) that have influenced one way or another, its manifestation in the economic, social and economic situation of those who were employed in agriculture. Since the early part of the nineteenth century, Nicolae Bălcescu referred to such matters (Bălcescu, 1849). Subsequently, numerous works have been developed, manifesting prosperity interest to agriculture. In the preface to his "Special agricultural policy of Romania" Gheorghe Ionescu - Sisești presented in a synthetic manner, numerous works by various authors, in which they addressed issues related to agriculture and the peasantry, pointing out that "peasantry Romanian life had to be entirely reconstructed after charters and authentic historical sources in the latest weather" (Ionescu-Sisesti), stressing in this regard, the role of the great historian Nicolae Iorga.

The agricultural situation is presented in a paper by Nicolae Xenopol (Xenopol, 2013) references covering a long period of time, covering the second half of the nineteenth century, until 1913. He notes that in general, the Romanian economy, with wealth, which plays its prosperity in time, it "can be seen terrible poverty." Highlighting the "bright side", we reckoned, as written, no umbrellas, including those in agriculture.

Table 1930 agricultural census

Category of holdings by area ha	Number of holdings	Area held by each holding category ha	Share in total number of farms %	Share in total agricultural area %
0-10, of wich:	3 020 000	9 490 000	92	48
0 - 5	2 460 000	5 535 000	74,9	28
10-50	235 000	3 895 000	7,2	19,8
Over 50	25 000	6 365 000	0,8	32,2

Source: INS

Prewar Romanian agriculture was dominated by small peasant farm, oriented, especially, for subsistence. From the total number of farms existing in 1930, which was 3.28 million, the holdings up to 10 hectares, representing 92% (those with up to 5 hectares accounted for 74.9%), their average agricultural area being of 3.1 ha (General Agricultural Census 1930) (Table 1).

**Table 2 Farms and total area by size classes of the total area,
by the legal status of holdings**

Category of holdings by area ha	Number of holdings	Area held by each holding category ha	Share in total number of farms %	Share in total agricultural area %
0,1-10, of wich:	3 747 365	5 732 345,28	97,4	36,5
0,1-5	3 524 432	4 245 005,07	91,7	27,0
10-50	75 636	1 338 445,91	2,0	8,5
Over 50	22 244	8 624 236,22	0,6	55,0
Total	3845245	15 695 027,41	100,0	100,0

Source: INS

There is a better operating structure than occurred immediately the after application of the Land Law 18/1991, when there were over 5 million properties. Gradually, the number of farms has decreased, reaching in 2010 to 3,845,245 (General Agricultural Census 2010) being 17.2% higher than in 1930 (Table 2 and Table 3).

The average on a farm was, in 1930, 32.8% higher than in 2010 (Table 3).

Table 3 The average area per holding

	1930	2010	% (+/-)
Total holdings	3 280 000	3 845 245	+ 17,2
Agriculture area per holding ha	6,02	4,08	- 32,8
Surface resting on a holding of land use:			
ha			
- total	-	3,5	-
- Individual holdings	-	2,02	-

Source: INS

What was in those households was marked by tradition on agriculture, its elements being repeated by rural communities for centuries to come. Mining economy was autarkic, so with little or no elements of openness to economic flows, progress and initiative. "People from Romanian villages, shows philosopher Constantin Radulescu Motru is under collective work tradition every villager is what will make everyone think . He has the courage to start a new job than the deadline set by custom. The world is out of line for Romanian villager, not merely a risk but insane. " (Motru Radulescu, 1998) However, the new initiative is needed for other attitudes.

Household productive behavior endorsement wearing rural communities experience, which was not entirely wrong, but it was certainly enough, if we consider the phenomenon of change that occurs in economic life, it is true, at different rates in different historical periods (much faster lately). Besides, who keeps the tradition says the author cited above, refuses to light. A household could also ensure the progress of agriculture and improving the living conditions of the farming population. Romanian leading personalities have highlighted this

and tried to formulate solutions to move to other organizational forms in order to ensure better implementation of land property value. In a mostly rural civilization as the Romanian of the time, it was natural that great men, such as N.O. - Lupa Popovici, Gheorghe Ionescu Sisești, Virgil Madgaru, ND Cornățeanu Victor Slăvescu etc. to look upon agriculture, realizing its economic and social role. Issues area raised was large enough to highlight the contribution of it, as appropriate, regarding: managing estates, agricultural policy, intensification of agriculture (Cornățeanu, 1941), cooperation and association and more.

Along with small and medium-sized households (7.2 % of the total, with an average area of 16.6 ha) in structure and large mining operation (holdings), recognized as the estates, forming after formulation then big capitalist property. They were in number 25 000, had an average size of 254 acres and operated 32.2% of the total agricultural surface (General Agricultural Census 1930).

Gheorghe Ionescu Sisești, renowned agronomist and agricultural economist, was preoccupied with issues of agricultural policy (Parpală, 1995) and the administration (management) of large-scale mining operations, showing, among other things, that "there is neither matter nor private profitability the economic function of agriculture in the body, which is the quality leader exploitation (Ionescu-Șisești). Opting for version where the owner is the driver, seeming conflict with Frederick Taylor who claimed to lead the one who knows . It seems, however, that Ionescu Sisești need to lead knowledge was implicit as add, following the above statement that if the owner "wants to run one operation, but does not have the time or training necessary for this then he joined a specialist, an administrator (manager), leading the operation, according to the indications of the general, but in accordance with the technical and economic"(Ionescu-Șisești). He appreciated that if the hole initiative was not left to the manager, exploitation often suffer disunity in leadership. The outlined ideas about leadership (manager quality, holding, the knowledge to lead, management unit) are found today in Management Science, that is widely debated and developed. To them are added Ionescu Sisești concerns, and other authors, and other management issues in agriculture, such as: management of production factors, the size of the operation, including operation lesser forms of exploitation, etc. Some of their assessment remain valid today, if we consider that the current operating structure of our agriculture farms with large commercial nature, there are also many small, subsistence farms.

After World War II the Romanian agriculture has experienced since 1949 the movement to command economy, based on a type of property (socialist) fundamentally different from the one above. Occurs the transition to another management, being found excessive centralization for the one already existing, is exercising the leadership of the party at the time and in the economy.

For agricultural units, especially those belonging to the state, most decisions were taken outside of them, whether they concerned the determination of the activity, or the provide of inputs or the outputs (the destination of the products obtained). Although there were higher education teaching units, weak autonomy has limited their decision, not to speak of the enterprise. It is true that agricultural units were collective management bodies (participatory management of late) . With clearly delineated attributions, they must fit into what was called the "up". This limitation of the power of decision was to lose a potentially great creativity and initiative, the rigidity of the system are well known.

Agricultural cooperatives, although rightfully belongs to those who have been, fel some "pressure" such as price controls, centralized distribution of resources, selling products based on contracts, prohibition to process agricultural products, to hold technical means (the work being done by agricultural mechanization resorts, payment being kind) etc.

In the above conditions the management units of the period referred to sum up, as a rule, in the operative, in order to obtain products of vegetable or animal origin according to the profile of each unit. As known, however, that management is richer experience of those who exercise it could not expand since managerial tasks and thus their ability to work was limited. However, without action can not develop managerial skills.

After the transition to market economy was necessary, of course, little more than an operational management, the former managers being found in a world of agribusiness, which included: private initiative, negotiations, environmental awareness, with special reference to square, etc. It has been said, and perhaps rightly, that things are not going well in the economy, in general, we do not have managers. It is no wonder, because no practical work did not help, nor training, higher education, agriculture and economic position of the focus is on the organization and planning that is exercised in the context of known. Driving course introduced at a time, fold it all the specific concerns of the system. Another transition occurred after reconstitution management of private property, which has radically changed the "picture" of Romanian agriculture in terms of structures (Voicu, 2000): operation (types and forms of exploitations, production, marketing, etc.). Under the new type of property holdings acquired full autonomy. This opened new managerial and entrepreneurial perspectives. It was found that, though, in terms of ownership, agriculture corresponds to the new type of economy, however, there were issues that do not help realizing its advantage, enhancement of existing resources and the rapid progress of the industry, such as: "Atomization" and separation properties plot, insufficient financial means smallholdings, technical resources etc.

Contemporary period is specific operating structure, arising from the land reform initiated by the application of the Land Law No. 18/1991, based on farms .¹

Structural image of agriculture in terms of exploitation, is dominated by individual farms in 2010, accounting for 99.1 % of their total number (Romanian Statistical Yearbook 2012). The rest, about 1 % is the legal status of farms mainly agricultural societies and companies, which brings to mind the name of economic organizations and authorized individuals, individual enterprises and family businesses. Their share is insignificant, but their relevance comes from how agricultural practice, using technology and management, which may lead to higher performance, and with openness to economic flows of agricultural products.

Whatever type of holding, given that it uses human input and intervention work, it is necessary that to be made on the basis of efficiency and will obtain economic results (positive outputs) as a requirement of farm consolidation.

Achieving such things goes to exercise their management. Depending on the type and form of holding the level of expertise, economic and managerial responsibilities of those who have this kind of recourse to management is different, reporting being done mainly to its scientific content.

If **subsistence farms** prevalent not only among individual farms, but also in their total number, intervening actions of persons who hold management (heads of farms) as a result of the reconstruction and building of private property. According that such people have little

¹ Named by the official statistics, there are, however, different views on their name: units, households, farms, ranches. It is important that the name is actually surprising that each type, and the use of a generic, whatever it may be, it can not cover, at least in case, for operating all parts of the structure, see, among others: Voicu, R., Dobre, Juliana, organization and development of agricultural units, ASE Publishing House, 2003 Bold, I., Claus, A., agricultural holding - organization, development, mining, Ed Mirton, Timisoara, 1995

knowledge assessments, and most are old as age (National Strategic Plan for Rural Development 2007-2013). In addition, these holdings:

- have a small area and increase a limited number of animals of different species;
- have low capitalization;
- operate as closed systems;
- have a poor economic power for farming resorting often to income from other sources;
- domestic agricultural produce and process, some of them to the food needs of the family;
- often use seed from their own production, uncertified, traditional technologies based on works carried out manually, and uses animal energy work but noticed some insertion of agricultural equipment in the sense of seeking some means of this kind to perform work requiring great effort (plowing, harvesting grain cereals etc .), which shows a certain openness for the purchase of inputs;
- in case of developed agriculture, farms have also disappeared or have a very poor area of representativeness, their place being taken by commercial family farms connected, so domestic economic flows, helping to ensure the operation of the routes of the various products and agri-food system countries.

Exercised management relies heavily on tradition, experience gained in the course of time, under the influence of that happening in rural communities. " Romanian rural population stands in the tradition of collective work. Each villager makes what he believes will make everyone". In these circumstances, we can speak of a traditional management model, with a sort of back in time, to what happens in Romanian agriculture under socialism (Rădulescu-Motru, 1999).

Decisions taken are generated by concern for the needs of family food consumption and intermediate consumption insurance. Multiple activities of such holding, although not high volume, assume that such persons have knowledge of various kinds (technical, economical, managerial, etc.).

These farms are a reality of Romanian agriculture, producing food they have a social role and will continue to exist alongside other relevant holdings in greater or lesser practice of commercial agriculture.

If individual subsistence farms, the situation from the point of view of management, is similar, and these traits found in the case of subsistence, their names show that combines elements of the same kind as those on a certain openness to the environment, inducing some quantities of the channels, which meets the Romanian agrifood system operation, and purchasing certain quantities of inputs.

Opening to the environment, be it even partial, impose their decisions on the scope, to consider specific elements of the environment, with emphasis on the economic, market acting factor. It takes information from clients – individuals and / or businesses. Orientation activities (crops, livestock etc. categories obtained from the product) must be made according to customer requirements and quality standards, and other aspects of the environment.

Given the openness to economic flows, the heads of these holdings should focus more on highlighting the costs and revenues, to negotiate relationships with intermediaries or directly with clients to organization and planning, removing hazard related phenomena, gradually approaching to managerial behavior of a commercial family farms.

Agricultural societies (associations with legal personality) belong to associations with simple associative holdings. Their establishment was made for various reasons, the

provisions of Law 36/1991 on agricultural companies and other forms of association in agriculture.(Law 36/1991)

The companies were formed by transforming state enterprises into joint stock companies, according to Law 15/1990, they suffered in the aftermath of privatization, in various forms or by showing the private initiative (limited liability companies), which works according to Law 31/1990 on trading companies.

Management of companies mentioned is of course other than the subsistence and semi-subsistence farms, although not commercial agricultural companies, some products satisfy addressing requirements of their members, while others make the sale.

Agricultural companies and trade actions functional organizational structure (management) and operational, and if the limited liability may be one or more associates.

Management bodies are created and have duties according to the law, participatory management, as for any business organization, being institutionalized (Nicolescu, 1999), operating above the laws for agricultural companies constituting the general meeting of shareholders, the Board of Directors, it may elect a steering committee and for limited liability companies, general meeting of shareholders, the Board and Committee. Laws provide as appropriate, each managerial body duties.

The existence of hierarchical management structures at different levels of their managers with higher education background and management, are essential for its functions to be performed according to the requirements of management science.

And in a more or less complex, with the different number of levels, where decisions are carried out and where functional and operational processes is necessary for senior management to use coordination to focus all efforts towards the goals and the "company, agricultural" to maintain the "path" established by the prediction function (which operates with plans, which are basic guidelines to follow and reporting achievement) .

The conditions under which the agricultural production, especially in the vegetable, raises its organizational work processes (displacement technical means labor on certain distances, works under the influence of climate, providing social elements), so coordination is difficult. Operative nature of management is assumed, since the work to be done in due time, otherwise the layout of the disorder, with negative impact on the production.

The control function is more relevant than other business organization as in agriculture, biotic processes can be found, can occur in the system due to disturbances such as pest and disease state which damages the plant growth and the growth of animals. It is the emphasis on active control (preventive), (Thietart , 1999) as the reagent not only help in another cycle of production and management, their conclusions on this occasion, changing how to proceed in the future.

The economic organization of agriculture such decision making is carried out on different parts of their business that require information, identified and collected from the environment, they aimed at: providers, beneficiaries, brokers, real and potential competitors, agricultural policy, labor market employment, financial institutions and insurance etc. Environmental knowledge, identifying trends in the different processes and phenomena, allows the organization to make appropriate decisions, regulatory actions taking place on its internal and connection to economic flows.

Some agricultural organizations of the nature of companies are large sizes, cultivating areas of tens of thousands of acres, concentrating large herds of animals or birds with vertically integrated business, are able to use the knowledge management methods offered, such as

participative management and management by objectives, which can help improve their economic performance (Nicolescu, 2008).

TOWARDS ANOTHER MANAGEMENT IN ROMANIAN AGRICULTURE

It is necessary to move to another management, which is common to all farms, but it is necessary for individual farms, especially because they hold most of the agricultural land and arable, labor, livestock, etc.

What happens with these holdings determines the state of Romanian agriculture. The heads of these farms make decisions, even if they call it, with serious incidents on the economic situation of their families (family heritage and the holding coincide) and the broader social, referring to their contribution to providing food products population needed.

Attention to decision-making processes of these holdings increase, if we consider that decisions are one-man stating, that there is a single decision-making center, which is not the case for limited liability companies.

It is easy to assert the need for browsing "road" to the new management, but it is doable if we consider very large number of individual holdings and characteristics of those who manage them. The high age of the heads of farms can contribute to lack of interest by: (Voicu, 2003) strengthening and modernization of farms, diversification of activities and events entrepreneurship is known that the last aspect is stronger for young people. Issues relating to age, lack of funds and rising prices of inputs may lead them not to use new elements in the cultivation and animal husbandry, to a certain openness to flows of agricultural products exist and closed systems feature a subsistence holding. Might the time to eliminate many of these holdings and they will maintain a quasi isolation.

From the perspective of generational change, the installation of young farmers in rural areas, with financial support for this (measure 1.1.2. "Setting up of young farmers", the RDP 2007-2013) actions that are training farmers (measure 1.1.1 "training of farmers and foresters" of the RDP 2007-2013) are essential for management to incorporate as much knowledge, valuing the course, and some valuable items related to tradition and experience.

Opportunity for general training, professional and management is determined by elements of the type above, strengthened by the fact that when someone wants to take a holding is required, among others, to present a diploma certifying that they have knowledge at a certain level.

If elderly people can not be used in the training, because of understandable reasons, this can be replaced with guidance, advice, information and monitoring the functioning of certain agricultural activities, which would lead to use to good agricultural practice.

For young people, the general prior professional preparation training, advice and guidance, can improve the productive and managerial behavior seeking: methods of farming, choice of activities, opportunities to inform the manifestation of openness to the external environment, with respect to the negotiation and implementation of relationships with suppliers and recipients, etc connecting the flows of agricultural products.

Economic knowledge related to management issues with respect to expenses, revenues, gross margin, planning activities, development of budgets as benchmarks and reporting results are required and must, of course, be assured.

Information is also relevant to those who manage farms. Agricultural and Rural Strategy for EU aderation – 2003 appreciate that Romanian farmers were less informed or do not have information regarding: prices of agricultural products in different market segments (retailers,

industrial process, etc.) And various locations of the national territory is available on different product attributes, price developments over a year of marketing.

They have, therefore, limited information, which creates difficulties for decision making on product choice (what to produce ?) and their involvement in the marketing phenomenon that diminishes their income.

Since the charges are made and collected revenue accounting as partnerships should be among the concerns of producers. In some cases, expenditure is assessed in a comprehensive way, claiming that they were large, which may be true, but financial education assumes otherwise, proceeding an exactly counting on.

In preparation producers can highlight the benefits of cooperation, even in its simplest forms, especially since, according to appraisals, individualism seems to characterize Romanian. Since then (the text was published in 1937 by the Romanian Bucharest psychological research Society), it is possible that things have changed, regarding economic and social dynamism. However, individualism, resumed conceptually, in the current period, adding the adjective "destructive" is not beneficial either in the social or economic life. In modern organizations are required cooperation, teamwork, cooperative efforts, such examples of our agriculture producers are represented by groups and associative forms.

CONCLUSIONS

Conducting research in agriculture has allowed noting the persistence of strong elements of traditional farm management in the interwar period, the households in the non-coexisting during socialist agriculture, the return, in the case of individual holdings after reconstitution of private ownership in the industry. However, concerns have found expression leading to large farms (estates) existing before the Second World War, the large scale management units specific to the period of application of the Land Law 18/1991 and its transition by type of property in agriculture. Greater emphasis was placed on agricultural management under current conditions, when we are dealing with an operating structure that coexists in diverse holdings, from subsistence farming to large companies, and agriculture is to develop and operate according to the requirements of market economy.

Below, we list the main conclusions of the paper.

- A good management is exercised overall competitiveness, making necessary an extension of a different attitude towards it, especially because there are manufacturers who consider that production is everything, but getting them right to consumer demands and economic efficiency involves many decisions correctly formulated and applied in real time.
- During the studied period, was found in farm management even if it was not named as such, but not in the proportions found in the economy since the second half of the twentieth century, when it was recognized in the current sense (Drucker, 1999).
- With all the changes in the political and social existing, reference period being specific and different political systems, there were elements of continuity of management in various forms, since any company, regardless of its ideological regime, legal and political management needs if you want the economy to thrive in innovative and creative rhythm (idea belonging to J. Burham, found in his managerial revolution cited by Petrescu, I. in Management Reporter Publishing Holding 1991)
- Fundamental social and political changes that saw Romania in the period studied, their mark on the functioning of the Romanian economy, including the management of organizations of various kinds, including agricultural. Management of different forms of expression, depending on several factors. For example, during the

centralized management of the economy, agricultural units with limited autonomy and state interference manifests political factor in their management mainly being due at operational, many decisions regarding their relationships with upstream and downstream were considered to functions and powers of the managerial bodies (collective leadership)

- Changes have been mentioned as elements of continuity management are found only partially, from one period to another, requiring new knowledge to find solutions in other circumstances. Proved steadier management based on tradition.
- Due to different operational structures coexisted in each period management based on the empirical knowledge. Even in socialist agriculture, along with managers from large companies who had higher education were small farmers in areas that appealed more to the tradition of non-co.
- After application of the Land Law 18/1991, it was operating prewar structure, even emphasizing the " atomization " of land holdings and subsistence households resorted to tradition inherited.
- For over 20 years there have been structural changes, but slowly, that increased the farm who use knowledge of various kinds including the management.
- Managerial behavior in different periods shows the need for transmission and acquisition of knowledge along with the native person belonging Manager to be active in management exercise, especially that expands the role of knowledge in the economy.
- Area managerial knowledge, and not only the broad and diverse and complex decision problems requires management consulting operation, farmers will be increasingly connected to rebuilding agriculture requirements.

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Possibilities and limits of valuing labor productivity in agriculture

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ABSTRACT

As a process that can be measured, labor productivity is important both as level and dynamics, the latter being expressed as absolute and relative spore. This paper reveals the concerns for labor productivity determination based on the method of effective costs of labor, method inspired by the question: "How much labor uses the agricultural producer (individual or collective) to produce goods for consumption?" The reasoning of this method has as basic elements salary cost and direct intermediate consumptions, with the aim of determining the indicator "full productivity of labor".

Key words: *full productivity, intermediate consumption, salary price, potential labor*

IMPACT OF LABOR PRODUCTIVITY ON THE FUNCTIONING OF THE ECONOMIC MECHANISM IN AGRICULTURE

Analysis of changes in labor productivity in terms of its effects on the processes of formation and distribution of agricultural income and the capitalization of this branch reveals: the existence of relations system of "feed-back", closely related to the efficiency of work (Fig. 1), so it is that as the driving force, labor productivity, although it is an economic category, belonging to the sphere of production, connects itself to the distribution process, especially in the case of agriculture, as primary branch, whose productivity depended and depends on the expansion of non-agricultural sectors.

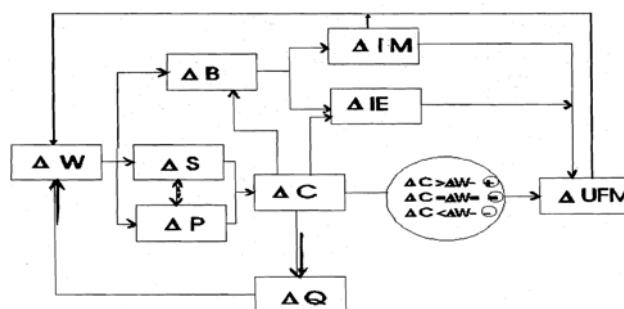


Fig.1. Impact of labor productivity on the functioning of the economic mechanism in agriculture

W = labor productivity, S = salaries, p = prices (real), B = profit, IM = investments for production modernization, IF = investments for production extension, C = demand of agricultural products, UMF = labor utilization, Q = production, Δ = indicators variation, $-->$ = explicit relationships, $=>=$ = implicit relationships, $<--->$ = interconnected relationships

Implicit or explicit nature of the relationship between labor productivity and the various elements of the economic mechanism in agriculture has certain relativity, each variable having its multiple determinations.

THE METHOD „EFFECTIVE EXPENDITURE OF LABOR“

Using the concept of "effective labor expenditure" is inspired by the following question: how much work consumes agricultural producer (individual or collective) to produce goods for consumption? The answer can only reflect the finding that every farmer must submit, ultimately, an effort to make possible remuneration of labor and material resources necessary to achieve, through various combinations, productive objectives. As long as the monetary equivalent of this effort, be it at the level of one hour of work, is a salary price, one can take into account the idea of measuring with the help of all consumption caused by the production process. In fact, what the farmer is interested in is the efficiency with which his efforts are reflected in output obtained, either directly (through the labor process) and indirectly (through material means that it mobilizes). Of course, the work is important in terms of performance of material resources it delivers, but at the farm level it must be analyzed in equivalent work effort to get those material means without the agricultural products can not be obtained.

In a first conclusion, if the issue is to convert the materialized work in means of production, through a converter represented by physical and mental skills of farmer, the yield would be given by:

$$\text{equivalent in potential labor}^* = \frac{\text{prices of material factors of production}}{\text{Salary price per hour}}$$

*expressed in number hours-worker

In other words, extending the application of judgment in assessing the use of labor for agricultural production, we can associate to any resource or service, a multiple of salary price per hour, respectively a certain number of hours-worker: for example, the price to be paid for a tractor is "X" times higher than the salary per hour of a farmer "A", "Z" times higher than the salary per hour of farmer "B" etc. As a result, the need of work is "X" hours, respectively, "Z" hours. Whether hourly wage, due to the influence of the labor market, the level of social labor individual productivity, interprofessional relations, measured more or less correctly the effort of one hour of work, the reported above equivalence is intrinsic to economic mechanism, or the importance of labor productivity derives from the role that it has to adjust the economic mechanism and not one "abstract" or "absolute" mechanism.

The considerations set, which justifies the use of wage price (or real price) and, thus, enables the measurement in labor units of all materialized consumption embodied in agricultural production, put the method of effective expenditure of labor in the light of a reasoning respecting, in greater extent, the content of the concept of labor productivity expressed in this case by "full productivity of labor."

The main restrictions imposed by effective expenditure of labor method are related to the distribution of indirect inputs – labor consumption, intermediate consumption, capital services and services provided by third parties – on the different products and aggregate productivity corresponding to different products to obtain an acceptable information for the work efficiency for a group of products of agricultural activity on the farm or agricultural branch.

We believe that, depending on the farm's profile and specialization, the base of allocating indirect consumption may differ. What is important is how far the objective of locating the

product consumption as close to reality is achieved. Such reporting may be based, taking into account its active role in the agricultural production, the direct intermediate consumption.

Regarding the measurement of labor productivity by product, farms and so on, as the aggregation is performed at higher levels, the ability of synthesis expressed by the labor productivity decreases.

Moreover, as long as the same product, similar or substitutable, compete on the market, not farmers, farms - "actors" which can lose or gain from competition – the major interest should not happen for measurement labor productivity at higher structural levels of the products or groups of products, including agricultural products on the world market do not face, for example, Romanian agriculture to agriculture of other countries, but Romanian agricultural products to those similar from other countries.

Finally, any assessment of the contribution of agriculture to overall economic developments will include distortions inherent in any system of aggregation of information, even in the example below, the determination of labor productivity for five products (wheat, corn, barley, peas, milk) in wheat equivalent (based on the ratio of the price of other goods and the price of wheat) the share of productivity per product with coefficients of structure of total production in wheat equivalent. In comparison, aggregate information across agriculture, taking as a basis the weighting structure of turnover or gross and net value added, significantly reduce the "accuracy" of indicator: labor productivity.

The methodology of measuring labor productivity based on effective expenditure of labor implied the elaboration of a block diagram and a logical diagram of data processing, considering the particularities of agriculture imposes, in our approach, the following preliminary reasoning:

a. average wage price (per hour) will be a weighted average calculated on a while longer; in case of family labor, a net salary will be established by assimilating the salary of a worker in the area, working in the same conditions, or by a method of accounting;

b. agricultural land, as input, will be represented in the consumption of producing the rent actually paid by the agricultural producer (individual or collective) - if you come from farming, or by assimilating an average level of rent recorded in the respective zone – when it belongs to the own capital;

c. speaking about measurement of labor productivity per products, self-consumption is included in the input volume as equivalent work. For example, self-consumption of grain for livestock will be expressed on the basis of labor productivity in the equivalent hours-worker (by dividing the amount consumed in productivity that has been achieved). In this way, the influence of self-consumption on productivity at farm level is annihilated, as occurs once as effect - for cereal production - and twice as effort – for animal production;

d. capital services will be measured based on the discounted value, to meet the demands of reproduction. Direct capital services will be expressed first as time (usually in hours) based on the daily sheet of using machine, equipment, installation etc., then it will multiply the hourly depreciation, fixed with updated inventory value and service life measured in "hours";

e. in relation to debates on whether or not to include financial expenditure in calculating labor productivity (incurred by services provided by third parties for which payment takes the form of interest on loans, insurance premiums, taxes collected by the state budget, etc.), we consider that it is necessary to include them in the efforts of obtaining the volume of agricultural production. Excluding them would distort labor productivity in product development and strategic default of agricultural production can be extended to an undue level, agricultural branches characterized by long cycles of the production process and,

accordingly, slow movement of capital, or which "conflict" the mechanism of agricultural policy (through the fees, taxes, etc.).

f. secondary production will be equated in man-hours (secondary output value at recovery price / wage price), deducting, to ensure comparability between effect (physical production) and, effort, total consumption in equivalent work.

Calculation for labor productivity per product is exemplified on "barley", whose price is "free" (compared to prices of wheat and corn), for other products: wheat, corn, peas and milk, we indicate only the data needed for obtaining the aggregate indicator of labor productivity on farm level (Table 1, 2).

**Table 1 – Resource consumption for obtaining the barley
(wheat, corn, peas, milk) production**

No.	Specification	Type of consumption	Quantity / price		Value (Thousand lei)	
			t_0	t_1	t_0	t_1
1.	Labor (FM_{ij})	Direct (FMD_{ij})				
		Indirect (FMI_{ij})				
2.	Intermediate consumption (C_{ij})	Direct (CD_{ij})				
		Indirect (CI_{ij})				
	Of which: -fuel -fertilizers -seeds -water for irrigation -other consumptions ¹	Direct				
		Direct				
		Direct				
		Direct				
		Direct				
		Indirect				
3.	Services of capital (updated) (K_{ij})	Direct				
		Indirect				

			Quantity / price		Value (Thousand lei)	
4.	Other services ² (T _{ij})	Direct				
		Indirect				
5.	The balance of unfinished production(ΔPN _{ij})	Direct				
			-	-		

1 including the rent related to cultivated area

2 including banking services (interest for credits), assurance and services provided by state (for which, duties and taxes are paid etc.)

Table 2 – Labor productivity per product and production obtained, expressed in wheat equivalent

No.	Product	Labor productivity kg/hour-man		Production in wheat equivalent (To.)			
		t ₀	t ₁	t ₀ t			
				abs	%	abs	%
1.	Barley	4.34	4.22	486	14	540	12.5
2.	Wheat	4.15	3.8	715	20.5	700	16.3
3.	Corn	3.58	4	1406	40.4	1540	35.8
4.	Peas	2.5	1.8	206	5.9	240	5.6
5.	Milk	2.8	3.5	664.8	19.2	1277.5	29.8
	Total	3.587	3.716	3477.8	100	4297.5	100

$$W_{i0} = 4.34 * 0.14 + 4.15 * 0.205 + 3.58 * 0.404 + 2.5 * 0.059 + 2.8 * 0.192 = 3.587 \text{ Kg wheat / man-hour equivalent}$$

$$W_{i1} = 4.22 * 0.125 + 3.8 * 0.163 + 4 * 0.358 + 1.8 * 0.056 + 3.5 * 0.298 = 3.716 \text{ Kg wheat / man-hour equivalent}$$

CONCLUSIONS

We may conclude that the effective work expenses method has some limits, such as:

- the allocation of indirect product inputs, relying on direct intermediate consumption
- the aggregation of work productivity corresponding to different products
- the relevance of the indicator decreases of the as the aggregation level increases.

The fact the, on the market, the products are the ones that compete and not the actual farms that produce them, must not be omitted.

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Food security and sustainable development

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ABSTRACT

The article clarifies issues of food security and its relationship to health security, undernourishment, malnutrition, and food insecurity. Afterwards, it examines the influence of the energy crisis and environmental crisis on the food crisis, continuing with issues linked to hunger on our planet and ending with human anti-natural facts that increase the gap between food security and sustainable development.

Keywords: *food security, food insecurity, health security, undernourishment, malnutrition, family subsistence, agricultural protectionism, agricultural crisis, ecological crisis, chronic hunger*

FOOD SECURITY - A COMPLEX NOTION

Food crisis is a world challenge. This crisis is intrinsically linked to two other major challenges which people have to face at the beginning of the 21st century: energy issue and global warming. Nutrition is at the core of environmental, social and financial crises and offers eloquent illustration of how all these influence each other.

Food security is the component of national security concerning organizational policies and instruments used for prevention of risks, threats and vulnerabilities and counter any crisis occurred in the secure access to food for individuals and human communities; therefore it is considered by some experts as being linked to human security along with economic security, health security, environmental security, personal security, community security and political security.

To fully define the concept of food security, it is necessary to look through the prism of at least two components:

- firstly, it is about availability, meaning that food must be physically, must be constantly produced in sufficient quantities and in a convenient structure. Otherwise, it is impossible to feed on a long-term a population that grows continuously, given that natural resources grow in arithmetic progression and population growth is exponential. Even if the amount of food produced globally is sufficient for all mankind, strong variations are recorded at regional, continental or local level;
- secondly, it is about accessibility, meaning that there is the possibility of buying it, in terms of purchasing power; e.g there may be famine with windows full of food.

At the two aspects, we can add shortages created for speculative purposes, which can create serious anomalies on agricultural and food markets. Also, we should not forget the link with health security, meaning that a large number of existing disease on earth today are related to food, either in terms of quantity, such as undernourishment, either in qualitative terms, such as malnutrition.

Food security must achieve three specific goals: ensuring adequate food production; maximizing stability of agricultural products' supply flow; providing access to available agricultural resources of those who need them, ensuring basic foods necessary for human

health. The overall objective of global food security would be: "ensuring that all people, at all times, have physical and economic access to basic food they need". (Abdelmalki, 2010, p.52) Achieving food security is a matter of interest for Romania too, a fact emphasised by the decay of Romanian agriculture, at the same time with the transition to massive imports of food products.

We must not forget that the problems should be viewed differently in the North part in comparison to the South part. Whether, in North, we can speak of food security, in South we speak of food insecurity. Therefore, for the South part, the degree of agriculture dependence is very high, because about 91% of agricultural land is owned by small family farms, occupying 86% of the rural population that act to ensure the family subsistence.

We may also mention the degree of dependence on agriculture is that, in these regions, "seven out of ten workers are in agriculture, the agricultural production provides about one third of the national wealth, supplying about 40% of export earnings". (Arnaud, 2008, p.63) All of them require a revival of the agriculture program, in parallel with northern countries accountability, should ensure the planet security in terms of food.

Such an agriculture recovery program should provide the subsistence exit, which requires access to OMG related technology (formerly GATT) and increase the state's role in supporting research and public financial support for training, innovation and investment in rural areas. At the same time, it is necessary to encourage micro-credit in rural areas, opening to the outside but also protect their agriculture through market integration in some form of agricultural protectionism and the need for a new code of conduct.

In the medium and long term, food security requires putting in practice commercial arrangements that should impose to exporting countries discipline on international markets, in order to prevent collective food security, i.e speculative phenomena.

SUSTAINABLE DEVELOPMENT – A GOAL OF THE 21ST CENTURY

Sustainable development was defined in the early 80s and "synthesizes the system of programs and actions through which the current generation of the planet manages to satisfy needs without jeopardizing the needs of future generations". (Masu, 2011, p. 21) Assen S. is one of the authors that attributes to this concept, the function to correct imbalances in current development, aiming to achieve "harmony between economic, social and environmental dimensions, so that to ensure global, long-term sustainability of the entire system". (Assen, 2007, p.98).

Based on the classic triangle of sustainable development – economic, environmental, social – we get the idea that, to be sustainable over time, the development of a society involves three dimensional reproduction of capital: economic classic capital, environmental composed capital of all natural resources inherited from one generation and social equity capital, assimilable to integrative capacity of the community and that depends on access to wealth and its distribution mode.

Moreover, sustainable development is "the result of an integrated approach of political and decision factors where the environment protection and long-term economic growth are seen as complementary and mutually dependent". (Bacescu, 2010, p.69) The current global economic situation is the failure of an inadequate economic development that depletes natural resources and sentences to poverty the majority of the world population. Although, in the last 50 years of the twentieth century, world production increased six times and twice the world's population, inequalities between nations and inside nations widened, becoming a source of concern and potential conflict. 20 % of the world population consumes 80 % of the planet's natural resources, "2.4 billion people lacking access to basic sanitation and about 1 billion struggling to survive for less than a dollar a day". (Chauveau, 2009, p.43)

While development is perceived as synonymous with economic growth, considered indispensable for the essential needs of the population, sustainable development introduces, therefore, a new vision, an environmentalist one which emphasizes the necessity of considering the limited and non-renewable resources of the planet.

Sustainable development underlines the economic growth and its limits. It is the most comprehensive concept that economic thinking offered to collective reflection; a sustainable development can be conceived only through the impact of the global population. Food crisis and the energy crisis were triggers of this new way of thinking. Sustainable development is a complex combination of the social, ecological and economic, with a projection for the future, to secure both the current generation and future generation, through irrational consumption and lack of perspective, but not preserving the future by condemning the present generation to stagnate and sacrifice.

INFLUENCE OF THE ENERGY CRISIS AND ENVIRONMENTAL CRISIS ON FOOD CRISIS

For emerging countries and the poor ones, economic development involves producing as much energy, provided a sustainable management of climate change, which in fact is really the meaning of sustainable development.

The question that arises here is that the sun and wind are inexhaustible public goods, while petroleum, gas and coal are depleting private goods which threaten the climate. Modern agriculture is a huge energy consumer because it is heavily mechanized and fertilized. Also, as Nicholas Georgescu Roegen said, "resource depletion occurs as a proportional reduction in the level of future life". (Bogdan, 2009, p.78)

Not to forget the growing share of the production of bio fuels, which deviate from the consumer a range of cereals and oil producing plants. Let's think that only 20% of ethanol production is done by the U.S. and China follows it. Of course some consider the production of bio fuels as a "crime against humanity", while others consider it a necessity for sustainable development. The truth is that the focus towards agro fuels diminish the supply of food products and determines the rise in agro food products' prices, both aspects leading to the deepening of food crisis.

Everyone supports the idea that we cannot speak of a sustainable economy without fully manage each of the two crises, and the interdependence between them. There are a number of international organizations' studies that conclude that if current gas emissions are not diminished, we will see an increase in planet temperature by two-three degrees in the next four-five decades. This increase will lead to serious climate change repercussions on food production, environment and health. Hence, we can conclude that in order to feed the 21st century world's population, a correlation between the two crises must be assured.

All of these studies have shown that about "25% of the emission of greenhouse gases is due to agricultural practices such as deforestation, fertilizer, animal fattening". (Masu, 2009, p.15) This means that the more we have more farming, the more we will have a more pronounced warming climate, more emissions of greenhouse gases and more harmful effects. Not to mention the high frequency of droughts, storms and flooding caused by climate change that threatens the viability of agro systems.

Of course that agriculture can contribute to climate change mitigation, creating agricultural systems able to absorb external climate phenomena to conserve, change and replace carbon. We must not forget that agriculture consumes 70% of the Earth's water, and in some parts even 90-95%, the great consumer being irrigation, where water also dispels. The trend towards waste is created because water is not paid, and the farmers had the impression that water is a free and inexhaustible good; only 4/5 of the surface is covered by water, mostly salt water and only 3% of water reserves is fresh water. Furthermore, from this freshwater only 0.01% is used water,

namely rainwater and shallow groundwater. This means that, at present, “1.2 billion people live in arid regions and they will reach 3 billion by 2025”. (Brunel, 2009, p.92).

Obtaining drinking water was found to be more expensive, which makes us wonder whether it is a commodity or a global public good. Climate changes are causing global catastrophes if we think that in 2010 there were about 440 natural disasters, which have resulted in about 230.000 deaths in just 6 months. Only extreme heat and fire in Russia led to a decrease in production of wheat by 25%, which led to a rise in price up to 75%. Price per ton of rice reached \$1000, increasing by 50%, the highest level since 1970. Let's think about the fact that only 10 grams of rice per day for each inhabitant of India means an additional production of 3.6 million tons annually. Climate changes will cause malnutrition for 25 million children, “they will reduce wheat production by 30% and will double by 2050 prices for wheat, rice and corn”. (Carfantan, 2009, p.84)

We must also not forget that in 2050 Asia's population will increase from 3.9 to 5.2 billion inhabitants, and in “Africa will increase from 906 million to 2 billion people” (Masu, 2011, p.36); regions where already reigns chronic hunger and feeding these populations will raise serious issues.

Increasing agricultural production records a decreased rate. Thus, if in 1961-2000 the rate was + 2.3% per year, in the next period it was + 1.5%, which will require the production of 200 million additional tons by 2015, an unrealizable task.

HUNGER ON OUR PLANET

We must recognize that food provides eloquent illustration of how social, financial and ecological crisis worsens. Therefore, the concept of food security cannot be confined to the issue of proper food. Thus, food crisis is intrinsically linked to the two major challenges at the beginning of XXI century, i.e the issues of climate warming and energy, the world going toward famine. Let's think about the fact that each year the world's population is multiplied by 70-75 million people (about 4 Romanians), meaning an extra 3 billion people by 2050 that require a doubling of current food production. Decreased production in major exporting countries such as USA, Russia, Australia affects each time supply and cause a sharp rise in prices.

Given that approximately 100 million tons of U.S. corn leaves food markets towards increasing vehicle fuel production with soy, palm, sugar cane, beets, wheat, etc., we find a shift of agricultural production to energy demand and saving fossil, non-renewable resource (gas, coal, oil). We must not forget that even the European Union in “2020 expects to incorporate green fuel into gasoline at a rate of 20%”. (Masu, 2011, p.99)

Also, due to the desire to keep production for their own market and for fear of a possible shortage, a number of countries suspend or restrain their exports, which have inherent effects on those markets of goods. This has an effect on rising oil prices, which affect the world price of food.

In tropical areas droughts will multiply and intensify and conflicts for reasons of shortage will be more frequent and more violent. We can say that world is moving quickly to hunger, as evidenced by the fact that hunger riots multiply due to the explosion of food prices by 50% and our planet becomes a hungry planet due to resource shortage, both in energy and in food field. This is demonstrated by the existence of more than “one billion malnourished in 2012, compared to 800.000 in 1995, the percentage of malnourished population increased from 16% to 20%”. (D’humieres, 2010, p.53)

There are situations when hunger is caused by some armed movements that strive for power and resources, and destroy crops. Not to mention a series of deliberate speculative business such as stocks designed to allow price increases. In such situations the economic response becomes insufficient, imposing solving the armed conflict; hunger causes are therefore both technical and geopolitical.

CONCLUSION

Man has turned Earth into a planet that threatens to become a space that cannot sustain life with fewer resources and disrupted flows and circuits, going into a drift of no return. We already have a sick planet since the natural order was overturned by abuse and aggression, things that spring, on one hand, from the dark chaos of ignorance or the immeasurable desire for enrichment, the inclination towards violence and criminal acts of others, on the other hand.

To justify this statement, we remind the wild waste of natural resources by man, the destruction of balanced natural ecosystems, abusive consumption, blowing all kinds of toxic gases, starvation and disease, disturbance by humans through violence, organized crime. These are anti-natural facts that increase the gap between food security and sustainable development. In this way, people tend to remain without a leader, divided into a network of international bodies and organizations, that would lead to terrorism and mafia. Our alarm signal is targeting those people who oppose to the natural order and push humanity towards suicide. We just have to think globally and follow a "universal good", with order and rigor for all people.

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Food security: changes and trends on world agricultural markets

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ABSTRACT

This paper aims to investigate the state of food security worldwide, trying to answer the questions: What are the changes of food demand and supply on the world market? What are the gaps in food availability between different regions of the world? Which are the future trends of food demand and supply? In pursuing these questions, statistical data from FAO data base have been gathered and analyzed. Forecasts of food consumption and production are made using graphical method. The results show that in regions where food consumption is low, Africa, Asia, it does not provide the nutrients necessary to maintain harmonious development and health. In contrast, there are countries in North America, Europe and Oceania, where consumption is sufficiently varied and nutritionally balanced.

Keywords: *agricultural markets, food security, food crisis, hunger*

INTRODUCTION

The research investigates the state of food security, emphasizing the differences among regions of the world, among developed countries and developing countries. It focuses on establishing whether changes in food demand and supply on the market have affected the state of food security and, if so, what are the future considerations of this issue.

The objectives of the research are to identify the dynamics of food consumption and production worldwide, in the last fifty years, the gaps in food security situation between regions, to forecasts the food demand and supply to draw appropriate conclusions about future trends of food security.

The differences in food security assurance between developed and developing countries issue from the gaps of resources spent per capita. It is estimated (Diamond, 2005) that 1 billion people in developed countries use, per capita, 32 times more resources compared to the developing countries.

The market economy has its limits, including international agricultural trade imbalances, debt of underdeveloped countries and food crises causing strong pressure characterizing the agricultural markets. In addition, adjustment of agricultural markets can not be achieved only on the "invisible hand" of competition, but requires interventions to support the supply and / or demand for certain agricultural products.

The world agricultural market show fluctuating trends, under the impact of imbalance between supply and demand, difficult to correct because of the lack of elasticity of agricultural production on the short term.

As trends, in recent decades in developed countries demand remains the same, and supply tends to exceed demand, although the geographical areas and countries remain major imbalances. As a result, prices are fluctuating and agricultural markets are unstable.

World agricultural markets are influenced by agro-dependence of developing countries, particularly in Africa, and in a number of major oil-producing countries, which have no agricultural resources (United Arab Emirates, Iran, Iraq).

MATERIALS AND METHODS

Demand for agricultural products on world markets

Demand for food supply is a complex economic category, reflecting the differences in consumer behavior, both between population groups within the same country and between countries. The size and structure of demand are influenced by economic factors (income and prices), demographic, social, geographical etc.

Among the mentioned factors, income has a significant influence on the structure and size of demand for agricultural products. For example, low income reduces consumption level, especially for products with high nutritional value: meat, milk, vegetables and fruits, and maintain or increase consumption of foods with low nutritional value cereals and cereal products, potatoes, vegetables etc.

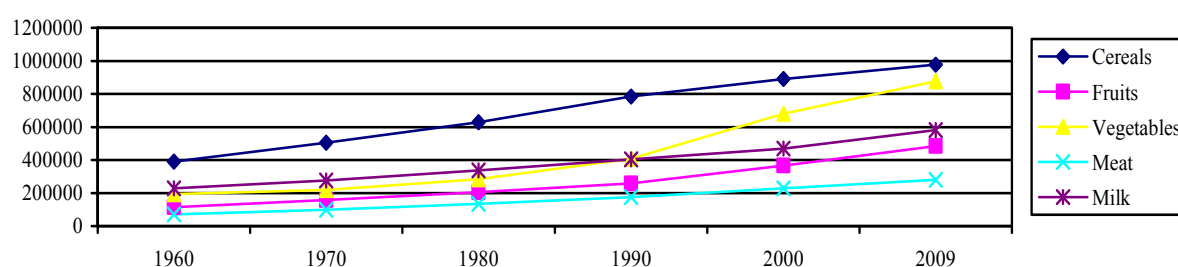
To capture the changes in world agricultural demand and differences between countries, the food consumption in different regions of the world is analyzed in dynamic and structurally.

Although, on short-term consumption does not vary greatly, in the long run, in the last 50 years, consumption of agricultural products increased 2.5 times in cereals and milk and 4 times in fruits, vegetables and meat (Table 1). The application not only increased intensively (consumption per capita), but also extensively due to increasing world population.

Table 1 Dynamics of world consumption for the main agricultural products, 1960-2009 (1000 tons)

Specification	1960	1970	1980	1990	2000	2009	2009/1960 (%)
Cereals	390527	503780	628141	783388	890409	976681	250.1
Fruits	114568	158569	205068	258991	366603	485446	423.7
Vegetables	193962	218763	283602	408140	679353	877489	452.4
Meat	70062	98185	133963	175665	229364	278863	398.0
Milk	229546	275908	337408	404000	469896	580868	253.1

Dynamics of world consumption for the main agricultural products, 1960-2009 (1000 tons)



Source: FAO, own calculations

There are structural differences between regions in per capita food consumption, an important indicator of food security (Table 2). The population of Africa, Asia and South America has a diet based on vegetable products and the population in North America, Europe and Oceania has a diet based on animal products: meat, milk, and products with high nutritional value : vegetables and fruits.

Table 2 Regional disparities of agricultural products per capita consumption for the main agricultural products, 2009

Specification		Africa	Asia	North America	South America	Europe	Oceania	World
Consumption per capita (kg / year / person)	Cereals	151	155	109	118	131	98	147
	Fruits	62	64	113	103	92	103	73
	Vegetables	65	161	122	52	122	99	132
	Meat	18	31	117	73	76	105	42
	Cow milk	44	54	250	130	219	178	87

Source: FAO, own calculations

In regions where food consumption is low, Africa, Asia, it does not provide the nutrients necessary to maintain harmonious development and health. In contrast, there are countries in North America, Europe and Oceania, where consumption is sufficiently varied and nutritionally balanced.

Supply of agricultural products on world markets

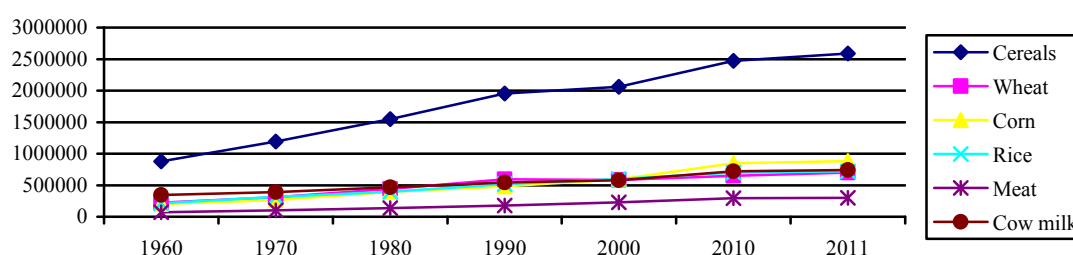
Although currently climate change, economic and social crisis occur, however, the world agricultural production has sharply increased, after the Second World War.

Total world agricultural production per capita for the main agricultural products, although it does not ensure domestic food demand in some regions has, however, an ascendant trend (Table 3).

Table 3 Dynamics of total world agricultural production and per capita for the main agricultural products, 1960-2012

Specification		1960	1970	1980	1990	2000	2010	2011	2012
Total production (1000 tons)	Cereals	876 874	1192508	1549913	1952458	2060595	2474121	2589143	2546631
	Wheat	222 357	310 740	440 187	592 311	585 690	651 906	701 395	674 884
	Corn	205 027	265 831	396 623	483 372	592 479	849 792	885 289	875 098
	Rice	215 646	316 345	396 871	518 568	599 355	701 047	722 559	718 345
	Meat	71 357	100 668	136 736	179 423	229 961	293 242	298 871	-
	Cow milk	344 184	391 820	465 657	542 739	578 986	722 963	739 363	-
Production per capita (kg / person)	Cereals	284.2	323.4	348.8	368.6	336.5			357.2
	Wheat	72.1	84.3	99.1	111.8	95.7			94.7
	Corn	66.4	72.1	89.3	91.3	96.8			122.7
	Rice	69.9	85.8	89.3	97.9	97.9			100.7
	Meat	23.1	27.3	30.8	33.9	37.6			-
	Cow milk	111.5	106.3	104.8	102.5	94.6			-

Dynamics of total world agricultural production, 1960-2012 (1000 tons)



Source: FAO, own calculations

The world currently produces three times more grain than in 60s, four times and two times more meat and milk. The highest production increases recorded to corn and meat (corn sustain, actually, livestock).

Although the production of meat and milk increased, availability per capita consumption remain low compared to normal diet (the availability of milk remained the same for over 40 years).

Increasing agricultural production and improve its global structure, by increasing livestock production, is a way of improving consumption and hence food security. In return, increased animal production depends on the degree of intensification of agriculture and fodder resources (especially cereals and soybeans).

RESULTS: WORLD AGRICULTURAL DEMAND AND SUPPLY – GAPS, TRENDS AND FORECASTS

Analysis of the global food security situation is based on comparisons of the level of agricultural production in different parts of the world and highlighting gaps between developing countries and developed countries. This, compared to the share of the main areas considered, highlight disparities and unequal distribution of agricultural production, the main source of food security.

In Africa, where lives 15% of the world population, only 6% of grain is produced, 3.6% of wheat and 13% of fruits, 6% of vegetables, 5% of meat and around 5% of milk. In Asia lives two thirds of the world population, but get less than half the production of cereals, fruits, meat, and cow milk. Only the share of vegetable production produced in Asia in total world production is greater than the share of population. North America produce two-three times more grains, wheat, meat and milk, than the needs of consumers. In South America and Europe the situation is more balanced: production of cereals, fruits, meat and cow's milk is even higher than consumption needs. Oceania produces more than consumer demand, excluding vegetables.

Table 4 Regional disparities of total world agricultural production and per capita for the main agricultural products, 2012

Specification		Africa	Asia	North America	South America	Europe	Oceania	Total world
Share of area population in the world population (%)		15.4	60.2	5.0	5.7	10.4	0.5	-
Share of area production in total world production (%)	Cereals	6.1	50	16.8	6.2	18	1.6	
	- Wheat	3.6	46.8	13.2	2.9	29th	4.5	
	Fruits	13.4	51.6	4.4	12.8	11.2	1	
	Vegetables	6.2	76.9	3.4	2.3	9.2	0.3	
	Meat	5.3	41.8	15.8	12.8	19.4	2	
	Cow milk	5.0	36.9	13.4	9.1	29.6	3.7	
Production per capita (kg / person)	Cereals	153	302	1151	422	565	1164	351
	Wheat	22	73	251	48	264	794	94
	Fruits	81	76	79	201	97	170	84
	Vegetables	65	195	104	62	135	83	150
	Meat	15	29th	132	95	78	154	40
	Cow milk	38	64	275	163	290	707	101

Source: FAOSTAT, own calculations

More than half of production and supply of main agricultural products of vegetal origin are obtained in Asia (50% of cereal production, 51% of fruit, 77% of vegetable). But Asia is in the

top of world producers for animal products as well: 37% of milk production and 42% of meat production.

The large geographical disparities arise between the share of population and the share of grain production, between Europe and North America and populated and poorest areas of the world.

Developed countries, which hold 16% of world's population, produce 36% of the grain, while the developing countries, which hold 84% of world's population, produce only 64% of the grain. The situation is not only due to the lower land resources of the developing countries, but also the gap in yields.

Solutions to increase agricultural production in developing countries aimed at both extensively approach – increasing the area cultivated – and intensively approach – additional allocation of factors per unit of production (per hectare and / or animal) and higher average yields.

In some developing countries, agricultural production increased as a result of the Green Revolution, so India has produced in the years 1986-1987, 160 million tons of grain, other countries in Central Asia, the Middle East and Latin America have notably increased production in the 80s.

However, the level of grain production per capita remains very low. Compared to the world average of 351 kg / capita, 1151 kg / capita in North America, and 1164 kg / capita in Oceania, in Africa it is only 153 kg / capita.

Imbalance between per capita grain production in different continents and groups of countries is obvious. Thus, the ratio between the grain production per capita between Africa and North America is 1: 7.5.

Increasing yield is the only way to solve the problem of cereals in developing countries. In Africa, doubling yields would improve the food situation of the population and reduce structural power imbalances.

Meat production per capita in the world is 40 kg. The higher per capita productions are obtained in Oceania, North America, South America and Europe. The ratio of the average meat production in Africa and Oceania is 1:10.

In 2012, Europe has 19% of global meat production to a population of 10% of humanity, and North America 15% to 5% of the population, while Africa and Asia holding 5% and 42% of production, for 15% and 60% of the population. Although there is surplus production of meat in rich areas of the globe, humanity still suffers from major imbalances due to the lack of animal protein.

World milk production is concentrated in Europe, where large surpluses occur. The average per capita production of milk varies depending on the area, as follows: in Africa 38 kg, 64 kg Asia, 163 kg in South America. Developed countries have the highest per capita production of milk, 2-3 times higher than the world average and 6-9 times higher than production per capita in developing countries. The gap between milk production per capita in Africa and Europe is of 1:7.6.

For better understanding the food market trends, we forecast supply and demand for the next period of time. Considering the data of table 1 Dynamics of world consumption for the main agricultural products, 1960-2009, and the data of table 3 Dynamics of total world agricultural

production for the main agricultural products, 1960-2012, data for 2020 and 2030 result using graphical method of extrapolation.

Table 5 Forecasts of world consumption for the main agricultural products, 2020, 2030 (1000 tons)

Specification	2020	2030	2020/2009 (%)	2030/2009 (%)
Cereals	1120095	1241409	114.7	127.1
Fruits	518118	590473	106.7	121.6
Vegetables	935945	1076629	106.7	122.7
Meat	312274	354538	112.0	127.1
Milk	623454	692173	107.3	119.2

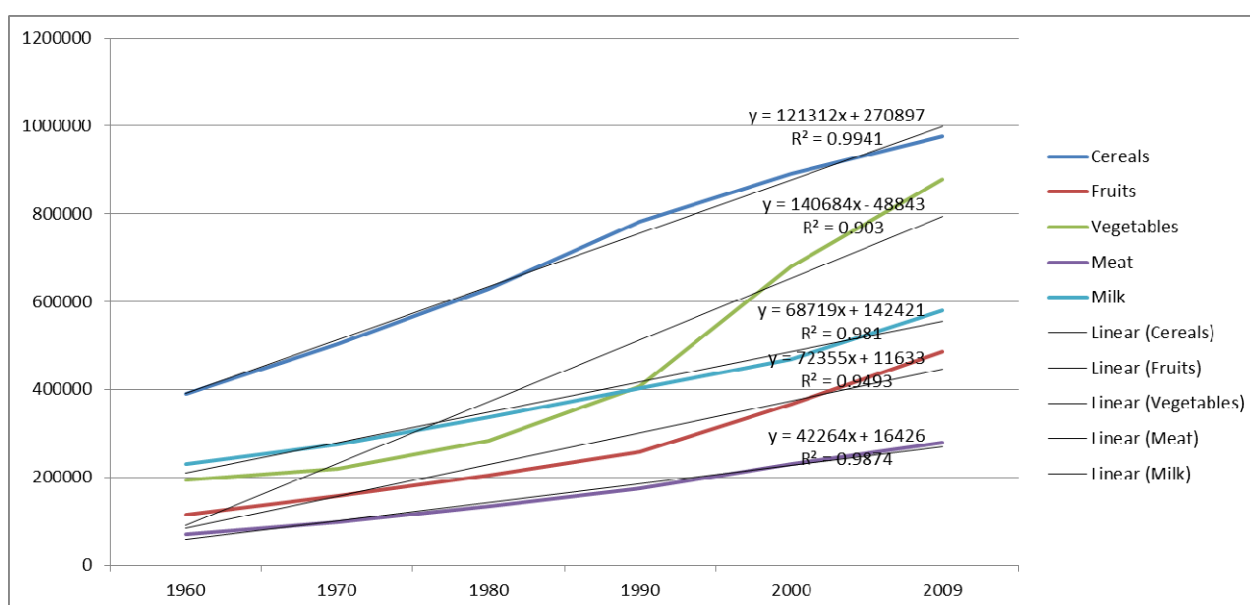
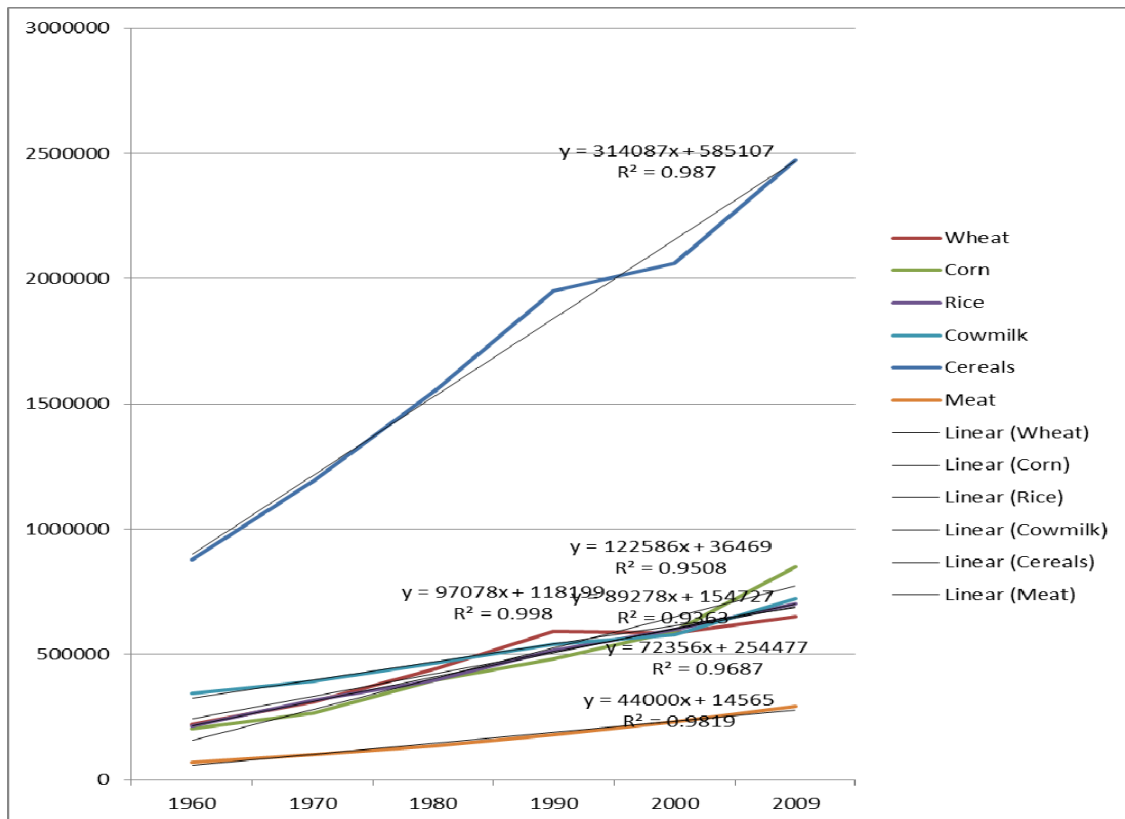


Table 6 Forecasts of total world agricultural production for the main agricultural products, 2020, 2030, (1000 tons)

Specification	2020	2030	2020/2009 (%)	2030/2009 (%)
Cereals	2783716	3097803	112.5	125.2
Wheat	779673	868951	119.6	133.3
Corn	895971	1018757	105.4	119.9
Rice	797745	894823	113.8	127.6
Meat	322565	366565	110.0	125.0
Cow milk	760969	833325	105.3	115.3



Both food production and consumption will increase, with about the same growth rates, in the next periods, continuing the linear trend. Although currently climate change, economic and social crisis occur, however, the world agricultural production increases. The food consumption grows as well, due to the increase of population.

CONCLUSION

The results show that in regions where food consumption is low, Africa, Asia, it does not provide the nutrients necessary to maintain harmonious development and health. In contrast, there are countries in North America, Europe and Oceania, where consumption is sufficiently varied and nutritionally balanced.

The low level of food security in some regions of the world, due to the gaps in resources allocation and effects of the food crisis, becomes apparent through drastic reduction of global food reserves, far beyond the minimum security, rising food prices on the world market, increasing developing countries' dependence on exports of developed countries.

Researchers (Wijkman, 2013) argue that a second green revolution could solve the food security, in the sense that resources could improve access to food for 1 billion chronically undernourished people, and in addition, provide food for a growing world population estimated 2 up to 3 billion people over the next 30-40 years. Food production should increase by 70% by 2050 to adequately feed a growing world population (IAASD, 2009). In the twentieth century, in the '60s, Asia held the first green revolution, which resulted in a doubling of production for major cereals – wheat, maize and rice. It was the result of modern agricultural policy based on hybrid perfected on chemical fertilizers on diesel pumps for irrigation and pesticides. These methods led to the growth of agribusiness food production, especially in India.

Currently, the food security is the lowest in Africa. A second green revolution should be sustainable in terms of environment, given that the first green revolution had negative effects, such as decreasing water reserves, soil erosion, chemical pollution of soil with pesticides and heavy overloading them with nutrients through fertilizers. As a result, the main feature of the second green revolution is durability. In addition, it must be based on management practices adapted to a warmer climate.

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Sustainability education within universities

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ABSTRACT

Sustainable development is a challenging goal established several decades ago in order to create a more harmonious relation among humans and between them and the natural environment. On the long way to this goal education is an important component that needs to undergo important changes. The nature of these changes, their expected outcome, processes and actors contributing to this and the progress made so far are examined in an exploratory approach envisaging to clarify further information needs for improving human resources for sustainable development. In terms of competences, institutions, and educational programs we report significant progresses, while in case of practitioners information availability hindered at some extent the relevance of findings which at this point confirmed the normative framework.

Keywords: *human resources, competences for sustainable development, higher education, economics and management, sustainability managers.*

INTRODUCTION

Sustainable development was launched for more than two decades and although it envisaged a practical outcome in terms of policy making it turn out to be a vision that is at the end of a very long transformation process to be undergone by society as a whole (Rojanschi et al., 2006). This process comprises many changes to be accomplished and it is now recognized the need of gradual approach, with a number of stepping stones that allow both changes to be implemented and resources to be gathered.

The need to endorse sustainability with appropriate human resources was recognized in an early stage and continuous to remain an important cornerstone of the progress toward sustainable development. In 1990 was signed the Talloires Declaration which consists in a ten point action plan for the integration of sustainability in education. Currently is deploying the United Nations Decade for education for sustainable development (2005-2014).

Universities are key actors in this playground since they prepare the professionals able to deliver or to manage processes, products, services etc. in accordance with the requirements of sustainable development. The challenges of sustainability are addressed by higher education institutions in various ways, but the most important transformation to occur is the change of the curriculum (Wals, 2008). Such change necessitates a careful preparation even by using a strategic approach underpinned by change management. This includes, among others, a clarification of competences and how these could be developed by various educational programs and/or disciplines.

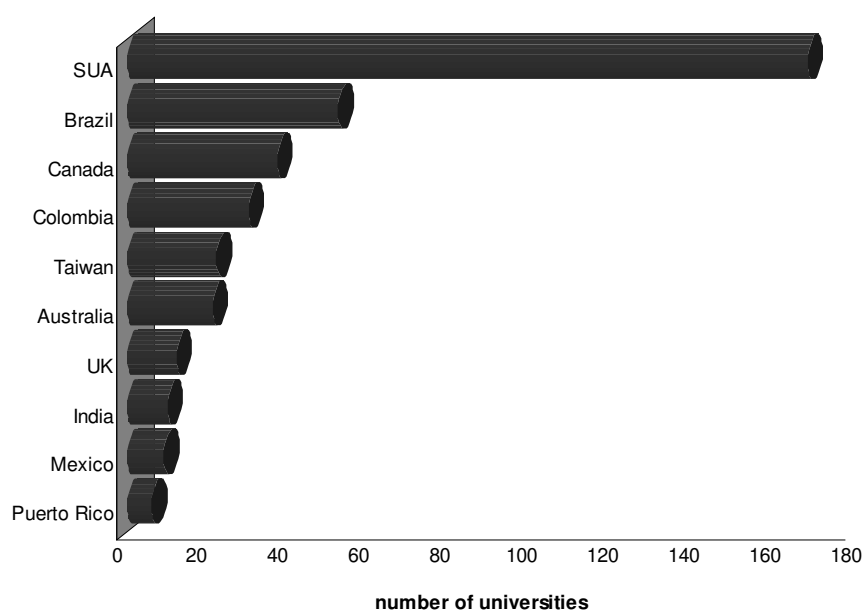
Worldwide a number of educational programs are already focusing on the delivery of sustainability professionals, while others integrate in the content of disciplines or of curriculum components that target core sustainability competences. Our paper focuses on educational programs in the economic field using an exploratory approach that aims to

outline a range of possibilities for curriculum changes that respond to the exigencies of sustainable development. The structure of the paper goes on with a first part that gives details on the institutional progress toward sustainability in higher education. The second part is a comprehensive review of the literature that reveals the state of art for the definition of competences for sustainable development. Further, there is performed a qualitative analysis of the educational programs of the top 25 universities in the world and the educational background of a selection of current or former environmental/sustainable development top managers in order to identify regularities or patterns that are relevant for both competence definition/confirmation and educational programs' development. The final section concludes and discusses the findings and their theoretical and practical relevance.

INSTITUTIONAL PROGRESS TOWARD SUSTAINABILITY IN HIGHER EDUCATION INSTITUTIONS

Higher education institutions represent a deeply conservative place (Velazquez et al., 2005) where numerous barriers could be encountered against any change, including the ones needed for improving the integration of sustainability. Some of these barriers could be overcome easier by establishing an institutional framework that provides guidance and facilitates information exchange among universities on a particular theme.

In the case of sustainability there are a number of initiatives that could be regarded as progress toward an institutional framework that supports the universities to identify the necessary changes and to implement them. All these initiatives are built on a foundation represented by the environmental education, goal that is approached by a number of dedicated events such as the Tbilisi Intergovernmental Conference held in 1977 or the International Meeting of Experts in Environmental Education held in Paris in 1982. It worth to mention the wider framework of education for sustainable development (ESD) which is promoted by the United Nations by declaring the 2005-2014 decade as the decade of education for sustainable development (DESD) with the mission, among others, to catalyze partnership, encourage monitoring and evaluation, develop a research agenda, share good practice, and create flexible working groups.



Source: ULSF, Talloires declaration institutional signatory list, http://www.ulsf.org/programs_talloires_signatories.html, accessed in 14 July 2012.

Fig. 1 Top 10 countries by the number of signatory universities for the Talloires Declaration

In 1990 was signed within the framework of the Conference of Rectors of Europe the Talloires Declaration (TD), a ten point action plan for the integration of sustainability in universities. This declaration was signed until 2012 by 440 universities from 53 countries. The order of countries according to the number of signatory universities puts USA, Brazil, and Canada in top positions (fig.1).

The secretariat of the TD is represented by the University Leaders for Sustainable Development (ULSF). In 1993 emerged the Declaration of Universities for Sustainable Development which prepared the ground for the Copernicus Campus - Universities Network for Sustainability. At its 2001 conference held at the University of Lunenburg the organization expanded and became international by integrating the International Association of Universities and the United Nations Educational, Scientific and Cultural Organization (UNESCO) in the Global Higher Education Partnership for Sustainability (GHEPS). This partnership's sustainability specific goals are i. to promote better understanding and more effective implementation of strategies for the incorporation of sustainable development in universities; ii. undertake a global review and assessment of progress in making sustainability central to curriculum, research, outreach and operations; iii. identify, share and disseminate widely effective strategies, models, and good practices; iv. make recommendations based on research and review.

Beside this global framework there are also regional agreements and networks that promote sustainability in higher education institutions.

At what extent the contribution of this institutionalization is really helpful for university managers it is difficult to be judged. Nevertheless, it could be stated that if there is will for change toward sustainability in a certain university, these networks and declarations make available valuable information including research published in specialized journals such as the *International Journal of Sustainability in Higher Education* and the web sites of sustainability departments/offices of numerous universities from different countries.

EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD) IN UNIVERSITIES

Sustainable development is a goal, a vision about a society that has no social disparities and that is in harmony with its natural environment. The list of actions to be performed in order to achieve this goal is far from being completed. However, these ideals were translated in strategies and action plans, including sector specific ones.

As long as human resources are regarded, their contribution to sustainable development is a question that animated research, educational management and the novel institutions of sustainability in education in the last decades. The main issues approached by ESD research and assessment in universities are the definition of its content, capture of patterns, the process and nature of change, drivers and barriers more or less connected with the state of integration.

ESD stems in environmental education (EE), which despite its name refers to a wider context. Thus, IUCN (1970) defined EE as the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among men, his culture, and his biophysical surrounding.

The current clarification on ESD provided by UNESCO (2012) reveals that both social and environmental issues need to be integrated. Hence, ESD refers to education regarding issues such as environment, peace, human rights, health, HIV/AIDS, biodiversity, gender, inclusive, multi-cultural, holistic, global, citizenship, disaster risk reduction, climate change, and food security.

Another important feature of ESD is its role as catalyst for innovation in education since along with the changes needed to develop specific competences a co-evolution of pedagogy is occurring (UNESCO, 2012). This pattern was signaled by earlier studies too. de Ciurana and Filho (2006) note that teaching toward sustainability is the beginning of a long process that involves a change in the epistemological, philosophical, political and social conceptions of all university members. Wals (2008) also states that ESD means a different view on pedagogy, but also on curriculum, organizational change, policy, and ethics.

As types of learning, there are opinions according to which ESD should be a transformative learning (Sipos et al., 2008; Ferrer-Balas et al., 2008; Wals, 2008). Transformative or transformational learning is a concept developed relative recently by Mezirow (1983) which emphasizes the transformation occurring in the learner by using various perspectives in the analysis of a certain issue and the transformation of passion and values in action (Sipos et al., 2008).

ESD implies changes and Thomas (2004) emphasizes that this needs a strategic approach, based on change management and supported by staff development. de Ciurana and Filho (2006) went further and outlined the characteristics of a model of the curriculum transformation toward sustainability (greening) that are presented in box 1.

Box 1 Characteristics of a curriculum greening model

1. Integrating the paradigm of complexity in the curriculum.
2. Introducing flexibility and permeability of the disciplines.
3. Contextualizing the curricular project – relationship with institutions and companies.
4. Taking into account the subject in the construction of knowledge.
5. Considering the cognitive, affective and action aspects of people.
6. Attempting to establish coherence and interaction between theory and practice.
7. Working within a perspective orientation of alternative scenarios.
8. Adapting new teaching and learning methodologies.
9. Creating space for reflection and democratic participation.
10. Reinforcing the commitment to transforming relations between society and nature.

Source: de Ciurana and Filho (2006), Education for sustainability in university studies. Experiences from a project involving European and Latin American universities, *International Journal of Sustainability in Higher Education*, vol.7 (1), pp.81-93.

Other practical strategies that can be used for ESD integration in universities include benchmarking, using good practices, creating networks, specialized departments and national centers.

ESD involves changes, but the changes are not necessarily completely new aspects to be integrated. Sherren (2008) stresses that there is no need to invent something disconcertingly new, but to reinforce certain concepts such as liberal education, interdisciplinarity, cosmopolitanism and civics in the philosophy, disciplinary content and pedagogy.

Despite the increasing strength of the sustainability discourse worldwide, its integration in higher education curriculum is a slow process (Winter and Cotton, 2012; Bran et al., 2009). The drivers and barriers of this process there identified and ordered at some extent. The most important drivers are academic and student interest (Chhokar, 2010), which develop then good “connectors” with society exist, along with the existence of coordination bodies and the availability of funding (Ferrer-Balas et al., 2008; Wals, 2008). The most important barrier is the resistance to change, accompanied by lack of awareness, interest, funding, training of

teaching staff, and profit mentality (Winter and Cotton, 2012; Wright, 2010; Chhokar, 2010; Wals, 2008; Velazquez et al., 2005).

The interplay of these drivers and barriers could be very different from one country to another, or even among universities. For instance, in The Netherlands there a specific organization was created for this purpose the process of integration is very advanced, while in Belgium ESD is not a structural part of the educational curriculum (Wals, 2008).

The analysis of ESD integration level by knowledge field is patchy, but the existing studies reveal that technical and science educational programs are more advanced than business and economic programs. Johannsdottir (2009) states that business education failed to answer the demand for environmental literacy, while Palma et al. (2011) report that only 33% of business administration programs in Brazil included new courses to address sustainability. On the other hand, Giacomelli et al. (2003) found that the main drawback for the graduates of sustainability educational programs was the lack of socio-economic disciplines in their curriculum.

COMPETENCES FOR SUSTAINABLE DEVELOPMENT (CSD)

ESD's outcome should be a number of competences that enable graduates to address sustainability issues in a professional manner. Although the debate continues, by comparing the list of competences provided by independent inquiries it is possible to identify a pattern consisting in *six broad competence* categories: i. holistic/integrative thinking; ii. critical thinking; iii. interdisciplinary approach; iv. creative thinking; v. acknowledging complexity; and vi. transformation of feeling in action. These categories, their original description and sources are presented in table 1.

Table 1 **Broad categories of CSD**

Crt. nr.	Competence category	Original description	Source
1	Holistic/integrative thinking	analyzing and harmonizing all the relevant factors involved in approaching environmental problems	Giacomelli et al. (2003) Italy
		relevant knowledge and ability to think, act and take responsibility out of a holistic understanding of the preconditions of life on earth in a global perspective	Swedish experience (Wals, 2008)
		adopting an integral view: looking at reality from many different perspectives	Dutch experience (Wals, 2008)
		integrative lens: taking a holistic perspective	UNESCO (2012)
2	Critical thinking	think and analyze critically	Swedish experience (Wals, 2008)
		to reflect in a distanced manner on individual and cultural concepts	German experience (Wals, 2008)
		critical thinking and discussion	Stubbs and Cocklin (2008)
		critical thinking	Hurlimann (2009) Australia
		critical: questioning "taking for granted" patterns	UNESCO (2012)
3	Interdisciplinary approach	ability to cooperate over disciplinary and professional borders	Swedish experience (Wals, 2008)
		to work in an interdisciplinary manner	German experience (Wals, 2008)

Crt. nr.	Competence category	Original description	Source
		complex interdisciplinary approach	Dale and Newman (2005)
4	Creative thinking	think in new creative ways	Swedish experience (Wals, 2008)
		to achieve open-minded perception, trans-cultural understanding and cooperation	German experience (Wals, 2008)
		unlocking creativity: ability to think from new mental models and paradigms, out of the box	Dutch experience (Wals, 2008)
5	Acknowledging complexity	complex thinking and using specialists for different areas	Swedish experience (Wals, 2008)
		to think in a forward-looking manner to deal with uncertainties, and with predictions, expectations and plans	German experience (Wals, 2008)
		appreciating chaos and complexity	Dutch experience (Wals, 2008)
6	Transformation of feeling in action	ability to create enthusiasm	Swedish experience (Wals, 2008)
		to feel empathy, sympathy, and solidarity to motivate oneself and others	German experience (Wals, 2008)
		personal leadership and entrepreneurship	Dutch experience (Wals, 2008)
		independent inquiry	Hurlimann (2009) Australia
		transformative lens: moving from awareness to incorporating real change and transformation through empowerment and capacity building to lead to more sustainable lifestyle	UNESCO (2012)

Source: authors own compilation using the sources mentioned in the last column.

The list of competences is not exhausted by the ones presented in table 1. On the contrary, there are many other competences that are considered necessary for a sustainable development professional. These include: system thinking (Bran et al., 2009), problem solving, planning, continuous learning, capacity for change and others

The overall picture of CSD allows us to capture the following features: non-specificity; solid knowledge and information accrual; acceptance of knowledge limits; and feeling-knowledge interaction. CSD are not sector specific in terms of knowledge or even profession and could be regarded as transversal competences. On the other hand, holistic/integrative thinking, creative thinking and interdisciplinary approach are three categories of CSD that are very demanding in terms of knowledge and information accrual (Bran and Ioan, 2006), although even a solid foundation in this respect would not exclude unexpected outcomes due to the complex patterns of natural and social systems. It could be inferred that CSD are not easy to acquire and that the upload of knowledge and information would occur at the end of a long process and it might be of limited availability.

Eventually knowledge and information gaps could be overcome at some extent by involving feeling built up in a novel architecture of values and passion. In order to reach such an outcome it would be necessary to reconsider not only the content of disciplines, but also the teaching methods and the “value” environment of universities and campuses where students should recognize the shift toward sustainability.

EDUCATIONAL PROGRAMS THAT DELIVER CSD

Universities' reaction to sustainability has various shapes and dimensions and could be assessed against sets of criteria established at international or national level having as outcome a range of clusters. Within this area of research our paper aims to reveal the changes in the content of social sciences and management educational programs that are enforced in order to deliver CSD. The analysis is performed using the above mentioned educational programs of the world most performing universities (top 25 in the QS Top Universities classification by subject for Social Sciences and Management, Economics and Econometrics).

The rationale for establishing the empirical basis is twofold: on the one hand it is related to the type of change that is assessed, and on the other hand it refers to the universities that were selected. In the first case, the analysis of changes in curricula means to reveal the patterns for the outcome in terms of sustainability integration in higher education. Curriculum changes are the first criterion of sustainability assessment in the set used by ULSF, while the Dutch organization for sustainability integration in universities considers such changes as an indicator of strong integration (Wals, 2008). In the second case, the most performing universities were selected because in their case the drivers of sustainability are strong enough to produce effects. Hence, these universities are very well connected to the research and education priorities of the society, such as sustainability, and have the necessary financial and human resources to endorse the changes needed. Further, there is little reporting on the hierarchy of universities against sustainability criteria. Therefore, the top 25 universities were assimilated as the best practice models for sustainability integration.

The occurrence of curriculum changes, their magnitude and variation among universities, the relation between social and environmental sciences, the representation of global environmental priorities and other patterns were revealed by taking in account program and course information provided by sample universities for undergraduate and graduate programs, excepting PhD degrees.

Two thirds of the universities made changes in their curriculum toward sustainability. These changes are different in magnitude, being comprised between the design of dedicated programs and the availability of at least one specific course in the elective category. Between these limits the number of courses for CSD makes the difference among universities.

Several universities have specific educational programs that deliver CSD and these are organized mainly as graduate programs. The exceptions are the *Land economy* undergraduate course of Cambridge University and the minor in *Environmental economics* at the University of Toronto. Dedicated graduate programs are *Environmental policy, Planning, growth and regeneration*, and *Leadership in sustainability* (University of Cambridge); *Environmental policy with Economics* (London School of Economics and Political Science); *Organizations and environmental management* (University of Pennsylvania); and *Green Management, energy and corporate social responsibility* (Università Commerciale Luigi Bocconi).

The minor change is the availability of only one to three elective courses. In such cases the proposed courses are broad in scope and could be introductory courses as it is the case of the University of Toronto (*Introduction to environmental studies, Multidisciplinary perspective on environment*), or courses that reflect an emerging issue that could be of interest for a graduate in economics (the course of *Philosophy and economics of the environment*, taught at the Oxford University's undergraduate program in Economics).

A broad range of CSD developing courses is featuring only several universities such as Cambridge, Harvard, Yale, London School of Economics and Political Science, Pennsylvania, and Luigi Bocconi.

The analysis of courses' content and scope was performed by creating a pool of CSD delivering courses from all universities. The first thing to notice was the size of this pool. By summing up we found 132 CSD delivering courses, because virtually each course has a different nomination. This means that every university gave a different name and possible scope to its CSD delivering disciplines. This situation could be indicative for an *epistemological bias* which could be explained, at some extent, by the interdisciplinary pattern of sustainability and the continuous quest for better solutions against environmental problems that persist despite more and more intense effort to cope with them. At this point is worth to notice that sustainability is represented mainly as an environmental issue, its social dimension receiving much less attention.

By giving a closer look to the CSD delivering courses we noticed that although they are different in nomination there are similarities among them that suggest a certain overlap of their content and scope which allowed the grouping presented in table 2.

Table 2 Grouping of CSD delivering disciplines

Crt. nr.	Group	Disciplines
<i>Environment and society</i>		
1.	Human-environment interaction	Asian environments and frontiers; Environment and cultural behavior; Environment: science and society; Environmental change: past, present, and future; Environmental history of Africa; Environmental history of the Middle East; History, environment and ethics; Humans and the environment; Innovation, science and technology. Policy and the public good; Interdisciplinary environmental studies; Introduction to environmental history; Multidisciplinary perspective on environment; Responding to environmental challenges; Social entrepreneurship; Technology, society and the environment
2.	Business and the environment	Business and corporate strategy for the 21 st century; Business and governance for sustainability; Business and the environment; CSR and corporate sustainability; Environmental law and business; Environmental management and strategic advantage; Financing green technologies; Green business operations; Management and the environment: issues and topics; Private investment and the environment; Project finance and financing strategies for green businesses; Strategic corporate responsibility and consulting projects; Sustainable business and green management; Sustainable innovation and supply chain management; The new corporate social responsibility: public problems, private solutions, and strategic responses
3.	Environmental economics	Applied environmental economics; Economics of natural resources; Economics of the environment; Environmental and natural resource economics; Environmental economics; Environmental economics and law; Environmental economics and society; Fundamentals of environmental economics and policy; Introduction to environmental economics; Philosophy and economics of the environment
4.	Environmental policy	Democracy and sustainability; Environmental governance; Global governance; International environmental policy and governance; International organizations and conferences; Managing a living planet: governance solutions for global environmental problems; The media, energy, and environment: global policy and politics; Public policy and regeneration
5.	Sustainable development	Environment and development; Land economy, development, and sustainability; Linkages of sustainability; Science and technology for sustainability; Sustainability science: interactions between human and environmental systems; Sustainability, trade, and environment; Sustainable design; Sustainable development; Technology and sustainability
6.	Environmental law	Environmental law; Environmental law, sustainable development and governance; International environmental law; Law and the environment; Local environmental law and land use practices; Planning and environmental law

Crt. nr.	Group	Disciplines
<i>Environment and environmental issues</i>		
7.	Environmental science	Applied risk assessment; Biological processes in environmental engineering; Cancer toxicology; Case studies in ecology; Case studies in environment; Disease ecology, economics, and policy; Ecology and population biology; Environmental chemistry; Environmental design; Environmental impact assessment; Environmental planning and environmental assessment; Environmental protection clinic; Environmental risk assessment; Environmental systems modeling; Environmental transport processes; Introduction to environmental analysis; Introduction to environmental systems; Introduction to statistics in the environmental sciences; Natural science; Risk analysis and environmental management; Systems modeling of the environment
8.	Energy	Alternative energy; Culture, power, oil; Energy innovation policy; Energy markets; Energy policy analysis; Energy policy: technologies, systems, and markets; Energy systems analysis; Energy, engines, and environment; Energy, technology, and society; Energy, climate, law, and policy; Environmental and energy economics; Forecasting energy futures: pitfalls and prospects; Green energy policy; Quantitative perspective on energy and the environment; The economics of renewable and energy saving technologies; The energy business and geopolitics; The geopolitics of energy; Topics in sustainable management and energy
9.	Urban environment	Air pollution control; Biological treatment and utilization of waste; Buildings and regeneration; Cities and sustainability in the developing world; Land and urban economy; Management of utilities; Managing solid waste; Sustainable cities: urbanization, infrastructure, and finance; The urban environment; Urban and environmental planning; Urban brownfields; Urban development: politics, policy, and planning
10.	Biodiversity	Coastal ecosystems: natural processes and anthropogenic impacts; Genetics, biodiversity, and society; Issues in conservation; Landscape ecology; Maintenance of wetland ecosystems; Modeling geographic objects; Species and ecosystem conservation: an interdisciplinary approach
11.	Water	Water and development; Water and wastewater treatment; Water quality control; Water resources in the Middle East
12.	Food	Food policy and agribusiness; Global food politics and policy; Land, food, and ecosystem services
13.	Climate change	Carbon markets and carbon management; Climate change: impacts, adaptation, and mitigation

Source: authors own compilation using information available on universities' official web sites.

The above grouping allows us to remark that the social science and environmental science are balanced as representation having 64, respectively 68 disciplines. On the other hand, several disciplines that address environmental issues are in fact belonging to the first group (e.g. *Energy markets, Energy policy, Land and urban economy, Food policy and agribusiness*) because they provide students with social science and management competences that could be used in case of specific environmental issues. Further, there are disciplines with mixed content such as *Carbon markets and carbon management; Sustainable cities: urbanization, infrastructure, and finance; Sustainability science: interactions between human and environmental systems*. Considering these overlaps it could be stated that social science approach is prevalent over environmental science approach.

The priority of environmental issues on the public agenda is quite well represented by the size of discipline groups. Apart from the broad content *Environmental science* disciplines that are the most numerous, *Energy* is the largest group of disciplines. This mirrors the world

challenge of coping with the increasing energy demand within the restraints of fossil fuel exhaustion and mounting greenhouse gas emissions from their burning. *Urban environment* is also represented by a large number of disciplines, this being in accordance with the challenge of environmental improvement of cities and continuous growth of urban population.

The *Business and the environment* group comprise two types of disciplines: i. disciplines that provide competences for the organization's environmental management and ii. disciplines that focus on environmental or green businesses. The size of this group suggests that business executives will be more environmentally aware, but it should be kept in mind that Master in Business Administration (MBA) programs had little contribution to the creation of the pool of CSD delivering courses.

EDUCATIONAL BACKGROUND OF SUSTAINABILITY TOP MANAGERS

The opportunity to explore the educational background of sustainability managers is endorsed by at least two reasons: firstly, the normative framework of CSD is quite well established to be verified against practice, and secondly, the demand for sustainability practitioners entered a clear upward trend.

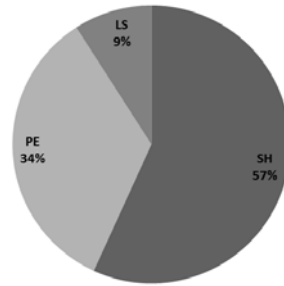
Sustainability top managers could be considered individuals that have acquired CSD. In practice, they are designated as sustainability officers, directors, consultants etc. (Bran et al., 2011). By examining their educational background we will attempt to clarify some aspects of educational programs-CSD relationship. Among the limitations of such approach there could be invoked the facts that CSD could be acquired by professional experience or that the publicly available *Resumes* are not detailed enough to present short training stages or the content of educational programs.

The individuals considered in our analysis are mainly employees of public organizations (United Nations Environmental Program, Intergovernmental Panel for Climate Change, International Union for Nature Conservation, European Commission, specific ministries at national level etc.), but also several corporate sustainability officers. The pool of 136 sustainability managers was difficult to be gathered due to the scarcity of information about their educational background especially in case of corporate sustainability officers. In the meantime, it cannot be considered a sample, since it was built using the criteria of information availability instead of selecting with a certain technique from a population. This limitation does not allow inferences endorsed by statistical significance, but still allows us to capture certain patterns in order to design further research that will explore their relation with the normative framework.

The analysis comprised the following aspects: structure of bachelor degrees by domain of science, occurrence of master and PhD degrees, domain of science for master/PhD degrees and its relation with bachelor domain.

The structure of bachelor degrees by domain of science. For this analysis we used the scientific domain classification of European research programs. This classification has three levels: domain, subdomain, and research area. The domains are: i. Social Sciences and Humanities (SH) with six subdomains; ii. Mathematics, Physical Sciences, Information and communication, Engineering, Universe and Earth sciences (PE) with 10 subdomains; and iii. Life Sciences (LS) with nine subdomains.

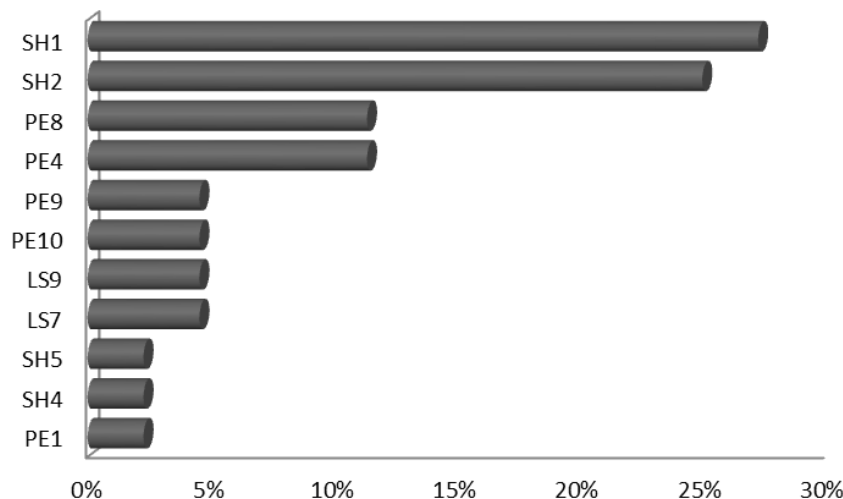
At the domain of science level the structure of bachelor degrees is dominated by SH (fig.3), which represents more than half (57%).



Source: authors own computation of educational background data of sustainability managers

Fig.2 Structure of bachelor degrees by domain of science

At the next level we found eleven subdomains out of a total of twenty five. In other words, more than three quarters (76%) of subdomains are represented in the structure of bachelor degrees. The largest proportion (27%) belongs to SH1 – Individuals, institutions, and market: economics, finance, and management, followed closely (25%) by SH2 – Institutions, values, beliefs, and behavior: sociology, social anthropology, political science, law, communication, social studies of science and technology. Other well represented subdomains both with 11% are PE4 – Physical and analytical chemical sciences: analytical chemistry, chemical theory, physical chemistry/chemical physics and PE8 – Products and process engineering: product design, process design and control, construction methods, civil engineering, energy systems, material engineering (fig.3).



Source: authors own computation of educational background data of sustainability managers

Fig.3 Structure of bachelor degrees by subdomain of science

Occurrence of master and PhD degrees. Most of sustainability managers continued their education by taking graduate courses or even PhD degrees. Thus 62% followed graduate courses (master or other type) and less than 10% held more than one master degrees. As long as PhD is regarded, 38% of the analyzed sustainability managers obtained this degree.

Domain of science for master/PhD degrees and its relation with bachelor domain. The higher level of education is better represented by programs dedicated or specialized for CSD formation and development. This is reflected by the occurrence of specific subdomains such as SH3 – Environment and society: environmental studies, demography, social geography, urban and regional studies subdomains and LS8 – Evolutionary, population and environmental biology: evolution, ecology, animal behavior, population biology, biodiversity, biogeography, marine biology, eco-toxicology, prokaryotic biology for both master and PhD degrees. Meanwhile, the number of subdomains is shrinking to nine in case of master degrees and to eight for PhD degrees. In most cases, there is a correspondence between bachelor and graduate programs domains.

CONCLUSIONS

Education is one of the main contributors to change toward sustainable development since its outcome creates the innovative potential needed for this (Bran et al., 2010). On the other hand, education is a complex process itself and its change is featured by a great resistance. Our paper explored several aspects of this issue. We approached both the needs (competences) and the outcomes (practitioners), meanwhile performing an analysis of the means represented by educational programs and of their institutional framework.

The competences for sustainable development (CSD) benefited from a quite long and in depth process of analysis which resulted in a comprehensive description of them alongside with the development of important information hubs that allow access to relevant inputs for educational managers. CSD means holistic/integrative thinking, critical thinking, interdisciplinary approach, creative thinking, acknowledgement of complexity, and transformation of feeling into action. The UN's Decade of education for sustainable development and the Global higher education partnership for sustainability along with other associations and networks provide information exchange opportunities that could support managers in the implementation of changes in education toward sustainability.

Using a benchmarking approach we analyzed the educational programs of the top 25 universities in the world in case of Social Sciences and Management, Economics and Econometrics. CSD delivering courses of these programs are very diverse, with a good representation of environmental sciences and of current environmental priorities. Many courses are inter- and multidisciplinary and reflect a holistic approach, although the amount of knowledge to be delivered imposed the sector specific courses too. The content of the disciplines that could be inferred from their nomination give little indication regarding their contribution to the development of critical or creative thinking skills which are competences that depend more on teaching method than on content. The same is true for transformative learning, although there are courses that focus on ethics, responsibility, and society enabling the emergence of a sustainability supporting value system.

Sustainability managers had a comprehensive educational background as both domain of science and type of educational program. In fact, this background comprises all domains of science and is completed by graduate programs (master and PhD). In case of graduate educational programs, although all domains are still represented, it could be observed a certain specialization since specific subdomains occur and the number of subdomains is shrinking. Social science and humanities belonging educational programs are prevalent, their proportion being highest (73%) for master programs.

The three components (competence, educational programs, and practitioners) that were analyzed pinpoint the importance of managerial competences. This is consistent with the opinion of Morelli (2011), who also found that the proportion between technical and organizational skills should be in the favor of the second one. The important restrains

encountered in case of the third component (practitioners) limits the relevance of our findings. In addition, previous studies analyzing practitioners are also very few. Hence it emerges the opportunity of a research that allows a better assessment of the outcome and the analysis of linkages between education and competences used for the design and implementation of sustainability fostering projects.

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The importance of harnessing natural resources through health tourism in Romania

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ABSTRACT

Health tourism is an area with an extensive history in Europe, being dependent on the natural resources from the area where it takes place and on the existence of potential curing factors. The main resource that is used in this field is water, which can be used in various forms. It can be used in the treatment of many diseases for prophylaxis or for maintaining the welfare of tourists. One of the European countries that are characterized by the abundance of resources that can be used in health tourism is Romania. The main advantage of this is that a single resort can treat many illnesses, but that infrastructure modernization delayed to be made resulting in a poor positioning of the destinations in Europe, despite the history, experience and renowned resorts such as Băile Herculane.

Keywords: *spa tourism, natural resources, health tourism, spa tourism in Romania, potential spa resorts in Romania, treatment factors, website spa, resort spa online*

INTRODUCTION

The importance of natural resources has never been more acknowledged than today, when everyone makes efforts to maintain their quality. One of the areas that is directly dependent on resources is tourism, which can be considered more elastic or less elastic depending on the type and the area which is considered. One of its branches which cannot adapt to changes in a short time is health tourism, which is often defined by the treatment factors. The objectives of this paper are to highlight the importance of spa tourism resources and strengths of Romania in this field and also to show how are promoted Romanian resorts in the online environment.

NATURAL RESOURCES - A COMPONENT OF THE TOURISTIC OFFER

Natural resources are a mainstay component of human life from the beginning, being those who have contributed both to its survival and progress to a level never seen before. Human society has been used since the early stages of its development resources provided by nature, such as water, forest, soil. The only thing that has changed in the meantime is the contribution to the disruption of equilibrium environment, a support which has increased with the scientific and technical progress (Teodorescu & Alexandrescu, 2004, p.7).

When we refer to natural resources we must take into account their type, if they are renewable or not (Răducanu, 2000, p. 243). A resource which cannot be exhausted is one that can generate economic effects to infinity, while the exhaustible resource is derived from a finite stock. Taken as a whole and adding the “time” aspect we can say that any resource cannot be fully exhausted and it is characterized only by the length of time - lower or higher - required to regenerate. An example in this case is water (Hartwick & Olewiler, 1998, pp. 5-75).

Water is a key natural resource, regardless of the industry, with a direct or indirect contribution, the most visible contribution having it in agriculture. The fact that it is indispensable in many areas has made it one of the most polluted resources and arranged degradation. This situation is still kept in underdeveloped countries and developing ones. In developed countries, the industry began to look for measures to protect it, even if mostly of these come from tax considerations. An example is given by the United States, where each cubic meter of water is reused in the industry for about 17 times (Ciobotaru, 2004, p.74).

But it is not only a useful resource in industry and agriculture, but also in tourism – a sector that has experienced a rise since the Second World War (Huybers& Bennett, 2013) and which, according to the European Commission in 2010 generated 5% of continent's GDP (Dionysopoulou, 2012, p. 284).

Tourism, like agriculture, is highly dependent on the existing natural resources and the climate of that area (Cabrini, 2010, p. 50), we can say that the climate may be considered a resource (Perch-Nielsen, Amelung & Knutti, 2010, pp. 363-364).

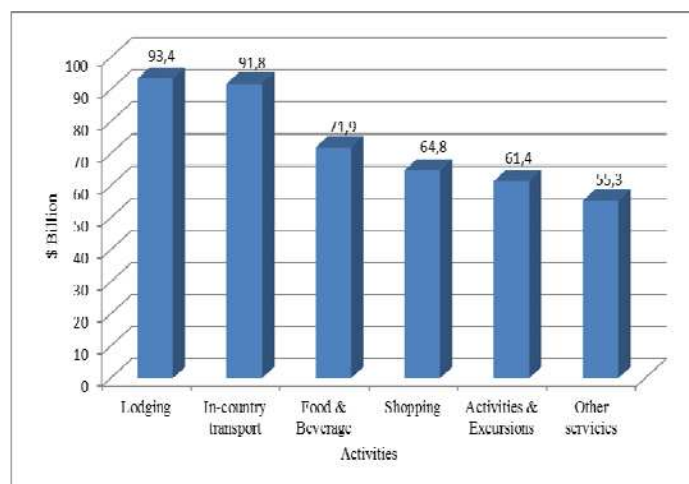
Natural resources often defined tourism areas, being those that provide the necessary basis for conducting certain activities. Even if their presence provides an indisputable advantage in the field, they do not necessarily bring a proper level of competitiveness (Bobirca & Cristureanu, 2008, pp. 76-78).

The water, seen as valuable natural resource, is affected in several ways by human actions with immediate or delayed results, but predictable, such as global warming (Ruhanen, 2012, p.155). Because this resource predisposition to pollution is high, affecting directly the practice of tourism, efforts in this area are being made to slow down and stop its degradation. In these circumstances concepts such as sustainable development (Nistoreanu, 2006) or environmental protection appeared (Huybers & Bennett, 2003, p. 229).

As a tourism resource, it can take different forms and can be used for recreation, for practicing different types of sports or boat trips and also for curative purpose in health tourism. Lakes are those that have always attracted tourists. The lake tourism development areas play a vital role with certain characteristics, such as water surface, physicochemical parameters, basin morphology, natural surroundings, climate and access routes (Negru & Vodă, 2005).

Regarding health tourism, it is based on the existence and browsing a series of natural factors, using different techniques in bathing cures such as: thermo-mineral waters, therapeutic lakes, sludge treatment, therapeutic gases, salt, herbs, climate cleaning (Țigu, Țală, Talpeș, Lungu & John, 2003, pp.91-92). These resources can be used in specific treatments after scientific testing, which certifies the curative properties and how to use them (Giljanovic, 2008, p.109). It can be seen that this type of tourism is directly dependent on the natural resources from the area where it is practiced.

This direct link between the practice and the resources used in health tourism is clear from the definition of this form of tourism which is practiced in Europe for over 2000 years. Health tourism and spa therapy involves treatments that are developed especially in countries where there are many sources of thermal and mineral springs, which are used for therapeutic purposes (Tefner, Nemeth, Laszlofi, Kis, Gyetvai & Bender, 2012, p. 3163). Health tourism experienced a real boom and significant improvement of treatment facilities and recreational facilities after the Second World War (Ianc, 2005, p. 82). The importance of this type of tourism and of the wellness tourism, in special, in terms of revenues, is shown in the following figure.



Source: Global wellness Institute, 2013, p. 7.

Figure No. 1. The wellness tourism economy

According to the Global Wellness Institute, wellness tourism involved in 2013 \$438,6 billion, which represents 6% of all domestic and international trips. This total represents the sum of the main activities for which tourists pay. The biggest sum is paid for lodging: \$93,4 billion followed by the transportation (airlines, rental cars, public transit, trains, taxis). The smallest sum belongs to other services, like: insurances, telecom, which represents \$55,3 billion. The importance of wellness tourism comes not only from the incomes, but also from the high level of direct jobs which are generated: 11,7 million.

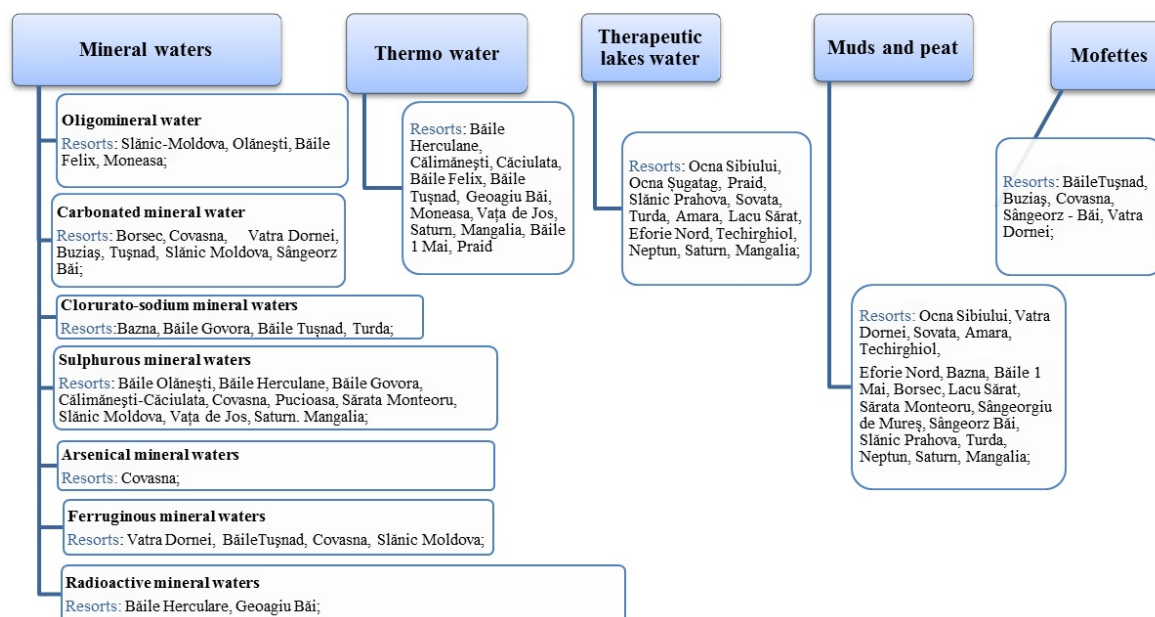
BRIEF DESCRIPTION OF NATURAL RESOURCES OF ROMANIAN SPA TOURISM

In Europe, one of the countries that have real potential in spa therapy is Romania, because of the variety of natural resources and because of the fact that they are accumulated in certain destinations, and may treat many diseases in the same place. Also, its experience in the field is appreciated here is exploiting spa treatment factors over 2000 years (Stăncioiu, 1999, p.207) currently there are over 200 spa resorts (Nistoreanu, 2005).

The reasons why resorts from the country deserve to be placed on the international map of destinations spas are numerous and are mainly based on the wealth of resources. The large number of localities that have cure factors, the large number of diseases that can be treated, the fact that about a third of the natural mineral springs in Europe are in Romania (Stăncioiu, Băltescu, Botoș & Pârgaru, 2013, p. 129) provides ideal tourism conditions.

For a better viewing, the figure below (figure. No. 2) shows the cure main factors: mineral waters, thermal waters, lakes therapeutic muds and peat, mofetta gas and their association with health resorts where can be found.

Romania also can be an important destination not only for the treatment but also for prophylaxis or treatment procedures like occupational stress (Neacșu, Snack & Baron, 2006). The treatment of diseases caused by the requesting service, which in the past were not as present as today made to develop so-called spa, which in addition to the treatment of certain disorders handles to ensure and maintain the welfare of tourists and especially of the segment of female to the 48 (Graf, 2011, p. 220).



Source: Adapted by the authors after the Ministry of Regional Development and Tourism, 2011

Figure No. 2 Classification of health resorts in Romania for resources

Although major changes have occurred in the demand for health resorts in Romania some of these destinations still resonate among tourists as Băile Herculane (Ciangă & Pătrașcu, 2010, p. 16). This is a famous resort known internationally appreciated especially during the occupation of the Austrian Empire (Voinea & Baran, 2008, p. 175).

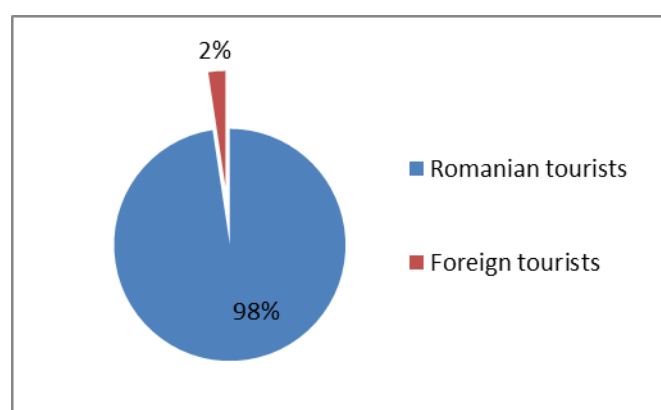
Turning to one of the main strengths of Romanian's health tourism, is that in a resort can be treated several diseases. In the following table (table no. 1) are presented the resorts which use water from the therapeutic lakes.

Table No. 1 Therapeutic health resorts around the therapeutic lakes

No.	Health resort	Therapeutic indications
1	Techirghiol Lake	<ul style="list-style-type: none"> Gynecological diseases Disorders of the locomotors Respiratory Illness Dermatologic Conditions Cardiovascular Disease
2	The balneoclimateric resort Amara	<ul style="list-style-type: none"> Rheumatic diseases Traumatic disorders Peripheral neurological disorders Gynecological diseases
3	Sovata	<ul style="list-style-type: none"> Gynecological diseases Disorders of the locomotors Respiratory Illness Dermatologic Conditions
4	Băile Turda	<ul style="list-style-type: none"> Rheumatic diseases Peripheral neurological disorders Traumatic disorders Cardiovascular Disease Gynecological diseases

No.	Health resort	Therapeutic indications
5	Lacul Sărat	<ul style="list-style-type: none"> • Disorders of the locomotors • Neurological disorders • Gynecological diseases • Dermatologic Conditions • Occupational diseases
6	Căineni Băi	<ul style="list-style-type: none"> • Disorders of the locomotors • Neurological disorders • Gynecological diseases • Dermatologic Conditions
7	Ocna Sibiului	<ul style="list-style-type: none"> • Disorders of the locomotors • Neurological disorders • Occupational diseases • Nutrition disorders

Source: Adapted by the authors based on: Munteanu & Munteanu, 2012, pp. 27-48.



Source: Romanian tourism statistical abstract, 2012, p. 52.

Figure No. 3 Overnight stays of tourists from Romanian SPAs in 2011

Although in Romania the resources are numerous, it should not be overlooked an important detail, namely that the adaptation to the new conditions imposed by the tourists did not take place like in other countries. Popular destinations have taken the boundaries far beyond mass tourism, sometimes to the high end tourism. The fact that prior to 1990 – the reference year in many areas regarding change – almost half of the population spent a vacation in a resort (Minciu, 2005, p 157) gave a false assurance for industry players. Thus improvements in the treatment centers and recreational facilities to make Romania a destination internationally competitive were never made (Turtureanu, 2007, pp. 54-55).

The importance of SPAs and the big opportunity which Romania has through its resources is given by some aspects which characterized the world population today. The increasing number and proportion of the aged within the world's population, the big number of people with chronic illness, health systems – are only some reasons for SPAs development (Global Spa Summit, 2010).

Thus, under current conditions, despite the advantages it has, Romania cannot compete with countries like Hungary (Bender, Balint, Prohaszka, Geher & Tefner, 2013, pp.2-5), Switzerland (Laesser, 2011, p 88), Germany, who already have a reputation and that tourists consider a landmark. Although the country's tourism offer is a rich potential in this regard, one cannot become effective until you meet a number of features to boost tourism consumption spa (Munteanu & Cinteza, 2011, p 63). These points are visible in the following figure, in which is presented the type of tourists in Romanian SPAs.

According to INSSE, in 2011 the total number of tourists in Romanian SPAs was 4342157. From this, the largest share is represented by Romanian tourists, which are 98% of total. This situation can be explained through the bad condition presented in the SPAs and through the policy followed by some hotels which are focused on the domestic tourism. The social programs are also an important factor. Because of these, some hotel's managers consider that the tourist will come regardless of the conditions because the prices are very low for Romanian tourists who meet certain criteria. So they are no longer interested on attracting foreign tourists who are more exigent.

RESOURCE RECOVERY CURRENT SPA IN ROMANIA

The multitude of resources in Romania and numerous opportunities to exploit the country does not ensure success as a leading destination in the wellness or SPA tourism. To see if there is a concern for the promotion of resorts that can create a competent tourism product we analyzed several websites, including the website of the Ministry of Regional Development and Public Administration, The Organization of Spa Owner in Romania and spa resort's websites promoted on this website. In this analysis we have considered information posted, the last update, the year the website was created, if the content is available in multiple languages and of course, if the resorts have their own website which should include information about the resort.

Organization of Spa Owner in Romania was founded in 1993 on the initiative of 19 representatives of the major resorts; currently the organization has 62 members. The organization's websites is www.spas.ro and contains multiple information about the organization, conferences and other events they organize, 31 resorts, a version in Romanian and one in English. It also has an interactive section consisting in map on which the visitor can choose the destination resort and will then be sent to a page describing the respective destination, but which does not make reference to the resort's website. Another section is the "Offices Abroad", which specifies the countries where Romanian tourism is promoted generally without making direct reference to health tourism.

First post on the site dates from January 2008 and the last date from date 11.09.2013 on the subject of the Exchange organization and Spa Tourism Forum. Data obtained from the analysis made on the website, www.spas.ro, regarding the presentation of the resorts and spa's websites are presented in the table no. 2. We considered issues such as the existence of the resort's own website presented by Organization of Spa Owner in Romania, year of establishment, language versions available if the presentation on www.spas.ro of the resort is complete and if on the resort's website of the are available a product or are available only accommodation options.

Table No. 2 **Description of information available online about health resorts**

No	Resort	Resort's website	Website since	Languages	Complete presentation of the resort on www.spas.ro	Existence on the resort's website:	
						Spa package	Accommodation
1	Băile Felix	✓	2007	RO	✓		✓
2	Băile Calacea	✓	2004	RO	-	-	-
3	Buziaș	✓	2013	RO	✓	✓	
4	Moneasa	✓	2010	RO	-		✓
5	Turda	✓	2013	RO, EN, HU	✓	✓	
6	Geoagiu Băi	✓	-	RO	✓		✓

No	Resort	Resort's website	Website since	Languages	Complete presentation of the resort on www.spas.ro	Existence on the resort's website:	
						Spa package	Accommodation
7	Olănești	✓	-	RO	✓	✓	
8	Băile Herculane	✓	2008	BG, EN, FR, DE, HU, IT, (variante indisponibile), RO	✓		✓
9	Govora	✓	2007	RO	✓	✓	
10	Ocele Mari	✓	2009	RO	-		✓
11	Călimănești-Căciulata	✓	2009	RO	✓	✓	
12	Ocna Sibiu	✓	2011	RO	-		✓
13	Bazna	✓	2008	RO	-		✓
14	Sovata	✓	2009	72 variante lingvistice	-		✓
15	Praid	✓	2013	HU, RO, EN	✓	-	-
16	Vatra Dornei	✓	2013	RO	✓		✓
17	Sângeorz Băi	-			✓		
18	Băile Tușnad	✓	-	HU, EN, RO	-	-	-
19	Balványos	✓	-	HU, EN, RO	-		✓
20	Covasna	✓	-	HU, EN, RO	✓		✓
21	Breaza	-			-		
22	Sinaia	-			✓		
23	Slănic Prahova	✓	2012	RO	✓		✓
24	Pucioasa	-			✓		
25	Slănic Moldova	✓	2009	RO	-		✓
26	Oglinzi	-			-		
27	Lacul Sărat	-			✓		
28	Amara	-			✓		
29	Eforie Nord	✓	-	RO	-		✓
30	Saturn	-			-		
31	Mangalia	-			-		

Source: Developed by authors based on information available on the spas website and on the www.spas.ro

The analysis made in the online environment of the 31 resorts, showed that 9 of them have their own website. Of the remaining 22, the oldest web page belonging to Băile Govora is dating since 2007, and 4 resorts have created an online page online only this year. Regarding language versions available 7 websites have content in a language other than Romanian, predominantly English and Hungarian. Of these 7, Sovata integrates a translator program, thus having content translated into 72 languages and Băile Herculane has 6 language versions available outside the Romanian, but do not generate any results.

Analyzing the presence of spa tourism product on the website of each resort or only the presence of the accommodation, showed that of the 22 resorts, three of them do not have either of these two aspects, 5 feature spa packages and 14 and have only accommodation deals.

Of the 31 resorts presented on www.spas.ro, 14 do not have a complete description, being omitted one or several of the following: geographic location, natural healing factors, indications, contraindications, access.

Regarding the concern to promote spa resources and their exploitation www.mdrt.ro site analysis revealed that there is concern, being available to those interested in the following documents which are directly related to health tourism: Master plan for health tourism development (prepared in November 2009), 3-year action Plan – the page of these documents being last updated on June 14, 2012 – guide spas – online brochure (prepared in November 2011) and pre-feasibility study "Spatial and tourism redevelopment of Cacica, Praid and Slănic Prahova salt mine".

Thus, there is a commitment from both the authorities and the private structures, but not sufficient. Information contained in the online environment is not collected on the spa's websites; they are often limited to the posting of general information about the history, resources Spa, treatable disease without linking these issues to present tourism offers by creating a complex and attractive package. Also, the lack of posting the dates of the festivals in the area, such as "The Festival of Gypsy songs and dances" in Baile Felix, "Gypsy Festival" in Băile Herculane, in Mangalia Callatis Festival "Festival sarmale" in Praid (InfoTravel Romania, 2013) and local crafts or other types of tourism, wine tourism, gastronomic, that can be practiced, don't do nothing but to hinder the development of the areas.

By posting adequate promotion and complex information in an easy way to view and understand, would invigorate both resorts and the surrounding areas. It would create more jobs for the resident population, would encourage crafts and traditions throughout the year, given that health tourism is not affected by seasonality and would harness also other travel resources in addition to the spa.

CONCLUSIONS

Natural resources have always been the basis on which mankind has built throughout its existence to reach this stage of progress. Using them without taking into account that may degrade especially by polluting or they may even end and never be used is a way anymore taken into account. The current concern to develop and implement new concepts such as sustainable development and environmental protection must be the beginning of large-scale action to protect everything around us.

A natural resource used in many activities is water, which has a key role in many areas such as agriculture, industry and even tourism. Tourism is using it for numerous activities, from transportation, to the practice of specific sports, but it's most important branch based on this resource is health tourism.

The conclusions that can be drawn from this work are:

- Spa tourism has a long history in Europe and has been developed mostly after the Second World War. It is based on the use of treatment factors to treat various illnesses, for prevention or maintenance of well;
- Among the countries with a remarkable potential in this area and spa tourism history is Romania with internationally known areas like Sovata and Băile Herculane;
- The main advantages of the country are the large number of natural resources, their density in many towns and that in a resort can be treated many diseases;
- Natural potential unfortunately is not an enough reason for Romania to be a competitive destination, as it is not doubled by a modern infrastructure, updated to the new demands of tourists;

- Even though most resorts in the country have their own website, the information available is incomplete, often missing a spa product to promote;
- Website of Organization of Spa Owner in Romania provides information about actions and the resorts states, but this information is not complete;
- On most sites the resorts are not present current information about festivals in the area, crafts, or other types of tourism that can be practiced;
- There is interest from the authorities and from private establishments regarding Romanian spa tourism development;
- Through adequate and sustained promotion of health tourism could get good results, such as increasing the number of jobs and therefore the economic development of the area, encouraging the crafts and traditions, supporting lucrative activities throughout the year ;

Thus, in order to be considered a key destination for health tourism in Europe, Romania should consider upgrading old equipment and adaptation of supply to new trends. It is also necessary to create a tourism product and promote it; most resorts now choose to present its offer on parts, providing accommodation, recreation, treatment or food service.

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Factors requiring performance implementation in Romania

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ABSTRACT

The scope of the research is to identify the factors requiring performance implementation in present day Romania and to find the factor in relation to which we need to take action so as to stop corruption in other factors that maintain it. The main research methods that are used are: quantity and quality analysis and comparison. The information base of the researches consists of the statistic data published by international bodies, researches and works in the field published in the country and abroad, information provided by the National Institute of Statistics and other public information. The main conclusions resulting from the research have applicative scientific value that may establish sustainable solutions for performance implementation in Romania within the meaning of the fact that we have identified the factor forming the basis of performance implementation and we have proposed the implementation modes.

Keywords: *performance, education, corruption.*

INTRODUCTION

Considering that public money should provide the comfort, safety, health, education, transport and utility infrastructure for the country's population, performance implementation in the spending of money is the only way to satisfy such needs and to ensure the healthy evolution of the country. Romania reached the phase where it can no longer afford to waste money; the trials the Romanian people was subjected to in the last 23 years have had a negative impact on the economy and on the human resources, that shall last for many years to come. Corruption can only be removed through performance, with supporters consisting of persons dedicated to fight against it, and, on the other hand, performance, anywhere in the world, in any field, does not occur in corrupt environments, but only with the strict observance of moral and ethical norms. The state of factors contributing to the acquirement of a nation's performance is, in fact, the mirrored image of the country's assets: the cultural and social capital, assets that Romania has wasted in the last 23 years.

ANALYSIS OF FACTORS REQUIRING PERFORMANCE

Some of the most important factors we have identified, requiring current performance in Romania, include: competition, crisis, education, motivation, competence, national skills or vocation (Figure 1).

Competition

Competition is the main factor stimulating performance in all types of activities: sports, education, research, health, techniques, economy, etc. In Romania, one cannot speak of competition, due to corruption that is present where budgetary support is available: in the public administration, education, law, health, etc. areas. Competition is blocked in such areas, and the situation has a negative impact on the entire population that has to deal with low

quality services, expensive drugs and food, as well as on staff motivation and on human resource training. We have become a country without economy, as the deindustrialization of the country through privatization where contracts were not honored only created a real estate market and transformed the country in an outlet as a low quality and expensive market due to the agency chain. In the absence of competition, there can be no performance either. The main benefits brought by competition in the public administration area of Romania are as follows:

- performance is materialized in the assurance of the best manner of allocating resources and in optimizing the degree to which they are capitalized, increasing benefits in the population's and the community's favor through the efficient use of public money, quality improvement and by diversifying public services;
- territory and community management under the same laws allows - by comparison -, the real performance assessment of the management teams leading the local public authorities and decentralized institutions;
- the efficient use of human and natural capital, of the financial resources and of the anthropic accumulations, protection against pollution, against natural and anthropic risks for the population, the natural and built-up environment, ensuring quality of life in the community are objectives that each mayor brings into discussion with the citizens during elections. Such objectives also establish the main arguments and reasons to compete with other communities in order to attract investors in the community, without which election promises shall not materialize, under the conditions where the citizens' needs are high, and the allocations from the central budget are insufficient.

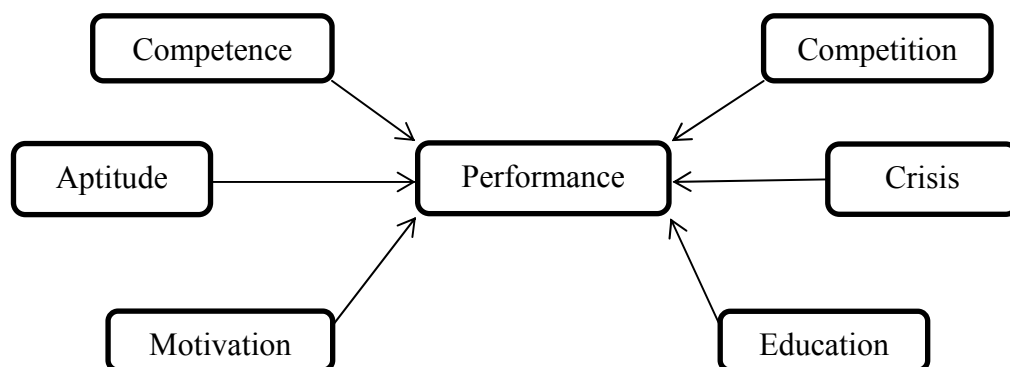


Figure 1. Factors that require performance in Romania

Crisis

Under all of its forms, crisis is the result of the people who have run the country in the last 23 years, and who have not created a climate favorable to performance development, who have never encouraged performance and have taxed labor (60% of the wage level consists of charges and taxes paid by the employee and the employer), have not discouraged, but have ignored corruption, where the law is observed neither by the state, the politicians or the citizens. The poor training of politicians and corruption in parties and the public administration have weakened the authority of state institutions and therefore, the country's citizens are not respected in any institution and by any institution. However, the crisis will not be overcome with aid received from international financial institutions, but through performance, which must be required in all institutions where public money is spent. The state, through its institutions, must respect citizens registering performance, it must use them and encourage them to stay in the country. However, in Romania, the crisis hit the social area very hard: it amplified corruption, it diminished investments, living conditions and the number of jobs and it contributed to the stagnation of demographic increase, the increase of

mortality and morbidity and the reduction of life expectations. According to the 2012 report on corruption by Transparency International (<http://www.mediafax.ro>), Romania comes in 66th, with a score of 44. The indication, established based on data collected by 13 international institutions - including the World Bank (WB), Asian and African development banks or the World Economic Forum - varies between zero for the “most corrupt” and 100 for the least corrupt country.

According to the 2012 Report of the World Health Organization Regional Office for Europe, Romania occupies a stagnant ranking, respectively places 41 (for men) and 37 (for women), from a total of 53 countries, in terms of life expectation. Moreover, the infant mortality rate is one of the highest on the continent, with 9.8 cases registered for every 1,000 births. Circulatory system disorders continue to remain the main cause of deaths, with a rate of approximately 540 cases out of every 100,000 inhabitants. Romania occupies the last positions in terms of the level of expenditures per capita and of living conditions, according to a study carried out by the European Statistics Institute, <http://www.columnatv.ro>. Overcoming the crisis requires for the State, through its institutions, to be a guarantor of performance, morality and ethics in all areas of life.

Education

Education is essential for the efficiency of public institutions, in order to attract investors and for employment in economic and social activities. Education is a complex social activity, similar to an “exterior offer”, as well as to an “interior dialogue” of one’s own being and of developing humanity. Plato defined education as “the art of acquiring abilities or of developing native skills for the virtue of those holding them”. Well trained and prepared human capital is on the one hand capable of meeting a growingly larger portfolio of tasks and responsibilities that generate performance and, on the other hand, it requires quality services and products. The opportunities to use its capacities to generate performance depend on the internal structure of economy, if it is given this opportunity, and on the economic policy of the state, except for the fact that we are the main higher education workforce providers in the EU. In the public administration and decentralized institution area, it was maintained and promoted for people who do not hold expertise/training, due to politicization. Corruption has determined the reluctance of specialists to work in the local public administration, it has discouraged the involvement of young people, who are disoriented and have no goals and have no motivation to prepare to generate performance. The promotion of non-performance in public institutions had the aim of promoting uneducated, but easy to handle and manipulate employees, voting machines for the managers of such underperforming institutions. Education, professional training and health are real opportunities to increase incomes for individuals, to increase work productivity in firms and, at the country level, they determine positive outsources compensating the costs incurred by the company for education. All such benefits turn the human capital into the main production factor that is very precious for each country. The training of the human capital through the education system is the support of the country’s future development. The integration of graduates on the labor market is one of the major problems of education. The European norms stipulate the need for such integration to maximum four months from graduation. This is currently impossible, since the knowledge and capacities formed in the education system are almost entirely uncorrelated to the employment market needs. On the other hand, the diplomas obtained in the education system do not have value coverage through specific knowledge and thus provide false results on the developed knowledge and abilities, even if the demand and supply match. This situation has two causes. The first is that the country has no long term development strategy where the education has its own role, and the second is university independence that has been inaccurately applied in private and state universities. The independence of state higher

education has ensured the necessary conditions within the meaning that, aside from decentralization, optimum conditions were also provided, to increase the flexibility of the human resource training process, so that they meet the real needs of Romania's economy - the scope of independence and of supporting education institutions with superior budgetary resources. Normally, state universities should generate graduates in correlation with the market needs, based on feed-back, whereas this is completely absent, since we have no professors for new specialties, the market is many times one step ahead of the education generating graduates whose knowledge is incompatible with the market requirements and I do not believe we can afford to train human resources for export. Higher education institutions are also impacted by corruption: plagiarism, false diplomas and nepotism are some of the forms that will impact us on a long and very long term, together with the involvement of the political area and the failure to sanction such acts of corruption as a direct beneficiary establish an attack on the rule of law.

Motivation

The motivation of the staff is the key instrument in obtaining performance. Theoretically, motivation and performance are two separate concepts that imply each other in reality - if one is motivated, they can register performance, and, while obtaining performance, one is motivated to register higher performance. Managers are the first to be concerned by their employees reaching the highest professional objectives possible. This consists of actual results, quality and costs. Together with financial motivation, non-financial motivation is extremely important in Romania, where there is no real value scale and where only money brings glamour and respect. The respect of society, of trade and of institutions, the reward of accomplishments, respect amongst employees and the respect thereof by managers and owners, the availability of a unitary assessment system, based on objective criteria impacting promotion and wage payment and a relationship based on honesty are some of the extremely beneficial ways to stimulate staff. Special care paid to such motivating factors leads to performance and to higher profit. Non-financial motivation can optimize business through quality and a high work volume, the maintenance of old customers and the gaining of new ones and customer satisfaction, all of which establish a real path to motivation and, thus, create a cost-benefit ratio. The better the ratio, the higher the motivation of the staff will be.

In practice, it was proven that the following factors diminish motivation:

- Romanian citizens, or most of them, cannot afford to prioritize their talent or their enjoyment to perform an activity, but must focus their efforts on a job that can provide them with decent living conditions;
- failure to correlate performance and reward, even if some employees generate performance due to external motivation or if their performance level is not related to rewards;
- the absence of a perspective in terms of a potential promising career is shown for young employees and employees who want to assert themselves;
- insufficient wages (including bonuses and other benefits);
- failure to correlate the job market with the education system.

In the budgetary area, the selection, assessment and promotion through methods that are only known by the superior has not motivated the employment of persons who are capable of generating performance; this is the area where corruption, bureaucracy and disinterest have lived together under all governments and where public services never met the level of the population's requirements in accordance to the taxes and prices that were paid.

National skills or vocation

Skills and vocation cannot be created – they are given, one is born with them, however they must be shaped and amplified through an adequate education system. Primary and secondary education play the role of identifying them – through the portfolio that has recently been created by the Ministry of Education and Culture, and the other forms of education that are to capitalize them by shaping them, through a specific pedagogical system, so as to obtain market value, to compete and to generate performance. Without vocation, kitsch is produced in all fields, money is wasted, we cannot compete and we will not register performance. Therefore, by enjoying their training in a field and by developing their natural talent, people will work with good results, greatly increasing the level of work productivity. This is translated in a healthy economy, where the quality of products and services and the end-consumer's satisfaction comes first.

Unfortunately, this is by no means the case and everything seems to stem from a chaotic and incoherent education system, generating non-quality and receiving non-quality as input. This is a vicious circle: a poor system generates poorly developed people, who are unable to create performance. Some of them choose to work in education and, since they are poorly trained, they will create even less competent resources, who cannot handle the serious issues of the society where they will continue to exist as production factors.

In order to escape this unprecedented situation, it is important to identify the areas where citizens and communities have vocation, to support them in order to promote authenticity and, thus, we shall obtain real and sustainable success. The recipe for overcoming the inertia of the last 22 years is expressed by the following quote: *“Real forces determining the welfare of a nation are the acquirements of its citizens, their efficiency and inventiveness, the quality of their leaders, the manner of organization and economic politics”* (Friedman & Friedman (1998).

Romania has stopped taking the skills and vocation of its citizens into consideration in the country's economic, social and cultural development, for over 70 years; we have always had to do a bit of everything to give up imports. Sometimes we did so, and it was a good choice, because we were well organized, and ‘management’ was an unknown word to the Romanian vocabulary, however, it was something different: compulsory discipline and responsibility inoculated in young people that were part of the education system. It is extremely interesting that, despite the fact that in the last 22 years we have developed an education system meant to produce managers, who are surrounded by a group of Ltd.s ready to take them over to certify them, which is what higher education should produce, respectively – skills in various types of management, it can be seen that economy, health, education, tourism and all other areas operate at crash rates. This raises an obvious question: do we, Romanians, have the vocation to train managers and to be good managers? We can find the answer in the works of the great Romanians our country has produced, Constantin Radulescu-Motru (1904): *“Our Europeanization should begin by capitalizing individual vocations. It is not the egotism, but the vocation of individuals that forms the basis of western culture.” “People without individual vocations are people that are condemned to stagnate.”*

Petre Țuțea (1938) *“Everyone knows that the non-profitability of Romanian works, aside from random causes and permanent causes - the lack of organization, the colonial position of our economy as a raw material provider and a constant debtor to foreign capital, has entered under the most varied forms and under onerous conditions, technical primitivism and the lack of investment and product capitalization capitals. Such capitals can only be eliminated through internal efforts.”*

However, by 1989, by using their “internal efforts”, Romanians generated industry, research, infrastructure, agriculture, tourism, education, culture, etc. They also managed the largest sites ever to have existed in the Romanian territory, research and education institutes,

production facilities and numerous other establishments, without following any additional schools of management. Managers were recruited after years of work, amongst the best professionals, they had to be party members, and they participated in several lectures about management. The conclusion is that Romanians cannot be good managers without having the adequate education. The answer is proven by the trials and failures we have registered in the last 23 years, where those who have become managers were not managers, but other, inexperienced people, based on management class graduation diplomas and on a C.V., without testing and verifying management skills and without knowing the person's other qualities: diligence, punctuality, morality and ethics.

Competence

If one is born with skills, competences are acquired through studies acknowledged by society. Persons who have skills, as well as studies, are generally the most efficient and inventive. It has been established that the emphasis for employment is placed more on competences than on theoretical knowledge; the move was practically made from the assessment of candidates based on their knowledge to the assessment thereof based on their competences. Romanian education does not create competences, and the decrease of education quality and the increase of school abandonment are reasons for concern for the local business environment. The current outcome is the development of mass education, so that the market absorption capacity has reached saturation; employers can no longer meet the needs of tens of thousands of graduates that complete their studies every year, with faculties generating a continuous stream of unemployed persons and issuing diplomas that do not reflect the graduate's competences.

According to the World Economic Forum, Romania ranks 90th place out of the total 142 countries, in terms of the quality of its educational system. Romanian education has a level similar to that in Tanzania, Lesotho, Syria, Argentina and Italy. On the other hand, Romania loses qualified employees every year due to workforce export. Together, such issues will determine the erosion of competitiveness in Romanian economy.

According to the National Institute of Statistics, approximately one million young people up to 17 years old are not enrolled in any unit of education.

Such educational issues generate additional costs for the local business environment. A study of the Manpower company indicates that 53% of the companies that are employing are facing difficulty in recruiting people, due to the absence of adequate candidates. This is the highest level registered in Europe, where the average is 34%. No institution responsible for quality in education, ARACIP (Romanian Agency for Quality Assurance in Pre-University Education) or ARACIS (Romanian Agency for Quality Assurance in Higher Education), measures the substance of the educational system, i.e. its efficiency. It is limited to only measuring the input, and not the output/outcome elements, i.e. the set of life competences, long term, deep results, of the educational system's operation. This happens in all public institutions where errors, failure to observe the law, acts of corruption, therefore output/outcome elements, are not measured in order to be quantified and sanctioned.

CONCLUSIONS AND SOLUTIONS

It can thus be ascertained that all factors contributing to the acquirement of performance are extremely altered due to corruption (Figure 2).

In order to exterminate corruption, we need to identify the factor influencing all others on which we need to interfere, so that we can thus overcome corruption. It can be ascertained that, amongst the factors requiring performance and corruption, connections are also established (fig. 2), forming a six-angled structure, that is very stable and difficult to destroy, since, irrespective of how it is broken down, it results in triangles, which are also stable

structures. All factors are the forms of manifestation of individuals, manifestations whose common support is education. Furthermore, education is a process generating humanity and it is preferable for the best education to be school education. Considered a key factor in the development of society - it ensures qualified workforce for all activity sectors, it favors progress and stimulates intellectual curiosity, the capacity to adapt, creativity and innovation - education is one of the strongest instruments we hold in order to shape the future or at least in order to turn towards a desirable future. The solution to all serious and critical issues that contemporary society is facing is also sought for in education and in school.

This results in the primordial role of education in a society undergoing full development, and, therefore, in the particularly important role of education as the main level for the spreading and development thereof amongst all social categories. Therefore, we must focus our efforts in education in order to form a resource that is capable to generate/implement performance (Figure 3).

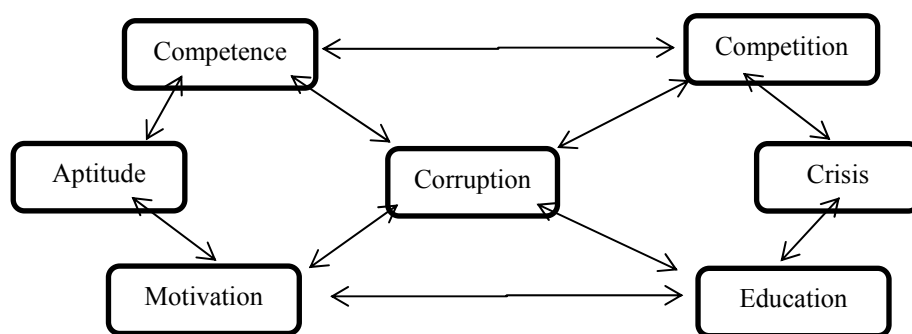


Figure 2. Connections between factors that require performance and corruption

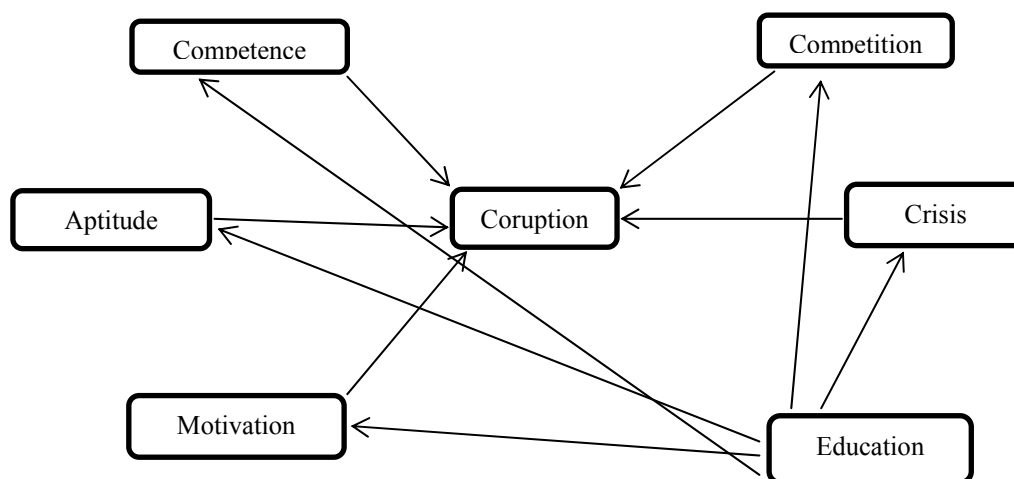


Figure 3. The focus on education to enforce performance and eliminate corruption

How can we achieve that? Only by applying performance and not quality standards, as we have until now. What does this imply? For us to focus on professional education from high school, vocational schools and up to the last step - PhD programs, whose assessment shall be made differently, per activity sectors, within the meaning that the performance standards in institutes of education and professional education institutes shall be correlated with those from public and private institutes – beneficiaries of the human resource.

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Corporate governance through environment protection conditions applicable for Aeroflot Company

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ABSTRACT

The paper reveals the concept of corporate governance, which states the official definitions of this topic, as well as a brief presentation of its evolution over time and also what it comprises today. This study practically tries to identify the impact of the company's financial results on its corporate governance. We analyse the Russian airline company Aeroflot, whose data was extracted from the online interview with the Chairman of the company's Board of Directors and also from the company's consolidated financial statements and annual reports from 2011 and 2012 and the company's website. Both the management structure and the performance indicators in respect with environment protection represent subjects of huge importance that corporate governance deals with.

Keywords: *corporate governance, environment, key performance indicators, management, quality*

INTRODUCTION

This paper examines the influence of the corporate governance over the performance of Aeroflot in conditions of proper environment protection. At national level, this concept is quite recent, but the specialized studies conducted over time demonstrated that there should be given more and more importance to corporate governance.

The corporate governance is the system by which companies are directed and controlled. This involves a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and also are determined the means of attaining those objectives and monitoring performance. Good corporate governance should provide the proper incentives to pursue objectives that are in the interest of the company and the shareholders and should facilitate effective monitoring, thereby encouraging firms to use resources effectively.

The main purpose of this paper is to conduct an analysis of the corporate governance principles regarding its influence over the company's performance. The paper's purpose is emphasized through approaching and presenting the following objectives: analysis of the specialty literature on the corporate governance domain, deepening the corporate governance concept, analysis of the corporate governance principles and strategies, evaluating the performance indicators and the company's management and the decisional processes and also the relation between those.

The management structure and the performance indicators of a company represent subjects that have an extraordinary impact on the image that the company transmits on the market and on the quality of company's achievements also. At least, at declarative level, every big company have a management structure which respects the provisions and the recommendations which exist at international level.

On one hand, the analysis of the company, the performance indicators and it's corporate governance system don't show a significant relation between the governance and performance, neither at the shareholding structure level, nor at the management structure level.

On the other hand, there is being analyzed the relation between the company's performance indicators and its decisional processes, regarding the company's development, future investments, the resources to be allocated to each segment, the remuneration of the company's personnel, the extension, modernization, environment protection.

Aeroflot, as the leader of Russia's civil aviation, realizes its great responsibility before the society and future generations, and strives to secure a sound ecological balance in all its activity areas. This forms an integral part of its large-scale civil responsibility program, being a basic elements of the company's operations.

To achieve its environmental objectives Aeroflot is committed to completion of the following tasks:

- Air fleet modernization through replacing old power-consuming aircraft types with more energy-efficient ones
- Reduction of energy consumption by introducing resource saving methods and technologies
- Airline network optimization and introduction of new piloting techniques enabling lower emissions of noise and other pollutants from aircraft engines
- Introduction of new and improving of the current technologies and materials to provide ecology friendly aircraft maintenance
- Waste management in order to minimize the environmental impact of waste, with the emphasis on recycling as the most efficient way of waste utilization.
- Monitoring and analysis of the company's operations and technologies to elicit new ways of environmental performance improvement
- Usage of environmental efficiency indices as one of the key criteria for selection of suppliers and contractors
- Bringing the company's facilities and operations in compliance with the highest international standards of environmental protection
- Improvement of the staff's awareness of the responsibilities in the environment protection sphere, provision of incentives for a more responsible consumption of all resources, developing a culture of recycling.

To complete the above tasks, the company has implemented and is developing a system of environmental management complying with ISO 14000 series standards, which provides the company's compliance with the requirements of the Russian and international legislation in the sphere, and promotes the optimal choices of ways to achieve the environmental policy goals.

As a full member of the SkyTeam alliance, Aeroflot has developed its environmental policy in accordance with the Statement of Corporate Social Responsibility adopted by IATA (International Air Transport Association) in June 2008. The document sets the state-of-the-industry standards in environment protection, improvement of social responsibility and provision of economic prosperity.

THE CONCEPT OF CORPORATE GOVERNANCE

The term 'corporate governance' describes and refers to the rules by which a company is driven and controlled. Practically, it is the combination of control elements which operate all together in order to regulate the relationship between all those who have an interest in the company: shareholders, the management, employees, customers, suppliers, or other stakeholders. In other words, by corporate governance is pursued the development and growth of the company performance and the harmonization of the various groups of interest. Especially after the big scandals which shattered the companies such as Enron or WorldCom, the governments and control authorities have focused their attention on the establishment of a more efficient governance system of the companies.

HISTORY

The history of the corporate governance, perceived as the constituent process of configuring the relationship between shareholders and managers, is a relatively new field of research. The biggest part of the recent historiography was written by non-historians (in particular by economists and scientists) who were concerned, first of all, by analyzing the roots of the contemporary regimes of corporate governance.

The core history of this literature focuses on the automated (dispersed) and concentrated structures of the shareholders combined with the financial and political factors that have shaped different paths of development. In the article 'History without historians', written by Gary Herrigel, in 2006 at the University of Chicago is stipulated that there exist five big mechanisms of corporate governance, namely the models from the United States, Great Britain, Germany, France and Japan. Corporate Governance in Japan has a history different to the other countries. There have been practiced three types of property ownership: companies with dispersed shareholding, state ownership and companies owned by families. Also, this is the origin of the famous keiretsu companies, group of companies in various areas that work together (Herrigel Gary, 2006).

Various points of view regarding the company may be equally correct, but are reflected in decisions which may not be easily harmonized. So, in developing its activity, the company's leaders should be aware of these potential conflicts deriving from bringing a multitude of interests under the 'same roof'. The agency is one of the key elements of what may also be called contractual vision on the company, developed by Coase (1937), Jensen and Meckling (1976) and Fama and Jensen (1983). The essence of this problem is being the separation between the management and finances or, in other words, between ownership and control.

The agency issue is generated by the difficulties faced by the investors in ensuring that they will not be dispossessed of their funds or that these will not be wasted on projects of inefficient investments (Dragota Mihaela, 2006). Even in the economies of the developed countries still exist sufficient controverting issues regarding to how appropriate or inappropriate are different mechanisms of corporate governance. For example, the studies of Easterbrook and Fischel (1991) and Romano (1993) have laid out an optimistic assessment of the corporate governance system of the USA, while studies of Jensen replied (1989, 1993), sustaining that the system is suffering major deficiencies and require significant changes.

It is also put into attention, the replacement of the anglo-saxon system with that of Germany and Japan (Roe, 1993, Charklam, 1994) and it is also considered that corporate governance systems in the United States of America, Germany, Japan and Great Britain are some of the best in the world and the differences between them are not so significant compared to the systems of other states. Financial theory sustains that the explanation of the influence exercised by the shareholding structure on the dividend policies consists in agent problems that appear at company level.

THE CODE OF CORPORATE GOVERNANCE

At national level, corporate governance is a recent concept, a Code of corporate governance being adopted in 2008 by the Bucharest Stock Exchange. Grouped on 11 articles and a total of 11 principles, the Governance Code comes to ensure an order and rightness required on the Romanian market. Although the code is predominantly intended for commercial societies whose financial instruments are the transactions on the regulated market, operated by Bucharest Stock Exchange, this fact does not impede other commercial societies or other types of issuers to adopt the principles of the Code and to follow them in an adequate manner. The present Code includes some recommendations which are provisions with suppletive character of normative acts from Romania (Law no. 31/1990, Law no. 82/1991, Law no. 297/2004).

Among the endorsements of the code is exposed the need of creating an annual report, in which the issuers should have in regard a chapter dedicated to corporate governance with all the events recorded during the previous year. An aspect that we can consider as an imperfection of this Code, is the fact that there is no principle of obligation in what it is concerned, which does not further involve the liability of the companies. Thus, in the case in which the company would not totally or partially implement one or more of the recommendations contained in the Code, then it will only explain its decision in the section above, as well as in the statement 'apply or explain'. Except the Board of Administration, of which the number of members is not specifically stipulated, it is also endorsed the setting up of a Nomination Committee, one of remuneration and one of audit.

THE TYPES OF MANAGEMENT SYSTEMS – UNITARY AND DUALIST

In what concerns the administrative system, at global level there are two types of management systems: unitary system and dualist system. In case of Romania, these systems have been introduced in an incipient form by the Law of commercial societies no. 31/1990. Subsequently, as the Romanian business environment has evolved, causing changes in what concerns the financial reporting, followed by the introduction of external and internal audit, excepting the Law 31/1990, amended and republished, there also appeared a series of normative acts, which together create the conditions for a better application of the principles of corporate governance. In the Code of governance of Bucharest Stock Exchange is not presented any specific preference for one of the systems, leaving it to the companies' discretion to choose. At least at declarative level, all big companies in Romania have a management structure that complies with the recommendations and existing provisions at international level. Normally, it is recommended for all the listed companies to have in their management structure not only the executive directors, but also an odd number of non-executive directors who would ensure about the compliance of all stakeholders' interests.

FINANCIAL AND ECONOMIC OVERSIGHT OF THE COMPANY

Financial and economic oversight at Aeroflot is being performed by the Board of Directors and the Audit Committee (of the Internal Audit Department), the Revision Committee and other audit organizations hired by the company, like: KPMG, the Operational Safety Audit of IATA, BDO. The Revision Committee exercises control over the business, economic and financial activity of Aeroflot, carrying out the audit of the company's financial activity, in order to achieve a reasonable level of confidence, which is also in accordance to the current Russian legislation and also with the shareholder's interests. In accordance with the Statute on the Revision Committee, the information contained in the annual financial statements, including the profit and loss account, the balance sheet and other internal documents intended to be presented at the Annual General Meeting of Shareholders is being audited each year. The Commission prepares and approves an opinion as a result of the audit.

The opinion contains an analysis of the company's financial documents, and analyzes the changes in the balance sheet structure and the main factors that determined those changes. The opinion also contains recommendations made by the Revision Committee, regarding the results of the audit of accounts for the previous year, with the intent to improve the efficiency of the company, increase profitability and reduce expenses.

The opinion is usually positive, so the Revision Committee states its acceptance that the company's reporting is accurate and real and that the Committee has no reasons to refuse approving the data, which is contained in the balance sheet and profit and loss account of Aeroflot at the end of each year.

Aeroflot has shown steady improvement of its key financial indicators over the last six years thanks to both organic growth and expansion of the business through acquisitions. The company continues to show positive profitability indicators despite the crisis, which affected the global air transport industry in 2008-2009. Still, in 2012 has also been observed a significant decrease in the net profit, due to the second wave financial crisis.

Aeroflot's environmental policy was developed in a strict accordance with the IATA strategy aimed at a reduced negative environmental impact of the air transport industry.

Aeroflot's Ecological Management and Control System incorporates up-to-date technologies and standards. The company has adopted Energy and Ecological Efficiency Programme which is in full compliance with IATA's ecological strategy.

The IATA strategy is being implemented along the four main lines:

- Fleet modernization and replenishment;
- Improvement of ground-based operations and procedures (e.g., takeoff and approach stages, toolkit of flight planning);
- Infrastructure improvement (passenger terminal zones);
- Economic problem solving (e.g., tax remissions for investments in aircrafts and aviation equipment with high fuel efficiency).

As both part of the IATA strategy implementation and Aeroflot's own environmental policy, in 2007 the company introduced the system for environmental management and operational control. Practically all Aeroflot air fleet complies with the standards of ICAO (International Civil Aviation Organization) for emissions of noise and other pollutants to the atmosphere.

The company is currently completing the introduction of e-ticket system, allowing it to escape the paper technology of air ticket issuing, and thus save vast areas of woodland. Aeroflot has developed a program for the switch to the usage of environmentally friendly and easily recycled materials in passenger servicing. The complex of energy saving measures the company has developed and is implementing will enable it to save up to 1.5 million tons of jet fuel a year and reduce its specific consumption by 43.6% in the period of 2007- 2020. The company is committed to its policy of openness about its intentions, efforts and achievements in environment protection. Corporate awareness of the company's environmental policies is achieved by means of corporate media and internal regulations.

However, the company achieved revenues of 8,138.1 million USD in 2012, which is 53% more than in 2011, mainly due to the increase of the company's volume of operations. EBITDA increased by 4% to 671 million USD, and the net profit showed a significant decrease of 66% compared to 2011, reaching 166.3 million USD.

We present further on, the results of the online interview with the chairman of Board of Directors of Aeroflot, regarding the impact and the interaction of environment and corporate governance.

1. General data

Activity domain of the company (industry): air transportation

Average Turnover of the company/year: 5.000 mill. USD

Net profit/year (net loss): 491.3 mill. USD (as per 2011)

Year of establishment of the company: 1923

Average number of employees: 3320

Legal form/ type of company: Joint Stock company

How long have you been activating in this domain? (chosen answer is underlined)

1-5 years 6-10 years more than 10 years

2. What kind of information do you utilize for strategic decisions (extending the market share, obtaining loans, supplementary investment, increasing the number of aircrafts, adding new routes/destinations, protecting environment etc.)? (chosen answer is bolded)

The degree of customer satisfaction (through questionnaires, feedback from the clients)	YES	NO	NOT KNOWN
The degree of satisfaction of the employees (through questionnaires, feedback from the company's employees)	YES	NO	NOT KNOWN
The liquidity degree (current assets/current debts)	YES	NO	NOT KNOWN
The solvability degree (total debts/total assets)	YES	NO	NOT KNOWN
The indebtedness degree (debts/own capital)	YES	NO	NOT KNOWN
Profitability (profit/sales revenue)	YES	NO	NOT KNOWN
Occupancy degree	YES	NO	NOT KNOWN
Weight of the costs for maintaining the aircrafts in proper conditions for environment protection	YES	NO	NOT KNOWN

3. To what extent do you use the company's financial information: financial statements and/or annual reports in the activity your company performs? (chosen answer is bolded)

very few	few	medium	large	very large

4. On a scale from 1 to 5, please give points regarding the importance of the aim of your company in performing its activity (1-very unimportant; 5-very important):

Obtaining a high profit	1	2	3	4	5
Reducing the costs	1	2	3	4	5
Increasing the number of ecologic aircrafts	1	2	3	4	5
Increasing the number of realized routes and also the number of passengers because of the safety of the flights	1	2	3	4	5
To create a global airline	1	2	3	4	5
To maintain the company's dominant position on the Russian air transportation market	1	2	3	4	5

(chosen answer is italic)

5. Is the economic and ecologic knowledge compulsory in order to achieve a position in the company's Board of Directors?

It is not compulsory, but desirable, taking into consideration the complex economic and technical indicators and data that is being analyzed in the decision making process.

6. At Aeroflot, what is the regulatory framework for corporate governance and the General Director's duties?

The principal sources of company law and regulations are:

- the Civil Code of the Russian Federation
- the Federal Law on Joint Stock companies
- the National Environment Law
- the company's constitutional documents
- the company's internal documents.

CONCLUSION

The corporate governance subject was and still remains a very debated subject in the developed economies, by academics, executives, regulators, investors. On the Romanian market, studies on corporate governance are quite few, mainly due to the lack of the companies' transparency regarding the economic and financial results and their influence on decision making process.

As follows, corporate governance appeared in the 80s, as a reaction of the fact that the company was seen as a series of contracts and also due to the fact that, in the United States, the duties of the directors have expanded beyond their traditional legal responsibility. In this era of globalization, competitiveness growth and apparition of financial flow mobility, corporate governance has become one of the key elements that have a high impact on companies' performance and implicitly on the decisions adopted by its management. Due to its implications with the efficient allocation of resources at the company and industry level and economical performance growth, corporate governance has proven to be an essential factor in today's economy.

The economic concentration led to the appearance of big and complex companies through which the activities or way of operating imposed a decentralized activity. This refers to dividing the entities in distinct departments with relative autonomy, competing at reaching the strategic and

financial objectives of the company. The accent is put on mobilizing and activating all the available resources for integrating the each department's objectives with the strategic ones within the company. The corporate governance assumes the collective effort of the company's management realized for improving and developing the company on the long run.

In this paper, were highlighted the characteristics of corporate governance within a company. Thus, its main objective is to direct and control the company's activities, at the same time maintaining the strong relation between the shareholders, the Board of Directors, the Audit, Strategy and Personnel and Remuneration Committees, Chief Executive Officer and its Executive Board. There have been presented the two important elements of the corporate governance – the management structure and the company's operating and performance indicators, the main connection between them representing the decisional processes taken within the company.

Good corporate governance and relevant and detailed results ensure the company's management that their investments and all the activities performed are being made prudently in order to grow the company's financial and business activity. It involves the protection and the cooperation with stakeholders who have a legitimate interest in the company's performance.

The company's management provides high quality, transparent financial reports and present objective, real, consistent, relevant and comparable financial results.

With an increasing role in corporate governance, the company's management is an independent, objective assurance and consulting activity designed to add value and improve the organization's operations. It brings a systematic and disciplined approach to evaluate and improve the effectiveness of the company, through decision taking and governance processes. At the same time, there is an important connection between the company's management and the decisional processes, referring to the fact the executives perform actions to evaluate whether the policies and processes established by them for helping the organization to achieve specific objectives and goals, were made. That is why managers and directors had to adapt and to cope with situations of unknown complexity and with difficulties created by a world in constant motion. All this information are certified in the presented case study.

Another important aspect of the case study in this paper is the presentation of the company's financial statement for three years and also the main indicators of the liquidity, financing, efficiency and profitability ratios. The results present a stable and continually growing company, able to satisfy its obligations and pay all its debts, meet all its financial requirements, successfully utilize its assets in order to generate profits.

According to the analysis conducted in the case study of this paper, it was proved that the Board of Directors is being helped in the decision making process by the prior analysis of the Committees of complex issues, based on the company's performance, its activity during the year, the operating, financial and value indicators, the various types of risks (such as commercial, financial, environmental, insurance, etc.), the comparison between the achieved and the expected results. Then, the decisions, after further analysis are made on key matters relating to the business priorities, to the financial, operating and market business, financial planning and budgeting, the strategy and innovative development, improvement of the company's organizational structure and managements mechanisms, to the company's investments that should be made (for example development and expansion of the aircraft fleet, starting using biofuels), training of the company's employees, the level of remuneration of the company's members of the Board of Directors and also all the personnel.

At the group level, the centralization of the company's management functions, procurement, capital expenses and also the technological innovations represents one of the main challenges of the company regarding the increase of the shareholder's value through corporate

governance. Including in the annual reports non-financial information, besides financial one, could explain or justify, to some extent, the changes produced in the structure of various patrimonial elements, supporting the decision-making process by increasing the transparency of the activities unrolled and the results obtained by the company.

In the actual economic and business environment, characterized by instability and difficulty in predicting the evolution of the performance indicators, the company, through its detailed analysis and forecasts could estimate the company's future, especially its survival and development, in this case.

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Ecological terrorism – from definition to methods of fighting globally against it

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ABSTRACT

International terrorism is the most painful wound of the contemporary world as they know the forms causes destabilization and fear. Terrorists are those who direct their hatred against the innocent motivation preceding the terrorist act is closely related to abstract and absolute ideals. Guilt to the victim is replaced with the fulfilment of a "duty faith." Terrorist killing in the name of justice, the action was considered its tool.

Keywords: *attack, cyber terrorism, ecology terrorism, environmental, disease.*

INTRODUCTION

Definition of ecological terrorism. Terrorism from yesterday, nowadays... As a phenomenon, terrorism is the same as always, being the basis of the terror's strategy exerted by the Roman legions against populations from different conquered territories (Basarabescu, 2001). The terrorism has appeared in many forms, from cave terrorism to Cyber-terrorism, depending on civility's rank of mankind, but although the means were always different, the essence remained the same: frightening, destruction and killing (M.A.N. 2002).

It is true that terrorism, like war, is part of the stock by which the world denies, hates and destroys itself, believing that it endures a purification process (M.A.N. 2002)

Terrorism can be considered a special type of war that aims to the destruction of lives and of value systems. Unlike terrorism, usually an ordinary war does not mean to destroy a value system, it aims only to defeat an army, even without bloody battles, human loss and material damage. But terrorism and also ecological terrorism, aims to destruction for the sake of destruction (M.A.N. 2002).

The term ecological terrorism leads to the definition of biological synthesis of ecology that studies the interaction between organisms, plants and the environment in which they are living (abiotic and biotic). As a result, ecology examines closely the structure, function and productivity of biological systems superindividual (population biocenosis) and mixed systems (ecosystems (DEX 2009).

Together with the evolution of societies from different places of the world, man has realized the importance of environmental conditions, the meaning of the term ecology expanding beyond the restricted sense of biology, becoming a synonym for the idea of environmental protection.

If all the fundamentals upholds a major protection of all environmental elements, ecological terrorism comes with a destructive force affecting the environment, which aims to preserve the ecological balance by stopping any damage of the environment in order to maintain and

preserve the natural patrimony and the assurance of living conditions for present and future generations(M.A.N. 2002).

Ecological terrorism is, in fact, a sudden attack, usually in weak points, aiming to kill, destroy and bring terror, to create spectacular effects, also a hell atmosphere and human misery waged to abject and unbearable.

One can say that ecological terrorism is not a unitary phenomenon, although its implementation has various levels, based on the same philosophy of destruction and terror.

Therefore, ecological terrorism can be defined as a policy instrument, namely its fastest, most secret, most dangerous, hardest to stop, control and master instrument. Ecological Terrorism represents a political strategy whose fundamental is based on the systematic use of chemicals noxious elements, products related to the virology or bacteriology, radioactive substances, dangerous insects carriers of microbes etc.

Using the above listed elements in a terrorist attack aims to spread insecurity.

MATERIALS AND METHODS

Organizing the terrorist attacks. From the organizational point of view, a terrorist attack has a pyramidal structure that always states the leader or the head of the organization at the top of the pyramid. He is a strong politically motivated middle class person being obsessively possessed by the idea of injustice and having a very good education.

The next layer is occupied by the active staff and performers, men and women participating in training others, but also in executing the attacks. The third layer is occupied by the active supporters(M.A.N. 2002). Even if they don't consider themselves to be members of the organization, they provide material and financial support for the actions of the second layer, also providing technical assistance and logistics.

The last layer consists of the passive supporters or accomplices. They have some general knowledge on the subject, but apparently they are not interested in the phenomenon that occurs and develops in countries ruled by exclusive beliefs or ideologies. The passive supporters deny fundamental freedoms of human being and spread crime and violence as a method of persuasion and constraining religious or political doctrine in the world.

Steps of the terrorist attack. Constantly, analysts and military experts consider that terrorism involves several steps, which can be also found in the informational war:

- the combatants' selection from socially, ideologically or religiously motivated categories, entirely dedicated to a cause;
- the special training in centers, camps or schools organized on the territory of some permissive and well-disposed states;
- the organization of a large informative network for finding and studying the attacks' targets, with a maximum efficiency on propagandistic plan and accessible attacks;
- the performers' slinking in the countries and targets to be attacked.;
- the execution of the attacks by startling.

The risk duality: ways of reporting the human being to Earth's ecosystem. The relationship between man and nature has evolved rapidly. Nowadays it is developing at a tremendous speed, impossible to stop or control.

In the last hundred years, mainly the last ten years, man has developed rapidly and the improvement of technical or instrumental means has much more increased the human's power upon nature, upon the environment, food chains and all links from the food chains. Undoubtedly, the technology has been improved. It has also improved the quality of human life.

At the same time, human life is conditioned and controlled, and the survival on Earth is seriously threatened. Thus, in the modern man's life the risk of natural or induced catastrophe has appeared and the effects of these catastrophes affect directly all the environmental elements. Initially, we could talk exclusively about natural risks. At the same time with the development of man's technical power over nature, the caused risk, so-called technological or instrumental risk, has increased.

In this category we include all the aspects that are classified as terrorist acts with direct impact on the huge eco space and we can say that: "Today, as never before, humanity has acquired the capacity to destroy, to annihilate itself and also to annihilate the wonderful things it has achieved so far" (Lockwood, 2009).

Through unconscious actions, the seas can be polluted with highly toxic substances but discharged with direct purpose to be prejudicial to the drinking water supply, air can be infected with various viruses, microbes, spores that can cause diseases and the most serious disorders, breast milk can contain toxins, etc.

In the same way, the accumulated chemical, biological, nuclear weapons are a dangerous stock which may have serious and irreversible impacts on ecosystems and implicitly, on human being at a certain time. It is possible that in the future, the human-nature ratio to be changed. Ecological terrorism is almost invisible, it can appear in the most diverse and hard to imagine fields. An invasion of insects may be a natural phenomenon. But an invasion of insects can weaken a vegetation background on long term while insects can spread diseases and can destroy crops with a devastating speed; they can be used as weapons in ecological terrorism (Lockwood, 2009). So insects can be categorized as one of the cheapest and most destructive weapons available to terrorists. For example, after World War I, not the opposite armies, but typhus, caused by lice, sickened 30 million people and killed five million. In the Second World War, the French and Germans spread Colorado beetles to destroy enemy crops and Japanese troops killed 400,000 Chinese, spreading plague-infected fleas and flies carrying cholera virus. Also, during the Cold War, the U.S. military has created a plan of producing 100 million mosquitoes infected with "yellow fever" virus, aiming at vulnerable targets in the Soviet Union and its **ally's territories**. According to some experts in biological **defence**, a terrorist having only \$ 100, some simple instructions and a plane ticket, could bring to United States or any other targeted country, without being caught, the fever virus "Rift Valley" disease discovered in 1931, which can affect the nervous system in humans and which is potentially lethal.

Today we managed unprecedented performance. Because viruses and bacteria are not deadly enough, laboratories were able to obtain some of the most aggressive bacteriological weapons.

For example smallpox, a serious disease caused by the variola virus brings a mortality rate of at least 30%. The pox is categorized in A class of all bacteriological weapons because of the high mortality caused by the virus and the fact that smallpox could be quickly transmitted by air.

Also Anthrax, produced by the terrible *Bacillus anthracis* bacterium. Because of the high rate of mortality and its long resistance in the environment, anthrax bacterium is also considered an A Category biological weapon. The bacteria lives in the soil where it can infect domestic animals and humans can be infected with anthrax by physical contact, inhalation and ingestion. Most cases of infection are cutaneous anthrax, transmitted through skin contact with bacteria, but the most serious and deadly form is inhalation anthrax. In cases of inhalation anthrax, mortality is 100% in untreated cases, and 75% when applied to a specific emergency treatment.

The disease called Ebola is caused by one of the most aggressive viruses, the disease is known as hemorrhagic fever. Once present in a host, the virus infects any living organism that come into contact with blood or any body fluids of the host carrier. Although there are multiple studies, there is currently no cure or vaccine against this virus. Plague or "Black Death" is also an A category biological weapon, plague bacteria, *Yersinia* bacterium can trigger two types of plague, the bubonic and the pneumatological. Bubonic plague causes a much higher mortality than pneumetologic, and it is transmitted by fleas' and / or lice's bite, but also by physical contact with body fluids of an infected person.

in about 50% of organisms, mostly species of rabbits and rats. Although tularemia is known more as a disease that decimates rabbits, the mortality at humans can exceed 5%, the bacteria that trigger this disease is one of the most infectious bacteria on Earth. Botulinum toxin, *Clostridium botulinum*, is a colorless and odorless substance; however, in the first 12-36 hours after contamination, the first signs of botulism appear. At this moment, the only solution for infected people is the injecting of an anti-botulinum toxin. The disease untreated quickly leads to respiratory paralysis followed by death.

Rice's Agent is a rice crop disease triggered by *Pryricularia oryzae* fungus. Bacteria, viruses, toxins have a high potential killer, though there are some biological agents specially selected for destroying food sources of potential enemies, and triggering a large-scaled famine in the attacked country. Once spread over rice crops, cereals are infected shortly by the spores of this unconventional weapon and finally the crops are destroyed.

Another disease, Rinderpesta or cattle's disease was brought by the armies of Genghis Khan in 13th century Europe. The disease is caused by a virus and can affect either domestic cattle or wild animals such as buffalo, bison, giraffes, virtually any ruminant herbivore. The condition is extremely dangerous; the infested animals suffer from fever, dysentery and inflammation of the membranes' mucous. There is an efficient vaccine, but because of the fact that the disease is highly contagious, many cattle die before vaccination.

Nipah virus is named after the region of Nipah in Malaysia where, in 1999, there were the first human victims. Nipah is spread through physical contact or body fluids of infected persons. Because of its high mortality, Nipah virus was included in A Category.

Chimeric viruses, created in the laboratory, joins the plague, smallpox, anthrax, which are the most feared biological agents created by nature. Chimeric viruses have the ability to instantly kill anything and everything([www. Descopera.ro](http://www.Descopera.ro)).

RESULTS AND DISCUSSIONS

Combating the terrorism in the entire world. Terrorist acts can occur anywhere, anytime. Combating terrorist acts, however, requires a concerted effort, starting at eradicating the causes of terrorism. It is understood that it may require multiple measures related to the implementation of some political, economical, cultural, global and regional strategies. These strategies could be developed only in relation to the conclusions that can be retained after a comprehensive investigation of all defiance, challenges and threats that characterize the life of mankind in the third millennium. The first step you should take the professional research form of the terrorism phenomenon and eco-terrorism. One should take into account that at some levels great progress has been made, such as nuclear, chemical, biological, genetic and

bacteriological. Related to this vast progress, also the terrorist actions can be multiplied and diversified infinitely.

It is true that human relations have significantly deteriorated in transition to implement the objectives and structure of the new world order, which is generally characterized by a state of chaos (which therefore is required to be analyzed on chaos theory coordinates).

As a result, the individual psychology, the group psychology should function under the direction of accepting the systems' value of all existing civilizations and also the progressive decrease of the aggressive behaviour either between groups of people or international relations. However, there must be a collusion of all political makers' activities, requiring optimization of human relations already degraded significantly. Now, states are at different stages of development and progress. Even so, a general approach could be represented by promoting the dialogue and exchange of values between religions, ethnicities, ethno-cultural groups, etc. The same effort can involve military staff in all its institutions, by specific levels (tracing the attacked areas and their isolation, preventing the extension of contaminations to other areas, immediate intervention for treatment and decontamination of the area), which may contribute to the development of some strategic models with an effective action over the causes of eco-terrorism.

In the same way, one can take measures that lead to fighting against structures and terrorist actions. Such measures actually give a generic anti-terrorist strategy.

This strategy is one that contains offensive against terrorist organizations and that is a set of discovering and abolishing by political, legislative, economical and military means of those groups to which the protection and defence against terrorist actions should be added. The last one refers to a system of measures of counteracting the terrorist attacks, of protection against chemicals and pathogenic agents.

CONCLUSION

Terrorism, whatever form it takes, represents a present problem but especially one of our common future. All kinds of attacks known all over the world, have generated fear and desire to discourage anyone who intends to conduct terrorist attacks in the beginning of the third millennium, which started with a wide antiterrorist war.

Finally, we must take into account the offensive against eco-terrorism, which requires researching and discovering groups, organizations, laboratories and means of producing chemical and biological agents. In this type of action, chemists, biologists, geneticists may be involved to support the ecological terrorism war by convergent working.

In the meantime, specific actions should be running to ban terrorists' access to all that is chemical and biological, requiring even the establishment of activities to prevent and neutralize chemical and biological terrorist attacks by using some chemical, biological counter-agents of the vaccines.

The political, economical, military resources may underlie the liquidation of the terrorist bases and organizations. Protection and **defence** against ecological terrorism actions require involvement and participation of specialized institutions and structures, which must be the buffer solution or the interface between science and society.

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Rural culture in transition

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ABSTRACT

The progress of the rural economic sector depends also on its cultural ground. A specific culture, that is open to the dynamic of the modern society facilitates the acquiring of new values and knowledge and incentivizes the knowledge transfer. Is the Romanian rural culture opened to such changes? This is a question that worth to seek an adequate answer.

Keywords: *rural community, values, knowledge, rural development*

INTRODUCTION

Romanian villages are currently living a drama. The integration into the EU should potentiate the development of agriculture, the main economic activity and income source in rural areas. EU drained a series of stimulating funds to align them to the performance of other Member States. Romanian agriculture starts this “race” from multiple handicaps, some of them structural, such as low productivity and poor performance; some other of conjuncture, such as shortage of human resources in the context of massive emigration to the Western labor market. Overcoming or (at least) reducing the performance gap to the EU agriculture, which the EU incentive programs can only facilitate, should be based upon a unified and coherent agricultural strategy based on a thorough knowledge of the Romanian agriculture’s situation at present, and of the causes that led to it. Indeed, a simple comparative glance to labor productivity in agriculture both during the communist rule, and after 1990 indicates a yield of about 25-40% from the level achieved in Western countries’ agriculture, some of them having lower natural and human resources than Romania.

DISSCUSSIONS

In Romanian agriculture it was achieved on average – for the entire period after the Second World War – 2,500 kg/ha for wheat, compared to 6,000-7,000 kg/ha in Western countries in EU; 1,900 to 2,000 l/cow/year compared to 5,500-7,000 l/cow/year in the same countries, etc. (Table 1, focused on synthetic indicator of productivity, i.e. the average yield per ha/animal, is relevant for these differences by comparing statistical data from Romania and some Western countries).

Romanian agriculture’s productivity is two to three times lower than in EU developed countries. In this perspective, it is clear that Romanian agriculture is unprepared to face the competition imposed by the participation in open Community market, the differences and deficits tend to rise despite pumping Community funds, and they managed poorly or selectively. If the next 5-10 years organizational disinterest and shortcomings of agricultural development will not be removed, the chronic character of low productivity will generate a major conflict status between the domestic producers and the foreign ones, including those willing to invest in this crucial sector of the economy.

Identifying the causes of the current low productivity of the Romanian agriculture is therefore a fundamental action to implement the recovery strategic project, knowing that cyclical, palliative measures merely extend an agonizing condition, already defined as chronic. These

causes can be fully determined only if the necessary historical perspective is taken, allowing the delimitation of the evolutionary processes crossed by the Romanian agriculture and their comparative definition within the more or less harsh situations they crossed. As a starting point of such an exercise of knowledge, the agrarian reform of 1921 can be taken, which changed the structure of farm type in Great Romania after World War I, when the trigger of a first process of transition to Western agriculture's performance criteria was set up.

The 1921 Land Reform policy was the consequence of administrative laws aimed at achieving "social justice" for the peasantry, the social status that led on its shoulders the weight of the "Wholeness of nation's war". Romanian peasants' sacrifices should be rewarded, the only way to mitigate its deep social discontentment being to satisfy the "land thirst". Land reform was not caused by economic criteria, but on social and political ones, interrupting the "natural" rural land ownership concentration that began after the reform initiated in 1864 under the reign of Alexandru Ioan Cuza. Following the Agrarian Law of 1921, over six million hectares (mostly contained in large properties) were divided by 3, 850,000 homeowners. It was so that nearly 90% of the country's arable land was used in systems with 1-3 ha. Generalization of small properties – with limited or reduced input of technical progress gains on the farm – resulted in maintaining low agricultural yields, comparable with the previous period of the First World War (See in this regard Table 2 in Appendix).

The legislation adopted after 1921 land reform aimed, from the same "social justice" perspective, to maintain the small property; to limit land transactions; to limit to max 5 hectares the allotment plots, not in favor of increased productivity and efficiency, possible only in consolidated environments or large properties, allowing rational exploitation. Small properties sustained for social and political reasons by most interwar governments suffered inevitable erosion due to spraying (mainly through the succession acts) and financial inability to stimulate technical progress, enabling the "machine" use in main farming works (plowing, sowing, threshing etc.).

The attempt to favor some cooperative association forms was incoherent, inconsistent and unsupported. The Land Law from 1937 and the decree from 1939 - proposed rather following a theoretical query of solutions to make the Romanian agriculture to "take off" – came in an absolutely unfavorable historical context, too late to have the necessary time to show fruit. The interwar small property, based on tradition and routine, kept the extensive, mainly grain farming character of the former great properties, which realized raw productions (wheat, corn, barley, livestock and skins etc.), of high volume for export with a low, but enough income to restart the process without huge difficulties. Small property could not afford even this option without possibility of alternative economic activities or keeping any "reserves" that could allow overcoming "route accidents" (economic crisis, natural contexts – droughts, floods, weather changes – etc.).

In this respect, it is exemplary the action of Moromete, the hero of the great novelist Marin Preda, who – based on the high price of wheat in the previous year – cultivated a large area with cereals, without realizing that – by virtue of the same reasoning – all the others peasants will do the same, resulting in a glut on the market and an inevitable fall of cereals price. In addition, in the interwar period, Romania ceased to be the "breadbasket of Europe", partially because the market has been overrun by the production of major agricultural powers (U.S., Canada, Argentina) and – on the other hand – because Western countries have failed – due to ownership concentration and massive introduction of technical progress – to solve most of their inner consumption. In this context, the production of small properties could come only in a very small proportion to the international trade circuit, being uncompetitive even in practicing dumping prices. World economic situation and the lack of appropriate strategies to stimulate ownership concentration and to increase agriculture investment has led to conserve

the “natural economy” traits of the Romanian agriculture; a subsistence agriculture in which the exploitation’s autarchic character is meant to provide all needs of the owner (farmer family). In this type of agrarian economy there is no question of effectiveness or productivity and profit from the invested efforts. The underdevelopment becomes endemic and the exploitation may fail at any time under the market pressure or as a result of natural or social bad circumstances.

One of these circumstances was the political situation after the Second World War. The soviet occupation and the propulsion of the totalitarian left (communist) power imposed a new agrarian reform (1945). The reform was clearly ideologically marked as one of the political tactics of the Communists to attract Romanian rural society in their project of social construction. The 1945 reform destroyed the large farms – wrongly called large estates – whose areas were limited to 100 ha in the hilly area and to 250 ha in the plain area by the 1921 Land Law. The reform emphasized spraying farm areas, maintaining absolute majority in an area of 5 hectares, not enough – as shown before – to achieve higher yields and higher returns. More serious is the fact that the “natural” ownership concentration was almost completely stopped, the communists quickly triggering the project of abolishing the private property in agriculture (1949). The nationalization and collectivization of the agriculture destroyed the structures of the Romanian agriculture property, set in over 100 years of history.

By nationalization and collectivization, 90% of the agricultural area of the country became the “property of all”, in fact the “property of none”. The state owned directly 30%; the remaining 60% were the property of the “collectivists”. The purpose of this forced trial was to grow the agricultural performance using on large areas the planned modern technology. Collectivization and nationalization of agriculture did not give the expected results; the growth was slow and fragile, made simultaneously with a drastic reduction of rural human resources, in the context of rapid industrialization of the country.

The process severely destabilized the Romanian village which lost its unique cultural traits and specific axiological universe without putting in place viable values of the specific modern civilization type. One consequence was the “rurbanization” phenomenon, by planting in urban areas some human groups, unprepared for this lifestyle. Social atomization reached a maximum, the organisms of the rural communities being replaced by the “lonely crowd”. Social effects of rapid transfer were complex and therefore difficult without economic goals to be achieved.

Of course, it can be raised the question whether the communist state was aware of the agriculture’s backward state and therefore sought to remedy the situation forcing a process of concentration of ownership which would occur much slower on a “natural” way? It is known that the great property promotes investment and resources which, with a proper management, are effective. For the communist state and party this reason was a secondary one. The inefficiency of the collectivist nationalized agriculture was already been tested in its origin country, URSS and the Romanian peasant’s “land thirst” was the predictable cause of failure for the process that “confiscated” his property – the source of his existence and his existential dignity.

The process initiated by the communists aimed, in fact to achieve a strong social control of the rural communities with somewhat independent evolution, the peasant “stuck on earth” building his own axiological universe less influenced by urban movements, the so-called “fortuna labilis”. Deprived of his natural communion with the earth – his natural surroundings and source of his symbolic horizon – the peasant becomes an “object of history”, a simply statistic data, with depleted or even annulated creative resources, with reversed main values scale.

Economic failure of the nationalization and collectivization process can easily be seized on the basis of comparisons with the developments of other agricultural areas and even with the own situation of the Romanian agriculture (See Table 1). Although the number of tractors increased by 48 times compared to 1938, the amount of chemical fertilizers by 200 times, the irrigated areas by 19.2 times, average yields per hectare increased only by 1-1.5 tons cereal crops (wheat and corn). The state has set 573 SMAs and a large number of specialists were assigned in agriculture – an average of 35.5 per IAS and 6.5 per CAP. For this purpose, specialized education was developed and agricultural research units and laboratories were set up in counties. With such a material and technical base and the existent number of specialists, the large areas agriculture (on 5.7 to 7.0 thousand ha per IAS and 1.1-2.0 thousand ha per CAP) should achieve a level of performance similar to that of the Western agriculture. But this level has never been achieved and the productivity – in absolute terms – fell just below the interwar Romanian agriculture. The main cause was the peasant's dispossession of land ownership, his return to an exploitation of somehow holding type, which in its time assured the users' subsistence and some surplus for the domain's master. Deprived of his work object, without even his own means (passed to the state or the collective ownership), the Romanian peasant was no more interested in traditional, rational utilization of his world resources, accepting – in spite of his millennial economic spirit – the waste and disinterest and even practicing a kind of "piracy" on the results of his work, that he could no more enjoy.

Elimination of private property in agriculture eliminated its natural concentration, eliminated the private initiative interest stimulated by its own free market competition which didn't exist any more. Reduced to a simple stage of "speaking tools", the peasants ceased to act like responsible stewards of their own fortunes, the exploitation management was taken over by state officials with a very limited field of administrative initiatives. Facing the state omnipotence and the "state plan", even the specialists must accept absurd development projects, aberrant and inefficient investments. Political dirigisme blocked and destroyed the economic initiative, positive mercantile spirit and, in the same time, the rural symbolic universe, peasants replacing the former "running off from estates" with "running to the cities", whose consequences were partially listed.

In Western agriculture, farms average area led directly or in association by their owners could adopt by own initiative some specific investment strategies, could – with the necessary risks – be guided by the effects of competition alleged by it. In the statist and collectivist controlled agriculture of Romania, such type of development was excluded. At the end of the twentieth century, Romanian agriculture's disaster was already a foretold one...

The overthrow of the communism in 1989 did not lead automatically to the opening of new "taking off" directions in agriculture. In fact, the restitution legislation and the reconstruction of former land ownership (achieved after many delays and "amendments" of the communist regime's "heirs") put the Romanian farm in the situation in which it was before the totalitarian historical parenthesis and led it back more than a half century.

Western countries' agriculture didn't dance, all this time, the back steps. At the beginning of the third millennium, Romanian agriculture found itself in the context of resuming normal ownership concentration process as private property, as a basis for effective exploitation and use – under the pressure of the free market competition – of technical progress, market strategies, agricultural management and knowledge transfer. In the situation of lacking funds and facilities – those taken by or introduced under the communist regime being obsolete or completely worn out – a chaotic, selective or even malevolent use of European funds, to restart the natural development process was extremely difficult and, sometimes, alienate for the rural Romanian inhabitants. Romanian village entrance into modernity, rural destabilization of human resources and their massive migration to other cultural and economic horizons will finally crumble the basic cell, the typical peasant family, the

economic, cultural and political habits, in other words – the typical specific ideals. The Romanian peasant, forced by the “hard times” to migrate to Europe, will adapt, in principle, to his new living environment, evolving on a way described by William Thomas and Florian Znaniecki in their famous work “The Polish Peasant in Europe and America”.

But if the “peasants’ end” – to use an expression of the well-known French sociologist Henri Mendras – is predictable (the pressure of the communist model of urbanization being regarded as the last lethal stroke upon the rural universe), the agriculture as a key sector must survive for the sake of the nation and become effective in order to withstand to the blind competition generated by meeting on the Community market with other domestic agricultures.

There are several ways of achieving, on the foundation of private property, farm performance. On sized surfaces (80-100 ha for cereals and technical plants, 10-15 ha for fruit trees or vines, 8-10 ha for vegetables, 20-50 ha head of cattle for milk, 30-40 million pigs etc.) with adequate facilities, by selling specialized products (in various degrees of processing), individually or jointly (through participatory associations – such as holdings – placed alongside with those of specific tourism or craft) may generate a rapid recovery of the Romanian agriculture and its integration in the overall farming system assumed by the EU. It should be, however, form this perspective, a strong political will (embodied in legislative initiatives favorable to the agriculture), and a real responsibility in the use of structural development funds and investment orientation, consistent and functional organization systems and agricultural credit insurance, an effective orientation and agricultural training, including knowledge transfer.

Developing a pool of performing farms cannot be achieved within the more than nine millions hectares returned to the private ownership without a legislative support to block the natural process of spraying small properties. Romanian society integrated into the EU cannot afford to wait for natural transition, after the initial rural ownership spraying, to a concentration of the rural property – a slow action, realized after several contradictory manifestations in the Western states. Merging various plots of various owners – even before the cadastre and land organization – with divisibility exclusion on various transactions or inheritance – of the unincorporated territories could be a prerequisite for increasing the efficiency of rural activities. For holdings constituted by “block” sale of private lots or by proportional association of small properties, an organized directed agricultural credit, more rigorous than the existing one, should be set up to favor (on the basis of available material guarantee criteria, judicious preparation, obtainable objective), by buying land and optimal size of technical working means, the development at an optimal size, necessary to enter in the market generated competition. Optimal holdings would reduce in 15-20 years direct employment in agricultural production form 35% of all employment in the country, to 10-15% compared to 5-7% in the rest of the EU. HR surplus thus obtained could be assigned to the alternative activities providing comprehensive development of rural areas.

Farm efficiency is easily to be achieved in the case of state agricultural ownership (the former IAS). Various commercial companies (former IAS) hold about 1 million hectares in large surfaces, erratically exploited on arbitrary projects, as it always happens with state properties. These large farms could be divided into medium-sized farms, equipped with relevant technical means, with a commercial goal. Their privatization or renting should be directed to the farmers presenting valid feasibility projects and material and professional competences to withstand the competition imposed by the market. Overall privatization or lease of large state-owned farms is counterproductive because, at least virtually, it reduces the required competition performance by creating conditions of local monopolies, inevitably tented to dominate the market and to seize the gross farm efficiency. Former IAS have, beside assets of aver 1 million ha, huge movable and immovable capital, tempting the interests groups or

current political power's clientele to pursue their fraudulent liquidation, including the transfer to foreign investors, less interested in Romanian rural society – by speculative operations and establishing phantom companies. An interesting and coherent set of proposals on how to transform the state agricultural properties is set up by Dr. Eng. Hilary Isaac (in “Romanian Agriculture”, paper published in 1999 by PROPACT, the National Union of Romanian Peasants), based on seizing different socio-economic trends in rural area, which are valid even today. Based on historical data and trends compared between the Western and Romanian agriculture, the researcher proposes the following:

1. Delimitation, within the large scale farms, of viable medium exploitations which can ensure commercial agricultural production by using modern techniques (80-100 ha for grain farms – technical plants, 10-15 ha for orchards or vineyards, 8-10 ha of vegetables, 15-35 heads milk cattle etc.).
2. Transfer of these medium farms through sale, lease or concession to a first generation of private farmers, according to special criteria (age, training, criminal record, material guarantees, etc.) stipulated in a special legislation.
3. The main advantage for the national economy is the immediate establishment on the IAS 1 million ha of tens of thousands of private farms of optimal production size, similar to those in Western countries (where it took several decades to concentrate small properties).
4. The competition between them, to which the 8-9 million ha of the small properties will be also involved, will trigger the concentration of land ownership which within 15-20 years can provide 10-15% of villages' specialized agricultural producers (from the now existing 34%), the rest of the inhabitants (because the villages should not be depopulated) will be involved in related activities (processing, services, packaging etc.).
5. Setting up the production capacity of various existing IAS facilities (where not yet robbed) at the center level of business or farms (storage, processing, meat, vegetables, fruit, grapes etc.), in the nuclei of cooperative group associations, that should integrate with the exploitations resulted from IAS farms restructuring and private holdings in the area, which will gradually arise through land concentration and specialization in certain crops (products).
6. It is useful that the legislation treats equally and contains provisions concerning the unit production capacities of the former ILF, IPILF, Vinalcool, ICIL etc., who are currently unused and deteriorating.
7. It should be avoided altogether the formal privatization type carried out in industry, with thousands of shareholders.
8. The purpose of privatization should be to trigger the initiatives, the interest, the responsibility, the competition etc.
9. A fruit tree farm, for example, of 200 ha owned by the state, privatized with a **single owner** ensure the installation of all the market economy precepts or, according to the **MEBO** system (**PAS**), with **all employees**, will have no effect upon performance while owned by 10-15 people.
10. The holdings “auctions” should in no case be based upon the financial strength, but the criteria to ensure that the person who will become the owner (leaser) will put into practice his own work (and his family work) and that he is capable of the appropriate performance to ensure an increase of 2-3 times the actual results.

In conclusion, account should be taken, having the experience of two socio-economic systems (capitalist and socialist), in the last 5-7 decades of the last century, that **the performance is not possible to be achieved with officials, but only by owners.**

At their turn, the “associative forms” and the agricultural associations organized under Law 36/1991 have nothing to do with the market economy. What mechanisms can act so that the yields increase by 2-3 times those realized by a CAP on the same land?

The associations are exploitation forms so that the earth does not remain uncultivated; they are not forms to ensure increased performance – the main objective of any agricultural strategy.

Formation of middle size property in Romania is conditional (along with previously mentioned factors), upon:

- Constitutional **guaranteeing private property and the right to be its first defender**
- Providing facilities for the purchase of agricultural machinery to farmers in training and professionals – entrepreneurs to create private agricultural services, of medium or small size (not monopoly)
- Establishing a rational structure of the Romanian agricultural production in terms of its European Union integration, to guide the agricultural profile of the forming holdings
- Immediate organization by separation from IAS or public patrimony domain of optimum size farms to be transferred (through sale, lease, rent) to specialists who will operate on a private basis in order to serve as model farm on various production profiles
- Design and realization of a rural development policy, of a ***network of small – medium enterprises capacity for better use of the agricultural, horticultural, livestock production*** (Module – Annex for fruit and vegetables). Without the perspective of profitable recovery of production, no specialized commercial farms can be formed
- The production structure of the Romanian agriculture – mainly cereals – must be reconsidered, by developing greater intensive crops. It is not understandable how, in a country where more than 34% of the population works in agriculture, the wheat crop – the most extensive one – 100% mechanized and with a low yield, around 2,500 kg/ha, with uninsured sale, is stimulated (by seeds, incentives etc.)?
- Based on specific criteria, it is necessary that private farms of optimal size, with commercial production be included in the SME category, enjoying their stimulating regulations
- Within the Agriculture Ministry, a service, a direction, if not more, should be officially intended to set and track the establishment policy of medium farms in Romania – the single way to ensure performance, to increase agricultural productivity
- Introduction in the agricultural education curricula, since 2008-2009, the discipline “organization of the private farm” instead “socialist organization” which, under other names, is still in use
- Rethink and modernize the Romanian village as a matrix of a prosperous economy, of commercial production and processing, in which the market economy laws have free action field
- The Romanian village and peasant problem should no longer be simplistic addressed, meaning in which way is he working the land: individually or “edged” in an association, the substantive issue is whether the Romanian peasant must continue to live on the rent (income) that lies in 2.5 hectares of land?! In other words, **small farmers (34% of the active population) should be “saved” keeping them in poverty?**

CONCLUSIONS

The diagnosis and the proposals configured by Prof. Hilary Isaac are focused on recovery of the Romanian agriculture, including socio-economic revitalization of rural areas. After EU integration, these targets became stringent, compulsory requirements. With some coherent agricultural policies and some stimulating structural funds offered by the EU, they can be realized in a more or less rapid rhythm. Agriculture modernization and rise of an efficient farmers category, adapted to the European market demands – an inevitable process – will lead to dissolution of the peasant cultural universe, to the “end” of peasants”.

The Romanian village was, since immemorial times, the creator and deposit of an specific axiological universe, the basement of the fundamental ethnic personality, but, under the times' pressure, its existence ended. Instead of the specific characteristics of some related small communities, imposed also by the special jointly organizational forms, the characteristics (surprised by F. Tönnies in "Community and Society" – 1887) of the global society in which convention, money, obligations' right and political structure have an essential role are more and more pregnant. The process is, probably irreversible and necessary. But, for a society raised up on the cultural ground of the rural, sometimes even against it, as it happened in the Romanian society, maintaining – not only in the "collective memory" – its values and traditions becomes an essential duty. We cannot know when to appeal to this identity definition would become – in the world dynamic – necessary.

Table 1 Average production in different countries, per hectar, per animal

Product	Year	M.U.	Romania	France	Holand	Denmark	Italy	USA	Russia	Germany	Austria	Belgium	
Wheat	1979-1981 1991-2001	kg/ha	2487	4991	6280	5135			1424	4799	3783	5031	
			2355	6517	7897	6740			113445	6406	5018	6648	
Corn	1979-1981 1991-2001	kg/ha	3157	5455	12910	-	5538	6474	2996	6165	7047	6297	
			2910	7776	25000	-	4634	6568	112675	7450	7651	8381	
Potatoes	1979-1981 1991-2001	kg/ha	14728	28465	37752	26904	18261	30229	11095	23587	25387	39246	
			11579	34495	42006	33077	21273	35330	112795	33161	22776	39122	
Sugar beet	1979-1981 1991-2001	kg/ha	21723	52381	49252	40148	48563	46198	19732	41703	49907	54798	
			19242	68319	63500	49799	46259	44582	1120789	50562	51340	58827	
Grapes	1979-1981 1991-2001	kg/ha	5798	8803	244470	-	9345	15990	7337	10153	7220	9520	
			4361	7469	15552	-	10132	17294	114729	15307	7163	8742	
			Romania	France	Holand	Denmark	Suiss	Sweden	Israel	N.Koreea	S.Koreea	German y	Russia
Milk	1979-1981 1991-2001	l/yea r/co w	1914	3807	5052	4920	4194	5257	6817	2244	4864	4178	2097
			1907	5107	6260	6424	5035	6152	9163	2356	6623	5078	2267 R
			Romania	France	Holand	Belgium	Italy	Germany					
Fruits	1979-1981 1991-2001	kg/ha	4200	16530	18550	17340	15400	14200					
Total			6040	21850	25150	22300	20500	18500					

Source: FAO

Table 2 Structure of land ownership of EU farms (1995)

A. Number of exploitations per classes of dimension (Thou.)

B.

Country	Class							Total
	under 5 ha	5-10 ha	12-20 ha	20-30 ha	30-50 ha	50-100 ha	Over 100 ha	
EU 15	4171,3	955,5	780,3	412,7	435,1	370,8	214,7	7 341
EU 12	4052,4	881,4	682,0	360,6	391,5	346,5	205,5	6 932
Belgium	23,7	10,2	12,7	9,0	9,4	5,0	0,8	71
Denmark	2,1	11,4	14,9	10,4	12,9	12,1	5,0	68
Germany	179,2	84,0	100,0	64,0	69,3	51,6	19,9	558
Greece	580,9	118,2	52,4	13,1	8,1	2,6	0,7	773
Spain	706,4	111,6	147,2	60,5	54,7	51,7	45,4	1 277
France	20,9	69,6	88,5	65,3	109,0	128,2	70,3	734
Ireland	14,9	20,5	40,6	29,1	23,1	16,1	4,1	153
Italy	1938,3	253,1	140,2	58,8	45,5	25,9	13,4	2 482
Luxemburg	0,8	0,3	0,3	0,2	0,5	1,0	0,2	3
Holland	37,4	18,1	20,8	15,0	14,8	6,2	0,9	113
Austria	87,3	41,7	49,0	21,5	14,2	5,2	2,8	227
Portugal	345,5	51,9	28,3	8,5	6,5	4,4	5,4	456
Finland	10,5	17,9	30,3	19,1	16,2	6,0	0,8	101
Sweden	11,0	15,5	19,0	11,4	13,3	13,0	5,6	88
UK	32,3	29,5	26,1	23,8	32,7	40,9	39,3	234

C. Agricultural area, per classes of dimension of farms

Country	Class							Total	Average area of a farm (ha)
	under 5 ha	5-10 ha	12-20 ha	20-30 ha	30-50 ha	50-100 ha	over 100 ha		
	Thousand hectares								
EU 15	7278,5	6701,3	11040,1	10058,1	15741,9	25604,8	50937,5	128 370	17,5
EU 12	7010,5	6154,8	9622,4	8798,9	15081,0	23980,8	4947,2	119 693	17,4
Belgium	45,5	73,2	166,1	222,3	257,0	331,3	122,0	1 337	18,8
Denmark	4,1	82,8	216,4	254,0	501,7	836,3	831,4	2 725	40,0
Germany	397,8	605,3	1457,3	1574,5	2540,5	3505,0	6977,0	14 155	25,6
Greece	1053,6	793,1	709,3	309,2	295,9	167,3	125,4	3 464	4,5
Spain	1408,8	1459,5	2032,0	1459,1	2095,0	3594,3	13193,7	25 230	19,8
France	404,4	499,0	1283,6	1680,5	4255,5	8969,0	11174,2	28 057	38,2
Ireland	45,0	155,9	596,2	714,4	1084,7	1081,1	648,2	4 325	28,1
Italy	2890,1	1778,9	1927,3	1418,5	1751,5	1829,2	3089,8	14 685	5,9
Luxemburg	1,5	2,0	3,8	5,2	18,3	68,5	27,6	125	41,7
Holland	77,4	129,1	301,6	368,3	550,2	42,4	159,9	1 995	17,7
Austria	202,3	303,3	707,3	521,6	534,3	335,6	820,8	3 425	15,1
Portugal	595,9	360,3	388,7	207,2	249,4	299,2	1823,0	3 924	8,6
Finland	33,2	133,0	444,1	467,6	610,5	391,0	112,4	2 191	21,7
Sweden	32,5	110,2	266,3	280,0	516,1	897,5	957,1	3 059	34,8
UK	75,4	216,7	519,9	586,6	1279,3	2896,4	10875,1	16 449	70,3

Source: FAO

Study regarding management of technological systems in agriculture

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ABSTRACT

Initiation of agricultural activities generates preliminary approaches of multiple aspects that characterize them. The content of such problems and their resolution aim, first, knowledge of the market of agricultural products, determining of the production structure, in accordance with ecological potential and, in particular, for maintaining its, choice of technological systems, being known their variety and the influence, ultimately, on achieving a certain level of performance, preferable economic and ecological. Approach is not at all simple, so requires substantial managerial knowledge connected to reality, especially as it is known propagated impact of management in achieving desired goals. Based on the foregoing, the aim of this paper is to identify practical elements of organizing a multifunctional farms, focusing on technology, which will leads to different results to the level of farm and environment.

Keywords: *agricultural farm, environment, technological system, management*

INTRODUCTION

Decisions on the establishment of farms are complex, given that agriculture itself is subject to numerous restrictions. Perhaps most important, recognized, moreover, in the literature today are the ecological, which can influence decisions in different directions at senior management level. It is evident that nature has become a determinant for any entrepreneur who seeks a certain longevity of its business, and that is understandable, cannot ignore. In any activity to be launched, the aim is to achieve economic results performance, allowing operation or, more development. It therefore requires recognition of the importance of the economic factor, it diverting, in many cases, decisions at managerial organizational structure. Market analysis is a starting point for the correct evaluation of potential farms that decisions are based on the structure of production. Whether recourse to diversification or specialization, which will take is the sum of the results of the analyzed factors.

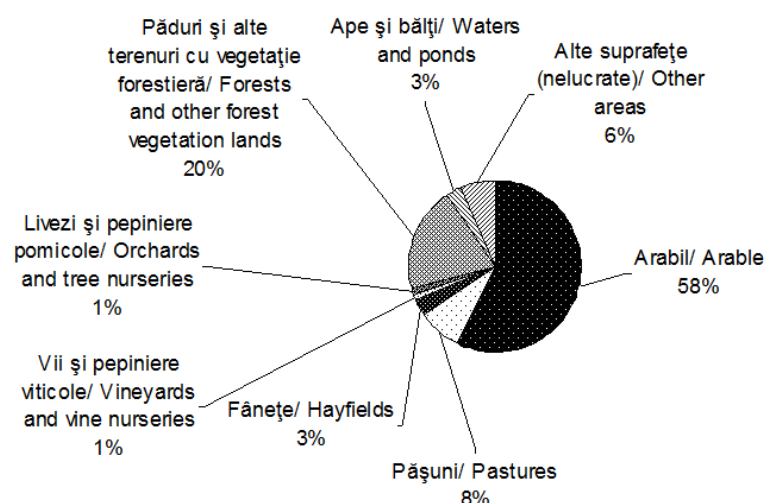
With certain intensity, there is technology practiced. If we consider the modern farms, as in this case, there is a need of applying ecological superior technological structures that highlight the existing natural resources and ensure the quality of certain openness to the market, which will become the holding functional and secure premises for sustainable development. Moreover, there are measures to support and implement the modern technologies in agriculture in the NRDP that can help boost its performance, thus farm. The eligibility conditions, farms can benefit from a series of investments to adapt to organic farming, purchase of machinery and new equipment, the establishment of plantations etc. The structure of beneficiaries is diverse and has different categories, it comprises: authorized person (established by law 300/2004, with subsequent amendments or established in the law 44/16/2008) individual enterprises (established under the Emergency Ordinance no. 44/16

2008) family business (law no. 44/16 April 2008), family associations and agricultural companies (Law 36/1991), agricultural company stock (Law 31/1990), company companies (Law 31/1990), privately owned company (Law no.15/1990), producer groups (recognized under Law 338/2005), agricultural cooperatives (Law 566/2004). Application of advanced technology systems make sustainable farm, of course under the "protection" for appropriate management.

Materials and methods

There are entrepreneurs who tend to initiate and develop new activities in line not only with getting immediate profit, but also with efficient use of resources in the ecological sense. In South Muntenia region exist optimal conditions for vegetal farms, thus allowing the practice of various crops (cereal crops, pulses, fodder), whose combination results in the possibility of a production structure for the market.

Eco - economic space. The South - Muntenia Region is situated in the south of Romania. In this region are predominant landforms with low altitude (plains and meadows 70.7 % respectively in the central and eastern Romanian Plain), which are occupied by agricultural plant species, forest and ruderal. The landscape is varied and includes 36 types and soil associations. Young soils are prevalent in the chernozem class (molisoils → ten types and associations) and the advanced, well-developed Luvisols class (clay-alluvial → eight types and associations), both shows great fertility and latitudinal distribution in the plain, succeeding from south to north in the form of strips. Soil types found in South Muntenia region as natural factors, offer vegetable agriculture development.



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Fig. 1 Structure of agricultural and nonagricultural land

Source: Anuarul Statistic al României

As a result of the foregoing, the land of the South Muntenia Region (fig. 1, 2011) is an important component with economic value – arable land, which is the main and most trusted wealth.

In the Figures 2 and 3 (Statistical Yearbook of Romania) we can notice that the vegetal production is preponderant, South Muntenia Region being supplier for grain and other categories of own livestock feed, and surrounding regions with the most developed animal. These products are beyond the average production per person / country.

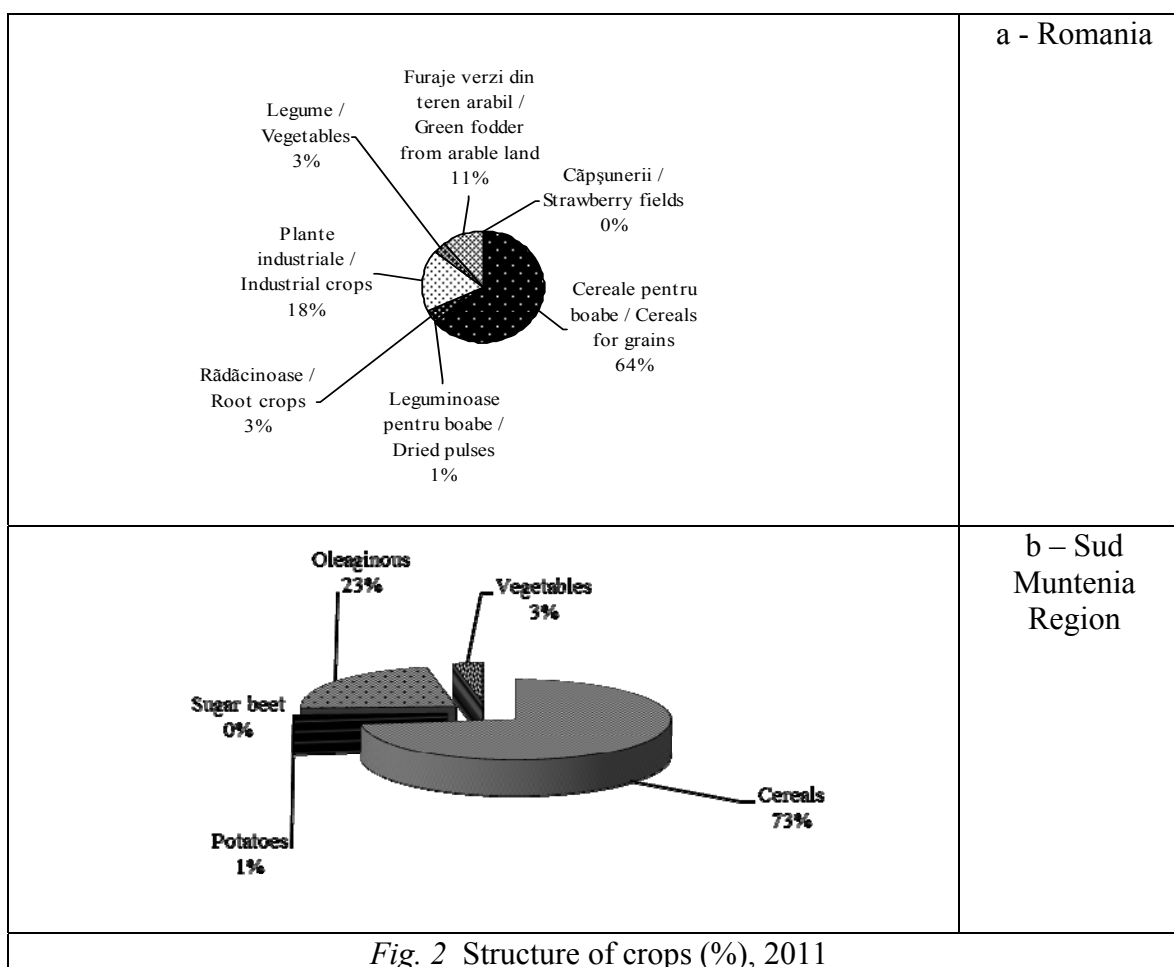


Fig. 2 Structure of crops (%), 2011

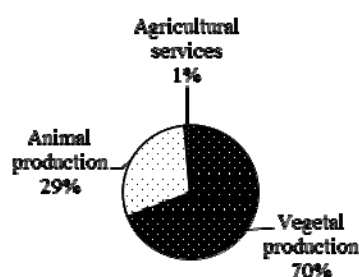


Fig. 3 Production of agricultural branch in Sud Muntenia Region (%), 2011

Among cereal grains, wheat and maize hold the highest share, which confirm the grain character of the counties bordering the Danube. In fact, grains occupy the largest area in the world. Cofas Elena and Soare Elena (2013) noted that according to data from FAO, the world's arable land, estimated at 1.4 to 1.6 billion hectares, over half is occupied by cereals. But there are products that are not productive in this area due to natural conditions and lack of irrigation systems. In Figure 4 are presented the farms that use irrigation water (27 565 farms in the South Region), most of which hold up to 5 ha areas, leading to vegetable structures.

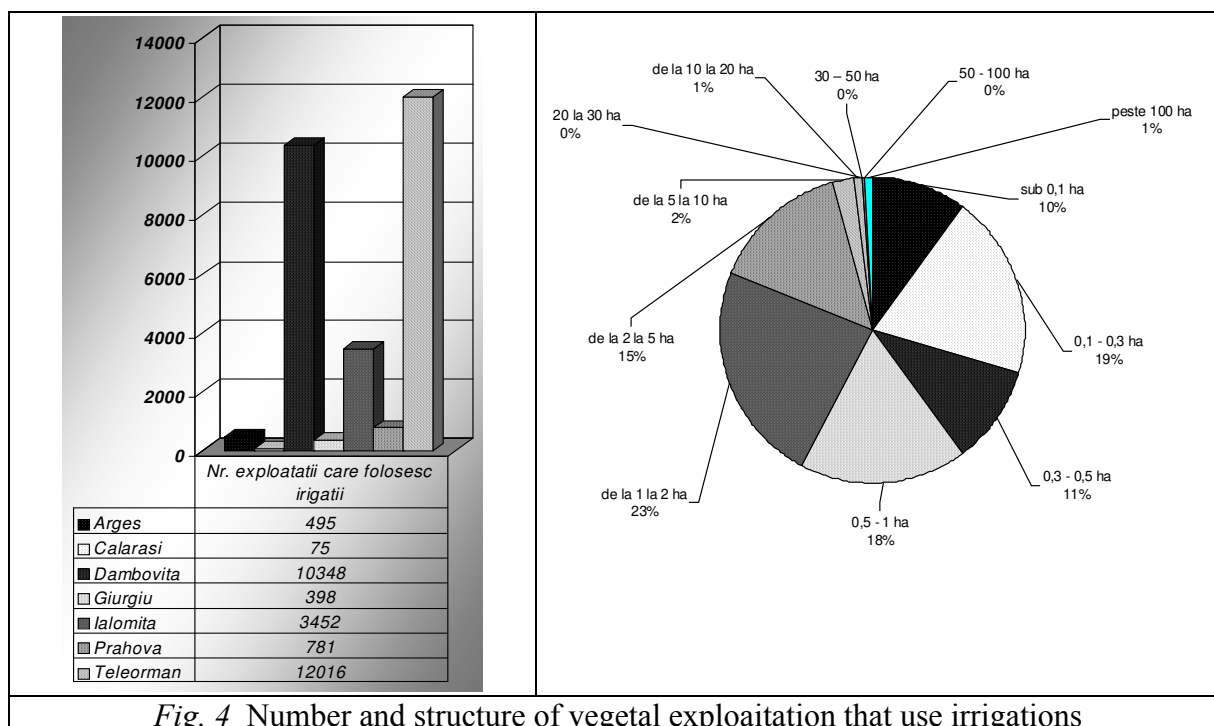


Fig. 4 Number and structure of vegetal exploitation that use irrigations

The paper is based on representative studies in research literature with reference to the zone, vegetable technological systems, farm management in agriculture, agricultural market. It has been recourse to information from sources in research institutes and agricultural stations. Also, we used the information necessary for the economic and technological forecasting.

Results and Discussion

This paper aims to design production and economic activity of a farm in the south region. The holding is based on the Law 36/1991, the law of agricultural companies and other forms of association in agriculture, which allows manifestation of entrepreneurship and investment. The farm has an area of 240 ha, with a production structure specific to the zone (cereal crops), but due to the low level of investment, weak market oriented. Crops, irrigated formerly practiced in present conditions are undersized in terms of production. Moreover, events and escalation of climate change disfavored most productive plant species.

What is aimed at farm level is to create the necessary technological and managerial framework for sustainable operation. Also, the effort to obtain good results in ecological joins practicing structure of production including branches with high adaptability to the "state" of the environment and responding to changes in the consumption pattern of the population (R. Voicu, Bran M., Dobre I., Stephen M., 2008).

The functioning of the agricultural exploitation requires the holders thereof to significant changes in level of technology and production structure, aiming not only high economic results, but also to create the ecological framework and enable its sustainability. Changes occur with the purchase of a plant watering, fully automated, generating new projections on farm land redevelopment, and practicing a new structure of production.

FUNDS for farms. In order to modernize the farm, the farmer can access Measure 121 "Modernization of agricultural holdings". The maximum eligible project shall not exceed 2,000,000 Euro, share of non-refundable support will be 50 % and will not exceed 1,000,000 Euro. For these sectors, grant support may be increased by:

- 5% for investments made by young farmers under 40 years old at the time of submission of the application, based on the provisions of the Accession Treaty (Annex VIII: Rural Development, Section II: Special provisions for investment support);
- 10% for investments made by farmers in the areas referred to in art. 36 (a) (i), (ii), (iii) of Regulation (EC) No 1698/2005;

All through measure 121 is encouraged and organic production, allocation of funds and by getting a higher score on selection for this type of activity.

For protection curtains (forestation), farmer can access measure 221 "First forestation of agricultural land" Public support (Community and national) provided under this measure shall not exceed 70% of eligible costs for plantation establishment.

Farm organization. Organizational activity at land holding aimed, first, decisions on the structure of production, the crop to be charged, taking into account the possibility of intercalation vegetable branches afforestation and beekeeping activities, from environmental compliance and economic criteria. When choosing crops were added on the availability holding financial, labor or related to the training manager. Approach and joined activity location use categories (the arable being predominant) and organization of crop rotation (Fig. 5).

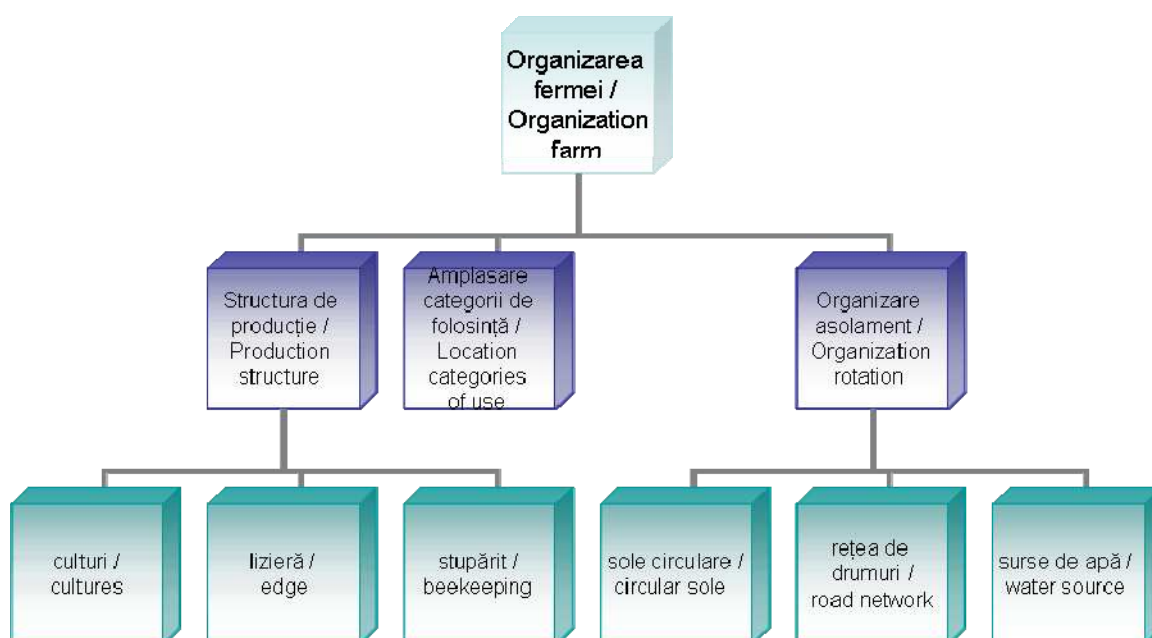


Fig. 5 Synthetic scheme of the main organizational and technological activities of farm

Organizing crop rotation area includes various elements, such as dividing the territory into sole crop rotation and coordinated placement of fields, mapping the road network operational (field, secondary) location of water sources (Voicu R., Dobre I., 2003). Moreover, crop rotation promotes efficient use of environmental resources, application of appropriate technologies, reduce the effects of pests and diseases, which will be sent on the level of total production costs .

Structure of production. Cultures, namely corn, sunflower, soybean and alfalfa, the jumping field, are practiced in the open and under two types of production systems, conventional and organic. Structure, meaning the total area of farm crops and proportions of them settled by resorting to specific methods of optimization processes of branches. Using the method variants, and attempts have been made to combine successive cultures in order to obtain the most advantageous embodiment. We took into account indicators and economic production of each crop (production per hectare, the average expenditure per hectare, revenue and profit

per hectare), any modification of the surface resulting culture obviously different results. Technological reasons, environmental and economic, crop them back after our calculations, 77.10 % of the total area of the farm, 185.04 hectares, respectively, and 22.9% left the area for afforestation and access roads (22.40 % and 0.5 %).

Organizing crop rotation. Once chosen in the structure arable crops are necessary to divide the distribution of cultures on soles. In terms of the number of soles, we opted for the formation of six sole equal sizes (surface of the sole of 30.84 hectares). Given the importance of crop sequence on sole, annually 3 soles will be occupied by maize (tolerant monoculture), sunflower, soybean and alfalfa being distributed on one field (Scheme 1).

Year	Sola						
	I	II	III	IV	V	VI	
I	maize			soy	sunflower	alfalfa	
II	soy	sunflower	maize				
III	sunflower	soy	porumb				
IV	maize		soy	sunflower	maize		
V	soy	maize			alfalfa		sunflower
VI	maize	sunflower	maize				soy
VII	maize		sunflower	soy			maize
VIII	sunflower	maize					soy
.....	alfalfa	
			alfalfa				
		alfalfa					
	alfalfa						

Scheme 1 – Crop sequence on sole ² (field grubbing at 4 years)

Water source. Providing the necessary water for irrigation can be achieved by surface network channels or resorting to groundwater reserves. Irrigation is made with pivot installation, the changes of the position of wetting is performed through towing of installation from a sole to another.

Organic farming is the most restrictive in terms of environmental impact. Responsibilities for maintaining the ecological balance responsibilities, primarily farms. They must address specific ecological system, which, relate to:

- Respecting the “conversion period”.
- Appropriate crop rotations for efficient use of farm resources (cycle 6 or 12 years because the soil is not damaged – monocultures are prohibited).
- In areas with moisture deficit, practice coverings and mechanical work (in small numbers) runs vertically (without turning the furrow).
- Limiting the use of synthetic chemicals (pesticides, fertilizers, animal antibiotics, food additives, etc.).
- Prohibit the use of GMOs.
- Local resources (manure for fertilization).
- Identification and use of plant resistance to pests and diseases and adapted to local conditions.

² Observations. For nine years ... crop rotation will be the same criteria (suitable monoculture corn, sunflower returns after five years; soy, being legumes in rotation with sunflower and corn).

- Establishment of hedgerows (skirts) to improve landscape value along with the overall improvement of environmental conditions, etc.

SCENARIOS USED FOR FARM. Spatial land farm field – Holding seed or green?!

Scenario 1A Seed production

Criteria: conventional technology, irrigation system

Area: 1 hectar

Indicators	UM	Maize	Sunflower	Soybean
Average production	kg/ha	4000	1000	2000
Total expenditures	lei/ha	120000.0	66000.0	23000.0
	E/ha	26666.7	14666.7	5111.1
Cost of production	lei/kg	30.0	66.0	11.5
	E/kg	6.66	14.66	2.55
Total incomes	lei/ha	128000.0	69000.0	26000.0
	E/ha	28444.4	15333.3	5777.8
Price	lei/kg	32.0	69.0	13.0
	E/kg	7.11	15.33	2.88
Profit/kg	lei/kg	2.0	3.0	1.5
	E/kg	0.45	0.66	0.33
Total profit	lei/ha	8000.0	3000.0	3000.0
	E/ha	1777.8	13500.0	13500.0
Rate of profit	%	6.66	4.54	13.04

In this variant, we noted that efficiency is low. The main issue is prices on the unit of product that are smaller than, for example, some from ecological system.

Scenario 1B Seed production

Criteria: ecological technology, irrigation system

Area: 1 hectar

Indicators	UM	Maize	Sunflower	Soybean
Average production	kg/ha	2500	600	1500
Total expenditures	lei/ha	112500.0	54000.0	27000.0
	E/ha	25000.0	12000.0	6000.0
Cost of production	lei/kg	45.0	90.0	18.0
	E/kg	10.0	20.0	4.0
Total incomes	lei/ha	120000.0	57000.0	33000.0
	E/ha	26666.7	12666.7	7333.4
Price	lei/kg	48.0	95.0	22.0
	E/kg	10.66	21.11	4.88
Profit/kg	lei/kg	3.0	5.0	4.0
	E/kg	0.66	1.11	0.88
Total profit	lei/ha	7500.0	3000.0	6000.0
	E/ha	1666.7	13500.0	1333.3
Rate of profit	%	7.55	5.55	22.22

There are more considerations which can be into account, because implies many economics elements. We consider that every economic indicator and its change contribute to efficiency of farm. Anyway, soybean is a good choice, its not implies too much expenditures, but offers

best results. All the crops are in respect of crops rotation, what means, overall, maintain of sustainability of farm. From economic point of view, the best efficiency is 1B.

Scenario 2A Production for consumption

Criteria: Conventional technology, irrigation system

Area: 1 hectar

Indicators	UM	Maize	Sunflower	Soybean
Average production	kg/ha	11000	2200	3200
Total expenditures	lei/ha	3500.0	3960.0	4480.0
	E/ha	777.8	880.0	995.5
Cost of production	lei/kg	0.32	1.8	1.4
	E/kg	0.07	0.4	0.31
Price	lei/kg	0.51	2.1	1.9
	E/kg	0.11	0.47	0.42
Total incomes	lei/ha	5610.0	4620.0	6080.0
	E/ha	1246.7	1026.7	1351.11
Total profit	lei/ha	2110.0	660.0	1600.0
	E/ha	468.88	146.7	355.6
Rate of profit	%	60.28	16.66	35.71

As we observed the most efficient is maize, on the one hand because of the high production in comparison with the other crops, and on the other hand for lowest cost of production. The rate of profit is, also, highest. Therefore, this variant can provide a certain economic stability of the farm level.

Scenario 2B Production for consumption

Criteria: Ecological technology, irrigation system

Area: 1 hectar

Indicators	UM	Maize	Sunflower	Soybean
Average production	kg/ha	5000	1200	2000
Total expenditures	lei/ha	4200.0	3000.0	6000.0
	E/ha	933.3	660.0	1333.3
Cost of production	lei/kg	0.84	2.5	3.0
	E/kg	0.18	0.55	0.66
Price	lei/kg	1.1	2.9	3.3
	E/kg	0.24	0.64	0.73
Total incomes	lei/ha	5500.0	3480.0	6600.0
	E/ha	1222.2	773.3	1466.7
Total profit	lei/ha	1300.0	480.0	600.0
	E/ha	288.8	106.7	133.3
Rate of profit	%	30.95	16.00	10.0

Indeed, the ecological system secures not only production and area, but also food safety. Even if the level of profit is not very high, the prominence of this kind of system leads to sustainability.

CONCLUSIONS

- The South Muntenia Region has an remarkable potential for development of agriculture.
- There are many categories of use (arable, vineyard, pastures, orchards, forests) that can lead to development of significant activities.
- Agricultural society presented follow to be extend, due the its potential.
- Therefor, our proposition is to increase the area from 240 hectares to 480 hectares. In this way, ensure complete using of installation for irrigation.

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Integration And Competitiveness In The Governance Of Rural Development

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ABSTRACT

During the last decade, the European agri-food system has been facing major challenges due to the dynamics of the globalization of markets, the changed international context, increasing competitiveness. From the MacSharry reform in 1992, Fischler in 2003 with the *Mid-Term review*, Fischer Boel with the *Health check* in 2009, to 2014-2020 structural policies, has been modified the method of sector support (partially decoupled support) and, above all, initiating a rural development policy to improve the competitiveness of rural areas, protect the environment and rural heritage, promote the multifunctional role of agriculture. The competitiveness of the sector is an inseparable component of other important objectives, such as the multifunctionality of agricultural activity, the "non-productivistic" functions of agriculture. In this sense, the functions are enhanced environmental, landscape, social and recreational activities as characterization of the "European agricultural model" based on the small size of companies, the relevant presence of multiple employment and strong integration between agricultural activity and territory.

Keywords: *integration, competitiveness, the new CAP, supply chain, agri-food chain, rural development*

INTRODUCTION AND METHODOLOGY

The contents of the regulations for the Common Agricultural Policy after 2013 substantially confirm the system of rural development policy so far established. Frame this policy within the framework of the European structural policies, rely on the Member States the tasks of defining strategic choices in a context of multi-level governance, oriented, co-financed and controlled at European level.

There are numerous novelties introduced. From the methodological point of view and of synthesis this paper aims to illustrate a critical analysis of the most important and innovative details of the new CAP, highlight the differences compared to the current rural development policy, to frame this policy in the overall context of the CAP reform and the long-term prospects of the European Union.

EVOLUTION OF RURAL DEVELOPMENT POLICIES

Origins and evolution of rural development policy are essential to understand and interpret the current policy dynamics, distinctive characters, limits and potential. We highlight the interdependencies of this sector with other public policies, such as the agro-industrial complex, territorial development and cohesion and, finally, the environmental one, of territorial maintenance, forestry, handicraft, tourism and social.

Rural development policy fits on agricultural, to give a different development to the CAP and to move part of public support from market policy to the structural one, with the aim of making this support less distorting and fairer. In addition, after the 1980s, new ideas and instances have emerged on the borders of agricultural policy, from that environmental, of the

consumer protection, to the quality of organic products, local products and food safety. These adjustments and innovations have emerged in a moving context and are combined with macro-level dynamics that pushed towards the liberalisation of the markets in the direction of globalization, simultaneously to the anchor to the territory, the recovery of traditions and specificities, decentralization of governments towards local management.

Inevitably, the rural development policy is influenced by these composite origins and, with the approval of Agenda 2000, maintains the different souls: agro-productivist and modernizing, territorial-environmentalist-conservative, post-productivist of promotion of quality and typicality. Aspects that, if properly governed, are composition and can lead to "virtuous" actions for rural development. The challenge precisely lies in governance mode, or in the choice of strategies and tools to drive change and hold together the complexity (of interests and ideas, of public and private actors), without falling into non-virtuous choices in favour of continuity and consensualism.

From the point of view of the objectives and principles of policy, breaking with the past and the news are identified in communications, decisions and EU regulations adopted since 1999 for the implementation of Agenda 2000. From the point of view of the tools and strategies, i.e. actual procedures by which objectives and principles translate into action, they can only present the characteristics of flexibility, adaptability, of ongoing adjustment according to local specificities, but also of the global input. In a general policy design defined by the logic of government, EU regulations and national plan, is to develop a governance, based on a non-hierarchical logic, of horizontal coordination, encourage the exchange of resources among the different parties involved, make stable networks of relationships between the various actors, set interdependencies with other sectors of policy.

The Cork Conference (1996) on rural development in Europe, Agenda 2000 and the concept of multifunctionality define, therefore, the origins temporal, strategic and conceptual of rural development policy. Three main ideas emerged are: a) the multipurpose role of rural areas, which are important for the productive function but also the capital of natural resources, for the development of crafts and SMEs; b) sustainable development as a key principle of multifunctional and integrated role of these rural areas, to outline a different non-sectoral model of agriculture and structural policies; c) strengthening financial resources to use on a territorial basis and integrated approach that could derive only from a reform of the CAP, that is the reduction of price support, from decoupling and thus from innovation of the tools used.

These ideas and principles incorporated and better specified in Agenda 2000, in which the continuation of the CAP reform and the streamlining of the structural funds, lead to the establishment of the second pillar of rural development and the elaboration of the concept of multifunctionality. The aim is to characterize the "european agricultural model" that, alongside a reformed market policy, gives to the second own pillar the task of enhancing the diversity of territorial socio-economic environments, promoting local orientations differ, agri-environment type, agritourism, and agro-craftsmanship. Also the quality and typicality of agrifood products becomes the subject of rural development policies if the territory provides conditions for their development under the economic and trade aspect. The eco-friendly or environmental sustainability policy is another constituent element and can take the forms of reforestation, extensive methods, good farming practices and animal health.

It is innovative ideas that have opportunities to be translated into political thanks to the consolidation of European environmental policy, the strengthening of cohesion policy and the structural funds, the continuation of the path reform of the CAP begun in 1992, continued in 1999, deepened with the *Mid-term review* of 2003 and confirmed by the *Health check* in 2008. The innovative aspect is related to the tools with which these policies are conceived and designed. The strategic principle of integration, that of subsidiarity, those of transversality for environment and cohesion redefine the boundaries of sectoral policies,

make it far less rigid divisions of responsibilities and powers between levels of government and allow new actors to have access to the political process and decision-making. In concrete terms, is it placed at the center the territorial dimension and around this position themselves actors, strategies and actions more appropriate and effective to value it.

The actors and composition of different interests

Farmers are not the only relevant actors of rural development policies, they are in the same way the environmentalists that, especially at the local level, have the power to restrict the exploitation of natural resources and block activity that causes negative externalities on the landscape. They are consumers who have found a way to make their voices heard by shifting demand and purchasing choice on traditional quality products, certificates, secure. They are tourists and tourism operators because they choose places, residences and activities related to the resources of the territory. These are SMEs and other economic actors of rural areas that in the promotion of the territory and of their small-scale productions, find guarantee of work and income. These are the local communities to protest and block infrastructure, works and settlements that are harmful to their eyes. These are still local authorities, public officials and are obviously the medium or small farmers that operate in these areas and over time have to share financial resources, services and financial aid, even to redefine their identity and their roles in relation to a different way of conceiving and promoting development.

It is not surprising, then, that the redirection of resources to rural development policy meetings much resistance from some Member States, as well as to policy makers at national and local level, of agricultural interest groups. Continue with the setting and the practices of the past is obviously easier, as much literature on path dependence (Pierson, 2004) and on policy legacy (Rose, Davies, 1994) have shown, and, therefore, it is more difficult to manage aid on innovative measures, services, training and incentives to young people, rather than on enlargement of a barn; the complexity of controls often translates into bureaucratic excesses and additional costs (Bureau, Mahé 2008). To have priority in fact need strong policy assumptions and need to build coalitions of actors that share them and support.

It is no coincidence that, in the distribution of resources among the axes and in the count of applications already made, even for the period 2007-2013 prevail considerably easy policies, transfers and less innovative projects (Dax 2005; Sotte, Camaioni 2008); so as before were most popular environmental measures and reforestation, whose administrative costs are limited while large are the financial benefits to farmers (De Filippis, Storti 2001).

Objectives, strategies and axes are the result of choices made by other levels of government according to the logic of government and establish priorities and lines of action for regional and local governments (De Filippis, Sotte, 2006). Their operational translation, however, can only follow logic of governance: the success and failure of these policies is measured on horizontal coordination capacity, negotiated choices, shared priorities and tools of implementation and effective control and appropriate to the situation, differentiated according to the different objectives and productivist post-productivist. Only a set of networks and formal and informal connections can hold together a multiplicity of actors who do not belong to the agricultural world, but are related to what should become a new domain, that of rural development.

Governance. From “axes” to “priorities”

It is obvious that we cannot have the evolution of a rural development policy entirely homogenous in Europe. The definition of policy established in the last decade from Cork to the *Mid-term review*, in different contexts and with different institutional frameworks, the combination of new and old objectives, composition of strategies and instruments, the number, the type of actors and networks are clearly different in different European countries and perhaps also in the different regions. This poses a problem of governance at EU level on

how legitimate the common commitment of resources for a territorially-focused policy not only in solutions, but also in institutional and policy dynamics, where the mix between public and private sectors might move in favour of the second in which the weight of the agricultural sector could be reduced over time in favour of tourism or crafts. And, of course, also a problem of governance at the national level where the different solutions of the different systems of governance for rural development must have specific connotations, for territorial areas for priority objectives, number and type of actors, while some common traits should be and remain connected with Community provisions. Horizontal coordination, sectoral integration and multifunctionality are general principles which are already taking form and substance based on ideas and traditional roles that the primary sector has in the economy, also according to levels of government involved and other relevant economic sectors (crafts and tourism, the environment, forestry) (Dragulanescu, 2010).

Extending the boundaries of the rural development policy as well as agricultural, of issues object of attention, the number of actors who participate is a process in place; governance structures that will grow in individual cases will be crucial to its success. The old system of rural development policy was in fact a rigid construction and over-simplifying. It is excessively rigid because often the measures within an Axis at the same time could respond to objectives of another. Oversimplified, because within the same axis coexisted policies different from each other, so as to suggest in some studies to reclassify the measures as appropriate in "political" in order to grasp the link between resources committed and objectives (Sotte, 2009).

The first novelty is the suppression of the Axes and the introduction of six Priorities. The old titles of the Axis, in effect, are preserved in the new rural development policy, but transformed into objectives defined as follows: "competitiveness", "sustainable management of natural resources" and "balanced development of rural areas", within the framework of the Mission: "contribute to the achievement of Europe 2020 strategy for smart, sustainable and inclusive growth, in a complementary way with other EU policies". To the six priority (tab. 1) are associated some keywords that clarify the meaning and, which constitute as many objectives of synthesis. Every measure should be associated with them, integrating where possible and appropriate, more priorities.

Table 1 The six new priorities of rural development policy 2014-2020

Priority	Keywords
1 Knowledge transfer in agriculture	Human capital, networks, innovation, research
2 Agriculture's competitiveness and viability of companies	Restructuring, market diversification, generational change
3 a. Organization of food chains b. Risk Management	Integration, promotion, quality, short chains Risk Management
4 Preserve and improve ecosystems dependent on agriculture	Biodiversity, landscape, water, soil
5 Transition to a <i>low carbon economy</i>	Use of water, energy, waste, emissions-sequestration of CO ₂
6 Development of job potential and Rural Development	Diversification, <i>job creation</i> , social inclusion, poverty, local development

The first priority, "transfer of knowledge in agriculture" is now properly clarified in relation to the recognition of the growing importance of human capital and organizational aspects in the pursuit of competitiveness. The second priority aims to the objectives of traditional European structural policy. It focuses in particular on supporting the structural and

infrastructural improvements, instruments of market access, and the various forms of diversification and of generational change. The third priority covers two objectives: a) The first, the "Organization of food chains" and forms the explicit recognition of the need for a systemic approach that integrates agriculture in food chains to which it belongs; b) The second, "risk management" was introduced as a response to sensitivity of agricultural incomes compared to the increased volatility in international markets for agricultural commodities. The assignment of this policy to the second pillar and not the first, as it would have been more appropriate, it will create many problems, both because it will contribute to erode the already scarce resources overall, both because it will need to find not easy chords and aggregate management mode. The fourth and fifth Priorities responding explicitly to the goal of sustainability (maintenance of the relationship among agriculture/forestry and public goods) and the need to cope with those from the CAP Health check of 2009 were named "new challenges" means biodiversity, water management, renewable energy and climate change. The Sixth Priority groups overall the objectives more explicitly territorial, of rural development policy which, in current programming falls within the action of third and fourth axis. In essence, the European Commission collects the two axes in a single strategy aiming at closer integration of the of rural development policy thus defined by other European territorial policies financed by other European funds.

Integration strategy and financial support

A substantial innovation that should concern all EU structural policy for the period 2014-2020, including therefore the rural development, links the specific regulation concerning the second pillar of the CAP with those relating the other key EU policy: structural policy, regional and cohesion. It is in fact the regulations, and in particular to that of the "common provisions" to all EU Funds (European Commission, 2011b), which refers to the proposal for a Regulation on rural development policy. There will be no more, in fact, the Community Strategic Guidelines (CSG) and the National Strategic Plan (NSP) specific to guide the rural development policy. At the center of all future territorial action of the EU, there will be two general strategic documents: at the level of the whole Union, the *Common Strategic Framework* and, at the level of each Member State, a *Partnership Contract*. The first translates the strategic objectives of the EU in priorities and *focus areas* for action of all European funds (including EAFRD) and is adopted by the Council and Parliament after the approval of cohesion policy regulations. The second aligns the action EU Member State to strategic objectives facilitate territorial coordination, integrates the strategies to the needs in the territory, takes care of the efficiency and effectiveness of the interventions. It is submitted by the Member State to the Commission within three months and is approved by this within six months after the approval of all its underlying programs (including Rural Development Programs – RDP). With these tools the EU and Member States shall ensure coordination among all European funds EAFRD, ERDF, ESF, EIB, the European Fisheries Fund, the Cohesion Fund and other financial instruments. To verify the good execution of the Contract of partnership on the part of each Member State is provided the presentation to the European Commission of two *Progress Report* after 3 and 5 years (in 2017 and 2019). The configuration of European territorial policy have thus two instruments defined and administered at the regional level, ROP and RDP, joined in the action by a strategy and a single coordination at European and national level. This is to ensure overall investment strategy in accordance with the objectives of the EU 2020 Strategy.

To implement the rural development policy, along with other regional development policies financed by Brussels, each Member State must establish a partnership. The partnership brings together a series of representative institutions (European Commission, Member State, authorities or institutions designated by the Member State, regional or local authorities) and social (economic or social partners, civil society organizations, NGOs). The Member States

are responsible for the involvement of partners. The partnership is involved in the definition of partnership contracts, in the processing and analysis of *Progress reports*, in monitoring and evaluation activities. In the new proposals for regulations of the second pillar of the CAP, the ways of financing of rural development policy are confirmed with some differences compared to today. In approving each rural development plan (RDP) will be defined the contribution of the EAFRD and the corresponding national co-financing. The EU ceilings are differentiated by type of regions (evaluated at Nuts level): 85% for the so-called "less developed regions" and 50% in other regions, with a minimum of 20% anyway.

Two directions should be noted. The first concerns the classification of European regions. The "less developed regions" (similar to the current "convergence regions") are those with a GDP per capita below 75% of average per capita GDP of the European Union. "Regions in transition" are those with GDP per capita between 75% and 90% of the EU average. The second concerns the level of co-financing.

Ex-ante conditionalities and rural development programs

One of the limitations to the European structural policies generally, which is not without rural development policy, is that the difficulty often encountered in ensuring the correspondence between objectives and results. This is a problem, reported by more than one research and also by some of the European Court of Auditors reports (eg, European Court of Auditors, 2011). To overcome these problems, the general regulations for the management of European funds establish the modalities to ensure the proper achievement of results. These consist primarily in the provision of 5% of the funds available for each RDP (as every European Fund) in order to constitute a "performance reserve" (reserve of effectiveness and efficiency) that will be available (for the same or other RDP or other RDP of Member State) only once exceeded the *Critical Milestones* programmes at the priorities level, based on information and evaluations provided in the implementation status reports submitted by the Member States in 2017 and 2019. A second option proposed to ensure the good achievement of results concerns the so-called "Ex-ante conditionalities".

Each Member State must demonstrate in the Partnership Contract that it has sufficient ex ante conditions in terms of human resources, technical assistance and innovative initiatives to animate the actions, tools and capacity for monitoring and evaluation, and to possess organizational tools and solutions appropriate for the definition of local development projects. These *ex ante* conditions are defined for each European Fund. If the ex ante conditionality were not fulfilled at the date of transmission of the Partnership Contract, Member States shall include in it a summary of the actions to be taken at national and regional levels and the time schedule of implementation in order to ensure the fulfillment of these conditions within two years maximum of the adoption of the Partnership Contract. The failure to complete actions to fulfill an *ex-ante* conditionalities by the deadline set in the program constitutes a reason for the suspension of payments by the Commission.

The ex-ante conditions relating to the second pillar financed by the EAFRD are shown meticulously in Annex 4 of the Regulation and are schematically summarized in table 2.

Table 2 The Ex ante conditionalities for rural development

Priority	Ex-ante conditionalities
1. Knowledge	Existence of a strategy for innovation. Sufficient capacity for technical assistance
2.-3. Competitiveness, food chains and risk management	Measures to encourage and facilitate the start-ups
4. Eco-systems	Definition of good agronomic and environmental conditions. Definition of basic criteria for fertilizer use and environmental protection. Existence of national systems of risk assessment and disaster management

Priority	Ex-ante conditionalities
5. Efficient use of resources	Policies to reduce greenhouse gas emissions. Energy-saving policies. Water pricing policies. Waste management plans. Renewable energy promotion policies
6. Rural areas development	Access to the FESR. Measures to encourage and facilitate start-up economic activity. Policies for internet access networks of new generation
Horizontal conditionalities	Administrative efficiency in the Member States. Allocation of human resources. Selection criteria for local development projects

They are collected for individual priorities of rural development policy and end with some ex ante conditions "horizontal" valid for all Priorities.

The rural development programs (RDP) covering the period January 1, 2014 - December 31, 2020. Each Member State can opt for the realization of one or more RDP entrusting the formulation and management to the regions. Member States which present regional programmes may also submit for approval a National Framework "national legislation" containing common elements to these programs, without a separate budgetary allocation and a list of the specific measures to be included in the RDP for environmental objectives, economic or social identified at national level. A significant innovation for rural development policy 2014-2020 consists in the fact that the Member States (or regions) may insert in the rural development programmes of the thematic sub-programmes, which contribute to the achievement of EU Priorities for rural development and respond to the specific needs identified, particularly with regard to young farmers, small farms, mountain areas and short supply chains.

As for the contents, similarly to the provisions in the current rural development programming, each RDP should treat a long list of issues, including: an analysis of the situation in terms of strengths and weaknesses, opportunities and threats (SWOT) and the identification of needs to be met in the geographical area covered by the programme; the description of the strategy, including targets for each EU priorities for rural development; the evaluation of preconditions (ex-ante conditionality) and, where appropriate, the solutions adopted to make sure that they are guaranteed; the description of the selected measures; the description of the mechanisms of coordination between the local development strategies and cooperation; the description of the approach adopted in innovation; the analysis of the needs in terms of monitoring and evaluation and the evaluation plan; the financing plan and the arrangements for implementing the program.

EVOLUTION OF THE AGRI-FOOD SYSTEM

The organization of the agricultural product markets, in recent years, is involved in deep evolutionary dynamics that lead to a more direct comparison between a limited number of suppliers and a demand more and more concentrated. In this context, small agricultural producers are facing a situation of constant crisis since it can no longer do come easily their products to the final consumer. Even the traditional wholesale markets, and cascading the local markets, that were the fundamental place where trade took place in the cities and where small farmers were selling their products, are now in a situation of continuing loss of market share as compared to more modern forms of sale.

Many scholars, therefore, have started to analyze theoretical models of reference to describe all the steps that a product must achieve in order to reach from production stage to the final consumer. In this regard, it highlights how some terms, such as *production chain* or *supply chain* has entered into the common lexicon and sometimes they tend to overlap them. In reference to this last aspect we see how the evolutions of the agri-food system have posed the need to give the correct interpretation of these two theoretical concepts.

The characterization of the agri-food system

In recent years, profound changes have affected the agri-food system. These changes were determined by a few key factors: new guidelines on food consumption, structural and organizational renewal of agro-industry, large retailers and HORECA channel (Hotel-Restaurant-Café), the increasing liberalisation of markets and the numerous innovations that have affected the system.

The evolution of consumption, in particular, is characterized by two trends: on the one hand the homogenization of consumer tastes and, on the other hand, the emergence of segments and niche markets increasingly specific, in connection with certain patterns of behavior. The destructure of meals and changing habits of their preparation are moving the buyer's attention towards products that incorporate a high level of services. The agri-food industry, on the other hand, is in a way quite dichotomous, with large companies, very competitive on the global market and whose brands are widely known by consumers, and small and very small companies with a predominantly local scale reference. Also the modern distribution has experienced over the last twenty years an intense expansion. This has led to the displacement of increasing bargaining power downstream along the production chain. In particular, the banners of modern distribution shall require their suppliers increasingly sophisticated partnerships, in relation not only to the quality and type of requested products, but also with regard to additional services, from packaging to logistics, management of linear, up to the promotion and advertising. Finally, the retail trade, in recent years has completely outclassed the traditional retail and has effectively assumed the role of guarantor of last resort towards the consumer. The propensity to concentration of purchases from customers (one stop shopping) causes them to be carried out in a single day of a week and in a single store. This has encouraged the emergence and development of distribution typologies that meets this trend, with increasingly large surfaces and the widest assortments possible. The development policy implemented by the big distribution, in order to accommodate the new demands of consumers and the profitability, is divided into specific axes of intervention:

- the separation of the logistics from the commercial;
- the replacement of storage facilities with logistics platforms;
- the progressive shortening of the chain, through the exclusion of the wholesale market in the process of product distribution.

The logistic function has become in recent years a strategic role for the entire agri-food system. In fact, it has helped to give positive responses to the increasing complexity of the activities along the chain. Logistics, therefore, can be seen as a real organizational innovation, which has led to greater control of production and to achieve greater economies of scale.

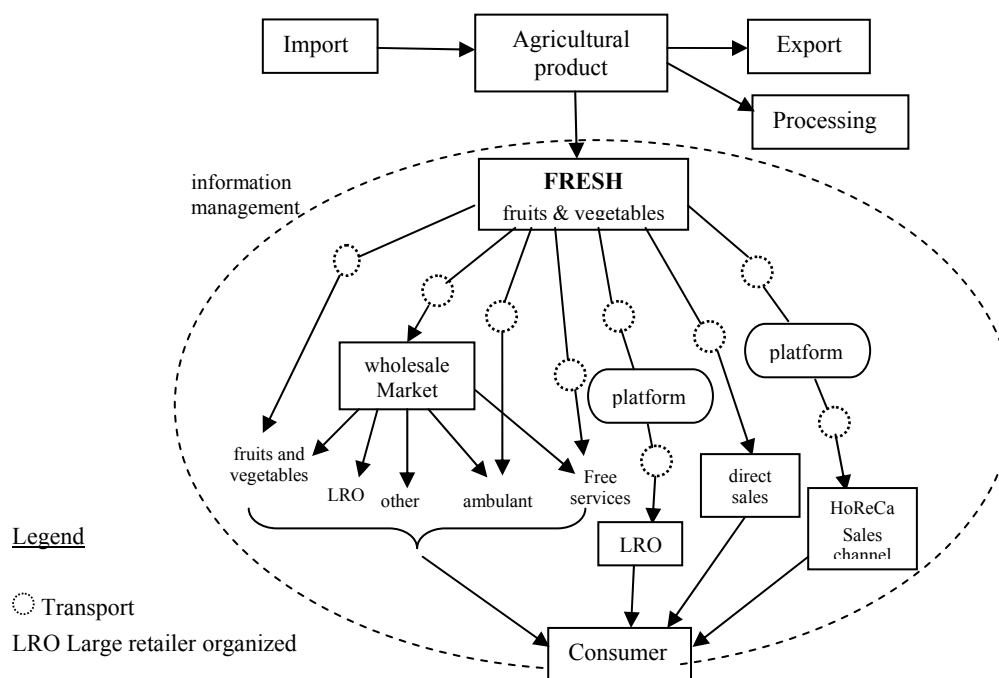


Figure. 1. Fresh fruit and vegetables chain organization

In particular, for *large-retailer organized* (LRO) applying efficient logistics management leads to the possibility of minimizing the impact of stocks, through the replacement of traditional storage function with logistics platforms, which occur as centers of receiving orders and in which products can be subjected to manipulation processes and subsequently be sorted (fig. 1). There are different forms of platforms:

- producers, which occur as platforms of concentration, located mainly in the areas of production;
- distributors, located close to consumer markets, which can operate on non-homogeneous products;
- logistics providers, managed mostly by transport companies that can offer their customers on-time deliveries (thanks to better knowledge of the territory), reliability in the preservation of goods (these platforms are often organized with both dry and refrigerated warehouses depending on the type of product they carry), ad hoc insurance on products handled.

The optimization of logistics costs can also be pursued through the use of the opportunities offered by information technology in order to improve the dialectical relationship between the phase upstream and downstream of the distribution channel. The growing attention towards logistics activity is motivated by the fact that in almost all areas of logistical costs represent more than 10% of the turnover. In the fruit and vegetable industry they can reach more than 30% of the total cost: if we take into account the high number of manipulations and large distances covered in the case of products against-season, the logistics costs come to be higher than the relative production costs. In addition, the large-retailer organized (LRO) maintains relationships with suppliers that depart more and more from classical business model, precisely of traditional trade. In particular, the modern distribution to provide for the procurement of its stores have a direct relationship with the purchasing center (specialized structure to which it is assigned the role to evaluate and select suppliers cheaper on prices, post-sales services and logistics). The purchasing

Central takes a commitment to interact with suppliers and to take out with them appropriate supply contracts and notebooks load.

Ultimately, the Central is placed along the chain as a full-fledged intermediary, which replaces in fact the wholesale market. Finally, faced with a long list of food crises, global retailers, in order to give precise guarantees to consumers on product safety, require farmers and to all operators who in various ways are involved in agri-food supply chain to subscribe private quality standards such as EurepGAP (Eurep-Euro-Retailer Produce Working Group/GAP-Good Agricultural Practices), BRC Global Standards and IFS (International Food Standard), which define the commercial terms about the minimum safety requirements and quality of products. In order to do so, the companies involved must necessarily realize modernization processes of logistics and computing systems for exchanging information.

Supply Chain

The concept of agro-food supply chain is based on the evolution of the traditional notion of chain (Malassis and Padilla, 1986). In fact, in the studies regarding the agri-food sector is often used the term supply chain, with which we want to define a succession of stages sequentially close together, from a technical and technological point of view, needed to transform raw materials into the finished product, ready to be purchased by the final consumer.

The agri-food products, therefore, are transferred along the chain and undergo physical transformations, treatments and conditioning treatments needed to prepare them for final sale. In this process, however, it is not take into consideration the actual requirements and expectations of the consumer. Since the early 1980s, then, some works (primarily Filser, 1989) have begun to emphasize the role played by the consumer in the process of organization of the upstream sector. The basic idea is that the consumer is changing, and changing researches increasingly in foods, health attributes, nutritional and organoleptic, hygienic and safety, as well as features to make it easier to use in preparing meals. The producer therefore, has to adapt to all these changes.

It follows that the chain approach alone fails to explain the complexity of the changes of the consumer, distribution, transport, production and so on. In this process, then, the notion of the agri-food supply chain can better interpret the ways in which the various operators in the agri-food sector (agricultural producers, intermediaries, wholesalers, food manufacturers, retailers, etc.) are called to confront the new challenges of economic environment and, at the same time, the new needs of consumers. The concept of agri-food supply chain starts from the consideration that, in order to adequately respond to these new challenges, the agri-food sector should try to create a more collaborative environment in relations between operators upstream and downstream. This leads inevitably to a search for solutions and relationships between operators so to simplify procedures reduce the uncertainty among the different stages and increase confidence of final consumer. Moreover, this system creates the conditions for the management of new frontiers for the control of supply chains and the traceability of products. In particular, the traceability of agrifood products (mandatory for all products starting from January 1, 2005) requires an adequate system that allows following products from farm to fork, integrating information on the origin and characteristics of the product to those related to logistics management of goods. The most important information should be identifiable on the individual consumption unit.

Consequently, the organization of circulation of goods in the model of supply chain corresponds to an adjustment of the upstream sector by the downstream sector. Instead, a model that is based on the concept of supply chain considers as an element of analysis the management of the flow of goods and information flow connected. Supply chain approach, therefore, adds a few dowels to the theory of the supply chain: the flow of goods to which corresponds that to information, concatenation between economic actors close sequentially, so that they affect each other in an idea of "circularity" between the flow of goods and information flow with the ultimate goal of

maximizing the utility of the consumer. The consumer needs and/or of a downstream economic agent are received by the upstream economic agent that seeks, according to the own productive structure, to respond in a way more satisfying to the customers.

Ultimately, considering the agri-food system through the supply chain approach allows making actually applicable instruments, fielded both by the legislature and by companies, to reassure consumers about the quality and safety of products. It also allows inserting new subjects (logistics service providers, managers of software systems, etc.) among the strategic factors that may or may not influence the strategies of success and competitiveness of the agri-food system as a whole. We continue, however, to talk about chain essentially because this term has entered the common lexicon and now all (scholars, practitioners, policymakers, and others) tend to express by it all processes sequentially close (from upstream to downstream) that carry the product from field to fork, extending the concept more in the supply chain sense than of Malassis's agri-food approach. An example of what is meant by supply chain and how it is represented is shown below (fig. 2).

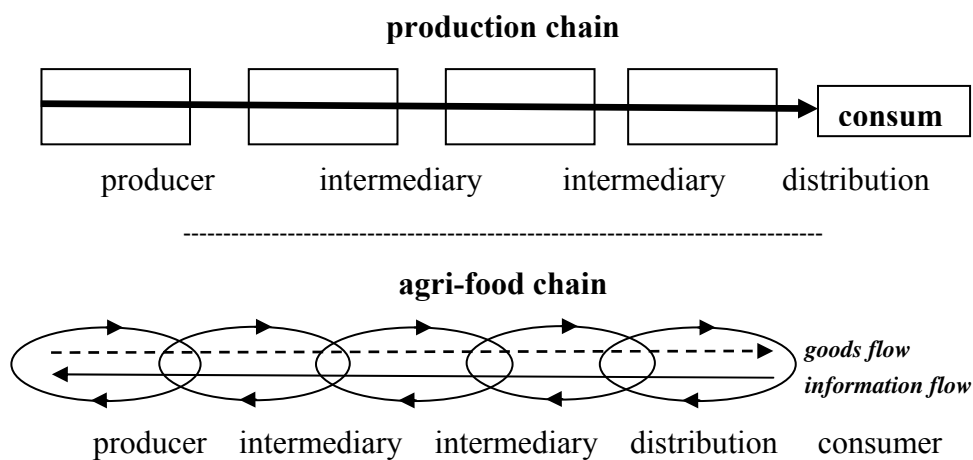


Figure 2. Graphical representation of the notion of production chain and agri-food chain

THE FACTORS OF COMPETITIVENESS

Business competitiveness is a complex topic which was studied by theoretical and methodological approaches also, very different. Nevertheless, a usual definition of competitiveness of enterprises regarding their ability to "stay on the market," or, according to the definition of Lagnevik and Pitts (1998, De Stefano, 2003), "the enduring ability to acquire and maintain with profit a certain share of the internal market or internationally". Among the various approaches that have characterized the study of matter, often linked to various theoretical paradigms, Porter's work emerges for the different applications to which it gave rise, especially in advanced economy countries (De Stefano, 2003). Porter's theory (1985) is based on the idea of comparative advantage, namely the identification of corporate competitiveness factors that enable the company to achieve a dominant position on the market. In this view the interaction of various factors which characterise the activity of the undertaking, as productive resources, infrastructure used, demand for goods, the structure and strategy of competitors and the action of the institutions determine the conditions for the adoption of innovations that can create competitive advantages. The company is thus able to gain a competitive advantage over the competition when, through an optimal combination of inputs, manages to create a stable value for consumers. According to Porter there are three strategies that enable companies to achieve this competitive advantage on the market:

- *cost leadership*: this strategy is based on the ability of the company, to offer similar products or equivalent to those offered by competitors, but at a lower price. This strategy is

particularly relevant in areas where products are highly standardized and competition between companies is based prevalently on price factor;

- *differentiation*: this strategy is the ability of the company to offer products with an added value or differential factors. These items must be able to be recognized by consumers, who will be willing to pay a higher price because of the presence of these "unique" features of products;
- *the focus* is a strategy that can be cost-oriented or differentiation. A company can then aim at pursuing a cost advantage limited to one or a few segments of the market, or go to differentiation, trying to identify a customer segment that is particularly sensitive to the quality of its products.

However Pretolani (2003) highlights how these strategies are not fully applicable to the context of farms, as Porter's model is based on conditions such as the presence of a small number of companies and their ability to impose prices on the market, which are rarely found in the agricultural system. Similarly the differentiation of products from farms is done according to peculiar dynamics to the sector, in particular, is generally linked to collective marks rather than to the brand of products.

Despite these important limitations, the conceptual framework developed by Porter allows accurate determination of the factors of competitiveness, which has also found important applications to the business reality of agriculture. Pretolani (2003), based on this theoretical framework, has divided the factors that determine the competitiveness of agricultural enterprises into four main types:

- 1) *the characteristics of enterprises*: the analysis of the competitiveness of agricultural farms should primarily be based on the examination of the structural characteristics of the companies (in the double sense of physical dimension and economic). The parameter of economic dimension of enterprises becomes particularly important if in addition to the effective competitiveness of enterprises would be analyzed their survival strategies (Sabbatini, 2006). At the same time it is necessary to detect physical and social characteristics of entrepreneurs (age, sex, type of company's management, etc.);
- 2) *the economic and institutional environment*: as already mentioned above, the competitive potential of enterprises is highly influenced by the set of factors that make up the economic and institutional framework in which they operate. In the case of agricultural enterprises becomes particularly interesting to note the role of the public sector in determining competitiveness (for example, assessing the weight of community support);
- 3) *the conditions of production factors*: the competitiveness of companies is linked to the availability and cost of major inputs, such as labor and capital. Other determining factors are the geographical location of companies and their infrastructure endowment;
- 4) *company's relations with the markets*: from the point of view of competitiveness are fundamental the relationship that the company has with the market. Such factors may include both goods and services produced by companies (downstream linkages), but also those assets that companies use as factors of production (upstream links).

The qualitative analysis of these factors allows having a comprehensive framework on the competitive position of firms in the market, taking in the main strengths and their weaknesses. At the same time, the calculation of enterprise income and remuneration of the factors of production allow to have an important quantitative basis for evaluating the competitiveness of agricultural enterprises.

Territorial competitiveness and profitability

The profitability or the capacity to produce income (profit), is an indicator that certainly plays a major role in assessing the competitive level of business. In this regard it should be noted that, in the agricultural sector, the optimal combination of factors of competitiveness and the implementation of the strategies described above (for example, of leadership, cost or product differentiation) are almost always aimed at maximizing enterprise income (Pretolani, 2003). The income of a farm, defined as Real Net Income (RNI), corresponds to the difference between the gross marketable production value (GMPV) and the sum of fixed costs (CF) and variable costs (VC):

$$\text{RNI} = \text{GMPV} - (\text{CF} + \text{VC})$$

The enterprise income, together with other economic characteristics and productive farms, can be analyzed through the use of the database FADN (Farm Accountancy Data Network), which is the official source of EU. Many scholars have tried to interpret the competitiveness in territorial key, by inquiring on the issue whether the territory affects the competitive capacity of enterprises or if the latter are to affect the competitiveness of the territory where they are located. In fact, in order to properly address this assessment must start by clarifying the level of analysis chosen, i.e. competitiveness between companies or between territories. Competitiveness, in fact, can be referred to the company, its product and to a given geographical area; it is, therefore, a relative concept, with a meaning adaptable to the different fields of references and, however, ambivalent, expressing at the same time a sense of conflict and cooperation (Nardone, Sisto & Lopolito, 2005). The territorial approach, with the concept of *milieu innovateur* (Camagni 1989, 1994) and with the approach of the districts (Bramanti, Maggioni 1997; Varaldo, Ferrucci 1997; Becattini 2000; Garofoli, 2001; Rullani, 2003) sees competitiveness as the result of the diffusion of knowledge and innovations at the level of the territory. The choice of the territory, as a starting point in the study of the competitiveness of the agro-food companies, in particular, is based on the consideration that it takes place in a complex plot of activities (production, processing, marketing, services, etc.), sometimes linked in a functional manner the one and the other and for which it is extremely difficult to find the limit of a component over another.

The territory is, among other things, the factor with which to interact and integrate economic forces, political and social issues (Cesaretti, Green, Hammoudi, 2006). In the territories are simultaneously present multiple activities and, there is facing an extreme heterogeneity of actors that contribute to the production of goods and services and a complex cultural and economic structure, which determines the constraints but also strong local identities (Dragulanescu, 2007). On the other hand, the agri-food production, considered in its entirety, is confronted with a set of differentiated outlet markets both of territorial type (agricultural intermediaries, wholesale markets, centrals purchasing of modern trade) and extra territorial (linked or no to the local ones). Finally, the territories, and the companies that operate within it, are confronted with numerous rules and regulations of local, national and European level.

In addition to the above noted is highlighted how territorial articulation of the agro-food business is confronted with an increasingly global reality on the one hand and local level on the other. This leads to the need for territorial governance that would allow to the different companies that have an impact on a specific territory to gain a competitive position in the global market and "defend" its position on the local market. The territory, then, represents the starting point for the creation, interaction and integration of the activities that make up the agri-food system and an essential logical basis for any strategy of improvement the competitiveness of the agri-food supply chains.

The issues on what are the factors of competitiveness of territory/agri-food companies and the best combination to achieve it is nowadays a key discussion item. The agri-food system, in fact, with the different evolutionary dynamics and related complexity, increasingly orients

itself towards development patterns that lead to obtaining a certain competitive positioning within global scenario, both of companies and of the territorial systems. Ultimately, from our point of view, the competition of companies depends not only on factors related to individual companies, but from the action of many other actors involved in territorial system in which the company is located. In this context, acquires a strategic role the availability, from the business universe, of a set of common goods such as: adequate endowment of infrastructure, the dissemination of efficient business models and administrative, but especially encouraging innovation and the sharing of information and knowledge. We can say, thus, that the ability of enterprises to compete in today's global context depends on the skill of the territorial systems of which they are part, to support development, providing to the resources already present in the territory, innovative tools capable of resolving issues related to distortions, delays or to an inefficient allocation of resources. In other words, the territorial system competitiveness also depends on its ability to innovate and improve.

The study of objective measurement systems, and related indicators, is an exercise that always involves many scholars. In fact, it seems that there are not, at present, the aggregate competitiveness indicators, but only some specific factors. For example, some indicators start from the consideration that the competitiveness of a territory is based on the socio-economic relationships that exist among companies and actors and their level of modification over time. The competitive capacity of the territories is strongly correlated to the degree of bureaucracy of the public administration, the relations between enterprises (the presence or absence of cooperatives), the characteristics of the banking system, a territorial propensity and relations with the local productive system and the presence or absence of criminality.

In this regard, some research institutes and institutions have tried to make a measurement of competitiveness. For example, the WEF (World Economic Forum) takes as reference an indicator of global growth competitiveness (developed since 1979), which is measured based on 12 indicators grouped in three macrogroups: indicators of economic development (functioning of the institutions, infrastructure, macroeconomic stability, education and health), economic efficiency indicators (labour market efficiency, financial market, production level, etc.) and indicators of technological innovation. Moreover, also the WEF calculates an index of the degree of competitiveness of firms in a certain territory using the so-called "Business Competitiveness Index (BCI)".

The strategy for innovation

The framework, although summary thus far presented, on the proposals for future EU rural development policy is completed with confirmation of the strategy of animation, management support, technical assistance and dissemination so far implemented, at European and national level within Member States. In particular, it confirmed the *European Network for Rural Development* and the *System of National Rural Networks* in order to stimulate the participation of stakeholders in the implementation of rural development improve the quality of rural development programmes, helping to inform the public about the benefits of rural development policy.

Rural Networks collect, analyze and disseminate information, increase the involvement and commitment of stakeholders for rural development, collect, validate and disseminate best practices, create and manage thematic groups and/or workshops for exchanges of experiences, inform and organize conferences and seminars, support the national networks and transnational cooperation initiatives, support the activities of local action groups. Within the framework of the *European Rural Network* has confirmed the role of the *European Evaluation Network for Rural Development*. It is also so confirmed the prominent role that within rural development policy is attributed to evaluation at all stages of the process ex ante, ongoing and ex post.

A novelty is the initiative of the PEI (*European Innovation Partnership*). To support the PEI on the productivity and sustainability of agriculture has established the PEI Network that

aims to establish and operate a help desk on innovation, animate the debate at the level of each RDP, encourage the establishment of *Operational Groups for Innovation* (GOI) at national or regional level, disseminate research results and extend knowledge, individuate consolidate and disseminate good practices, organising conferences and workshops to disseminate information within the scope of competences of PEI. To stimulate the innovative effort has established a prize to innovative local cooperation in rural areas which can apply two or more partners from different Member States, annually from 2015 to 2019. After a pre-selection by a maximum of 10 projects per Member State are identified at European level 50 winners per year, to this is awarded a prize equal to the maximum of 100 thousand euros.

FINANCING THE RURAL DEVELOPMENT POLICY

The financing of rural development policy is the sore point of the overall proposal. The distribution of EU budgetary resources among all European policies, as was to be expected, penalizes the CAP. Less expected was that this penalization hit in the same way the first and the second pillar, but slightly more the second one (-12.9% between 2013 and 2020) compared to the first one: (-12.5% in the same period), with the result that it will contract in the EU total budget from 9.5% in 2013, to 8.0% in 2020 (European Commission, 2011d). The entire latest step in the long process of CAP reform, in fact, had been marked by the transfer of funds from the first pillar to the second one (or directly in the resource allocation, or gradually with the so-called "modulation").

This process had gradually increased the weight of the rural development policy over the whole of the original Pac approximately 10% of the Agenda 2000 (when the two pillars were established) to the current about 24%. It was still far from the goal of giving to the two pillars the task to support in equal measure the scaffolding of the CAP (hence the choice to call them "pillars"). But the rapprochement between the two was gradually ongoing. The interruption of this flow of more resources is not a major surprise. It was widely announced, considering that back in November 2010, in the initial Communication of the preparatory phase of the new CAP (European Commission, 2011b), the rural development policy was tackled shortly before conclusions (while to first pillar was granted six times larger space than the second one).

In that text were expected three options for the future CAP: the first one (*adjustment scenario*) "continues the current policy", the second one (*integration scenario*) "greening direct payments" and the third one (*refocus scenario*) "progressive abolition of direct payments and strengthening of rural development policy". But it was implied that, among the three, there was really no alternative and the second scenario was definitely the favorite. This choice was on the other hand both supported by many agricultural organizations, and by many new Member States, opposed to any form of co-financing of agricultural policy and for these supporters of the first pillar. The final endorsement to this choice was made by the Agriculture Committee of the European Parliament when interpreting in this way, its power of co-decision; it is aggregated to the Commission that had submitted proposals simply less conservative and, in fact opening to the third scenario.

Table 3 The expenditure for the CAP inside the MFF 2014-2020 proposals

	2013	2014	2015	2016	2017	2018	2019	2020	2014-2020
Absolute values in 2011 price (billions of euro)									
P1 Agricultural market and direct payments	43,5	42,2	41,6	41,0	40,4	39,6	38,8	38,1	281,8
P2 Rural Development	13,9	13,6	13,4	13,1	12,8	12,6	12,3	12,1	89,9
Total PAC	57,4	55,9	55,0	54,1	53,3	52,2	51,2	50,2	371,7
Total EU budget	145,6	142,6	144,0	145,1	146,4	147,3	148,9	150,7	1.025,0

Percentage values									
P1 Agricultural market and direct payments	29,9	29,6	28,9	28,3	27,6	26,9	26,1	25,3	27,5
P2 Rural Development	9,5	9,6	9,3	9,0	8,8	8,5	8,3	8,0	8,8
Total PAC	39,4	39,2	38,2	37,3	36,4	35,4	34,4	33,3	36,3
Total EU budget	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

It can be certainly see that, having taken note of the balance of power in favour of maintaining direct payments, efforts to rationalize the CAP have concentrated in the direction of "unpacking" of the first pillar and in an attempt to make it more "green", trying to get similar results in this manner (with more money) and freeing at the same time, the second pillar of some environmental tasks, with regard to young people and areas with natural limitations. However, we must see how "green" payments will be effectively green or will not result only – as is likely to happen even in relation to their *one size fits all* for all EU hectares - practical effects limited, or even perverse: (a) duplication of tasks with the second pillar (b) additional complication and (c) bait and switch, in an attempt to change as little as possible the current inefficient distribution of expenditure between companies and territories. Otherwise, why was ruled out a priori the hypothesis to move these tasks and related funds to the second pillar, bringing back to the first pillar the risk management.

The justification in favor of the first pillar based on the alleged slowness of spending of the second one it does not convince. First of all, because the problems of difficulties to spend regard specifically certain regions, while the most of the other (as in the rest of the European Member States) has been shown the ability to make timely use of available resources. It is then clear that if there are problems of efficiency, these should be addressed by improving the instrumentation, the organization and competence and certainly not lowering the attention to the quality of expenditure or adhering to formulas in which the connection between spending and goals is uncertain and probably very poor. Rural development policy, then, will have to cope with fewer resources and, above all, with a series of measures for risk management entirely inconsistent with the objectives of rural development, which will trigger strong pressure both for the need of a solution by farmers, and for the interests (insurance) that will move around them. The risk is that these further drain funds and leave the rural development policy itself even less resources, especially if the increase in ceilings EU quota for co-financing in the least developed regions should be seized as an opportunity to lower national co-financing, thus removing other funds to the availability of overall spending.

A solution at least partial, to the problem of diminishing resources, could be offered by the so-called "flexibility between pillars". In fact, the regulation on direct payments to farmers (European Commission, 2011) provides for the possibility for Member States to make available as additional support for the measures under rural development programmes up to 10% of annual national ceiling for the first pillar (for some Member States is also granted to move 5% in the opposite direction from the second to the first pillar). Taking into account the relations between the two pillars, a small percentage of transfer from the first pillar could be a very significant increase of funds for the second one. Where, for example, the risk management measures should be retained in the second pillar, this flexibility could be used at least to cover with funds from the first pillar these policies that should have been appropriately addressed by it.

CONCLUDING REMARKS

There are many positive aspects to be noted in judging the future rural development policy 2014-2020. In designing the new articulation, the Commission appears to have made the experience carried out so far in the two programming periods elapsed so far: that of Agenda 2000 and the present one. The positive aspects can be roughly summarized as follows: (a) the passing of the Axes for Priority, (b) the simplification of the menu of measures with greater attention to the objectives,

the fixing of measurable goals and therefore the efficiency and effectiveness of expenditure, (c) the possibility of formulating thematic sub-programs for specific sectoral and regional problems, (d) the more freedom of choice in the distribution of expenditure between measures and between objectives, (d) the emphasis on innovation, networking and horizontal measures (e) the possibility, through flexibility between pillars increase the availability of the second pillar to the detriment of those in the first. Naturally, in the architecture of rural development policy, there are negative aspects. These are the main ones: (a) the inappropriate inclusion in the second rather within the first pillar of the measures for the risk management, (b) increasing the EU co-financing rate in the less developed regions with the risk of a cutting of overall expenditure, (c) the presence of consistent and increased duplication of tasks between the first and second pillar, (d) the undefined and therefore uncertain distribution of funds in total available for the second pillar between Member States, contrary to what has been done for the first pillar.

But the most negative aspect concerns not only the rural development policy, but the quality of the overall proposal for the reform of the CAP for the *septennial* 2014-2020, is that the "reformers" of the Commission opted for the choice of preservation, interrupting a process by focusing on the second pillar, it could make even more acceptable a more gradual dismantling of the first one. It was decided to maintain and consolidate direct payments (even unpacked and reformed) as a key measure of the CAP. The introduction of direct payments was the interim solution adopted by Fischler in 2003 and completed by Fischer Boel with the Health Check of 2009, to get the full decoupling without penalizing farmers immediately. Precisely in transitoriness, was their justification. But, after the transition, some "coupling", in terms of clearly and unequivocally link between public spending and the goal that are pursued with it, is essential. The proposed re-coupling (de facto) with the eligible hectare, although regionally or redefined however, does not solve the problem absolutely, and weakens the overall proposal.

Ultimately, it was not focus on the rural development policy, despite integrates regions and local actors (in fact in accordance with the principle of subsidiarity as set out in the Treaties), despite multiplies the funds available through co-financing, despite the objectives of a policy aims at specific targets and suitable for them (targeted and tailored) is the better implementation, despite responds better to the objectives of the EU, although it integrates better with other EU policies.

"The CAP is facing several challenges (...) that push the EU to make strategic choices for the long-term future of its agriculture and its rural areas"; future CAP "must be effective in orienting towards these challenges" and "contribute to the EU 2020 Strategy". In the Pac future, the three key objectives "smart growth", "sustainable growth" and "inclusive growth" will mean respectively: (a) "increase the efficient use of resources and improve competitiveness through innovation"; (b) "maintain renewable the productive base (...), producing environmental public goods" (c) "unlocking the economic potential of rural areas" (European Commission, 2010a; European Commission, 2010b).

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Agricultural market crisis and globalization – a tool for small farms

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ABSTRACT

There are many ways by which globalization has been defined. People around the world are more linked to each other than ever before. Information and money flow more speedily. Goods and services produced in one part of the world are increasingly obtainable in all parts of the world. International travel is more common. International communication is simple and fast. This fact has been termed as "globalization." The positive and negative effects of globalization and the groups that resist and support globalization are many. Some of the impacts of globalization can be seen on small farmers in developed and developing countries. Corporate globalization has impacted the rural communities in several ways. This paper presents the impacts of globalization on small farms.

Keywords: *globalization, sustainability, agriculture, small farms*

INTRODUCTION

Globalization is one of new trend. It is a complex phenomenon. It is a process of integration of global economy. It involves creation of network and activities transcending economic, social and geographical boundaries (Anderson & Babinard, 2001).

Globalization has influence in all branches. We can see the influences of globalization on agriculture having both its negative and positive aspects. With the development and exchange of technology it became more helpful in agriculture field. The new technology and knowledge helps people to introduce high breed seeds and fertilizer. Along with this introduction of new machines, also helps us in agriculture field. With introduction of new machines the agriculture work became easy. We can introduce high breed seeds and plants through tissue culture. It posed increase in production, because of this profit from agriculture field half increased (Reddy, 2007).

Production across the frontier of state and continent also helps us to make profit. Now the production in agriculture field is standardized. At the same time through the phenomenon of globalization there are many negative impact in agriculture filed (Dragulanescu & Drutu, 2012). Because of the development and introduction of machines there is unemployment also is increasing. It caused many problems the decline of agriculture, badly affect the aggregarian countries like India. With the introduction of new fertilizers it destroyed the fertility of soil. And country faces many great losses from this field. It also causes the increasing prices of food crops

through the promotion of the commercial crops. With the removal of Government restrictions through liberalization it became more helpful to developed countries to earn more profit. The highly subsidized agricultural products of USA, European countries and Australia will destroy Indian agriculture and affect the livelihood of million. Now agriculture became expansible than profit.

EFFECTS OF GLOBALIZATION

The issues and perceived effects of globalization excite strong feelings, tempting people to regard it in terms of black and white, when in fact globalization is an extremely complex web of many things. Table 1 presents ten opposing points of view often expressed about globalization.

Globalization has costs and benefits. There have been examples of poorly managed globalization (eg when countries opened their economic borders before they had the capacity to respond well) but there are also examples of well managed engagement with the international community.

Like it or not, globalization is a reality. Many countries have committed themselves to reducing poverty through the Millennium Development Goals (MDGs) and are cooperating together to work out smart ways to manage globalization.

No.	Benefits of globalization	Problems of globalization
1.	Economies of countries that engage well with the international economy have consistently grown much faster than those countries that try to protect themselves. Well managed open economies have grown at rates that are on average 2 ½ percentage points higher than the rate of growth in economies closed to the forces of globalization.	There are social and economic costs to globalization. Trade liberalisation rewards competitive industries and penalises uncompetitive ones, and it requires participating countries to undertake economic restructuring and reform. While this will bring benefits in the long term, there are dislocation costs to grapple with in the immediate term, and the social costs for those affected are high.
2.	Countries which have had faster economic growth have then been able to improve living standards and reduce poverty. India has cut its poverty rate in half in the past two decades. Cheaper imports also make a wider range of products accessible to more people and, through competition, can help promote efficiency and productivity.	Some countries have been unable to take advantage of globalization and their standards of living are dropping further behind the richest countries.
3.	Improved wealth through the economic gains of globalization has led to improved access to health care and clean water which has increased life expectancy. More than 85 percent of the world's population can expect to live for at least sixty years (that's twice as long as the average life expectancy 100 years ago!)	Increased trade and travel have facilitated the spread of human, animal and plant diseases, like HIV/AIDS, SARS and bird flu, across borders. The AIDS crisis has reduced life expectancy in some parts of Africa to less than 33 years and delays in addressing the problems, caused by economic pressures, have exacerbated the situation.
4.	Increased global income and reduced investment barriers have led to an increase in foreign direct investment which has	The increasing interdependence of countries in a globalised world makes them more vulnerable to economic

	accelerated growth in many countries.	problems.
5.	Improved environmental awareness and accountability has contributed to positive environmental outcomes by encouraging the use of more efficient, less-polluting technologies and facilitating economies' imports of renewable substitutes for use in place of scarce domestic natural resources.	The environment has been harmed as agricultural, forest, mining and fishing industries exploit inadequate environmental codes and corrupt behaviour in developing countries. Agricultural seed companies are destroying the biodiversity of the planet, and depriving subsistence farmers of their livelihood.
6.	Increasing interdependence and global institutions like WTO and World Bank, that manage the settlement of government-to-government disputes, have enabled international political and economic tensions to be resolved on a "rules based" approach, rather than which country has the greatest economic or political power. Importantly it has bolstered peace as countries are unlikely to enter conflict with trading partners and poverty reduction helps reduce the breeding ground for terrorism.	The major economic powers have a major influence in the institutions of globalization, like the WTO, and this can work against the interests of the developing world. The level of agricultural protection by rich countries has also been estimated to be around five times what they provide in aid to poor countries
7.	Improved technology has dramatically reduced costs and prices changing the way the world communicates, learns, does business and treats illnesses.	Trade liberalisation and technological improvements change the economy of a country, destroying traditional agricultural communities and allowing cheap imports of manufactured goods.
8.	Modern communications and the global spread of information have contributed to the toppling of undemocratic regimes and a growth in liberal democracies around the world.	Modern communications have spread an awareness of the differences between countries, and increased the demand for migration to richer countries.
9.	The voluntary adoption by global companies of workplace standards for their internationalised production facilities in developing countries has made an important contribution to respect for international labour standards. Wages paid by multinationals in middle- and low-income countries are on average 1.8 to 2.0 times the average wages in those countries.	Globalised competition can force a 'race to the bottom' in wage rates and labour standards. It can also foster a 'brain drain' of skilled workers, where highly educated and qualified professionals, such as doctors, engineers and IT specialists, migrate to developed countries to benefit from the higher wages and greater career and lifestyle prospects.
10.	International migration has led to greater recognition of diversity and respect for cultural identities which is improving democracy and access to human rights.	Indigenous and national culture and languages can be eroded by the modern globalised culture.

Table 1 Benefits and problems of globalization

Source: made by authors after <http://www.ausaid.gov.au/>, <http://www.worldbank.org/>, <http://www.undp.org/>, 2013

GLOBALIZATION OF AGRICULTURAL SECTOR

Globalization of agriculture means that every country of the world should have a free access to the markets of other countries as far as agricultural products are concerned.

In the agricultural sector, crop imports could be traded at cheaper prices, and could be exchange for another commodity because of the free trade - as entailed among the provisions of WTO. In this way, countries that rely primarily on agriculture (i.e. the Philippines), could purchase or import crops from another country at cheaper tariff rates, in case of a shortage. However, on the downside, countries that are more progressive agriculturally could just dump their third-rate or low-class products to their third-world trading counterpart. Thus, poor quality products could be received by the "lesser" country. "Quality Control" of the traded products is the main issue.

The multinational companies operating from outside the country are processing food grains and adding value to them. For this, they have introduced suitable modern packing and transport for their products. This development may help the farmers to some extent. But important of food product creates a danger of changing food habits of the people. It may even alter a part of the culture, as in any nation, cooking traditions and food habits are a result of the natural climate condition and the crops grown locally.

Globalization has eroded the cultures of nations and has made farmers' lives difficult. To meet the growing competition, farmers have begun to buy expensive seeds, synthetic chemical fertilizers, and are using large quantity of water.

The difference between agriculture and industry is that in industry we can measure our profit, stop or start production, increase or decrease it too. But agriculture depends on the rain and natural conditions. The crop is planted according to the season and has to be harvested at the right time. All the produce comes to the market at the same time the price is determined by the market, not the farmer. Under these circumstances, governments all over the world are forced to subsidize farm products.

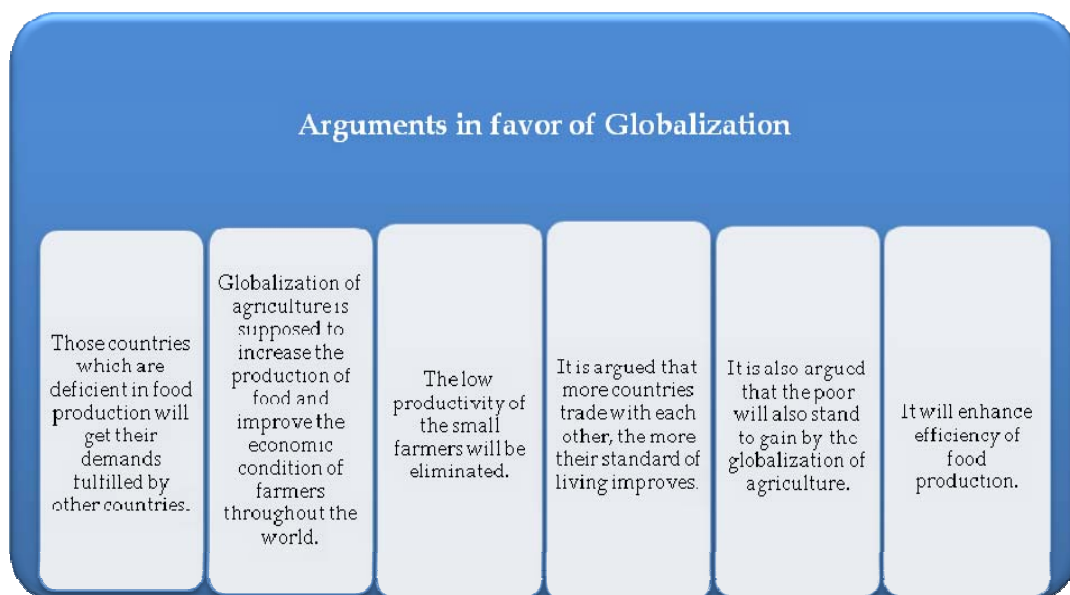


Figure 1. Arguments in favor of globalization

Source: made by authors after <http://www.preservearticles.com>

The implications of market globalization and corporate colonialism are no more acceptable than were the implications of earlier attempts at cultural globalization and political colonialism. But with such powerful economic and political forces promoting globalization,

how can we ordinary people expect to stop it. First, we can help people realize that the undeniable existence of a global ecosystem, a global society, and a global economy does not justify market globalization – i.e., the removal of all economic boundaries among nations. Natural boundaries are necessary to ensure ecological integrity. Cultural boundaries are necessary to ensure social responsibility. And economic boundaries are necessary to ensure long run economic viability. Without boundaries, the world will tend toward entropy – toward a world without form, without structure, without order, and without life.

In a global agricultural economy, large farms will continue to displace smaller farm in the global marketplace. Increasingly, the larger farms will be controlled by giant multinational corporations. Many small farms depend on sales of internationally traded commodities to provide cash farm income, in developed as well as less-developed countries. The most important aspect of their farming operation may be its non-cash contributions to their quality of life. In less-developed countries, the major non-cash contribution of farms may be food, clothing, and shelter, while in other countries it may be a healthy environment, privacy and security, and an independent life-style. In both cases, however, the economic viability of the farm may depend on cash income from sales of internationally trade commodities. Under globalization and corporate colonialism, small independent family farms quite simply will not have access to markets for internationally traded commodities. Essentially all such commodities will be produced under comprehensive contracts offered by corporations linked to one of the “global food clusters.” Only the larger farming operations will be able to secure such contracts, and in many countries, such operations may be corporately owned and operated.

In a global agricultural economy, small farms will be replaced by large farms, which in turn will be controlled by giant multinational corporations. Small farmers quite simply will not be able to compete in a “free market” global economy. Many small farmers of the world rely on horticultural crops for their viability. Thus, the implications of globalization may be even more dramatic for horticulture than for most other agricultural sectors. But even more important, ecological and cultural boundaries are essential to the long run sustainability of agriculture. Thus, if all economic boundaries are removed, human life on earth, at least as we know it, will not be sustainable.

PRICE VOLATILITY IN FOOD AND AGRICULTURE, POTENTIAL DEVELOPMENTS AND IMPACTS

In this period international food commodity prices rose to unprecedented levels in nominal terms, as witnessed by the FAO food commodity price index which reached a peak in June 2008, before retreating back to 2006 levels by early 2009. As shown in Figure 5, this price surge in primary food commodity prices followed what has been described as the longest and largest surge in global commodity prices in over a century. The factors underlying this broad surge appear largely global and macroeconomic in nature, including the rapid economic growth of developing countries during the period, particularly in Asia, but also monetary factors including money supply growth, financial laxity and exchange rate movements (particularly depreciation of the US dollar). Given a substantial co-movement among primary commodity prices during the period, food commodity prices, despite their huge implication for food security, were relatively more restrained than many other commodity prices.

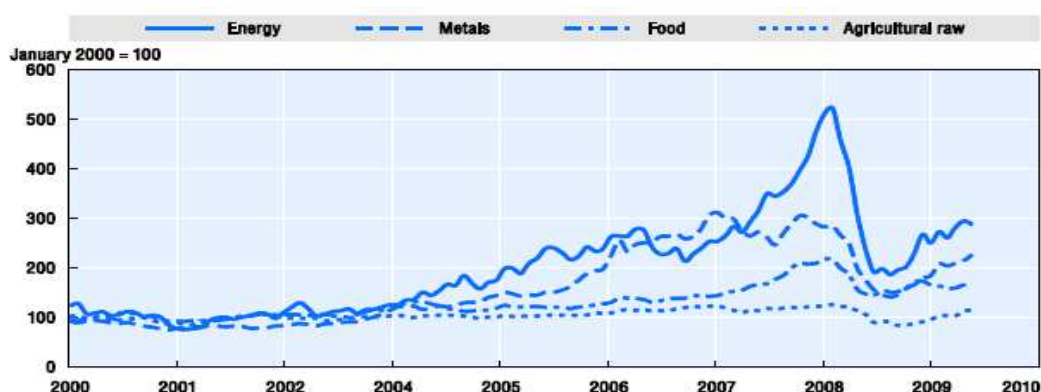


Figure 2. Co-movements of commodity prices, 2000-2010

Source: IMF International Financial Statistics, 2010

In the context of the broader commodity price surge, the food price hike was affected by a series of drought-induced crop shortfalls at a time of low stocks. It was also influenced by the increasing integration of agricultural markets to energy markets, and the important impact, both intended and unintended, of government policies. Importantly, energy prices, which experienced the largest price spike, underpinned production costs of agricultural products relying on energy and fertilisers. Coupled to this impact was the emerging demand for feedstocks to support production of biofuels. This impact was largely crop-specific and included maize in the United States, vegetable oils in the EU, and to a lesser extent, sugar in Brazil. Mandated consumption targets for biofuels, and other support policies further re-enforced the links between energy and feedstock prices.



Figure 3. Co-movements of agricultural food crop price

Source: <http://www.fao.org/worldfoodsituation/wfs>

Additionally, increased production of feedstocks was to the detriment of other crops whose cultivated areas decreased (e.g. wheat and soybeans). Fears about food price inflation incited further policy reaction by food commodity (including rice) exporters and importers alike who were keen to assure food supplies, and in combination put additional upward pressures on prices (Figure 3).

While the energy factor explains an important and controversial part of the increase in agricultural commodity prices, other factors were at play too. Agricultural supply initially exhibited sluggish responsiveness to the increase in demand, not only due weather related production shortfalls and its inherent production lags, but also after having undergone a long period of low investment given the low real prices in the previous decade. Commodity stock levels fell to critically low levels in 2006 and 2007. Macroeconomic factors such as the depreciation of the US dollar and monetary expansion also influenced the crisis, including

agriculture. The depreciation of the US dollar improved the purchasing power of many importing countries, causing an increase in prices of commodities which are denominated in dollar terms.

The role of speculation in financial markets encounters vigorous debate. Some analysts argue that low interest rates and low returns in other markets attracted non-commercial investors into agricultural and other commodity markets, fueling higher prices. Of course the causality is debatable - higher prices more likely attracted speculators, rather than the other way round. Anecdotal evidence suggests the number of traders in futures markets increased as prices increased. For example, institutional investment funds, which trade on large, long-term commodity-indices rather than specific markets, may have had a role in rising futures prices. Various studies, such as by Irwin and Saunders (2010) and Gilbert (2009), provide differing conclusions as to whether index funds have caused the 2006-2008 bubble in commodity prices.

Most agricultural commodity markets are characterized by a high degree of volatility. Three major market fundamentals explain why that is the case. First, agricultural output varies from period to period because of natural shocks such as weather and pests. Second, demand elasticities are relatively small with respect to price and supply elasticities are also low, at least in the short run. In order to get supply and demand back into balance after a supply shock, prices therefore have to vary rather strongly, especially if stocks are low. Third, because production takes considerable time in agriculture, supply cannot respond much to price changes in the short term, though it can do so much more once the production cycle is completed. The resulting lagged supply response to price changes can cause cyclical adjustments (such as the often referenced „hog cycle”) that add an extra degree of variability to the markets concerned. Business cycle fluctuations in demand for agricultural non-food commodities (such as cotton) from rapidly growing, industrializing economies may also be contributing to increased volatility.

As of Spring 2011, world price levels as reflected in various measures, including the FAO's world food price index, have once again reached the levels of 2007/08, giving rise to concerns that a repeat of the earlier crisis is underway. Several of the same factors known to have contributed to the 2007/08 crisis are also present – weather-related crop losses, export restrictions, high oil prices, and a depreciating US dollar, against a background of a continuing tight supply-demand balance. The debate on the impact of financial investment in commodity markets also continues. On the other hand, the 2010/11 situation differs from the earlier episode in some important respects. Firstly, the 2010 harvests in many food importing countries in Africa were above average or very good, so that prices in the region have been more stable. Stocks were higher at the outset which has also helped to mitigate the price rises. Finally, the price increases have been differently distributed among commodities. Meats, sugar and dairy products are all affected, and these are commodities that are less important in the food bills of the most vulnerable. It should be noted also that while the index of prices for cereals has come close to its 2008 level on average, and prices of vegetable oils are also very high, contrary to the 2007/08 situation the price rises have not affected rice. As rice is the staple food of many millions of the world's most vulnerable consumers, this means that the incidence of current price increases is somewhat different. Nevertheless, there are serious risks to food security and the situation needs to be kept under close review by national governments, and by international organizations and non-governmental agencies.

CONCLUSION

The district can be an important tool for the revitalization of rural areas.

It is structured by physical capital represented by the territory in which the companies are, belonging to a supply chain, human capital, consisting of the resident population, and the

share capital represented by all the relationships and interactions carried out by all those involved. It allows to grasp and enhance social diversity that characterizes the different rural areas and because the district through the instrument can examine the interrelationships between the various stakeholders.

In an international scenario marked by uncertainty and in anticipation of the post-2013 EU gives particular attention to the applying of a territory of efficient policies in response to increasing competition in the markets, and represents a district in this connection an interesting tool for intervention governance in rural development within a defined area with product quality of local material. In this direction for some years now the EU has authorized state aid for the implementation of supply chain contracts and district in order to promote agricultural modernization and technological development of enterprises.

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Structural changes in the Polish agriculture after accession to the EU in the light of the sector's competitiveness and efficiency

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ABSTRACT

Socio-economic transformations that took place in Poland in the period of EU membership caused a number of structural changes in the resources and distribution of production factors in agriculture. As compared to other sectors of the economy the changes in the agricultural sector seem relatively the most significant ones. The material presented below includes: a brief analyses of structural changes taking place in the Polish agriculture in the 2002-2012 period, information on the absorption of the EU funds for implementation of structural programmes and conclusions from this assessment referring to the issues of competitiveness and efficiency of the Polish sector.

Keywords: *structural changes in agriculture, competitiveness of agriculture, efficiency of agriculture, State aid for agriculture, Common Agricultural Policy*

INTRODUCTION AND RESEARCH OBJECTIVES

Poland's membership in the EU has radically changed the economic conditions of functioning in the Polish agriculture and rural areas. The most important sources of these changes, of course, apart from the European Single Market and macro-economic conditionalities, include Common Agricultural Policy (CAP) and structural funds. Today, we already know that CAP has actually caused an increase in support for agriculture, while structural funds have triggered considerable cash flows intended for modernisation of food economy and rural areas development. As compared to other sectors of the economy the changes in the agricultural sector seem relatively the most significant ones. The research presented below aims at showing the character and pace of changes taking place in economic structures in agriculture under the influence of socio-economic transformations and Poland's membership in the EU, as well as those related to CAP implementation and relate them the issues of competitiveness and efficiency of the agricultural sector.

The article adopts competitiveness and efficiency of Polish farms as indicators of their economic strength and the indicators of competitiveness and efficiency were derived from the definition of competition which is one of the basic economic mechanisms of market economy. Competition is a process used by market participants, who while driving at implementation of their own interests, try to present offers that are more beneficial than others in terms of price, quality or other characteristics influencing the decision to enter into a transaction [Kamerschen, McKenzie, Nardinelli 1991]. At this background competitiveness is a specified state of competition, one of its characteristic features [Adamkiewicz, 1999]. It is an evaluative term determining the desired state that may refer to economic entities, sectors of national economies and countries or regions. Competitiveness of the economy (sector) is something more than a simple average of competitiveness following from the sum of

international competitiveness of economic entities acting on its area [Chesnais 1988, Lubinski, Michalski, Misala 1995].

Another concept evaluating competitiveness takes into account the resources of production factors, efficiency of their use, pace and direction of structural changes. Z. Wysokińska (Wysokińska, 2001) links competitiveness to efficient use of resources of production factors, as well as structural changes taking place in the economy resulting in increased efficiency of farming. According to Meredyk K. (Meredyk, 2001) competitiveness is a feature of economic growth and follows directly from the quantity and quality of labour. The definition of competitiveness relies more and more often on two interconnected pillars of efficiency and quality, since it is the quality of products that preconditions the prices and possibilities of sales. Numerous authors, such as G. Hamel, C.K. Prahalad, J. Barney, J. Kay, M. Cassone do not define competitiveness although they analyse it in their works.

During the 1994 World Economic Forum in Lausanne competitiveness was defined as the ability of a country or enterprise to generate greater wealth than the competitors on the world market [World Economic Forum, 1994]. According to OECD [Competing in the Global Economy, 1994] competitiveness is the ability to produce goods and services that are acceptable on the world market under the conditions of free trade with simultaneous growth of real income of the population in the long-run. M. Porter sees competitiveness through the eye of the ability to create conditions favourable for development of the international competitiveness of companies under individual national industries and branches. This ability is determined by a system of interconnected production factors, demand conditions, mutually connected and supporting branches and strategies of companies, structure of the branch and competitors – the so-called Diamonds of National Advantage [Porter, 1995]. Thus competitiveness analysis can be conducted *ex post* – by assessing the result of competition at a defined moment in time, or *ex ante* – by referring it to a long-term ability to keep or improve the present competitive position.

On the other hand, the economic efficiency is understood as the ratio of achieved effects to the incurred inputs. The economic effect for farms is the income obtained from agricultural activity generated by them, whereas the input is the total labour input, labour input of farmers and their family members expressed in AWF and FWU³. Many authors commonly use these indicators as measures of economic efficiency of agricultural enterprises [Józwiak 2009, Goraj, Mańko 2011]. However, agricultural enterprises and farms do not usually compete directly with comparable enterprises on foreign markets. Entities that are directly present on international markets and compete there are agri-food processing enterprises and trade enterprises [Ziętara, 2012]. Quality and price of the offered products preconditions their tendering strength. They are most of all dependant on raw materials that are delivered by farms and agricultural enterprises. According to A. Woś the costs of raw materials constitute 2.3 of costs incurred by the food industry [Woś 2003]. Although agricultural producers are not directly present on international markets they have an indirect impact on competitiveness of agri-food products.

The analysis of competitiveness and efficiency for the needs of agriculture presented below has been preformed through the eye of competitiveness of resources allocation. Since farming is based on the assumption that resources are limited and that the available skills are selected in a rational manner. When looking for an optimal selection, unlimited needs of consumers are taken into account along with limited available resources and production technologies. Thus the main focus has been drawn to production resources (land, labour and capital) referring to their quantity (sometimes also their quality) and agricultural structures

³ AWU (annual work unit) – equivalent of labour input of 1 full-time employee (2,200 man-hour/year). FWU (family work unit) – labour input of farmer and his family members (2,200 man-hour/year).

influencing the used production potential expressed by resources. The analysis has been supplemented with references to the sectoral competitiveness shaped through economic policy instruments (primarily CAP) which directly and indirectly influences the competitive possibilities of agriculture.

Statistical data used for analytical purposes in this article were taken from the databases or published materials concerning economic results of farms covered by the FADN

(Farm Accountancy Data Network) accountancy system, macroeconomic data of the Economic Accounts for Agriculture (EAA), results of CAP implementation provided by the Agency for Restructuring and Modernisation of Agriculture (ARMA) as well as literature studies.

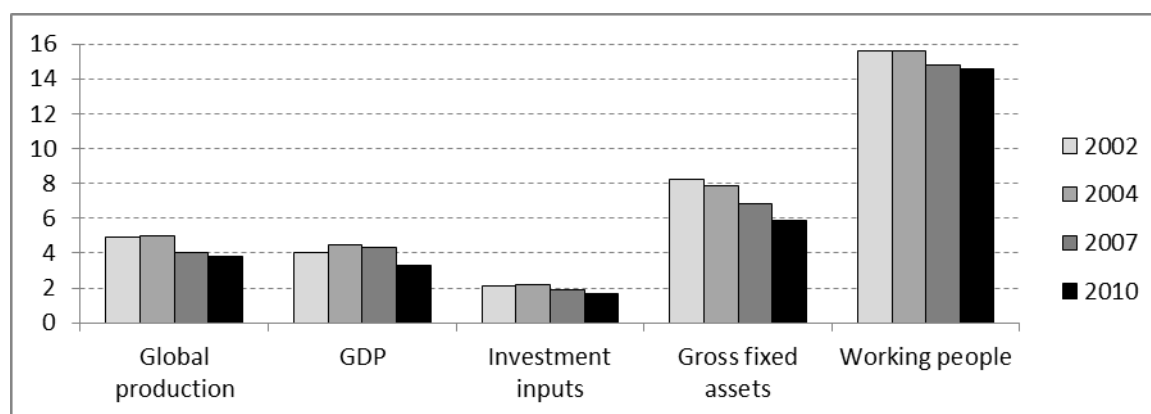
STRUCTURAL CHANGES IN AGRICULTURE

In the years preceding Poland's accession to the EU, in 2004 and the following years structural changes took place in agriculture in the field of employment, resources of utilised agricultural land, production organisation, level of input and progress made. Sometimes they were rather dynamic (e.g. changes in the production structure), on other occasions they took place over generations (employment in agriculture). Usually they were a continuation of the already existing trends (sometimes with slight changes in their intensity), however, on other occasions their directions changed due to new circumstances. After 2004, multiannual trends were continued which were expressed in a slower decrease in the area of agricultural land, sown area or livestock population. They were accompanied by an increased intensity of plant and animal production, crops and unit productivity of animals.

Despite structural changes, sometimes very deep, the Polish agriculture remains an important sector of our Polish economy. This is, primarily, confirmed by the structure of employment and structure of land use. The sector plays an especially important role as it comes to social and economic development of rural areas. Since agriculture uses over half of the total area of the country for economic purposes, it sets the main functions and directions of land use and shapes the natural environment and landscape. The agricultural sector remains the place of work for almost 15% of the total number of working people. However, the number of people working in agriculture points to negative relations between the labour resources and land and capital resources thereby causing low efficiency of labour. On the other hand, from the perspective of Gross Domestic Product (GDP) generation the significance of the agricultural sector in Poland is decreasing. The share of agriculture (including hunting and forestry) in GDP has dropped from ca. 9% in 1990 to 4% in 2003 and 3.3% in 2010. The share of agriculture in replacement and increasing of the assets remains significantly smaller. Investment inputs for the purpose are shaped below 2%, which inevitably leads to further decrease in the role of agriculture as owner of fixed assets in the national economy.

An analysis of labour resources and fixed assets as well as of the share of agriculture in creation of the global product and gross domestic product prove that the productivity of assets is small and that labour productivity in agriculture stagnates (Figure 1). On a country scale, in some regions it still plays an important role, having a strong impact on the level of development and the standard of living of the inhabitants of the regions. In general, agriculture still keeps the traditional character expressed e.g. in fragmented (as compared to such countries as Germany or France) agrarian structure, multi-directional production activity of farms, extensive production techniques, although very radical changes take place also in this scope. These changes are caused primarily by the market economy system and transformation following from CAP instruments and structural policy.

Figure 1 Agriculture in national economy (share in %)



Source: "Pracujący w Gospodarce Narodowej" (relevant yearbooks), CSO, Warsaw, "Środki Trwałe w Gospodarce Narodowej" (relevant yearbooks), CSO, Warsaw, "Statistical Yearbook of the Republic of Poland", CSO, Warsaw 2011; own calculations

In 2002-2010 the land resources of farms have decreased significantly. The total area of land has dropped by ca. 5.5% from 19,325 thousand ha to 18,257 ha, i.e. by over 1 million ha of agricultural land. The decrease has covered only agricultural land and its area has decreased by 1,365 thousand ha (i.e. by 8.1%) from 16,899 thousand ha in 2002 to 15,534 thousand ha in 2010 and this was caused, mainly, by a decrease in the area of land not used for agricultural purposes and the area of grasslands. At the same time, there was an increase in the area of forests and other lands, and or perhaps above all, an increase in area intended for service activities, construction or infrastructure development. The area of agriculture production has decreased by only 415 thousand ha of agricultural land (the aggregated surface of sown area, orchards, meadows and grasslands has dropped from 14,597 thousand ha to 14,182 thousand ha).

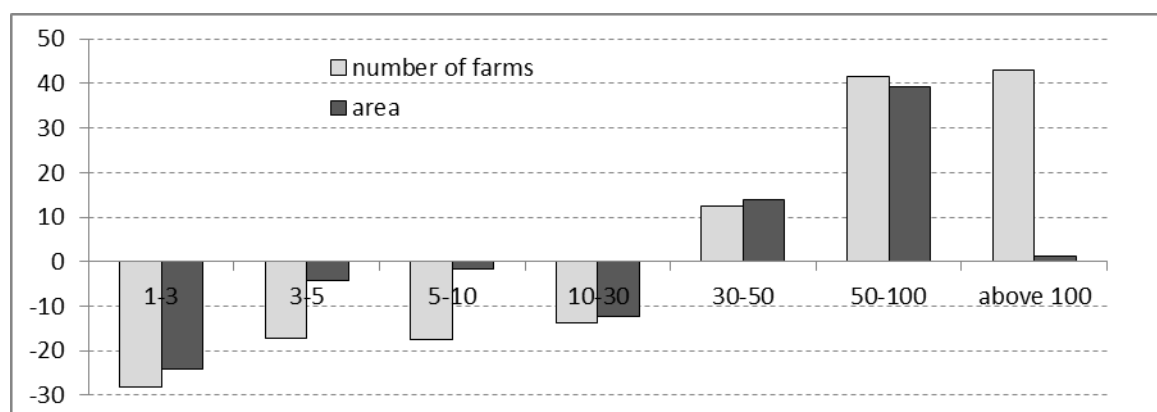
Changes in the area structure of farms have also occurred in the discussed period. The total number of farms has decreased from 2,933 thousand to 2,278 thousand, i.e. by 655 thousand (22%), and the decrease concerned both agricultural parcels (farms up to 1 ha of agricultural land), as well as farms above 1 ha of agricultural land, and the decrease in agricultural parcels amounted to 27%, and in farms above 1 ha of agricultural land – 20% (in 2010 the number of farms above 1 ha of agricultural land was 1,563 thousand, which means a drop as compared to 2002 by 393 thousand). The structural changes were significantly differentiated in individual area groups. The share of farms below 1 ha has also decreased, while there was a simultaneous increase in the share of units above 1 ha (from 66.6 to 68.6%). However, in the second group the changes were multi-directional. The number of farms above 1 ha has decreased by 20% (by 393 thousand), and the number of farms ranging from 1 ha to 30 ha has dropped by 405 thousand, while the number of farms above 30 ha has increased by 12 thousand. A dynamic decrease in the number of the smallest farms (similarly as in the case of agricultural parcels below 1 ha) resulted from not covering some part of land of these farms with direct payments (because of failure to act by their owners or difficulties in proving that agricultural activity is pursued on the lands). The group of farms with the area above 30 ha has increased from 2.6% in 2002 to 4% in 2010, whereas in farms of 30-50 ha the increase amounted to 12.5% and in the group of farms greater than 50 ha of agricultural land – the increase amounted to over 40%. However, in 2010 there were only 63 thousand farms of more than 30 ha of agricultural land. From the perspective of competitive potential the structure of land use is more important than the structure of farms. Changes that took place in this scope are, however, similar in their direction since there was a very significant decrease

in agricultural land of the smallest farms (1–2 ha by over 30%), several percent (13.8–17.4%) in the group of farms of 2-20 ha and an increase in the utilised land resources in the farms of more than 30 ha of agricultural land (the greatest by almost 40% in the group of 50–100 ha of agricultural land).

The idea behind economic activity in agriculture, just like in other production sections, is production. Introducing elements of production structure to the analysis of agriculture's productivity results from the fact that the volume of obtained production depends not only on the intensity of involvement of production factors and labour force resources (under the given natural conditions), but also on the area of activity on which these factors were involved [Rudnicki, 1997]. However, it is without doubt that structural changes in production are closely related to changes in area structure. In 2002-2010, the number of farms sowing crops has changed by ca. 28% (from 2,007 thousand to 1,449 thousand), and the average sown area has increased by 1/3 to 7.2 ha (by 1.8 ha) (Table 2.13). There was also a drop in the number of farms growing vegetables (by over 80%), potato (by 75%), sugar beet (by 50%) and cereals (by 22%), while the number of farms growing rapeseed (by 100%) and maize (by 20%) increased. Production concentration has been visible both in plant and animal production. The size of an average bovine herd has increased from 5.9 to 11 units (and more than 60% of the population was gathered in herds of more than 20 units), cows from 3.3 to 5.9 units (herds of 10 and more units gathered 67.6% of the population), pigs from 24 to 38 units (herds of more than 500 units gathered 33% of the population). In 2010 herds of more than 20 thousand units gathered over 68.2% of the population of laying hens and over 90% of the population of broilers.

The direction of changes in the number and structure of farms should be deemed positive. Farms bigger in terms of land, which gather an increasing percentage of agricultural land, are more and more important. In 2002 the number of farms of more than 20 ha of agricultural land amounted to 51 thousand (2.6% of farms of more than 1 ha of agricultural land) and as of 2010 it increased to 63 thousand, but it still is less than 4% of farms of more than 1 ha of agricultural land. In 2002 these farms utilised 5,509 thousand ha of agricultural land (33.4% of agricultural land in farms of more than 1 ha of agricultural land), while in 2010 – 6,039 thousand ha of agricultural land (almost 40% of land resources in farms of more than 1 ha of agricultural land). However, the pace of changes is clearly unsatisfactory (Figure 2).

Figure 2 Changes in the number of farms and area of agricultural land according to the area group in 2002-2010

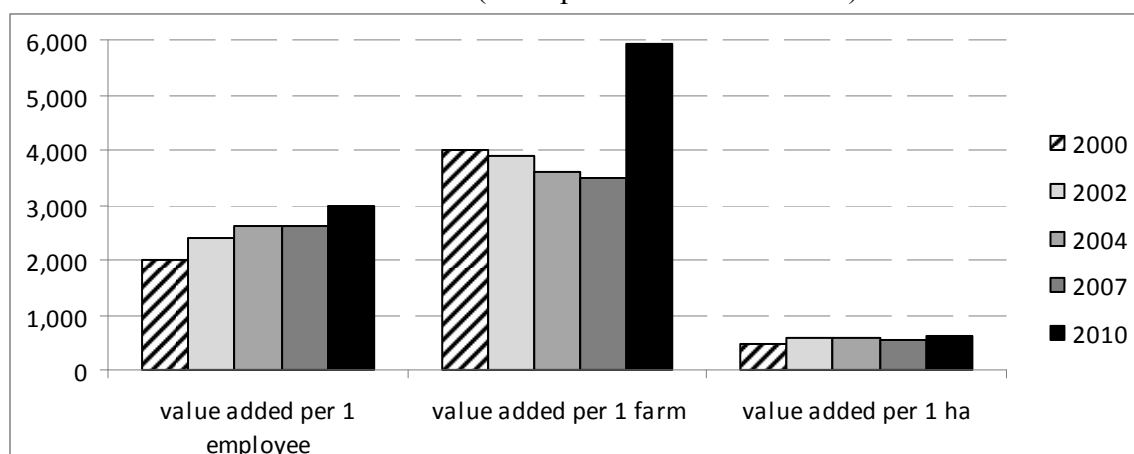


Source: Raport z wyników – Powszechny Spis Rolny 2010, CSO, Warsaw 2011; own calculations.

In 2010 the Polish agriculture had at its disposal ca. 8.5% of land resources, it involved 18% of labour input and 5.1% of capital input in the EU-27 agriculture. Although these relations are not favourable, there was, however, a systematic although relatively small improvement in the relation between land resources (area of agricultural land) and labour input (expressed in AWU⁴), or the sum of indirect consumption and depreciation and labour input. In 2010 the area of agricultural land per 1 AWU in Polish agriculture amounted to only 7.7 ha, which was less than half of the value in the EU-27 (16.4 ha). One unit of labour input has used capital input (sum of indirect consumption and depreciation) with the value of EUR 7.3 thousand, which amounted to only 30% of the average level in the EU-27, while intensity of production measured with capital input per 1 ha of agricultural land has amounted to EUR 941, which corresponded to ca. 60% of the level of these input in EU-27. The relations showing the provision of the active factor in the production process - i.e. labour, with the two other production factors, namely land and capital give evidence to a weak competitive position of the Polish agriculture as regards the competitive potential and preordains low efficiency of labour in sectoral terms and relatively low intensity of agricultural production (relation: capital input - land resources) determines rather low productivity of land [Poczta, 2012].

Differentiation of the structure of farms is often showed as one of the main factors deciding on the economic results of the sector. In order to eliminate the impact of different pace of price change in individual countries on the results of the sector, the economic results of agriculture were analysed in fixed prices of 2000 (Figure 3). In 2000-2010 there was a permanent and significant increase in the value added per 1 employee, but it was small as calculated per 1 ha of agricultural land. The ability to cumulate resources for new investments and perceiving a takeover of farms as an attractive alternative by future successors is significant from the perspective of durability and possibility of further development of farms. Thus it is necessary to assess the production effects in which farms have their share. An increase in the value added from ca. USD 4 to nearly 6 thousand, even under eastern European conditions, does not give evidence to significant economic strength of farms in these countries.

Figure 3 Value added generated in agriculture per 1 employee, farm and 1 ha in the EU (fixed prices in USD of 2000)

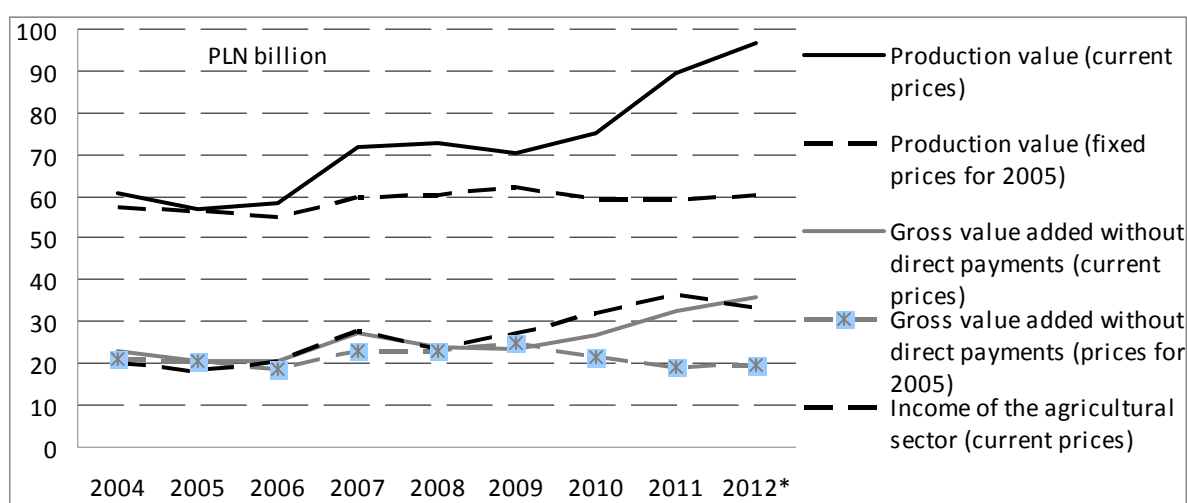


Source: own elaboration based on the data of Eurostat (table ef_lu_ovcropaa) and World Bank [World Development Indicators & Global Development Finance table EconomicPolicy&Debt\National Accounts\Agriculture, value added (constant 2000 USD)].

⁴ 1 AWU (Annual Work Unit) - CSO makes it 2,120 work hours per year (265 days x 8 hours)

The analyses conducted with the use of Economic Accounts for Agriculture (EAA)⁵ [Floriańczyk, 2013] show that in 2004-2012 (i.e. in the years of Poland's membership in the EU) the value of production in the agricultural sector in current prices, excluding payments to products, has increased from almost PLN 61 billion to over PLN 96 billion. And the increase in nominal value of production was especially strong in 2011 and 2012 (Figure 4). The increase in the value of production was linked primarily to the increase in the prices of agricultural products. For comparison, the value of production in fixed prices (2005) in the examined period has increased from PLN 58.0 billion to PLN 60.5 billion, i.e. within the range of 3%. The highest value of production in fixed prices has been observed in 2009 which was linked to the extremely high crops.

Figure 4 The value of production, gross value added without direct payments and income in agriculture in 2004-2012



* estimated data

Source: Data for EAA.

Gross value added (GVA) is an important indicator of the effects of agriculture. It is the source of replacement of assets and payment for own work, foreign production factors and taxes, as well as possible resources that may be allocated to different objectives. In 2012 the GVA of the agricultural sector without payments to products reached PLN 35.7 billion and was higher by over 50% as compared to 2004. It is the highest value of GVA since the time of the accession to the EU. The comparison of GVA in fixed and current prices shows that a high increase in the latter was related to a stronger increase in the prices of agricultural products than inputs observed in the last years. Also in real terms, the value of GVA has increased slightly in 2012 although in the previous years it dropped strongly.

As for the value of income from the agricultural sector in 2012 they have reached the level of PLN 33.3 billion (in current prices) and were by almost 15% lower as compared to 2011. This is an effect of decreasing the total amount of direct support on account of finishing the previous programming period. As a result, in 2012 the total amount of direct support constituted 37% of agricultural income while in 2011 it was nearly half of that. However,

⁵ These are satellite accounts as regards some national accounts and they are made by IAFE-NRI in cooperation with the CSO for the needs of the European Commission.

given the record level of income in agricultural sector in 2011 it may be assumed that the high level of income in Polish agriculture after the accession to the EU has been continued.

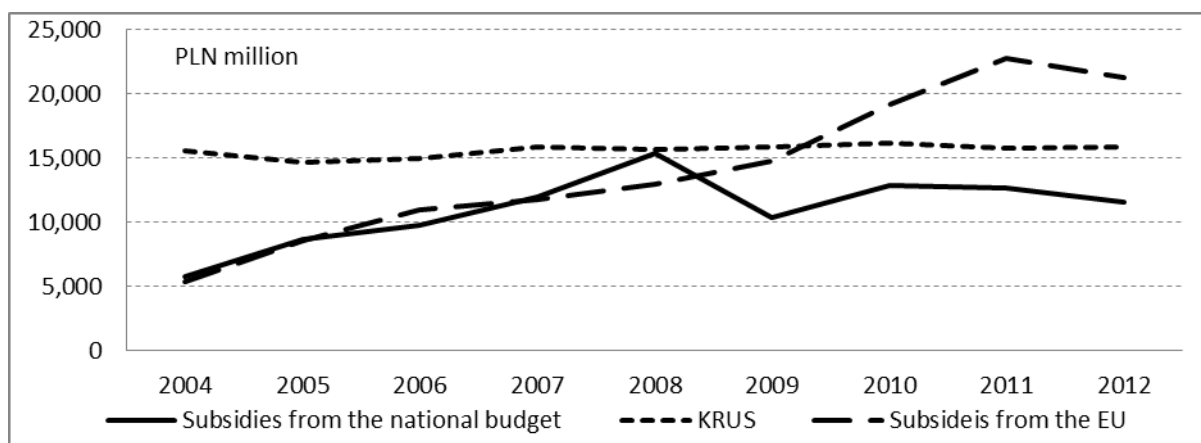
When examining the EAA it may be seen that in the analysed period the value of plant and animal production has increased, as well as the value of production services provided by agricultural producers for other entities operating in agriculture. This was not caused only by a change in prices, but also different forms of progress, growing level of provision of farms with technical means, reduction of production under unfavourable conditions. Moreover, the rapidly processing denaturalization of consumption affected a drop in the value of home-processed agricultural products despite a price growth [Józwiak, 2012]. Starting from 2004 the amounts of payments to production and certain types of products have increased incrementally. Because of the above, the increase in the value of agricultural income, despite an increase in the costs of indirect consumption, was faster and, consequently, the increase in the gross value added was also more rapid.

The progress made in the national agriculture was a resultant of activities undertaken by agricultural producers following from growing competition, changes in the prices of agricultural products and means of production, payments to production and products, State aid in the field of investment support and introduced innovations. The last concept encompassed each significant change in the scope of products and production processes, which resulted from solutions created in the country on the basis of licences bought abroad, foreign innovative means of production, results of national research and local invention and technology improvement activities.

POLICY FOR AGRICULTURE AND RURAL AREAS – FINANCIAL AND MATERIAL DIMENSION

The increase in expenditure on the agricultural sector both in nominal and real terms is the measurable effect of Poland's accession to the EU. This refers to expenditure from the national budget as well as the EU budget (Figure 5). The share of expenditure on agriculture (excluding KRUS) in State budget expenditure has increased over twofold (from almost 2% in 1997-2004 to ca. 4% in the 2005-2012 period). An increase in budget expenditure for agriculture and rural areas is a consequence of covering Poland with the CAP and structural policy instruments of the EU, and it follows from the principle of co-financing of the operational programmes and co-financing of the direct payments from the national budget. After 2003 for the first time (since the system transformation) there occurred a chance for direct improvement of the income situation of national agricultural producers and reproduction processes on their farms. The recession in Poland took place as a result of improvement in the macroeconomic conditions of functioning of the economy, which were seen as an opportunity to stop the growing degradation of the Polish agriculture and rural areas. Increased budgetary inputs were not, of course, able to solve the basic problems of the agricultural sector in Poland on-the-spot, since this requires several years of consistent agricultural policy [Czyżewski, Matuszczak, 2012].

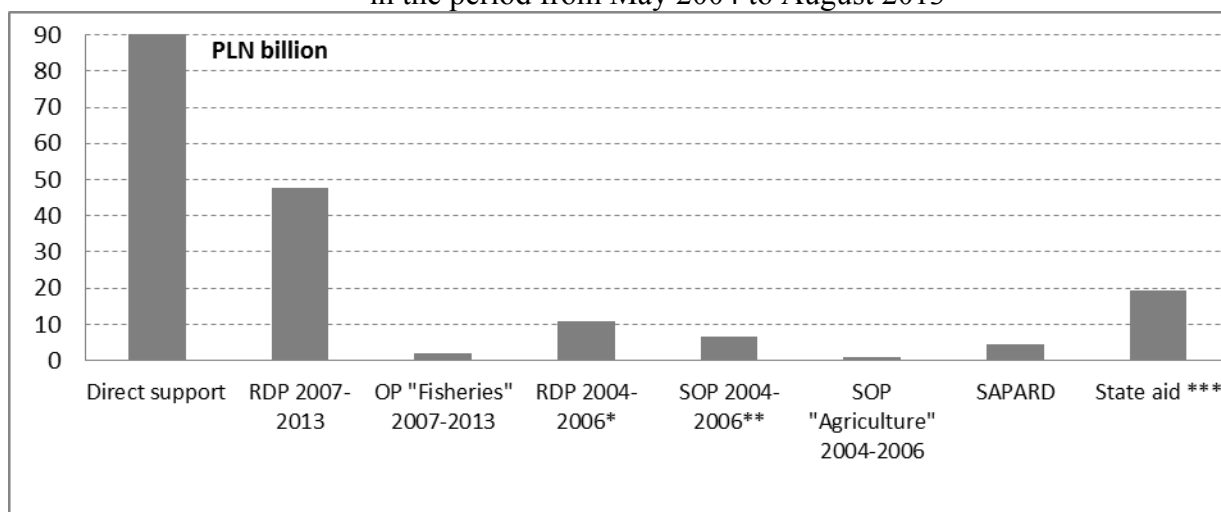
Figure 5 Budgetary expenditure for the agricultural sector in 2004-2012
(PLN million)



Source: Own elaboration on the basis of "Analiza produkcyjno-ekonomicznej sytuacji rolnictwa i gospodarki żywnościowej w 2011, 2009 i 2006 roku", IAFE-NRI, Warsaw (subsequent years) and Czyżewski A., "Opinia o ustawie budżetowej w częściach dotyczących rolnictwa, (individual years) Opinie i ekspertyzy, Chancellery of the Senate, the Analyses and Documentation Office

The budget of the European funds was the main source of financing of the increase in budgetary expenditure on the development of agriculture, food industry and rural areas. In 2012 it amounted to ca. 53% of the budgetary expenditure for the agricultural sector (including KRUS). From the beginning of membership in the EU until June 2013 Poland has received over PLN 180 billion under different support instruments from the EU resources (market intervention, direct support system, rural development programmes, and fisheries policy) and national support (excluding KRUS). The greatest share in these transfers belonged to direct payments (over 50%) and payments to implementation of rural development programmes (almost 40%) (Figure 6).

Figure 6 Aggregated expenditure to CAP implementation
in the period from May 2004 to August 2013



* excluding CNDP 2004-2006; ** along with measures of the Foundation of Assistance Programmes for Agriculture (FAPA) and Offices of the Marshal; *** Mainly subsidies to interest rates on loans

Source: Author's own compilation based on ARMA Management Information System, www.arimr.gov.pl (accessed on: 02.09.2013)

These financial resources intended for agriculture development and paid from the EU budget may be divided into four groups according to their impact on growth and structural changes in agriculture:

- entirely direct impact: modernisation of farms, early retirements and diversification of agricultural activity, setting up of young farmers;
- entirely indirect impact: infrastructure, land drainage, land re-parcelling, afforestation, agri-environmental schemes, advisory services;
- partly direct impact: direct payments, support for agricultural activity in less-favoured areas (LFA), market intervention expenditure, establishment of agricultural producer groups, establishment of micro-enterprises;
- partly indirect impact: quality of life on rural areas, support to processing industry, PHARE programmes, LEADER programme, village renewal, training, technical assistance.

Direct payments are, of course, the basic instrument of support to agricultural income. Poland, like the majority of the new EU Member States, applies the Single Area Payment Scheme (SAPS), under which Single Area Payments (SAP) and Complementary National Direct Payments (CNDP) are provided. Payments are awarded to each hectare of agricultural land in good agricultural condition of a farm whose area exceeds 1 ha. Total area entitled to SAPS in Poland is 14.1 million ha. Each year, applications for single area payments are submitted by ca. 1.35 million farmers and complementary payments – cca. 1.2 million farmers. The Single Area Payments constitutes ca. 60% of the total amount of payments, while the complementary payments – 130% of the amount of payments. Other forms of direct payments are insignificant in terms of the total budget of paid direct payments (e.g. animal payments amounted to 5% of total budget of payments and sugar payments to 4%).

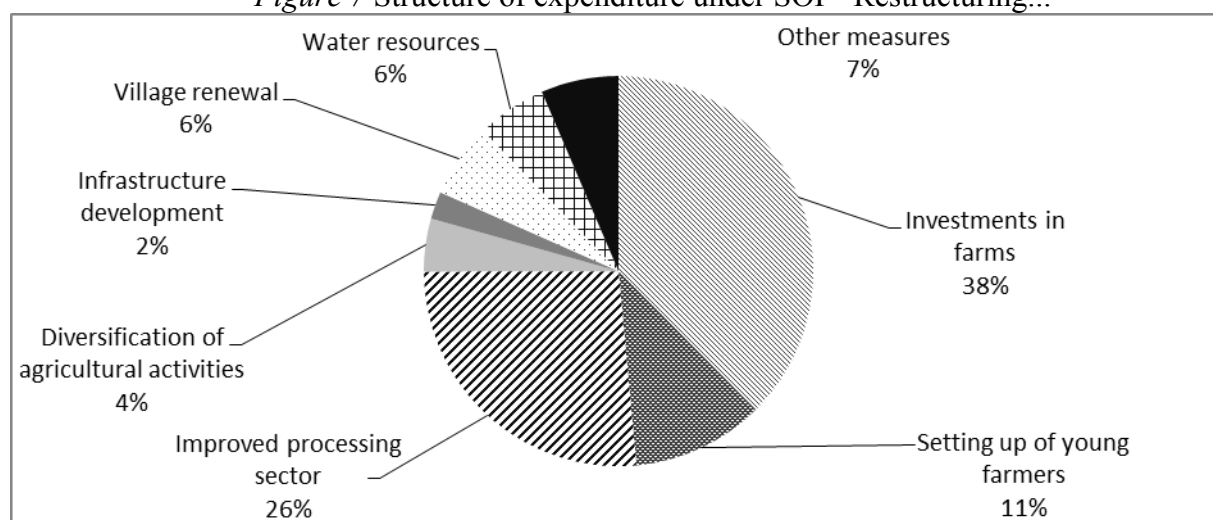
The initial level of the Single Area Payment received by Polish farmers was much lower than the average level of payments in the EU-15, since Poland was covered by a 10-year transition period. The default rate of payment in 2004 amounted to 25% of the rate in the EU-15, 30% in 2005, 35% in 2006, after which it increased by subsequent 10% each year until reaching 100% of the average level of payments in the EU-15 in 2013. At the same time, complementary payments were paid from the state budget. They involved all crops excluding fallow land, potatoes other than starch, vegetables and decorative plants (both annual and perennial). In 2004-2010, the amount of co-financing from the state budget reached 30%, in 2011 it was 20% and in 2012 it was 10%. In the 2004-2012 period the total amount of support under SAP and CNDP expressed in PLN per 1 ha has increased from ca. PLN 503 to PLN 943 in 2012. The continuous increase in expenditure allocated for direct payments caused an increase in the role of these payments as an income-generating factor in agriculture. Before the accession the subsidies accounted for less than 9% of the farmers' income, while in the 2009-2012 period (despite the increase in the value of agricultural production in real terms by 20%) their share exceeded 60%.

The resources from structural funds of the EU were rather insignificant as it comes to funding changes in the Polish agriculture in 2000-2002. In subsequent years the share of EU budget resources in the funding of changes in the agricultural sector was, however, more significant. The first real programme addressed to villages and rural areas was the pre-accession SAPARD programme with the budget of EUR 946 million. In subsequent years - 2004-2006 (and actually, because of programme settlements, until the end of 2008), two programmes were implemented, e.g.: Rural Development Plan for 2004-2006 (RDP for 2004-2006, with the budget of EUR 3,592 million) and the Sectoral Operational Programme “Restructuring and Modernisation of the Food Sector and Rural Development 2004-2006” (SOP “Agriculture”, with the budget of EUR 1,788). The Rural Development Programme (RDP 2007-2013, with the budget of EUR 17,420 million) has been implemented in Poland since 2007. The total amount of public resources – both EU, and national – allocated to rural development under SAPARD, RDP 2004-2006, SOP “Agriculture”, and RDP 2007-2013 is

EUR 23.7 billion. Financial resources under the programmes implemented in 2000-2006 (a total of EUR 6.3 billion) were used in full. The RDP 2007-2013 enjoys as much popularity among beneficiaries as its earlier versions.

The SOP "Agriculture" was focused on implementation of two priorities, i.e.: 1 - Supporting changes and adjustments in agricultural and food sector, 2 - Sustainable development of rural areas. The so-called technical assistance was also funded under the programme. The greatest significance from the perspective of improved competitiveness of the agricultural sector and better efficiency of farms operation belonged to measures concerning investments in farms (over 28.2 thousand of projects were implemented for the amount of ca. PLN 2,412 million), setting up of young farmers (14.2 thousand of projects were implemented for the amount of ca PLN 707 million), improved processing conditions in the food industry (1.2 thousand of projects were implemented for the amount of ca PLN 1,622 million) and differentiation of the sources of income on a farm (4.4 thousand of projects were implemented for the amount of ca PLN 280 million) (Figure 7).

Figure 7 Structure of expenditure under SOP "Restructuring..."

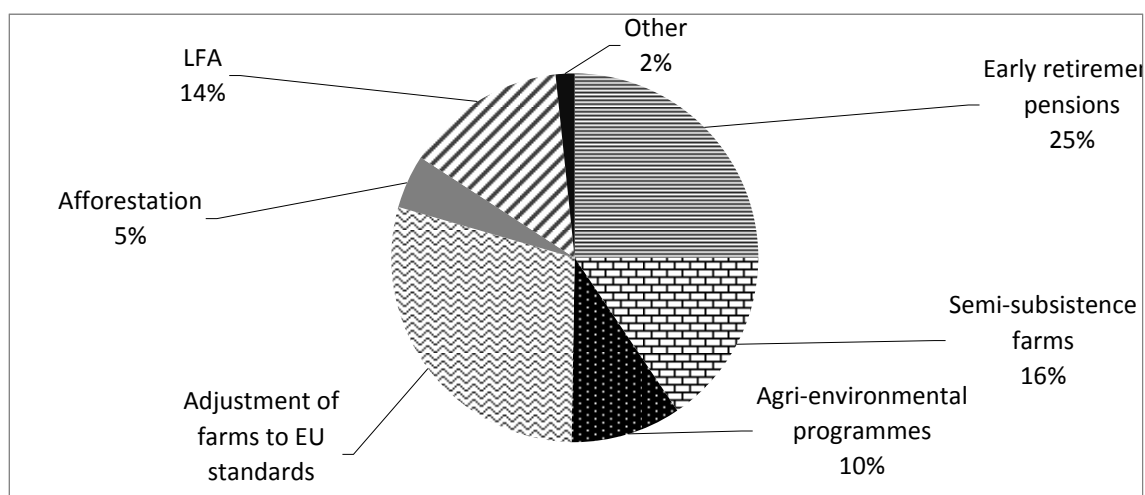


Source: Author's own compilation based on "Informacja o stanie realizacji SPO „Rolnictwo...”, Wydział Monitorowania, www.minrol.gov.pl (accessed on: 02.09.2013)

The RDP 2004-2006 was a social programme, although some of the measures conducted under it additionally contributed to environmental protection and indirectly also to the improvement of the competitiveness and efficiency of agricultural holdings. The most important measures from a financial point of view included: early retirement pension scheme (owing to its implementation over 53,000 holdings were transferred to the successors, and the value of paid pensions exceeded PLN 2,083 million), semi-subsistence farms (assistance provided to 172,000 farms, and its value exceeded PLN 1,316 million), agri-environmental programme (it applied to 79,000 projects and assistance amounting to ca. PLN 815 million), adaptation of holdings to EU standards (73,000. projects worth about PLN 2,437 million) and afforestation (29,000 projects worth about PLN 385 million) (Figure 8). From the financial point of view, however, the programme to support economic activity within less-favoured areas (LFA) for agricultural development under natural conditions was most important (in 2004-2006, there were 628,000-718,000 applications submitted every year for the amount of PLN 1,145-1,295 million)⁶.

⁶ Implementation of the RDP 2004-2006 programme ended on 31 December 2008. The presented data were obtained from the Management Information System of the Agency for Restructuring and Modernisation of Agriculture (ARMA).

Figure 8 Structure of expenditure in RDP 2004-2006

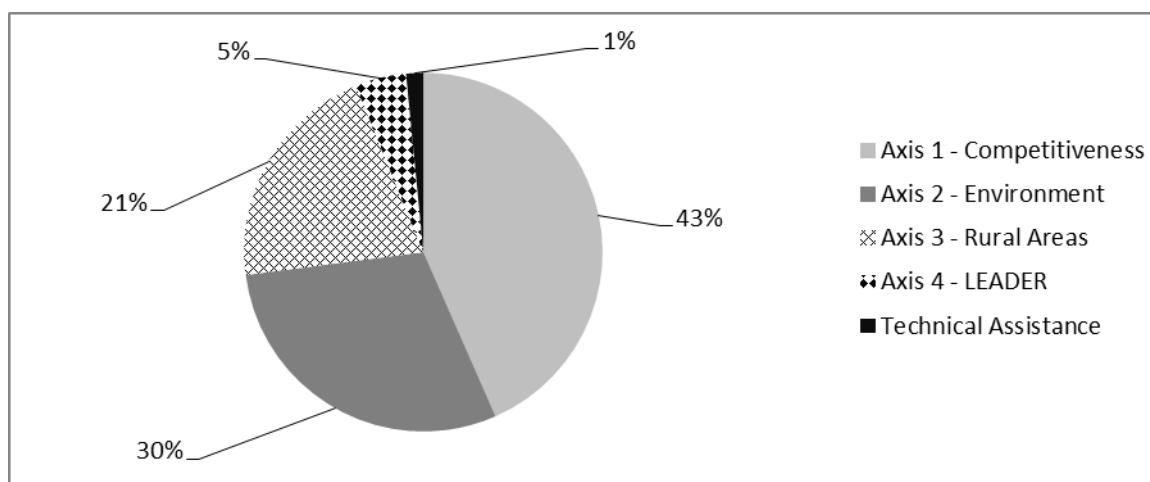


Source: Authors' own compilation on the basis of the data from the Management Information System of the Agency for Restructuring and Modernisation of Agriculture (ARMA) (accessed on 02.09.2013)

RDP 2007-2013 is the largest assistance programme that invests in rural areas. Among the EU Member States, Poland has at its disposal the largest allocation from EAFRD (EUR 13.4 billion) for the implementation of measures covered by RDP 2007-2013. These funds are supplemented with a State budget contribution, which amounts to EUR 4 billion. In addition, the commitments from 2004-2006, which amount to EUR 3 billion and were undertaken under the Rural Development Plan 2004-2006, are also financed under EAFRD. The RDP 2007-2013 measures are implemented under four strategic priority axes (Figure 9): Axis 1: Improving the competitiveness of the agricultural and forestry sector; Axis 2: Improving the environment and rural areas; Axis 3: Improving the quality of life in rural areas and diversification of the rural economy; Axis 4: LEADER. From the point of view of improving the competitiveness of the agricultural sector and improving the effectiveness of agricultural holdings, major importance is attached to farm modernisation measures (over 45,200 projects for a total of ca. PLN 7,105 million), early retirement pensions (20,100 projects for a total of PLN 1,240 million), facilitation of business start-up by young farmers (23,100 projects for a total of ca. PLN 1,594 million), improvements to processing in the food industry (932 projects for a total of ca. PLN 1,906 million) or in improving the standard of living within rural areas, including the support for implementation of basic services for the economy and rural population (1,800 projects worth PLN 4,061 million), diversification of sources of income of an agricultural holding (11,700 projects for a total of ca. PLN 1,023 million) and establishment of micro-enterprises (6,700 projects worth ca. PLN 1,107 million)⁷. Besides, the RDP 2007-2013 contained the follow-up measures from RDP 2004-2006. These are: early retirement pensions, support to agricultural producer groups, support to semi-subsistence farms, agri-environmental programmes, afforestation of agricultural land.

⁷ The presented data refer to programme implementation according to the data at the end of August 2013.

Figure 9 Breakdown of funds for the implementation of the RDP 2007-2013 by Priority Axes



Source: RDP Operational Programme 2007-2013, the Ministry of Agriculture and Rural Development

The current structural transformations in the Polish agriculture are an effect of multiple factors, both the ones associated with economic cycles, geopolitical ones and the current generation-related changes. Both macro-economic conditions that arise from the presence within EU structures and the presence within the Single Market and State aid programmes addressed to the agri-food sector under the CAP contribute to it. The process of concentration of production and concentration of land takes place first of all by way of market sales of agricultural land [Sikorska, 2013]. To a much lesser degree, the transformations result from the transfer of agricultural holdings within a family because in such a case the land is perceived not as a form of production, but as assets that is transferred a generation by generation. The inflow of EU funds from the EU was an important incentive that triggered structural changes and hence the improvement of the effectiveness of farming and the competitiveness of agriculture. However, the public policy instruments currently in use, which were supposed to promote convergence of the regions, are not able to prevent their polarisation. Even an increasing economic and spatial polarisation can be seen. Economic disparities between commercial farms with strong links to the market increase and the farms that produce mainly for self-supply and are social in their nature. The development distance between rich regions or the ones becoming richer and the poor regions clearly gets larger. Rich areas develop due to the use of their potential and economic situation whereas the poor areas are stuck in stagnation [Rosner, 2011].

CONCLUSIONS

When searching for the paths towards modernisation of the Polish agriculture and increase in the income of the population working in that sector, the improvement of agrarian structure is always mentioned. In the Polish agriculture, just like in the Southern Europe countries and unlike in the Northern and Western Europe countries, there are mostly small farms (up to 10 ha of farmland). The number of agricultural holdings is higher only in the Romanian and Italian agriculture. Large farms with an area of over 50 ha of farmland represent only 1.7% (of the total of holdings that are involved in agricultural activities), and 30% of farmland is concentrated in them. In the western and northern countries of the Community, as well as in Hungary, Slovakia and in the Czech Republic, 75-90% of the total farmland is concentrated in the largest farms. The gap between an average farm area in Poland and an average farm area in the EU decreases.

A weakness of the Polish agriculture consists in the concentration of the most of the production potential (resources) in the agricultural holdings that produce on a small scale. The measures for the acceleration of structural transformations are justified mainly by the increase in competitiveness of the food sector on the domestic and international market, reasonable use of factors of production and the improvement in the living conditions of the population that is maintained from the work in family farms. The faultiness of agricultural structures often translates into mistakes in the applied production technologies, and both areas entail low productivity of the factors of production. The micro-economic weakness of most agricultural holdings determines the sectoral weakness of the Polish agriculture on the European Single Market.

The percentage of the contemporary agricultural sector in the generation of the final food product and the generation of the GDP shows a downward trend. Yet, the contribution of non-agricultural elements of food economy increases in that account. The Engel's law, which states that as consumers' income rises, the proportion of income spent on food (in particular the processed one) falls, although nominal value of the expenditure on food rises, has clearly revealed in the Polish food economy, just like in the entire global economy.

When analysing the competitiveness through the prism of stabilisation of agricultural markets and modernisation of the agricultural sector, it should be stated that, after Poland's accession to the EU, significant changes took place that were connected with the previous trend for socialisation of the budget expenditure for growth of expenditure earmarked for financing of structural changes in the agriculture and within rural areas. Among other things due to them, the number of farms in 2002-2012 decreased within area groups in which there are difficulties in achieving a parity income level and development opportunities. An increase in the number of farms took place in area groups in which there was appropriate income guarantees proper performance of the consumption function (parity income level) and the production function (implementation of net investments). The still present faultiness of agricultural structures and the necessity to make adjustments in the relations between the factors of production is a proof that it is necessary to introduce changes consisting in continuing the reduction of labour resources in the agriculture and modernisation of fixed assets.

The CAP instruments covering Poland resulted in doubling the actual income of farmers, which improved their economic situation and increased the opportunities to finance the current expenditure and to implement modernisation investments. However, the agricultural sector needs further transformations in the field of agrarian and production structures, and the EU's CAP should be an important stimulant thereof. After the accession, a considerable production and economic progress was made, but its competitiveness does not represent a strong foundation of international competitiveness. In the Polish exports on the European Single Market there are mostly higher processed products (which results from labour costs and processing fees in the Polish food sector) and labour-intensive products. Because of cheap labour force, the agricultural sector has an advantage in labour-intensive production areas, which is in accordance with the Heckscher–Ohlin theorem. Therefore, Poland should obtain competitive advantages in exports in the area of agri-food products such as fruit, vegetables, meat, meat offal and processed meat.

The positive impact of the EU agricultural policy on the shape of the domestic policy on rural areas is expressed in the increasing importance of environmental matters, protection and conservation of natural resources, the valuable habitat of which is represented by rural areas. The environmental awareness of farmers increases, and they started to be referred to as “the guardians of nature and landscape”. More and more often (in the financial dimension – State aid programmes; in the social dimension – the environmental awareness), their roles in the preservation, protection and care of natural resources (public goods) is appreciated. Despite

substantial funds from the EU that are used by the Polish agriculture and the Polish rural areas both indirectly and directly, the socio-economic development level of rural areas was equalised neither in urban-rural terms (the centre and the peripheries), nor in the regional terms.

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The hydroponic system – a way to get vegetable crops through performance methods

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ABSTRACT

In the current crisis, in order to cope the situation, many of us are trying to refocus into other more profitable fields. A reliable source of income is getting vegetables on the nutritious substrate, or hydroponics system, a system in which vegetables do not need soil, these are developing successfully in environments loaded with nutrients such as water, sand or sawdust. The techniques to start a hydroponic culture must be performed by specialized growers.

Keywords: *Hydroponics cultures, tomatoes, nutrients substances, vegetable care.*

INTRODUCTION

The lately socio-economic conditions of our country, imposed by the economic downturn, a new orientation favored work for most people. For various reasons, some people were forced to abandon their core and embrace another profession.

The need to support a family, and later a business can choose farming as a way of life. Thus, under stress conditions, man gives up many pleasures, but not food. So they set vegetables microfarms. But man is a major consumer of fruits and vegetables, so by modern means, can have throughout the year.

The greater is the demand of these products onto the market so large are their imports. We Romanians, eat vegetables imported from abroad. Few know that many of these countries import vegetables from Romania, which then processes them.

We know that Romania has a great intellectual capital, and a "bio" also, the later referring to the almost inexhaustible source of biological material as a nutrient substrate for many cultures. Vegetable growing in parallel with the development of agriculture has undergone a number of changes and gradually came to be organized on other scientific principles in order to supply the population with fresh throughout the year. It went from extensive to intensive one on account enhancing product quality with respect to customer requirements.

The organization of micro vegetables, are the two very important strategies: production management and the marketing. There are two distinct but mutually influence each other to be successful in the chosen business.

Production management involves choosing a location for the activity, in a scientific knowledge of the technological process and selection of staff motivated in business success and willing performance. It is not enough to produce vegetables; we must know them and sell. Otherwise, the goods remain in stock, and finally we will have to come to see that business doesn't work.

A reliable source of income is getting nutritious vegetable substrate or in hydroponic system. Hydroponics is growing plants without the soil. There are countless types of hydroponic systems; some using only water, but most are composed of an inert growing medium, such as sand or gravel, to support plants. Hydroponic growers use many types of growing media, including gravel, marble, sand, rubber, foam, mineral wool, wood, slate, peat and sphagnum moss, plastic beads, polystyrene, crushed brick or vinyl to list some.

Many hydroponic systems intended for farming marijuana include containers, growing media, nutrients formulas and sometimes include an irrigation system based on pumps and timers. Manufacturers claim that they have "magic formula" that will increase the plant bigger and stronger.

There are four key points that apply universally, in hydroponics and they are more important than any particular ratio of nitrogen and phosphorus or something, no matter the type of hydroponic system chosen.

The most important criterion is pH. The pH depends on the water and the nutrient solution is used to dissolve in water. The pH of the result will determine which nutrients are absorbed and how easy it will be absorbed by the plants of each substance.

The second criterion is the aeration. An environment that is too hard (consisting only of organic matter, such as manure), or a system that is constantly saturated with stagnant water will suffocate the roots. Roots need oxygen and in the absence of air (oxygen) will actually choke or will drown and plant health and development will suffer. Submerged roots are difficult rehabilitated without affecting the smooth development of the plant, the culture must be dry and decongestants and the plant may need to be transplanted into fresh medium. If one uses any of the above-mentioned culture medium, when such a problem will not occur as long as the plants will not be in water uncirculated.

The third criterion is the accumulation of salts. Excess accumulation of salts causes many "signs of weakness" and can lead to toxic conditions. To fix the problem the container should be flooded, repeatedly with pure water, hoping that will be drained of toxic salts medium. Reuse containers for the second crop is discouraged due to accumulation of salts. It always starts with a new medium that can dry quickly, such as gravel, sand or plastic beads. Even these environments must be rinsed several times with clean water before reuse. Hydroponic mixes are cheap and easy.

The fourth and last criterion is the ratio between nitrogen and potassium. The duration and intensity of light affects the absorption and utilization of both elements. Under a high intensity light like a greenhouse in summer, plants need double the amount of nitrogen to the potassium. In winter, under low light intensity (illumination systems based on tubes) plants require approximately equal amounts of nitrogen and potassium.

The word hydroponics technically means working water, stemming from the Latin words "hydro" meaning water, and "ponos" meaning labor. Many different civilizations from the beginning of time have relied on hydroponics for growing plants, such as the early Mexican and Egyptian civilizations. However, recently growing hydroponically has grown in popularity and use across many different markets.

There are six different types of hydroponic growing systems, they are: Aeroponic, Drip, Ebb and Flow, N.F.T, Water Culture and Wick.

- Aeroponic System: One of the most high tech growing systems;
- Drip System: The most widely used type of hydroponic systems;
- Ebb and Flow System: The system can be modified in many ways;
- N.F.T.: Nutrient Film Technique System - most commonly thought of;
- Water Culture System: A very simple to use hydroponic system;
- Wick System: The simplest of all hydroponic systems.

Plants that are not traditionally grown in a climate would be possible to grow using a controlled environment system like hydroponics. NASA has also looked to utilize hydroponics in the space program. Ray Wheeler, plant physiologist at Kennedy Space Center's Space Life Science Lab, believes that hydroponics will create advances within space travel. He terms this as a bio regenerative life support system.

THE ADVANTAGES OF USING HYDROPONICS SYSTEM

- ✓ No soil is needed for hydroponics;
- ✓ The water stays in the system and can be reused - thus, a lower water requirement;
- ✓ It is possible to control the nutrition levels in their entirety - thus, lower nutrition requirements;
- ✓ No nutrition pollution is released into the environment because of the controlled system;
- ✓ Stable and high yields;
- ✓ Pests and diseases are easier to get rid of than in soil because of the container's mobility;
- ✓ Ease of harvesting;
- ✓ No pesticide damage;
- ✓ Plants grow healthier;
- ✓ It is better for consumption.

Today, hydroponics is an established branch of agronomy. Progress has been rapid, and results obtained in various countries have proved it to be thoroughly practical and to have very definite advantages over conventional methods of horticulture.

There are two chief merits of the soil-less cultivation of plants. First, hydroponics may potentially produce much higher crop yields. Also, hydroponics can be used in places where in-ground agriculture or gardening are not possible.

THE DISADVANTAGES OF USING HYDROPONICS SYSTEM

Without soil as a buffer, any failure to the hydroponic system leads to rapid plant death. Other disadvantages include pathogen attacks such as damp-off due to *Verticillium* wilt caused by the high moisture levels associated with hydroponics and over watering of soil based plants. Also, many hydroponic plants require different fertilizers and containment systems.

HYDROPONIC SYSTEMS - ADVANCEMENTS

With pest problems reduced, and nutrients constantly fed to the roots, productivity in hydroponics is high, although plant growth can be limited by the low levels of carbon dioxide in the atmosphere, or limited light exposure. To increase yield further, some sealed greenhouses inject carbon dioxide into their environment to help growth (CO₂ enrichment), add lights to lengthen the day, or control vegetative growth.

Having some data of a standard unit of Romania greenhouses, we could make a calculation of an investment in a hydroponic system for growing tomatoes, obtained in 2012.

Thereby, the area was 90 ha and the substrate nutrient acquisition costs "Grodan Rockwool" were about 12000 Euro / ha. For a glass-covered greenhouse ha and a boiler necessary to ensure the heating in winter, the total costs have risen to an amount around 1200 000Euro. Seedling requirements for tomatoes culture amounted to approx. 27 - 30000plante/ha, with an average price of 0.8 Euro / thread, respectively 232000Euro/ha.

The total costs for 90ha in 2012 have been near 1,008,208 Euro and the income from the exploitation vegetables were about 99 Euro 1020, being registered a gross profit of 120 862 Euro. As a conclusion we can say that the conditions in Romania, were the hydroponics system is not very well developed, obtaining a 450t/ha production of tomato (culture substrate) is a good annual production.

CONCLUSION

The fundamental component in hydroponic system is represented by the nutrient solution. The control of nutrient solution concentration, referred as electrical conductivity or osmotic pressure, allows the culture of a great diversity of species. Moreover, the accurate control of nutrient supply to the plant represents the main advantage of soilless culture. Additionally, the regulation of pH, root temperature among others factors, leads to increased yield and quality. Below are some pictures of obtaining vegetable crops in hydroponic system.



Hydroponics is a versatile technology; appropriate for both village and backyard production systems to high-tech space stations. Hydroponic technology can be an efficient mean for food production from extreme environmental ecosystems such as deserts, mountainous regions, or arctic communities. In highly populated areas, hydroponics can provide locally grown high-value crops such as leafy vegetables or cut flowers.

The future use of controlled environment agriculture and hydroponics must be cost-competitive with those of opened filed agriculture. Therefore, associated technologies such as artificial lighting, plastics, and new cultivars with better biotic and abiotic resistance will increase crop yields and reduce unit costs of production.

Prospects for hydroponics may improve if governments design public policies supporting subsidies for such production systems. Besides economic benefits, hydroponics implies conservation of water, cogeneration of energy, income-producing employment for, reducing the impact on welfare rolls and improving the quality of life.

Nowadays, development and use of hydroponics has enhanced the economic well-being of many communities both in developing and developed countries.

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Interdependencies regarding the evolution of greenhouse gas emissions and agricultural activities of Romania

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ABSTRACT

This work aims to analyse the interdependence of the activities that lead to the increase of gas emissions afferent to agriculture lands, and as well to identify some characteristics regarding the years within the analysed period. It has been noticed that the biggest quantities of greenhouse gas generated by the main analysed agricultural food groups (cereals, leguminous plants, oleaginous plants) were produced in 2007. In order to develop the agro-food sector in Romania, measures to reduce the greenhouse gas emissions should be taken.

Keywords: *agriculture, GHG, interdependent, sustainable development.*

INTRODUCTION

Agriculture is, traditionally, an important branch of the Romanian economy, being supported both by the population number working in the sector and the contribution to the gross domestic product.

At the same time, within the National Development Plan for 2007-2013 it is shown that the analysis of the rural area offers a clear image of the investment level from the following sectors: agriculture, forestry and piscatorial one, all characterized by poor technical equipment for farmers, mainly because of the low level income and difficulties encountered in accessing bank loans.'

From the 23.8 million ha which represents the Romanian territory, the agricultural area of the country is 14.7mil. Ha (61.7 %), of which 9.38 mil. Ha represents arable land.

Romania finds itself on the 6th position in Europe in terms of used agriculture area (after France, Spain, Germany, Great Britain and Poland) and on the 5th position in terms of arable area (after France, Spain, Germany and Poland).

The agriculture real estate's repairs done according to the way it is used indicates that the arable land covers circa 64% of the agriculture area, a third part of the area, 4.8 mil Ha, is covered by pasture and hayfield, whereas the vineyards and orchards represents circa 3%.

The rapport between the arable area of the country and the inhabitants number indicates that each inhabitant shares circa 0.42 Ha arable land, whose value is superior to most European countries and almost double with regard to European average, which is only 0.236 Ha/inhabitant (Romanian Ministry of Agriculture and Rural Development).

The cereals represent the main food group, grown on almost two thirds of the cultivated area. Although within the last years the cereal production in Romania was highly reduced because of the unfavorable climate conditions (excessive drought), Romania is, in general, a big cereal producer.

Table no. 1. **Area and total production on agricultural culture categories**

Specification	Area –thousands ha					Total Production – thousands tones				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Total Cereal	5129.2	5210.7	5282.4	5066.4	5224.7	7814.8	16826.4	14873	16946	20842
Wheat, rye	1987.1	2123.3	2164.3	2060.5	1959.4	3065.0	7212.4	5235.5	5727.4	7145.1
Barley, two-row barley	363.8	394.0	517.5	506.1	419.5	531.4	1209.4	1182.1	1262.7	1329.0
Oat	208.7	200.4	202.7	194.3	185.3	251.6	382.0	295.8	331.1	375.9
Corn kernel	2524.7	2441.5	2338.8	2289.9	2589.7	3853.9	7849.1	7973.3	9085.2	11717.6
Rice	8.4	9.9	12.9	13.1	12.7	27.5	48.9	72.5	89.6	65.3
Sun Flower	835.9	813.9	766.1	823.6	995.0	546.9	1170.0	1098	1454.8	1789.3
Rape oil	364.9	365	419.9	579.5	392.7	631.5	673.0	559.6	920.6	739.0
Soya	133.2	49.9	48.8	64.1	72.1	136.1	90.6	84.3	143.3	142.6
Sugar Beet	28.7	20.4	21.3	24.4	18.8	748.8	706.7	816.8	792.5	660.5
Potatoes	268.1	255.3	255.2	243.9	242.6	3712.4	3649.0	4004	3333.8	4076.0

Source: processing MARD data and Annual Statistics Report 2009 - 2012.

By analyzing the table no.1 it can be seen that in the period 2007 – 2011, both the area cultivated with the main food groups and the obtained production have been growing. The report will analyze the interdependences between the food groups with the heaviest weight within the value of agricultural production in Romania and greenhouse gas emissions.

MINING DATA ANALYSIS

With the view to establish the interdependences between the GHG emissions and the agricultural activities, the following things were included: Culture production – Peas, Beans, Soya; Sugar Beet, Fodder Roots; other leguminous plants; Industrial cultures for fibers (linen, hemp); Sun flower; Rape; Other oleaginous plants; Other industrial cultures; Tomatoes; Onion; Garlic; Cabbage; Pepper; Watermelons; Melons; Other vegetables; yearly Green Fodder; perennial green fodder (alfalfa-trefoil). All of them are expressed in thousands tones/year (ASE represents agricultural sector emissions).

In order to identify the interdependences between the activities, Weka programme will be applied – software dedicated to analyze the type of data mining for data. This can be found at [w-WEKA11] and consists of a platform which has used more algorithms while maintaining an intuitive interface.

The analysis has two stages:

1. Identifying the most important activities and grouping the years accordingly (the components of a group (years) will have similar data).
2. Identifying a set of existing rules within the data.
 - a) **Identifying the most important activities and grouping the years accordingly (the components of a group (years) will have similar data).**

The algorithm used to identify the most important attributions is Infi Gain, which gives a score to each attribute which has a class role. This one, together with the Ranker method (method that gives a score to each attribute relying on individual assessment) offers a list of

attributions in the order of the given scores. The results are (Figure 6.13) (the higher the value, the bigger the information inflow within the analysis for a specific attribute):

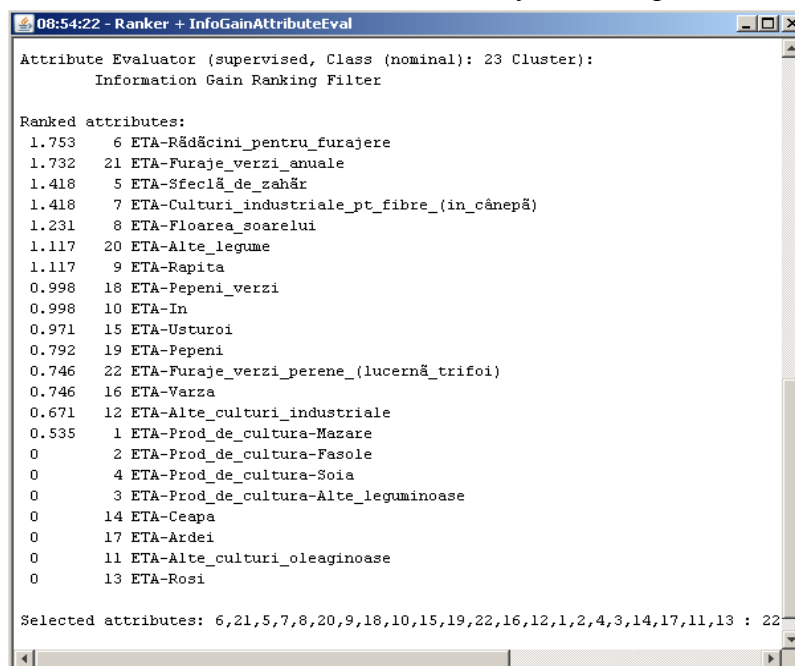


Figure no. 1. Given scores to the agricultural activities

Table:

Ranked attributes:

- 6 ASE - Fodder_Roots
- 21 ASE – Yearly_Green_Fodder
- 5 ASE – Sugar_Beet
- 7 ASE – Industrial_cultures_for_fibres_(linen_hemp)
- 8 ASE – Sun_flower
- 20 ASE – Other_leguminous_plants
- 9 ASE – Rape
- 18 ASE – Watermelons
- 10 ASE – Linen
- 15 ASE – Garlic
- 19 ASE – Melons
- 22 ASE – Perennial_green_fodder (alfalfa_trefoil)
- 16 ASE – Cabbage
- 12 ASE – Other_industrial_cultures
- 1 ASE – culture_production_Peas
- 2 ASE – culture_production_Beans
- 4 ASE – culture_production_Soya
- 3 ASE – culture_production_Other_leguminous_plants
- 14 ASE – Onion
- 17 ASE – Pepper
- 11 ASE – Oher_oleaginous_plants
- 13 ASE – Tomatoes

The years in which the activities took place can be grouped in four categories, each of them with certain characteristics regarding the values of the most representative instances. The

algorithm used to identify the categories is k-Means. The principal of the algorithm is the following [W-MEAN08]:

- it is initiated the centers (centroids) $z_1, \dots, z_k \in R^d$ and the cluster number C_1, \dots, C_k ;
- it is calculated the distance from the centroids to all the instances from the data set;
- an instance is allocated to a cluster C_i if the distance from it up to the centroid z_i is smaller than those to the other centroids;
- the algorithm is closed when, from one period to another, the instances do not change the cluster to which they were allocated.

The results are presented within the Table no.2.

Table no. 2. **Results after applying the algorithm**

Attribute denomination	Cluster 0	Cluster 1	Cluster 2	Cluster 3
An	2007	1989	1991	2003
ASE-Cultivated production-Peas	17.7	98	49	23.5
ASE-Cultivated production-Beens	18	143	57	36.7
ASE-Cultivated production-Other leguminous plants	0.5	13	5	0.4
ASE- Cultivated production -Soya	136.1	303	141	224.9
ASE-Sugar beet	748.8	6771	3277	764.5
ASE-Roots for fodders	595	4094	2575	985.6
ASE-Industrial cultures for fibres (linen hemp)	0.6	241	125	3.9
ASE-Sun flower	546.9	655	556	1506.4
ASE-Rape	361.5	18	10	8.1
ASE-Linen	0.4	48	28	1.5
ASE-Other oleaginous plants cultures	1.7	7	3	19.5
ASE-Other industrial cultures	9.6	90	42	20.4
ASE-Tomatoes	640.8	1011	813	818.9
ASE-Onions	325	412	225	350.4
ASE-Garlic	49.9	46	30	76.5
ASE-Cabbage	893.2	877	551	1019.2
ASE-Peppers	184.9	253	182	249.1
ASE-Watermelons	408	0	0	706.3
ASE-Melons	0	0	0	58.3
ASE-Other vegetables	615	1594	1247	1405.8
ASE- Yearly green fodders	2222.5	15801	14403	4725.3
ASE-Perennial green fodders (alfafa trefoil)	7330.2	18057	12963	12613.9

Source: processing data of WEKA programme

On the basis of the table above, it can be seen that the years can be separated into four categories within the analyzed period. Most emissions are generated as a result of perennial green fodders. All the activities within this cluster have high values of CO₂ emissions and 1989 is the most representative year. At the other end, there is cluster 0 which has the lowest values beside the gas emissions, the representative year being 2007. The distribution of the instances in the cluster is the following:

Clustered Instances

0 5 (24%)

- 1 1 (5%)
- 2 9 (43%)
- 3 6 (29%)

b) Identifying a set of existing rules within the data.

In order to obtain a set of rules, algorithm Part is used, which works based on the 'divide and rule' principle, and builds a decision rule on the basis of each leaf (from a decision tree). By running the algorithm, the following rules were obtained:

PART decision list

1) ASE-Melons <= 41.9 AND

ASE-Watermelons <= 2 AND

Year > 1991: cluster0 (7.0)

2) ASE-Melons <= 41.9 AND

ASE-Culture_production-Other_leguminous_plants <= 0.9: cluster3 (6.0)

3) ASE-Watermelons > 0: cluster2 (5.0)

Number of Rules: 3

Commentary: first rule: If the gas emission resulted from the melon activity is smaller or equal to 41.9 and the gas emission as a result of the watermelon activity is smaller or equal to 2 in any year after 1991, then, the instance (year) is allocated to cluster 0, the one with the lowest values regarding the CO₂ gas emissions. Seven instances follow this rule.

Commentary: second rule: If the gas emissions resulted from the melon activity is smaller or equal to 41.9 and the gas emission resulted from leguminous plants activity is smaller or equal to 0.9, the instance is distributed to cluster 3. There are 6 instances that follow this rule.

CONCLUSIONS AND PROPOSALS

Current environmental risks generated by the degradation of the quality of the environmental factors led, in time, to the necessity to integrate the objectives of the environmental policy within the sectoral policies; as the relation between agriculture and environment is interdependent, assuring the compatibility between the agricultural and the environmental policies is one of the main concern at the international level in the present.

Romania's adherence to European Union has brought new challenges for agriculture, such as managing compatibility differences with regard to the EU. The objectives related to environment tend to become difficult to meet. Even if the financial support systems created within the agricultural policy in order to assure the increase of profitability impose environmental conditions and objectives, most of the time these are not efficient, due to informing gaps, a decreased level of interest for environment protection, or as a result of the administrative barriers, problems already met in the case of the other member states. For example, even if there is pressure to include more requirements regarding the environment protection within the agricultural policy applied by the international organisms and civil societies, eco-conditioning is regarded as a more laborious measure from the administrative point of view. Some member states ask for simplification of the process and specific management requirements. More than that, at the EU level, studies referring to implementation of the agro-ecologic systems suggests that the effectiveness of these could be improved.

Data mining analysis of interdependences of the activities which lead to the increase of the emissions constitute a new approach to the necessary forecasts and scenarios regarding the climate change, constituting also support for the policymaker factors. The development of

ulterior research in the field could include the influence of the policy measures on the changes occurred in the emissions evolution.

Within the analyzed period (1989-2007), it is seen that GHG emissions from agriculture (from the main analyzed food groups) decreased considerably (with circa 70%). For the future period, innovative technologies which can maintain the decreasing trend of GHG emissions from the agricultural activities should be introduced. Awareness-raising actions for farmers regarding the potential risks generated by the GHG emissions for the environment are also necessary.

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The milk market trends in Romania

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ABSTRACT

The dairy market is well developed in Romania, having a high production of milk and products derived from it and increasing values in the last five years. Despite the high production, sales fluctuate being affected by the food safety issues in a negative way and positively by new methods of distribution for milk through automatic dispensers and the intense marketing methods companies practice it in our country. This article aims to analyze the dairy market in Romania making reference to milk production, consumption and price.

Keywords: *milk market, production, consumption, price*

INTRODUCTION

Milk and dairy products market has certain characteristics in Romania, such as uniform demand throughout the year, territorial dispersion of supply, with large regional differences and seasonal fluctuations; highly perishable product, different levels of consumption between urban and rural areas.

The main characteristics of the product chain are:

- Milk production is oscillating, registering significant differences between the quantities delivered during summer and winter, although our country's pastures and natural grasslands hold 32.94 % of the farming land. The demand of milk is generally uniform throughout the year, we can only notice unsatisfied demands during the cold season, when the milk supply is low;
- Traditional milk production areas are generally those of hills and mountains ;
- Consumption and production is not evenly distributed, so, in general, the large urban centers have high consumption ;(Rahoveanu Turek, 2009)
- National production holds a value of 91.72% and represents most of the milk resources available on the market in Romania.

The usable part of the production goes to export and for different uses such as: feed consumption, industrial processing and human consumption. Most of the milk and milk products are for human consumption, representing a rate of 80.17% in terms of total resource value of milk.

Almost all indicators fluctuate, but we can notice a notable downward trend from 2008 to 2011. Exports of milk and milk products have increased every year from 2008 to 2011 showing an increase of 120.13%.

Table no. 1

The food balance for milk and milk products in equivalent of milk 3,5% fat.*Thousands of hl*

	2008	2009	2010	2011
A. Resources	68.304	63.346	59.759	61.270
1. Usable production	64.923	62.195	55.434	56.201
2. Import	3.381	1.151	4.325	5.069
B. Uses	68.304	63.346	59.759	61.270
3. Export	421	646	884	930
4. Domestic deposits for consumption	67.883	62.700	58.875	60.340
5. Intermediary consumption	7.704	7.475	6.696	6.746
Animal feed consumption	6.319	5.725	4.922	4.762
Industrial transformation	1.385	1.750	1.774	1.984
6. Loses	5.464	5.068	4.781	4.902
7. Variation of stock	-46	94	-600	76
8. Available for human consumption	54.761	50.063	47.998	48.616

Source: Supply balance, 2009-2011, Romanian National Institute of Statistics**1. THE OFFER OF MILK AND MILK PRODUCTS**

The offer is part of the market and represents the amount of an economic good that sellers are willing to sell it on the market, based on an equivalent, over a period of time (Manole, 2010). The sector of milk and dairy products is one of the most important sectors for the Romanian agriculture. Milk provides through its complex composition and its nutritional quality, the necessary elements for a complete and balanced diet. For the population it represents a food product indispensable especially for children, the elderly, sick and those who work in toxic environments. Easiness of use of milk and dairy products for preparing meals, constitute a reliable premises for an upward trend in the consumption of milk and dairy products.

Table no. 2 **Cow milk production on the eight regions of Romania***Thousands of tons*

Region	2007	2008	2009	2010	2011
Nord-West	895.000	948.000	788.100	730.000	820.000
Centre	692.000	777.000	666.900	610.000	618.000
Nord-East	1.130.000	1.125.000	1.094.800	927.000	931.000
South-East	540.000	633.000	480.000	417.000	443.000
South Muntenia	785.000	839.000	782.100	547.000	546.000
South-West	507.000	574.000	441.400	356.000	366.000
West	410.000	456.000	363.000	331.000	337.000
Bucharest-Ilfov	38.000	42.000	37.600	26.000	14.000

Source: http://epp.eurostat.ec.europa.eu/portal/page/portal/agriculture/data/main_tables

From the table above we can see that the Nord-West region has the highest production achieved over the five years analyzed, followed by the North-East and lowest production was recorded in Bucharest-Ilfov, followed by Western region.

North-West had the highest production in 2008, amounting to 948 million tons, and the lowest value in 2010, the difference between these periods being 33%.

Production values in each region shows a fluctuating trend during the five years analyzed, all regions showing increases and decreases from 2007 until 2011.

In 2010, milk production was the lowest in all regions.

Table no .3 **Total resources of milk and dairy equivalent for 3,5% fat milk.**

<i>Thousands of hl</i>				
	2008	2009	2010	2011
Total resources	70.777	65.773	62.389	63.300
Initial Stock	2.473	2.427	2.630	2.030
Production	64.923	62.195	55.434	56.201
Import	3.381	1.151	4.325	5.069

Source: Supply Balance, 2009-2011, Romanian National Institute of Statistics

From the total resources of milk, the production has the highest rate with a higher percentage of 90%. During 2008-2010, both total resources and the production of milk experienced a downward trend until 2011 when they started to recover.

Imports of milk decreased in 2009 compared to 2008 with 65.95% in the next year knowing an increase of more than 2.5 times, maintaining and increasing trend until 2011. The amount of imported milk has little value compared to national milk production.

Table no. 4 **Evolution of milk production in the period 2007 – 2011.**

<i>Tons</i>					
	2007	2008	2009	2010	2011
Cow milk collected by processing units.	79.645	81.303	79.257	68.737	63.003
Consumption milk	16.826	16.473	19.130	19.120	20.219
Consumption cream	3.960	4.244	4.407	4.174	4.052
Sour milk	11.448	13.008	13.771	14.040	12.912
Butter	488	556	778	722	651
Cheese –total -	4.603	4.762	5.139	4.753	4.484

Source: <http://www.insse.ro/cms/rw/pages/comunicate/arhivaLapte.ro.do>

Cow milk collected shows fluctuations over the five years analyzed, so we can notice the highest value in the year 2008 and the lowest in 2011, between the two years there a difference of 22.50%.

The drinking milk indicator value remains relatively equal in 2007 and 2008, experiencing after a 16.12% increase from 2008 to 2009, maintaining its value in the coming years, not suffering major changes.

Cream consumption shows an increase from 2007, when it had the lowest value, until 2009 when it reaches the maximum value of the five years analyzed being 7.17% higher. In other years analyzed it maintains its value with small changes, but not more than 5%.

Sour milk indicator increased until 2010, reaching a value of 22.64% higher than in 2007, when it has the lowest value. In 2011 we can notice again a slight decrease.

Butter the lowest in 2007 and highest in 2009 between the two years being a difference of 32.41%. After 2009 it started to drop but not with very significant quantities.

Cheeses increased in the first three analyzed years, followed that in 2010 and 2011 to decline reaching the lowest value recorded in the five years analyzed.

2. THE DEMAND FOR DAIRY PRODUCTS IN ROMANIA

The size of the demand depends mainly on milk price level and on the buyer's income, respectively on the part of income that can be directed towards the purchase of dairy products. Rational behavior of the buyer is reflected by the structure of consumption expenditures (Manole, 2010).

Table 5 Internal consumption of dairy in equivalent of 3,5% fat milk.

	<i>Thousands of hl</i>			
	2008	2009	2010	2011
Internal consumption	67929	62606	59475	60264
Animal feed consumption	6319	5725	4922	4762
Industrial transformation	1385	1750	1774	1984
Available for human consumption	54761	50063	47998	48616
Losses	5464	5068	4781	4902

Source: Supply Balance, 2009-2011, Romanian National Institute of Statistics

Internal consumption of milk and dairy shows a decrease of 8% in 2009 compared to 2008, 6% in 2010 compared to 2009, rising to 1.3% in 2011 compared to 2010. Compared to 2008, in 2011, domestic consumption has decreased by 12%.

Regarding feed consumption, it decreased throughout the period analyzed, so that by the year 2011 compared to 2008 it fell by 25%.

The amount of milk that goes to industrial transformation increased with 26.35% in 2009 compared to 2008, following an increase of 1.37% in 2010 compared to the previous year, and in with 11.83% in 2011 compared to 2010. Compared to 2007, in 2011, the amount of milk to be industrially processed increased by 43.27%.

The amount of milk for human consumption represents 80% of total internal consumption. Compared to 2008, the amount of milk for human consumption has decreased each year with an average of 10%, by 2011 recording a value 12% lower.

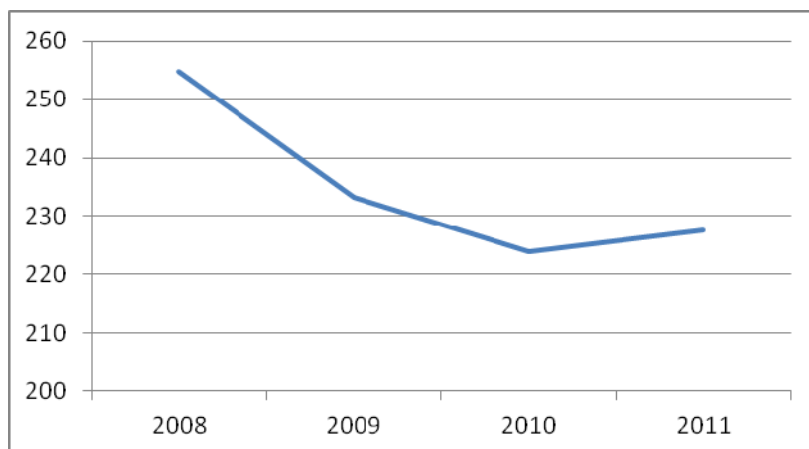
Losses of milk are the 12th part of internal consumption and values decreased until 2010, only which in 2011 they were 2.5% higher.

Table no. 6 Annual average consumption of dairy in equivalent of 3.5% fat milk.

	2008	2009	2010	2011
Liters	254,7	233,2	224,0	227,7
Kilograms	262,3	240,2	230,7	234,5

Source: Supply balance 2009/2011, Romanian National Institute of Statistics

Consumption and demand for milk and dairy products are the trigger element for the high traffic of these products. For the entire agricultural sector, milk production is dominated by farms that produce only for their own consumption and sell surplus of milk to collection centers or through the traditional markets.

Evolution of average annual consumption of milk and dairy products during 2008-2011 (liter)

Source: Supply Balance 2009/2011, Romanian National Institute of Statistics

Average annual consumption of milk and dairy decreased in 2009 and 2010 compared to 2008 with an average of 5%, recording in the following year a slight increase of 1.6%. In 2011 the average consumption decreased by 11.60% over the reference period.

3. THE PRICE OF MILK AND MILK PRODUCTS

Integration of farmers in dairy chain requires the knowledge of certain issues, namely: how to produce quality milk, to deliver it in large quantities and to fit into delimited quantities by quotas. The result of these sides is synthesized by the price that dairy farmer receives. Pricing is based on internal and external factors that priority is low cost, market conditions, raw material and material consumption, labor, general expenses, transportation, distribution, etc.(Rahoveanu Turek, 2009).

Table no.7 The average price of cow milk

Euro/100kg

2007	2008	2009	2010	2011
22,71	29,93	21,23	22,32	25,48

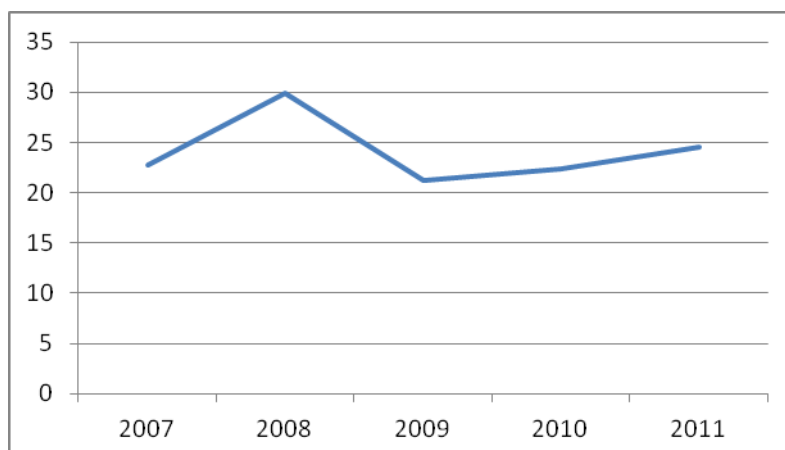
Source: http://www.insse.ro/cms/files/Anuar%20statistic/10/10%20Preturi_ro.pdf

The price is determined by supply and demand of cow milk on the market in a given period of time and is influenced by a number of factors such as the price of milk from sheep and goats, the price of other dairy products, time period and so on.

Chart no. 2

Evolution of average price for cow milk during 2007-2011

(euro/100kg)



Source: http://www.insse.ro/cms/files/Anuar%20statistic/10/10%20Preturi_ro.pdf

Over the five years analyzed, the average price for cow milk has increased from 2007 until 2008 with 31.79%, following a period in which decreased by 30% in 2009 over the previous year. In the next two years, the average price of milk increased slightly to € 25.48 Euro/ Kg, respectively with 20% in 2011 compared to 2009.

Table no.8 The consumption price indicator, for major dairy groups

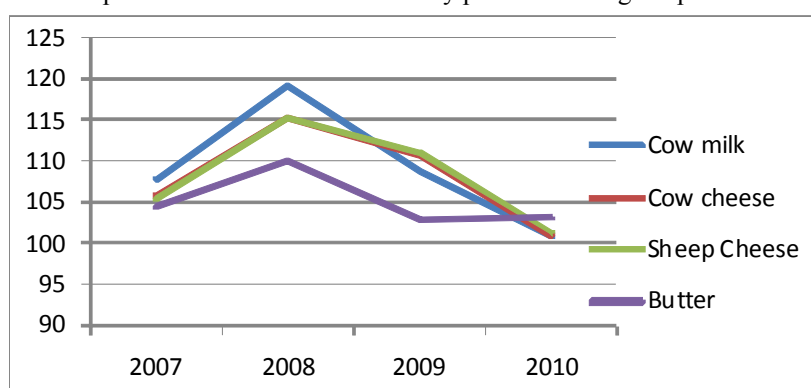
	2007	2008	2009	2010
Cow milk	107,75	118,99	108,78	100,77
Cottage cheese	105,73	115,34	110,52	100,99
Goat cheese	105,35	115,14	111,02	101,37
Butter	104,39	109,86	102,77	103,04

Source: http://www.insse.ro/cms/files/Anuar%20statistic/10/10%20Preturi_ro.pdf

The consumption price indicator for each category of dairy products show their evolution in a certain period of time, their change is determined by the supply, demand and other factors affecting the price of a product.

Chart no. 3

Evolution of price indicator for the main dairy products during the period 2007-2010



Source: http://www.insse.ro/cms/files/Anuar%20statistic/10/10%20Preturi_ro.pdf

The price for consumption indicator began to increase in 2007 for all dairy products, reaching the maximum value in 2008. The following year, price indices decreased by approximately 10% in all categories of dairy products in 2009 compared to 2008, maintaining a downward trend with a value almost equal to that of last year, so that from 2008 to 2010 price indices decreased by approximately 20% for the above dairy product categories.

CONCLUSIONS

According to the analysis of data we have seen that the milk market was seriously affected by the economic crisis with shown symptoms in our country since 2009. Since this year the majority of the milk market indicators began showing a slight decrease until 2011 when they started to recover.

Dairy products are consumed by people of all ages, from children to the elderly. These products are used in various forms such as fresh milk, yogurt, cheese and other products. The most frequently consumed raw milk, plain yogurt or fruit, buttermilk, Sana and cheese.

Women are easily influenced by the intense marketing that the dairy companies approach. They choose to purchase a dairy product that is advertised just for testing it, these advertisements stimulate their curiosity and interest in products.

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Environmental cost-benefit analysis on a wind farm

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ABSTRACT

Romania is one of the most attractive countries, in terms of investment in green energy, and this is due both to the green energy potential and to green energy system promotion based on green certificates. This study presents the results of an environmental cost-benefit analysis that was made on a wind farm example. Forecasting costs and revenues was performed for a period of 23 years and relied on the use of inflation rate for obtaining the discount rate. The need of using renewable energy sources requires cost-benefit analysis in this area, to show all the impacts and especially the profitability of a wind park in order to attract more investors in Romania.

Keywords: *environmental cost-benefit analysis, risk and sensitivity analysis, Romania, the profitability of green energy production, wind farm.*

INTRODUCTION

The monetary analysis of socio-environmental costs and benefits is still a challenge, even though, in the last century, studies have showed that this analysis can be feasible and that the intangible goods, such as air pollution, noise pollution, can be measured.(Johansson,1993; Hanley & Spash, 1993; Quah & Toh, 2012) Thus, the developed countries are debating the usefulness of this technique and more often are applying forms of the improved cost-benefit analysis, as a result of increased challenges appeared in the area of social economy, climate change, sustainable development and global environmental policies. The major challenge of applying this technique is precisely the difficulty of assigning a monetary value for the externalities (positive, if are assigned the benefits, or negative, that are costs in the moment of assessment).(Johansson,1993) When is not possible its achievement, are being used other additional methods, such as multicriteria analysis.

Impact assessment of an investment project or a policy presents five different ways of approach, namely: assessment to choose, assessment to manage, assessment to justify, assessment to learn and assessment to motivate.(Martini & Sisti,2007; Polin,2012) So, the cost-benefit analysis is a tool used for choosing.

According to experts in the field (Johansson,1993; Quah & Toh,2012; Momigliano & Nuti, 2001), cost-benefit analysis (CBA) is a tool in studying the impact of an investment project or a policy by evaluating and comparing the economic, social and environmental costs and benefits under several design options, which contribute directly or indirectly to the growth of social welfare. In order to be accepted the investment projects, the cost-benefit analysis is defined by the existence of the following equation:

Net Benefit = Total benefits - Total costs > 0.

Cost-benefit analysis is increasingly used to evaluate projects and policies that affect natural capital and, as well as, to select those projects that maximizes the net benefit as a result of

services brought to the society.(Carpenter, Mooney & et al,2009) It should be noted that the analysis requires the assumption of a number of hypotheses, of complicated calculations and, finally, careful and objective judgment of the analyst.(Cellini & Kee,2010)

The question that should be put before using an environmental cost-benefit analysis is whether this technique really is effective and applicable in today's reality. Some experts(Hahn & Sunstain,2002; Ackerman, Heinzerling, et al.,2005) believe that in fact this analysis is unreliable because is difficult to use it in a neutral manner, that involves an objective assessment of socio-environmental costs and benefits and a transparent evaluation, regardless of the result. If we think further, we agree with the fact that the cost-benefit analysis could not fully consider the multiple dimensions of human welfare, the complexity of ecosystems and the implications of space-time framing(Wegner & Pascual,2011), but also we think that the point of such an analysis is to find the best solution from the existing ones.

In Romania, the investment projects have to have, besides other studies, also a cost-benefit analysis in order to obtain European funding. An existing guide of such an analysis is presented by the European Commission (2008) and an actual exercise-template is presented by Ilie Florin (<http://www.metodologie.ro/analizacostbeneficiu.htm>). This template is very simplistic and must be completed a lot in the area of environment and social rate of discount.

We chose to do an environmental cost-benefit analysis in the field of wind energy because of Romanian's potential and because of the fast growth of wind energy market after 2011, when has been stabilized the Romanian legislation. According to the Energy Strategy of Romania for 2007-2020, updated for 2011-2020, Romania's wind potential is 23,000 GWh, which means an economic equivalent of 1.978 million toe, and the wind turbines have a capacity of up to 14,000 MW(Ministry of Economy, 2007). Until 2012, many wind farm investments were made in Dobrogea (TPA Horwath & Schoenherr,2011), but there is also potential in the regions of Moldova and Banat according to the Romanian wind map. In what concerns the promotion system of wind energy, according to the law 220/2008 (2010), the wind power producers were assigned two green certificates until 2017 and from 2018 one green certificate for each 1 MWh produced and delivered by the producers of electricity from wind energy, which are tradable on the green certificates market in the range of 27-55 euro/MW. Although the number of green certificates has declined since July 2013 by the enactment of the Emergency Ordinance no. 57/2013, the analysis was performed according to the 220/2008 law, republished in 2010.

The objectives of this study were: to determinate what are the economical, social and ecological impacts of a wind farm in Romania and to perform an environmental cost-benefit analysis, taking into consideration the green certificate promotion system.

We chose this topic due to the increasing need to attract investment in wind energy sector, for ensuring energy security and for achieving the objectives in the field, assumed at European and global level. We believe that the expected results will conclude that the net benefit of the project will be positive and so on we will encourage the investments in wind energy projects, although the initial investment costs are huge.

METHODOLOGY

This study is using the ex-ante cost-benefit analysis to assess the economic, social and environment impacts of a wind farm on the local and national community and biodiversity. First, we have identified these impacts, than we have made its monetary assessment and in the end we applied the steps of the cost-benefit analysis. According to the Guide for developing cost-benefit analysis of investment projects, for the achievement of a viable and effective cost-benefit analysis there are certain stages of organizing the evaluation (Comisia Europeană, 2008), namely:

1. General presentation of the project, which involves: identifying and defining objectives, determining socio-economic and environmental benefits and costs of implementing the project and also presenting the ex-ante evaluation advantages of the investment's impact.
2. Options analysis, which involves establishing the alternatives that are intended to be analyzed and the feasibility analysis. Several alternatives can be considered, namely: the situation with the project, without the project and one that involves the completion of a part of the project. In this moment, economically, the optimum distribution of resources is very important. In the case study of this paper will make a comparison between the alternative with project and alternative without project. With regard to the feasibility analysis, this is complying with legal, economic, technological, environmental constraints.
3. Financial analysis, which aims to determine the economic outcome at market prices, ensuring financial balance between needs and funding, adequate financial coverage over the project life and even ensuring the achievement of the non-financial objectives. For projects with high environmental impact the choice of the discount rate and of the time horizon is particularly important because it can lead to very different assessments of profitability.
4. The economic analysis, which aims to determine the project's contribution to social wellbeing. In the end, it analyzes the calculated economic performance indicators.
5. Other evaluation criteria, which complements cost-benefit analysis. Here should get carrying out an analysis or multi-criteria environmental impact study or an economic impact analysis.
6. Sensitivity analysis and risk analysis, which involves finding those critical variables that have the greatest impact on the financial and economic performance of the project and analyze all forms of risk and also describe how to prevent them. In order to determine the risk, may be used the Monte Carlo method which can be easily used due to the existence of a software.
7. Submission of the results, which implies the delivery of the conclusions and proposals. At this stage, is determined the best solution of the project. In addition, it will also present the analysis limits, ie environmental and social benefits and cost, which could not be monetized.

We consider that structuring as clear as possible the working methodology and establishing as clear as possible the assumptions will help the investor to reduce working hours and performing this analysis with an accuracy as high as possible.

The results were obtained by using computer programs as: Google Earth, WindPRO, Global Mapper, GIS. The gathered data came from the National Energy Regulatory Authority, the National Institute of Statistics of Romania, and from other national and international databases. Also, we applied a personnel interview of the SC EPC Consultanță de Mediu SRL 's employees about the renewable energy engineering field.

For a decision on the achievement or not of the project it had to be calculated a number of financial indicators (Cellini & Kee, 2010; Pertile, 2012):

a) *Financial internal rate of return (FRR) / Economical internal rate of return (ERR):*

$$FRR/ERR = \frac{B_0 - C_0}{(1+r^*)^0} + \frac{B_1 - C_1}{(1+r^*)^1} + \frac{B_2 - C_2}{(1+r^*)^2} + \dots + \frac{B_n - C_n}{(1+r^*)^n},$$

where n represents the number of years and r^* represents the discount rate.

FRR/ERR must be higher than the minimum 5% rate imposed by the European Commission, through the methodology established by 28/2008 Government Decision. In addition to this condition, in order to make a decision on the acceptance or not of the project they must be correlated with the net present value. The project is accepted when $FRR / ERR > 5.5\%$ if and only if $NPV > 0$.

b) *Financial net present value (FNPV) / Economical net present value (ENPV)*

$$FNPV/ENPV = \frac{B_0 - C_0}{(1+r)^0} + \frac{B_1 - C_1}{(1+r)^1} + \frac{B_2 - C_2}{(1+r)^2} + \dots + \frac{B_n - C_n}{(1+r)^n},$$

where n represents the number of years and r represents the rate based on which is calculated the discount rate. The project will be accepted if $NPV > 0$. Note that this indicator is influenced by subjective estimate of the discount rate. This is calculated as follows:

$$v_t = \frac{1}{(1+r)^t}, \text{ where } v_t \text{ is the discount rate.}$$

RESULTS

The wind farm on which it was done the cost-benefit analysis consists of 10 Gamesa G90 turbine type of 2MW, with a height of 78m. Total energy production of the park will be 20 MW and the annual estimated production without its own consumption will be: 365,25 days/year * 24h/day * 30% * 20 MW * 90% = 47336 MWh/year.(Zaharia,2013)

Forecasting the costs and revenue of the park was made for a period of 23 years because the average lifespan of these types of projects is 20-25 years. The assumptions made to do this analysis were:

- The company that invests has its own capital of 10 million euro and contracts a loan from Unicredit Company to cover the rest of the amount needed for the project (ie 19.502 million euro), which will enter into the current account in 2015 (80% of total amount) and 2016 (20%);
- In the tenth year will be carried out a general planned maintenance facility, which has a cost of 1.2 million euro and in the fifteenth year will be done a major repair, which involves a cost of 2.1 million euro;
- Operating expenses are calculated to be higher costs in the early years and in the last years of operation of the wind farm;
- The received price for the distributed electricity in the grid is considered to be, in the first year, 52.13 euro/MWh (OPCOM, 2011).

The benefits of implementing the project that were taken into consideration when doing the analysis were: the distribution of green energy in the national grid, which contributes to the targets assumed by Romania at European level (Europe 2020, 2010); benefiting from green certificates; incomes granted for the locals; increasing the locals incomes by creating two permanent jobs for the security services of the park; reduction of CO₂ emissions. The costs of implementing the project that were taken into consideration when doing the analysis were: total cost of building the park; the loss of agricultural production by removing from use the agricultural land; air pollution through the CO₂ emissions; the impact of noise pollution and shading effect. During these 23 years, we forecast the operational costs considering the fact that the prices will increase annually based on the annual change of the European inflation rate, that is considered to be of 2%, the unemployment rate over the last 10 years and the increase in labor cost index and consumer index. Thus, the inflation rate has a decreasing trend when the unemployment rate is rising and the cost of labor has an increasing trend.

When estimating the operational incomes we consider that until 2017 will be granted 2 green certificates /MWh while from 2018 will only be granted 1 green certificate/MWh (Zaharia, 2013).

We took into consideration the appearance of a green certificate market balance in 2016, which will lead to a decrease in the value of their trading. (Badi & Popov, 2011).

Financial analysis

The difference between financial and economic analysis is that economic analysis takes into account all costs and benefits of the project (including internalized externalities are), while financial analysis focuses on cash-flow analysis.

Table 1.1: Financial analysis of the wind farm (I)

Thousand euro / Year	2013	2014	2015	2016	2017	2018	2019	2020
Total incomes	0	0	0	6594,91	5984,58	4428,58	4487,80	4552,85
Total operational costs	-1150,54	-1173,5508	-1197,02	-1220,96	-1245,38	-1270,29	-1295,69	-1321,61
Total investment costs	-10000	0	-15602	-7800	3900	0	0	0
Total costs	-11150,54	-1173,551	-16799	-9020,96	2654,62	-1270,29	-1295,69	-1321,61
Net financial flows	-11150,54	-1173,551	-16799	-2426,05	8639,20	3158,29	3192,11	3231,24

Source: Zaharia, 2013

Table 1.2: Financial analysis of the wind farm (II)

Thousand euro / Year	2021	2022	2023	2024	2025	2026	2027	2028
Total incomes	4619,01	4686,30	4754,75	4824,37	4895,21	4967,26	5040,57	5115,16
Total operational costs	-1348,04	-1375,00	-1402,50	-1430,55	-1459,16	-1488,35	-1518,11	-1548,48
Total investment costs	0	0	0	0	-1200	0	0	0
Total costs	-1348,04	-1375,00	-1402,50	-1430,55	-2659,16	-1488,35	-1518,11	-1548,48
Net financial flows	3270,96	3311,30	3352,24	3393,82	2236,04	3478,92	3522,46	3566,69

Source: Zaharia, 2013

Table 1.3: Financial analysis of the wind farm (III)

Thousand euro / Year	2029	2030	2031	2032	2033	2034	2035
Total incomes	5191,05	5268,27	5346,84	5426,80	5508,16	5590,97	5675,24
Total operational costs	-1579,44	-1611,03	-1643,25	-1676,12	-1709,64	-1743,83	-1778,71
Total investment costs	0	-2100	0	0	0	0	0
Total costs	-1579,44	-3711,03	-1643,25	-1676,12	-1709,64	-1743,83	-1778,71
Net financial flows	3611,61	1557,24	3703,59	3750,68	3798,52	3847,13	3896,52

Source: Zaharia, 2013

The financial indicators have the following results:

- Internal rate of financial return on investment: $FRR = 8,14\% > 5\%$
- Financial net present value of the park: $FNPV = 8.701,41 \text{ €} > 0$.

Of these two financial indicators results that the project is financially viable because it will generate funds that ensures return on the loan made, meaning that the revenues cover the costs. The discount rate used is 5% because this value is set by the European Commission to be used by EU Member States as a reference parameter for the opportunity cost of capital on a long term. We took into account also the inflation because the analysis is done in current prices. Net present value is even bigger as the investment is higher. According to the „Guide for cost-benefit analysis of investment projects" made by the European Commission(2008), energy financial rate of return should be around 7%, but it must be pointed that this project is about the production of electricity obtained from renewable sources and thus can be explained the size of the financial rate.

Economic analysis

To conduct this analysis were internalized the positive and negative externalities and was used a conversion factor for taking into account the opportunity cost.

Table 2.1: Economic analysis of the wind farm (I)

ECONOMIC ANALYSIS (thousands euro)	Factor conversie	2013	2014	2015	2016	2017	2018	2019
Electricity sales	1,5	0	0	0	3928,03	4006,59	4086,72	4168,46
The sale of green certificates	1,1	0	0	0	4373,85	3644,87	1874,51	1879,71
Total incomes		0	0	0	8301,88	7651,46	5961,23	6048,17
Incomes granted for locals		0	0	0	18,1	18,1	18,1	18,1
Reducing unemployment by creating 2 permanent jobs		0	0	0	4,39	4,39	4,39	4,39
Emissions reduction of CO ₂		-	-	-	504,92	504,92	504,92	504,92
External benefits		0	0	0	527,41	527,41	527,41	527,41
The labor force	0,8	-26,88	-27,42	-27,97	-28,53	-29,10	-29,68	-30,27
Other operational costs	1,1	-1228,63	-1253,21	-1278,27	-1303,84	-1329,91	-1356,51	-1383,64
Total operational costs		-1255,51	-1280,62	-1306,24	-1332,36	-1359,01	-1386,19	-1413,91
Total investment costs	0,9	-10000	0	-15602	-7800	3900	0	0
Total costs		-11255,51	-1280,62	-16908,24	-9132,36	2540,99	-1386,19	-1413,91
Loss of agricultural production	1	0	0	-101,98	-1,18	-1,18	-1,18	-1,18
Air pollution by CO ₂ emissions		-	-	-	-5,41	-5,41	-5,41	-5,41
Shadow flicker effect		0	0	0,00	-0,98	-0,98	-0,98	-0,98
External costs		-	-	-101,98	-7,57	-7,57	-7,57	-7,57
Total Benefits - Costs		-11255,51	-1280,6	-17010,2	-310,65	10712,3	5094,88	5154,1

Source: Zaharia, 2013

Table 2.2: Economic analysis of the wind farm (II)

ECONOMIC ANALYSIS (thousands euro)	2020	2021	2022	2023	2024	2025	2026	2027
Electricity sales	4251,83	4336,86	4423,60	4512,07	4602,31	4694,36	4788,25	4884,01
The sale of green certificates	1890,13	1900,54	1910,95	1921,37	1931,78	1942,20	1952,61	1963,02
Total incomes	6141,95	6237,40	6334,55	6433,44	6534,09	6636,55	6740,86	6847,03
Incomes granted for locals	18,1	18,1	18,1	18,1	18,1	18,1	18,1	18,1
Reducing unemployment by creating 2 permanent jobs	4,39	4,39	4,39	4,39	4,39	4,39	4,39	4,39
Emissions reduction of CO ₂	652,49	652,49	652,49	652,49	652,49	652,49	652,49	652,49
External benefits	674,98	674,98	674,98	674,98	674,98	674,98	674,98	674,98
The labor force	-30,88	-31,49	-32,12	-32,77	-33,42	-34,09	-34,77	-35,47
Other operational costs	-1411,31	-1439,54	-1468,33	-1497,70	-1527,65	-1558,20	-1589,37	-1621,16
Total operational costs	-1442,19	-1471,03	-1500,46	-1530,46	-1561,07	-1592,30	-1624,14	-1656,62
Total investment costs	0	0	0	0	0	-1200	0	0
Total costs	-1442,19	-1471,03	-1500,46	-1530,46	-1561,07	-2792,30	-1624,14	-1656,62
Loss of agricultural production	-1,18	-1,18	-1,18	-1,18	-1,18	-1,18	-1,18	-1,18
Air pollution by CO ₂ emissions	-7,04	-7,04	-7,04	-7,04	-7,04	-7,04	-7,04	-7,04
Shadow flicker effect	-0,98	-0,98	-0,98	-0,98	-0,98	-0,98	-0,98	-0,98
External costs	-9,20	-9,20	-9,20	-9,20	-9,20	-9,20	-9,20	-9,20
Total Benefits - Costs	5365,54	5432,15	5499,88	5568,75	5638,8	4510,04	5782,49	5856,19

Source: Zaharia, 2013

Table 2.3: Economic analysis of the wind farm (III)

ECONOMIC ANALYSIS (thousands euro)	2028	2029	2030	2031	2032	2033	2034	2035
Electricity sales	4981,69	5081,32	5182,95	5286,61	5392,34	5500,19	5610,19	5722,40
The sale of green certificates	1973,44	1983,85	1994,27	2004,68	2015,09	2025,51	2035,92	2046,34
Total incomes	6955,13	7065,18	7177,22	7291,29	7407,44	7525,70	7646,11	7768,73
Incomes granted for locals	18,1	18,1	18,1	18,1	18,1	18,1	18,1	18,1
Reducing unemployment by creating 2 permanent jobs	4,39	4,39	4,39	4,39	4,39	4,39	4,39	4,39
Emissions reduction of CO ₂	652,49	652,49	726	726	726	726	726	726
External benefits	674,98	674,98	748,49	748,49	748,49	748,49	748,49	748,49
The labor force	-36,18	-36,90	-37,64	-38,39	-39,16	-39,94	-40,74	-41,56
Other operational costs	- 1653,58	- 1686,65	- 1720,38	- 1754,79	- 1789,89	- 1825,69	- 1862,20	- 1899,44
Total operational costs	- 1689,76	- 1723,55	- 1758,02	- 1793,18	- 1829,05	- 1865,63	- 1902,94	- 1941,00
Total investment costs	0	0	-2100	0	0	0	0	0
Total costs	- 1689,76	- 1723,55	- 3858,02	- 1793,18	- 1829,05	- 1865,63	- 1902,94	- 1941,00
Loss of agricultural production	-1,18	-1,18	-1,18	-1,18	-1,18	-1,18	-1,18	-1,18
Air pollution by CO ₂ emissions	-7,04	-7,04	-7,83	-7,83	-7,83	-7,83	-7,83	-7,83
Shadow flicker effect	-0,98	-0,98	-0,98	-0,98	-0,98	-0,98	-0,98	-0,98
External costs	-9,20	-9,20	-9,99	-9,99	-9,99	-9,99	-9,99	-9,99
Total Benefits - Costs	5931,15	6007,4	4057,69	6236,61	6316,89	6398,57	6481,67	6566,23

Source: Zaharia, 2013

The financial indicators have the following results:

- Economical internal rate of return: $ERR = 14,85\% > 5,5\%$
- Economical net present value of the park: $ENPV = 29504,5 \text{ €} > 0$

These two indicators argue that the project is socially beneficial and can be implemented.

For the economic analysis, the European Commission recommended the 5.5% rate of discount and that why in this analysis it was also used.

Risk and sensitivity analysis

Risk analysis is performed to allow decision makers and not only to understand what risks may arise on costs and how they would influence economic and financial indicators. The challenge of performing this analysis is that we need to identify those critical variables that affect the costs and benefits and cause major changes when they occur. (Lurie, Goldberg, & et al, 1993) This analysis includes analysis a sensitivity, which is performed to select the critical variables and to determine what influence they have on the rate of return and net present value.

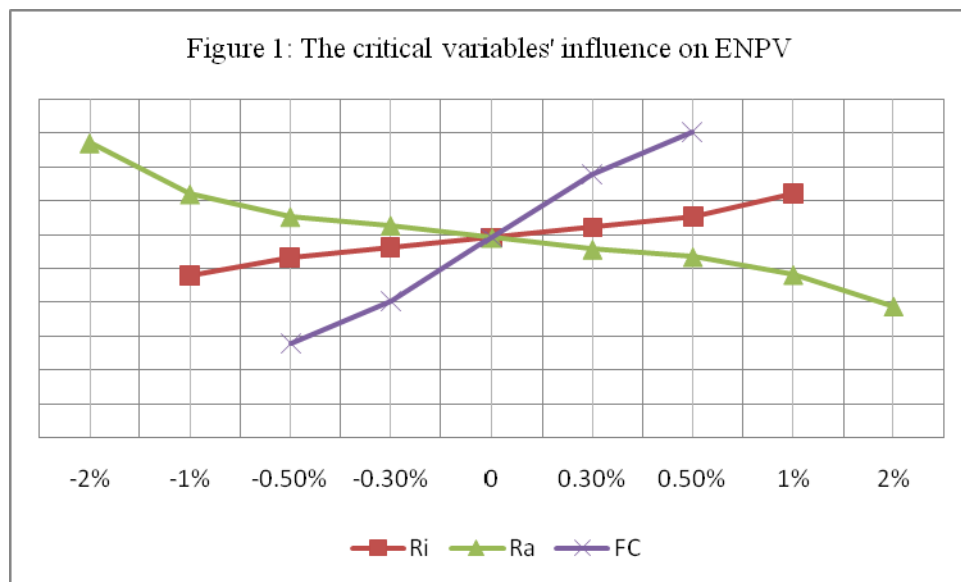
In this case, the following critical variables were analyzed: the inflation rate (R_i , which influences the forecasting of the costs and revenues during the 23 years), the discount rate (R_a , which influences the net present value), the conversion factor (FC) in the sale of electricity (because European Commission proposes a conversion factor of 2 for the energy sector, but must be taken into account that the renewable energy production is particular). These variables have been analyzed individually and the inflation has the biggest impact between those three and its influence is presented in Table 3.

Tabel 3: The influence of inflation rate on the rate of return and on the net present value (financial)

Inflation modification	-1%	Modification	-0,50%	Modification	0%	0,50%	Modification	1%	Modification
FRR (%)	7,64	-0,50%	7,88	-0,26%	8,14	8,40	0,26%	8,67	0,53%
FNPV (€)	7.037,27	-19,12%	7.838,76	-9,91%	8.701,41	9.629,72	10,67%	10.628,52	22,15%
ENPV (€)	23.861,82	-19,12%	26.579,50	-9,91%	29.504,5	32.652,24	10,67%	36.038,95	22,15%

Source: Zaharia, 2013

Therefore, a lower inflation rate will lead to a decrease in the rate of return, because it contributes both to reduce costs and lower revenues due to lower prices. Inflation affects economic indicators in the same way as financial ones are influenced. Would be interesting to see how the exchange rate evolves in the future, to see how economic and financial indicators are influenced in this case. The critical variables influences on the ENPV are illustrated in the following chart:



Regarding the influence of the discount rate on net present value (financial and economic), it is observed that with increasing rate, the net present value decreases for both the financial and the economic one. Also, by increasing the conversion factor for electricity sale, the economic indicators of the park have a tendency to increase.

CONCLUSION

This paper shows that each green energy project must be analyzed separately according to its specific conditions, as well as we have done in this work. Considering the model presented in this study and all the assumptions made, we conclude that total benefits exceed the total costs, which means that the project can be implemented and will have a positive influence on the social welfare. Of course, this analysis has its limits because took into account only some externalities, such as: increasing the locals' incomes, reduction of CO₂ emissions, the loss of agricultural production by removing from use the agricultural land, air pollution through the CO₂ emissions, the impact of noise pollution and shading effect. Also, there are other impacts that were not considered such as the impact on birds.

Therefore, no monetary assessment method of environmental and social costs and benefits is 100% safe and effective when speaking of social welfare and of environment assessment.

But, with the use of several methods, increases the probability of achieving a more comprehensive and safer study. Usually, to minimize the effects of cost-benefit analysis' limits are used as additional methods: multi-criteria analysis, environmental impact assessment, taking into account those impacts that could not be monetized. In Romania, the cost-benefit analysis complements the feasibility study of an investment project. We believe that in fact the basis of this method should be the feasibility study, environmental impact, impact on the community, the analysis using some software (WindPRO, GIS) and other studies that would help to identify costs and benefits of the projects.

In the future, it would be interesting to conduct a cost-benefit analysis to make a comparison between a project that includes the incomes obtained from green certificates and another that do not include this incomes, in order to identify the impact of green certificates in the wind energy sector. Also, thorough in such analysis should be calculated other indicators such as internal financial rate of the national capital, that highlights the period of time in which would have to be paid the long term loan. At the same time, would be interesting to forecast the discount rate based on several variables (not only the inflation rate) so that the analysis to be clear and precise.

In conclusion, applying a cost-benefit analysis in environmental economics is a challenge and a necessity to achieve a landmark investment. So, investing in a wind farm it is profitable and at the same ensures both the protection of social and natural capital and the obtain of economic benefits.

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Providing the quality of agro-food products through the research and technological development

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ABSTRACT

The purpose of this paper is to provide a comprehensive and clear picture about the importance and role that the agro-food product has over the research, technical development and food security. The general aspects regarding food safety and security are presented in the CAP framework. Quality of agro-food products and commodity price volatility is a particularly serious problem especially for those states that are dependent on the producers of such raw materials/commodities. In recent years, price trends revealed multiyear extremes that reached up to 100%. About two billion people, about a third of the world's population, depend directly on the production of primary commodities – basic agro-food products such as grain, oil, sugar, rice, meat, cotton. Food insecurity, climate change and price volatility are, more than ever, the three major global challenges that humanity faces. Food Security refers to food access and availability. A family farm or household, or any other form of organization, can be regarded as being safe, as providing safe food, only when all its members do not live in hunger or fear of starvation. According to UN FAO and that World Resources Institute, global per capita food production has increased substantially in recent decades, but contrary to these calculations/results, over 1.26 billion people suffer of chronic hunger caused by extreme poverty, while over 2 billion people are food insecure and 6 million children die of hunger every year - (17,000 daily) from malnutrition. (Source FAO, 2003). Sustainable development has become a critical concern of many economists all over the world, which hold out that in the strategy for agro-food products, should be taken into account as a key issue, the current financial and economic crisis. Agro-food products always depend by the research and technological development, but this will happen only if the agricultural markets are established as well defined entities. Under the pressure of an increasingly unstable economic environment, the phenomenon becomes more and more dangerous, threatening global food security.

Keywords: *agro-food products, research, technological development, food security, climate change, agriculture.*

INTRODUCTION

Providing the quality of agro- food products through the research and technological development

Several phenomena, which can be divided into 4 basic categories, are considered in the evolution of food commodities production:

- Food commodities implementation and observation, the most important being traceability of agro-food products;

- support innovation, a process in which the most important development is to involve the requests in order to obtain food products when using new conservation, encasement and marking techniques;
- Create new agrarian production systems, the most important being biological and smart agriculture and biotechnologies;
- Enhance the food products supply by sending new items on the market or by developing the already existing products due to the inquiry's new requests, from which we notice functional food products, dietetic products, items based on genetic modified organisms, traditional and biological products.

The consumer plays an important role in the new product's invention. When a new item is to be released, the companies in the food community industry aim to lessen the risks the consumer's food preferences might bring.

This is the reason marketing is called in; the applied procedure consists of several main stages:

- test the basic concept through a survey which represents the project for a new product or a new spectrum of products;
- create a prototype based on the information gathered in the concept survey;
- organoleptic examination of the product performed by experts in a laboratory, in which they give marks to each main feature;
- a new organoleptic examination of the product which has been modified based on the results from the previous examination.

The fifth European tendency regarding the customers possibility to assess the food items features is based on senses. This is the reason why the package has gained such an importance lately; it is the correspondent between taste, smell, flavor, appearance and the color of the product or package.

Advertising plays an undeniable part in linking producers to customers. Producers do not advertise directly and explicit for they wish to prevent any possible feeling of rejection towards the product.

With respect to the new products, they resort to already known characteristics and analogies in order to determine the customer to purchase the item.

Fresh food products have a more and more important role in every day nutrition. However, as they can only be purchased during a short period of time, consumers have to store them which are the reason why seasonal fruit and vegetables can be used all over the year. This is the moment when consumption methods and techniques are crucial.

Methods used for Agro-food fresh products

Fresh food is usually threatened by 2 main categories of spoilage agents: microorganisms, which decay the product and enzymes which enhance the spoilage chemical reactions. The best methods to slow the chemical reactions down are freezing, ultra-fast freezing, pasteurization, which is used to eliminate microorganisms through heating, a process that leads to taste alteration due to aromatic molecules' sensibility to high temperature.

To prevent taste modifications, fast pasteurization followed by immediate cooling is used.

The disadvantage of these methods is, that it cannot be used to sterilize certain non acid items that also contain spores, such as: milk or particular vegetables (beans, potatoes, etc). In this case, the only efficient procedure was sterilization with its disadvantages caused by high temperature.

Against these 2 disadvantages methods based on high temperatures, new solutions are being created and used, from which we must mention high pressure submission and pulsed electric fields.

High pressure submission is a method that allows not only fruit and vegetables juices and products conservation but also cold meats conservation. The item will only change its volume without modifying its shape due to the fact that pressure takes action upon every point. Bacteria are completely eliminated because the method applied.

This method can not be applied to products that contain air, such as: bread, or have a higher degree of acidity, or the food products that can not be packed in vacuum such as: salads or fruit and vegetable mixtures. This method has significant advantages: microorganisms complete elimination by destroying the cells diaphragm, a consequence to lipids crystallizations in normal temperature, vitamins and aromatic substances preservation.

There are, though, some disadvantages: bacteria are eliminated under a 4000 bar pressure while some microorganisms require a 6000 bar pressure, proteins can be modified, thus resulting unplanned consequences or economical disadvantages.

Electric pulsate field method is a more recent procedure than the pressure based one; it requires high enough voltage to fully eliminate bacteria. The items that are to be conserved are put under an electrostatic field with 18000 and 40000 volts per centimeter voltage for an extremely short period of time (a millionth and a billionth of a second).

At the moment, the only products which the electric field method can be used on are liquids, free from gas bubbles and large particles.

This methods advantages are the following: complete elimination of microorganisms, taste preservation, a very low protein modification.

These methods disadvantages are the following: the need to adjust the electric pulsate field due to microorganisms' different sensibility, a lower quantity of vitamin C.

In addition to that, this method requires high costs, being new technologies, the implementation and assembling costs can sometimes be very high, especially for small and medium enterprises. The crisis in the agro-food area determined customers and producers to be very reserved regarding new technologies. In the end, European legislation constrains producers, through "Novel Food" law come into force in 1997, to obtain a trading authorization for the products upon which new technologies were used.

The agro-food products encasement has a crucial role in the promoting strategy.

The main European tendency is to adapt the package to the products particularities. This is mostly taken into consideration for fresh food and vegetables. Air-proof encasements might lead to alteration. To avoid these precise effects several encasement methods are being used:

- penetrable package for CO₂, method already used for fruit and vegetables industrial conservation;
- using oxygen absorbent substances in the package;
- using humidity absorbents that do not allow microorganisms to grow;
- using ethanol encasement to provide protection against molds;

Smart encasement is another European tendency in the package field. These packages can provide information regarding the products condition and can be endowed with freshness parameters or microorganisms indicators which alter the quality of the content.

There are other systems that test the real freshness parameters such as : measuring the fruit flavors intensity and quantity, gases detection resulted from microorganisms' biological reactions, bacteria detection using antibodies placed within the bar code which becomes readable when the bacteria exist.

Food commodities package rise a particular issue: the waste they generate. Therefore, the European food industry producers concentrate on finding the most suitable solution. This is encouraged by the increasing number of concerned customers about the plastic packages and the relation between environment and food consumption. The most inexpensive and the

easiest to use biodegradable materials are paper and cellophane, both being based on cellulose.

Plastic biodegradable material utilization is let up by their price 3 times higher than the average plastic material price. Nevertheless, the industrial procedures developments lead to a fast drop of the price.

Some food items also have therapeutic qualities and help treating some diseases.

The so called remedy-food products have got the EU attention. These items are different from other categories of food at the level of composition; their particular qualities result from specific industrial procedures which usually provide these functional characteristics. Functional food products are not remedies, nor have they the ability to cure a disease; they do not require prescription or trading authorizations from pharmaceutical institutions.

The effects depend on the particular substances they contain. Some functional food items might help digestion while others might lower the risk of heart diseases.

Active elements come from more important sources such as: fat fish (tuna or sardine), vegetable oils (sunflower or canola) or a range of edible plants.

The simplest way to convert a conventional food product into a functional one is to fortification it; method through which the natural active substance quantity is enlarged. There are very many dairy products and fruit juices with an enhanced quantity of calcium and vitamins. According to the compatibility degree between food commodity and the desired active substance, the later can either be added in the products natural state or can be chemically modified.

Their production and trading are the effects of a deep knowledge regarding the human organisms' benefactions.

Of course, producers advertising about these items highlight their advantages.

To ensure a fair protection for the customers (nutritionally, sanitary and economically), functional food products advertising is very rigorous in European Union. Authorized advertising which presents a functional food products good effects, is restricted by law: tests must be performed previous to trading. This system was confirmed and reinforced by a norm, published on 30th December 2006 in the EU Official Journal, which establish the requirements availability of these proposals mentions. Functional food products are also aimed at by the legislation voted by the European Parliament in 16th July 2006 regarding enhanced food items.

In European Union, any statements related to the possibility of a food product to help prevent, treat or cure diseases are forbidden.

Is prohibited the various suggesting differences from similar foods that would cover most valuable nutritional intake, and also that any pathology is forbidden because you strictly for the drugs having very different regime authorization, marketing and management.

All these restrictions are meant for producers, but they can sometimes be crossed.

From the point of view of the marketing, these food items are submitted as "light", "shape", "litheness", "fitness" or "0%". According to Codex Alimentarius, an item is considered to be "light" if it contains at least 25% less certain nutritional ingredient, in relation to the item it is derived from.

Said ingredient can be: sugar, fat, salt, etc. These products can not be seen as dietetic (at least not all). Dietetic food products are items that meet the nutritional needs of customers with particular health issues. "Light" products can be purchased by all customers who have the freedom to choose the quantity and consumption way.

Regarding industrial producers, "light" food items contain less fat with negative effects, do not have sugar (especially saccharine) and other similar sweet ingredients. Almost all food products which resulted from industrial processes can be included here.

For example, to lower the sugar quantity, saccharine is usually replaced with sweeteners that have very few calories.

Several methods can be used for fat attenuation: using raw stock with a reduced quantity of fat (yogurt, milk cream), changing the meat/fat ratio for cold meats, replacing fat with modified fatty acids that are not absorbed by the human body, replacing fat with nutritive fibers or vegetable proteins, water addition for obtaining emulsions (butter or margarine), air addition through kneading or emulsifying cream or paste, etc.

Experts say that, in general, these food items are more expensive than the average products. The reason is that large research, development; marketing and advertising investments are required for their production. Raw materials are, however, quite cheap because sometimes only water or air addition is needed.

CONCLUSION

In the end it is the producer who can conclude whether or not the product will be released. Therefore, without diminishing the customers contribution, the producer eliminates a major risk with respect to the products rejection by retaining only those values that are able to fulfill the majority of the costumers.

Another European tendency is to increase the consumers influence upon the food inventions process. Such feature requires identifying distinctive food habits for different categories of customers.

A third European tendency for the current European customer profile is to lessen the time for food consumption. Producers provide several solutions such as:

- expand the items availability term;
- decrease the time needed for food preparation;
- trade food in closed disposables containers;
- sell items in smaller portions, designed for individual consumption regardless of the place and time.

Customers concern for health represents another characteristic. The origins of this phenomenon are in the 1980s starting with sugar-free and non-alcoholic drinks followed by food with a certain amount of vitamins and minerals. Lately, consumers have more and more often suggested products that encompass certain ingredients which would help prevent diseases, have therapeutic character, would help preserve the body or even semi-cosmetics.

Moreover, customers can not consume just any quantity because even if they are sugar-free this does not imply that these items also contain no fats and vice versa. Sugar-free biscuits and chocolate can have the same quantity of fat as the average products.

Research shows that it is difficult to confirm if “light” products’ taste and organoleptic features reach the conventional items level or if they surpass them.

There is an important problem regarding the information that reaches customers and especially the confidence that can be put into this information. It can be considered valid if the label is read and interpreted according to comparable elements such as calories, fat and sugar content caloric mase. Cheese area should be analyzed carefully because in 2005 the fat percentage was estimated in relation to the quantity of dry substance and after 2005 the percentage is estimated in relation to the total mass of substance (cheese can have 40% fat in relation to dry substance or 8% in relation to the total substance).

“Light” food products can be another European tendency because, even though they are on every supermarket shelf, the price can be an impediment in certain situation. These items are widely consumed commodities because producers provide them as an answer to consumptions behavior development tendencies. An example is simple sugars excessive consumption to complex ones (present in fresh items). This tendency is valid for the majority processed food products.

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European Innovation Partnership – an instrument for sustainable development in a knowledge-based society

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ABSTRACT

In nowadays society innovation has become a decisive factor in the state of economic and social development of a country or region. At the European Union level, changes have occurred in the approach of this factor, knowledge becoming increasingly appreciated and promoted as an indispensable resource. Currently efforts are being made towards improving knowledge transfer to intercede the distribution of this valuable resource across the European space. The agricultural European Innovation Partnership represents the newest instrument in perfecting knowledge transfer in agriculture. Their approach is different, following the "interactive innovation model" which involves creating partnerships between farmers, advisors, researchers, businesses, and other stakeholders in Operational Groups. EIPs are expected to ensure the optimal development opportunities for partners in innovation and research, so they will be able to work together, reaching better and faster results.

Keywords: *innovation, sustainability, knowledge transfer, partnership, rural development*

INTRODUCTION

Economic development is a key condition in the process of improving the standard of living and quality of life. In achieving a high level of economic development, knowledge and innovation have a crucial influence, empowering those who own it. The concept of knowledge transfer has become increasingly used and its importance has been noted and is now emphasized by European Union policies.

THE AGRICULTURAL EUROPEAN INNOVATION PARTNERSHIP

The current CAP reform highlights the necessity for a notable development of research and innovation in order to approach the demanding social challenges of food security in the circumstances of the current land use competition and pressures on resources and the environment.

In the Commission's CAP reform proposals are set out three instruments in order to support this process:

- Ongoing support of the rural development (Pillar 2) for investment in processes and technologies in agriculture and food supply sector, followed by an upgrading of farmer advisory services to make them more effective.
- Agricultural and food research will receive increased financial support under the Commission's Horizon 2020 research program

- An European Innovation Partnership, which is an instrument for the development of agricultural productivity and sustainability

As we notice above, the Europe 2020 Strategy provides the organization of European Innovation Partnerships (EIPs) in different economic sectors, as an answer to the challenge of developing EU research and innovation.

EIPs place the emphasis on social welfare and swift updating in the sector they are focusing on. EIPs are expected to ensure the optimal development opportunities for partners in innovation and research, so they will be able to work together, reaching better and faster results.

The agricultural European Innovation Partnership (EIP-A) aims to nurture competitive and sustainable agriculture that “achieves more and better from less”. This partnership intends to bring its contribution to providing a steady food supply, its efforts taking into consideration the essential natural resources balance, which must be undisturbed because the evolution of farming depends on this fragile equilibrium. Its intention is to bring together main actors, policies and actions at EU and national levels, from research to market, around common objectives to address major societal challenges more effectively.

The objectives of the EIP-A are expressed in Art 61(1) of the proposal for a Rural Development Regulation for the programming period 2014-2020: “The EIP for agricultural productivity and sustainability shall:

- (a) Promote a resource efficient, productive, low emission, climate friendly and resilient agricultural sector, working in harmony with the essential natural resources on which farming depends;
- (b) Help deliver a steady supply of food, feed and biomaterials, both existing and new ones;
- (c) Improve processes to preserve the environment, adapt to climate change and mitigate it;
- (d) Build bridges between cutting-edge research knowledge and technology and farmers, businesses and advisory services.”

The innovation model provided by the EIP-A does more than interceding the knowledge transfer from laboratory to practice (also called the "linear innovation model"), by following a different model, referred to as the "interactive innovation model" which involves creating partnerships between farmers, advisors, researchers, businesses, and other stakeholders in Operational Groups.

OPERATIONAL GROUPS

By creating Operational Groups, it is intended the stimulation of innovation from all parties, generating new perceptions and insights of the problems debated, thus incorporating existing knowledge into practical solutions. They will reunite researchers, advisors, farmers, businesses, NGOs and other actors in order to find new and practical solutions by implementing innovative projects in accordance with the objectives of the EIP-A.

An Operational Group is formed on the request of interested parties and pursue an innovation project. First, a description of the project is made, the expected innovative results and the manner to achieve them are established and finally the work management process of the Operational Group is specified. In addition, Operational Groups are obliged to disseminate the results of their effort through the EIP network.

Operational Groups may engage in projects referring to "the development of new products, practices, processes and technologies in the agriculture, food and forestry sectors" (Art 36 (2) (a)) as well as "pilot projects" (Art.36 (2) (b)).

THE FUNDING OF OPERATIONAL GROUPS

In what concerns the funding of the Operational Groups' activity, the projects may benefit from support under rural development measures or from those of the EU's research policy.

Horizon 2020 represents an EU framework for funding research and innovation. It states that the sum of 4.5 billion € has been assigned for the Societal Challenge "Food security, sustainable agriculture, marine and maritime research and the bioeconomy".

This particular framework funds projects oriented towards practice, like "multi-actor approach" and "thematic networks" that has the purpose to "ensure interactions between researcher, businesses, farmers/producers, advisors and end-users". This pattern matches exactly with the Operational Groups.

Funding may be obtained through other policies, such as the EU Regional Policy, through the European Regional Development Fund and the Cohesion Fund, as well as Education Policy.

Apart from EU policies, the national/regional policies in Member States should provide opportunities of additional funding for these structures.

EIP NETWORK AND EIP-A SERVICE POINT

The European Innovation Partnership Service Point has the role of mediation between the stakeholders of the EIP's including farmers, advisors, agri-business, civil society, and researchers, facilitating communication as well as knowledge and skill transfer. This structure was appointed by The European Commission's Directorate General for Agriculture and Rural Development in April 2013.

The EIP-A Service Point gathers and shares information on policy measures in the research and innovation field, research activities, funding opportunities and any other data that could be of interest to the actors in their approach.

The Service Point makes interaction between different groups, players, and networks easier and more accessible, using a variety of communication channels (seminars, conferences, publications, website, and social media).

HIGH LEVEL STEERING BOARD OF THE EIP "AGRICULTURAL PRODUCTIVITY AND SUSTAINABILITY"

For the right development and implementation of the European Innovation Partnership (EIP) on Agricultural Productivity and Sustainability and for guidance, it has been appointed a High Level Steering Board by Dacian Cioloș, European Commissioner for Agriculture and Rural Development and Máire Geoghegan-Quinn, European Commissioner for Research, Innovation and Science, who co-chairs the Steering Board. The High Level Steering Board provides the EIP with guidelines, by elaborating a Strategic Implementation Plan (SIP) which gives strategic advice and recommendations to the EIP and provides orientation on its main working areas.

CHALLENGES

- Cultural differences between the members of the same or different groups. In order to work together, it is imperative to develop a homogenous working environment and culture
- Stakeholders groups will vary in member number, activity and interests and it is going to be challenging to address them as a whole.
- The differences in culture and understanding of the agriculture between rural and urban areas.
- Research and innovation involve risk taking, and all group members must be aware of the possibility of failure, but in the same time, this event should not affect the evaluation of the project's idea and development.
- There are differences between Member States in approaching innovation and understanding its importance, and this premise should be taken into account.

CONCLUSION

Agriculture within the EU space is currently facing challenges that are going to have to be resolved taking into account the environment as well as the needs of future generations.

In order to successfully face those challenges, all the actors involved in this process have to work together for developing innovative solutions, to be applied in practice.

The European Innovation Partnership provides the opportunity for all stakeholders in food supply chain to participate in finding new pathways to address their problems and to learn from each other by sharing knowledge and experiences. The exchange of information and knowledge and interchangeable learning will ensure a proper use and success of policies like the Rural Development Policy and the Framework Program for Research and Innovation Horizon 2020.

The key areas that are facing challenges have been identified, in accordance the EIP-A will find ways to address them, without disturbing the balance between sustainability and the food supply chain. This is not an easy mission, but cooperation and the desire to make progress through innovation will open the way to a wide range of solutions that will integrate the two main priorities mentioned above. Another requirement is that innovation combines in a smart manner traditional knowledge with new scientific knowledge in order to provide value-added

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Funding opportunities on the stock exchange for agricultural companies

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ABSTRACT

The paper aims to prove how agricultural companies can practically exploit internal and external funding sources available in the capital market. These sources are seen as an alternative dynamic capitalization / lending to companies' projects investments, meaning both lower costs than traditional alternatives and also image benefits through share issues / public offerings or bond issues. This type of opportunities are recoverable in a bad economic context for agriculture companies, mainly due to the limitations imposed on bank lending and laborious access to funds. The methodology used in the paper is the comparative method and financing alternatives will be compared to "stock exchange – private equity", "stock exchange vs. strategic investor" and "stock exchange vs. banks", and the analytical method by describing minimum criteria required by the market operator, deducted from analyzing agricultural companies access to financing through the capital market methods (exposure, case study and conclusions). The overall result of the work lies in the awareness of the opportunities and benefits of capital market funding system. Once one company knows the outcomes, this leads to practical ways an agricultural companies can access the stock exchange, (here including practical steps that they have to follow and the criteria to perform), leading eventually to understanding how practically works a listed company, beneficiary of the grant funding system.

Keywords: *stock exchange, European funds, agricultural companies*

INTRODUCTION

Agriculture's growth and development is critical to Romania's overall economic and social development. Agriculture plays an important role in Romania because of the size of the rural population and because it is a significant source of employment, making it central to Romania's European integration and social cohesion goals. Romania has one of the best resource endowments in Europe (15 million hectares of agricultural land, of which about 5 million hectares are highly productive arable land) and was once widely considered a breadbasket for Europe, but the sector remains underdeveloped. Despite the highest proportion of rural population (45 percent) in the EU, Romania has the highest incidence of rural poverty (over 70 percent), the largest gap in living and social standards between rural and urban areas, and one of the lowest rates of agricultural competitiveness. Although almost 30 percent of employment is in agriculture (compared to some 2 percent in the EU15 and 3 – 14 percent in the EU8), Romania imports an increasing amount (approximately 70 percent) of its food needs.

Taking in consideration the above mentioned hypothesis, the stock exchange may enable agricultural companies to gain access to long-term investible funds by issuing company shares and debts securities to the public.

The main role of a stock exchange in any economy is to mobilize resources and direct them to the productive sectors of the economy. It offers relatively cheap sources of capital for investment and working capital requirements compared to the traditional financial intermediaries.

The stock exchange enables the business community to access long term capital for investment through shares, bonds and debentures. All listed companies have issued shares as a way of raising long-term investment capital. Apart from facilitating the Initial Public Offering (IPO), the stock exchange serves another function: it facilitates Secondary Public Offering (SPO) and transfer of securities. By so doing, shareholders are accorded an avenue through which they can relinquish their ownership of the company and new ones can come in.

A quoted company enjoys a lot of benefits, for example: the market acts as a constant value of its worth so when the shareholders want to sell their shares, the market price provides a real basis for valuation. By comparing the previous approach with lengthy, laborious process and hard bargaining that it takes the shareholders of a private company to dispose of their ownership, the arguments are obviously better for the first approach.

The stock exchange can enhance the development of agricultural companies by enabling those wishing to raise cheap and long-term capital to do so. Agricultural business should take advantage of this to raise financial resources to expand their business and diversify into other areas. The common tendency is for the agricultural companies to rely on commercial banks credit for business expansion or to delay their investments plans until they generate sufficient funds internally. Both approaches are quite expensive, because bank credit can be costly as has been witnessed in the local market.

Besides the attitude of financial institution toward the agricultural sector has proved wanting despite Romania's financial sector being dynamic, it failed to target clients in the agricultural sector. Company savings through retained profits, particularly for a sizeable project, often take long to build up. At the same time, by waiting to finance business or investment through internally generated savings, a company may lose business opportunities or fail to undertake the envisaged expansion due to cost escalation.

In short provided the companies operating in various sections, including agricultural business, are efficient and well managed, they can benefit immensely by using the exchange to raise long-term investment capital. There are some companies' management and pioneer shareholders who know the benefits of listing but are afraid of losing control of their companies to newcomers.

This need not to be so as a company can issue any proportion of its ownership in a public issue provided it is at least 30%. One does not necessarily lose control by going public. Secondly, other securities such as bonds, debentures and loan stocks can be issued instead of shares. Even the most conservative shareholders or management, therefore, has the opportunity to enter the market and raise investment capital.

Differences between publicly- and privately-held companies

Privately-held companies are – no surprise here – privately held. This means that, in most cases, the company is owned by the company's founders, management or a group of private investors. A public company, on the other hand, is a company that has sold a portion of itself to the public via an initial public offering of some of its stock, meaning shareholders have claim to part of the company's assets and profits.

One of the biggest differences between the two types of companies deals with public disclosure. If it's a public company, which means it is trading on stock exchange it is typically required to file quarterly earnings reports (among other things) with the Romanian Financial Supervisory Authority (ASF). This information is also made available to shareholders and the public. Private companies, however, are not required to disclose their financial information to anyone since they do not trade stock on a stock exchange.

The main advantage public companies have is their ability to tap the financial markets by selling stock (equity) or bonds (debt) to raise capital (i.e. cash) for expansion and projects. The main advantage to private companies is that management doesn't have to answer to stockholders and isn't required to file disclosure statements with the ASF. However, a private company can't dip into the public capital markets and must therefore turn to private funding, which can boost the cost of capital and may limit expansion. It has been said often that private companies seek to minimize the tax bite, while public companies seek to increase profits for shareholders.

The popular misconception is that privately-held companies are small and of little interest. In fact, there are many big-name companies that are also privately held.

Comparative approach on the availability of the funds

- **Stock exchange vs. professional equity funds:**

Funds may have limitations in allocation, regardless of opportunities. By contrast, stock exchange could offer successive rounds of capital increase (e.g. initial public offering – IPO, followed by secondary public offerings – SPO);

- **Stock exchange vs. strategic investor:**

A company may not be ready to be 'married' to a strategic investor, or strategic investors are not yet 'ready'; In the same time additional equity resources may be needed to strategically increase the equity value, placing the stock exchange as the preferred choice;

- **Stock exchange vs. banks:**

Fundamentally there is a different type of financing, when we analyze equity vs. debt. Debt may be limited: leverage and/or risk of the company; New debt may be prohibited within current environment.

Control

Investors at a stock exchange require liquidity (e.g. free-float of min. 25%) and transparency of results and significant decisions; most often control is not an issue; By contrast, a strategic investor requires control in most cases.

Valuation

It is subject to specific drivers, including profitability, growth rate, risks, control and transparency; It is very important for potential issuer to choose the right timing (e.g. first IPO in the current circumstances) may improve valuation.

Ground criteria for investors' preference

The investor will analyze size, age in business and proven business model, sound strategy (relatively easy to grasp), scalability (new money turns into business expansion, favorable industry, mandatory profitable, leadership and corporate governance in place, IFRS reporting in place

Fine-tuning criteria

It is important if the company has a 'story' that attracts investors. The IPO represents an intermediate financing step, not a major sell of current shareholders, thus for investor is important the size of the new issue as premise for subsequent liquidity. It is recommendable for an issuer to generate a free-float of min. 25% and also has an adequate capital structure in place, before and after the process, looking for leverage, cash position and dividend policy.

The IPO process and players

An IPO requires a real commitment and a consistent effort from shareholders, board and the executive management. Once a decision is made and basic requirements are met, a multidisciplinary team needs to be created, in order to help the issuer in preparing and carrying out the offering and the listing, which can include:

- Key departments and management of the company
- Investment banker (brokerage firm) – one entity or a consortium;
- Independent external auditors;

- Legal advisers of the issuer and of the investment banker;
 - Tax advisers (optional);
 - Investor Relations Agency (IR) / Public Relations (PR) (optional);
- Most companies where Private Equity Funds are already shareholders should not have major difficulties matching the requirements in a period shorter than the average.

Expectations from a listed company

It is advisable to have a dedicated Investment Relations Officer, who would act as a liaison between the company and the outside investment/regulatory community, on investment and legal issues. Alternatively, the tasks could be carried out by designated persons within financial and legal departments, possibly under the supervision of the CEO/CFO;

It is also necessary to create a web site section that could be named Investor Relations with financial reports and other company's info. The company has reporting obligations:

- Quarterly – release financial reports (desirable/optional in Romanian and English and along with analysts' earnings conference calls and investors' presentations);
- Annually – release GSM' decisions and Annual Report;
- Occasionally – Release Current Reports on price sensitive information (example: M&A projects, insolvency, buy/sale of assets representing more than 10% of total assets, major changes in ownership or management, major litigations and other);
- Occasionally – meet investors or potential investors.

Table 1 - IPO Timeline

TIMELINE	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Plan	Board Decision, Kick off					Reserve for delays
	Internal Assessment of the issuer, short presentation					
Structure	Recruit lead manager, consortium, advisors					
	External due-dilligence (3-4weeks)					
	Equity story, presentation, management training					
Marketing	Get financial audit already					
						Prepare prospectus (12 weeks)
	Presentation to research analysts					
	Pre-marketing, road shows					
	Prospectus approved					
Offer	Final preparations					
	Public offering (up to 2 weeks)					

Table 2 - Listing Fees owed to ASF and BVB

IPO – Listing Fees owed to ASF and Bucharest Stock Exchange				
Fees owed to ASF (RON)		Initial	After closing the offer	
Commision applied to the IPO value		0	0,10%	
Approval of the Preliminary Prospectus		2,500		
Approval of the Preliminary Announcement ad		1,000		
Registration of the IPO – related securities		1,000		
Fee for maintainance to trading (per year)		350-4.000		
Fees owed to the Bucharest Stock Exchange BVB (RON)				
Commision for the IPO Tier trade (applied to the seller in the IPO, applied to IPO value)		0,135%		
Fee for processing the listing file (exemptions applicable)		1200		
			Tier I	Tier II
Fee for admission to trading (exemptions applicable)			11.100-21.000	3.600-7.500
Fee for maintainance to trading (per year, paid beginning 1 year after IPO)			11.100-21.000	3.600-7.500

Case study

The issuer NUTRICOM S.A. runs business in the field of raising of swine, chicken and feed production. It is traded on BVB under symbol NUTE on exchange segment RASDAQ, Tier III R, main market XMBS. The company registered market capitalization of 28,977,742.28 RON. The total number of shares is 93,476,588 on a nominal value of 0.1000 RON and the share capital is 9,347,658.80 RON. For the period of last 52 weeks the total number of trades is 171 while the issuer registered the total value of 51,729.5100 RON. The average price for last 52 weeks (10/29/2012-10/25/2013) is 0.2970 RON.



CONCLUSIONS

The stock exchange offers the right solution not only for a company's expansion capital, but also access to further opportunities and an enhanced strategic position on the market. For successful IPO process, the company needs a set of 'ingredients' as well as a fully-committed management team. The costs involved in the process and after are worthwhile the benefits. The transparency and predictability enhance considerably relationships with investors and the corporate governance in place ensures the long-term success as a listed company.

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The main objectives of the EU rural development policy for 2014-2020

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ABSTRACT

In this article will be identified the main objectives of rural development policy at European level for the new programming period 2014-2020. The paper will begin with a short analysis of the situation in 2007-2013 and will continue with the presentation of new objectives, which are in accordance with the Europe 2020 Strategy. Rural development will remain Pillar 2 of the CAP, thus completing market measures and direct payments. Financing of the policy will be made from EAFRD through rural development programs. Each Member State may propose a single national program or/and several regional programs that can include several thematic sub-programs.

Keywords: CAP, Europe 2020 Strategy, financial framework, objectives, rural development

INTRODUCTION

Since its appearance, CAP was one of the most important EU policies. Considering that over 56% of the population lives in rural areas, over 91% of the territory is rural and less than 5% of the active population is employed in agriculture according to the European Commission and result the need to maintain and to reform the CAP for 2014 - 2020.

CAP was created to achieve a sustainable agricultural sector in Europe, thus ensuring a safe food supply, protecting the environment and the countryside and to provide a fair standard of living for farmers.

According to Communication from The Commission "Europe 2020 - A strategy for smart, sustainable and inclusive growth" were set EU targets for 2014-2020 and all EU policies, including the CAP should contribute to achieving the goals and objectives of the Europe 2020 Strategy.

In order to implement the Europe 2020 strategy, Member States should prepare "National Reform Programmes" to identify their own development policies in line with EU policies. National Reform Programmes (NRPs) have the following priorities: promoting a sustainable, smart and inclusive growth with high employment work, higher productivity and social cohesion.

During the current programming period, respectively 2007-2013, the rural development policy was focused on axis, each having several support measures. These axis are: improving the competitiveness of agriculture and forestry, protection of the environment and the countryside and improving the quality of life in rural areas and diversification of economic activities. Member States have developed a national program or / and regional programs that indicates the funds allocated to each of the axis or measures. Rural development policy is partly financed by the EU budget and partly from national or regional budget of the Member States.

EUROPE 2020 STRATEGY

The Europe 2020 strategy is designed for a period of 10 years and proposes the creation of favorable conditions for sustainable economic growth (increase resource efficiency, reduce environmental impacts, low carbon), intelligent (effective through investments in R & D and education, higher productivity, supporting an economy based on knowledge and innovation) and inclusive growth (job creation and poverty reduction in order to achieve social and territorial cohesion).

The strategy focuses on five main objectives:

- Employment – achieving an employment rate of labor force of 75% of the population aged between 20 and 64 years;
- Research and development – allocation of 3% of European Union GDP for this purpose;
- Climate and energy objectives (20/20/20) – reducing with 20% the emissions of greenhouse gases, 20% increase in energy efficiency and increasing the share of energy from renewable sources to 20%;
- Education – fall below 10% of early school leavers, over 40% of young people have higher education;
- Support against social exclusion and poverty – a decrease of at least 20 million people threatened with poverty.

These objectives will be transposed into national strategies of the Member States.

THEMATIC OBJECTIVES

The European Commission proposal for the Multiannual Financial Framework 2014-2020 sets to combine in a Common Strategic Framework (CSF) the funds supporting Cohesion Policy, Maritime and Fisheries Policy and Rural Development Policy, respectively the European Regional Development Fund (ERDF), the European Social Fund (ESF), the Cohesion Fund (CF), the European Maritime and Fisheries Fund (EMFF) and the European Agricultural Fund for Rural Development (EAFRD). The Common Strategic Framework established 11 thematic objectives derived from the Europe 2020 strategy. The CSF represents the EU guidelines for the new programming period, replacing the current strategic guidelines for each fund. Member States prepare national strategies called partnership agreements in accordance with strategic guidelines for CSF and NRPs and these will be negotiated and approved by the Commission.

Thematic objectives of the Common Strategic Framework are:

- Strengthening research, innovation and technological development;
- Increasing access to modern information and communication technologies;
- Increasing the competitiveness of SMEs in the agricultural sector (EAFRD) and the fisheries sector (EMFF);
- Supporting the transition to a low carbon economy;
- Adapting to climate change, risk prevention;
- Environmental protection and efficient use of resources;
- Introducing sustainable transport;
- Supporting employment;
- Supporting social inclusion and combating poverty;
- Promoting investment in education, upgrading of skills and lifelong learning;
- Improving the institutional capacity.

Common Strategic Framework through the thematic objectives set in accordance with EU priorities for smart, sustainable and inclusive growth will ensure an integrated use of funds (CF, ERDF, ESF, EAFRD and EMFF) to achieve the objectives of the 2020 Strategy.

THE OBJECTIVES OF RURAL DEVELOPMENT POLICY 2014-2020

EAFRD shall contribute to achieve the Europe 2020 objectives by supporting sustainable rural development and an ecologically balanced agricultural sector, competitive and innovative.

To support rural development, the objectives for 2014-2020 are:

- Improving the competitiveness of agriculture;
- Combating climate change and sustainable management of natural resources;
- Balanced development of rural areas.

The objectives for Rural Development Policy at European level for the period 2014-2020 are:

- Enhancing innovation and knowledge transfer in agriculture and forestry in rural areas by supporting training through the lifelong learning and enhancing relations between these sectors with research and innovation.
- Enhancing the competitiveness of agriculture and farm viability through promote next generation of farmers in sector and orientation to the market.
- Support for primary producers in the food chain through producer groups and promote them to local markets and a better risk management at farm level in agriculture.
- Strengthening and preserving ecosystems in agriculture and forestry.
- Efficient use of resources, production and use of renewable energy, reducing carbon emissions and adaptation to climate change in agriculture and forestry.
- Rural economic development, poverty reduction and social inclusion through the creation and development of businesses, creating jobs and increasing accessibility to information and communication technology in rural areas.

Member States may include sub-themes in their rural development programs for achieving the Europe 2020 objectives, such as helping young farmers, small farms, sustainable agriculture or achieving some local needs of rural areas.

Rural development measures promoted in the new programming period are shown in the table below.

Table 1. **Rural development measures for the period 2014-2020**

Measure	Support	Beneficiaries
1. Knowledge and information transfer	Training activities; Demonstration activities; Information events; Visits to the farms.	Providers of knowledge transfer; Providers of informative actions; Participants in these services - SMEs
2. Advisory services	Providing advisory services to improve farm performance; Promotion of farm advisory services; Professional training for the consultants.	Farmers; Owners of forests; Other land managers; SMEs; Providers of training and advisory services
3. Introduction of quality schemes for agricultural products	Participation in quality schemes for agricultural products.	Farmers who participate for the first time to introducing quality schemes
4. Investments in physical assets	Tangible or intangible investments: for improving the performance of farms; for processing and marketing of agricultural products; for realizing infrastructure in agriculture and forestry.	Farmers; Groups of farmers; Foresters
5. Restoring agricultural	Investments in order to restore production potential damaged by natural disasters;	Farmers; Groups of farmers;

Measure	Support	Beneficiaries
production capacity affected by natural disasters	Investments in order to introduce measures to reduce the effects of natural disasters.	Public entities.
6. The development of businesses and farms	Setting up of enterprises by the young farmers; Creation and development of non-agricultural activities; Development of small farms.	Young farmers; Members of farms; non agricultural micro and small enterprises
7. Improving basic services and village renewal in rural areas	Preparation of development plans or restoration of villages; Investments in upgrading local infrastructure and public based services; Development and promotion of rural tourism; Restoration of natural and cultural heritage of villages.	The local authorities
8. Investments to increase the viability of forests and forest areas development	Support for afforestation (establishment costs, providing an annual subsidy to cover maintenance costs and loss of agricultural income)	Private and public agricultural and non agricultural landowners and their associations
	Create agroforestry systems (covering start-up costs and provide an annual subsidy per hectare for maintenance costs)	Private land owners, municipalities and their associations
	Prevention or recovery from damage caused by forest fires, natural disasters, pests, diseases and climate threats	Public and private owners of forests and their associations
	Investments to increase the ecological value and potential of the forest for reduce the climate changes impact	Public and private forest owners and their associations
	Investments for the introduction of new forestry technologies for the processing and marketing of forest products	Private forest owners, municipalities; their associations; SMEs
9. Setting up producer groups in agriculture and forestry	Adapting production to market requirements; Introduction of products on the market together Establishing common rules on production.	Producer groups
10. Climate and agri-climate	Granting additional payments for costs or loss of income incurred by beneficiaries	Farmers; groups of farmers; other land managers
11. Ecological agriculture	Payments granted annually per hectare of agricultural land for organic farming	Farmers; groups of farmers
12. Payments related to the Water Framework Directive and Natura 2000	Payments to farms per year per hectare of agricultural area for costs resulting from disadvantages areas	Farmers; private forest owners; farmers groups; associations of private forest owners
13. Payments for areas with natural constraints	Payments granted to farmers in mountain areas or other areas with natural constraints per year per hectare of agricultural area	Farmers
14. Animal welfare	Payments granted to farmers in order to conduct operations for animal welfare	Farmers
15. Forest-environmental services, forest	Support per hectare of forest to forest-environment development activities, conservation of forest genetic resources	Public and private forest owners, their associations

Measure	Support	Beneficiaries
conservation		
16. Cooperation	Support for cooperation between different actors in the food chain and in the forestry sector	Entities in the agrifood chain and forestry
17.Risk management	Financial contributions to insure crops, plants, animals from unfavorable weather events, pest infestation, plant and animal disease or environmental incident	Farmers
	Financial contributions to mutual funds for compensation for economic losses caused by animal and plant diseases, pest, unfavorable climatic or environmental incident	Farmers
	Introducing an instrument for income stabilization for compensation to farmers for a severe drop in revenue in the form of financial contributions to mutual funds	Farmers

Source: processing of author after The Regulation of the European Parliament and the Council on support for rural development by the European Agricultural Fund for Rural Development (EAFRD), December 2012

THE AMOUNT OF FUNDS ALLOCATED TO RURAL DEVELOPMENT POLICY FOR 2014-2020

In 2011 was adopted the proposal for the Multiannual Financial Framework for 2014-2020 entitled "A Budget for Europe 2020". The main changes taken into account consist in a simplistic approach to policy implementation, the use of higher compliance and focusing on results.

The European Commission proposed allocating funds worth 281.8 billion euros for the first pillar of the CAP and 89.9 billion euros for Rural Development Policy for the period 2014-2020.

CONCLUSION

For the period 2014-2020 all EU policies, including the CAP should contribute for achieving the targets and objectives of Europe 2020 Strategy.

If in the programming period 2007-2013, rural development policy has focused on the priorities to improve the competitiveness of agriculture and forestry, protection of the environment and the countryside and improving the quality of life in rural areas and diversification of economic activities, in 2014-2020 the priorities are to improve the competitiveness of agriculture, climate change and sustainable management of natural resources and balanced development of rural areas.

In the Common Strategic Framework were grouped the funds supporting Cohesion Policy (CF, ERDF, ESF), Rural Development Policy (EAFRD) and Maritime and Fisheries Policy (EMFF). The Common Strategic Framework were established 11 thematic objectives derived from the Europe 2020 strategy in order to support it.

The objectives of Rural Development Policy at European level for the period 2014-2020 are: fostering innovation and knowledge transfer in agriculture and forestry, increasing the competitiveness of agriculture and farm viability, support for primary producers in the food chain, better risk management at farm level in agriculture, strengthening and preserving ecosystems in agriculture and forestry, more efficient use of resources, production and use of renewable energy, reducing carbon emissions and adaptation to climate change in agriculture and forestry, rural economic development, poverty reduction and social inclusion through the

creation and development of enterprises, creating jobs and increase the accessibility to information and communication technology in rural areas.

For the period 2014-2020, the European Commission proposed allocating funds worth 281.8 billion euros for the first pillar of the Common Agricultural Policy and 89.9 billion euros for rural development.

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Sustainable Forest Management: Case Study

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ABSTRACT

Forest management is an important issue at national level, especially in the current context of the Romanian economy and of the international challenges, like climate change. Natural and anthropogenic hazards, climate change, overexploitation of natural resources, environmental pollution, population growth, have led to a drawing alarm signals regarding the existence of humankind and of Earth. Based on these signals, is tried, in each country, to design strategies and policies in order to achieve the objectives of sustainable development concept and one of those is the sustainable forest management. In this research we made a secondary data analysis which had provided information about the current situation of Vrancea's forestry and about the importance of socio-ecological dimension in making economic decisions. The results could contribute on doing a more effective planning of forest management.

Keywords: *economic and social-ecological decisions, sustainable forest management, Vrancea forestry study case, secondary data analyses,.*

INTRODUCTION

In the last century, the idea of protecting and conserving forests on the international scene was quickly propelled into one of the most important topics discussed and regulated worldwide. In this context, 2011 was declared by the UN as the International Year of Forests, wanting to draw attention to their central role in maintaining and protecting biodiversity and the role of humanity in sustainable forest management.

Forestry is to manage as efficiently and as rationally as possible the forest fund taking into account the objectives of sustainable development, which promotes a balance between economic, social and environmental aspects. (MMDR,2008). So, the sustainable forest management was first defined in 1993 and refers to a „*stewardship and use of forests and forest land in a way, and at a rate, that maintains their biodiversity, productivity, generation capacity, vitality, and their potential to fulfill now and in the future, relevant ecological, economic, and social functions at local, national, and global levels*”.(MCPFE,1993) As European Commission agrees, the importance of forests is huge for the local biodiversity, rural development, tourism, human recreation, human health, reducing unemployment, reducing the impacts of climate change and so on.(European Commission, 2013)

In the first part of the paper we made an overview of Vrancea County and in the second part we made an analysis of the structure and organization of forest fund. We followed that this overview to create an insight into the forest management at county level, in order to allow doing a comparison in future research with other counties in South-Eastern Romanian development region, which includes Vrancea, as well as analyzing the county in relation to the information presented at the national level. In the third part of the study, we showed that

forest conservation measures must not be inconsistent with economic development, but must be completed under the sustainable development objectives.

METHODOLOGY

This paper is a study case about the forestry in Vrancea county from Romania. This research is mainly based on data purchased from Vrancea Forestry Direction and the National Institute of Statistics of Romania, but also from other national and international databases. Also, we conducted personnel interviews with the Vrancea Forestry Direction employees for obtaining additional suggestions. With the data collected we chose to do a secondary data analysis which provides some explanations on forest management at the county level, given the opportunity of further studies.

RESULTS

General elements of Vrancea County

Vrancea County is located in the south-east of the country, at the curvature of the Eastern Carpathians. Relief is placed in steps from west to east and includes Vrancea Mountains, Hills Subcarpathian and Lower Siret Plain, bounded to the north-east by the Moldavian Plateau and, to the southeast, by the Ramnic Plain.(Agenția Națională pentru Protecția Mediului, 2012).

The total area of Vrancea county is 4857 km² and has a population of 387 632 inhabitants, which is declining. County density is 79.8 inhabitants per km². (Agenția pentru Dezvoltarea Regională Sud-Est, 2013).

The major relief of Vrancea territory is very varied, both in terms of altitude and shape and in terms of the origin and his age. Geomorphologic units influence stationary conditions, meaning that the mountainsides storm water circulation is faster and the stagnation is very rare. This phenomenon is more obvious on plateaus, but especially in the Siret valley. (Direcția Silvică Vrancea, 2010a). Vrancea is characterized by the highest seismic sensitivity in the country and has a temperate climate, the hottest month, July, having an average temperature below 22°C and an average rainfall below 35 mm, and the coldest month, January, having an average temperature below 0°C and an average rainfall below 144 mm. (Agenția Națională pentru Protecția Mediului, 2012). Also, it is characterized by a well represented hydrographic network, whose main streams rivers are: Râmnicu Sărat, Putna, Milcov, Șușița and Siret. Except Siret, located at the eastern boundary of the county, Putna River is the main watercourse that crosses the territory over a distance of 144 km. Putna receives a large number of affluents including: Zăbala, Năruja, Milcov, Râmna. The county is dominant vegetation at lower altitudes beech forest mixed with conifers, while at great heights are predominated the spruce forests. Forest area in Vrancea County which includes forestry vegetation outside the forest is 184900 hectares, which represents 39% of the entire territory of the county. Thus, regarding the area, the county occupies the number twelfth in the country, with an area of 0.48 ha of forest per capita. In the same time, the forest fund falls mostly in the center of the Curvature Carpathians and Sub-Carpathians, characterized by a great variety of landforms (6% plains, 54% hills, 40% mountains). In terms of forests landforms' distribution, we note that the largest area of forest covers the mountain area (81913ha) and the lowest area is found in the Siret Valley, where the total area amounts to 3072 ha. (Direcția Silvică Vrancea, 2010b).

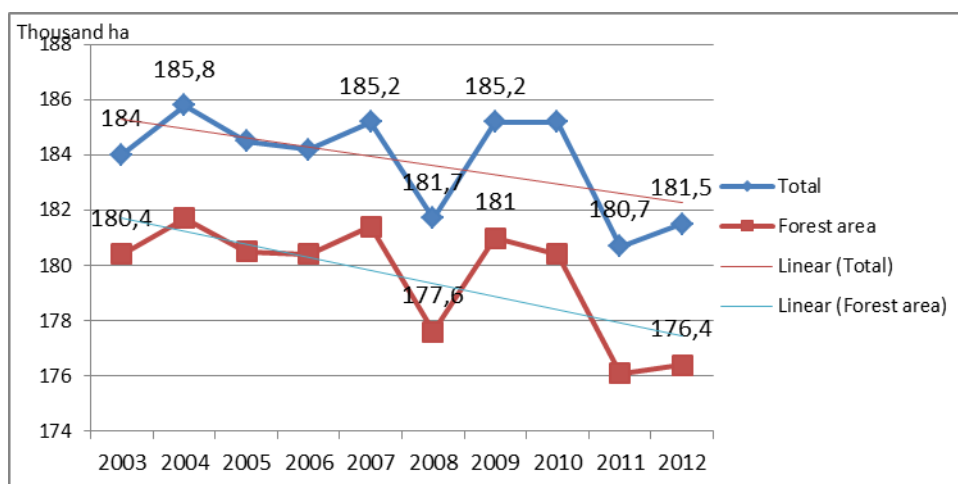
Forest fund organization and structure in Vrancea

Public property forest fund is ascribed to six forest districts with an area of between 5000 ha and 20000 ha. In 2004, Vrancea Forestry Direction took in custody from the Environmental Protection Agency of Vrancea the following protected areas: Cenaru forest (383.2 ha), Focul Viu from Andreiașu (12 ha), Reghiu–Scruntaru forest (95.7 ha), Lunca Siretului (388.4 ha),

Schitu – Dălhăuți forest (188,2 ha), Râpa Roșie–Dealul Morii (49,6 ha), Cheile Nărujei II–Verdele forest (250 ha). To ensure appropriate planting material, Vrancea Forestry Direction has 40 seed reservations, covering 1421 ha and 51 ha seed orchards (24 ha acacia, 22 ha spruce, 5 ha fir) and 61 ha upgraded nursery. The transport network sums 937.7 km forest roads, which is 5.8 km / ha, of which over one third of the forest fund is inaccessible. Lack of accessible or difficult access makes annual not to exploit about 40 thousand cubic meters wood. Current density of 5.6 km / ha requires, as present and future strategy, gradually thickening forest road network. (Direcția Silvică Vrancea, 2010a)

In early 1990, Vrancea county forest fund, managed by Vrancea Forestry Direction, had an area of 168.8 thousand hectares and the one managed by ICA.S. Bucharest through O.S.E.Vidra had an area of 15.8 thousand hectares.(Direcția Silvică Vrancea, 2010b) Once the law enforcement applied concerning the reconstitution of private property forestry land, the surface managed by Vrancea Forestry Direction had a decreasing trend from 184 thousand ha in 2003 to 181.5 thousand ha in 2012, of which 176400 hectares of forest.

Figure 1: Forestry fund and forest area evolution for 2003-2012



In 2010, in addition to the state forest fund area under management, the Vrancea Forestry Direction provided forestry services for an area of 44.9 thousand hectares of private forests (belonging to individuals, businesses, religious establishments, educational and administrative-territorial).(Direcția Silvică Vrancea, 2010b)

Except plain regions, the county vegetation belongs entirely to the forest area. In terms of forest structure we can speak by several distribution criteria. Further, we presented these criteria.

By landforms, it is noted that most of the forest is located in the mountain area(52%), followed by hills region by 41%, and then at long distance the plains(5%) and valleys(2%). The distribution of forest species in the territory shows that their requirements are met towards environmental factors and climatic conditions.

In the county there are two major groups of species: resinous trees with 21.5% (10% spruce, 5.6% fir, 5.9% pine) and broad-leaved trees with 78.5% (40.8% beech, 13.8% oak, 15.5% various hardwood and 8.4% various softwood).

In terms of age class, the forest fund is characterized by a surplus of unexploited trees (located in the first three age classes and that hold a total of 53%) and by a deficiency of exploitable trees (last two classes that have 35% overall):

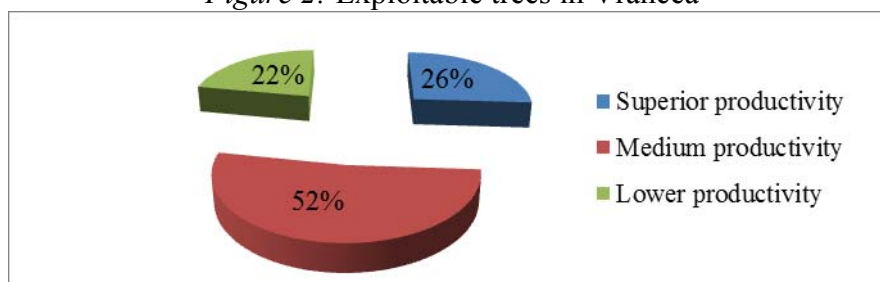
Table 1: The distribution of forest fund by age classes:

The age class	I (1-20 ani)	II (21-40 ani)	III (41-60 ani)	IV (61-80 ani)	V (81-100 ani)	VI (peste 100 ani)
% of forest fund	20	15	18	12	12	23

Source: Direcția Silvică Vrancea, 2010a

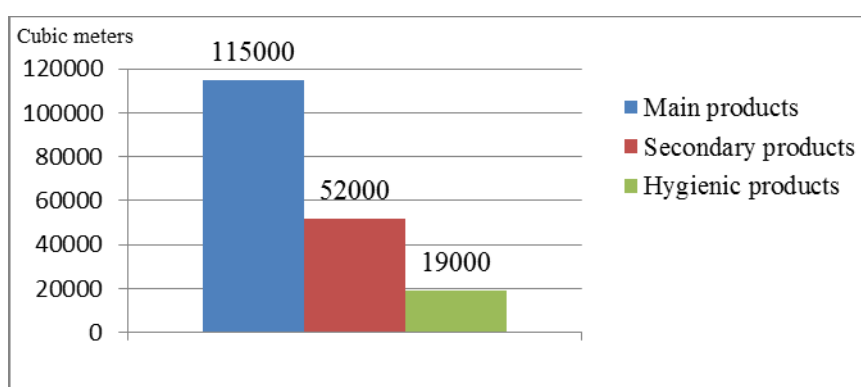
The structure by productivity of exploitable trees is:

Figure 2: Exploitable trees in Vrancea



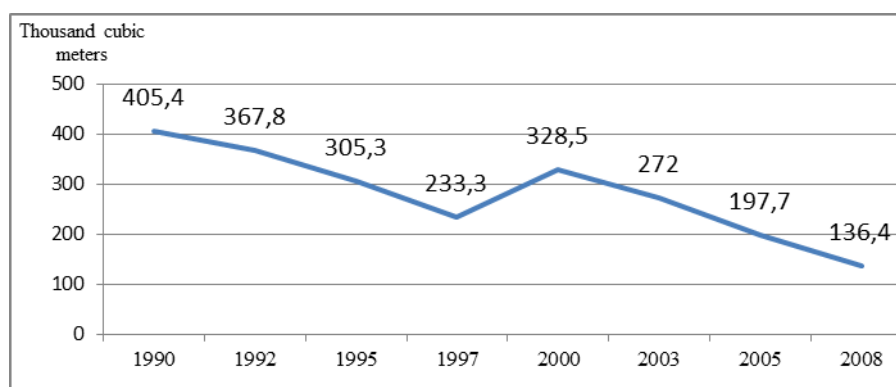
Also, the forest fund area is divided according to existing forestry arrangements, namely: I group (75%)-forests with a protective role and II group (25%)-forests with production and protection role. The total wood mass is 13.2 million cubic meters, returning an average of 236 cubic meters per hectare. Current annual growth by total species is 5.7 cubic meters per year per hectare. The current annual opportunity for the public property forests is 186000 cubic meters, of which:

Figure 3: Annual possibility for the public property forests in Vrancea, by types of products, in 2008



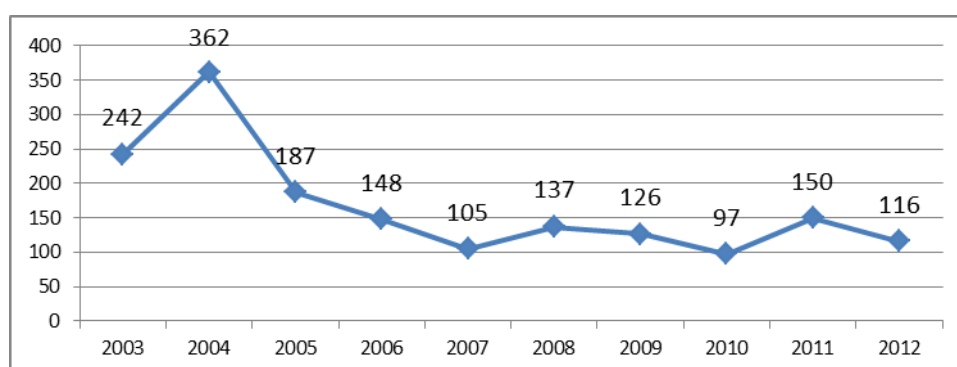
The annual possibility of cuttings for care and management of young trees is 2453 ha, of which 139 undercuts ha, 595 ha sanitary cleaning and 1719 ha thinning operations. In fig.4, we noted, that during 1990-2008, the volume of wood mass had a decreasing trend.

Figure 4: Evolution of the wood mass volume



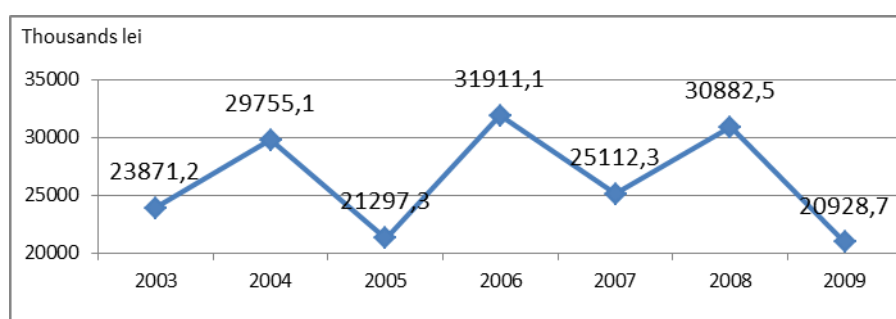
Also, the artificial regeneration, that implies to plant or seed a surface of land in order to create new trees, was also diminishing and, making a comparison between that and the cuttings, we can say that the total of cuttings is much higher than the artificial regeneration, which leads to forestry fund decrease.

Figure 5: Area of the land used for artificial regeneration schemes



In what concerns the turnover of the forestry units in Vrancea, we have noted also an decrease in the 2003-2009 period, decrease that can be attributed to the reduction of wood and goods sold.

Figure 6: Turnover of the forestry units' evolution



We conclude that these indicators shows a reduction in the income of the forestry units, based on the reduction of wood mass volume, on the big percentage of unexploited trees, on the non efficient report of cutting and regeneration wood.

Substantiation of the economic decision in relation with the socio-ecological decisions

„In general, the decision is the action which seeks realization in a given direction, of a future perspective, of contradictions that may arise, setting in each case practical ways of solving them effectively.”(Bran,2002) Substantiation of decisions requires assuming sustainable and feasible decisions so that they have a practical basis and so that can be implemented successfully. Decisions should be taken after performing a series of economic, social and environmental studies, which are designed to achieve different scenarios decisions implementation's effects.

The importance of the forestry sector can be evidenced by its contribution to the achievement of GDP and regional commodity trade.

Table 2 Forestry sector contribution to GDP and trade in goods (continents)

No.	Continent	Contribution to GDP (%)	Contribution to trade in goods (%)
1.	Africa	6	2
2.	America de Sud	3	3
3.	Asia	2	2
4.	America de Nord și Centrală	2	5
5.	Europa	1	3
6.	Oceania	2	3

Source: Bran, 2002, p.227

It may be noted that Africa is the continent with the largest contribution to GDP in the forestry sector and North and Central America has the largest contribution to the trade in goods. In the future, if we want to continue exploiting forest resources, it is necessary to apply the sustainable development principales.

The Vrancea Forestry Direction should take into account the need for correlation with the economic component the social-ecological one for several reasons, namely: environmental problems due to deforestation and poor forest management, generally, could not be separated from economic processes that should be considered rational and efficient use of forestry resources, that should be considered an existence of a healthy environment for people and an important recreation space and so on. In this regard, within the Vrancea Forestry Direction is a compartment named Environment Protection, which aims to achieve and to implement its environmental objectives in the management and exploitation of forests.

The extent of corruption, deforestation, uncontrolled exploitation for trade, forest degradation through activities with a high degree of delinquency in forests considered "without an owner" means imbalance, poverty and starvation. Neither Vrancea is removed from the appearance of these negative phenomena, although in recent years they have begun to diminish.

If the main cause of forest degradation is mainly the human and those who manage it, then the solutions must take into account the training of human resources, of population. For starters, it is necessary that Vrancea Forestry Department to employ personnel or invest in existing human resources, to educate them regarding the practice of combining three concepts: economic-social-ecologic. However, it should be conducted campaigns to inform and educate the population in the county and the tourists about the activities threats with a negative role on the forest sector and beyond.

If appears, the environmental problems involve much higher costs for their control than if they had been predicted and resolved at an early stage when their effect would have not yet made an appearance. Also, the period of time is much slower to recover, for example, a forest area than if it were to protect and care in the appropriate time. The Forestry Direction should

adopt eco-economic decisions because its decisions can have multiple effects since the economy and the environment interact as a complex, integrated system.

For a long time have been neglected environmental costs and damages caused to natural capital and human health, therefore have begun to appear forest degradation, for which, if not taken based socio-economic and environmental measures in the future on a long-term, things will get worse(will no longer be growth) and people's needs are becoming less satisfied. In this way, it would no more be achieved the sustainable development and the future of the next generations will be uncertain.

CONCLUSION

This research paper aims to throw more light on some topics related to the sustainable management of forests and encourage further debate on the adoption of realistic and achievable decisions that stimulate progress. In Romania and thus in Vrancea, the green dimension had begun to have an increasingly larger role in developing strategies and policies, as well as in most economic activities performed by people. This also applies to the forestry sector in the county.

But the current situation is not good because the forestry fund is diminishing due to the more higher exploitation of wood then the regeneration of wood.

Therefore, the substantiation of the economic decision in relation with the socio-ecological decisions regarding the forestry management is imperative since forest resources are limited and the role of the forest, determined by its functions, it is very important for the sustainable development of Vrancea.

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Inventory management within a food factory

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ABSTRACT

An efficient management of inventories means proper planning and usage of one of more control methods as Just in Time(JIT), Material requirements planning(MRP), Vendor Management Inventory(VMI) or Distribution resource planning(DRP). The stock coverage before production capacity is influenced by many aspects, activities or factors, as: delivery time, payment term, payment methods, risk assuming in terms of delivery terms agreed and accepted, transport administration, minimum quantity delivered, stock buffer, planned quantities to be supplied according to the production and sales plan, monthly average consumption, product category ("jumper" or not), availability of one article on market. Each food stock needs Bulletin analysis and Declaration of conformity, migration tests for packaging that come into direct contact with the product. The management methods used will pay attention to storage capacity, ambient or temperature controlled spaces, mandatory and optional documents, the frequency of inventory management, humidity records, Quality standards followed, internal and external audit, physical and qualitative reception, issuance and tracking complaints, labelling, items identifying, samples management, expired items administration, losses recording, key performance indicators and many other aspects.

Keywords: *stocks coverage, minimum and maximum boundary, manufacturing cycle, shelf life*

INTRODUCTION

This paper aims to analyze stocks of food factory, in their relationship with both upstream and downstream sources, the places where the stocks are consumed. It's analyzed that part of supply chain of stocks, both raw and packaging materials before production capacity. The correlation of stocks with the operating result, with regards to increasing or decreasing of them, means efficiency.

STOCKS FLOW TILL COMPANY WAREHOUSE

The flow of raw and packaging materials till company warehouse means activities of Purchasing and Logistic Departments made in order to deliver the article required "in the best quality", "at the right time" and "in the most cost-effective way". The procurement is more effective if company manages to find multiple sources of supply for the same raw or auxiliary materials and services. A few objectives pursued by analyzing suppliers are to identify strategic suppliers and to determinate the dependence of the company by certain suppliers. For example when a recipe is established by using a specific type of spices this means an agreed supplier, a fixed source.

Before the building of stock the link with supplier is mandatory to be created. A business relationship starts with supplier's identifying and verification. The evaluation of suppliers is very important activity of Procurement Department. Considering supplier's certifications, current customer portfolio and its availability, the negotiation is open. There are analyzed

aspects as minimum of delivery, delivery time, payment terms, methods of payment, payment instruments, terms of delivery, freight administration, possibility of creating a buffer stock at supplier, average monthly consumption referring to article subject of negotiation, prices and discounts quantities and values, pallets policy, information about the temperature during transport and storage, the insurance of goods during transport, the timing of the transfer of ownership.

The delivery of an article means a purchase order issued based on terms agreed before each delivery. Commercial terms are with regards to a minimum of delivery, unit price, condition of delivery, lead time, day of delivery, **facultative documents** as Analysis Report or Bulletin of microbiological analyses, Bulletin of antibiotic residues, Pallets Notes and **mandatory documents** : the contract or purchase order signed and stamped by both parties, Packing list, CMR, Invoice, Technical Specification, Declaration of Compliance or Conformity, temperature diagram for each delivery, migration tests for those packaging which come in direct contact with the product.

Before a purchase order the link with supplier is mandatory to be created. A business relationship starts with supplier's identifying and verification. The evaluation of suppliers is very important activity of Procurement Department. Considering supplier's certifications, current customer portfolio and its availability, the negotiation is open. A purchase order contains the information similar with the final invoice: information about both supplier, and customer, date of issuing, the article ordered, the quantity, the unit measure, the unit price, the discount agreed, the value, the date of delivery.

The purchase order together with the packing list, reception and invoice represent the set of documents required by Accountancy Department. Based on it the payment to supplier for the article bought will be done according to commercial terms agreed.

No article can be delivered to a food production company before testing. This means a request of Research & Development Department for an article. The article is sought from several suppliers, active suppliers or not still. Before delivery of minimum of quantity needed by a trial period, a technical specification of article required is mandatory to be provided by each contacted supplier. Also, the unit price and delivery terms (transport is included or not within unit price) are very important aspects because of Controlling Department which needs them for an internal calculation in order to make a simulation of final cost of finished goods. The Controlling Department will provide information about profitability of article tested.

EFFICIENT MANAGEMENT OF EXISTING STOCK. CONTROL METHOD USED

Inventory is one of the most critical aspects of most businesses. Management inventory within a company is essential because of fact that it tends to become an important part of a company's balance sheet.

The company uses the Material Requirements Planning (MRP) as software dedicated for inventory management.

“The main objective of MRP is to use the demand for higher-level items to drive the demand for lower-level (dependent) items. Similarly, the main objective of DRP is to use demand at downstream facilities to drive demand at upstream (supplying) facilities. The logic used in DRP is really just an extension of MRP logic.”

MRP is a method of planning and control of inventory, with implications in procurement activities with the aim of minimizing inventory and to plan efficient each delivery. This means that are always available the followings information:

- a list of all articles, raw and packaging materials required by all finished goods
- inventory records
- weekly, monthly production plan
- clients firm orders
- a forecast of clients orders

The list of all articles represents all raw material or packaging materials required by all finished goods. It is a structure of finished goods. Each article as finished good has a recipe. The recipe means quantities or values of raw materials (meat, spices, for example) and packaging (labels, films, bags, boxes, casings, clips). A recipe will always include the percentage of losses allowed.

The inventory records means the actual stock of raw and packaging materials, available stocks within Warehouse Company, the quantities open, ordered already to suppliers, the lead time of purchasing for each article. Current stock is recorded both a physical and script. Stock's updating occurs after each settlement of production orders which can be made daily or weekly. The sooner, the better, in terms of accuracy of stocks registered into management inventory system. A settlement of production orders means an updating of recording of all work in progress (WIP) articles.

Production plan of the company analyzed is frozen for next week and open for the period ahead, depending on production capacity, sales forecast and firm clients orders. Without a production plan the Material Requirements Planning (MRP) cannot issue requirements of raw and packaging materials. Production plans content the quantity of each article as finished product, planned to be realized on next week.

Clients' firm orders represent actual customer requests for the next period.

The forecast of clients' orders means estimating demand for final products, for a time horizon. All these information are provided by Sales and Marketing Department because of them responsibilities to keep in contact with each client referring to possible quantity required by market, marketing activities (promotions, samplings, so on). Information available about market behavior in the past are also an essential input.

THE FREQUENCY OF INVENTORY COUNTING

According to Romanian law the inventory stocks is mandatory once a year.

Nevertheless a good warehouse or stocks manager will perform this inventory at the end of each month, for a good accuracy of the data and especially there where are kept the products that are intended for human consumption. This is not only the correct management of the pluses or minuses of inventory.

An monthly inventory can be a warning of losses greater than those accepted by the recipes, a good administration of those articles with short life, updating of the minutes referring to products expired or products which cannot be used because of special requirements of clients as new labels, new design for a film or for a bag or for boxes, new recipe, new article which require new raw and packaging materials, the supervising of monitoring reports referring to humidity and temperature within warehouse during last 30 days. Products with lower lifetime are carefully managed within food Production Company. To pay attention to these articles means to announce in due time those people responsible for production plan building and to find a way to produce and sell the finished products which require these raw materials.

STORING STOCKS

The flow of raw and packaging materials till company warehouse "in the best quality", "at the right time" and "in the most cost-effective way" is a responsibility of Purchasing and Logistics Departments. The activities of the flow presented require not only the high quality of service, but the quality of the product delivered.

Keeping the quality of service means to ensure that at any time or place in the chain has to be provided:

- Cleanliness of storage conditions, even during the transportation
- Compliance with temperature control conditions for those article which require a special temperature, both in the truck and in the warehouse

- Keeping away from direct light exposure
- Pest control of the places where the goods are stored
- Segregation of goods so that the products are stored isolated from those goods which might affect their properties.

Securing high quality of service is equal to preserving the quality of products.

The quality of product delivered may be challenged on delivery or reception point before placing the item in stock, or after delivery, when it is used and can be detected the non-compliance. In both cases, a formal complaint is issued to supplier. Supplier shall analyze product claimed or the lot of article delivered and give an official response which describes the solution found: replacement item, commercial discount for the whole quantity delivered or describing of all measures took for the prevention of nonconformity complained.

The warehouse of raw and pack materials has to prove in every moment the goods traceability. Product traceability consists of quick identification of a route of a product in the supply chain. Product lot code is the key information for traceability report. A traceability report provides the information about all customers where products were shipped to and their related quantities. To be able to recall a product from the market traceability report includes the following information: the quantity of boxes coming in the warehouse, the quantity of boxes shipped to customers (per Delivery Note document) and the quantity of boxes currently in stock in the warehouse. This means that the lot number of each raw and pack material is a mandatory information. The lot number is an information filled in Declaration of Conformity, a document which accompanying the article to the destination. If the packing list is mandatory from commercial point of view, providing the information about net quantity, supplier name and address, date of delivery, a Declaration of Conformity or Certificate of Compliance provides information about lot number, production date, expiry date, date of issuing, and it is required by Quality Department of production plant (responsible for traceability), by Sanitary Veterinary Authorities and by Auditors.

Because of two types of articles categories handled there are different storage conditions: **temperature controlled** (TC) for meat and special spices and **ambient** for spices, labels, boxes, films, bags, casings, auxiliary materials for production activity and cleaning materials. These mean more warehousing spaces with the own management inventory.

A dedicated place is arranged for those articles that contain allergens. The usage of these items requires a special attention, involving strict observance of flux.

Dedicated spaces have the samples, the refusal articles and the expired items or decommissioned also.

KEY PERFORMANCE INDICATORS, PRODUCTIVITY

As a measure of Management Inventory performance there are used some Key Performers Indicators (KPI's). Related to the transportation of goods there is "On Time Loading" (OT), number of loadings made in time versus total number of loadings. For reception point the "Invoice Accuracy" (IA) as number of invoices correctly issued versus total number of invoices.

The main objectives of those who manage the inventory are to avoid any "out of stock", to obtain a good coverage stock per each category of articles which means less "Days on stock" and to obtain time to time a cost saving. The cost saving means the same effect with less effort, or a better effect with the same effort. It can be obtained, for example, by replacing a film with 180 mm with one with the same structure but thinner, a better use of storage space by creating a vertical storage space, easy to access, good manipulation and administration. A kind of cost saving could be the Order Size Rebate which is offered when the quantities ordered by the customer are such that the trucks ordered are fully utilized both in weight and

cubic capacity. This allows to get better \$/kg rate on transportation. Benefits would be shared. The company which buy is encouraged to issue orders above certain percentage of truck utilization based on the product specifications.

CONCLUSION

Inventory management involves determining the optimal amount of stocks to be held, identifying of the right moment for a new purchasing and the right quantity which has to be bought.

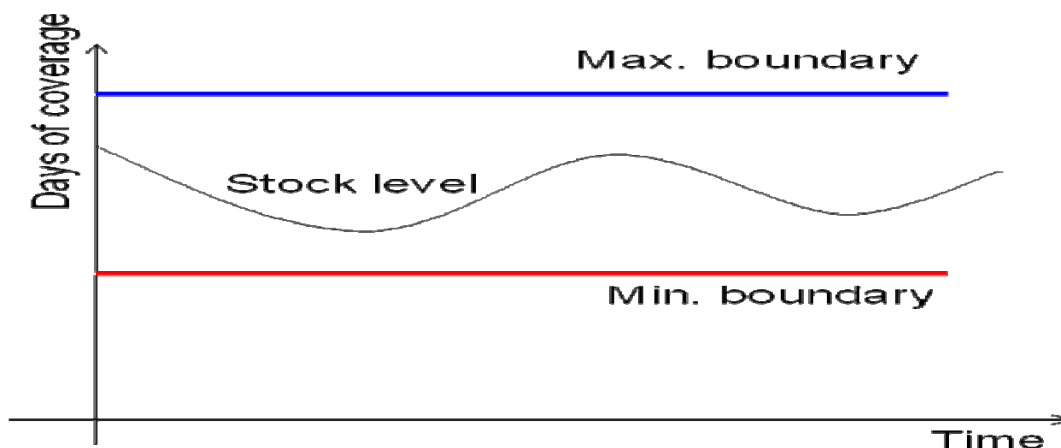
The stock level of raw and packaging materials is influenced by the actual sales (coverage of finished goods), sales estimates, production input (production lead time, production cycle time, minimum lot size, quarantine period) logistic input (transport time, shelf life, trade life).

“The maximum stock limit is the upper level of inventory and the quantity that must not be exceeded without specific instruction from the management. In other words, the maximum stock level is that quantity of material above which the stock of any item should not normally be allowed to go.”

“The minimum level or minimum stock is that level of stock below which stock should not be allowed to fall. In case the stock of any item falls below this level, there is the danger of stopping production and, therefore, the management should give top priority to the acquisition of new supplies.”

The Boundaries recommendation, presented below by Figure no 1 are influenced by **coverage of the actual stock** (days on stock), **production output** which depend on capacity utilization, raw and pack material availability, personnel usage and **sales estimates**.

Figure 1: Boundaries recommendation



When the operational result decreased during 2012 by 12% comparing with 2011, and purchase value with regards to acquisitions of both raw and pack materials decreased by 12%, it turns out a good stock management and the relevant figures.

But what about when a regretful translation of European law text has blocked the stock labels because of the label information which is against the law? Thus any delivery on market would be an offense. The stock remains locked until the local and national authorities will take the necessary steps by the Commission in Brussels, in order to correct the legal text translation.

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The polarization of the exploitation structure and its impact on the agricultural performance

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ABSTRACT

This paper aims to reflect the need to correct the exploitation polarization as a key point in the development of Romanian agriculture and the rural in general. The main purpose is to expose the differences existing between Romania and other EU member states regarding the exploitation structures of the agricultural land and also to identify changes than can be made in order to increase the performance and the competitiveness of Romanian agriculture. Presentation and interpretation of statistical data supports the necessity to correct the exploitation in agriculture, in Romania.

Keywords: *polarization, property structure, exploitation structure, performance in agriculture, holdings structure, agricultural land.*

INTRODUCTION

The property structure picture influence the structure of exploitation and it is reflected in productivity. The Romanian agriculture is characterized by a huge number of agricultural land owners, determined by an excessive crumble of the land, effect of Law 18/1991 also known by the domination of Land Law. This crumble it's reflected on the agricultural land exploitation and explains the huge number of agricultural holdings with a small surface of utilized land. The existence of so many agricultural land owners also explains the existence of a high number of subsistence and semi-subsistence holdings. This situation of agricultural land exploitation has led to an unperforming and uncompetitive agriculture compared to the European Union developed member states.

The approach of the agricultural land property it is made in strong connection with the one of exploitation and the results which are obtained from agriculture, this way it is emphasized the necessity of finding the appropriate solution for correcting the agricultural exploitation polarisation in Romania, polarisation characterised by a high number of agricultural holdings that have surfaces under 20 hectares (approximately 4000 thousand holding which occupies 5726 thousand hectares of the total agricultural land) and a small number of agricultural holdings that have surfaces bigger than 20 hectares (under 300 thousand holdings that occupies 7573 hectares the total agricultural land).

HOLDINGS WITH THE ECONOMIC SIZE HIGHER THAN 1 ESU IN SOME EUROPEAN UNION MEMBER STATES

Emphasizing the differences regarding the agricultural performance it is made by analysing the following data:

Table 1. Number and average surface of holdings larger than 1 ESU and the share of surface exploited by owners in total agricultural surface, 2010

	Number of holdings larger than 1 ESU(thousand)	Total surface occupied by holdings larger than 1 ESU(thousand ha)	Average surface of a (ha)	Share of holdings over 100 ESU in total holdings (%)	Share of surface exploited by owners in total agricultural surface (%)
Bulgaria	117,8	2,9	24	1,4	17
Czech Republic	25,9	3,5	135	9,8	16
Germany	348,5	16,9	48	12,7	37
France	491,1	27,4	56	16,9	25
Hungaria	140,8	4,1	29	1,6	37
Poland	112,8	13,9	12	0,4	77
Romania	866,7	9,5	11	0,2	64
Slovakia	15,8	1,9	120	6,2	9

Source: Structural investigation in holdings, Eurostat

It can be observed that Romania has the highest number on holdings with a size bigger than 1 ESU, more precise has a number of 866,7 thousand holdings compared to Germany that has 348,5 thousand holdings or France that has 491,1 thousand holdings. The lowest number of this kind of holdings it is found in Slovaia and is 15,8 thousand holdings.

This situation can be explained on one hand by the surface of agricultural land that every country posses and on the other hand by the exploitation structures picture. The explanations regarding the high number of agricultural holding can be found in the table because it can be observed that the average surface of an agricultural holding bigger than 1 ESU is only 11 hectares compared to Czech Republic which has an average surface of 135 hectares, Slovakia 120 hectares, France 56 hectares or Germany 48 hectares. By analysing the share of the number of holdings with an economic size higher than 100 ESU in total holdings it can be observed that in Romania the percentage is low-0,2 compared to France where the percentage is 16,9 or Germany where the percentage in 12,7. This picture is justified by a high number of agricultural land owners, in Romania the percentage of holdings exploited by land owners in 2010 was 64, while in France was 25 and in Germany 37. In can be observed that Poland, also shows a high number of owners that exploit their land. Ex-communist country, Poland, emphasizes a high number of owners, just like Romania does, but the sizes of the agricultural holdings are compared to the ones in Romania which are characterized by small properties and holdings with economic size close to 1 ESU.

THE INFLUENCE OF SIZE AND SPECIALISATION OF AGRICULTURAL HOLDING ON THE AGRICULTURAL PERFORMANCE

Both size and specialisation of agricultural holdings influence the yields in agriculture. However this influence is limited and conditioned by many factors, some of them uncontrollable (those related to agro-pedo-climatic conditions) and others controllable related to the degree of mechanization, size of working capital.

**Table 2. Wheat and corn yields in some European Union Member States
per types of holdings**

		France	Poland	Romania
All holdings	Average surface(Ha/holding)	78	18	12
	Wheat yeilds(kg/ha)	7600	5100	3100
	Corn yeilds(kg/ha)	8900	7600	4400
Specialized holdings	Average surface(Ha/holding)	106	43	41
	Wheat yeilds(kg/ha)	7500	5400	3000
	Corn yeilds(kg/ha)	9100	7300	4300
Specialized holdings higher than 100 ESU	Average surface(Ha/holding)	219	780	1555
	Wheat yeilds(kg/ha)	7800	6000	2900
	Corn yeilds(kg/ha)	9100	7400	4400

Source: processed information from RICA database

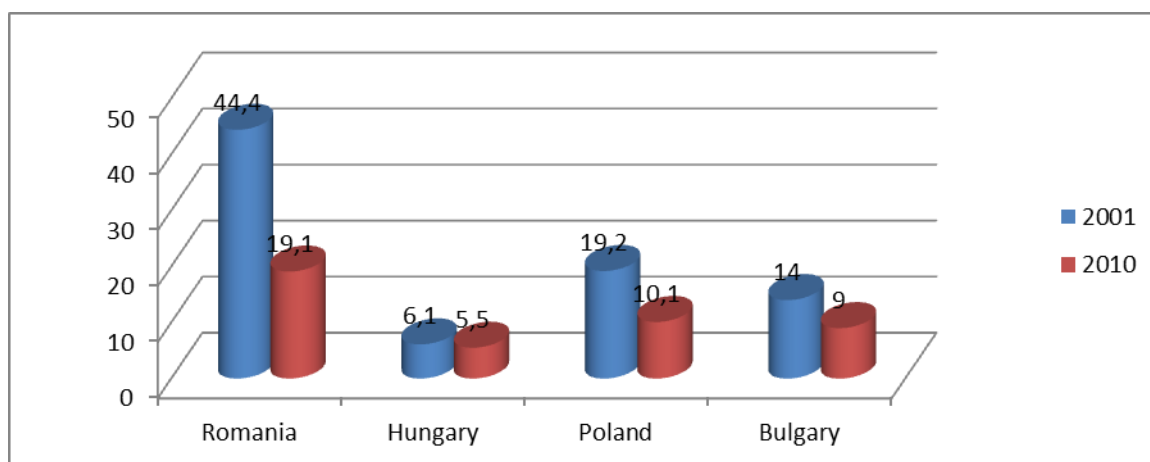
By analyzing the data in the table number 2 it is observed that both in France and Poland the wheat and corn yields increases on the same time with the specialization and the size of holdings. However in Romania the yields tends to have the same value regardless the economic size, average surface or the degree of specialization of the agricultural holdings, more than that, the wheat yield is lower in the case of specialized holdings bigger than 100 ESU. These rise the question if not the fact that the surfaces are too big determines a faulty management of this type of holdings. Another fact that needs to be pointed out is the one that the yields in Romania are lower to the yields of France and Poland.

This situation can be explained by the degree of development of the entire agriculture at the level of each country, by the degree of mechanization and chemisation of the crops. Another point that can bring an explanation is the experience that France have regarding the cereals cultivation and the support that this country had from European Union on consolidating and developing this sector.

THE DIFFERENCES BETWEEN ROMANIA AND OTHER EUROPEAN UNION MEMBER STATES REGARDING THE POPULATION OCCUPIED IN AGRICULTURE, FORESTRY AND FISHING

An approach to the indicator population occupied in agriculture from the angle of the influence that this has on the performance it is strictly necessary. The high number of small agricultural land owners which also have the role of holders reflects its direct impact on the agricultural performance.

Figure 1. Population occupied in agriculture, forestry and fishing



Source: Eurostat database

The figure presents the population occupied in agriculture, forestry and fishing in Romania, Hungary, Poland and Bulgaria and the evolution of this indicator in 2010 towards 2001. It can be observed that in the year 2001, in Romania 44,4% of the population was occupied in this sector. This value has changed, in decreasing, registering 19,1% in 2010. Compared to the others three Member States this value is very high, Romania being in the position of Poland in 2001. The decrease of this indicator can be justified by the measures taken at the level of rural space regarding the orientation of rural population to others activity sectors, supporting the rent, encouraging the cooperation and the association in agriculture, offering the alternatives for the older population.

It is expected an increase of the agricultural holding size as an effect of reducing the population occupied in agriculture, this represents a step forward for the Romania agriculture. If the rural population which owns agricultural land decides to activate in other field then the owned land will be sold or rent.

TECHNICAL EQUIPMENT OF HOLDINGS IN TERMS OF SIZE

The agriculture performance is influenced by the technical equipment of the agricultural holdings. This technical equipment is influenced by the size and dimensions of agricultural holdings. As long as the holdings will have small sizes there is no possibility of buying or even utilize technical equipment due to the high cost that this utilisation is supposed to have.

By analyzing the data presented in the table number 3 it can be observed that the agricultural holdings in Romania are not sufficiently equipped with technical support and it is highlighted a major disparity between Romania and Poland or France. The insufficient technical equipment leads to a high charge per tractor which influence the performance obtained in agriculture.

Tabel 3. Technical equipment of holdings in terms of size, 2010

		Under 5 ha	5-20 ha	20-50 ha	50-100 ha	Over 100 ha	All forms
France	Use tractor(%)	83,6		99,1	99,6	99,4	92,9
	Own tractor(%)	70,7		95,6	97,2	97,0	85,9
Poland	Use tractor(%)	89,4	98,1	99,6	99,0		95,2
	Own tractor(%)	61,4	88,8	96,7	93,4		79,9
Romania	Use tractor(%)	68,6	73,9	75,1	71,5		69,9
	Own tractor(%)	4,9	17,6	44,7	55,5		8,9

Source: Eurostat database

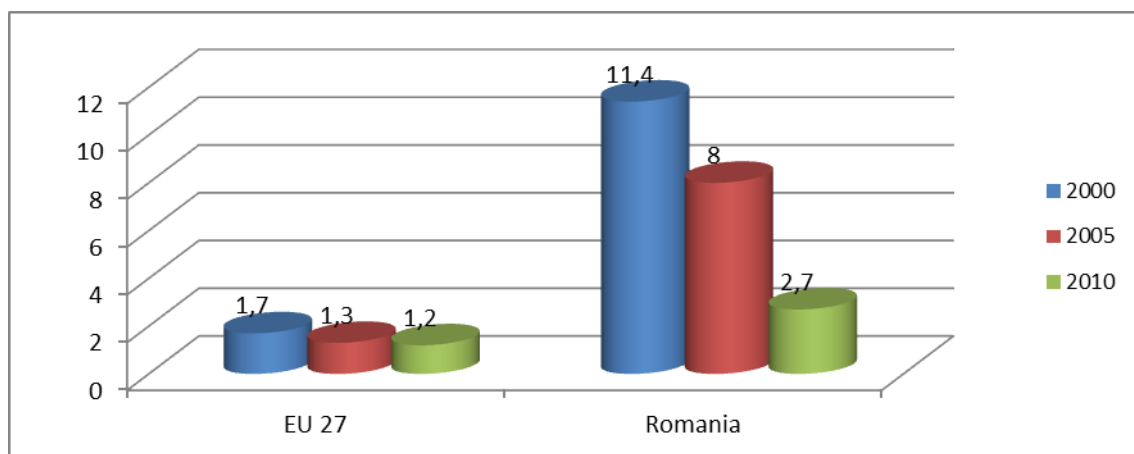
If the data from the table are followed it can be observed that the bigger the holding is the more technical equipped the holdings are, and the tractors used are usually owned by the holding that utilizes it. However this is not the case for Romania where the differences between use and own are majors, especially for the agricultural holdings with a size under 5 hectares. Although 68,6% from this type of holdings utilize tractor, only 4,9 own it. The explanation that represents the key of this situation is reduced to the high cost that such king of technical equipment suppose to have.

SHARE OF THE AGRICULTURE IN THE GDP

In order to establish the performance it is necessary to observe the effect that the agriculture has, in this case its contribution to the GDB. A relevant comparing is made between Romania and EU 27 with the purpose of pointing out the existing gaps.

Romania presents high agricultural potential due to a large area of agricultural land, labor fit for carrying out activities in the field, favorable climatic conditions, soil characteristics that advantage crops etc. But this potential is under exploited this under exploitation is caused by inefficient use the land fund as a fundamental resource in agricultural activities, an unclear legal system, crumbling of land, lack of funds and material, aging population in rural areas, lack of youth interest in practicing agricultural activities etc.

Figure 2. Share of the agriculture in the GDP (%)



Source: European Commission Reports

It can be observed that there are considerable differences between the percentage that the agriculture hold in GDP in Romania and the one of EU 27. If in EU 27 the values decreased from 1,7 % in 2000 to 1,2 % in 2010, in Romania the value of this indicator decreases from 11,4% in 2000 to 2,7 in 2010. Although this indicator decreases considerable in Romania, it remains double compared to the one of EU 27. The registered decrease is justified by the increase of technical equipment and the orientation of the population that use to be occupied in agriculture to others activity sectors.

MEASURES OF RURAL DEVELOPMENT WITH IMPACT ON THE AGRICULTURAL HOLDINGS STRUCTURE

In order to develop the entire Romanian agriculture there were taken a series of measures. These measures had also an impact on the exploitation structure. The main purpose of these measures was to increase the performance registered in agriculture.

Measures of interest that have/had a impact on the exploitation structure picture:

- Measures for developing the agricultural holdings and business: young farmers settlement, small size holding developing, developing non-agricultural activities in rural space, compensation for leaving the scheme given to small farmers and old farmers
- Services of consulting and concealing
- Support for association and cooperation in agriculture
- Support for innovation
- Support for insurance of crops and animals

These measures can bring modification regarding the exploitation structure in the sense of increasing the holdings size.

CORRECTING THE POLARIZATION OF THE EXPLOITATION STRUCTURE

In order to develop the Romanian agriculture it is necessary a correction of the polarization of agricultural exploitation.

To correct the polarization it is considered the increasing of holdings size and specialization, without losing from the view the limited influence that both size and specialization have on holdings, by public political measures and recommendations with the purpose of consolidating the agricultural holdings.

The effects that correcting the polarization may have are the following:

- Increases commercial holdings performance
- Increases yields
- Increases the degree of technical equipment
- Increases labour productivity
- Increases the work capital
- Increases the Gross Value Added
- Major contribution of the agro-alimentary sector to economic increase

CONCLUSIONS

The agricultural potential that a country has consists in the agricultural land surface that owns. But the efficient exploitation of this agricultural potential is conditioned. The conditions are imposed by factors such as: agro-pedo-climatic condition, the historical past, the degree of land crumbling, the number of land owners and holders and power of invest. These all factors “paint the picture” of property and exploitation structure and influences directly the productivity and performance in agriculture.

A performing agriculture has a uniform picture of property and exploitation structure with a base represented by the medium and large holdings. In order to practice a high valued agriculture, competitive on the market, in Romania, are needed changes in the polarization of the exploitation structure, more accurate it is highlighted as necessity moving from the small holdings to medium and large holdings.

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The economic and environmental integrated analysis scheme – instrument for evaluating the power generation techniques

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ABSTRACT

In the context of the current economic and financial crisis, the costs reduction has a great importance in any sector of activity. Moreover, in order to comply with the environmental requirements a significant financial effort is needed. In such situation, the integrated analysis - environmental and economic - gains increasingly more ground worldwide for developing and selecting of viable scenarios for sustainable development. Within this work, the scheme of integrated analysis - economic and environmental - will be presented. This type of analysis might be an appropriate basis for evaluating the electricity production techniques, and finally for guiding the strategies in the energy sector.

Keywords: *energy, integrated analysis, indicators, algorithm*

INTRODUCTION

Optimizing decisions on policies and measures in the field of climate change through an integrated analysis – economic and environmental - becomes more and more important as a basis for developing and selecting of viable scenarios for sustainable development.

In this context, the proposed scheme might be used as a basis for the evaluation of the electricity production techniques, and finally for the guidance of the energy sector strategies.

For this scheme, qualitative and quantitative methods will be used to define the integrated analysis algorithm, and to establishing the relevant indicators and the evaluation criteria.

The stages of elaboration of the integrated analysis scheme are the following:

- Establishment of the classes of indicators;
- The establishment of the indicators for each of the classes;
- Assigning the weights for the classes and indicators;
- Assigning of scores to each indicator, and setting ranges of values associated with each score;
- Setting the compositing algorithm;
- Setting the final result interpretation procedure.

RELEVANT INDICATORS

A first step in the development of integrated analysis - economic and environmental - scheme is the establishment of the classes of indicators and their associated indicators.

The classes of indicators which are set out are the following: economic indicators, energy indicators and environmental indicators.

In the table no. 1 are presented the relevant indicators for each class of indicators.

Table no. 1: **Classes of indicators and their associated indicators**

Classes of Indicators	Indicator	Unit
Energy indicators	Unitary consumption	toe/MWh
	Energy efficiency	%
	Resource availability	years
Economic indicators	Investment costs	\$ / kWh
	Operation costs	\$ / MWh
	Fuel costs	\$ / MMBtu
	Levelised cost (L.E.C.)	\$ / MWh
Environmental indicators	Emission factor CO ₂	tCO ₂ / toe
	Emission factor CH ₄	gCH ₄ / toe
	Emission factor N ₂ O	gN ₂ O / toe
	Investment cost for CCS system	\$ / kWh
	Investment cost for NOx control systems	\$ / kWh
	Other pollutants with risk to health and the environment - significant emissions	Atmospheric pollutants emitted

In the following, the indicators for the three classes of indicators will be presented.

Energy indicators

Specific fuel consumption for power generation

Conventional fuel consumed for the production of 1,000 kWh electric energy is the quantity of fuel in oil equivalent (10000 Kcal/kg) consumed in the reference period, reported to the electricity produced during that period.⁸

In order to ensure a unified expression of this indicator, which allows comparison of fossil fuels in this respect, the indicator will be expressed in toe/MWh.

Energy efficiency

The energy efficiency is the percentage of the amount of energy consumed by an equipment for an effective activity, which is not used as heat.

Energy efficiency can be assimilated with the yield, respectively the ratio between the effective energy and energy consumption, and hence also yield will always have a subunitary value. In the ideal situation, the energy efficiency has the value 1.

Usually, the energy efficiency is expressed in percentage.

Resource availability

Resource availability of fossil fuels is an increasing problem worldwide.

The specialists are estimating that the existing oil reserves would be able to support the current level of consumption only until the year 2040. For the world's natural gas reserves there is estimated the possibility to ensure the need at the present level of consumption by the year 2070, while coal reserves could guarantee consumption for a period of over 200 years, even in conditions of increased level of consumption with respect to the current one.

The indicator "resource availability" will be expressed in number of years.

⁸ National Statistics Institute, (2013), *Tempo-online database*,
<https://statistici.insse.ro/shop/index.jsp?page=tempo3&lang=ro&ind=IND116A>, accesed at 12.03.2013

Economic indicators

Investment costs

The cost of investment is an important parameter in assessing the expediency of building a plant. Investment costs vary depending on the technique used and the complexity of the installation, but also depending on the fuel used.

In order to ensure an uniform expression of this indicator, allowing the comparison of fossil fuels in this respect, the indicator will be expressed in \$/kWh.

Operation costs

This indicator incorporates the costs of operation and maintenance of installations for the production of electricity. Operating costs vary in a relatively narrow range, depending on the technique used, the fuel used and the power of the plant.

According to the estimates made by Risto and Aija (Risto and Aija, 2008), the operating costs for the plants most commonly in use in Europe, to produce electricity through the burning of fossil fuels, are in the range of 7-11 \$/MWh, at the price level in 2008.

In order to ensure a uniform expression of this indicator, allowing the comparison of fossil fuels in this respect, the indicator will be expressed in \$/MWh.

Fuel costs

The cost of fossil fuels is influenced primarily by the increasing energy consumption at the global level, but also by the natural process of continuous decrease of reserves.

Another important element that has influenced the evolution on a global basis of petroleum products prices was the deficit of the refining capacities, the issue requiring the identification of solutions, both on medium and long term. To all of these issues is added the tendency of certain states to supplement their own stocks to face the crisis.

These considerations have led to a general trend of increase in the world prices.

In order to ensure a uniform expression of this indicator, which allows the fossil fuels comparison in this respect, the indicator will be expressed in \$/MMBtu.

Levelised cost (L.E.C.)

The average cost per unit of electricity over the life of the plant (Levelised cost – LEC) is used as an indicator of global competitiveness for different types of techniques. This cost represents the cost in \$/MWh, of the construction and operation of an installation, throughout its life. The input indicators used for calculating this cost are the capital costs, fuel costs, operating costs, maintenance costs and financing, and the utilization rate for each type of installation.

The average cost per unit of electricity over the life of the plant (Levelised cost - LEC) is calculated using the following formula (U.S. Energy Information Administration, 2013):

$$LEC = \frac{\sum_{t=1}^n \frac{I_t + M_t + F_t}{(1+r)^t}}{\sum_{t=1}^n \frac{E_t}{(1+r)^t}}$$

in which:

LEC – The average cost per unit of electricity over the life of the plant (Levelised cost)

I_t – Investment costs in year t

M_t – Operation and maintenance cost in year t

F_t – Fuel costs in year t

E_t – Electricity generated in year t

r – Utilization rate

n – Lifetime of the system

Environmental indicators

Unitary emission (Emission factor) for carbon dioxide (CO₂)

In order to compare the various techniques for the production of electricity through the burning of fossil fuels in relation to the amount of CO₂ emitted into the atmosphere, the unitary emission was chosen, expressed through the emission factor.

According to the definition given by the Guidelines for the Development of National Inventories of Greenhouse Gases, developed by the Intergovernmental Panel for Climate Change (IPCC), Edition 2006 (Intergovernmental Panel on Climate Change, 2006), "the emission factor is a factor which quantifies the emission of gas, generated by the activity unit". To ensure a representative estimate of the emissions generated by a given level of activity corresponding to a set of conditions for running the installation or the analysed activity, the emission factors are established through the mediation of a large amount of data obtained by measuring.

For the combustion of fossil fuels to produce electricity, the IPCC 2006 Guidelines, provide emission factors for carbon dioxide resulting from the combustion of various fuels used in large combustion plants - the category sources code NFR 1.A.1.a - expressed in t CO₂/TJ.

In the integrated environmental and economic analysis were taken into account national emission factors for CO₂ used for the category sources code NFR 1.A.1.a, in the National Environmental Protection Agency Annual Reports to the United Nations Framework Convention on Climate Change. The unit of measure selected for this indicator is tCO₂/toe.

Unitary emission (Emission factor) for methane (CH₄)

In the process of burning fossil fuels, other greenhouse gases are emitted into the atmosphere, in addition to CO₂. Although the emitted quantities are lower, these gases can contribute significantly to the equivalent amount of CO₂ resulting from combustion, due to their global warming potential, which is higher than that of CO₂.

The 2006 IPCC Guidelines present the emission factors for other greenhouse gases resulting from the combustion of fossil fuels, namely methane (CH₄) and nitrous oxide (N₂O), in volume 2 - stationary sources section.

In the case of methane (CH₄), in order to ensure uniformity of approach with regard to emission factors in order to obtain meaningful values, the measurement unit used will be gCH₄/toe.

Unitary emission (Emission factor) for nitrous oxide (N₂O)

As in the case of the methane emission factor, in the case of the nitrous oxide (N₂O), the emission factors used, were those provided for different techniques of electricity production, by the 2006 IPCC Guidelines.

In order to ensure uniformity of approach with regard to emission factors, in order to obtain meaningful values, the measurement unit used is gN₂O/toe.

The investment costs in systems of carbon capture and storage

This indicator refers to the cost of the installation of a system of capture and storage of carbon dioxide to a new plant, or to an existing one.

Immobilization of carbon by capturing and storing the carbon dioxide is a developing technology, released as a solution for the limitation of CO₂ emissions released by burning fossil fuels. Proponents of the idea say that this process will stop the spreading of noxes in the atmosphere, preventing air pollution, while detractors are protesting against the risk of leakage of landfill once buried, not being convinced of the effectiveness of the technology. A number of experts in environmental protection even draw attention to the fact that

development in this direction can distract attention from the search and exploitation of renewable energy sources.

The cost of installation of such plants for the capture and storage of CO₂ vary from \$ 25/kWh for the coal plants, up to 110-120 \$/kWh for plants that use natural gas (U.S. Energy Information Administration, 2013).

The investment costs in low NO_x control systems

The indicator refers to the cost of the installation of a combustion control system which has the effect of a drop in nitrogen oxides (NO_x) in the combustion gases, and is expressed in \$/kWh.

The application of combustion control system leads to the reduction of up to 50% of NO_x emissions as well as, through the increase of the efficiency of the combustion process, to the increasing of the plant efficiency.

The investment costs in this type of control systems can range from 25 to 52 \$/kWh in the case of gas turbines, up to 84 \$/kWh in the case of plants which burn lignite (European Commission, 2006).

Other pollutants with risk to health and the environment

In addition to greenhouse gases, in the process of fossil fuels combustion to produce electricity, an extensive range of other pollutants that affect the population health and the environment, will be emitted in the atmosphere .

The types of pollutants and in particular the quantities emitted, depend on the fuel used and the installation type.

According to the EMEP/EEA Air Pollutant Emission Inventory Guidebook 2009 (EMEP/EEA Air Pollutant Emission Inventory Guidebook, 2009) in the combustion process of fossil fuels the following pollutants are emitted in significant amounts in the atmosphere :

- ***Sulphur oxides*** – mainly sulphur dioxide (SO₂) – resulted after the oxidation of the sulphur content in coal, content that can vary from 0.3% for anthracite, to 8% in lignite, with an average of 2 – 3% (Schiopu, 2011);
- ***Nitrogen oxides (NO_x)*** – resulted due to the oxidation of nitrogen in the air used for combustion;
- ***Suspended particulates*** – derived mostly from the ash, but also from the solid impurities in coals;
- ***Heavy metals*** – from the quantity of sterile contained by coal;
- ***Dioxins and furans*** – chlorinated compounds with high degree of toxicity.

This environmental indicator was introduced in the analysis in order to prioritise the techniques for producing electricity, after the intensity of the environmental impact, produced by different types of plants, depending on the type of fuel used.

ALGORITHM

The weights for indicators

The next stage in the procedure of drawing up the integrated scheme is the granting of weights for the classes of indicators and their respective indicators.

The indicators used in the scheme of environmental and economic integrated analysis are included in the three classes of indicators.

Weights were given to the classes of indicators and respective indicators, as follows:

Table no. 2: **The weights of indicators used within the integrated analysis**

Classes of indicators	Weight of the class of indicators	Indicator	Weight of the indicator
Energy indicators	34 %	Unitary consumption	13 %
		Energy efficiency	17 %
		Resource availability	4 %
Economic indicators	33 %	Investment costs	6 %
		Operation costs	8 %
		Fuel costs	8 %
		Levelised cost (L.E.C.)	11 %
Environmental indicators	33 %	Emission factor CO ₂	10 %
		Emission factor CH ₄	2 %
		Emission factor N ₂ O	2 %
		Investment cost for CCS system	8 %
		Investment cost for NOx control systems	8 %
		Other pollutants with risk to health and the environment - significant emissions	3 %

By examining the table it can be noticed that equal weighting was given to each class of indicators. We have to mention the fact that the weights given to each class may vary depending on the moment in which the analysis is performed and the objectives to which the decision must be taken.

The criteria by which the weights were given to the indicators are as follows:

- Relevance of the indicator;
- Complexity of the indicator;
- Accuracy with which the technological level and the status of the installation is reflected by the indicator;
- Number of elements contained by the indicator;
- Importance of the elements analyzed by the indicator.

Scores

Under the scheme of integrated analysis, there were awarded scores of "1" to "5", "1" representing the most unfavorable, and "5" being considered the most favorable.

In the table no. 3, are presented the scores given to indicators and the intervals associated with each score.

Table no. 3: Scores awarded to the indicators within the integrated analysis

Classes of indicators	Indicator	Measurement unit	Score				
			1	2	3	4	5
Energy indicators	Unitary consumption	toe/MWh	> 0.3	0.25 - 0.3	0.2 - 0.25	0.15 - 0.2	< 0.15
	Energy efficiency	%	< 40	40 - 45	45 - 50	50 - 55	> 55
	Resource availability	Years	< 15	15 - 25	25 - 35	35 - 45	> 45
Economic indicators	Investment costs	\$ / kWh	> 1100	1000 - 1100	900-1000	800 - 900	< 800
	Operation costs	\$ / MWh	> 20	15 - 20	10 - 15	5 - 10	< 5
	Fuel costs	\$/MMBtu	> 20	15 - 20	10 - 15	5 - 10	< 5
	Levelised cost	\$ / MWh	> 100	90 - 100	80 - 90	70 - 80	< 70
Environmental indicators	Emission factor CO ₂	tCO ₂ / toe	> 4	3,5 - 4	3 - 3,5	2,5 - 3	< 2,5
	Emission factor CH ₄	gCH ₄ / toe	> 170	45 - 170	30 - 45	20 - 30	< 20
	Emission factor N ₂ O	gN ₂ O/ toe	>150	50 - 150	25 - 50	10 - 25	< 10
	Investment cost for CCS system	\$ / kWh	> 150	100 - 150	50 - 100	25 - 50	< 25
	Investment cost for NO _x control systems	\$ / kWh	> 150	100 - 150	50 - 100	25 - 50	< 25
	Other pollutants with risk to health and the environment - significant emissions	Atmospheric pollutants emitted	SO ₂ , NO _x , dioxins and furans, particles, HCl, heavy metals	-	SO ₂ , NO _x , particles	-	NO _x , particles

It can be mentioned that:

- For each score the ranges are set evenly (the intervals are relatively equal);
- The Scores "2", "3" and "4" contain fixed values intervals, and the scores "1" and "5" contain a more widespread interval;
- The score for the indicator "Other pollutants with risk to health and the environment " is assigned depending on the diverse range of pollutants.

Compositing algorithm

The objective of the scheme of integrated analysis is to evaluate two or more techniques of electricity production and to decide which is the best choice at a time or in a given situation. After choosing the techniques to be analysed, the values of the relevant indicators presented in the first part of the paper are identified and the matrix of performance is developed.

The compositing algorithm is the following:

1. In the case of each indicator, the interval for each value is identified, and the score is assigned.
2. Fiecare scor este înmulțit cu ponderea indicatorului aferent.
3. The values obtained are then added together, and the result represents the total score.

This algorithm corresponds to a cumulative linear model, described by the following formula:

$$AS_i = \sum_{j=1}^n W_j * r_{i,j}$$

in which: AS_i – total score for the technique i ;

W_j – weight of indicator j ;

$r_{i,j}$ – score of the indicator j for technology i .

INTERPRETATION OF THE RESULTS

As a result of the application of the proposed algorithm, to each alternative it is associated a total score. Based on this score, a techniques ranking is produced, in the descending order of total scores obtained by each technique.

In accordance with the manner in which the calculation algorithm was conceived, the technique with the highest total score is considered as optimal.

The purpose of this scheme is to review several techniques for the production of electricity at a particular point, in a certain area/region or in a specific situation, and finally, based on the results, solutions of orientation of the energy policies could be proposed.

EXAMPLE OF APPLICATION OF THE ANALYSIS ALGORITHM

For an easier understanding of the compositing algorithm, an example of application of the integrated analysis scheme is developed.

The techniques A and B, two techniques for the production of electricity are analysed.

In the table no. 4, the performance matrix is presented for the two techniques.

Table no. 4: Performance matrix for the techniques A and B

Technique	ENERGY INDICATORS Weight 34%			ECONOMIC INDICATORS Weight 33%				ENVIRONMENTAL INDICATORS Weight 33%					
	Unitary consumption	Energy efficiency	Resource availability	Investment costs	Operation costs	Fuel costs	Levelised cost	Emission factor	Emission factor	Emission factor	Investment cost for CCS system	Investment cost for NO _x control systems	Other pollutants with risk to health and the environment - significant emissions
	tge/MWh	%	years	\$/kWh	\$/MWh	\$/MMBtu	\$/MWh	tCO ₂ /toe	gCH ₄ /toe	gN ₂ O/toe	\$/kWh	\$/kWh	Atmospheric pollutants emitted
Technique A	0,23	48,1	30	850	13,0	2,25	85,3	3,91	29	21	35	46	SO ₂ , NO _x , dioxins and furans, particles, hydrochloric acid, heavy metals
Technique B	0,18	46,7	15	990	8,5	7,75	154,0	2,32	167	42	28	65	NO _x , particles

According to the methodology presented above, in the first stage the score corresponding to the interval in which the values for each indicator are situated will be assigned. These scores are presented in table no. 5.

Table no. 5: The scores assigned to each indicator

Technique	ENERGY INDICATORS Weight 34%			ECONOMIC INDICATORS Weight 33%				ENVIRONMENTAL INDICATORS Weight 33%					
	Unitary consumption	Energy efficiency	Resource availability	Investment costs	Operation costs	Fuel costs	Levelised cost	Emission factor	Emission factor	Emission factor	Investment cost for CCS system	Investment cost for NOx control systems	Other pollutants with risk to health and the environment - significant emissions
	tgg/MWh	%	years	\$/kWh	\$/MWh	\$/MMBtu	\$/MWh	tCO ₂ /toe	gCH ₄ /toe	gN ₂ O/toe	\$/kWh	\$/kWh	Atmospheric pollutants emitted
Technique A	3	3	3	4	3	5	3	2	4	4	4	4	1
Technique B	4	3	1	3	4	4	1	5	2	3	4	3	5

Source: Author's calculations

According to the calculation algorithm, each score is multiplied with the weight of corresponding indicator, and the values obtained from this calculation are summed. The results are presented in the table no. 6.

Table no. 6: Application of the composing algorithm

Technique	ENERGY INDICATORS Weight 34%			ECONOMIC INDICATORS Weight 33%				ENVIRONMENTAL INDICATORS Weight 33%						Total score
	Unitary consumption	Energy efficiency	Resource availability	Investment costs	Operation costs	Fuel costs	Levelised cost	Emission factor	Emission factor	Emission factor	Investment cost for CCS system	Investment cost for NOx control systems	Other pollutants with risk to health and the environment - significant emissions	
	tgg/MWh	%	years	\$/kWh	\$/MWh	\$/MMBtu	\$/MWh	tCO ₂ /toe	gCH ₄ /toe	gN ₂ O/toe	\$/kWh	\$/kWh	Atmospheric pollutants emitted	
Technique A	0,39	0,51	0,12	0,24	0,24	0,4	0,33	0,2	0,08	0,08	0,32	0,32	0,03	3,26
Technique B	0,52	0,51	0,04	0,18	0,32	0,32	0,11	0,5	0,04	0,06	0,32	0,24	0,15	3,31

Source: Author's calculations

It is noticed that, as a result of the application of the algorithm, the technique A has obtained a total score of 3,26 and the technique B a total score of 3,31.

For example, the ranking resulting from the application of the integrated analysis scheme is the following:

Table no. 7: The ranking of the proposed alternatives

Technique	Total score
Technique B	3,31
Technique A	3,26

It is noticed that the technique B can be considered to be the preferable alternative, because after the application of the algorithm of calculation a total score of 3.31 was obtained, in comparison with the technique A which obtained a total score of 3,26.

CONCLUSION

In conclusion, the objective of the integrated analysis scheme is to evaluate the various techniques for the production of electricity, and to decide on the basis of the results obtained, which between them represent the optimal solution to a specific situation or at a particular time.

This type of approach is not commonly used in Romania, and the potencial beneficiaries are the authorities and the experts from the energy sector and environmental protection.

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Progresses of Romania in the field of traditional products

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ABSTRACT

In Romania there are many products that have potential to be applied in accordance with Regulation (EC) 1151/2012 on the certification of traditional products. However, Romanian traditional products do not have a good representation in the EU market, imposing such measures on their certification and promotions. One reason is the lack of association of farmers and procedures that require a long time for the EU attestation of traditional products. In this paper is presented the situation of the certification of traditional products in Romania, as well as its evolution during 2005-2013, each food category.

Keywords: *traditional products, promotion, European Union*

INTRODUCTION

The producers of traditional products represent an important asset for the EU rural economy and particularly for the less-favored areas, both by increasing farmers' income and the stability of the rural population in these areas.

Quality is an issue for every farmer and buyer, whether dealing with commodities produced to basic standards or with the high-end quality products in which Europe excels and EU farmers must build on high quality reputation to sustain competitiveness and profitability (http://ec.europa.eu/agriculture/quality/index_en.htm).

A new EU Regulation on quality schemes for agricultural products and foodstuffs entered into force at the beginning of 2013, having a more simplified regime for several quality schemes by putting them under one single legal instrument and it creates a more robust framework for the protection and promotion of quality agricultural products, it's main key elements being the followings (http://ec.europa.eu/agriculture/quality/index_en.htm):

- more coherence and clarity to the EU quality schemes;
- a reinforcement of the existing scheme for protected designations of origin and geographical indications (PDOs and PGIs);
- overhauling the traditional specialties guaranteed scheme (TSGs);
- laying down a new framework for the development of optional quality terms to provide consumers with further information, it creates and protects the optional quality term "mountain product".

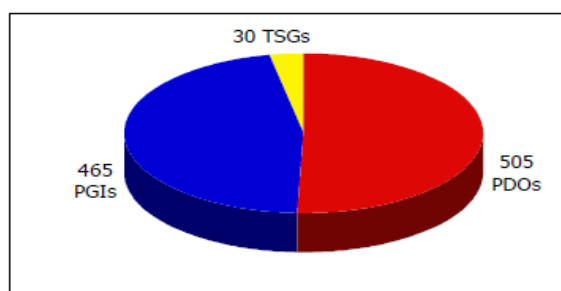
Table no. 1 – Situation of traditional products registration at EU level by countries

Nr.	COUNTRY	QUALITY SYSTEM/ number of products			TG
		I.G.P.	D.O.P.	S.T.G.	
1.	France	127	125	1	253
2	Italy	114	183	2	299
3	Germany	86	34	-	120
4	Spain	91	112	4	207
5	Romania	1	-	-	1

Source: data processing from European Commission

Traditional food products (TFP) are an important part of European culture, identity, and heritage. In order to maintain and expand the market share of TFP, further improvement in safety, health, or convenience is needed by means of different innovations (Guerrero et.al, 2009).

Graph nr. 1 - The share of PDO, PGI and TSG in all products made in EU



Source: Eurostat

Of the total registration of EU products, it is found that over 50% of these are products of origin, followed by products with PGI by 46.5% and on the last place are the products that were obtained by traditional production methods with about 3.5%.

Traditional products registered at national level

At national level there are a number of regulations on traditional products, namely: MARD Order no. 690/2004 and Order 724/2013. According to the two regulations, traditional product is a agro-food product made on the national territory and using local raw materials, which has the composition of food additives, which have a traditional recipe, a production and / or processing and traditional technological process that distinguishes it from similar products of the same category. Also, traditionalism is the element or set of elements in which a product is distinguished from other similar products of the same category; traditionalism cannot be limited to a qualitative or quantitative composition or to a mode of production established by Community or national legislation or by voluntary standards, however this does not apply if the regulation or standard that has been established to define the traditionalism a product.

Table no. 2 - Situation of Romanian traditional products registration during 2005 – 2013

1.	Year	2005	2006	2007	2008	2009	2010	2011	2012	2013 at 30 June
2.	No. of products	280	695	774	325	450	279	1050	438	111
	%	6,3	15,7	17,5	7,3	10,2	6,3	23,8	9,9	2,5
TOTAL										4402

Source: Ministry of Agriculture and Rural Development

In the period 2005-2013 were registered as traditional Romanian products a number of 4402 products. The main document was the basis for certification of traditional products has been the Decree of the Minister of Agriculture and Rural Development no. 690/2004.

In Romania there are many areas that are still producing agro-foods products in regions with traditional production methods that could acquire protection at national and / or Community level. It appears that most traditional products were registered in 2011 (23,8%), 2007 (17,5%) and 2006 (15,7%).

From the total of 4402 traditional products certified and nationally registered the highest number is owned by meat products (1541), followed by dairy products (1535), bakery products (750). Drinks category are recorded (285), vegetables and fruit (jams, jams) - 193 fish and traditional products - (11).

Table no. 3 – Situation of meat products registration by counties, 2013

Sibiu	233
Braşov	139
Argeş	127
Maramureş	119
Botoşani	107

Source: data processing from the Ministry of Agriculture and Rural Development

Regarding the registration of meat products, it can be seen that Sibiu county has the highest number of certificates because of its potential and the cultural diversion. On the second place it is ranks Brasov, a county placed in the same region as Sibiu.

Table no. 4 – Situation of dairy products registration by counties, 2013

Argeş	398
Sibiu	245
Braşov	134
Maramureş	107
Mureş	97

Source: data processing from the Ministry of Agriculture and Rural Development

Milk and dairy products represent one of the excellences in the culinary tradition of Romania meeting different preparation technics. Like meat products, it can be seen that counties with high altitudes and potential in the breeding sector rank the first places.

Table no. 5 – Situation of bakery products registration by counties, 2013

Sibiu	172
Maramureș	103
Sălaj	81
Alba	80
Covasna	55

Source: data processing from the Ministry of Agriculture and Rural Development

Bakery products represent for the Romanian population a sacred product and counties where traditionalism is more pronounced have the highest number of products. The bakery products from in these counties have as raw-material not only grain, but as well potato.

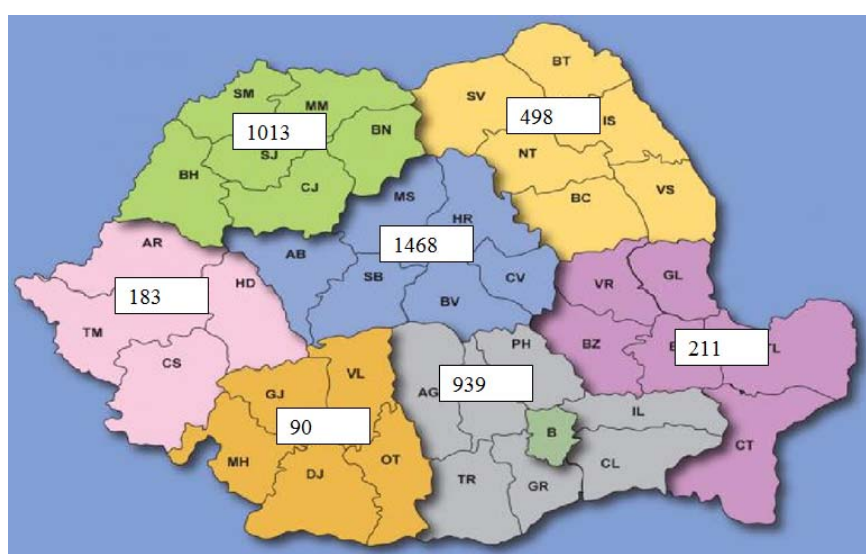
Table no. 6 – Situation of traditional products registration by counties, 2013

Sibiu	685
Argeș	641
Maramureș	395
Satu Mare	319
Brașov	300
Botoșani	165

Source: data processing from the Ministry of Agriculture and Rural Development

Sibiu county has the highest number of traditional products and beyond meat, bakery and dairy, additional products like vegetables, fruits, magiun and deserts are made here.

Picture no. 1 – Distribution of traditional products by regions, 2013



Source: data processing from the Ministry of Agriculture and Rural Development

By regions, it is noticed that in the Central Region, 33% of all registered products are concentrated, Sibiu being the most important county placing the region on the first place. On the second place we can find North-West Region with 23%, followed by Outh-East Region with 21% from all registered products.

CONCLUSIONS

For the agro-food producers the national regulations require to adapt to new market conditions, and finding the tools that allow them to increase the market value of the products, while ensuring the protection of consumers against improper practices and guaranteeing fair trade. It is required a revision of the national list of traditional products that were registered in the previous period in order to identify the right number and quality of the products on the market. As well, it is required a revision of the national legislation regarding the attestation of traditional products as well as the technical inspection. Clarifying and improving the conditions for registration of products it is necessary for protecting the producers and consumers. One of the most important issue is to adapt the requirements to the EU legislation and introduce the European concepts of traceability. Romania's alignment with European and international requirements has become a necessity and is generated by the new demands from EU and by the financial crisis. Connection to the international systems of quality assurance and food safety requires the development and implementation of traceability systems in the food sector, particularly important for our economy.

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The rural space and the human factor

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ABSTRACT

Given the growing importance of sustainable management of resources, as including human resources, in recent years is trying increasingly to growing importance is given to rural. Without taking into account the human factor, can generate problems like loss of social welfare. The purpose of this article is to make an analysis of the importance of the human factor in achieving the expected results due to the promotion and use of green economy, as well as a overview of the characteristics of the human factor in rural. The importance of the human factor is given by the need to take decisions that must have an impact on various aspects of rural.

Keywords: *rural, green economy, Romania, the importance of human factor, Human Development*

INTRODUCTION

Romania has a very important developing potential, which is not being used to its true capacity. With a surface of 238.000 square kilometres and a population of over 20 million inhabitants, Romania represents 6% of the total surface of the European Union and 4% of its total population. According to information published by INS, in comparison to data gathered in 2002, the population of Romania dropped in 2011 by 1.5 million inhabitants, meaning 7.2% of the total population. The factors that determined this decrease are mainly the negative natural increase (approximately 25%), as well as the external migration (approximately 75%).

In order to accelerate an economic growth and to assure a convergence of incomes with the ones in EU, investments and competitiveness should be improved in Romania. After recording an important decline, around the late 90's, the romanian economy has resumed its growth starting with the year 2000, recording an annual growth rate of 5%.

In Romania, the share of the rural population reflects an incidence bigger than that of other countries in EU. As so, from a point of view of territorial distribution, rurality is more obvious in Romania. In comparison to urban settlements, rural settlements are less populated and on a smaller scale.

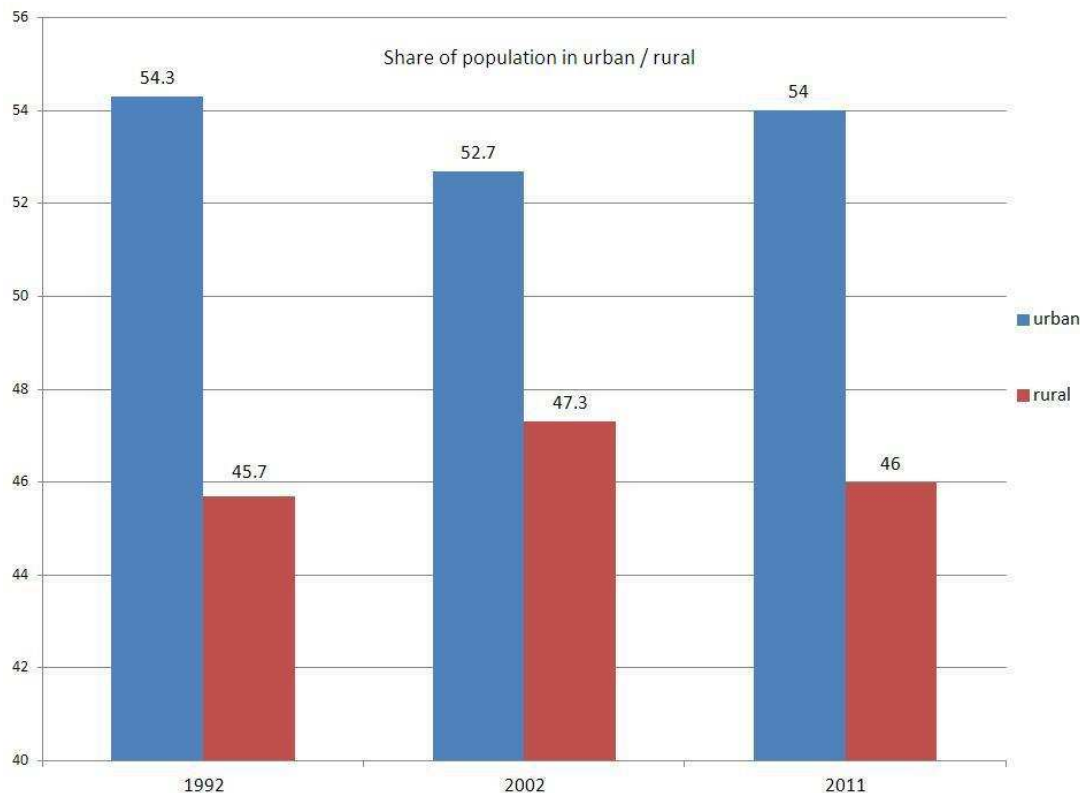
The involvement of these rural communities to the economic growth is very little. From the point of view of population density, there are significant differences, with the rural population being distributed unevenly. The most populated rural areas are the ones in the north-east of the country, where the birth rate is high, but also in the southern regions, due to the industrialization from the communist period. Also, there are big disparities, determined mostly by topography on a regional and county level.

We can consider, however, that the high share of rural areas within the national territory represents an advantage. As so, one can find craftsmen in the rural area, ready to both conduct traditional rural activities, and to offer domestic products.

RURAL AND POPULATION STRUCTURE

The rural areas have a substantial growth potential and a vital social role. Thus, the rural areas in Romania cover approximately 87% of the territory, including 46% of the population, that is 9.26 million inhabitants.

Figure 1: Share of population in urban / rural



On a sectoral level, a growth can be seen, from 2007 to 2012, of the ecologic production sector, but also a potential to continue extend and develop this production area. There is an interest to increase the production of high quality traditional food. Lately, one can observe the tendency to use origin designations, certified and registered at a national level, for the products that were created.

The need to standardize the processing units has led to the growth in numbers of the upgraded processing units. As a consequence, the number of investors from the urban area that possess significant resources has also grown. They make investments in the agro-food sector and apply innovative practices and technologies.

A traditional industry has developed in the past few years: wood processing.

However, according to the data published by INS, the aging index of the population has increased from 48.4 in 1992, to 79.8 in 2002, and to 101.8 in 2011⁹.

Also, the demographic dependency report of the elderly has increased from 16.6 in 1992, to 20.6 in 2002, and to 23.7 in 2011¹⁰.

⁹ the index of population aging represents the number of elderly persons (65 years and older) in relation to 100 young persons (under 15 years)

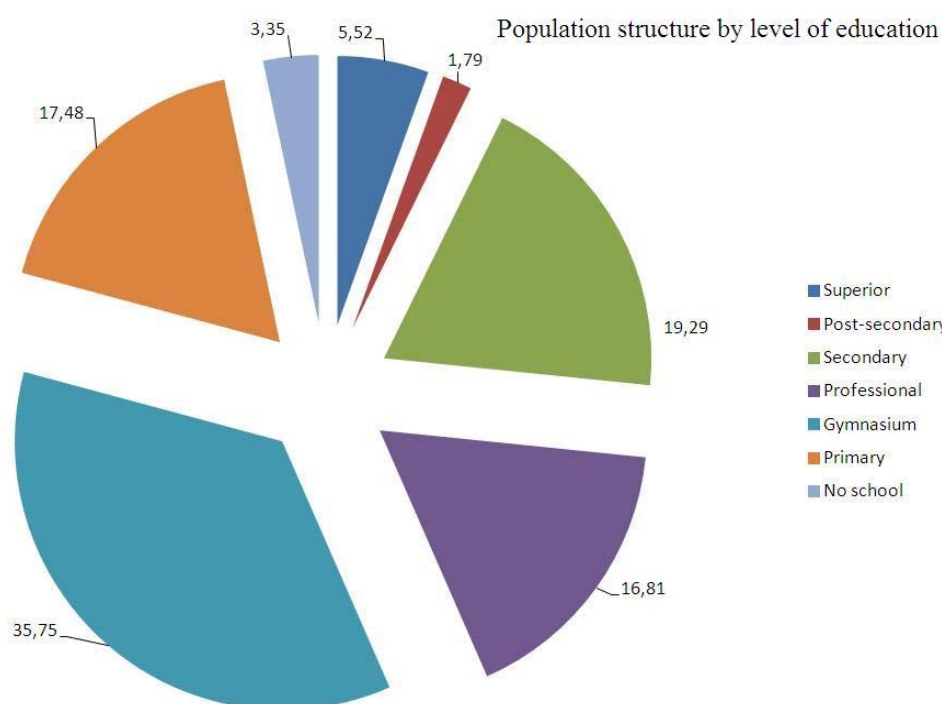
¹⁰ the demographic dependency report of elderly people is given by the number of elderly persons (65 years and older) in relation to 100 persons of working age (15-64 years)

In the rural area, after processing the statistical data regarding the level of education of the inhabitants older than 20 years, the informations can be synthesized in the table 1 and graphic 2.

Table 1. **Level of education**

Census	TOTAL	Superior	Post-secondary	Secondary	Without graduating high-school				
					Total	Out of which:			
						Professional	Gymnasium	Primary	No school
2011	7.055.242 (35 % of Romania's total population)	5.52	1.79	19.29	73.40	16.81	35.75	17.48	3.35

Figure 2: Population structure by level of education



Ten million and eight hundred thousand people live in the urban area, representing 54% of the total of settled population. The counties with the highest percentage of stable inhabitants that live in the urban area are: Hunedoara (75,0%), Braşov (72,3%), Constanta (68,8%), Cluj (66,3%), Sibiu (66,2%), Braila (62,5%) and Timiş (61,8%).

In 11 counties around the country, the rural area includes over two thirds of the settled population of the county. This group contains the following counties: Dâmboviţa (71,1%), Giurgiu (70,8%), Teleorman (67,6%), Neamţ (64,0%), Vrancea (63,8%), Călăraşi (63,8%), Bistriţa-Năsăud (63,3%), Buzau (61,4%), Vaslui (61,3%), Olt (60,9%) and Sălaj (60,7%).

The closest difference between the proportions of the settled population living in the two areas has been recorded in three counties: Mureş, Bihor and Prahova (50.2%, 49.2% and 49.1% of the settled population of these counties lives in the urban area).

The decrease in numbers of the population compared to the year 2002 is more emphasized in the rural environment (9.65 compared to a decrease of 5% in the urban environment).

On the 20th of October 2011, on a national level, children (0-14 years old) represent a proportion of 15.9% of the settled population, the young population (15-24 years) represent 12.3%, the adults (25-64 years) form the majority (55.7%), and the population older than 64 years old represent 16.1% of the total population. The population age 85 and older represent 1.3% of the total.

The age group 25-64 years represent the labor resources of a country and a prerequisite of economic development of the counties. Not by accident, the counties with the highest economic potential have higher proportions of this age group in the settled population. This includes Bucharest (61.1%), Ilfov (58.3%), Constanta (58.2%), Brasov (57.9%), Timis (57.4%), but also Arges (57.5%), Tulcea (57.1%) and Satu-Mare (56.7%). Proportions lower than the national value of this age group have been recorded in Calarasi (52.8%) and Giurgiu (52.6%) as well.

If on a national level, one out of six persons (16.1%) that are part of the settled population are age 65 or older, in Teleorman this age group represent approximately a quarter of the settled population. In counties Buzau and Giurgiu the age group of 65 years and older represent 20% of the total, and in Vrancea, Neamt, Braila, Olt, Valcea, and Calarasi it represents 18% of the total of settled population. The lowest proportion of the age group has been recorded in Ilfov (12.9%), as well as in Satu-Mare (13.3%) and in Timis (13.5%).

The demographic situation of Romania in 2008 reflected a historical-demographic process of deterioration unfolded during the second half of the 20th century.

The effect of the pro-natalist policies from the second half of the '60s and from the '80s has been the demographic decline shown even in the final decade of the last century.

LIFE EXPECTANCY

If between 2004 and 2006 the average life expectancy in Romania was 72.2 years, with sensitive differences between the male population and the female population (68.7 years for men, and 72.5 years for women), in 2011, Romania was situated amongst the countries with the lowest average life expectancy: 70.1 years for men, and 77.5 years for women).

It has to be mentioned that at a EU-27 level, between 2004 and 2006, the average life expectancy was situated around 75 years for men and higher than 80 years for women, and in 2011, the average life expectancy increased for both categories: 77.4 years for men and 83.2 years for women.

These informations regarding the average life expectancy are included in the centralizing table below:

Table 2. Life expectancy

	Women		Men	
	Romania	EU	Romania	EU
2004-2006	75,5	80	68,7	75
2011	77,5	83,2	70,1	77,4

As a conclusion to the informations regarding the population of Romania, in general, and the rural environment, in particular, we can say that the average life expectancy has increased, and the temporary migration for work abroad has decreased the pressure on the necessary resources to cover the essential economic and social needs of the population, and it has also led to a decrease of unemployment.

At the same time, there are aspects less pleasant. Those are: the lower birth rate; the change in demographic behavior of young couples which choose to have less children (preferably one), born at a higher age of the mother; the massive decrease of birth rate at mothers with a high level of education and average level of living; the increase of the elderly/adults dependency raport; the massive migration (especially the external one, but internal as well) from the less developed areas (rural environment, small towns, etc.) has led to imbalances and even depopulations in territorial profile when it hasn't been compensated by natality; the aging of the population of Romania, with strong negative effects on the evolutions of future labor resources.

During the last years, it has been found that older people have gradually replaced the younger population in the rural area. At the beginning of the '90s, the people that migrated to the urban areas came from all the age groups. This tendency has modified after 1996, when young people started leaving the rural areas, and older people started migrating to these areas.

Thus, the rural area has become more and more attractive to the population older than 35 years, and especially to people in the 45-54 age group who are, usually, more vulnerable on the urban area labor market, and who are heading towards rural areas, where they begin to conduct the subsistence activity.

For some people, however, living in a rural area is preferable to living in a crowded urban environment. The young population migrate to the urban areas searching for better work places and a more attractive life style.

For rural areas, migrating to another country has bigger economic and social implications than migrating from the urban area to the rural one. As so, important financial flows are occuring in the rural economy, as a consequence of the consistent amount of money sent in the country by the people working abroad.

This money not only lead to attitude change regarding the migration abroad, but also prepare the way for the modernization and the development of the rural space. A good amount of these sums of money are being invested into buying housing and land, as well as into the attempt to increase the qualitative level of life in the rural area, and to ensure a protection in case of potential financial problems. Those that have worked abroad (especially young people) begin to develop entrepreneurship, being willing to start a comercial agricultural, or non-agricultural, activity.

Despite the advantages, we should mention that there are disadvantages, represented by the social costs, as well. More and more children remain in the care of relatives in the country and more and more families are being separated.

THE IMPORTANCE OF THE HUMAN FACTOR IN INCREASE SOCIAL WELFARE

From the point of view of the level of preparation, if one talks about the preuniversitaty education, one can mention the following beneficial aspects: the increase of the mandatory duration of education to 10 years, the reorganization and diversification of the formation ways specific to the profesional and technical education; the increased degree of participation in preuniversitary education and the degree of continuation of studies after the end of the mandatory period; the existence of affirmative educational policies for rroma population, which leads to an increase in access opportunities to preuniversitary education; the existence of a legislation for education that gives national minorities the opportunity to learn their mother tongue in school and to receive education in their mother tongue, the adoption of the National Law of Education.

Actions to continue implementing a coherent and functional system to ensure the quality in preuniversity education are necessary, as well as the adoption and implementation of the National Qualifications Framework.

Prerequisites were created at the higher education level for: the structuring of the higher education system in 3 study cycles compatible at an european level, according to the „Bologna Process” concept; the expansion of the network of higher education institutions, both public and private; the consolidation of the autonomy of universities, sustained by the introduction of a system that ensures the quality of the evaluation, both external and internal; the ensurance of transparent qualifications, of transferability and comparability to the ones created at an european level, by introducing the diploma supplement.

Some of the aspects identified at a national level have a correspondent at an european level. Thus, taking into consideration the 2020 Europe Strategy, we notice that three aspects are closely related to each other: the intelligent development, durable and inclusive (European Commission, 2010). As such, the main challenges of Europe: the aging of population, the insufficient level of qualification of the work force, the necessity to increase the degree of innovation, the relationship between economic growth and environment degradation, as well as energy safety, should be treated through an integrated approach (2020 – Rolul politicii regionale în viitorul Europei).

If we consider that the economy that leads to the improvement of the human welfare and of the social equity, as well as to the reduction of environmental risks and ecological deficits, represents *the green economy*, then we can state that green economy is based on three strategies: the reductions of the carbon emissions, the improvement of the energetic efficiency and resources, and the prevention of biodiversity and ecosystemic services loss (UNEP, 2011).

The expression „green economy” first appeared during an Earth Summit held at Rio de Janeiro in 1992, and it is seen as an alternative to sustainable development.

Even though there is a formal conceptualization, there are no delimitations settled regarding a precise definition, on how to measure the degree of ecologization from an economy, on how to identify the role of the states, the financing method, on how to discover which would be the sectors most affected and which would be the beneficiaries, and last, but not least, on how to evaluate the influence of the transition to green economy on the day-to-day life of the citizens (Sawyer, 2011).

The transition towards a green economy should be made on both a national, and a global level, through cooperation and coordination, and all the strategies used for a green economy should be catalyzed and sustained by public and private investments, as well as political reforms and legislation changes (TEEB, 2011).

CONCLUSION

The desire to have a „green economy” is strong. By promoting sustainable development and the eradication of poverty, such a transformation depends on two big changes: the way in which our economy is structured and the acknowledgment that the environment represents the basis of our goods and that it should be managed as a source of economic growth, prosperity and wellbeing.

In this context of changing comparative advantages, one inescapable conclusion is that not all rural areas have the same conditions for attempting a development process based on the exploitation of its amenities. Low population density, which is characteristic of these areas, complicates economic diversification. The demographic profile and the characteristics of the social fabric, mainly of tagnant rural areas or those that lose population are different: there is

a vulnerability to external social ties, lack of local opportunities, low expectations of social mobility or increased interactions. Distance from urban centers can also turn into a disadvantage through increased information and transportation costs (Favareto, 2011).

When we talk about human resource development, we need to consider transforming their prospects.

Three of their common drivers: their proactive developmental states, their capacity to tap into global markets and their focus on social policy innovation (UNDP, 2013).

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The disparities analysis of the Bucharest-Ilfov region

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ABSTRACT

The reduction of economic and social disparities has become the key issue within the regional policy of the European Union (EU), especially in the context of its extension, and inclusion of new regions which presents in the most part disparities in comparison with the average level of development existent at the level of European Union's regions.

The existence of regional disparities at each country level remains a serious problem both theoretically and practically, requiring consideration in the planning and optimal allocation of resources and funds at the regional level.

Measurement of regional development and identification of regional disparities has become a major problem, which began to be approached in some EU member states and beyond.

Currently, the distribution of average incomes (under the form of Gross Domestic Product-GDP/capita) is used by national and European authorities, in order to evaluate the level of development of each region and in order to determine funding of each region through specific policies.

Bucharest-Ilfov Region consists in Bucharest – Romania's capital – and Ilfov County, which is located in the south part of the country, more precisely, in the central part of Câmpia Română (Romanian Plain).

Keywords: *economic disparities, social disparities, regional policy, regional development*

In what concerns its size, the Bucharest-Ilfov Region covers an area of 182.115 ha (0, 76% of the total land of the country), of which 13,06% represents the administrative territory of the Bucharest Municipality, and 86,94% of the Ilfov County. The two entities which compose the region are also the smallest territorial administrative units of Romania from a size point of view.

Table no.1 The structure of administrative-territorial divisions and of towns in 2012

Territorial division	Total surface (ha)	Population density (habitant/km ²)	Number of municipalities	Number of cities	Number of towns components of municipalities and cities	Number of townships	Number of villages
Bucharest Municipality	23.787	8.089,71	1	0	6	0	0
Ilfov	158.328	215,10	0	8	13	32	91
The Bucharest – Ilfov Region	182.115	1.243,65	1	8	19	32	91

Source: personal processing based on the data available in the section Tempo-online, www.insse.ro

The population of the region is concentrated in nine urban centers, 32 townships and 91 villages, to which are added 19 towns components of the municipalities and cities. The percentage of the urban population (2012) of the total population is 91, 49%. In the following table is described the comparative situation during the period 2007-2012 at a regional and national level, on residential averages:

Table no. 2 The comparative situation ob residential averages, at a regional and national level during the period 2007- 2012 (persons)

Residential Environment	Territorial division	2007	2008	2009	2010	2011	2012
Total	Romania	21.565.119	21.528.627	21.498.616	21.462.186	21.413.815	21.355.849
	Bucharest-Ilfov	2.232.162	2.242.002	2.253.093	2.261.698	2.267.419	2.264.865
Urban	Romania	11.914.343	11.872.270	11.835.100	11.818.670	11.778.195	11.737.460
	Bucharest-Ilfov	2.063.204	2.070.257	2.075.477	2.080.013	2.079.881	2.072.275
Rural	Romania	9.650.776	9.656.357	9.663.516	9.643.516	9.635.620	9.618.389
	Bucharest-Ilfov	168.958	171.745	177.616	181.685	187.538	192.590

Source: personal processing based on the data available in the section Tempo-online, www.insse.ro

The population of the region, of 2.264.865 habitants in 2012, is distributed by inverse proportionality with the dimension of the two administrative entities. The Bucharest Municipality is the biggest urban conglomeration in Romania, its population being 1.924.299 habitants, representing about 84, 96% of the population of the region, about 16, 39% of the urban population of the country, and about 9% of the total population in Romania, having a density of an approximate value 8.090 habitants/ km².

The population of the Ilfov County of 340.566 habitants represents only 15.04% of the total number of region, being situated in the category of small counties of the country with an approximate density of 215 habitants/ km².

Overlapping entirely some subdivisions of Câmpia Română, the region has a relatively monotonous natural environment, where are predominant the valleys created by flowing waters that cross the region, numerous natural and artificial lakes.

The evolution of Gross Domestic Product (GDP) of the Bucharest-Ilfov region determines its ranking on the first place in comparison with the other eight development regions, as it is shown in the following table:

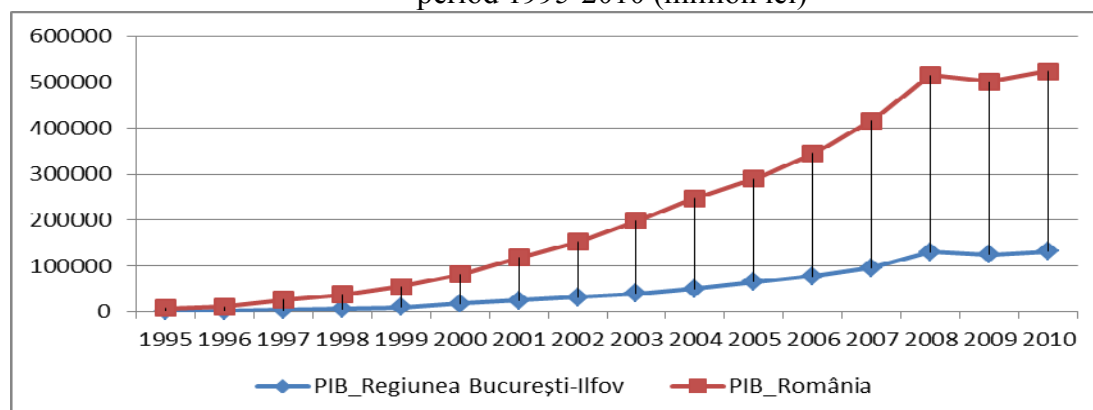
Table no.3 The evolution the Gross Domestic Product (PIB) at a national and development regional level during the period 2008- 2010 (million lei)

Territorial division	Year		
	2008	2009	2010
Romania	514.700	501.139,4	523.693,3
North – West Region	58.638,8	57.900,2	59.292,5
Central Region	57.303	57.100,9	59.120,1
North- East Region	55.021,9	54.408,4	55.669
South-East Region	53.851,1	52.706	56.339,5
South Muntenia Region	64.535,4	65.141,8	66.114,8
Bucharest-Ilfov Region	134.162,6	124.288,8	131.579,2
South-West Region	40.340,2	39.953,8	41.941,2
West Region	50.393,4	49.200,2	52.983,3

Source: personal processing based on the data available in the section Tempo-online, www.insse.ro

The geographical and historical conditions have determined a serious advance, from a socio-economic point of view, of the Bucharest - Ilfov Region, as it results from the linear evolution of the Gross Domestic Product (GDP) of the Bucharest-Ilfov, it is shown in the following figure:

Graphic no. 1 The evolution of the national and regional Gross Domestic Product during the period 1995-2010 (million lei)



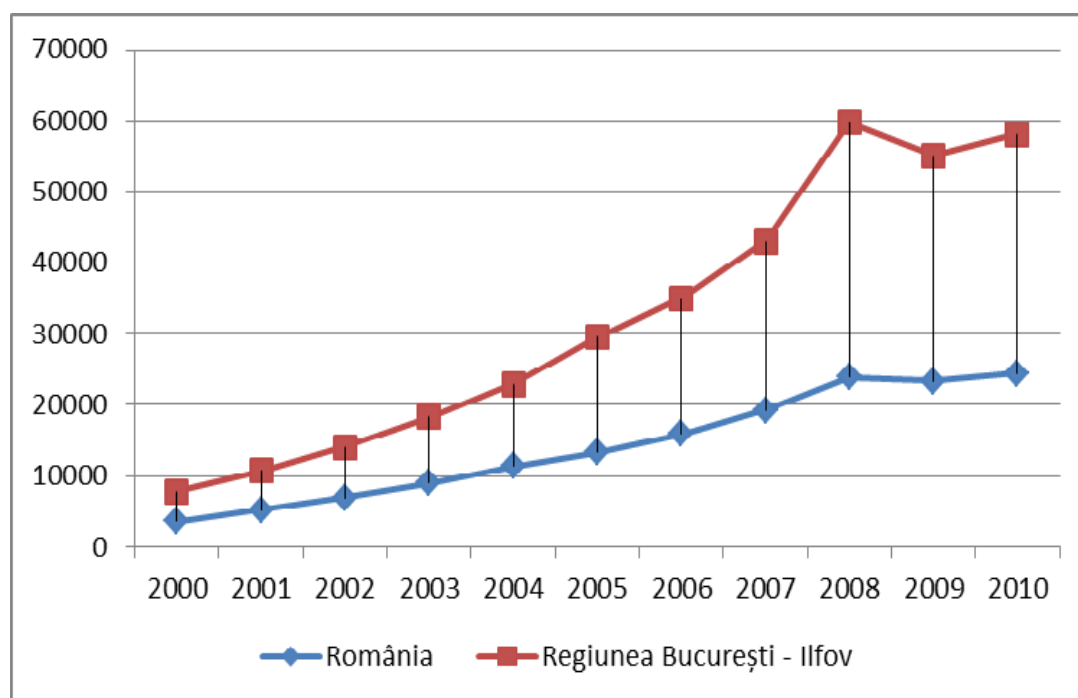
Source: personal processing based on the data available in the section Tempo-online, www.insse.ro

It is notable the fact that the evolution of the regional Gross Domestic Product respects the evolution of the National GDP. Also, in 2010, 25,12% of the total value of the national Gross Domestic Product, is produced by this region. The economic regional growth is due to the diversified industrial development, that took into account the specific conditions of the regions.

The evolution of the regional Gross Domestic Product is maintained during the entire analyzed period, starting from 17.869, 2 million lei in 2000 and arriving at the 131.579,2 million lei in 2010.

Another element to be taken in consideration in this analysis is Gross Domestic Product/capita, which furnishes revelatory information about the economic situation of the region, eliminating differences related to the population of different regions. In this way, we can observe the fact that the value of Gross Domestic Product/capita, which furnished relevant information about the economic situation of the region, eliminating differences related to the population of different regions. As a result, we can observe the fact that the value of regional Gross Domestic Product is superior to the national Gross Domestic Product/habitant, aspect due to the regional economy which is very dynamic. In the entire analyzed period, the value of regional Gross Domestic Product/habitant is 200% bigger than the value of national Gross Domestic Product/habitant, as it results from the graphic shown below:

Graphic no. 2 The evolution of Gross Domestic Product/ habitant at national and regional level during the period 2000-2010 (lei/capita)



Source: personal processing based on the data available in the section Tempo-online, www.insse.ro

In the following approach, it is presented the evolution of the districts which bring their contribution to the realization of the regional Gross Domestic Product in the period 2008-2010, more precisely:

Table no. 4 **The evolution of regional Gross Domestic Product based on composed activities during the period 2008- 2010 (million lei)**

Activities and composed elements Gross Domestic Product	Year		
	2008	2009	2010
Agriculture, forestry and fishing	380,4	329,4	398,1
Extracting industry, processing industry; production and input of electric and thermal energy, gases, hot water and conditioned air, water distribution, sanitation, management of waste products, decontamination activities	21.053,6	21.999,4	25.780,6
Constructions	18.695,7	14.408	13.113,9
Wholesale trade services and retail, the vehicle and motorcycle repair, transport and storage, hotels and restaurants	28.687,1	25.218	19.023,1
Information and communication	14.180,9	13.339,8	12.230,5
Financial mediation and assurance	6.426,3	6.600,3	7.694,8
Real estate transactions	3.698,7	4.265,2	9.570,7
Professional, scientific and technical activities, activities with administrative services purpose and activities for support services	9.923,7	10.212,9	13.016,4
Public administration and defense; social assurance in public system, education, health and social assistance	11.648,1	11.384,9	11.265,7
Cultural and entertainment activities, reparation of domestic use goods and other services	4.639,9	4.053,6	4.739
Regional Gross Value Added (VABR)	119.334,4	111.811,5	116.832,8
Tax product	14.682,1	12.506,4	14.407,9
Rights to import (custom rights)	310,3	228,8	490,6
Subsidies on product	-164,2	-257,9	-152,1
Total regional Gross Domestic Product	134.162,6	124.288,8	131.579,2

Source: personal processing based on the data available in the section Tempo-online, www.insse.ro

In 2010, the regional economy has contributed with 25, 12% at the obtainment of national Gross Domestic Product.

If we refer to the contribution of the economic districts components of the regional Gross Domestic Product, in the analyzed period, the agriculture has registered a varied evolution, due-probably – to the dependence of the climatic conditions, the low degree of mechanization, the lack of irrigation system, but also the excessive fragmentation of terrains. Also, it is notable the fact that the entire value added to agriculture is realized almost entirely only in the county Ilfov, whose agricultural surface is little over 100 thousand ha.

The industry has registered an increase of 22,45% in 2010 in comparison with 2008, as an effect to the fiscal policy which pursued and encouraged the development of the business environment, through foreign investors. The industry had during the period 2008-2010 a contribution between 15 and 20% to the production of the regional Gross Domestic Product.

Regarding the construction field, as we well know, it was the most affected by the global economic crisis, fact reflected also by the evolution of the contribution of this district to the obtainment of regional Gross Domestic Product. In consequence, we can observe the fact that this field has registered a decrease of about 30% of the analyzed period.

The contribution of the wholesale trade services and retail, the vehicle and motorcycle repair, transport and storage, hotels and restaurants has been reduced during 2008-2010 with an approximate percentage of 35%, also being a field affected by the global economic crisis.

In what concerns the contribution of the services to the obtainment of the regional Gross Domestic Product, it requires attention the field of “real estate transactions” which during the period 2008-2010, has registered an increase of about 250%, fact due to real estate frenzy, which has generated an impressive number of real estate transactions, but also the emergence of numerous residential areas in counties around the Municipality of Bucharest.

Analyzing the contribution given by the region to each branch, it is observed a high contribution given to the industry, followed by trade, transport and hotels.

Referring to the economic environment of Bucharest-Ilfov region, it is important to underline the fact that it was touched by the global economic crisis, effect which can be observed by the reduction of entrepreneurs with 9,37% in the period 2008-2010. Also, the reduction of the number of enterprises had consequences over the number of employees, which diminished with over 110 thousand persons in the same period.

The investments have been reduced at half, because a big part of investors gave up on development projects under Bucharest- Ilfov region.

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Renewal of railroads, the first step towards ecological reconstruction

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ABSTRACT

The current trend of railroad transport defines a future scenario in which cost minimization strategies will be replaced by quality maximization strategies due to the continuous development of the society and the change occurring in consumers' preferences that are in a constant desire of more and better. The renewal of the European railroads is one of the main objectives of all representative institutions. This is the reason for which the current paper wishes to analyze the present state of the Romanian Railroad System from a passengers' perspective and to assess the trend of the following years.

Keywords: *railroad, infrastructure, rolling stock, intermodality*

INTRODUCTION

The world is in a continuous move and development, in a continuous desire of more and better. These principles apply to railroad transport as well where the improvement of the system tends to become a necessity for all communities everywhere due to road traffic, costs of operating and owning a vehicle, high risks of accidents and pollution which have become overwhelming. Moreover, the economic and demographic trends, represented by an aged population, a high fuel price, growing urbanization, larger concerns on health and environment, as well as major changes in consumer preferences, conduct to a higher demand of a quality transport. The latter requires a change at a high level, a change of the entire perspective of the way we address transportation investments. We are thus urged to make the shift from an evaluation based on cost minimization to one that focuses on quality maximization (Litman, 2012) which will generate more consumers than in the first option. Even though the idea seems idealistic, in reality it takes into account the present and future tendencies of transportation.

TRANSPORTATION, PART OF WORLD ECONOMY

Reducing traffic and road pollution are two consuming issues that do not need any other description as they are well-known. Authorities from everywhere have developed several mitigation measures, more or less reliable, in order to reduce their impact. Lately, they tried to change the way people travel insofar as to focus on a means of transport that is less damaging both for the environment and human health, but one that is able to carry large capacities at once and which is accessible to various categories of people. This is railroad transport.

Trying to define this type of transport could be a challenge indeed mostly due to the various elements that are included. Nevertheless, we could say that railroad transport comprises a set of services and movements of goods on long and medium size distances, accomplished by transport operators, with the help of specialized railroad personnel and with specific vehicles

equipped with guidance systems such as wagons, engines and electric railcars, using a rail infrastructure made up of fixed railroads and rail stations (Gherasim, 2007).

Making an analysis of the term “railway”, Thompson (2010) notices a lower homogeneity of railroads compared to road, sea and air transport systems. For example, if a British driver is able to drive (even with small difficulties) on several roads from France despite the fact that his wheel is on the opposite side of all the other types of cars, a train from Portugal will never be able to move along the rails of Nigeria due to a gauge difference of over 600 mm.

The process of improving or developing public transport infrastructure has always attracted (and most probably will continue to attract) numerous discussions regarding the economic impact these types of initiatives can have from several points of view (Crampton, 2003). First of all, we have to talk about the financial resources involved, that is taxpayers’ money which represents the main source of support for these initiatives. The problem drives around the share that every citizen has to pay, if people are able to bear these costs and the way the money gathered will be justified. Secondly, there is always a doubt whether these investments will be successful or not, in other words if they can serve international purposes (such as international corridors) or they can be used only internally. Of course, the first case is the most suitable, but some governments wish to master this aspect before beginning work so as to avoid a huge failure. Last but not least, we must bring into discussion the issue of private funding which currently becomes a necessity as governments do not possess enough funds in order to start or finish certain investments. As long as we can prove that the sections which are about to be built or improved can bring commercial or any other kind of benefits to the investors or to different owners whose businesses or properties are in the way of these sections, the authorities are entitled to ask for personal contributions which can support the investments.

This problem is also encountered in railroad transport, where these investments hint mainly at the areas surrounding the big cities or which are close to them. We are thus speaking about short distance railroad transport which is suitable for commuters and which is assigned to several railroad sections that are frequently used. The necessity of improving these sections is absolutely mandatory due to a higher flow of people who work in the big cities but who live in the outskirts or up to 100 km away from their place of work.

Recent years have shown a trend directed to the development of business parks located at the outskirts of cities and which has contributed to an increase in the number of jobs for those who live nearby. Thus, the option of using the train when going to work seems more and more viable to everyone under the conditions of a deepened traffic. We can add here the low price of a train ticket and a safe journey. Starting from these reasons, improving and enlarging the railroad network (together with the railroad coaches that cater for these routes) on short distances represent two issues that need immediate solutions. The connection between economic growth and those areas is obvious, the results of the investments influencing each other in a positive way and changing completely the characteristics of the areas.

These ideas are supported also by Lunyu Xie (2012) which states that the impact of improving railroad transport accessibility is a positive one, reducing significantly the percentage of car usage on the same distances where the train is preferred. In addition, it seems that walking or cycling are two additional means of transport besides the train, the rate of using these two increasing at the same pace as the improvement of rail transport accessibility.

The same author demonstrated that in the case of enlarging the railway system or building new stations, the impact of this measure is much bigger for the inhabitants of the respective areas than in the situation of only improving the existent network. Moreover, it seems that

people who prefer the train instead of cars tend to live more closely to train stations, while those who have a higher income will never accept a shift from car to train.

According to a recent study (Marinov et al., 2013), a large part of the commodities shipped by high tonnage vehicles are not delivered up to the center of towns, their trip ending at the outskirts of cities. From here we can conclude that these transports can also be done via train, without further increase of road traffic or pollution. The authors of the study go even further and propose, besides the above mentioned solution, to continue delivering the commodities within cities on railroad as well, more precisely by using the underground networks and those designed for aboveground rail transport.

While many of us would be tempted to believe that this could not be possible, some real-life examples have proved their high degree of feasibility during the long period they have been implemented. Among these we can mention CarGo Tram from Germany (operating since 2001), Cargo Tram from Switzerland (first appearance – beginning of 2005), CityCargo from the Netherlands (2007) and Monoprix, Paris (appeared in 2007). While the advantages of these transport solutions are the same as the ones mentioned before (from an economic, ecological and social point of view), their disadvantages mainly focus on the fact that future researches will help outrunning them.

First of all, we can refer to the cost of the investment which has to be as lower as possible, a situation that can be obtained only by making use of the existent infrastructure. Secondly (strongly connected to the first aspect), the transport of passengers following that precise routes will be disrupted, but if these people understand that by resorting to rail transport we reduce both the impact on the environment and pollution, then they will be more tolerant towards this measure (an alternative could also focus on freight transport which could be done during the night when travelers do not use these routes so much). In addition, a strong political support is needed, for example by granting incentives, as well as a thorough analysis of each case alone, without trying to generalize a project that has been successfully implemented somewhere.

Contrary to all beliefs, there are people who criticize railway transport, accusing it of being a huge fund consumer and that it does not represent an alternative to reducing road traffic and pollution. Litman (2012) has managed to overcome these accusations with a series of strong arguments, outlining in the same time the constructive character of some of these critics in the light of the fact that they can encourage finding new ways of improving existent projects.

The author emphasized that most of the time these critics are based on incomplete information and do not take into account the fact that railway transport addresses to everyone (including handicapped people or those whose financial situation is not in line with affording a car or using airway transport), not only to car drivers, that has lower operating costs, that a railway system implies the vehicles themselves, tracks and terminals, while a road system needs vehicles, roads and parking facilities for each destination etc.

Another type of urban rail transport is the subway transport which had strong expansion trends in Europe even from the beginning of 2000 (Deloukas & Apostolopoulou, 2003). At that time, public-private partnerships in the field of rail transport were something new, only 2% of world's investments being directed to this sector. By 2011, the percentage had risen to 32.9%, being ranked second after the road transport towards which almost half of the funds corresponding to investments have been directed (48.8%) and surpassing considerably sectors such as sea and air transport where 12.77%, respectively 5.43% of the funds have been allocated (World Bank Group, PPI database, 2012). Nevertheless, the conclusion is that funding an improvement or enlargement of a railway network cannot be accomplished without a public-private partnership which leads to economies of cost and to a distribution of risks.

THE LONG WAY TOWARDS A HARMONIZATION OF THE EUROPEAN RAILWAY SYSTEM

Along with the expansion of air and road transport, the railroad sector has lost ground especially for the niche of freight transport. Lately, governments are trying to reduce this gap by using economic (cheaper), ecological (less polluting) and social (offer more safety) reasons and trying to overcome the weak points among which we can mention the lack of dynamism and flexibility. We can add here an old infrastructure and an obsolete rolling stock. According to the Directorate-General for Energy and Transport (2008), an efficient railroad sector is one where there is a separation between infrastructure management and the management of the rail services themselves. Shifting from a monopoly to a total open competitiveness of several companies which compete in order to win as many customers as possible represents the main reorganization direction. A financial transparency by separating funds corresponding to passengers from the ones associated to services is another essential condition for a maximum efficiency of the sector. A very important aspect that should be noted is that, at European level, the opening of competitiveness between companies is not encountered only at national level, but it exceeds physical boundaries and benefits from entire liberalization starting with 2007 for freight transport and 2010 for passenger transport. The settlement is done through Council Regulation no. 169/2009 regarding rules of competition among rail, road and inland waterway transportation (Official Journal of the European Union, 2009).

Probably the most important step towards the harmonization of all the elements of a rail structure (infrastructure, rolling stock, systems of signals etc) is represented by the European Rail Transport Management System which aims at standardizing the numerous national signage and speed control systems that can be found across Europe towards creating a single European railway area. We thus wish to overcome technical inefficiencies by creating a single standard for all the signage equipments (Business24.ro, 2012). Interoperability is the word that best defines the purpose of the European Union in this regard.

Another concept that the authorities are trying to implement is that one of intermodality, which is a combination of several means of transport that hints at obtaining a sustainable mobility and more efficient trips/transportation (Uniunea Europeana, 2013).

Starting from its two main advantages (which are less polluting and much safer), rail transport has to become more attractive to passengers. For this thing to happen, authorities need to strengthen passenger rights and to provide them secure and quality transport conditions. Consequently, beginning January 1st, 2010, the third legislative package came into force through the agency of which a legal and financial framework has been set up regarding the allocation of public service contracts, considering a much better quality-price relation for citizens (European Commission, 2011). Actually, even from 2007, in Europe, the legislation imposed the existence of a minimum set of common standards for passenger rights and from 2009 it has been decided that all passengers need to be informed as correctly as possible about their trip with the train.

In Romania, the history of rail transport finds its first act of affirming to the end of the 19th century when a series of foreign companies (I.T. Barclay, von Ofenheim, H.B. Strussberg, G.B. Crawley) were granted the franchise of the first thousand kilometers of railway (Serviciul de Informare Bibliografica, n.d.). While at the beginning this type of transport was only addressed to freight movement, today our country has almost 5000 coaches for passenger transport, with a total capacity of approximately 300000 passengers (Figure 1).

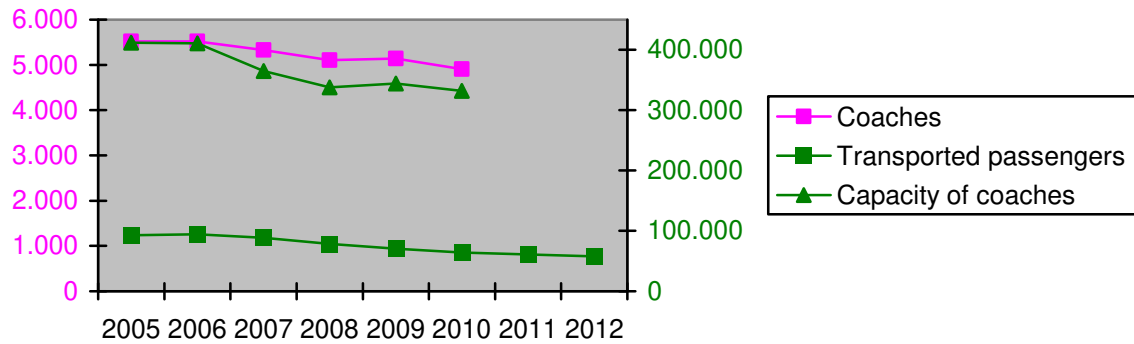


Figure 1. The number of coaches, their capacity and the number of passengers transported (thousands) from 2005 onwards

Source: author's own computation using data from the National Institute of Statistics (2011) and the Ministry of Transportation (2013)

Using just the information regarding the number of passengers transported on railways, we can replace the real terms (y_t) with theoretical values (Y_t) and based on a mathematical procedure we will obtain a series of adjusted values for this indicator which will help us estimate the number of passengers transported in the following years.

Even though time is just a reference point, which helps at arranging every term of the chronological series, the analytical adjustment of such a series allows us to express the main evolution trend. At the basis of all these calculations is the linear adjustment series, $Y = f(t) = a + bt$, where t is the value of the variable time and a and b are the parameters of this function which can be obtained based on the following normal equation system:

$$\begin{cases} na + b \sum t = \sum y_t \\ a \sum t + b \sum t^2 = \sum t y_t \end{cases}$$

Table 1. Analytical adjustment of the number of transported passengers by rail (thousands)

Year	y_t	t	$t \cdot y_t$	t^2	Y_t	$y_t - Y_t$	$(y_t - Y_t)^2$
2005	92424	-7	-646968	49	96282	-3858	14884164
2006	94441	-5	-472205	25	90435	4006	16046033
2007	88263	-3	-264789	9	84589	3675	13501950
2008	78252	-1	-78252	1	78742	-490	239855
2009	70332	1	70332	1	72895	-2563	6568969
2010	64272	3	192816	9	67048	-2776	7707564
2011	61001	5	305005	25	61202	-201	40200
2012	57562	7	402934	49	55355	2207	4871953
Σ	606547	0	-491127	168	606547	0	63860688

Source: author's own computation

Once we apply the condition $\sum t = 0$ (which is met according to column 3), the function will have the following structure: $f(t) = 75818.37 - 2923.37t$ with $t = -7, -5, -3, \dots, 5, 7$. Because parameter b is negative, the linear function expresses a downwards trend for the transported passengers which decreases by approximately 2923.37 people per year (during 2005 – 2012).

Also, from an economic point of view, parameter a has no significance. In order to check the correctness of our estimations, we will apply the following two relations:

$$\sum Y_t = \sum y_t \text{ and } \sum (y_t - Y_t) = 0$$

Following columns 2 and 6, as well as column 7, we can observe that these two equalities are met and thus we can proceed with the following step that is appreciating the quality of the analytical adjustment function. At this stage, we will analyze the residual variation using two indicators which are represented by the standard deviation (or standard error) of the adjusted values in comparison with the real values and the error coefficient of this function. The formulas for these two indicators are:

$$S_{y_t/Y_t} = \sqrt{\frac{\sum (y_t - Y_t)^2}{n}}, \text{ respectively } e = \frac{S_{y_t/Y_t}}{\bar{y}} \cdot 100 \quad (\bar{y} = a).$$

After using the formulas we will obtain a value of 2825.34 passengers for the standard error and 0.0373 for the coefficient error. Because the latter is under 5% ($e = 3.73\%$), we can state that the adjustment function has a good quality and it can be used for future estimations through an extrapolation of the function.

Regarding the extrapolation, specialists recommend not to surpass half the number of observations when making our estimations. This is the reason for which I have chosen to mold the forecasting for the next four years following the analyzed period. Thus, table 2 describes the evolution of the number of transported passengers by rail between 2013 – 2016, using an adjustment function, with an error of 3.73% and $t = 9, 11, 13, 15$.

Table 2. Forecast for the number of transported passengers by rail between 2013 – 2016 (thousands)

Year	Extrapolated values of the function
2013	49508
2014	43661
2015	37815
2016	31968

Source: author's own computation

We can thus observe a continuous decrease in the number of transported passengers, the value from the last forecast year being almost three times lower than the one from the beginning of the analyzed period. Keeping this pace, the national railway transport company could lose all its clients by the beginning of the second decade of this century, a situation that is out of the question taking into consideration the European common effort conducted to recover the sector and to transform it in a fierce opponent for the road transport which currently holds the lead.

CONCLUSION

If doubt still has control over the current state of the European railways, one thing is certain: the objectives proposed at European level are as realistic and suitable as they could be for the current rail circumstances, but no results will be obtained unless a common effort on behalf of everyone will be seen. Once the plan will be implemented at regional level, success is likely to appear on a large scale, on condition that the above mentioned imperative is respected. All the more for Romania, once an important European and across continents supplier of engines and coaches, the action of revival of railways should raise awareness to everyone due to the current downwards trend. Even though the analysis of the current paper

focused mainly on passenger transport, where according to the forecast all the clients could be lost by the beginning of 2020 if the present characteristics are kept, we must not forget about the freight transport, our country facing at this moment a process of change to private ownership.

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Market oriented measures for semi-subsistence farms

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ABSTRACT

The aim of the measures in Axis 1 in the National Rural Development Programme 2007-2013 was the market orientation of semi-subsistence farms. This was possible by using measures 111, 141, 142, 143. Beneficiaries could simultaneously access all these measures in order to achieve a competitive market. By accessing the semi-subsistence measures, the beneficiaries could modernize and restructure small farms and could also make technical investments in the agricultural holdings they own in order to sell to the market. The level of access was pretty low compared to what it was proposed in the National Rural Development Programme 2007-2013, but despite the low degree of absorption there were some satisfactory results for semi-subsistence farms. In this research I did a secondary analysis of data to provide information about the current situation of accessing measures under Axis 1 and the importance of semi-subsistence farms and markets for the Romanian economy. The results could help make a better future planning and respond to the needs traced by analyzing the measures of market orientation of semi-subsistence farms.

Keywords: *semi-subsistence farms, National Rural Development Programme 2007-2013, market, measures, economy, investments*

INTRODUCTION

After Romania joined the European Union, the field of agriculture needed to implement a substantial National Rural Development Programme. This first program was destined for the development period 2007-2013. NRDP 2007-2013 was implemented in a period of significant change for agriculture and rural areas. Under these conditions, Romania has taken the first steps towards the EU market. Another important role of the agricultural sector of Romania was the economic growth of the country within the EU, which has brought both opportunities and threats upon this very important sector in the Romanian economy.

In terms of the market orientation of small farms in Romania, these were supported through the National Rural Development Programme which was divided into axes. Among these, Axis 1 is addressing farms with a certain desideratum towards market orientation. Among its objectives we can mention the significant improvements in the agriculture and forestry sectors, in order to enable them to compete with the foreign market open trading environment. This Axis would enable to implement better agricultural workforce, an improved age structure of semi-subsistence farms, a modern commercial agriculture, increasing the added value of products, market penetration of semi-subsistence farms.

Among Axis 1 measures, measure 141 directly addresses the semi-subsistence farms. This is complemented by other measures, namely measures 111, 142 and 143. This complementarity was intended so that beneficiaries can access simultaneously the measure 141 and the measures mentioned above in order to benefit of a faster market access.

METHODOLOGY

This paper is an analysis of the measures under Axis 1 of the PNDR 2007-2013. It shows how they have helped the market orientation of semi-subsistence farms. This research is mainly based on data acquired from the Ministry of Agriculture and Rural Development and the National Institute of Statistics of Romania, but also on other national and international databases. We also conducted interviews with staff from the ministry. With the data collected, we chose to conduct an analysis that provides some explanation of the measures of the PNDR 2007-2013 and how they helped to achieve the objectives in the National Program of Rural Dezvoltaer 2007-2013, especially as they influenced the market orientation of semi-subsistence through the objectives found in the measures.

RESULTS

Measures analysis of 141

In Romania, the agricultural production is based on small, semi-subsistence and large farms. So far the measures taken in agriculture have not been sufficient to make the sector competitive on the market. Presently, their opening on the market is reduced, both in terms of inputs and outputs. According to the situation published by the Ministry of Agriculture, 88.846 applications were submitted for projects under measure 141 in NRDP 2007- 2013, with a public funding of 666.3 million euros, out of which 59.450 were contracted, projects with a total public worth of 448.4 million euro, until October 10th 2013 for "Supporting semi-subsistence farms". This support was given to the farmers who have a holding between 2-8 ESU, in order to guide these farms more towards the market, in order to turn them into commercial farms.

Within these semi-subsistence farms, the percentage of businesses is relatively low (0.5 to 2.1%). The advantage of these semi-subsistence farms is that they manage a segment of relatively homogeneous farms with an average of 5 ha for holdings with an economic dimension of ESU 2-4, respectively with an average of 9.3 ha for holdings with an economic dimension of 4-8 ESU. The overall objective of Measure 141 aims to increase competitiveness of these holdings, in order to solve the problems of transition, given the fact that agriculture is exposed to the competitive pressures of the single market.

The desideratum for measure 141 was that the farmer will cope with the restructuring and the transition period towards the market. This must be done through the sustainable use of inputs, improving management through diversification of agricultural production and the transition from an obsolete to an advanced technology, in order to adapt to market demands. Thus, it hopes to increase revenues while lowering production costs.

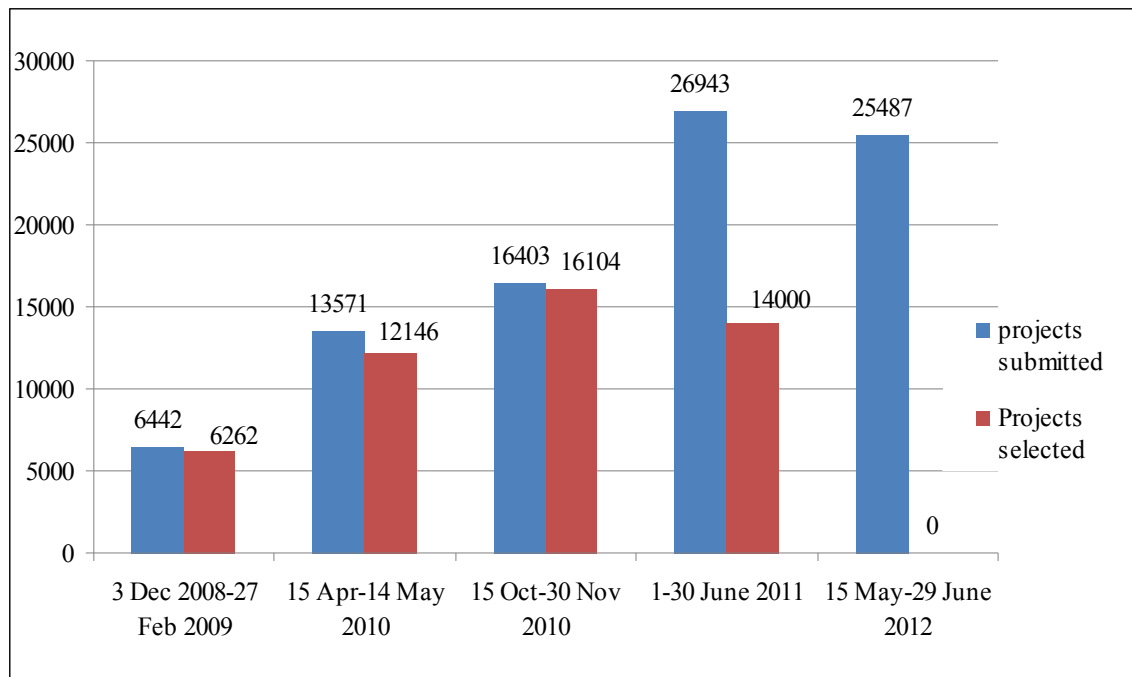
The business plan for this measure needs to focus on selling farm production and increasing the number of ESU, not on making investments, which are the ones that will be a basis for the orientation change of the farm. The main goal of the business plan will be to identify opportunities for improvement of production coming from the farm.

Specific agricultural activities of subsistence farms are plant crop and animal husbandry based on specific traditions of rural areas in Romania. The production structure of these farms is very diverse, determined by the daily needs of the household, and the very poor technical equipment of these farms. This leads to a necessary change in the production system and directly to an increase in financial expenses that some farmers cannot afford.

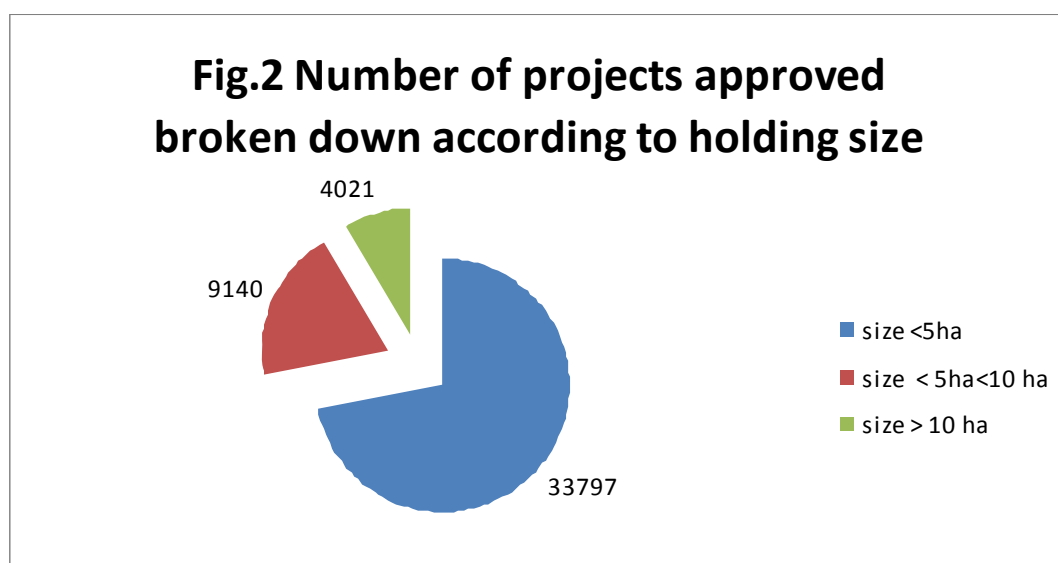
Within this measure, by the end of 2012, there were 5 calls for applications, through which over 88.846 projects were submitted as mentioned at the beginning of the article. Following the meeting of the Selection Committee, 48.512 projects were selected out of all applications submitted, out of which 46.958 were contracted projects.

The chart below shows the status of the projects submitted and selected within Measure 141

Fig.1 The number of projects submitted and selected within Measure 141



Regarding the status of approved projects by physical dimension of the farm we can report that the highest percentage is in farms that have a size less than 5 ha, which represents approximately 72% (33.797 projects) of all projects that obtained funding through this measure. The amount of public funding allocated to this category was 254,299.500 thousand euros. For the category of farms that have a surface between 5 ha and 10 ha the approximate share is 19.5% (9,140 projects) of all projects that were funded with a value of 68.680,459 thousand euros, regarding the last category of farms with a size greater than 10 ha, a share of about 8.5% (4,021) of the total number of approved projects was registered, with a cumulative public valuation of 30.303 thousand euros. This data is shown in the chart below:



Another important aspect is the percentage obtained on additional indicators. They are made at a rate of over 100%. Out of all the supported semi-subsistence farms, a total of 13.082 of

farms are managed by women, representing a rate of 171.75% out of the target of 7617. Another important additional indicator reached is the farms in the LFA which reached a rate of 126.56% out of the set target. All of the additional lists of indicators on farms applying for agriculture represents 146.63% out of the set target. This is important because the markets tend towards certified organic products or products processed under ecological conditions. Nationwide the measure 141 - "Support for semi-subsistence farms" was widely available and accessed equally in 7 of the 8 development regions, except the region *Bucharest-Ilfov. Most projects have been selected in the North-West Region 6 Satu Mare with a percentage of 24.95%, followed by Region 4 South-West Oltenia, accounting for approximately 17% of the total approved projects.

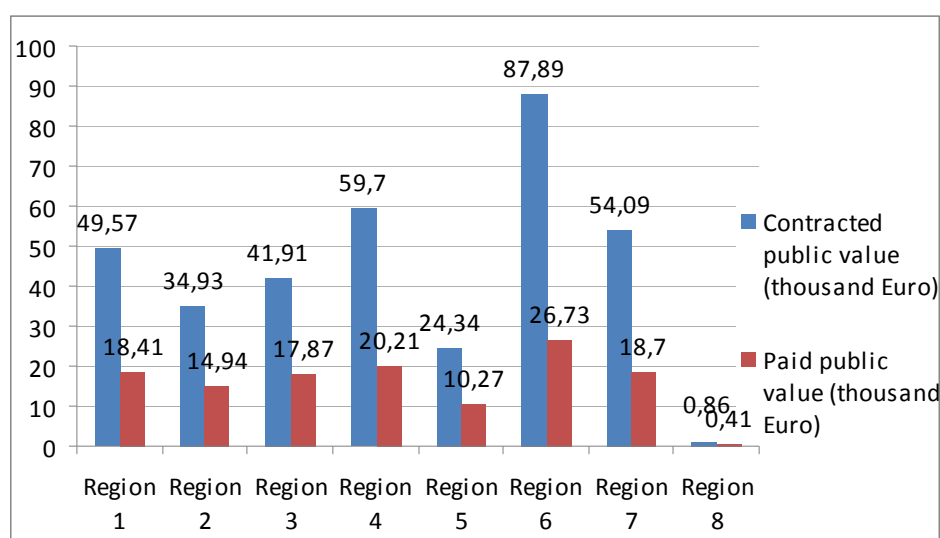
Details regarding the regional distribution of the approved projects are presented in the table below:

Table 1 - Number of projects approved

Region	Number of projects approved-measure 141	Eligible non-refundable value – thousands EURO
1 North-East Iasi	6.609	49.569
2 South-East Constanta	4.656	34.927
3 South Muntenia Targoviste	5.487	41.908
4 South-West Oltenia Craiova	7.960	59.700
5 West Timisoara	3.245	24.339
6 North-West Satu Mare	11.717	87.888
7 Center Alba Iulia	7.169	54.086
8 Bucharest Ilfov	115	864
TOTAL	46.958	353.283

The amount of payments made by the end of 2012 amounted to 127,535 thousand euros, representing 108,126 thousand euros EAFRD contribution. In 2012, the total payments done amounted to 56,308 thousand Euro, respectively 51,200 thousand euros EAFRD contribution. Details of the distribution regarding contracted public value and carrying value of payments deducted after farm dimension are presented in the chart below:

Fig.3 – Contracted and paid public value



Within the measure 141, after 5 years of implementation, the number of semi-subsistence farms that received support is 46.958 out of the 76.172 targeted, reaching a rate of 61.65% NRDP execution. In terms of financial execution, the rate is 27.22%, out of the allocation of 468.484 Euro, 127.537 thousand euros were used.

Measures analysis of 142

The second very important measure towards implementing semi-subsistence orientation to the market is the measure 142 "Setting up producer groups". It aims to increase the competitiveness of primary agricultural and forestry sectors. This measure intends a balanced development of relations between producers, processing and marketing sectors. Another point to be achieved by this measure is related to the adaptation of production in terms of quantity and quality to consumers' requests.

Measure 142 encourages the establishment and administrative operation of producer groups, to be recognized in accordance with the law. Thus, through these producer groups, production will be adjusted to market requirements. This measure also follows that products have value added growth, better economic management of resources and results, centralization of sales and wholesale distribution products.

During the implementation of this measure, payments amounted to 1,022.939 thousand euros, out of which 875,256 thousand euros represent EAFRD contribution. This amount of 1022.939 thousand euro was given to 35 groups of producers, representing 21.21% out of the target of 165, which represents 4.16% of the allocation of 24601.225 thousand euros.

The 35 projects that were approved for this measure point to agricultural industries types as shown in the table below:

Table 2 - Number of projects approved, by agricultural branch

Agricultural branch	Number of projects approved	Percentage (%)	Public value (thousands of EURO)
Field crops	18	51,43	3.3883,729
Milk and dairy products	8	22,86	494,896
Herbivores	3	8,57	125,987
Swine	2	5,71	769,447
Mix	1	2,86	131,371
Others	3	8,57	53,776

Measures analysis of 143

A very important semi-subsistence farms measure was the measure 143 "Providing farm advisory and extension services". Practically this measure enabled farmers to receive advice in preparing the business plan for their farms. The objective of these measure was to improve the competitiveness of the agricultural sector by improving the sustainable management of the holding by farmers, resulting in a performance increase.

In 2011, after the call of application of the Measure 141 that took place in the period 1st -30th July, 7498 eligible projects received free counseling through measure 143 and out of these a total of 5277 were selected.

Details regarding the regional distribution of the declared eligible and selected projects are presented in the table below:

Table 3 - Number of eligible projects prepared by measure 143

REGION	Number of eligible projects prepared by measure 143	Number of eligible projects selected for financing – prepared by measure 143
North-East	1.795	1269
South-East	689	483
South +Bucharest-Ilfov	255	179
South -West	1446	1013
West	47	33
Nord-West	1880	1320
Centre	1386	980
TOTAL	7498	5277

In 2012 after the call for applications in the period May 15th -July 13th under Measure 141, a total of 10.234 projects have received consistent and free advice for accessing measure 141. The payments situation in 2012 is 3349.051 thousand euros (financial execution rate being 24.86% out of the allocation of 13474.071 thousand euros).

CONCLUSIONS:

The measures of market orientation for semi-subsistence farms in Romania have played an important role in trying to bring these farms at a competitive level on the market. Through the measures implemented, a high level of efficiency and market orientation was achieved, while creating the institutional environment for infrastructure development of products obtained and by improving the quality of professional and occupational diversification. Yet, despite these improvements, the training and the information of small farmers is still low. There are still some identified needs and necessities that are to be raised at EU standards.

In the future, it is necessary to decrease the number of semi-subsistence farms and there is the need to consolidate farms by increasing their physical size (stopping the fragmentation) and economic viability. Another need is to make technical investments in agricultural holdings that are producing for the market, but also to restructure small farms by reducing structural and competitive disadvantages that they face on the market.

Regarding the implemented measures mentioned above, it is stated that they have a rather small absorption, we conclude that steps should be taken at the implementation level. Farmers should benefit from improvements in terms of financing projects with European funds to better meet their needs.

We must turn our attention towards new categories of products which fit in the new market requirements, especially ecological and traditional requirements. If the improvement of the quality of raw materials used in food is reached also by meeting the quality standards of processed products, only then farmers will benefit from the competition on the market.

Regarding the associations, it should be noted that it is needed to set up and organize more groups of producers for the enhancement of the production. Also on this branch, measures should be taken in terms of the need to create opportunities for the joint use of agricultural production, by the organizations/groups of producers. If these things are accomplished, the adaptation of production to market demand and a recovery in production rates by individual traders of association/cooperatives of producers based on commercial contracts farm/stable will surely be reached.

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Culinary Tourism - a key-aspect of Romanian tourism development

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ABSTRACT

Generally, this article aims at discussing the subject of culinary tourism, especially with its Romanian particularities. Besides resources, wild nature with mountains, rivers, Danube Delta, monasteries and medieval cities preserved in order for the contemporary footprint not to be noticed, Romania has an important background of traditional food products. These original and traditional products, as well as the authentic way of preparing them, increasingly invite the tourists to experience Romania from a culinary tourism point of view. The rural space of Transylvania, with its life, captivates more and more tourists and the article expresses the influence of British tourists arrivals observed in the last period.

Keywords: *culinary tourism, Romanian food products, authenticity, strategic management, British visitors*

INTRODUCTION

Ecological agriculture and public alimentation, as parts of tourism, have known a great and complex development, with an increasing proportion, both economically and socially. Romania may become, without exception, an important touristic attraction at international level due to the Carpathian Mountains and its untouched nature by time and people, with a unique and beautiful Danube Delta with its particularities and the advantage of the position of the Black Sea. One can add historical areas with medieval cities well-preserved in time, a unique rural space with Orthodox monasteries.

Romania has an international reputation with a strong personality which has multiple touristic destinations of great importance. In the tourism source-markets, the Romania's potential is a very good one. Romania is a good market to sell its touristic packages, but the touristic information is still reduced regarding the competitive advantage offered by this country. Besides this, it can be noticed a match between requirements and tourist needs, on one hand, and touristic offer on the other hand.

Nature, the natural environment of Romania respectively, remains an element that needs to be promoted with priority on the international touristic market. With all these advantages, which nature is offering together with its resources, in order to attract a higher number of foreign visitors, a remodeling of promoting tourism products is needed, not only in Europe, but also at international level.

During the last year, in 2012, according to the World Tourism Organization data, Romania was visited by 1,6 millions of foreign tourists. Average amounts spent by them were about

780 euros per person, considering the fact that they remain guests on Romania's territory for 3.5 days only (Gheorghe, 2013).

THE CONCEPT OF CULINARY TOURISM

Tourists have developed in time their preferences and necessities in terms of tourism. Not only that the financial and temporal resources have increased in tourism, but these requirements of the visitors have become more complex.

Culinary tourism is defined by the World Tourism Organization as representing tourists or visitors that schedule their trips with the goal to taste the local cuisine of one given country or to realize activities concerning gastronomy.

Another definition of culinary tourism is given by the International Food Tourism Association which sees it as “the pursuit of unique and memorable eating and drinking experiences”. Therefore, by definition, culinary tourism represents the search of unique culinary experiences being capable to satisfy tastes with the finest food and drink in a tourist trip.

In the specialized literature, there are three types of tourists that have interests in tasting traditional products (Frâncu, 2013):

- Entirely interested persons in searching new culinary experiences;
- Persons that are not choosing their touristic destination in a mandatory way for tasting traditional and specific food products, but they taste traditional specific cuisine of the area visited;
- Tourists that take part by chance to these offers during their trip.

So, if the first category is already well-coagulated, the last two categories become more and more powerful, filling the classic tourism.

Hall (2012) mentions the fact that the touristic experience focused on gastronomy does not include only the time and money spent at the touristic destination itself. With other words, there are several steps that have to be mentioned among the culinary trip of tourists:

- the moment before the visit – tourists eat at their homes or take food during their way;
- the journey – during this phase, local products start to be consumed by the visitors, no matter if they are using personal car, airplane, train, etc.;
- the trip itself – is the moment when tourists start to explore the local cuisine;
- the returning – local products are bought in order to be eaten on the way;
- the final phase – is the moment when the products bought from the visited country are eaten at home.

The importance of this type of tourism is materialized by the fact that it leads to a local, regional and national development of the economy of the country offering a high level of tourism diversification.

Therefore, one can talk about the management of touristic destinations, strategically designed and implemented through a marketing policy, based on specific theories, models, calculation techniques and principles. In order to offer the best experience for the tourist, a strategy which involves all the internal and external stakeholders has to be designed and implemented, offering in the same time a character of brand equity (Kozak & Baloglu, 2011).

In addition to the advantages offered by nature, landscape, seaside or mountain areas, the local products, especially the natural ones, gain a bigger and bigger share in the tourist's consumption, which brings uniqueness for the new desires of the touristic consumer. A local competitive advantage can be added, because these traditional culinary products are made near to touristic resorts, increasing the number of jobs, so revenues are a real help to the agriculture.

Moreover, tourism gains ground when gastronomy is brought in the forefront – because it becomes a motivation when a touristic destination is chosen, a fact that influences the traditional products offered, which are obtained and made in a way as natural as possible. According to experts, more than one third from the share of tourist destinations expenditure is based on food, which shows a growing importance in choosing travel packages.

Another definition very frequently met for the gastronomic or culinary tourism is the one given by Hall and Sharples (2003) according to whom this phenomenon, of culinary tourism, is a travel for testing, to explore a region from the gastronomic point of view, together with leisure and entertainment. So, primary and secondary producers of such types of food products, culinary festivals, fairs, special events, farmer's fairs, cooking shows, cooking demonstrations are included, which allows testing the quality and the originality of the products, etc. The absolute importance of this process is that, besides testing, tourists can learn new ways and customs to cook differently by themselves, with a better understanding of the local cuisine.

In what concerns the types of food, in Romania there are a variety of products, even if one can talk about cheese, meat, fish, fruits, chocolate, wine, beer, tea, jams and compotes or other traditional related products. Together with these, the gastronomic routes tend to gain increasingly more interest, especially in our country.

By gastronomic route one can understand a route situated along a circuit well defined that expresses the thematic tourism, composed by local brands, including, in the same time, touristic objectives, such as some places where the food is made or restaurants which contribute at feeding tourists with the best fresh food. In this way, not only the territory, the traditional customs and the direct source of these products are promoted (for instance, visiting the animals and fruits farms), but also the fact that tourists can stay as long as possible in the area, a primordial aspect for obtaining additional revenues.



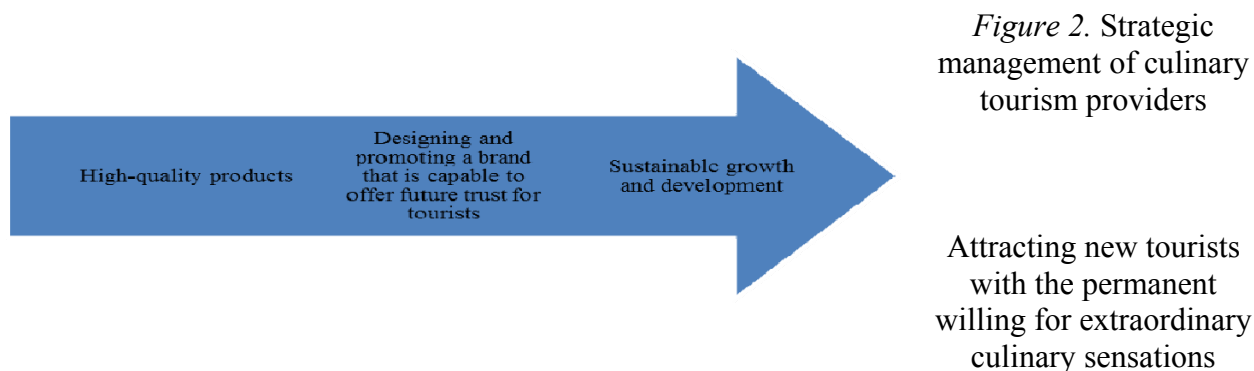
Source: Author's own computation

Figure 1. Classification of gastronomical tourism according to consumer demands

More often, in Romania, tourists like the idea of direct participation in the process of these products, so they are allowed to contribute if they want to the moment when various traditional Romanian dishes or desserts are produced. While it is obvious that influences from several migratory people that crossed by Romania's territory during the history exist, such as the Hungarian people or the Germans who still live here, or the influences from Turkey, Greece and France, the uniqueness of the Romanian cuisine is characterized from the ancient times, from Dacians' and Romans' period, who best shaped this space with their customs and traditions.

Therefore, by culinary tourism, tourists want to obtain what is presented in fig.1.

Culinary tourism providers have to bring quality offers on their own, in order to obtain competitiveness, uniqueness for a long-term, profit that can create more jobs and to attract more investments in the region by:



Source: Author's own computation

ROMANIAN CULINARY TOURISM

Romania has a lot of traditional culinary products. Apart from this, the competitive advantage that Romania owns is the way of cooking, old customs, preserved from the ancient times. The products are being offered in many fairs and cultural events in order to gather a large number of visitors, by combining the entertainment with cultural education and food. So, Sibiu, an old city, is famous for the soft cottage cheese, Braşov another old city, is famous for the cheese wrapped in fir bark, Silvoia and Topoloveni are famous for the plum jam and the Bucovina and Maramureş regions are famous for thier cookies. (Găină, 2013)

Moreover, one can add the vegetables and fruits, which are naturally planted and finally are prepared for preserves, compotes and jams, honey and bee products, herbal teas, wines, juices made from apples, pears, mushrooms obtained in specialized arrangements, hunted meat (fresh or processed for later consumption) etc. Tourists staying at pensions can see specialized appliances that are used in the preparation of food, such as mills for grinding cereals, vessels for seeds' germination, juicers for obtaining natural fruit juices or wine. Here, tourists can notice the manufacturing process of the clay pots, real "tools" which are traditionally used in cooking.

In recent years, British visitors have been increasingly interested about Romania, more interested about the lifestyle of the Romanians and their naturalness lands. The number of British visitors exceeded 100,000 persons in the last years, they being very interested in the Romanian agro-touristic pensions.

Moreover, a regression will be presented, based on two variables:

- The total number of foreign visitors who accomodated in the Romanian agro-touristic pensions;
- The total number of British people arrived in Romania.

The situation is analyzed during 2001-2010 for which statistical data from National Institute of Statistics, Romania, are available.

Table 1. The total number of foreign visitors accommodated in the Romanian agro - touristic pensions and the number of British visitors (2001-2010)

Year	The total number of foreign visitors accommodated in the Romanian agro- touristic pensions ¹¹	The number of British visitors in Romania
2001	6000	56.000
2002	9000	60.000
2003	12.000	69.000
2004	17.000	55.000
2005	18.000	77.000
2006	18.000	90.000
2007	20.000	118.000
2008	20.000	128.000
2009	19.000	104.000
2010	20.000	92.000

According to the results obtained after applying the regression function using *Microsoft Office – Excel 2010*, this has the following structure:

$$y_i = \alpha + \beta * x_i + e_i \text{ (1), where:}$$

- y_i and x_i represent values of the cause and effect variables;
- α and β are the parameters of the regression equation;
- α means a point of intersection that the regression line has with the O_y axis;
- β – shows the change of y expressed in units when it is noticed a variation with 1 unit of x ;
- e_i - is composed of other influential factors which are not essential, expressing a residual value (also called random error).

Replacing with the results generated by the program, the above mentioned function will have the following feature:

$$y_i = 3.54 + 0.14 * x_i + e_i \text{ (2)}$$

Therefore, Multiple R represents the correlation coefficient and because it fits the interval (0.5-.0.75), shows the fact that there is a medium intensity correlation between the two variables taken into consideration.

R square - determination coefficient – is 0.55, so the arrival of the British visitors influences in a proportion of 55% the variation of the foreign visitors accommodated in Romanian agro touristic pensions. In the same time, the coefficient β is positive ($0.14 > 0$) which means that when the number of British visitors increases by 1000 persons, the number of tourists who are accommodated at the agro touristic pensions increases with 145 persons. Due to the fact that β is positive, one obtains a direct relationship between the two variables under contextual analysis.

¹¹ Observation: Starting with 2009, the rural pensions were defined as agro-touristic pensions.

Table 2. The results obtained from the regression function

SUMMARY OUTPUT		
<i>Regression Statistics</i>		
Multiple R	0.745607871	<i>Significance F</i> 0.013300753
R Square	0.555931097	
Adjusted R Square	0.500422484	
Standard Error	3.580075239	
Observations	10	
ANOVA		
	<i>df</i>	
Regression	1	
Residual	8	
Total	9	
	Coefficients	
Intercept	3.542425193	
X Variable 1	0.145554474	

Source: author's own computation using the data from Table 1

Significance F (in this case equals 0.01) – significance level – which is lower than 0.05, shows the fact that the obtained results are significant.

CONCLUSION

Lately, the culinary tourism engages a high interest. Countries with high potential (specific products, unique ways of cooking) must integrate this branch of tourism into the global strategy of tourism. The profit brought by culinary tourism contributes not only to the development of the existent structure, but it also contributes to the development of certain touristic packages in the future because it helps all the related industrial branches – agriculture, transports, the sustainable environment.

Tourists' culinary experience on the territory of the host-country refers not only to the time and money spent in the resorts, but it also takes contact with the local products from the very beginning, when the tourists enter that country and, in their turn, they can buy, according to their preferences, local products which caught their attention during the trip. Moreover, not only the direct visitors get into contact with a specific cuisine, but also their relatives and friends at the return, if non-perishable goods are brought. Depending on their quality and taste, local products are creating an indirect advertisement for those who remained at home.

Romania has a huge potential, both as landscape and cuisine and it has to extend its efforts to continue the promotion of its touristic products, not only at European level, but also at global level as well.

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Agriculture over large areas, agriculture modernization premise of Călărași County

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ABSTRACT

Calarasi County is one of the counties with the most modern agriculture in Romania. Technological progress has also marked the agricultural field, so in addition to new technologies to improve soil fertility, new agricultural machineries of high efficiency have been brought, with extremely important role in increasing agricultural productivity. Currently, in Calarasi County are 574 farms, each one operating over 100 hectares of arable land, all of them exploiting aprox. 330.000 hectares, respectively 85 % of the arable land of the county, utilizing approx. 59 % of the county farming machinery. Agriculture over large areas was possible mainly by exploiting the leased land, and the largest contribution to the modernization of agricultural production was possible by accessing the European Funds, in this process, belonging to a cooperative structure such "farmers group ", being an advantage for scoring projects.

Keywords: *large areas, modern agriculture, Calarasi*

Calarasi county is one of the counties with the most modern agriculture methods in Romania. The total area of the county is 414.752, 71 hectares and out which only 405.297,96 hectares is used for agriculture. The plough land is 387,513,36 hectares.

Making a comparison between the data of the land measurements in 2002 and those in 2010 it is revealed a drop of 4 % in the number of agricultural exploitations, a growth of plough land from 357.125,3 hectares to 387.513,36 hectares. It is also noticed the growth of the number of agricultural exploitations over 100 hectares from 457 in 2002 to 574 in 2010 and also the growth of the exploited areas in big exploitations over 100 hectares from 301.818,66 hectares in 2002 to 329.509,48 hectares in 2010. The total number of tractors used in 2002 were 5.333, as compared to 4.236 in 2010 and 4164 in 2012 out which 235 owned in 2010 by owners of exploitations over 100 hectares and 550 in 2012.

Overall, it is established the enforcement of some conditions required for a growth in the efficiency of the agriculture land, modernizing being a step as big as necessary in the process of growing the economical performances for the agricultural economics purpose.

The modernization is a general target and a condition of efficiency. Modernizing agriculture means among the others purchasing new tractors, new seeders, harvesters, machines, equipments, accessories, special software, building or modernizing the buildings in use for agricultural production at the level of the farms, building or modernizing the internal road communication or the access to the agricultural district, usability and any equipment needed for the production, investments for processing agricultural products to the level of the farms, including equipments for sales of these, etc. (121 Measurement, *The Modernization of the agricultural exploitations*) and also specialized consultancy in all the problems the farmers

are facing, from the funding of cultures, their health till the insurance and the putting in circulation of the goods in the most advantageous conditions. The modernization costs, its advantages at least on the economic level are beyond doubts.

The intensive process of modernization of agriculture in the county Calarasi began in 2004 with the starting of the Special Program of Free Federation for Agriculture and Rural Development SAPARD, when the measure 3.1- Investments in agricultural exploitations was implemented 147 projects of an irredeemable value of 133.616.000 lei.

According to this program, there were purchased the following: □tractors, harvesters, machines, agricultural equipments, calibrating, selection and conditioning and storage of agricultural products obtained and processing at the farm, irrigation systems, equipments for processing the vegetal rests.

According to SAPARD Program there were financed projects of a global total value between 5000 and 500.000 each of them. Only maximum 50% of the total costs eligible of the project would represent the irredeemable contribution and only minim 50% should represent the own contribution, the rest meaning the co-funding necessary to the solicitor”(according to the materials of the presentation of the project).

The beneficiaries of these 147 of projects implemented are in 90% de great exploitations, over 100 hectares, taking into consideration the necessity of ensuring a level of a load of minimum 70 hectares per tractor purchased for the profitability of the project with the purpose of creating the necessary conditions for obtaining a minimum profit.

After adherence to UE, through PNDR, the Romanian Agriculture benefited of new opportunities to achieve the aim of modernizing trough 1.2.1 measure – Modernization of agricultural exploitations- they went very well for the necessities and the possibilities of big exploitations, the rest, according to the Solicitor’s Guide could purchased: “tractors, seeders, machines, equipments, etc. the rest ensures the growth of the work productivity, the improvement of the quality of the agricultural products, the introduction of new performing technologies, the improvement of the working conditions, building and/or modernization of the operational buildings the rest lead to the insurance of the conformity to the communitarian standards, diversification of the productivity according to the demands of the market, creation of the new products and introduction of the new technologies”.

In Calarasi county, on this measure, in October 2013 95 contracts were being implemented of a total value of 64.100 lei, 33.250 being from European funds, 134 projects already been finalized of 13.400 lei (according to the data provided by APDRP Calarasi). As in the case of the projects implemented through the measure 3.1, in the case of the measure regarding the modernization of the agricultural exploitation through PNDR, the great majority of the winning projects is detained by the exploitations over 100 hectares, out of the economical reasons the rest make the majority of farms below 100 hectares to hectares a limited access to the obtaining of some credits big enough to allow the purchased through some projects of some machines and equipments of high-tech, of modern technology.

Here are some examples of projects of modernization of agricultural exploitations in the evidence of APDRP Calarasi:

1. AGRO SUD SRL, project: “ Modernization of agricultural exploitation SC AGRO SUD SRL OLTENITA”, eligible value of 2.604.699 euros, exploitation of 847 hectares;
2. GRIVCO AGRO SRL, project : “ Modernization of agricultural exploitation with the purchasing of tractors, machines, agricultural performing equipments and a new oil press for obtaining vegetal oil out of raw material coming from the own ferm(Perisoru)”, eligible value of 1.999.963 euros, exploitation of 1.970 hectares;

3. AGROFARM PROD SRL, project: "Modernization of agricultural exploitation SC AGROFARM PROD SRL", eligible value of 1.992.114 euros, exploitation of 2.020 hectares;
4. ILDU SRL project: "Purchasing the machines and agricultural equipments at SC Ildu SRL, Vilcelele, Calarasi county", eligible value of 1.850.675 euros, exploitation of 1.135 hectares;
5. ALGAP SRL project: "Modernization of vegetal farm with purchasing of agricultural specialized transport at S.C. Algap SRL, Modelu, Calarasi county", eligible value of 1.731.639 euros, exploitation of 2.350 hectares;
6. CHIREA 2000 SRL project "Modernization of vegetal agricultural farm in Stefan Voda, Calarasi county", eligible value of 821.690 euros, exploitation of 1.486 hectares;
7. IZOCON MC SRL project "Modernization of agricultural exploitation from Modelu, Calarasi county, with purchasing new agricultural machines", eligible value of 747.838 euros, exploitation of 1.063 hectares;
8. SC DENCAR SRL project "Modernization of agricultural exploitation from Modelu, Calarasi county, with purchasing new agricultural machines", eligible value of 666.476 euros, exploitation of 1.106 hectares;
9. SC AGROEUROSERV SRL project : "Modernization of vegetal farm belonging to SC AGROEUROSERV SRL Slobozia, in Dor Marunt, Calarasi county, with the purchasing of new machine and agricultural equipments", eligible value of 628.115 euros, exploitation of 1.406 hectares;
10. AMYGO M.T.S.R.L. project: "Purchasing new machines and agricultural equipments at AMYGO M.T. S.R.L., Nana, Calarasi county", eligible value of 597.080 euros, exploitation of 880 hectares.

For benefiting of a plus of points, the great majority of those who applied for accessing European funds with the measure 1.2.1. and not only with it, called into a subscription as a member in a associative form.

The bank policy regarding crediting the agriculture proved to be a prohibitive one for the majority of the little farmers, the required guaranties not allowing to those to access big enough credits for purchasing hi-tech, if we bring in discussion either machines or agricultural equipments useful or necessary in the process of agricultural production. In consequence, "the task" of modernizing the agriculture rests upon exclusively big farmers and the agricultural exploitations bigger than 100 hectares, financial force and material ground enough to fulfill the conditions required in the moment of obtaining the loans(it must be mentioned in the present there are bank products of financing and loaning that at individualization of the loan take into account the total amount of the subventions according to the schedule of unique payment on a area, so those working a bigger area of land are being advantaged).

In 2013, in Calarasi county, the modernization of the agriculture through the technology and the use of specialized consultancy in maintaining the crops is obvious at the majority of the big exploitations, over 100 hectares.

From the point of view of technology of agriculture, it is useful to mention the evolution of the working force in the agriculture of Calarasi county. So, the population involved in agriculture represented 49,5% at the end of 2011, a lot over the national percentage. The number of employees from agriculture represented 8,5% from the total, at the level of South Muntenia- 3,6% and at national level it hectares been maintained 2% for 10 years.

See all data, the comparison to the situation in 2002 may be interesting. So, if regarding the population involved in agriculture the drop reflects a national trend (49,5% at the county compared to 58% in 2002 and at national level 29% compared to 36,2% in 2002), by taking

into consideration the number of employees in agriculture, a phenomenon must be remarked. If at the level of the county, the agriculture recently modernized in the last years, a drop with 5,5% in the number of employees is remarked (from 14% in 2002 to 8,5% in 2011), at the level of South Muntenia Region it is registered a slower shift of the number of those in the background of a slower development of agriculture only with 1,4 % (5% in 2002 compared to 3,6% in 2011) and the national level it remains constant to 2% the percentage of the employees in agriculture.

The conclusion is obvious, already known, but once again mentioned: the technology of agriculture determines the reduction in the salary costs by reducing the number of the employees in agriculture. This fact brings to the efficacy of the great agricultural exploitations, but causes the worsening of the social problems of the rural environment and a growth in the social discrepancy between the urban and the rural. This trend confirmed at the level of the county must be known and analyzed for the future suggestion at the national level, on the background of estimation of the growth of the development percentage of development of the Romanian agriculture especially due to its technology in the strategic period 2014-2020.

So as it was mentioned previously, in Calarasi county the number of exploitations of 100 hectares raised from 457 hectares in 2002 to 574 in 2010. In 2012, from 574 exploitations, 75 were over 1000 hectares, the others 500 being exploitations working between 100 and 1000 hectares.

The most important is to observe the evolution of the agricultural leaseholds. If in 2002 maximum 97.000 hectares were rented, 95.000 hectares by the big exploitations over 100 hectares, in 2010 the areas for which a contract was signed measure about 220.000 hectares, 211.000 hectares being rented to the big exploitations over 100 hectares.

Table no1.

	The area	The number of agricultural exploitations	The area of used plough land (hectares)	The medium plough land per exploitation (hectares)	The number of tractors in ownership	
1.	Less than 1 hectares	65.422 (65.336 G.I. 86 P.J.)	5.542,1	0,09	187	86,2% from the total of the exploitations 1,5% from the total of ploughland
2.	1 -10 hectares	8.819 (8.690 G.I. 129 P.J.)	21.350,71	2,4	836	11,5% from the total of the exploitations 5,5% from the total of ploughland
3.	10-50 hectares	874 (794 G.I. 80 P.J.)	17.388,6	19,9	546	1,2% from the total of the exploitations 4,5% from the total of plough land
4.	50-100 hectares	195 (145 G.I. 50 P.J.)	13.718,47	70,4	187	0,3% from the total of the exploitations 3,5% from the total of ploughland
5.	Over 100 hectares	574 (163 G.I. 411 P.J.)	329.509,48	574	2.480	0,8% from the total of the exploitations 85% from the total of ploughland
	TOTAL	75.884 G.I. 86 P.J.)	387.513,36	5,11	4236	

The data of the last general agricultural measurement indicate that in Calarasi county in big exploitations over 100 hectares, 329.509,48 hectares are labored, meaning 85% from the ploughland of the county (see table no.1), and in these conditions it can be assessed that a characteristic of this category can easily be considered a characteristic of the local agriculture. So, the modernization thanks to the technology, though easily met in big farms can be called a characteristic of the agriculture of Calarasi county.

The number of tractors was 4236 in 2010, owned by agricultural units from Calarasi county, being used 4720 for the labors (table no. 2). The medium load per a used tractor was 82 hectares of ploughland and on a used tractor owned by the agricultural exploitations in Calarasi 91,4 hectares of ploughland(table no 2).

Tabel no.2

	The area	The number of agricultural exploitations	The area of used ploughland (hectares)	The number of tractors in ownership	The number of used tractors	The charge on a used tractor	The charge of a tractor in ownership
1.	Less thectaresn 1 hectares	65.422 (65.336 G.I. 86 P.J.)	5.542,1	187	226	24,5 hectares	29,7 hectares
2.	1 -10 hectares	8.819 (8.690G.I. 129 P.J.)	21.350,71	836	862	24,8 hectares	25,5 hectares
3.	10-50 hectares	874 (794 G.I. 80 P.J.)	17.388,6	546	566	30,72 hectares	31,8 hectares
4.	50-100 hectares	195 (145 G.I 50P.J.)	13.718,47	187	197	69,6 hectares	73,4 hectares
5.	Over 100 hectares	574 (163G.I. 411 P.J.)	329.509,48	2.480	2.869	114,8 hectares	132,9 hectares

Compared to the situation of 2002, it is remarked a growth in the charge on a tractor (see table no.3). If in 2002, the charge on a tractor was 84 hectares/ a physical tractor, that was considered “unfavorable from the point of view of modernization and intensification of the agricultural product”, in 2010 the charge on a tractor was in average 91,4 hectares of ploughland.

Following the data in the table no.2, it is noticed that the biggest load it is found at the big exploitations, over 100 hectares, respectively 114,8 hectares/ used tractor and 132,9 hectares/ tractors found in the ownership of the exploitations in the county, and the littlest of the exploitations till 10 hectares, respectively 24,7 hectares/ used tractor and 26,3 hectares/ tractor in the ownership of the exploitations in the county. It can be drawn the conclusion that in the process of modernization of the agriculture of Calarasi county the following were stressed: the purchase of the performing machines, of great efficiency, aiming to the maximum exploitation of their potential, these being the most important factors in the growth of the productivity of the agricultural activity.

Tabel no.3 The parc of tractors and agricultural machines

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Physical agricultural tractors	4931	4444 6	4504	5043	5141	5073	4897	4587	4519
Cultivator – mechanical traction	927	842	880	1124	1184	1158	1263	1076	1087
Seeders-mechanical traction	2042	2280	2278	2442	2480	2506	2729	2765	2566
Combine with auto-propulsion mechanical for straw cereals	753	748	851	811	906	924	956	960	987
Plough area for a physical tractor	84	94	92	82	81	82	85	90	91

But for the tractors, which number is in a decline, the explanation being the greater power of the new purchased tractors and their capacity of working big ploughland surfaces compared to the tractors they replace, the number of the other agricultural machines is increasing, even if not linearly, but it increases getting from 927 in 2002 to 1087 cultivators in 2010, from 2042 seeders in 2002 to 2566 in 2010, from 753 combines in 2002 to 987 in 2010.

The fluctuation of the agricultural machine number from a year to another is an indicator of the fact that new machines of high-tech replace the old ones, and the constant growth between 2002-2010 verifiable with the evolution of the number of employees in agriculture is a proof of the technology of the agriculture of the county.

The average product per hectares at the main culture (table no.5) and the The value of the agricultural products / agricultural branch (table no.4) at the level of the county, knew major fluctuations between 2004-2012, because of the fact that the economic performance in agriculture is still mainly influenced by the weather. Nevertheless, it can be easily noticed that in a good agricultural year with rains and good temperature, the modernization of the agriculture thanks to the technology and mechanization can determine record productions and great revenues, the investments made to the increase productivity being justified.

Table no.4 The value of the agricultural products / agricultural branch

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total	1688465	1075564	1069440	874133	1841234	1476839	1591439	2270625	2018826
Vegetal	1218727	622070	618288	340296	1336817	767874	1080146	1717134	1429543
Animal	434646	433368	430663	497825	466876	656029	484724	506623	545745
Services	35092	20126	20489	36012	37541	52936	26569	46868	43538

Table no.5 **The average product per hectare(kg/hectare)**

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Wheat	3742	3225	3210	1161	3883	2125	2496	4044	2878
Corn	6111	4981	4189	696	3763	3923	4957	5290	3258
Barley	3665	1940	2213	1282	4103	2514	2788	4033	3026
Sunflower	1888	1338	1572	364	1594	1483	1669	1909	1749
Rape	1975	1507	1419	765	1536	1360	2042	2042	1280

The statistics from the tables no.4 and 5, referring to the value of the production for an agricultural branch and the average production per hectare to the principal crops of our county between 2004- 2010, lead also to the conclusion that, although the great exploitations managed to bring local agricultural to a high level of modernization achieved by the technology and mechanization, the problem of the modernization is still open. Many important investments are needed to the irrigation system in order to reduce the great extend of dependence of the agriculture to the meteorological conditions as well as the creation of a consultancy system addressed to the little farmers, but also to those exploiting between 100 - 500 hectares, the latter owning the greatest part of exploitations, practicing an agriculture at a high extent in Calarasi county.

Development of the health service infrastructure in rural areas

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ABSTRACT

Sustainable development of Romanian communities, especially of those in rural areas is a basic requirement for development of the state and therefore, should be a priority for a good governance. Given the current situation, in which primary healthcare is provided only by the private practice of the family doctor, the state medical dispensary reestablishment becomes a vital condition both for the health of the community, especially in rural areas and for the support of other activities related to the social and medical field.

Keywords: *community, rural areas, state medical dispensary, sustainable development.*

INTRODUCTION

Sustainable development of Romanian communities, especially those in rural areas is a basic requirement for the development of the state and therefore it should be a priority for good governance.

In this process, an important element of community members along with the educational, social and economic field is the health of the population, both in terms of demographics and of possibility to support and to develop the community by a healthy population. In this regard, the provision of primary care medical services and emergency healthcare is urgently necessary.

Romanian rural areas face major problems related to the delay of educational, economic, cultural, social infrastructure development, which determines a growth of population's migration to cities and to other countries during the last years. The phenomenon being caused mainly by young and relatively young persons, predominantly affects employment and the average age of those left.

Given the current situation, in which primary healthcare is provided only by the private practice of the family doctor, the state medical dispensary reestablishment becomes a vital condition both for the health of the community, especially in rural areas, and to support the medical and social activities that are extremely necessary.

THE STATE MEDICAL DISPENSARY - IMPORTANCE AND ROLE

Supporting and developing the state dispensaries as free healthcare institution for the poor and the suffering, was a political priority since of Cuza Voda and Carol I, in the context of their efforts to modernize the young state and the Romanian nation, at that time a purely agrarian country.

Especially today, the effort of our predecessors should be continued in order to succeed the modernization of the rural areas, unfortunately remained in a hazy past.

What would mean the reappearance of the state dispensaries after more than 15 years?

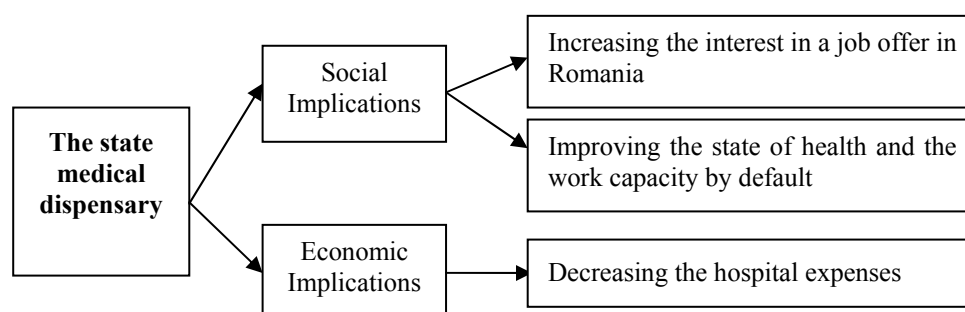
It primarily involves medical effects, to improve access to primary and emergency medical services, but would also generate benefits in terms of social and financial fields.

Thus, it could achieve a weight of population movement from rural areas to the city, otherwise quite expensive, to solve medical problems and thus a reduction in the present level of overcrowding of hospitals and also a possible stop and perhaps, who knows, even a reverse of the population's migration flow by turning the rural areas into an attractive environment for urban residents eager to settle (restore) in rural areas.

Although this trend is desired declaratory, the lack of basic services and infrastructure are major impediments for the voluntary migration of urban population in the opposite direction compared to the flow forced by authorities for the industrialization in the 50s -60s.

When we talk about rural areas, shown against a geographical backdrop and of stereotypes already known, we must keep in foreground the residents, mostly elderly, with very low income, but who represents 47% of the population, a population that generates an important part of the national morbidity and of public health problems from multiple causes, from the living conditions to those of education and nutrition.

Figure 7: Social and economic implications of the state dispensaries' re-establishment



Source: Ciobotaru, 2013

The improved version that I propose is an upgrade version of the one stipulated in the Law 3 of 1978 on health insurance, at a multifunctional medical center, freestanding, appropriate with the changes in conception and in specific legislation of the new millennium, without occupational duties, but with keeping the 5 main attributions and adding possible medical and social meanings:

1. public health assistance;
2. basic primary health care;
3. delivery houses;
4. stationary;
5. qualified first aid;
6. support / core for medical and social activities and community activities.

Through this latter attribution it could act as a platform for medical, social and community activities and could even be a bridge of contact, liaison and communication between various non-governmental organizations and community. For the subscribed population, the existence of a state medical dispensary and of public health nursing and general medicine, in areas without family doctors, would be extremely important, even vital. For healthcare professionals would mean mainly the existence of a job offered by the state, while by funding from the Romanian Health Fund would mean an assurance of stability.

Thus the dispensary doctor would work on the old principle of territoriality, with limited and well defined competence and area of interest and action, especially in public health, unlike

the family doctor who is working in a private practice regime, on the principle of free choice of treating doctor by the patient, without territorial limitation.

The dispensary doctor should perform public health actions disposed by the Ministry of Health under the governmental strategies, under required immunizations for the population, would oversee and monitor the health status of the population ascribed to the state dispensary and would be the basic unit for health monitoring in the territory through regular reporting of indices and indicators set by the Ministry of Health and by the County Directorates of Public Health.

The state medical dispensary, according to rural or urban location, could have several roles and therefore different responsibilities.

If we consider the organization and powers of state dispensary stipulated in the Law 3 of 1978 on health insurance basically all we have to do is to update and add more just something specific from the new millennium, although essentially the organization and the way of living, particularly in rural areas, remained somewhat frozen in time and not much different. Especially in the current problems faced by Romanian citizens in rural areas, two of these attributions would stand out, namely:

1. Qualified first aid and stabilization for medical disposal

The medical dispensary, especially in rural areas, can and should be the *first step for giving the qualified first aid and stabilization until the arrival of an ambulance*. To achieve this objective healthcare professionals must be well trained and accredited and the dispensary must have the minimum required endowment.

2. Delivery houses

Also within the dispensary structure, particularly in rural areas, should exist a delivery room and health professionals with higher or medium education capable of ensuring monitoring both the pregnant woman and a normal birth.

If the presence of a doctor or a midwife in a village was a possible fact since the second half of the nineteenth century, I do not think that today, in another century and another millennium, at a distance of more than 100 years, we could not provide a state of normality for its own citizens, especially in the context of declining birth rates, of the need to strengthen the role of the family and encourage population growth.

On the other hand, it should be noted that, if in those areas would have been dispensaries and even part of the needed healthcare professionals, it would not be justified the air evacuations of pregnant women on the verge of birth at term or some semi-medical emergencies in the isolated villages by heavy snow or other calamities, emotional gestures for viewers, especially if it is used a sound background to match the situation, but extremely expensive.

THE MEDICAL DISPENSARY - PILLAR OF THE COMMUNITY

The concept of medical dispensary, especially in rural areas, exceeds the mere existence of a structure or activity.

The dispensary, along with the school and the church, is one of the main pillars of the existence of a community, essential for the development and ensuring of the continuity of the Romanian people. (Ciobotaru, 2013)

The existence of such an institution, in addition to the growing importance of the village and of its socio-cultural life, contribute directly to rural development, besides health ensuring of the base population, leading also to an increase in the attractiveness for urban residents who wish to settle (to return) in rural areas, but hesitate because of the lack of social services and utilities with which are used.

CONCLUSION

I believe that the reestablishment of medical dispensary in an updated version can bring a state of equilibrium and efficiency both in ensuring a coherent and effective public health policy and in ensuring an effective primary healthcare for the population, especially in rural areas and the isolated areas.

If until 1997 the opposition to the total privatization of primary health care was equivalent to a communist nostalgia and the incapacity to understand the light from the end of the tunnel vision, today, I think it has become quite obvious to more than one person, that the state medical dispensary institution, an institution that is not of Soviet or communist origin, it is more necessary than ever.

I am convinced that only by bringing this concept in the Romanian society and thus restoring a network of public primary health care, unified coordinated at national level, acting as a platform/ support also for others medical and social activities, it might succeed the return to an acceptable level of epidemiological surveillance, of qualified first aid, to the financial balance of the public hospital system and to ensure a climate of medical safety of the population anywhere within the national territory.

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The role of local government in rural development over the current period of time

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ABSTRACT

Local Government, currently under reorganization, should play an important role in managing the rural communities' issues in Romania. Therefore it detaches the theme of spatial planning or that one of supporting the local producers, including systems supporting small and medium enterprises (IMM) and the use of European funds.

Keywords: *rural communities, local authorities, European funding*

INTRODUCTION

Rural development is a major problem in our country.

EU Member, Romania has formally aligned its policies in regional, local, agriculture (economic) and administrative-territorial areas to the EU regulations; we point out, however, that between European norms set and their implementation, a considerable distance remains still pending. Our brief analysis cannot exclude the context of economic, social and institutional crisis in the EU.

1. **The Analysis**, even a relatively superficial one, emphasizes a weak political will to modernize the economy, reflected in the manifest formalism of the public policies; the clearly conservative current elites focused on wealth accumulation, mainly through the exploitation of the power levers holding; deliberate or not giving up of the main economic and financial-banking levers to the EU corporations; the anemic society pressure on the ruling elites; widespread corruption and tax evasion. In the administrative field, a reform is formally applied, with the assistance of the World Bank. We cannot ignore, however, the marked influence of political factors on the administration, expressed in staff selection and promotion and resource allocation. Against this background, the current approach of decentralization seems to lead only to strengthen the local barons". We recall that in Romania almost 50% of the population lives in rural areas.

2. **EU regional policy, the common agricultural policy and rural development**

"Predominantly rural regions covering half of Europe represent approximately 20% of the population. According to the European Commission projections, by 2014 5 million jobs will disappear in rural areas. Diversification of economic activities and improve the quality of life in rural areas is a joint mission of the rural development policy of the European Union and the Cohesion Policy. European Regional Development Fund (ERDF) and European Social Fund (ESF) complete the European Agricultural Fund for Rural Development (EAFRD) (www.europa.eu/regional-policy)".

EAFRD key areas for action include creating jobs outside farming (new companies, development of touristic activities etc.), improved access and linkages between cities and rural areas, especially in the international society context, support for small and medium enterprises (SMEs) in agriculture (support for innovation and product development), agri-food and forestry and the development of basic infrastructure in villages, especially in the new Member States.

Within the cohesion policy there is no distinction between cities and villages. Between 2007 and 2013, 344 billion euro was allocated to the Member States as Structural Funds. (2)

Brussels promotes integrated investment strategy (European Regional Development Fund and European Social Fund). The European Agricultural Fund for Rural Development is added and Romania received (2007-2013) almost 2 billion euro. Note that between 2007 and 2013, 344 billion euro was allocated to the Member States as Structural Funds (www.europa.eu/regional-policy).

Rural development issues are also addressed in the European Charter for Regional Planning, the Territorial Agenda of the European and the Principles for sustainable development of the European continent, the EU (successive) Strategies for sustainable development etc.

EU Common Agricultural Policy (CAP) focused on financing development programs in rural areas and in increasing complementarities between agricultural financing through other funding policies (mostly regional). PAC programs may correlate with regional policies, environment, business, education etc. But funding opportunities must be identified, portfolios of projects must be developed, supply sources of financing must be found etc. It is required that local administrations develop as many joint projects as possible. Public administrations have a major role in this context, given the fragmentation of ownership, low level of education and training, stiffness to changes and reduced elasticity of supply. We note the importance of the Operational Program for Building Administrative Capacity and of the growing competitiveness; improve the life quality, infrastructure modernization Programs etc.

3. EU documents implementation

Between 2007 and 2013, official efforts were made in order to fulfill the National Rural Development Program (RDP). The application of the following measures was intended: increasing the agriculture and forestry competitiveness; support for semi-subsistence farms, setting up producer groups, rural economy diversification; micro-enterprises creation and development, tourism encouragement, basic services in rural areas improvement, public-private partnership development. Some parts of the Sectoral Operational Program Human Resources Development (SOPHRD) and the Operational Program for Administrative Capacity Development (OPACD) can also be applied in rural areas.

Since 2005-2007, Romania has adopted in the EU system several public policies, public policy strategies, sectoral policies; a Department of Public Policy was established at the Government General Secretariat level and Public Policies Units in Ministries. With some exceptions and hesitations, The National Strategy for Sustainable Development (2013-2030) is applied, with 7 years planning, 4 years convergence and reform programs, environment plans and strategies, territorial planning, energy, industry, mining and SME development, water management strategies and plans for public utilities communities' services. Today, the Romanian development strategy is the 2020 Europe Strategy; since 2008, all strategies, policies and development programs are approved by the EU Council (Oprescu, 2013).

Romania is still far from the **New Public Management** that would suppose: competition between the public services suppliers, control de-bureaucratization and citizens' control generalization, result-based public agencies' evaluation; public institutions' management according to precise missions and objectives (and less upon rules and regulations); public institutions focusing upon tax collection; public institutions should be oriented to solve

communities' problems, not only to supply public services. Private management strategies may also be used: task separation between one way qualified clerks and multi-qualified ones; focusing upon efficient zones and externalization of un-effective activities etc.

More, C. Rudnețchi emphasized that "institutions' un-efficiency, the lack of force to fulfill the objectives, the un-capability to produce changes based on thorough analyses and lack of dialogue led to the most simplistic state reform".

The fiscal consolidation program 2010-2011 directly affected the local administration. They cut spending, primarily with staff (25% in 2010); slowly increased the social assistance expenses and those with goods and services remained constant. The transfers to local authorities decreased while they received new responsibilities in the organization, operation and financing of secondary schools, vocational and post-secondary education units. Local authorities are part of the school boards.

Local authorities issue the payment provisions for social benefits. They are performed by county agencies in the field. The decentralization of health (374 public hospitals passed to the county and municipal administrations) was added; part of the expenditures is locally co-financed. Also the local police are paid by municipalities. Since 2010 local administrations received the maximum legal staff. It was set up that the amount of premiums, bonuses and individual allowances must not exceed 30% of the basic wage. All available execution jobs were blocked. Wage reduction in public administration caused a major crisis in the State current operation.

The application of Law no. 69/2010 for fiscal accountability was added; the local autonomy was reduced; by GEO no. 63/2010, budgets were divided into sections of operation and development; the rates of deducted income tax were reduced (to 41.75% from 82%); goods and services purchase was significantly reduced; the Advisory Committee on Local Public Finance functioning was only symbolic (Crăciuneanu, 2013). We may add also an unclear (unpredictable) evolution of the communes' income (from taxes, reduced amounts deducted from VAT); the discrepancy between communes population (45% of total) and the budget incomes (23% of the administrative units).

Likewise, we emphasize that the current governing coalition undertook an ambitious program to revise the Constitution and to renew the administration. Within this state and society modernization program, the executive issued a Decentralization Law draft project (GEO) with the stated intention of improving the central administration, to strengthen the local administration and to open them both towards citizens. Thus, since May 2013 the local authorities presented their views in the so-called Advisory Council for Regionalization. The debates on the subject of powers division and patrimonial inventory were considerable.

For 2014, the amounts provided by every ministry's budget for the institutions to be decentralized and their powers must be distinctly stipulated as annexes to the state budget, so that, together with the institutions' transfer to the local administrations, the financing sources be assured. For 2015, during the next year, by normative documents, standard costs will be established for each decentralized task, so that, every year, the necessary amounts will be insured by the state budget. On October 11, 2013, some heads from the Ministry of Agriculture complain the Ministry of European Funds disregarded the observations made in April by the Ministry of Agriculture about the institutional architecture 2012-2020, which offers to the Ministry of European Funds powers over the funds managed by the Ministry of Agriculture. The Agriculture Minister, Daniel Constantin, argued that the institution should discuss the issue with the Ministries involved (www.hotnews.ro).

At the same time, it became clear the national policies, their coordination and monitoring, following up the implementation of the national programs, the inspection and control tasks remain in the central structures of the Ministries.

In parallel, we note that the local authorities have the exclusive jurisdiction under the law (2006-2013) regarding the establishment, organization, coordination and operation of public utilities, as well as in the creation, development, modernization, management and operation of the public property or private administrative units related to the public utility systems. The competences are shared with the public authorities, central and competent regulatory authorities regarding regulation, monitoring and control of the public utilities services. We must add the actions for reorganization of the Agricultural Chambers and re-establishment of the Agricultural Consultancy. The Minister of Agriculture and Rural Development encourages the development of Local Action Groups (financed by the Regional Centers of the Paying Agency for Rural Development and Fishery).

Regarding the EU funds, this Agency warned that Romania spent only 20% of its European funds for agriculture and rural development investments. Among the causes that generated this situation (www.evz.ro/detalii), there are: lack of private co-financing; lack of approvals and certificates required due to late submission of the documents to obtain them; lack of documents proving ownership or use; failure to submit all requested documents on file; financial oversized projects etc. The Local Development Plans will gain an increased importance.

Also, there are to be highlighted such initiatives as **Civitas Foundation for Civil Society** which promotes the entrepreneurial spirit by developing associative forms (producers' associations and set up of storage services and processing, packaging and selling of agricultural products). Thus, the knowledge assimilation is stimulated in order to develop business plans for ventures or professional training. Various forms of collaboration with local authorities are essential.

In total, 59% from the European funds for rural development were absorbed (5.5 billions by August 2013). The system is slightly more difficult due to the latest standards of the Ministry of Finance, through which only one payment per month can be made, consequently to the introduction of legal deadlines for the account opening and so it is impossible to fulfill two requests per month (www.evz.ro/detalii).

1,800 projects were canceled due to lack of co-financing.

CONCLUSIONS

Rural development – in its local dimension – and local administration should be addressed in close correlation. Thus, there still is a faulty reporting between the National Development Program to the Regional Operative Program; at the regional level, the strategic documents were not turned in regional and county level projects. Also, the specific future economic impact assessments are lacking (the specific real social-economic assessments are not yet elaborated). Some shortcomings of administrative nature must be highlighted, resulting in cumbersome coordination between Regional Development Agencies and Intermediary Body. The Management Authorities often introduced adversarial procedures.

In the context of the excessive politicization of the European funds absorption, it comes to some programs lock by the European Commission (due to irregularities in the procurement area). It was also rashly appreciated that a great part of the European funds be directed to urban centers and growth poles. In another context, we point out that regional disparities have increased (www.fonduri-ue.ro/res) with 36% from 2004 to 2011.

On a closer examination, it appears that Romania socio-economic development could become “chaotic” in 2012-2020. An important 2011 SAR Report shows that in our country the “clienteles and lack of local responsibility” have proliferated and they created fundamental problems and neither the access to European funds, or hurried regionalization will contribute to improve the situation. At the same time, it is estimated that over 50% of local public institutions didn't draw annual activity reports. “These reports are practical the assessment

tool for local and regional public administrations activity, as they describe the undertaken programs, the performance, the achievements and the future goals”(www.romaniacurata.ro). On the other hand, it is known that economic productivity depends directly on the **local administration capability**. In the case of so-called Romania’s regionalization, we mention that the EU didn’t insist on its speed. But **multi-level governance** cannot be exercised primarily through a better absorption of EU funds, but through **efficient administration**. The **Advocacy Academy** believes that any hasty administrative reform may lead to “**local fiefdoms**” formation. Bureaucracy and corruption may increase. The possibility of supplying some **ethnic conflicts** is to be added.

Local administration can become an important development tool for Romania if: a real financial decentralization would be applied; the limit of 20% to which the local authorities are allowed to increase the local taxes would be eliminated; decentralization of some taxes to the local authorities (individual and familial enterprises); decentralization of all penalties to individuals and to some businesses, depending on their residence; revision of local budgets balancing systems; providing means to reduce the counties and communes arrears; revision of the system of fixing the indebtedness limits of the local authorities level; measures to correct staffing of local administrations etc. But an **initiative to reduce the communes’ number (from 3,000 to about 1,500) experience further serious opposition at central and local level**. The mediocre stage of local IT systems is to be added.

From our point of view, rural development would mainly involve overcoming some still huge obstacles and important government funding allocation - local and European – which is difficult in the conditions of the actual economic crisis.

Another problem relates to the infrastructure development (routes, irrigation networks, water and gas networks etc.). A coherent correlation should, however, be established between central and local authorities.

A very important issue is also ensuring the necessary specialists at the local level. The territorial population fixing cannot be separated from a serious encouragement of SMEs and other economic and financial measures to counteract the population decline and aging. Nor the environment issues can be neglected. A simple administrative decentralization will not solve these problems. Equally, we should envisage serious changes of cultural values and mentalities, to promote community engagement strategies in the local problems management and resolution etc.

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Environmental impact of rural tourism in the Mehedinti County

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ABSTRACT

The tourism industry in general has a major impact on the economy of a country, given jobs and gains generated from this activity. But equally important is the impact that tourism has on the environment, both through the destruction of ecosystems, and through measures for their protection. Today, tourism development involves a range of new products, higher quality, and quantity. Therefore, I chose to analyse Mehedinti County environmental effects that occur with the development of tourism in general and rural tourism in particular.

Keywords: *rural tourism, environment, touristic products, economy, sustainable development*

INTRODUCTION

Rural areas is the support of many socio-economic activities due to agricultural land resources that are the source of raw material for other economic sectors. In terms of tourism developed in rural areas, it should be a sustainable without negative effects on the environment, but which has as main goal to maximize long-term profits by attracting tourists and optimum satisfaction.

Rural tourism is a great source of investment, by creating small, but numerous, generating labor. However, this growth must be controlled in order not to threaten one authentic cultural image on the developing rural tourism.

Rural areas is influenced by many factors such as:

1. Geographical factors, the characteristics of each form of relief (climate, soil, elevation, vegetation and fauna);
2. Economic factors (physiognomy villages which cause numerous possibilities for their exploitation);
3. Historical factors concerning the genesis and evolution of each rural settlements;
4. Policymakers and administration by the organization and management of rural areas (rural community size).

The promotion of rural tourism is often seen as a suitable form of economic development for rural areas, but for every positive argument put forwards in support of rural tourism there tends to be a counter argument.

Tourism is considered a very important area in the sustainable development of the region, investment in this area is a priority of the community. As a result of tourism development, the issue of compliance with the request of the balance between tourism and its capacity to absorb the environment. If the green (forests, parks and nature reserves), beaches, parks, zoos, water meadows and even cultural centers, historical and architectural monuments are exceeded maximum capacity in terms of sightseeing, tourist quality, their natural traits, damaged. The main forms of tourism include : cultural, rural, health, business, sports, stay and transit, ecotourism, agritourism.

Table no. 1: **Effects and Conflicts**

Positive effects of rural tourism	Opposing argument
Job generating	Creates low wages and seasonal employment
Environmentally friendly	Degrades valuable and finite resources
Generates new demand in the local economy	Displaces existing demand
Generates new revenue sources for rural authorities	Tourism development is a fiscal burden for many small, rural governments, exerting a disproportionate drain on the local service base

Source: Nistoreanu Puiu. (1999) - "Rural tourism, a small business with great prospects", Didactic and Pedagogic Publishing House, Bucharest;

Tourism can cause a negative impact on the environment through: intensive use of water and land by recreational facilities, supply and use of energy resources, changes in the natural environment arising from infrastructure construction, air pollution and waste disposal, compaction and soil sealing (destruction vegetation) disturbance of wild fauna and inhabitants of the area (due to noise). The increase in the number of tourists and tourism development led to the assault by: wastewater from tourist facilities ; pollutants from transport (cars passing) pollutant emissions from thermal power plants ; uncivilized behavior Toward heritage values.

SOCIO-GEOGRAPHIC SIZE OF THE MEHEDINTI COUNTY

Mehedinti County is located in the south-west of Romania, on the left bank of the Danube, its laieșirea of the gorge. It has an area of 4933 km², representing 2.1 % of the country bordering counties Sise: West Caras-Severin, Gorj and Dolj north to southeast. To the south it borders with Bulgaria and Serbia.

County consists of mountains, plateaus and plains, presents itself in the form of an amphitheater that steps down from north-northwest to south-southeast. The highest level in the northwest, is made up of mountains Mehedinti and Cerna, middle level contains Plateau Mehedinti Motrului hills and high plains Bălăcița, the lowest rung, Blahnița Plain consists mostly of broad valleys of the Danube terraces Drincea and Blahnița. The presence of depression as Baia de Arama, Comănești-Halânga, of broad valleys and Topolnitei Carpathian basin type provides housing and traffic conditions, including high areas of the county.

In terms of administrative organization, the composition of the county between 2 towns (Drobeta -Turnu Severin and Orșova), 3 cities (Baia de Arama, Strehaia and Vanju sea), 61 communes and 344 villages. Mehedinti is resident of 324 115 inhabitants, of which 49.1 % live in urban areas and 165,050 people (50.9%) are rural population. In towns, the population is concentrated as follows:

- Turnu Severin – 118 114 locuitorio Orșova – 15 589 inhabitants
- Strehaia – 12.564 inhabitants
- Vânju Mare-Baia de Arama locuitorio 7.074-5.724 inhabitants

Due to its border county is considered the gateway of the south- west and is crossed by European road E70 and several roads. Rhine -Main -Danube Canal, opened in 1992, located Mehedinti county, DrobetaTurnu Severin, in direct contact with all European cities on the Black Sea to the North Sea. Bridge hydropower and navigation system " Iron Gates " linking Drobeta Turnu -Severin and Belgrade (300 km), Istanbul (700km), Athens (950km) and Rome (2000km)

Regarding the employment of labor, employment rose by 113,200 lanivelul employees, of which only 1000 working in the tourism industry (www.mehedinti.insse.ro).

CASE STUDY: BAIA DE ARAMA, MEHEDINTI COUNTY

In 2012 the county Mehedinti Baia de Arama was asked to conduct an environmental agreement investment objectives regarding "Creating a public infrastructure and tourism development functionality in Baia de Arama "Investment in tourism infrastructure and recreation is very important for the local community which aims to develop the tourist village.

Baia de Arama is in a favored position in terms of access possibilities and visiting the many natural attractions but also for mountain tourism, cultural and recreation. In the summer, the area can practice various sports : swimming, horse riding, cycling, motorcycling, climbing, hiking trail, winter following to create the necessary facilities ski, sled, etc. Currently the accommodation capacity is relatively weak because the area was not promoted. Although the appeal of such sites is extremely high, infrastructure greatly hampered the access road.

Table. No 2: **Environmental factors interaction**

Environmental factor	Cumulative effects	Environmental factors that interact	Potential interactions
Water	The cumulative impact is determined by the effect of water pollution by accidental spills from machinery and the rainwater. The overall impact is negative cumulative allowable limits	Flora and fauna, human health.	Effect on Valley City Water
Air	The impact will be well below the limit values given that it will implement the measures set for emissions. The cumulative impact is negative in the allowable limits	Biodiversity, flora and fauna, human health	Effect on vegetation and ecosystems. Specific pollutants emissions are dependent on the state road infrastructure equipment.
Soil	The cumulative impact on soil and land use is considered to negative over the allowable limits for the period of execution.	Population, biodiversity, flora and fauna, landscape, material values	-
Noise and vibrations	The cumulative impact on biodiversity and is considered to be negative populat�ei acceptable limits.	Population, biodiversity, material values	Impact on biodiversity, wildlife and people. Prevention and appropriate management of work will greatly reduce the potential

Environmental factor	Cumulative effects	Environmental factors that interact	Potential interactions
Biodiversity flora and fauna	The cumulative impact will be to alterations of the landscape, which is considered as insignificant negative impact. Implementation of the measures of biodiversity will cause significant attenuation effects	Landscape, soil	Habitat change affects biodiversity, landscape and the use of land
Population	The main impacts are: improvement of social and living conditions of the population in the short, medium and long term.	cultural heritage, architectural, material values	Project implementation will lead to changes in land use, the socioeconomic status of the population, landscape and infrastructure
Waste Management	The cumulative effect through action on water, air, soil, biodiversity, population. Appropriate waste management and waste technology can reduce the total impact on the environment Insignificant negative impacts	Water, soil and subsoil, air, population, biodiversity, material values, landscape	Water, soil and subsoil, air, affecting the fauna and flora, people and landscape. Implementation of the project will not have a noticeable effect on the community that will meet the waste management plan
Landscape	Form regarded as insignificant negative impact on the local scale.	Form regarded as insignificant negative impact on the local scale.	Biodiversity, flora and fauna are directly influenced by the natural elements of the landscape, which are essential components of habitats. Impact on the landscape can generate some impacts on wildlife.

Source: Assessment of Environmental Impact “Creating a public infrastructure for tourism and tourism development functionality in Baia de Arama”

For the purposes of tourism development in the northwest of the County initiated Mehedinti County Council have restored a series of national and county roads that now allow more tourists to come to ease but is now the necessary infrastructure development and housing creating opportunities for spending holidays in good condition, both winter and summer. Investment itself was divided into nine main objectives:

1. Artificial path
2. Swimming pool
3. Snow path
4. Rink
5. Connections and external networks
6. Planting site
7. Land arrangement for training site
8. Environmental protection facility
9. Site organization

CONCLUSION

European Union policy in the field of environment, as found in the European Community Treaty is aimed at achieving sustainable development by including environmental protection in EU sectoral policies. Touching this objective requires the introduction of high environmental standards and respect some very important principles, such as "polluter pays" principle "polluter liability for damage caused", combating pollution at source and sharing responsibilities between all operators and local actors - local, regional and national levels.

In our country, after attending the Summit in Rio de Janeiro and after joining the EU, environmental awareness has increased significantly and were taken to address these problems. Furthermore, the Association Agreement between Romania and the EU states that development policies in Romania should be based on the sustainable development principle and to consider their potential effects on the environment.

Policy makers in tourism development should consider its sustainable development in environmental, sustainable and profitable economically and ethically fair and socially for the local community. This requires integrating tourism to the natural, cultural and human and respect the fragile balance, characteristic of many tourist destinations.

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The present and future of small farms in Romania

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ABSTRACT

Small-sized farms have a significant share in Romania's agriculture, as a result of the specificity of land restitution to former owners in early 1990s. Although the total number of agricultural holdings in Romania was down by almost half a million in the last decade, it remains one of the highest in the EU countries and reveals the social, subsistence character of a large part of agricultural holdings.

The paper attempts to evaluate the situation of small farm sector restructuring after applying Measure 141 referring to the support to semi-subsistence farms from NRDP 2007-2013 and the Life Annuity national scheme. At the same time, starting from the Commission's proposal for the post-2013 period on the support to small farms under the form of a lump sum payment ranging from 500 to 1000 euro, a series of calculation variants are made in order to see whether this measure would be financially attractive for small-sized farms in Romania. The main conclusion of the study could be that the process of small farm consolidation and its integration into the market economy structures would be quite slow, due to the extremely large number of small farms and to their safety net role for the extremely poor rural population, whose survival depends on the operation of the small plot of land into ownership.

Keywords: *small farm, CAP Reform, Romania*

INTRODUCTION

Romania is the country with the most fragmented agrarian structure in EU-27, with 32.2% of the total number of EU farms and 7.7% of the utilized agricultural area. Land restitution to former owners and their heirs, initiated in the early 1990s featured certain peculiarities that favoured the present fragmentation. The most important characteristic was the limitation of restituted land area to 10 ha per family; this situation was corrected only in the years 2000 and 2005. The total area restituted to the 3.8 million beneficiaries of Law 18/1991 (land restitution law) was 9.3 million ha. On the other hand, this law, by the modality it regulated the legal circulation of land, practically blocked the land transactions until 1997. In the year 1998, the agricultural land market was liberalized while maintaining certain conditions (for instance, an upper limit of 100 ha imposed to the land areas into ownership), and in 2005 this was fully liberalized for the Romanian citizens. In spite of all the legislative improvements throughout the years and the measures applied to stimulate the average farm size increase, the land consolidation process is very slow and probably Romania will have a mostly dispersed agrarian structure many years from now.

MATERIALS AND METHODS

The paper investigates the small farm sector evolution in Romania, using as data sources the two agricultural censuses that took place in the years 2002 and 2010, as well as the farm structure surveys in the years 2005 and 2007. The role of small farms is investigated from the

perspective of the subsistence and semi-subsistence economy for ensuring food security and welfare for the small rural holdings. The data source is the Family Budget Survey, in order to reveal the importance of own resources for meeting the consumption needs of rural households and for their incomes. At the same time, the financial support to small farms is investigated, in the post-accession period, under the two pillars, i.e. SAPS payments and the support through the measures under the National Rural Development Program. The results obtained by the application of the Life Annuity Scheme are presented, focusing on the possible land consolidation effect and land transfer from elderly to young land owners. The data used in this analysis came from the official sources of the Ministry of Agriculture and of the Agency of Payments. As regards the perspectives of small farms in the budgeting period 2014-2020, the last part of the study makes an evaluation of the possible budgetary effects in the case of a simplified small farm scheme application in Romania, through an annual lump sum per farm.

1. THE ROLE OF SMALL FARMS

Although the total number of agricultural holdings in Romania was down by almost half a million in the last decade, from 4.48 million registered by the 2002 census to 3.85 million according to the 2010 census (Table 1), it remains one of the highest in the EU countries and reveals the social, subsistence character of a large part of agricultural holdings.

Table 1. Evolution of agricultural holdings in Romania in the last decade

	2002	2005	2007	2010
Number of holdings (thousand)	4 485	4 256	3 931	3 856
Utilized agricultural area (thousand ha)	13 931	13 907	13 753	13 298

Source: Romanian Agricultural Census 2002 and 2010, Farm Structure Survey 2005 and 2007, National Institute of Statistics (NIS), Bucharest

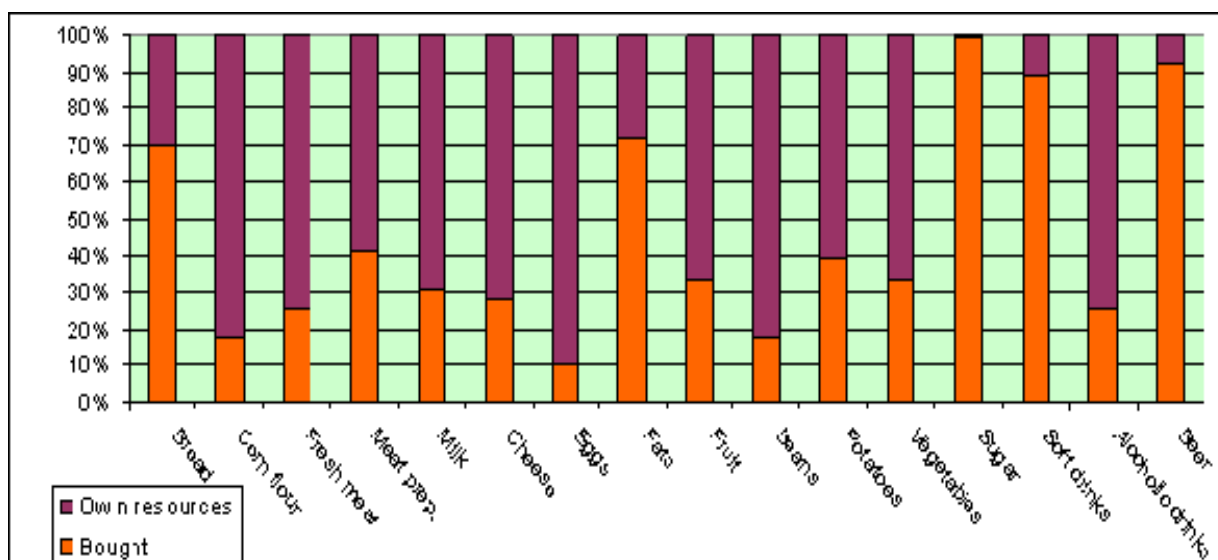
The 2010 Census reveals a picture of the Romanian agriculture under a too slow restructuring process. The average agricultural area of a holding was 3.4 ha, non-specific for a country with a significant size of agricultural land area. The result of the too slow transformations of the farming sector is highlighted by the fact that about one-third of the registered holdings in the European Union in 2010 are found in Romania. Of course, a significant part of these are merely subsistence holdings: about 75% of the registered holdings utilize an agricultural area smaller than 2 ha (however, the area of all these 2.8 million holdings represents 13% of the total utilized agricultural area at national level).

At present, Romania does not have a clear definition of the small farm yet, but for the purpose of this analysis we can take into consideration the holdings under 5 ha and even those under 10 ha. The 3.5 million holdings under 5 ha accounted for 93% of total number of holdings, and they operated almost 30% of the utilized agricultural area at national level. About 98% of holdings were under the 10 ha threshold, with about 39% of utilized area. The small holdings are obviously non-legal entities. In the year 2010, there were about 30 thousand legal entity holdings in Romania, with an average area of 190 ha each. By contrast, the 3.8 million non-legal entity holdings had an average area of 1.9 ha.

If we leave aside the 3 million subsistence holdings of Romania, the interest in increasing small farm competitiveness presupposes to focus on the 866 thousand holdings with an economic size over 1 ESU (according to the data from 2007). The integration of these holdings on the market represented and continues to represent a challenge, as long as 64% of these mainly produced for self-consumption, and 35% mainly for direct sales.

The main function of (subsistence and semi-subsistence) small farms is to ensure a certain social protection for the rural people who worked on the former cooperative farms and whose pensions are not sufficient for a decent living. However, these small holdings cannot lead to the increase of professional farmers' welfare, many of them being also dependent on the agricultural services performed by the owners of agricultural equipment.

Graph 1: Origin sources of food consumption on rural household



Source: Family Budget Survey, NIS, 2009

Although marginalized by the national and European agricultural policies (Ghib and Villemain-Ciolos, 2009), the small farms have a social buffer, which enabled Romania to go through the difficult period of the 1990s without social disturbances, when the disindustrialization resulted in premature unemployment that found an attenuation in the subsistence farming practice. In addition, these farms contribute to Romania's food security, if we take into consideration the high share of self-consumption on the rural holdings. Another benefit, this time from the territorial point of view, is represented by the presence of these farms mainly in the hilly and mountain areas, being the main players of local economy in these areas. In the present conjuncture of the prolonged economic crisis, the economic behaviour of the small farms can be also taken into consideration, which, although having a lower productivity, ensure a stable production, due to production diversification. Thus, while the very large-sized farms from Romania are generally specialized in the production of small grains and oil crops, the very small farms feature a strong diversification: they mainly cultivate maize (as a grain crop), used in the people's food and also for feeding animals, and also a multitude of crops that are used as food for people, such as: beans, potatoes, pumpkins, vegetables, fruit. At the same time, most small farms also raise animals: 1-2 dairy cows, poultry, several sheep or goats. Thus, in the countryside, people's food mainly comes from the production of small peasant household farms. These products are no longer marketed, but they are used as self-consumption. Thus, according to the Family Budget Survey (NIS, 2009), on the rural households, about 66% of total food consumption expenses is represented by the value of self-consumption. Practically, on these households, only those foodstuffs that cannot

be produced on the respective household are bought, i.e. sugar, oil, certain alcoholic and non-alcoholic beverages. That is why, it is considered that small farms have an important social role in Romania, although they represent a constraint to the development of high productivity agriculture; however, they represent an important factor in ensuring food security for the population, mainly in the rural area, where about 45% of the country's population lives (Alexandri, C., 2001).

2. SUPPORT TO SMALL FARMS

Although throughout the European Union (EU) the 2007 Farm Structure Survey revealed that there were only 13.7 million holdings, the CAP direct payments (2009 data) were received by only 7.8 million beneficiaries. The difference is made by the subsistence farms, which generally are out of the strict interest of the Common Agricultural Policy. A more rigorous delimitation of subsistence farms, made by Eurostat using the economic size of holdings, consider that the subsistence farms are those farms with an economic size less than 1 ESU. However, these farms (about 6.3 million) account for 47% of the agricultural holdings, 23% of the labour force employed in agriculture and 7% of the agricultural area, per total EU. In Romania, the respective shares of the subsistence farms are much higher: 78% of total holdings, 57% of the labour force and 31% of agricultural area.

2.1. Pillar 1 (SAPS)

For providing the direct payments to farmers, Romania opted for the simplified SAPS scheme, with the lower limit of holding of 1 ha, and the lower limit of parcels on holding of 0.3 ha. Thus, the total number of direct payments beneficiaries exceeded 1 million in each year of the period 2007-2010, but more than 80% of beneficiaries were farmers with less than 5 ha (Table 2), who owned about 20% of the eligible agricultural area for direct payments.

Table 2. Number of small farmers beneficiaries of direct payments (SAPS), per payment application years

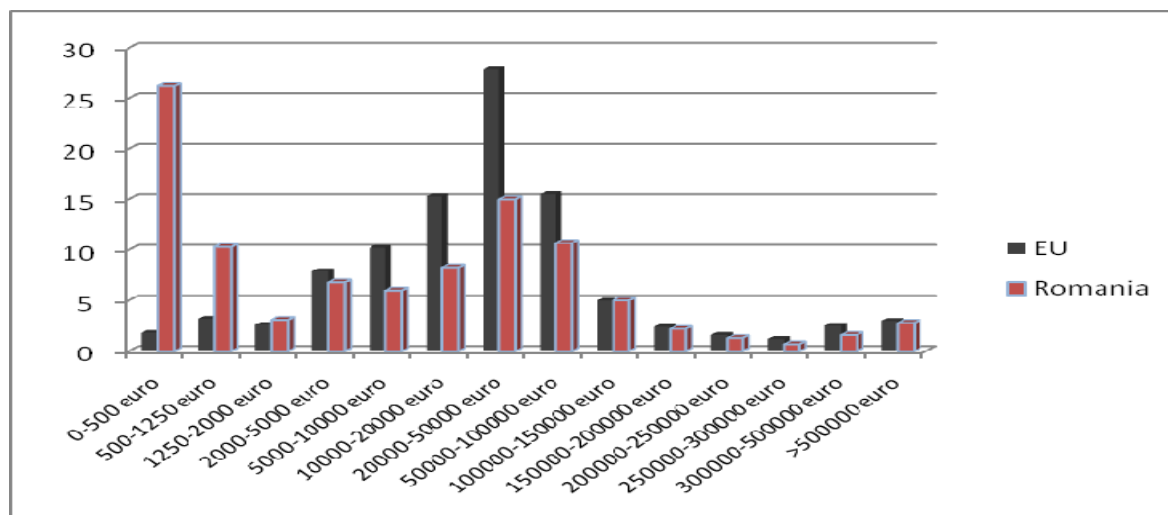
	Year 2007	Year 2008	Year 2009	Year 2010
No. farmers with 1 – 5 ha	1 000 096	915 897	857 101	879 380
No. farmers with 5 – 10 ha	162 039	141 603	134 442	137 316
Total number of farmers benefiting from SAPS scheme	1 236 844	1 130 964	1 057 947	1 092 672

Source: Agency of Payments and Intervention in Agriculture (APIA)

The analysis of the beneficiaries and corresponding eligible areas for area payments (from EU funds), starting from the detailed data of 2009 payments per Member State, reveals the extremely peculiar situation of Romania from the perspective of beneficiaries' distribution,

where a huge number of farmers (almost one million) received less than 500 euro direct payments from EU funds.

Graph 2. Share of total value of direct payments, by groups of beneficiaries, according to the size of payments (%), in the year 2011



Source: EC, Agricultural Policy Perspectives, Member States factsheets - March 2013

One can notice from Graph 2, the difference between the direct payments distribution by categories of beneficiaries in Romania and the EU-27 average. In Romania, 86% of farmers receive direct payments ranging from 0 to 500 euro, and the total amount received by this group of farmers represents 26% of the received direct payments in Romania. In EU-27, on the average, the farmers who receive direct payments from 0 to 500 euro represent 37% of total, and the total amount received by these represents only 1.8% of the direct payments at EU-27 level.

Pillar 2

Among the measures under Axis 1 of the National Rural Development Program for the period 2007-2013, two transitory measures are found, introduced in the special rural development regulation for the New Member States who joined the European Union in 2004 and 2007. These are the measures 141 “Support for semi-subsistence farms” and 142 “Setting-up of producer groups”, meant to speed up the integration of lower-sized farms on the market, resulted from the restructuring of agricultural sectors in the former socialist countries. By Measure 141, support is provided to semi-subsistence to get restructured individually, on the basis of a development plan that presupposes a better integration on the market, while 142 provides support for a collective activity of integration on the market, through the common marketing of products. The two evolution paths can remain separate, but they can be also combined: theoretically, it is desired that the beneficiaries of support for the semi-subsistence farms are members of a producer group, and thus their opportunities for a stable presence on the market increase.

Table 3. Cumulated situation of projects submitted for support through the transitory measures (June 2012)

Measure code	Number of submitted projects	Number of selected projects	Number of contracted projects	Value of contracts (mil. EUR)	Effected payments (mil. EUR)
141	64722	48512	46070	345.5	97.2
142	40	40	34	5.0	0.7

Source: Management Authority NRDP

Measure 141 provides support to the agricultural holdings whose production mainly goes to self-consumption, which also sell part of their production, in order to have their production restructured in the sense of a higher integration on the market. The eligibility conditions for Measure 141 are linked to the beneficiary's status (natural person up to 62 years old, who must become certified natural person until signing up the funding decision) and to the holding characteristics: holding registered in the Agricultural Registry, with an economic size ranging from 2 to 8 ESU, which sells part of the obtained agricultural products. This adds to submitting a business plan of a 5-year period (period for which the support is received). From the business plan, a 20% increase of the marketed production must result after the first 3 years, and an increase by 3 ESU of the economic farm size, eventually as a result of certain investments.

A relevant issue for the difficulty in the identification of a viable formula of Measure 141 implementation, which should have positive effects on the long run, is represented by the obligation of beneficiaries' registration as certified natural persons. It is clear that this registration offers the possibility of proving with invoices the increase of marketed production, but the commercial behaviour imposed to these (minority) farms is in contradiction with the prevailing current practices of a non-formalized economy, and the 1500 EUR / year support might not compensate the difficulties that the certified natural persons might face when selling their production.

However, Measure 141 is a measure that is in great demand: the number of its beneficiaries increased from about 16 thousand in late 2010 to about 46 thousand in June 2012. Out of the beneficiaries in 2010, 76% were holdings under 5 ha, 15% holdings with 5 – 10 ha, and 9% holdings over 10 ha, from which it results that small farmers are interested in their integration on the market.

2.2. The Life Annuity Scheme

The Agricultural Life Annuity is a national scheme, funded from the state budget, which was introduced in the year 2005 for the agricultural land concentration purpose, as it is explicitly stated in the law, having in view Romania's agriculture modernization by the establishment of efficient holdings. Actually, the natural persons aged over 62 years who owned agricultural land areas up to 10 hectares (land areas that were not the object of sale/purchase transactions after 1990), could receive until the end of their lives a sum of money guaranteed by the state, if they sold or leased out the land into their ownership. In the case of sale, the amount received annually was the equivalent of 100 euro for each hectare, and in the case of land lease, 50 euro. When the respective person entered this scheme (and became a renter), he/she could have into ownership only 0.5 ha agricultural land, in other words he/she quitted the agricultural activity.

The amounts due to these agricultural renters were paid from the state budget through a National office organized within the State Domain Agency, which had offices in each county; these offices were also in charge of keeping an evidence of renters and checking up the files. The first files for receiving life annuity were submitted in late 2005, and by the end of the year 2009, when the receipt of files was stopped, the number of beneficiaries had reached about 90 thousand persons. As a scheme introduced in the pre-accession period, the *Life Annuity* scheme benefitted from the possibility of continuation for a period of three years from Romania's accession to the EU, without the obligation to get it in line with the EU legislation of state aid. After the three years, the scheme was stopped, which meant that no new files for new agricultural renters were received, but the payments for the already registered persons at that moment continued to be received, and they will be received until the current beneficiaries' death.

The *Life Annuity* scheme, by the land area that was ceded by its beneficiaries, totalling 82 436 ha sold land and 247 184 ha leased out land, contributed to the adjustment of farm structure (diminution of the number of holdings from 1 to 10 hectares in size), as well as to updating the cadastre and to land lease formalization, by concluding contracts and their registration. Thus, the *Life Annuity* scheme proved to be a simple and robust measure, adapted to the Romanian agriculture situation. Taking into consideration the fact that the scheme still targets over 500 thousand beneficiaries of direct payments, owners of about 2 mil. ha (see Table 4), its continuation – under the form of a mechanism funded according to the state aid legislation – can contribute to farm structure adjustment, while also having a social role.

Table 4. Land area owned by individual farmers and their number, by age categories (2010)

Age category	< 30 years	30-40 years	40-50 years	50-60 years	60-70 years	> 70 years
Number of farmers (thousand persons)	10.2	74.4	141.3	231.8	292.6	351.4
Agricultural area (thousand ha)	92.9	524	909.7	1154.6	1175.4	1134.1

Source: APIA

3. SMALL FARM FUTURE IN THE POST – 2013 PERIOD

Among the issues focused on by the European Commission's Communication of 2010 on the Common Agricultural Policy towards 2020, the small farm issue can be also found, for which a simple scheme was proposed, specific only to the small farmers, which should replace the current system of direct payments to these farms, in order to improve their competitiveness and increase their contribution to maintaining the vitality of rural areas, while reducing bureaucracy. The proposal was welcome at European level by the representatives of different organizations, from farmers' associations to think-thanks and national governments. The Ministry of Agriculture and Rural Development from Romania expressed more than once its support for introducing a support scheme dedicated to the small-sized farms, also in Romania's Position on the Future Common Agricultural Policy after 2013.

We shall next present a few results concerning the effects of this proposal application (Giurca, D. Alexandri, C., Rusu, M., 2011), contained in a study elaborated within the European Institute of Romania.

As we have mentioned, the Commission's proposal on the small farm scheme envisages the replacement of the payments per hectare by an annual lump sum per farm and the simplification of conditionality with regard to the respect of good agricultural practices for receiving direct payments in the future CAP (EC, 2011). The main provisions of the small farm proposal refer to the sum to be paid, namely:

- The sum should not exceed 15% of the average value of payments per farm at national level
or
- The sum should correspond to the direct payment per hectare multiplied by the number of hectares, which can be maximum 3 ha.

What would be Romania's options in the case of this scheme?

If we have in view the first criterion of appurtenance to the scheme (15% of the average value per farm at national level), we can notice that in Romania, in the year 2017, the average payments per farm, at national level, would be those from Table 5 below. The data on the farm structure are those extracted from (APIA) database for 2010.

Table 5. Possible payments per hectare and per farm in Romania in the year 2017

	UM	Status Quo (current legislation)	COM proposals, 2017 (Annex II)
Eligible area (2010)	hectares	9611790	9611790
Number of farms (2010)		1115756	1115756
National ceiling	thousand euro	1780410.0	1939357
Euro/ha		185.2	201.8
Euro/farm		1595.7	1739.2
15% of payment per farm		239.4	260.7

Source: based on the Proposal for a Regulation of the European Parliament and Council for establishing rules for direct payments to farmers through support schemes under the Common Agricultural Policy ANNEX II
National ceilings mentioned under Article 6 and Regulation 73/2009

In the year 2009, according to the Commission's data, the average payment per farm in Romania was at the lowest level among the EU-27 countries. In the year 2009, the maximum level of payment per farm was 20950 euro in Spain, and the minimum level was 493 euro, in Romania.

The payment per farm, in the year 2017, would be about 1739 euro/farm, and 15% of this amount is about 260.7 euro/farm, hence less than 500 euro/farm, which is the minimum amount provided for in the scheme.

However, according to the Commission's proposal, the minimum level of single farm payment should not be lower than 500 euro/farm. And again we have the problem of the category of farms that could join this scheme. Rationally we think that the farms that would accept the scheme would be those that following the option for a payment of 500 euro/farm would get more money than in the case of receiving the direct payments per hectare.

As a result, we consider that this scheme could be attractive for the farms with 1 – 3 hectares. According to APIA data for 2010, about 650 thousand farms would fall into this category, and the area operated by these would total 1198 thousand ha.

Several variants of payments to small farms are presented below:

Variante 1 (reference variante), contains the situation in which the scheme for small payments is not applied and the small farms receive payments per hectare according to the national ceiling for the year 2017;

Variante 2 – when all farms from the segment 1-3 ha adopt the payment per farm of 500 euro;

Variante 3 - 75% of farms receive 500 euro per farm and 25% receive payments per hectare corresponding to the year 2017;

Variante 4 – the farms from the segment 1 - 2.5 ha receive the payment per farm of 500 euro and those from the segment 2.5 - 3 ha opt for the payment per hectare.

Table 6 is a synthesis of the results from the 4 investigated variants.

Table 6. **Funds received by the small farms under the 4 previously investigated variants – thousand euro**

Size category	V1 (reference)	V2	V3	V4
1-1.5 ha	51371.5	105489.5	91960.0	105489.5
1.5-2 ha	60739.8	87507.5	80815.6	87507.5
2-2.5 ha	67017.4	75003.5	73007.0	75003.5
2.5-3 ha	62603.0	57010.0	58408.3	62603.0
Total	241731.8	325010.5	304190.8	330603.5
% of national ceiling allocated to the payment of 500 euro/small farm	12.5	16.8	12.6	13.8

Source: own evaluations based on APIA data, 2010

We can notice that the small farms would get the greatest amount of money in the situation when the segment 1 – 2.5 ha opts for the single farm payment (500 euro), and the farms from the class 2.5 – 3 ha for the payment per hectare. It is obvious that these simulations are only orientative, as in the case of small farms there will also be other factors that will determine the decision to participate to the single farm payment scheme, among which the farmer's age will be a most important factor.

Under Variant V 4, the segment of farms 1 – 3 ha receive an extra amount of about 89 million euro compared to Variant V I, and the farms from the category 2.5 – 3 ha do no longer lose money compared to Variant V 1. We can also notice how much profitable to small farms is the participation to the small farms scheme (500 euro/farm) mainly for the farms from classes 1 – 1.5 ha and 1.5 – 2 ha.

We consider that in the countries where the segment of small farms is significant, the percentage stipulated in the Commission's legislative proposal should be extended towards 15%, as farms from larger size categories (4, 5 ha) may also adopt this simplified formula, mainly in the situation of elderly farmers, who cannot farm their land properly any longer. Romania should militate to obtain this and find allies among the member states with similar structural problems.

Introducing the scheme for the small farms is particularly important for Romania as it represents a precondition for the application of the farm exit measure – included in the regulation proposal for rural development, Pillar 2, by which the farms included in the scheme have the possibility to receive a compensation if they give up land operation in the period 2014 – 2010. The effect of this farm exit measure would be the diminution in number of semi-subsistence farms that receive direct payments.

CONCLUSIONS

- After the agricultural land restitution process that began in the year 1991, Romania probably has the most fragmented agrarian structure in Europe, the Romanian farms representing about 30% of the total number of EU farms.
- The farm consolidation process is extremely low, the average farm size increasing almost insignificantly in the last eight years, from 3.1 ha in 2002 to 3.4 ha in 2010.
- The main support instrument for the restructuring of the small-sized farms into commercial farms was Measure 141 from NRDP 2007-2013, supporting semi-subsistence farms

(defined as having an economic size from 2 to 8 ESU), benefiting about 46 thousand farms by June 2012, i.e. two-thirds of the proposed target.

- d) The application of the Life Annuity national scheme (2005-2009) devoted to the elderly farmers who want to exit the farming activity was mildly successful. The land area released by the beneficiaries of the scheme totalled 82.4 thousand ha sold land and 247.2 thousand ha leased out land. It is considered that the continuation of this scheme in the period post 2013 would prove to be beneficial.
- e) The Commission Proposal for the post-2013 period on the support to small farms under the form of a lump sum payment ranging from 500 to 1000 euro seems to be beneficial for Romania. The segment for which this measure may become very attractive is the segment of farms with 1 – 3 hectares, consisting of about 650 thousand farms (58% of the farms eligible for direct payments) operating 1.2 million ha (12% of the eligible area). A recent Romanian study indicates that in the situation of this scheme application, the small farms would receive more money and the administrative costs generated by the check-up and control procedures of the Payments Agency would be consistently lower. A problem that appears in Romania refers to the fact that if all the farms under 3 ha applied for this scheme, the payments allocated to them would reach 14%-16% of the national ceiling for direct payments, thus more than the 10% threshold proposed by the European Commission for the small farms. There is a proposal to raise the 10% threshold proposed by the Commission for the payments allocated to the small farms towards 15% of the national ceiling for direct payments.

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Romanian Milk Chain within Abolishment on Quotas' background – EU 27 comparisons regarding competitiveness

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ABSTRACT

Taking into consideration the new Common Agricultural Policy (2014 -2020, for the milk sector, which will have as main component the milk quota removal after 2014, the present paper makes a comparative analysis of the indicators from the milk chain links (agriculture, processing, trade, consumption) from Romania and the EU-27 member states in the period 2009-2012, in order to reveal the performance level and Romania's position among these European countries, as well as the modalities to narrow the productivity gaps along the Romanian milk chain compared to the European Union, having in view the domestic supply improvement and meeting the consumers' needs. In this context, an investigation was made by each link in the chain, at the level of milk production, raw milk collection for processing, milk processing, distribution and consumption, in close connection with milk quality and price evolution; certain variants and measures were designed to narrow the gaps of productivity and institutional organization of the milk chain in Romania.

Keywords: *cow herds, milk production, dairy cow farm size, prices, quality*

INTRODUCTION

The milk sector in Romania is characterized by a low integration of players in the chain, the main causes being the following: low attractiveness of association for milk producers, which results in an excessive fragmentation of supply and the diminution of farmers' bargaining power with processors implicitly, lack of market information, mainly in the case of medium and small-sized operators, who often make decisions unknowingly; this situation brings about losses at all levels, with a significant competitiveness diminution.

That is why the associative organization forms can be considered competitive structures that encourage milk sector modernization and can improve the marketing of dairy products, by the fact that they make it possible for a large number of small producers to actively and efficiently participate to the economic process, narrowing the productivity gaps along the milk chain between Romania and the remaining EU-27 member states.

In order to capture the main aspects concerning the national milk market, the following information was used: the national data supplied by the National Institute for Statistics (NIS), through the official publication "Romania's Statistical Yearbook", as well as the database Tempo-online - INS, which were subsequently processed, as well as information from the Ministry of Agriculture and Rural Development (MARD), the National Sanitary-Veterinary and Food Safety Authority (ANSVSA). The aspects regarding the evolution and the quantitative and qualitative modifications on the European and world milk market had as information source the reports and international studies elaborated by the European Commission, the data from FAOSTAT Agriculture and EUROSTAT publications. The

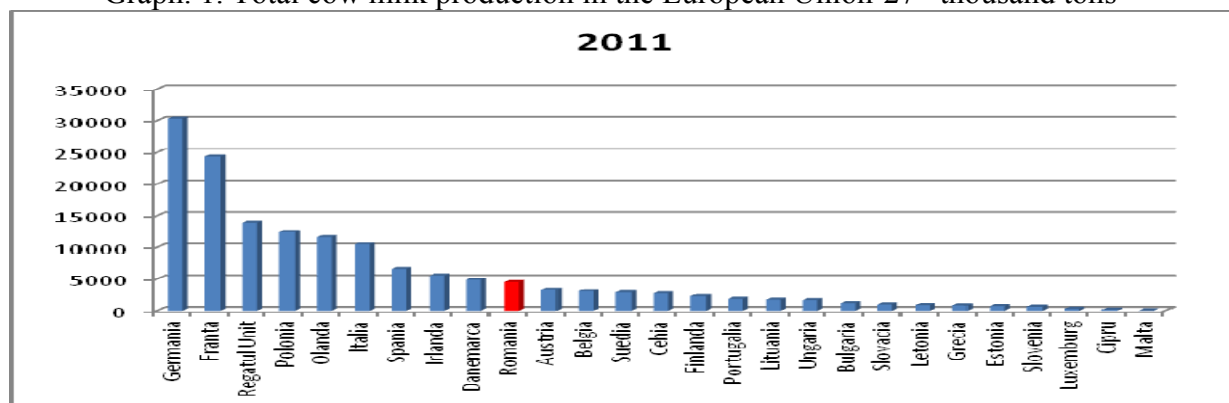
information supplied by the previously mentioned institutions has its own advantages, enabling comparisons by different regions and across Romania.

The utilized method was the comparative analysis of certain sets of indicators specific to each link in the chain. The set of indicators used for the analysis of the first link of the chain refers to the following: evolution of dairy cow herds, of their yields, average size of dairy farms. The second stage of the chain is investigated from the perspective of the following indicators: collected milk production out of total production by the processing dairy factories, dairy production resulting from the milk industrial processing, raw milk procurement price, milk consumption. The indicators on the trade with dairy products refer to the obtained production and the trade between Romania and the EU-27 member states.

MILK PRODUCTION

Although Romania is on the tenth position among the EU-27 cow milk producing countries, from the point of view of milk production evolution in the period 2009-2011, it has the strongest decline (-682 thousand tons), being on the last place in the case of this indicator (Graph 1).

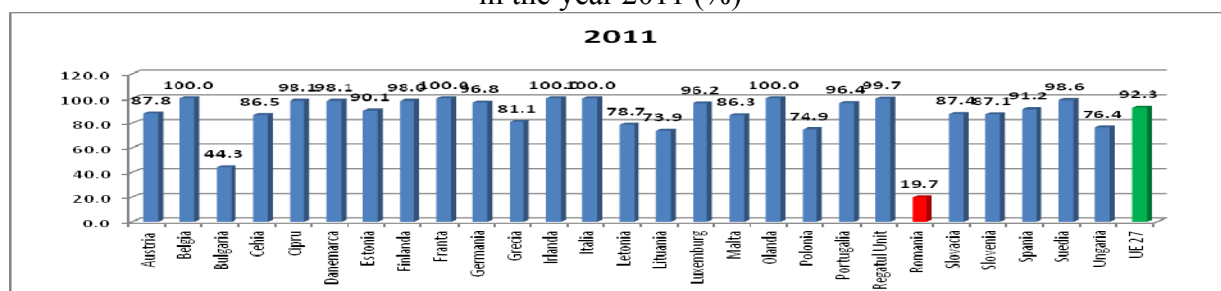
Graph. 1. Total cow milk production in the European Union-27– thousand tons



Source: www.fao.org – FAOSTAT Agriculture

As regards the share of milk deliveries in total obtained milk production, in the year 2011, it is mentioned that compared to the European average of 92.3%, the great majority of the European countries deliver milk to processing in percentages ranging from 87 to 100%. Bulgaria (44.3%) and Romania (19.7%) represent an exception. Romania lies on the last position following the analysis of this indicator (Graph 2).

Graph. 2. Share of milk deliveries in total cow milk production in the EU-27 member states, in the year 2011 (%)

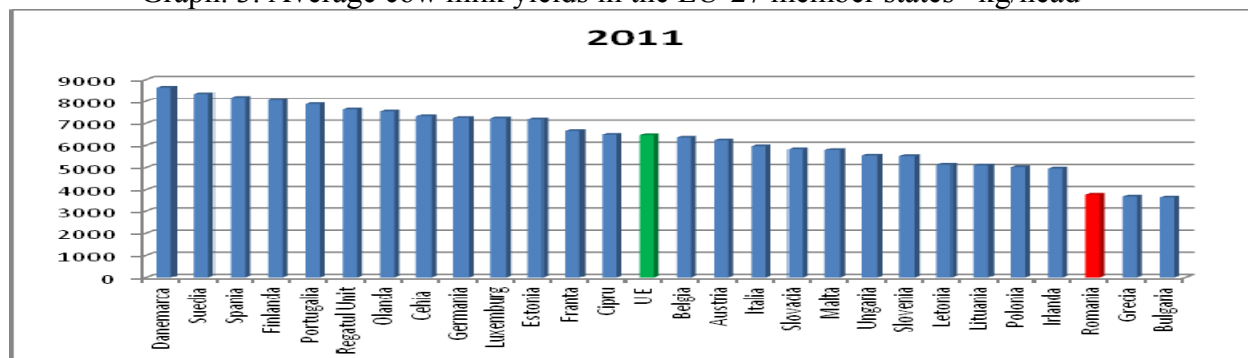


Source: Eurostat

The average yield/cow head (Graph 3) features great differences across the European countries. Thus, the highest yields in the year 2011 were found in Denmark (8636 kg/cow

head), Sweden (8341 kg/cow head), Spain (8174 kg/cow head) and Finland (8058 kg/cow head). At the opposite pole we can find countries like Bulgaria (3653 kg/cow head), Greece (3691 kg/cow head) and Romania (3776 kg/cow head)

Graph. 3. Average cow milk yields in the EU-27 member states– kg/head



Source: www.fao.org – FAOSTAT Agriculture

Both the quality and the quantity of milk are affected by the high fragmentation of production, as 59 % of the total cow herds in Romania are found on very small-sized units of 1-2 heads. Thus, out of the 761528 holdings whose average yield was 1.83 heads in 2010, only 20-22% deliver milk to the processing factories. In these conditions, an adequate selection work and the application of modern technologies are almost impossible. For comparison, the average size of dairy farms in several European countries is the following: Hungary – 22 heads (EUROSTAT 2010), Germany – 40.7 heads (EUROSTAT 2010), Slovakia – 183 heads (“An Assessment of the Competitiveness of the Dairy Food Chain in Slovakia”), Slovenia – 12.5 heads (EUROSTAT 2010).

RAW MILK COLLECTION

As regards raw milk collection for processing, it can be mentioned that an analysis by the two collection sources revealed the increase of imported raw milk from 3.6% in the year 2007 to 8.2% in 2011, to the detriment of milk collection on the holdings and milk collection centers in the country.

As regards the raw milk quality, from the market analysis conducted by ANSVSA, it results that at the end of the year 2011, the percentage of conform milk corresponding to the EU standards, delivered to processing units, was 80%. At the same time, the study also mentions that the conform milk percentage is higher in the case when milk is collected directly from farmers and it is lower when the milk is taken over from a collection center; out of this reason, the prices offered by the processors are different in the case of conform and non-conform milk. From this point of view, the ANSVSA specialists asked for and obtained the approval of the European Commission for the prolongation of the transition period in order to improve raw milk quality until December 31, 2013

MILK INDUSTRY

Milk industry went through an extremely difficult period caused by several factors: prolonged economic crisis, diminution of sales under the background of purchasing power diminution, the unprecedented increase in the price of utilities, the black market that reached 60% of total and the aflatoxin scandal that began in early March 2013. The aflatoxin scandal determined an unprecedented diminution of milk and dairy consumption, the figures supplied by the officials at that time ranging from 45% (APRIL) to 20% (Ministry of Agriculture). According to the Romanian Employers’ Association in Milk Industry, the small and medium-sized producing companies mostly suffered, as they did not have an outlet for their products any

more: the retailers ordered less, and certain buyers of the large trade networks preferred to import finite products.

MILK CONSUMPTION

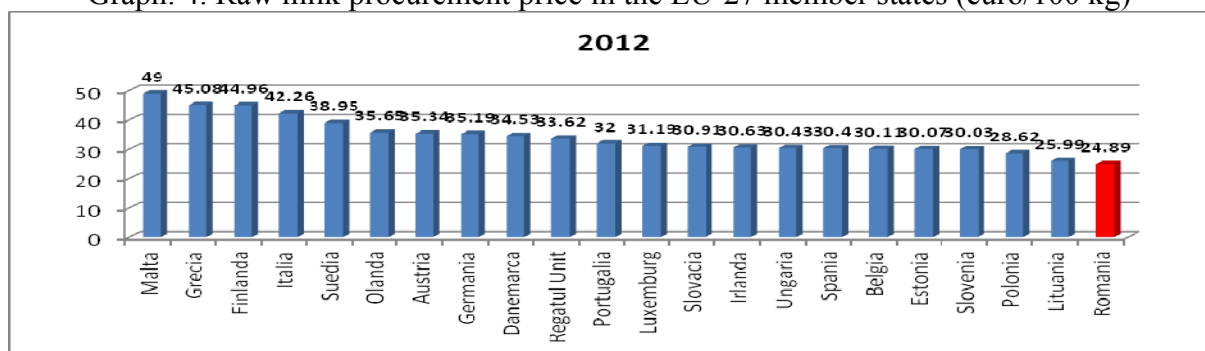
The consumption decline is also the result of the loss of the habit to drink milk on a daily basis. A study by Euromonitor conducted in 2010 reveals that Romania is among the last countries in Europe as regards milk consumption per capita, followed only by Slovakia and Bulgaria. Thus, in the year 2010, milk consumption per capita in Romania reached 36 liters (equivalent of about 100 ml/day), compared to the European average of 64-65 liters in countries like Switzerland, Netherlands, Belgium, Slovenia or Serbia. In the nutritionists' opinion, the recommended daily milk consumption is 250 ml/day, which is twice as high compared to the present milk consumption per capita in Romania.

According to a study of the company Tetra Pak, while the consumption of other categories of liquid dairy products continue to increase at an average yearly rate estimated at 6.9% in the period 2011-2015, milk consumption will continue to decrease at an average yearly rate of 4.9%. This diminution of milk consumption is largely determined by the diminution of unpacked (unprocessed) milk consumption. Although the packed milk will continue to increase at a yearly average rate of 2.8% in the period 2011-2015 (the UHT milk has an average yearly increase of 3.9%), this increase will not compensate the massive diminution of unprocessed milk quantities

RAW MILK PRICE

In Romania, although the raw milk price in the year 2012 was the lowest in the EU-27 countries (24.89 euro/100 kg), this is mainly dictated by the evolution of neighbour markets – Hungary, Poland, and Slovakia – as the main sources for covering the national deficit (Graph 4).

Graph. 4. Raw milk procurement price in the EU-27 member states (euro/100 kg)



Source: Eurostat

EXTERNAL TRADE OF DAIRY PRODUCTS

In Romania, the **import** of dairy products was worth 130-140 million euro in 2010, while **exports** reached about 40 million euro, with an increasing trend.

In the case of cheese and curd, the imports reached 2000 tons, worth 70 million euro, while the exported quantities were larger, i.e. about 2700 tons, with a value of only 15 million euro, which reveals that the exports consisted of raw products, curds, and quality finite products were imported instead. In quantitative terms, the imports followed an increasing trend, from 4365 thousand hl of milk in 2007, to 5771 thousand hl in 2011, while exports doubled, to reach 2234 thousand hl in 2011.

CONCLUSIONS

Romania after the removal of milk quotas – modalities to bridge up the productivity gaps

The milk sector in Romania presents significant discrepancies in terms of productivity compared to EU-27. This can be explained both by the internal structure of the Romanian dairy farms (small size, high fragmentation), inadequate or defective use of production factors (human resources included), and by the existing deficient institutional framework and infrastructure.

Although Romania is on the 7th position among the EU-27 countries with regard to the dairy cow herds, the average yields are quite modest (3776 kg/cow head), Romania being among the last countries on the list, only before Greece and Bulgaria.

The milk sector performance is seriously affected by the high fragmentation. Thus, in the year 2010, 59 % of the total dairy cow herds were found on very small-sized holdings of 1-2 heads, while the total number of holdings was 761528, with an average size of 1.83 heads/farm. Although a diminution by 28% of the number of holdings was noticed as compared to 2007, the number of non-performant small-sized holdings remains very high, which reveals the persisting subsistence and semi-subsistence phenomenon in the milk sector in Romania, which is the main factor that hinders competitiveness increase. However, as a positive fact, we can notice the percentage diminution of holdings with 1-2 cow heads in total holdings (from 92% in 2007 to 87.27% in 2010), simultaneously with the increase in percentage of the holdings with 3-5 heads (from 6.3% in 2007 to 10.14% in 2010). The holdings with 51-100 cow heads and over 100 heads, which we consider commercial or potentially commercial, account for only 0.11 %, having 6.25% of the total dairy cow herds.

From this point of view, due to the weak competitiveness of the Romanian dairy farmers compared to the farms from the developed countries, it is estimated that after the milk quota removal, many farmers with 2-3 cow heads/farm will disappear from the Romanian market, as December 31, 2013 means the end of the term for non-conform milk processing.

One of the main conclusions is that farm size is an important factor in profit maximization. That is why a support measure for the Romanian farmers after 2015, through the “Milk Package”, would be to **encourage the farms with at least 50 cows, with land into ownership, by projects with financial support**, on the example of certain countries like Netherlands, Belgium, which massively invest in dairy farm revamping, so that these can increase their animal herds up to 10 times, towards 3000 heads. One of the reasons for this is the fact that the farms smaller than 50 cow heads cannot supply sufficiently large milk quantities to processors so that to find a buyer for their production, not to speak about the capacity to bargain good prices and make a profit.

At the same time, another measure from the “Milk Package” envisages **strengthening the role of contracts**. In the milk and dairy sector, in order to ensure that the respective contracts are conform to certain adequate minimum standards and to guarantee the good operation of the domestic market and of the common market organization, it is necessary to establish certain basic conditions at EU level for the utilization of these contracts. As the status of certain dairy product cooperatives can already include rules with similar effect, these cooperatives must be exempted, for simplification purpose, from the obligation to conclude contracts. In order to ensure the effectiveness of such scheme, this has to be also applied in the case when the intermediaries (collectors¹²) collect the milk from farmers for delivery to processors. In this case, the contract must comply with the following: to be concluded before the delivery, to be under written form and contain the price due for delivery, which can be a

¹² „collector” means an enterprise that transports the raw milk from a producer or from another collector to a raw milk processor or to another collector, in which case the raw milk ownership is transferred each time.

fixed price and indicated in the contract and/or may vary according to certain specific clauses, namely the market situation evolution, estimated on the basis of market indicators, the delivered volume and quality or composition of delivered raw milk. The following must be also specified, namely: the volume that can be and/or is to be delivered, the calendar of deliveries and validity period of contract.

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Intra-sectorial analysis and evaluations on Romania's food processing foreign trade

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ABSTRACT

The research investigated the impact of EU accession on the competitiveness of Romanian agricultural products processing sector. Quantitative statistical analysis and qualitative methods have been applied based on relevant specific trade indicators. Romania is a net exporter of agricultural commodities, while over two decades an importer of processed products. The main results of the empirical research indicate a weak competitiveness of Romania's processing sector, alerted by dependence on imports, disadvantages compared to EU, especially concerning the quality of exports and trade inefficiency revealed by cheaper exports than imports.

Keywords: *agrifood processing sector, trade indices, competitiveness, accession*

INTRODUCTION

Overall, the policy impacts are highly revealed at consumer level by either gain or loss economic effects. In agricultural sector competitiveness is intensifying as the global economy achieves high levels of integration. The general trend in global food trading system to move gradually towards an open market is a desirable process in the wider context of sustainable development; however, EU recently accessed countries, focusing on Romania, faced more significant the competitive pressure in food processing sectors.

METHODS AND MATERIALS

Research used the methods of statistics analysis in the foreign trade and synthesis of results indicated by qualitative and quantitative analysis, including relevant indicators. In order to identify which Romanian product groups are competitive in international markets, the empirical results have been supplied by the calculation of the trade revealed comparative advantage index (Balassa). The index was measured by the group of products share in the country's exports relative to its share in world trade, taking values less or exceeding 1, indicating the level of competitiveness in foreign trade. Products differentiation by quality has been reflected by calculation of the trade unit value (export/ import value divided by quantity). The evaluations have been based on statistics the period 2007-2012 provided by the Romanian National Institute of Statistics - Statistical Yearbook, by the main chapters and group of products aggregated according to Combined Nomenclature (CN).

RESULTS AND DISCUSSIONS

Romania ranks 29th in the world for exports of agricultural commodities and food products processed at 88th (ranking among 189 countries in 2010, according to United Nations statistics database).

Currently, in the structure of the Romania's foreign trade flows, by the degree of transformation, processed food products prevails in import, sharing 68% in 2012, while base agricultural commodities occupy over half of exports (56%).

Agricultural base products gained net surplus following 2007, showing an increasing trend over the period 2008-2012 (Fig. 1), however based on a limited range of exports, including: cereals (59%), oilseeds (20%) and live animals (13%).

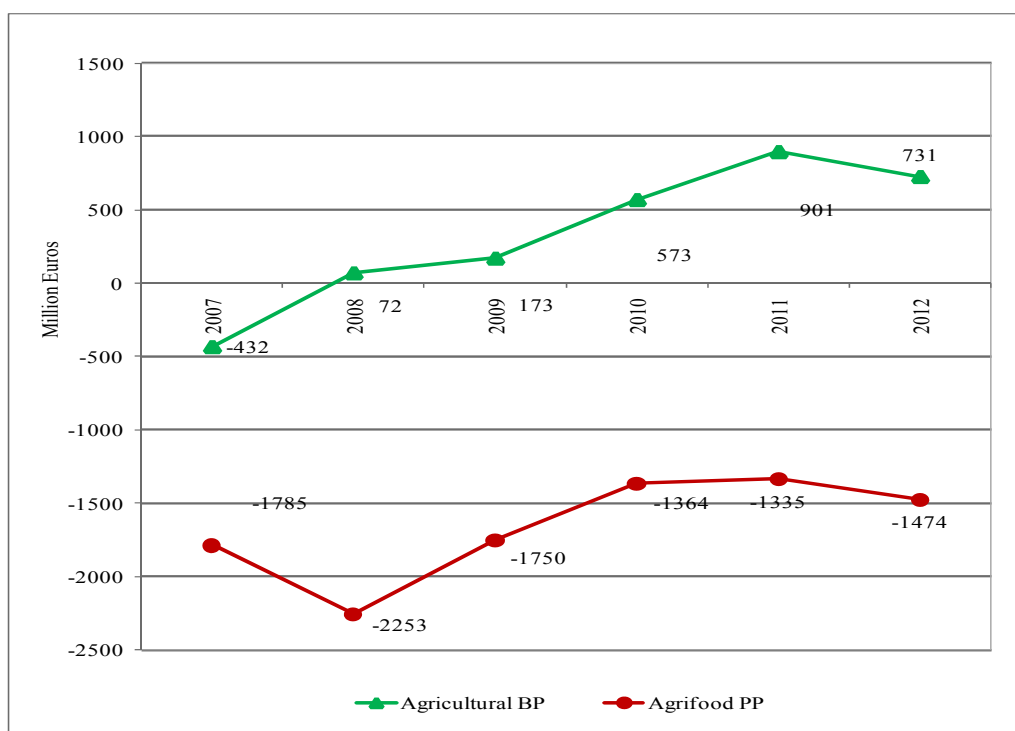


Fig. 1 Post-accession trends of agrifood trade balance: agricultural and processed products

Agricultural products in deficit, accounting for 16% of imports are: fruits, products of coffee chapter, vegetables, fish and live plants. These products represented 31% of Romania's agricultural exports and 42% of exports to the EU member states.

Romania's agricultural imports were dominated by processed products for over two decades, with larger fluctuations in the first period. Until 1990, processed products accounted for 69% of Romania's exports, although after a swing period until 1998, the proportion was reversed in favor of agricultural commodities.

The sector of food processing, beverages and tobacco achieved 12.4% of the value of the processing industry in Romania and 21.6% of value added, of which 53% are food (1% of EU-27) beverages and 27% (2% in the EU-27) (in 2010, by Eurostat data).

In the food processing area operate 8000 enterprises (3% of EU-27), achieving 51% of value added (total 1.48 billion Euros) in SMEs, close to the average in the EU-27, with 69% of people employed in the sector. Apparent labor productivity achieved in this sector is 22.5 thousand Euros/pers. employed, which is half of the EU-27 average. In 2010 the food processing in Romania, with a 46.8% share, has achieved the highest investment rate in the EU-27.

Most of the people employed in the sector works in the beverage processing industry (94%), but only 26% of added value is obtained in SMEs. In 2010 was made an apparent labor productivity of 31.4 thousand Euro / pers., representing 37% of the EU-27 average.

Tobacco processing sector has achieved a turnover of 546 million Euros in 2011, and conducted in a narrow number of companies, i.e. 9 companies in 2011 with 1458 employees, of which 34% are SMEs.

Due to a massive restructuring and privatization of the food industry in the period 1995-2000, food industry has made efforts to modernize and especially to regain domestic market, then the alignment quality requirements for export veterinary EU. These efforts have been underpinned by contribution of domestic capital investment and foreign direct investment. However, imports of processed food products increased yearly because of domestic supply shortage, reduced competitiveness of Romanian similar products and increasing domestic demand for quality products and a higher degree of processing (Steriu and Otiman 2013).

At the same time, the raise of agricultural exports in the post -accession period, 3.6 times in the period 2007-2012, both to the EU single market and to extra- Community third markets, turned positive the food trade balance since 2010 and an increasing trend along the next years.

The main exports of processed agrifood products to world markets, in 2012, were: cigars, meat and edible offal of poultry, sunflower oil, sugar, prepared foods, bakery products, pastries, biscuits, oil cakes and other residues from the extraction of fats other prepared or preserved meat, offal or blood, soft drinks, cakes and other residues from the extraction of soybean oil, chocolate and other food preparations containing cocoa, honey.

The main imports of agrifood processed products exported to international markets, included: pork meat, animal products preparations, miscellaneous edible preparations, meat and edible offal of poultry, bakery products, confectionery, biscuits, chocolate and preparations of cocoa, cheese and curd, refined sunflower oil, sugar, cigars, milk and cream, raw tobacco.

They had a share of 35% in imports from international markets, as well as intra-EU.

Romania's agrifood products evolution in international markets reveals a commercial disadvantage compared to EU products, dependence on imports especially of processed products of animal origin, resulting low competitiveness of the processing sector as the main constraint in growing export earnings (Rusali, 2012).

Food occupies, the major share, of 67%, in Romania's exports of agrifood processed products in 2012, (Fig. 2), beverage, 7%, and tobacco, 27%, while the share of food imports of 85% (Fig. 3).

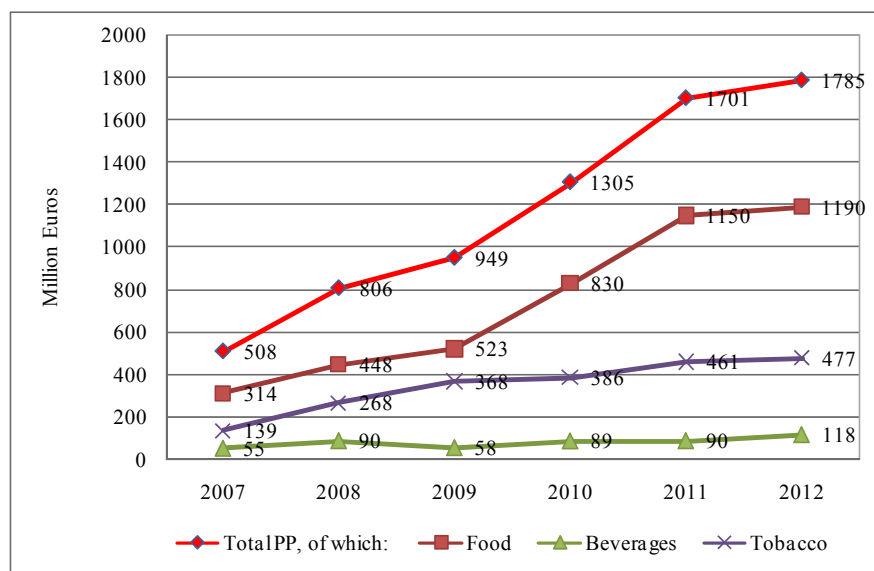


Fig. 2 Evolution and structure of Romania's exports of agrifood processed products

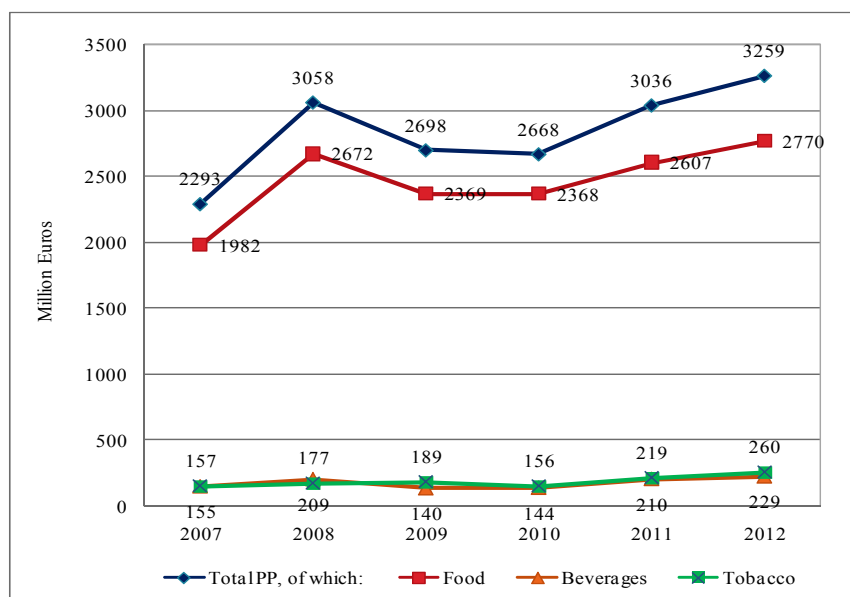


Fig. 3 Evolution and structure of Romania's imports of agrifood processed products

Only tobacco achieved an increasing positive trade balance in the period 2006-2012, though food systematically in deficit, and accumulating the major negative trade balance, accounting for - 1.6 billion Euros in 2012 (Fig. 4).

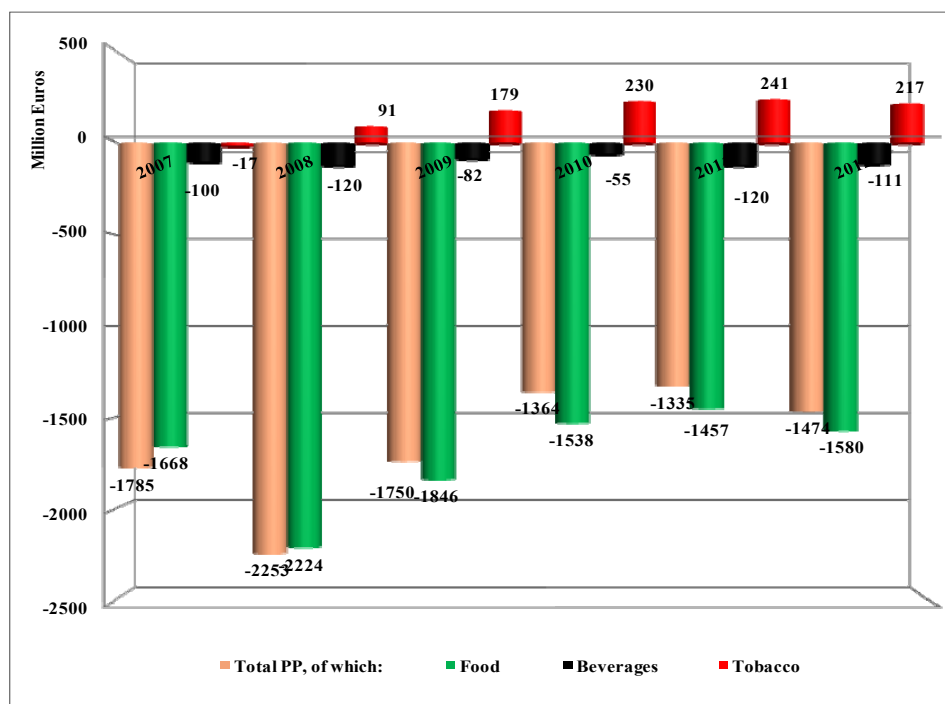


Fig. 4 Structure and trends of processed products trade balance

The trade deficit of processed products, amounting -2.08 billion Euros, has deepened compared to the previous year because of imports, growing by 12 percent (total 2.7 billion Euros).

Processed products cover the major share, of 73%, in Romania's agrifood trade deficit, while only 29% of competitive agricultural products are processed products.

Net income from exports of processed products amounted to 29% of agrifood trade surplus, of 619.7 billion Euros in 2012, 8 percent down from the previous year.

Competitive processed products, which have earned the highest net revenue from foreign agrifood trade were: cigars and cigarillos (18% in food trade surplus), cake and other solid residues, meat offal, fresh, chilled or frozen, sunflower oilseeds, honey, other prepared or preserved meat, offal or blood, horse meat, donkey or mule; meat of bovine animals, - residues of the manufacture of starch, meat of sheep or goats. These products have a high degree of representativeness (97 %) in the net trade balance (positive balance) of processed products.

The most deficient processed products, recording negative trade balance, are: fresh/chilled meat of swine, (8% in food trade deficit), cane or beet sugar and chemically pure sucrose (7.3%), oil cakes and other solid residues, whether or not ground (5%), raw or unprocessed tobacco, tobacco waste (4.7%), preparations of a kind used in animal feeding (4.6%).

Are as well included: food preparations not elsewhere specified or included (protein concentrates, essences), chocolate and other food preparations containing cocoa, cheese and curd, bakery, pastry and biscuit, undenatured ethyl alcohol of an alcoholic strength by volume of less than 80%, milk and cream not concentrated nor containing added sugar. These uncompetitive products, with a degree of representativeness of 61% of total processed products, accumulated a share of 44% in Romania's agrifood trade deficit, to which by adding coffee (4.7%), animals of the porcine species (3%) and citrus fruits (2.5%), they accounted in 2012 for over half of aggregate agrifood trade deficit and 40 % of imports.

Post-accession developments have led to a deterioration of the terms of trade in cocoa preparations and various food preparations, but also an improvement in performance in dairy products, live plants and floricultural products, cereals, processed cereals, beverages, meat, vegetables and fruit preparations.

Romania largely achieved cheap exports on the international markets, compared to imports, given that only 32 % of food exported products were of high quality as shown by the trade unit value indices assessed during the period 2007-2010, while in 2012 the share reduced to 18% (Table 1).

Products grouped by chapters with high levels of quality of Romanian exports are: meat and offal, fish and shellfish, milk and dairy products, live plants and floricultural products, vegetables, fruits, cooked meat and fish, sugar and confectionery, miscellaneous edible preparations, various tobacco and tobacco substitutes.

Table 1. Trade unit values indices of Romania's agrifood processed products

Codes CN-2	Denomination	2007	2008	2009	2010	2012
20	Vegetable, fruit preps.	0.29	0.2	0.19	0.27	1.97
11	Milling products	0.21	0.2	0.25	0.59	1.78
04	Dairy products, eggs, honey	0.25	0.3	0.44	0.43	1.73
17	Sugars and sugar confectionery	0.18	0.3	0.5	0.96	1.63
13	Lac, gums, resins, vegetable saps	0	0	0	0	1.61
02	Meat and edible meat offal	0.18	0.2	0.34	0.53	1.29
22	Beverages, spirits and vinegar	0.32	0.5	0.31	0.4	1.27
21	Miscellaneous edible preps.	0.29	0.4	0.53	0.63	1.19
15	Animal, vegetable fats and oils	0.54	0.6	0.59	0.8	1.02
16	Meat, food prep. nes.	0.39	0.5	0.47	0.57	0.98
18	Cocoa and cocoa preparations	0.14	0.2	0.25	0.27	0.82
24	Tobacco and manufactured prod.	2.25	3.8	4.69	4.63	0.8
19	Cereal, flour, starch, milk prep.	0.43	0.5	0.44	0.45	0.75
23	Residues, wastes of food industry	0.39	0.5	0.5	0.53	0.55
14	Vegetable products nes	1.5	1	0.97	0	0.5
05	Products of animal origin, nes	0.64	0.6	0.69	1.09	0.43

At a higher disaggregation level, the exports of processed products with the largest indices of unit value amounted to 576 million Euros, sharing 15% of exports included: edible products of animal origin, flour, meal and powder of vegetables, peanut oil and other oils, confectionery (including white chocolate), mushrooms and truffles, prepared or preserved and other vegetables prepared or preserved otherwise than by vinegar, fresh meat of sheep or goats, vermouth and other wine of fresh grapes, flavored.

Estimates of export comparative advantages indicate a profile of competitive products in live animals, oilseeds, cereals and tobacco, and in a lesser extent in products of animal origin, sugar & sugar confectionery beginning with years 2010-2011 (Fig. 5). Results alert the lack of competitiveness of the agrifood processed products. The empirical results indicate referred to the period studied a downward trend in the first year of accession of a great part of Romanian products' competitiveness in international trade, except for cereals and tobacco and annual fluctuations of evolution in cereals, oilseeds.

As well an immediate accession impact have been evidenced some critical comparative advantage decline in certain products with export potential before accession, such as exports of livestock, which experienced a significant decline.

It is also observed that vegetable fats and oils as well as milk and dairy products have suffered fluctuations and losses of competitiveness in international trade by 2008.

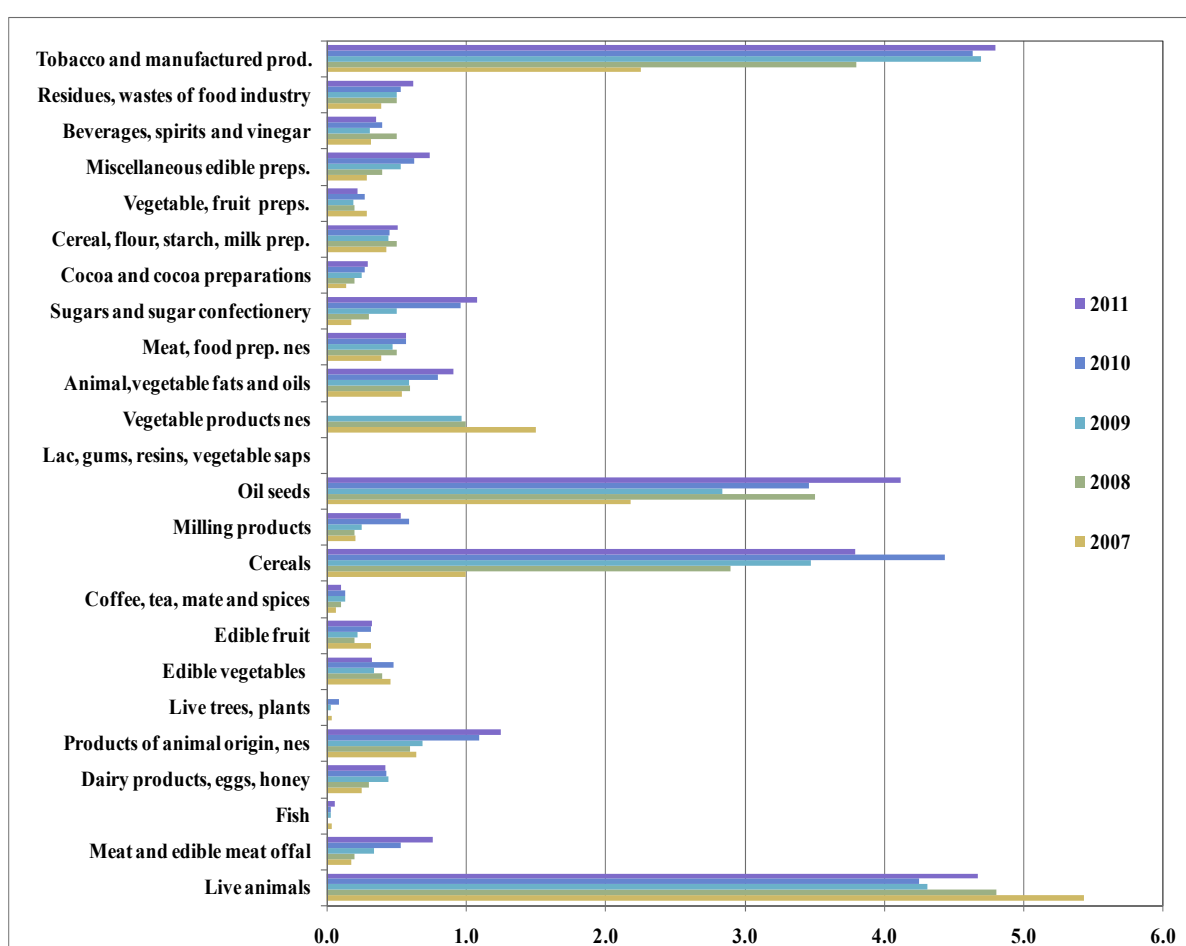


Fig. 5 Competitive agrifood products, by the relative comparative advantage indices

Note: Chapters 01, 03, 06-10 and 12 correspond to agricultural products, while the remaining codes to agrifood processed products.

Nevertheless, recent recovery trends indicated by increasing comparative advantage indices, since 2010, in products as: meat, cereals, fats, sugar, miscellaneous edible preparations, beverages and wastes and food residues.

It was also found that the products of chapter including tobacco and processed tobacco, recorded a significant ascending competitiveness post-accession.

CONCLUSION

The empirical results on products, aggregated by chapters of the CN, indicate a downward loosens of terms of trade of products of animal origin, preparations of cereals, residues and wastes of food industry, animal and vegetable fats and oils, preparations of meat, and, recently, tobacco and products.

On the other hand, compared to early post-accession period, major gains have had fewer produces, including milling products, vegetable saps, vegetable preparations, meat and edible meat offal, dairy products and beverages.

However, assessments of trade comparative advantages show an improvement of products containing food preparations, beverages and residues from food industry. While the indices describe a competitiveness profile of base products as livestock, oilseeds, cereals and tobacco, it strikes that of the processed sector, only product of manufactured tobacco proved comparative advantages in trade over the post-accession period.

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Modern management principles applied in leading and organization of agro-tourism farms and guesthouses

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ABSTRACT

Apply an effective and efficient management seems today the key to success for any enterprise in our country and beyond. Quality managers and management applied to them can ensure the continued growth and sustained economic entities, regardless of the profile and scope of their activities. Agro-tourism is the moment for our country and for a number of European countries a highly attractive area for both potential investors and customers. Offer in the Romanian rural area is still lacking. However, there is already approved and classified two specific forms of agro units, namely: agro-tourism farms and guesthouses. During their performance management problem often arises in the context in which they are often family businesses, and the manager is actually the head of the farm (agricultural exploitation).

Keywords: *agro-tourism, management, agro-tourism farms and guesthouses, manager.*

INTRODUCTION

If the definition management reached an universal conclusions adopted by specialists, the controversy over the identity of rural tourism and agro-tourism there are still some authors stating that the two concepts have the same content, others, identifying differences between the two concepts. As for us, we embrace a second opinion, but while emphasizing the positive aspects of the two common forms of tourism, namely: their development in rural areas, local resources and regional tourism activity, promotion of rural environmental protection and conservation, etc. However, can not be ignored numerous specific features of agro-tourism, which it defines and individualized, as a concept, namely:

- existence of specific accommodation structures – agro-tourism farms and guesthouses;
- combining farming with tourism at the same time and the same place;
- direct involvement of tourists in rural community life and current activities of the homestead;
- obligation by service obtaining part of agro food products offered to tourists in the food sector;

- economic activity is a complementary farm (homestead) and not an alternative or substitute for it;
- agro-tourism offer is accessible and low-income people who can spend vacations or holidays in the picturesque rural dream;
- agro-tourism is incompatible with the mass tourism conducted in resorts and tourist centers etc.

Can be highlighted further differences between rural tourism and agro-tourism concepts, in the technical, organizational, economic and legal approach, confirming the legitimacy of agro-tourism as a new concept, independently.

Agro-tourism includes two large sides (important issues), namely:

- on the one hand *tourism activity* itself, embodied in accommodation, food services – the system board – tourist movement, basic and supplementary services;
- on the other hand, *practiced farming* agro service providers (hosts tourists), reflected in the production and primary processing of agricultural products in the household, and marketing them directly to tourists or various commercial networks.

In time, due to the demands of increasingly larger accommodations and food on farms and agro hostels was necessary to establish a national body to coordinate and promote agro-tourism activity in Romania. The organization was founded ANTREC (National Association of Rural, Ecological and Cultural) to organize and protect agro-tourism providers and develop a new breed specific legislation represented by agro tourism. Agro-tourism uses catering accommodation for tourists and its specific structure, namely agro-tourism farms and guesthouses, defined, approved and classified, according to current legislation.

Agro-tourism farm is an accommodation structure for up to 20 rooms, categorized from 1-3 daisies, that works in a tourist farms provide food and fresh produce and local own sources.

Agro-tourism guesthouse with accommodation capacity of 3-20 rooms, categorized with 1-4 daisies and offers guests complete mandatory services, namely accommodation, meals and entertainment.

PRINCIPLES OF MANAGERIAL

In recent years, the number of tourism operators rose and began to develop more and more businesses, defending the new investors (Romanian and foreign) willing to exploit this field and occupy the market segment still out in some areas with high demand, represented by tourism. Consequently, tourism so-called "rural" is to generate business and rural world a new opportunity to exploit its heritage, landscape and culture. But to get customers and to drive a tourist company need "to do this science" that, unfortunately, those in rural areas do not have it yet. Tourism development in rural areas needs organization and cohesion of the actors, who still sometimes lacking reality.

In this context, for some specialists, **rural tourism** should be entrusted with the main operators at the same time managing the necessary capital and professional technicality. Making this choice means actually despise the very specificity of green tourism, which is by its nature, tourism craft, whose interest lies mainly city dwellers just this feature. In fact to be like "industrialization of crafts", there is a paradox that everyone unfortunately not perceive it yet. Unfortunately, in many units received from all countries, lacking basic knowledge and specialized people to be a good host.

However, everyone can learn, if you make some efforts. In all countries have improved education and training opportunities for the home side, as there are a number of specific knowledge that the owner must acquire them. Both hosts (individuals) and public sector workers should support and streamline the activities of units and structures of rural tourism

associations and service providers. Currently all European countries offering rural tourism market products. In many of these countries, rural hosts were associated organizations, based on the idea that in an organized are better opportunities management and marketing, supply structure, advertising and marketing offers (products) in rural areas than acting alone (individual). In Romania, the organization of the rural tourism and agro-tourism businesses through service providers as under the provisions of Decree Law no. 54/1990 on free enterprise, and Law no. 31/1991 on the organization and functioning of companies, is specific tourist-oriented areas, which have many advantages in the development of tourism activities in rural areas.

Businesses agro service providers (private, family, businesses, etc.), authorized under existing legislation, can become active members of federations, foundations or associations such as NGOs, not pursuing profit and, together, constitute rural tourism networks and tourism which have their own management, its own programs and may join national and international tours.

Agro-tourism farms and guesthouses are forms of organization and practice of tourism at the individual level, in households that have accommodation and are able to offer tourists some services, such as accommodation, providing food, providing food products of basic household items or local sources, organizing specific forms of leisure homestead or carried in its surroundings, which mainly aim exploitation of natural resources, cultural and historical etc. regional.

In the area in general and the tourism or agro-tourism, particularly, the human factor has a primary character, since the effectiveness of management, reflected in the results obtained from an establishment (agricultural, agro-tourism, etc.) Or an organizational subdivision it depends, crucially, the qualities of the person who is driving or manager. The person responsible for the management of the economic unit, regardless of its scope of activity has had in the evolution of management science, different names such as: leadership, management framework, director, and most recently the manager, a concept that has gained unanimous recognition and was generalized in all fields. Service sector activity in the field of management has a high degree of complexity, determined primarily by the large number of factors that contribute to the "product" and its characteristics, namely: intangibility, perishability, variability and inseparability. This determines the need for management staff (managers) service stations have a number of qualities, knowledge and skills specific nature intended as support their efficiency.

Given the applications of management science, a major role in its design it holds new systems, methods, techniques, procedures, enterprise management as a whole and its major components.

Developed based on the study of relations and management processes and regularities discovered methodological elements of management science are tools available to managers and their staff to streamline business activities in accordance with the scope of work and the demands of consumers, in our case the tourists.

Characteristic of modern management science, regardless of type, is placing in its investigations cent, of man in all its complexity, the subject and object of management against the objectives incumbent and interrelated objectives, resources and means systems in which it is integrated. The effect of this approach is the analysis of multilateral relations and management processes that reflect the multidisciplinary nature of knowledge management directly subordinated to increase economic efficiency and social enterprises.

Agro-tourism management is a component of general management that developed with the agricultural extension activity, knowing the market conditions, significant changes in optical and application. A convincing illustration of this reality is the fact that all the books that studying tourism phenomenon in its various forms, whole chapters are devoted to the

presentation of this sector management, namely how effective management of the tourism facilities and / or agro-tourism.

Management principles to be applied in agro-tourism units include:

- ordering and scheduling all activities of agro-tourism drive to achieve goals (attracting and retaining tourists to obtain appropriate and sustainable profits, respect local specificity etc.);
- assessment and decision activity plans and establishing procedures to control and natural resources program, technical, material, financial and human resources through these plans;
- recruiting, testing, guidance, integration, motivation and supervision of staff required and existing agro unit and tracking activity.

QUALITIES MANAGER

Depending on the nature of the contents and their management qualities are structured in several groups, namely:

1. *Intellectual qualities*, resulting in: intelligence, ability to learn easily and well, capacity to observe, collect, select and evaluate facts, capacity to recognize and implement new, creative imagination, inductive and deductive reasoning ability, capacity to synthesize and summarize the data, efficiency and durability of memory and so on;
2. *Related quality of character*, which refers to: a sincere desire to help others, friendliness, honesty, determination, the ability to recognize the limits of their competence, honesty, ability to admit mistakes and learn from failures, perseverance; modesty and so on;
3. *Staffing capabilities*, namely the ability to understand people and work with them, which involves: respect and tolerance for other people, carrying light human contact, the ability to anticipate and evaluate human reactions in various situations, the ability to gain trust and respect etc.;
4. *The ability to communicate*, persuade and motivate, which include: the ability to listen and understand the officials and subordinates; ease to communicate verbally and in writing; quality pedagogical training people, ability to lead people and motivate them to action;
5. *Refers to temperament qualities and human energy*, such as health and vigor; forbearance, energy and balance, healthy and constructive ambition, courage, initiative and perseverance in action, entrepreneurship, ability to face and deal effectively problems or conflicts;
6. *Intellectual and emotional maturity*, assuming: behavioral and emotional stability, balanced ability to act in a calm and objective manner regardless of the situation, flexibility and adaptability in terms of unpredictable changes, ability to withstand pressure, frustration and insecurity, self in contingencies.

The vicissitudes of the market economy and economic peculiarities of farming or determine the need for managers who can and farm owners (agricultural, agro etc.) They run, possess knowledge, not only technical, but also economic and legal designed to help an efficient economic management of their efforts from the production of goods or services.

The success of agro-tourism units depends largely on: the site and the location of the unit, tariffs and particularly the experience of people who lead, or managers. In this sense it is understandable that a manager will actively seek to attract as many customers on the farm or guesthouse with as few costs from these potential tourists, which should offer a better framework conducive to conduct various activities arranged tourism and non-tourism desired by them. Especially during the season acute problem arises agro-tourism establishments supplement their income by promoting more special programs such as business tourism, eco tourism, spiritual or cultural level.

Consequently, it can be seen that the managers of agro complex must be persons who possess a number of outstanding professional and personal qualities, in order to provide an effective and efficient management, namely: to be an open person, willing to accumulate more useful knowledge domain as agro-tourism (languages of international circulation, computer, modern management and marketing principles, ecology, etc..) to be a good manager, and an organizer of farming and agro-tourism in his unit; known to be a promoter of local customs and traditions and to organize local events that involve specific area and tourists, to know and to utilize agro-tourism activity all local resources (natural, cultural, historical, craft, architecture, etc.), to use local labor and be actively involved in the community in terms of institutional, social, environmental, cultural, etc.

CONCLUSION

a. Management as a science has crystallized through the efforts of a large number of specialists around the globe in response to the urgent needs of social practice and economic development continue, being approached from multiple points of view, which often differ substantially from one another but have common key.

b. Analysis of the factors that determines the characteristics of relationship management in the tourism units reveals a triple determination: socio-economic, technical, material and human. These measurements provide socio-economic characteristics and basic human entities, such as foundation work on the same principles of management, use of certain methods of forecasting, organizing, motivating staff, etc.

Regarding the use of modern management principles and specific tourism in the current period have emphasized the need to take them into account permanent and intense, their organic integration of current management activities, taking into account their specific objectives and content.

c. Tourism / agro-tourism management is actually the process of establishing and achieving goals through the use and coordination of human, technical and financial resources in the context of protecting the environment and ensuring sustainable development. In this respect we need: good management, based on setting and achieving goals tourist units / agro-tourism, tourism facilities / agro led and coordinated in order to develop products and services demanded by consumers and gainful; managers able to decide analysis objectives tourist units / agro, use of natural resources, human, technological and financial resources to fulfill the purposes of tourism or agro-tourism units; protecting the environment by making decisions about location, operation and management of tourism unit / agro-tourism, application management view of competition, customer demands, etc. restrictions imposed by legislation.

d. In conclusion, it is assumed that management is the administration of an economic unit, where our tourism profile that includes development strategy and long-term planning at the top level as well, organizing, coordinating and controlling activities related to production (goods and services), sales, finance, marketing, personnel, research – development at medium.

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An estimation of the EU integration effects upon some agricultural markets from Romania

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ABSTRACT

The paper analyses the effects upon welfare for two alternative scenarios, generically named “Fragmentation maintenance” and “Deepening of integration”, comparing the effects of a stronger integration of seven important agricultural markets from Romania upon producers and consumers. The period 2014-2020 brings about certain development opportunities for Romania’s agriculture in the poultry and wheat sectors, as well as certain threats associated to competition in the pig sector and milk reform sector, adding to certain pressures on the maize sector.

Keywords: *Romania, agricultural markets, European integration, producer surplus, net welfare.*

INTRODUCTION

The present paper was achieved by using a simplified partial equilibrium model for estimating the effects of deepening of European integration in the Romanian agriculture. The model used in this estimation was inspired by the model applied in 1998-1999 for estimating the effects upon welfare as a result of Romania’s adopting the Common Agricultural Policy. The effects upon welfare (gain or loss), measured at producer and consumer, represent a usual modality of estimating the impact of introduction or implementation of a certain agricultural policy. The welfare effects are measured as positive or negative changes of producers’ and consumers’ incomes, owing to the modifications of agri-food prices in the period 2012-2020. That is why, for each scenario under comparison, the agricultural prices are those that synthetically define the evolution of investigated markets.

The model calculates the effects upon welfare for two alternative scenarios, generically named “Fragmentation maintenance” and “Deepening of integration”, comparing the effects of a stronger integration of seven important agricultural markets from Romania upon producers and consumers. The model forecasts the effects quantified in money of the differences between the equilibriums of investigated markets, in the situation when the markets from Romania maintain the present fragmentation by the year 2020, which is specific to a partial integration, compared to the situation of deeper integration, favoured by the Common Agricultural Policy and accelerated by its reform measures.

MATERIAL AND METHOD

In order to compare the effects of the two scenarios of Romanian agricultural markets integration into the Common European Market, I selected two products from the grain category (wheat and maize) and three products from the meat category (beef, pork, poultry meat), plus two important products from the agricultural policy perspective (sugar beet and milk), as these will be affected by the CAP reform measures in the period 2014-2020, which presuppose the removal of quotas.

In order to define the “Baseline situation” I used the average producer prices in the period 2010-2011, expressed in euro per ton, for each selected product, as they result from the Economic Accounts for Agriculture corresponding to the respective period (Table 1). The data on the production level from the reference period also represent the 2010-2011 average level, expressed in tons for all products, according to the data from the Economic Accounts for Agriculture. As regards the level of consumption, this was estimated in the same units of measure as production, starting from the relation between the level of consumption and of domestic production from the Food Balances elaborated by NIS for the years 2010-2011.

Table 1 Prices of agricultural products in Romania for the baseline situation and for the two scenarios, expressed in euro/ton, current prices

<i>Product</i>	<i>Baseline situation (2010-2011)</i>	<i>Scenario 1 (2020) “Fragmentation maintenance”</i>	<i>Scenario 2 (2020) “Deepening of integration”</i>
Wheat	175	180	182
Maize	204	220	197
Sugar beet	34	31	29
Milk	466	555	433
Beef	1437	1653	2462
Pork	1638	1801	1453
Poultry meat	799	926	1358

Source: the author’s processing based on Eurostat and OECD/FAO (2012) data.

Scenario 1 “Fragmentation maintenance” presupposes that in the period 2012-2020 the evolution of production and of prices for each investigated market is influenced, on one hand, by internal factors (increase of agricultural yields, general economic growth and supply and demand equilibrium on each market), and on the other hand, by external factors (evolution of the prices of the respective products in the European Union, under the influence of world prices evolution, according to FAO and OECD forecasts for the period 2012-2022).

Scenario 2 “Deepening of integration” presupposes, in addition to the previous scenario, that an equalization of the product prices will be produced on the investigated markets. This hypothesis was approximated by the equalization of the level of prices in Romania, France and Poland, which means price adjustments in Romania, upwards or downwards, with a higher or lower intensity, depending on the competitiveness of different products and the fragmentation level of the respective markets.

Although the model simulates the evolution of production and consumption throughout almost one decade, the main determinant of the analysis is represented by the prices of products for each of the two scenarios, which makes the model have rather a static character, estimating the producer and the consumer effects, under the hypothesis that the shift from one price level (that in the baseline period) to another (for each of the two scenarios) is produced gradually. Another implicit hypothesis is that throughout this period of agricultural prices modification, there is no modification of processor margins, i.e. any modification of producer price level is found at consumer price level.

As regards the elasticities in relation to price and to income (Table 2), these are those used in the above-mentioned model, being considered adapted for the Eastern European countries. Other hypotheses are related to the yearly productivity growth, different by products, and to the increase of consumer incomes (1% per year, in our case), as a result of the general economic growth in Romania.

Table 2 Yield trends and elasticities for the selected products

<i>Product</i>	<i>Yields (% annually)</i>	<i>Price elasticity of supply</i>	<i>Price elasticity of demand</i>	<i>Income elasticity</i>
Wheat	2.0	0.8	-0.1	0.2
Maize	2.0	0.8	-0.1	0.2
Sugar beet	3.0	1.2	-0.3	1.0
Milk	1.5	1.2	-0.2	1.5
Beef	1.0	1.0	-0.7	1.5
Pork	1.0	1.0	-0.5	1.0
Poultry meat	1.0	1.5	-0.5	1.0

Source: processing of data from Davidova and Thomson (2003).

RESULTS AND DISCUSSIONS

Although the economic welfare effects of a deeper EU integration of the seven agricultural markets are not spectacular on a cumulated basis, the situation is different by each product in part, as it results from Table 3.

Table 3 The economic welfare effects of the deepening of European integration on the main agricultural markets from Romania, compared to maintaining their fragmentation (differences between Scenario 2 and Scenario 1, in the year 2020, expressed in million euro)

<i>Product</i>	<i>Producer surplus</i>	<i>Consumer surplus</i>	<i>Net welfare</i>
Wheat	14.06	-6.25	7.80
Maize	-285.61	17.25	-268.35
Sugar beet	-0.69	7.40	6.71
Milk	-379.57	350.94	-28.63
Beef	204.67	-130.37	74.30
Pork	-199.51	313.86	114.47
Poultry meat	368.38	-193.02	175.36
<i>Total</i>	<i>-278.27</i>	<i>359.81</i>	<i>81.54</i>

Source: author's calculations

In the case of grains, world price increase in the period 2010-2011 was also felt in the European Union, as well as in Romania. Wheat prices were slightly below those in France, but above the prices in Poland. Thus, an uniformization of wheat prices by the year 2020, under the background of maintaining the high prices from the beginning of the decade, would mean a moderate producer surplus, the consumer loss being even lower. It results that Romania's wheat production is relatively competitive, even though the yields are low on the average (the costs are also lower).

The maize producers in Romania benefited from a favourable market conjuncture in 2010-2011, which led to record prices (238 euro/t in 2011, much above the level from France, where the 200 euro/t threshold was not reached). This is an example of existing fragmentations on the European Single Market. Starting from the high price level in Romania in the baseline period, even though the EU average price is not expected to decrease until 2020 (but to remain at a high and relatively stable level), price uniformization (in other words surmounting the fragmentation drawbacks) will lead to a significant producer loss,

accompanied by consumer surplus (yet not at the same intensity, as maize does not have a very high share in the population's food consumption).

As regards the expected effects on the Romanian meat market, the evolutions are quite different, being specific to each of the three investigated products. Taking into consideration the economic crisis affecting most EU countries, meat demand orientation towards the cheaper options (pork respectively) is quite normal. However, in Romania, pork is the most expensive option, this situation revealing the non-competitiveness of the pig sector. The producer losses, determined by the Romanian price getting closer to prices from other EU countries, great pork producers, would amount to about 200 million euro in the year 2020, which imposes the development of investment programs, which should increase the sector economic performance. The pork consumer surplus in the year 2020 is even higher (over 300 million euro) and it is due to the pork imports at lower prices

Poultry meat consumption will not exceed pork consumption by the year 2020, even though the poultry sector in Romania is a competitive sector (the producer prices in Romania were half the prices in France in the year 2011). This reveals another aspect of market fragmentation: the difficulty in marketing a competitive production. According to the scenario, the deepening of integration on this market would lead to a producer surplus of over one third of billion euro in the year 2020. Correspondingly, the consumer will have a welfare loss (evaluated at about 200 million euro), under the background of a slight diminution of poultry meat consumption.

The asymmetry between the beef market situation from Romania (where the specialization of holdings in raising bovines for meat is quite rare) and the situation in France or Poland (where beef quality justifies the high producer prices) makes the results for this sector be relevant only from the perspective of the sector development potential. In the conditions of a deep integration, the Romanian beef production would have competitive prices on the European market, which would lead to a producer surplus of more than 200 million euro in the year 2020, while the consumers will have a loss amounting to 130 million, compared to the situation of maintaining a fragmented market. However, the orientation towards such an evolution (high quality beef production) needs more than an economic incentive, being a problem that can be solved up by the correction of the traditional bovine raising practices through a significant knowledge transfer.

Sugar beet cultivation in Romania drastically declined in the transition period, and the incentives from the post-accession period only succeeded to stabilize the situation at its previous level. The producer welfare effects, under the hypothesis of integration deepening scenario, reveals a modest loss compared to the fragmentation maintenance scenario, which is a predictable situation under the background of a slight decrease of sugar beet price in 2020, inclusively as a result of the quota system expiry in 2017, according to the European Commission Proposal. The consumer surplus is higher than the producer loss, and it is mainly due to the decrease of sugar price (regardless of its origin) induced by giving up the quota system.

The milk sector is also confronted with a problem of effects directly linked to the agricultural policies, the quota system expiring in 2015, according to certain decisions made before the present reform proposal. The prices taken into consideration targeted the raw milk production, while the main dairy markets (fresh milk, butter, cheese, skimmed milk powder) were considered for the consumption. The milk production increase potential in EU following the milk quota removal represents a challenge for the Romanian producers, whose milk prices (above the prices from France and Poland) will diminish, under the deep integration scenario, compared to the fragmentation maintenance scenario, resulting in a producer loss around 380 million euro in the year 2020. This amount will be almost totally transferred to consumers, under the form of surplus due to lower prices; however, the negative effect upon Romania's

economy will be the low increase of milk production (by only 5% by the year 2020), in a period with a global conjuncture favourable to milk and dairy consumption (butter, cheese, skimmed milk powder), when their world prices are expected to rise by about 20%, on the basis of increasing demand in the developing regions.

CONCLUSION

The period 2014-2020 brings about certain development opportunities for Romania's agriculture in the poultry and wheat sectors, as well as certain threats associated to competition in the pig sector and milk reform sector, adding to certain pressures on the maize sector (which is influenced by the livestock raising sector). Considering the essential importance of the pork and milk production in ensuring food security for the population in Romania, the respective sub-sectors need to get support, through investments, so as to successfully face competition on the European Single Market.

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Adapting the learning process to the present requirements. Changes and new ways

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ABSTRACT

In this context, attention should be interesting development in two areas: that of so-called "professional assessment"; development through the education system, the quality of "soft skills" of future graduates.

Why assessment is an area of interest in the training – As a result of successive evaluations of activities, all of them starting from the need for a more balanced development of the European space within the program documents more often the problem increased use in business conclusions of current evaluation processes. The problem of developing a theory of evaluation and its conclusions are motivated by at least the following: it is a tool to improve the efficiency of economic, social and educational process; provides reasons for Promotion Program Evaluation recognition as a profession; professional assessment provides the essential recognition and can better serve communities and populations to involve them in programs allocations for different needs – local / regional, national; contribute to influencing decision making for various programs; provide development of professional links between evaluators and evaluation users.

However, in the globalized labor force movement, the expansion of information technologies, the development of skills structured "soft skills" to graduates in economics becomes a necessity. Although they have many capabilities that are useful. Here the problem that arises is that of a minimum their training, in order to meet the challenges that will be submitted in the future. However, the free movement of labor force makes potential employers from the international arena, including at European level, to require increasingly more, at least five skills, qualities of "soft skills" for their future employees namely: flexibility; self-awareness; intercultural understanding and communication; technical expertise; resourcefulness as an expression of inventiveness.

Keywords: *competencies, cross-cultural training and communication, evaluation capacity, flexibility of employees, inventiveness, professional evaluation, soft skills, technical expertise, training of professionals, workforce.*

INTRODUCTION

In recent years, Europe has faced a multitude of economic and social difficulties, with continued financial problems, and the increasing unemployment. These concerns have increased the need to rethink how to prepare the workforce, so that in the future, to ensure economic performance and stability throughout Europe. The document

"Europe 2020 – A strategy for smart, sustainable and inclusive growth" focused priorities representative (smart, sustainable and inclusive¹³).

In this context, education and training of future graduates are essential and must be connected to the requirements of the Single European Market, which implies new skills, flexibility and innovative capacity. These qualities imposed of future technological change and the processes of transnational mobility requires the inclusion in the curricula of the training of new directions.

Regarding the quality of education targeted at the young graduates of economics we consider that attention would be interest develop at least two directions: training in knowledge and stimulate the ability to achieve "professional evaluation" programs and projects; the development of the future graduates, by the education system, of the "soft skills" quality.

Professional evaluation, an area interest in training economists

Professional evaluation activity can be described as an "independent review of an intervention, in terms of outputs, impacts and needs, that this intervention intends to satisfy" (<http://www.ader-evaluar.ro/biblioteca-de-evaluar-ro-p-1.html>) (source – CE). Evaluation is a key tool for establishing how to achieve the expected results of an action/ intervention, program or project. Evaluation is a process that allows to analyze independently the benefits of a financed from public funds intervention by reference to certain criteria such as: the impact of funded programs, efficiency and effectiveness of their continued relevance to the needs of beneficiaries as they have been identified during programming period.

At the international level the theory and practice of professional evaluation, indicators are grouped into immediate output indicators, outcome indicators (result indicators) and impact indicators (impact indicators). The assessment should meet to the aims pursued respecting the five criteria (criteria "DAC"), as follows: relevance, efficiency, effectiveness, impact, sustainability.

The complexity of the evaluation process is supported by standard evaluation methodologies that are used including: surveys for recipients and program managers, case studies, stakeholder consultation, technical approaches, and - the cost benefit analysis, econometric modeling of macroeconomic and regression analysis.

EU policies are evaluated on a regular basis and systematically checked the expected objectives are achieved, and to avoid the unnecessary regulations (including identifying opportunities to simplify¹⁴ and reduce the administrative burden¹⁵) (http://ec.europa.eu/dgs/secretariat_general/admin_burden/index_en.htm). The professional evaluation helps to develop realistic policies and also aims to inform European citizens about how their money is spent.

Based on best practices existing evaluation the Commission intends to strengthen all aspects of performance evaluation of their programmes and projects. Also, it is necessary to stress that European evaluation standards are similar to those applied to other comparable international organizations.

In Romania evaluation work is still at the beginning, and most often, it is the prerogative of foreign firms. It is also noted that in the absence of a Romanian evaluation network, plus the

¹³ (i) Smart growth, developing an economy based on knowledge and innovation. (ii) Sustainable growth, promoting a more efficient, greener and more competitive. (iii) Inclusive growth through the promotion of an economy with high labor employment, ensuring social and territorial cohesion

¹⁴ Simplification is part of the Smart Regulation agenda of the Commission. It involves both existing legislation and cutting red tape to avoid new tasks in the future, and is closely related to both evaluation and impact analyzes. Evaluations identify what should be simplified and impact assessments shed light on the costs of introducing new tasks. Simplifying and reducing regulatory burdens are therefore an integral part of the whole policy cycle in the Commission.

¹⁵ In the European Union Programme for reducing administrative burdens covers the following areas: pharmaceutical legislation, public procurement, statistically fiscal law (VAT), transport Working environment / employment.

sporadic presence of Romanian experts in similar European projects can affect the quality of evaluation work processes and underlying the financial allocations, also.

Box 1. Types of professional evaluation practiced in Romania to the present

The evaluation focused primarily on financial allocations received from the European Union. It should be noted that programs financed from the national budget have not been accompanied by evaluation studies.

National legislation on the evaluation of European funding programs do not include explicit provisions regarding the evaluation expenditure commitment by public funds. In this context, we can mention:

- Law. 500/2002 concerning public finances, the Ministry of Finance sets out the measures required to manage and monitor the use of national public funds.
- Neither OUG. 45/2003 on local public finances has no specific reference to evaluation of public funds; however it is mentioned evaluation programs "... designed to follow a defined goal or set of goals for which are established indicators of the program ...".
- Government Decision no. 775/2005 approving the Regulation on planning, monitoring and evaluation of public policies at central level provides for the establishment of some Public Policy Units within ministries and other institutions of central government, whose role will include evaluation of public policies, as they defined by law.
- Under the EU Extended Decentralised Implementation System (Extended Decentralisation Implementation System) which was implemented by Romania over the end of 2006, were transferred additional management tasks with European funding programs, to the Managing Authority for Community Support Framework of the Ministry Public Finance; this entity took over the management scheme for the Phare Interim Evaluation and for Operational Programmes implemented during 2007-2013.

Types of professional evaluation practiced in Romania to the present:

- (i) ex-ante evaluation carried out in European funding Programmes (Operational Programmes, SAPARD Programme, National Programme for Rural Development 2007-2013) were realized by an external evaluation contractor, in the summer of 2006;
- (ii) Intermediary evaluations for each program (in 2009 and in 2012) conducted by external evaluators; the first evaluation was on issues related to the selection and evaluation of funded projects which took place in 2009, and the second assessment was for 2012 and was focused on implementation issues - efficiency, effectiveness, impact early, etc..
- (iii) The ex-post evaluation of European Programmes 2007-2013 will be organized and managed directly by the European Commission

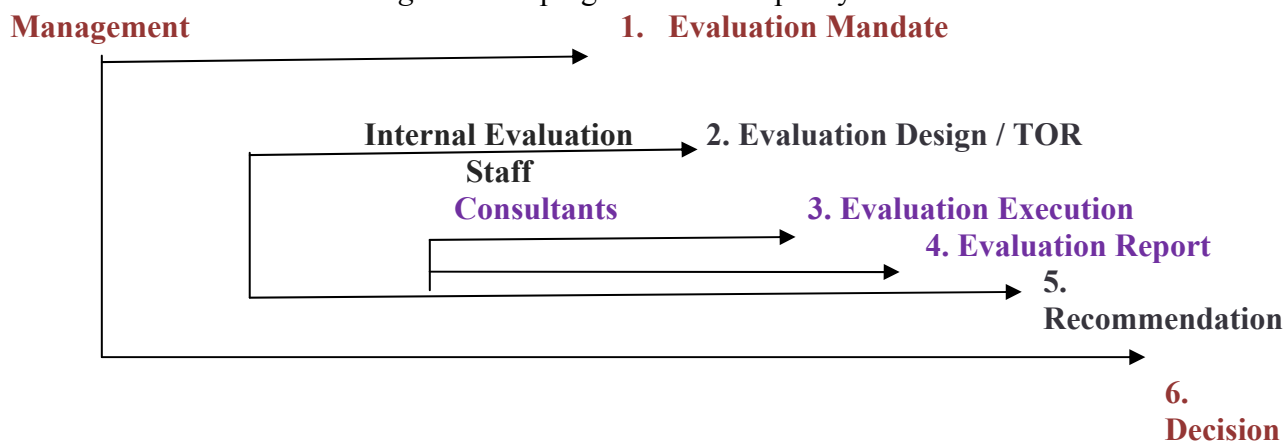
The training of future professionals for the work of programs and projects evaluation has become an interesting subject. This is illustrated with exposed during and successive evaluation applied to programmes and / or projects of public / private Member States, all of them from the need for a more balanced and equitable use of Community funds allocated and the need for sustainable development of the entire European space. Also increasingly appearing in the programming of the issue of higher valuation in the current business

processes evaluation conclusions just to boost the overall efficiency of actions designed and / or taken.

The problem of development and evaluation theory and the right use of the conclusions are motivated by at least the following of features of the evaluation:

- It is a tool to improve the effectiveness of interventions economic, social and educational;
- Provide reasons such as to push promotion recognition program evaluation as a profession;
- The practice of professional evaluations ensure for decision maker recognition of the right things which are "essential" ones;
- It can serve communities and people involved in financial programme allocations for the local / regional / national needs;
- Contributes to influence decisions related to a variety programs / projects;
- Ensure the creation and development of professional activities links between evaluators and users.

Fig.1 Developing evaluation capacity



Source: "Evaluability: A Wider perspective and key aspects", Vladimír Kváča, Ministry of Labour and Social Affairs, Czech Republic, Bucharest, April 26-27 2012, <http://www.evaluate-structurale.ro/images/stories/Documente/conferinta2627aprilie/26_aprilie/Workshop2.3/workshop%202.3_vladimir%20kvaca.pdf>

The inclusion and generalization in economic university curricula of the evaluation theory of programmes and projects in view to facilitate the use of this technique in practice is motivated at least by:

- Evaluation is a tool for socio-economic analysis that can help to diversify the training of future graduates;
- It develops interdisciplinary linkages ensuring for the future graduates "bridges" between evaluation theory and how to use this issue in the real life;
- Provides identification of the core capacity and can serve to better and faster resolution of issues related to resource allocation, in the future;
- Develop for the young people's ability and capacity to be involved the decision making process on a scientifically background.

All these features are able to provide strong reasons which, on the one hand, can boost planning promotion and identification evaluation programmes as necessary to practice the economist profession, and to support their inclusion in the curricula of students in economics, secondly.

In this context, evaluation courses for the economics students could attend to the following topics:

- Dynamic of the evaluation development at European level;
- Features of the programs and projects with national and international support that takes place in Romania;
- Evaluation methodologies (impact analysis, cost-benefit analysis, case studies, etc.).
- Knowledge of best practices of the evaluation and establishing the quality, programmes performance and projects with national and international public finance;
- Competencies required of evaluators of programs and projects, etc..

Regard as in this way will be achieved awareness on the importance national domain, and also it creates prerequisites for the development of a body of professional evaluator, contributing to increased use of resources in the development of the decision and the financing of future programs and projects.

Developing to the future economics graduates of some "soft skills" in view to increase their integration on labor market

In the globalized labor force movement, expansion of information technologies the development of "soft skills" to economics graduates becomes a necessity.

Although at the end of the studies economics graduates assume several capabilities, which will be useful in the future, however, more and more companies involved in labor employ look after for a minimum training on qualitative "soft skills" such as: flexibility, self-awareness, intercultural understanding and communication skills, technical expertise, innovation. These skills will be necessary for future employees to meet the current challenges that they will be the subjected on their jobs. However, it appears that the conditions of free labor force movement in the international space, including the European one requires to their potential employees to have such skills.

The importance to get of what is called "soft skills" is not only a modern job requirements or the young professional, but is also one of the most frequently discussed topics at various international meetings on issues concerning the minimum skills / required qualifications for the workforce.

Flexibility of future employees – as one soft skill required to young professional in economics
Technological change and innovation are a challenge for labor force, especially in downturns economic regions. In fact, in any region, the implementation of technological change and innovation represents enormous challenges for the future efficient use of local resources; them encourage complementarities and synergies and provide an impact for the whole socio-economic space of reference. This features must be reflected in the skills of workforce and them are required in different situations because perform changes in the current financing priorities of a business, a project, etc.

In generally each employee must be prepared to change or to adapt its current skills when on modify the targets, on the one hand, and to adapt its capacities in due time, on the other, in view to act quickly and effectively faced to a technological change and innovation. In the same time it must have the capacity to act in the right direction. This attributes have become principles for employment of a potential applicant when on assess its letter of intention or during the interview for hiring.

Employment flexibility highlights the "skill / ability" of the potential employee to answer to new needs and priorities.

Providing and instruction to a greater flexibility of young labor force during their specific training contribute to the reform of education, to a professional guidance facilitating cross-border dissemination of ideas and best practices and to a better consolidation of higher education institution to the requirements of local or regional development, also.

Self-consciousness, an advantage in the process of hiring and promotion

In general, a precious employee knows its own value, merit. Being perceptive of its strengths and to its weaknesses, also, an employee will know to rank its current priorities and it will know when to take initiatives, when it is necessary to delegate activities / responsibilities, when to accept inputs from other partners. A such behavior will help the worker to increase in professional hierarchy and in career and it will lead it in the direction to achieve performance.

For most young employees self-awareness of their own values is relative diluted, which implies targeted training of them on this goal since the time university studies. In this context, future young economists must learn how to acquire this quality and how to show it to a potential employer. The submission of a job application or participation on an interview represent a way to put in evidence the capabilities of the applicant and their skills. All of this must be communicated clearly because nothing discourages an employer more than a candidate who does not know what he wants to do or what can provide the institutional structure where it applied.

Cross-cultural training and communication

The general nature of students education in the field of economics provides their an extensive and specialized transversal cultural training. In moments when the graduates make an application for a job they mention this, but few of them can demonstrate, in fact, how they acquired this skill or how it works. In this context, for the professors is for interest:

- to develop to students' capacity for teamwork skills,
- to enlarge their oral and written communication taking into account different concept, categories,
- to adapt and combine knowledge acquired during the studies,
- to expand of the future workforce professional values and ethics,
- to increase the use of IT in a deeper way,
- to develop capacity to solve different problem and to build up a decision,
- to recognize and respect diversity and multiculturalism,
- to develop capacity for learning autonomy,
- to build up initiative and entrepreneurship,
- to be openness to lifelong learning,
- to give of young people large knowledge about how can be developed regional or domestic or international markets, what is the situation of local and foreign entrepreneurs, how can a market open regional specific activities connected to the global environment,
- how to build up and how to give appropriate feedback in different situation, etc.

In view to adjust to this challenges it is important to set up to the students the capacities to understand the several links among concept, categories, among knowledge received during the whole period of training courses.

Practical technical expertise

Practical technical expertise is important to develop a successful career, although often it ignored practical skills. In this context, it is necessary that students practice periods to be materialized by jobs in view to achieve as much contact with the public, with community (for e.g. reception desk, jobs in retail or the service-oriented type, etc.). Such experiences are likely to enrich the practical experience of future employees and ensure the development of communication skills, capacity for local/incipient decision making, capacity to set up minimum practical feed-back. In this way, the program of practical technical expertise for graduates starts on their adequate attitude in different situations. The technical expertise of graduates practice becomes a way to multiply their experiences through people who they

meet, to improve practical knowledge, to understand different theoretical issues, to increase their capacity to respond to diverse needs put in front of them by the job.

Inventiveness and originality

The reality is that graduates are often employed by small budgets and then are asked high results. In addition, the institution of higher education still focuses on assessing knowledge and no skills, no originality and inventiveness.

Therefore, even during school preparing young people must learn to demonstrate resourcefulness. They must be trained to know how to demonstrate their intellectual resources acquired during the years of study, how they can work with those around them, etc. This process which may be materialized by developing interactive and cooperative learning pedagogy. In this way on pass from simple knowledge acquisition to attainment of skills and competencies, elements that define the right purpose of education, and who are likely to support the development of future graduates the inventiveness and originality.

CONCLUSIONS

The success of a such strategic approach depends on the real involvement of all stakeholders in the rationale, implementation, monitoring and evaluation of the curricula developed.

In addition, adaptation to the requirements of this institution of higher education is a fundamental condition designed to ensure the success of efficient use of human resources, employment and skills development in accordance with the requirements of the National Employment Strategy Employment and the European Employment Strategy.

Adapting to the requirements of this institution of higher education is a necessity, and upgrading its elements suggested above involves new directions for future graduates to build new skills. On this way the can-do attitude, coupled with a smart and hard work, is able to led and to adapt the learning process to the present requirements in areas of so-called "professional assessment" and "soft-skills" of future graduates.

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Analysis of consumer choice between intern and foreign agrifood products in Romania

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ABSTRACT

Romania is among the top twenty countries in the world, in terms of meat production, livestock, fruit and vegetable prices. Following the dynamics of consumer preferences for food products, lately, many foreign producers have entered in the Romanian market, resulting in a rapid diversification of food products range. Consumer purchasing decisions are significantly influenced by the quality of the products, information on the label, appearance, price and packaging. In the conditions of a more diversified offer of agro-food products, the present study aims to highlight the consumer preferences for Romanian and imported food products. The paper is structured in three parts. The first part analyses, through documentary synthesis and analysis of statistical data, the market of main categories of food: meat market, milk market, fruit and vegetable market and grain market. Under this part are analyzed the production, household consumption and the volume of imports and exports of Romania. The second part of the study analyses the consumers preferences for different categories of Romanian and imported food products through questionnaire survey on a representative sample of 400 people. The last part of the study presents the conclusions of the analysis carried out and a set of pragmatic proposals for matching supply to the requirements and preferences of food products consumers.

Keywords: *Agri-food products, competitiveness, EU market, Romania*

Food products market analysis

The first part of the study aimed to analyze the food products market in Romania, in terms of production, consumption and the volume of imports and exports. Following the analysis, the market of food products is varied. For the analysis were considered meat market, milk market, fruit and vegetable market and grain market.

In terms of exports and imports of agricultural products, Romania has a deficit as exports are less than imports (Romanian Statistic Yearbook, 2012). The lowest rate was recorded in fruit export, where the export quantity is ranging between 1-2 tons for cherries and peaches.

Productions of meat, milk, fruits and vegetables were oscillating, with no great differences in the last years.

Pork and poultry has the largest amount consumed; in 2011 it was recorded a consumption of 28.7 kg / capita for pork and 16.5 kg / capita for poultry. Beef meat consumption recorded in 2011 an average of 5.2 kg / capita and mutton goats recorded the lowest consumption of 2.2 kg / capita (Romanian Statistic Yearbook, 2011, 2012).

Average annual consumption / capita for milk and milk products was about 227.7 liters / capita in 2011 (Romanian Statistic Yearbook, 2011, 2012).

According to the analysis, the most consumed vegetables are potatoes, tomatoes, cabbage, peppers and watermelon. (Romanian Statistic Yearbook, 2011, 2012)

Apples are the most consumed fruit by the population, followed by plums, peaches and nectarines, cherries and apricots. (Romanian Statistic Yearbook, 2011, 2012)

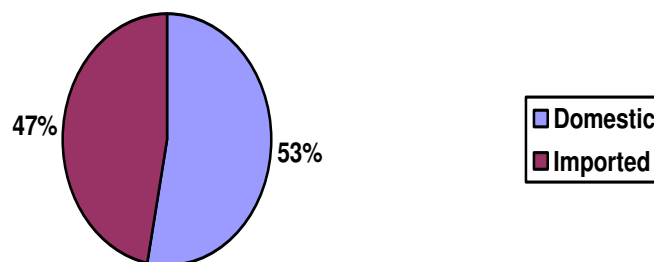
We believe that the main causes of low consumption of local food products are the low capacity of local producers and processors to attract investment funds for modernization, in order to compete with foreign competitors, the low level of subsidies granted to primary production and lack of funds for promotion of domestic food products.

Marketing research over the buying decision for domestic or import food products

Next in the study was conducted a marketing research, using a questionnaire survey on a representative sample of 200 people in Bucharest (according to sample formula of Amerein, P., Barczyk, D., Evrard, R., Rohard, F., Sibaud, B. & Weber, P., 2002), in order to find out the consumer preferences regarding the purchase of domestic or imported and the main factors that influence their purchasing decisions. The results of the analysis are presented below.

Asked what kind of food products they consume, 47% responded that they prefer imported products, while 53% prefer domestic products. They consume domestic products because of information on the label, the price and the fact that they are tastier than imported ones.

Figure 1: The buying preferences



Source: Own data collection

In terms of product type, 40 women responded that they prefer local products of meat and 46 men prefer imported ones. 75% of them said that the most important criteria are the freshness and taste. The remaining 25% said they prefer imported products due to the wide variety in terms of packaging and control of hygiene/preparation.

52 women prefer domestic fruits and vegetables, while 50 men prefer imported ones. The majority of respondents prefer the local ones because they purchase it directly from the producer, in a larger quantity at a lower price and consume them unprocessed.

In terms of the criteria of buying food products, the top is: look (3.53), price (3.38), followed by information on the label (3.28), and the packaging (3.27). 30 women consider look the most important product criteria that guide when buying food, while 18 men consider the label information the most important criteria. Price is considered a very important criteria when buying food by 26 women and 24 men.

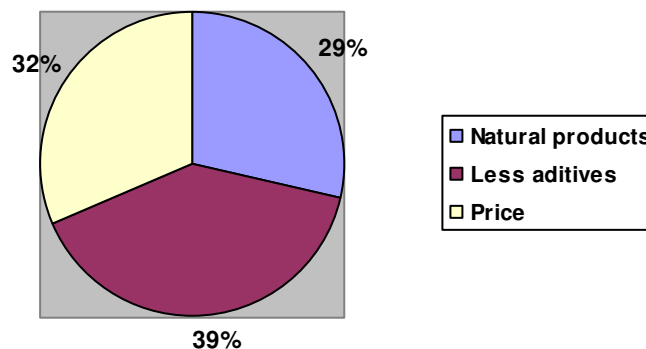
Figure 2. The criteria of buying decision



Source: Own data collection

Talking about the reason for buying domestic products the first place is that they are natural products (6.24), they contain fewer preservatives (2.32), and finally that have a lower price (2.12). 43 Romanian women buy domestic products because have an affordable price, while 29 men buy domestic products because they are natural, less processed. 48 women buy domestic products because they contain fewer preservatives, while only 32 men answered the same.

Figure 3. The reason of buying domestic food products



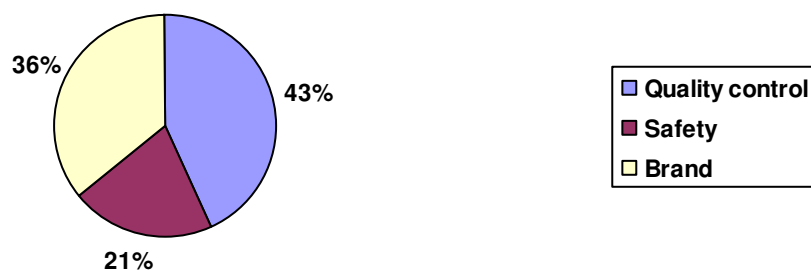
Source: Own data collection

28.5 % of respondents do not consume foreign products because they prefer the Romanian ones that are natural, less processed. 40% motivates that domestic products contain less preservatives than imported products, and finally 31.5 % consider the lower price a reason for buying Romanian food products.

On the other hand, the reasons why the respondents prefer imported products are: the good quality control (2.46), followed by safety from the point of view of hygiene (2.42), and the brand reputation (2.04).

42 women buy foreign products because they trust the reputation of the company, while 20 men buy foreign products because they are safe from the point of view of hygiene. 46 women buy foreign products because they have a good quality control, while 40 men buy imported products because of their good quality control.

Figure 4. The reason of buying imported food products

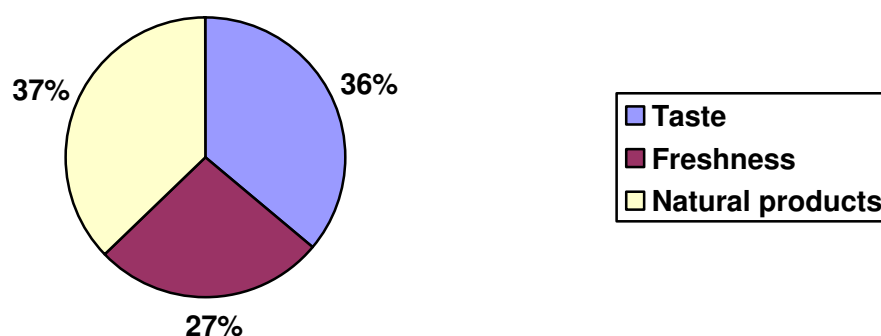


Source: Own data collection

Good quality control leads 43 % of respondents to purchase and consume foreign products, while 21 % consider that safety in terms of hygiene is a reason for buying foreign products rather than domestic ones. Also, 36% of respondents trust the good reputation makes them buy and consume foreign products.

The respondents surveyed said that the most important strengths of Romanian products are: the taste (3.34), the freshness (2.66) and finally the fact that most of them are natural (2.64). 38 women said that the most important strength of the Romanian products is taste, while 32 men think the same thing. 48 women and 30 men believed that being natural is their strongest point. 26 women said that a strength of the Romanian products is that they are fresh, while 26 men considered the same.

Figure 5. Domestic products strengths



Source: Own data collection

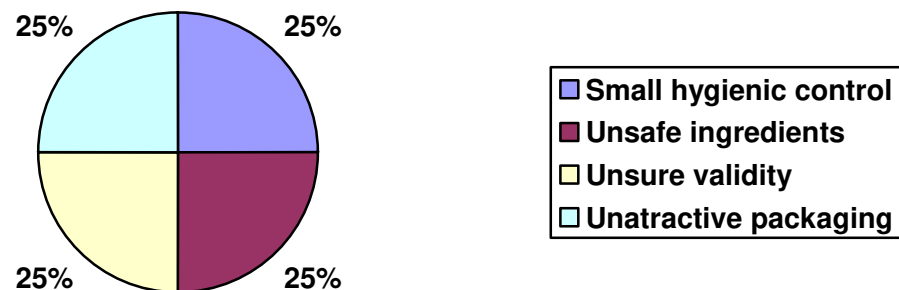
36 % of respondents consider the taste a strength against foreign products, which are bland, tasteless. 27 % think that freshness is a strength against foreign products. The remaining 37% believe that the strongest point is that Romanian products are natural.

According to the respondents, the most important weakness of domestic products are small hygienic control (3.73), unsafe ingredients used (3.52), the shelf life is uncertain (3.24) and unattractive packaging (3.22).

24 women responded that the unattractive package is one of the weak points of Romanian products, while 22 men deemed to be the less control in terms of hygiene / preparation. 27

women considered that the unsure validity is a weakness, while 24 men considered a weakness the uncertainty about the ingredients used.

Figure 6. Domestic products weaknesses

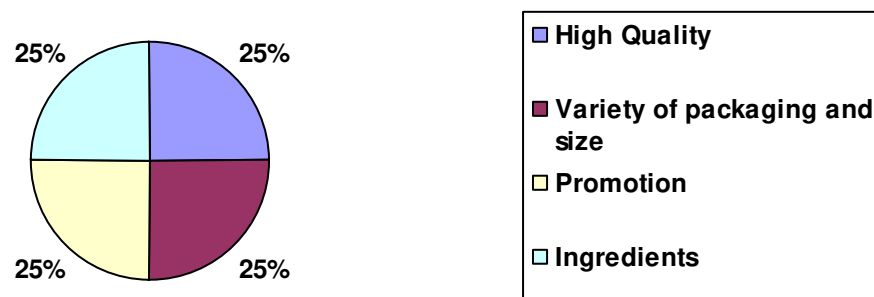


Source: Own data collection

The small hygienic control makes 25 % of respondents not to consume Romanian products, while the uncertain about the ingredients used leads 25 % to look carefully when purchasing products. Another 25 % said that the uncertain validity is a reason not to trust the Romanian products. The unattractive packaging leads 25 % of respondents not to purchase Romanian food products.

Asked about the strengths of the foreign products, the respondents said that those are: the high quality control (3.71), the ingredients used (3,7), the variety on packaging and portioning and the attractive advertising, which were in the same place with a 3.45 rank. 24 women and 26 men responded that the attractive advertising is a strength of foreign products while 27 women responded that variety of portioning and packaging is a strength of foreign products. 21 men considered a strong point the ingredients used, which are all marked on the label. 28 women consider quality control a strength of foreign products, while 22 men consider the same.

Figure 7. Imported products strengths



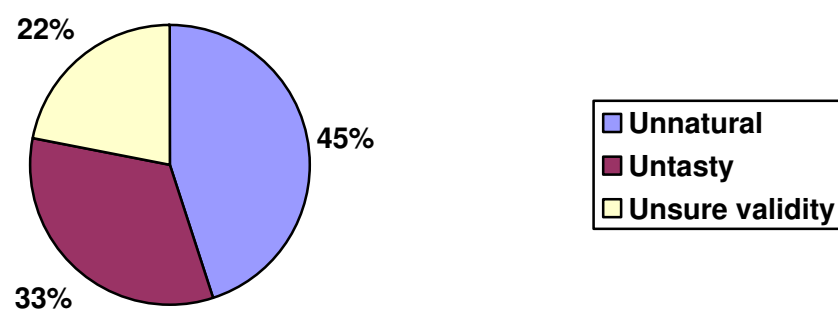
Source: Own data collection

For 25 % of respondents, quality control / hygiene makes consume foreign products rather than the Romanian. Ingredients found on the label determine 25 % of respondents to consume foreign products. 25 % of respondents answered that the variety on packaging and portioning is a strength of foreign products, and finally another 25 % consider the attractive advertising a strength of imported products.

Talking about the weaknesses of foreign food products, the first place is the fact that are unnatural (3.39), un-tasty (3.20) and unsure validity (3.08).

29 women responded that a weakness of foreign products is that they are artificial, while 23 men consider the taste bad an important weakness. 28 women and 27 men consider that foreign products are uncertain about validity in consumption.

Figure 8. Imported products weaknesses



Source: Own data collection

In relative values, 45% of respondents consider that the most important weakness of the imported products is that they are unnatural, 33% consider that the most important weakness is the bad taste, and 22 the unsure validity.

CONCLUSION

Following the survey, it was revealed a series of conclusions that highlight the current market situation of domestic and imported food products and consumer preferences for these categories.

It was found from the questionnaire, that the majority of respondents said they prefer domestic products from Romanian manufacturers.

Domestic and imported products were almost equal proportions in terms of consumer preferences, such as: 53% of the people surveyed answered that they prefer local products and 47 % prefer those imported.

The most important criteria that are taken into account in the purchasing decision are the appearance of the products, information on the packaging and the price.

Domestic products are most commonly acquired from traditional product fairs, followed by hypermarkets, supermarkets and a smaller number of respondents purchase their food products from homesteads.

The amount of money allocated for the purchase of food monthly is generally less than 1000 lei, while a lower class of people allocate to food amounts over 1000 lei per month. Reasons

for acquiring Romanian products are that domestic products are natural, and that they contain less preservatives than foreign ones.

Foreign products are purchased because they have good quality control and are safe in terms of health and hygiene, but also because of the brand reputation. Taste, freshness and being natural are the strengths of Romanian products. The values characterizing the Romanian products are tradition and sense of belonging.

However, the intense and attractive promotion of imported food products, leads to an increased consumer confidence in the reputation of foreign brands, which influences their purchasing decisions and thus lowers the market share of domestic food products.

To counteract this phenomenon manifested lately, some local companies (ex: from dairy or meat industry) created messages and adverts that surround products in a story that expresses freshness, taste of childhood, the taste that fits with nature.

However, we believe that the efforts to promote Romanian brands need to continue and intensify, in order to be stimulated mainly the consumption of domestic food products, for contributing to the economic growth of the country and to ensure food security and safety for population in the medium and long term.

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Gains and loses of Romanian agrifood products on EU intra-trade market

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ABSTRACT

The paper attempts to highlight the evolution of the main Romanian agri-food products on EU intra-trade market, in the last two decades. We would like to analyse the products which lost the markets and those which have had a positive evolution. This analysis used data provided by National Institute of Statistics (INS), EUROSTAT, internet databases and articles periodically published by the institutions specialized in economic analysis, as well as other specialty works, studies and working papers done by different researchers across Europe. Last but not least, we use the partial results from the FP7 Project COMPETE (*International comparisons of product supply chains in the agro-food sectors: determinants of their competitiveness and performance on EU and international markets*), financed by European Communities and National Ministry of Education and led by IAMO (Halle/Saale-Germania). By present paper we would like to put in evidence the weakness of Romanian governments in the last decades and the lacks of the policies elaborated to keep the high competitiveness of the products on EU and global market. In the same time, we would like to estimate the influences and pressure of the trade with the products analysed on the national budget. That is why we consider that our approach based on this paper will show the impact of investments and policies on products' competitiveness.

Keywords: *Agri-food products, competitiveness, EU market, Romania*

INTRODUCTION

By present paper we would like to analyse the evolution of the Romanian trade in the last decades, especially after EU accession. We focus on the agri-food trade and have in view the intra-EU trade.

There are a few Romanian products which "survived" on EU market and among them there are a few agri-food products, as well. Their existence is not absolutely correlated with accession into EU market. In the same time, many Romanian "traditionally" products disappeared, including agri-food products. There are lost markets but also gain markets. In this way, we can separate the analysis in winners, when we have in view the products (producers) still on the market and losers, when we have in view the products (producers) not on the market, at all. We want to analyse the dynamic evolution of the products on the market in close connection with their competitiveness.

The meaning of the term "competitiveness" is "to be able to withstand market competition" (EU, 1999 a). For firms or companies, "competitiveness" as a measure of economic viability is broadly accepted. Here, in a competitive market, "competitiveness is the ability to produce the right goods and services of the right quality, at the right price, at the right time. It means meeting customers' needs more efficiently and more effectively than other firms do." (DTI, 1994, in Thomson&Ward, 2005).

For nations, the term competitiveness is defined by the OECD as "the degree to which [a nation] can, under free and fair market conditions, produce goods and services which meet

the test of international markets, while simultaneously maintaining and expanding the real income of its people over the long term.” (DTI, 1994, in Thomson&Ward, 2005).

In the same time, we can have in view the European Union’s Sixth Periodic Report on the Regions (EU, 1999a) which specifies “Regional Competitiveness” as “‘the ability of a region to generate, while being exposed to external competition, relatively high income and employment levels’. In other words, for a region to be competitive, it is important to ensure both quality and quantity of jobs.” (EU, 1999 b).

The list of different definitions, to approach the term “competitiveness”, as well as the list of different competitiveness indices and indicators could be expanded by a huge number of studies and papers, all of which have their strengths and weaknesses. However, it also becomes clear, that the idea of productivity and employment runs like a red thread through more or less all of the concepts of competitiveness, most of all in connection with the living standard of the regional population (Schaller, L., Kapfer, M., Kantelhardt, J., Boris van Zanten, Verburg, P., Amsterdam, 2012).

Not the last, it is obvious the link between the products (firms) “lost in transition” and the lack of a clear and stable policy in this field.

ROMANIAN AGRI-FOOD TRADE AND CONSUMPTION

National economy, including Romania’s foreign trade in the last two decades, passed on a difficult stage through essential characteristic of the transition period to market economy. Worldwide, one of the most important problems was ensuring the competitiveness of products, “their survival” on the new open and global market, in other words the development of trade. Accordingly thorough knowledge of international economic relations, including in terms of theoretical and practical trade policies which have influenced, is a strict requirement of current economic and political.

Romania's foreign trade has undergone major changes with the collapse of “iron curtain” in 1989 and after with the entry into the European Union in 2007. Positive steps have been taken, especially lifting trade barriers, have led the free movement of goods, services and capitals. Thus, the single European market which resulted through economic integration has helped increase trade flows, but also to increased cross-border economic size (Bojnec S., Fertő I., 2009).

In Romania, these measures have caused a shift in exports for 83% of total trade for the European space. Imports hit a little less high, and yet they were oriented at a rate of over 68% for the European continent (Mițuko-Vlad I., 2012). Our main focus is on the agro-food trade in Romania and its competitiveness, also comparative advantage in the European area. As regards the concept of revealed comparative advantage, we mention that it was introduced by Liesner in 1958 and it was redefined by Balassa in 1965, in order to identify the country’s weak and strong export sector. Thus, Stern and Deardoff in 2006 argued that the non-involving countries in the global trade arrangements are more likely to lose then the others countries.

Generally, the trade volume meets a positive growth rate and the private sector is much highlighted. The total Romanian export has had an increasing trend and the decisive “jump” was done in 2007, when Romania joint EU. Nowadays, the Romanian export to EU market is bigger than 70% in total Romanian exports, but also the Romanian imports from EU reached 70% from total Romanian imports (in terms of value and volume). Unfortunately, there is no agri-food product in Top 10 Romanian exports in last decade.

If we have in view the share of agri-food products in total Romanian exports, in the last two decades, we can say that it was not constant and was characterized by fluctuations close correlated to weather conditions. For instance, the evolution in a few years of transition and

after accession into EU (FOB) was: 1991 = 4.9%; 2000 = 2.4%; 2007 = 2.2%; 2010 = 5.1% (calculations based on INS database).

After this short characterization of the Romanian trade, we can conclude that Romania is integrated (and dependant) of the EU intra-trade, but the agri-food products are not important in the balance of trade.

The Romanian agricultural balance of trade (see Figure 1, Figure 2) increased but reflects the dependency of natural conditions (especially precipitations), and it is correlated with the national productions.

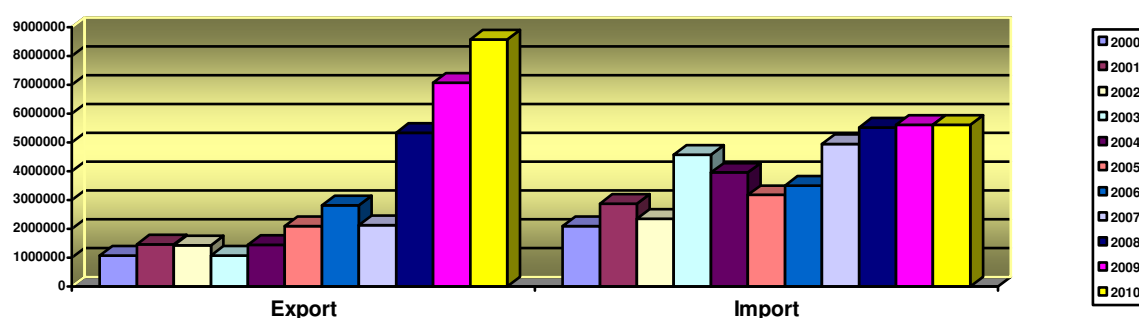


Figure 1. Agricultural balance of trade (Tons)

Source: INS

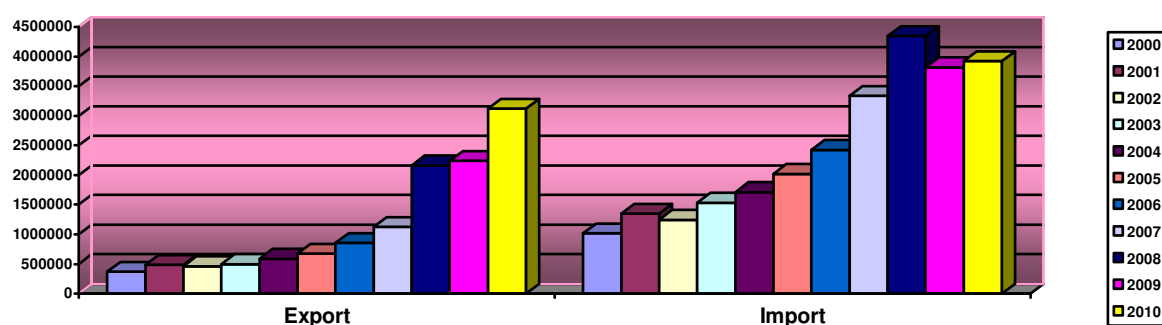


Figure 2. Agricultural balance of trade (Value-Thou.EUR)

Source: INS

From both figures, other conclusion can be draw: Romania exported cheap and imported expensive. It means that, even if the exports increased in the last years faster than imports (in volume), we see that in terms of value the imports are higher than exports, in other words, we export raw materials and import value added products.

In the next two figures, we present the balance of trade in case of vegetables (Figure 3, Figure 4).

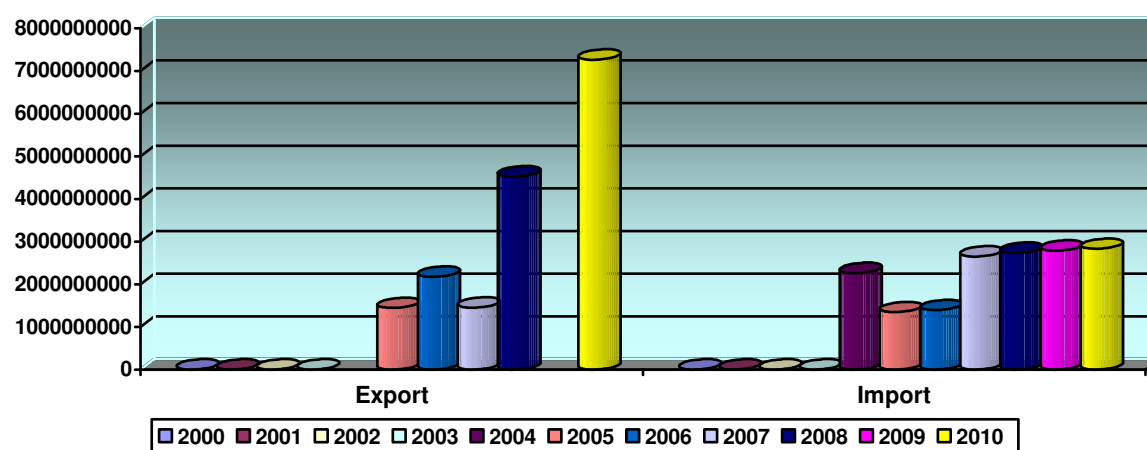


Figure 3. Vegetables balance of trade (Tons)
Source: INS

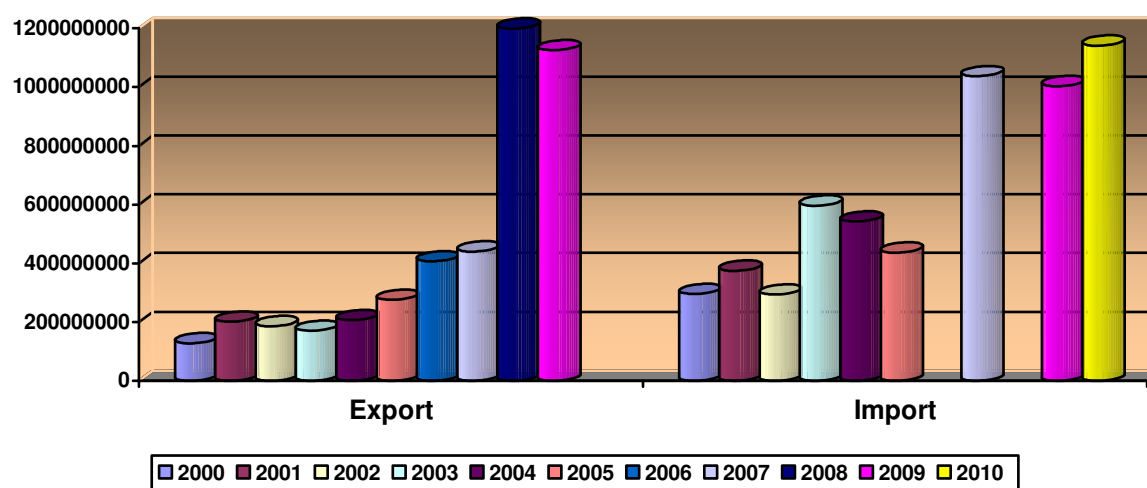


Figure 4. Vegetables balance of trade (Value-Thou.EUR)
Source: INS

In this case, the political moment when EU decided “the road map” for Romania and Bulgaria and their accession into EU in the “second wave” (2007) was decisive and the trade increased. In recent years, the exports are bigger than imports in volume. On the other side, if we have in view the value, the trade increased after 2007, the moment of accession into EU. The same conclusion, like in the case of agricultural trade, we can draw for vegetable trade: Romania exports raw materials and imports value added products, but the differences are not so evident.

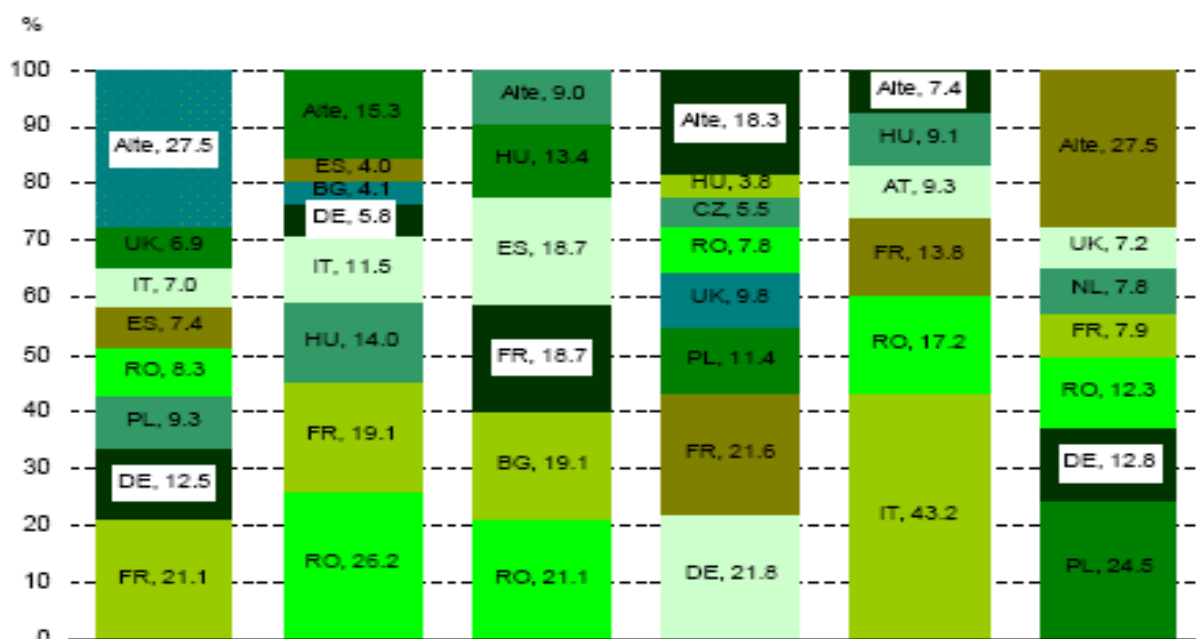


Figure 5. Area cultivated with main crops in EU, in 2010

Source: INS, 2011, Producția vegetală la principalele culturi în anul 2010, ISSN: 1842-0575, ISSN-L:1842-0575, ISSN-L:1842-0575 (Based on Eurostat New Cronos Data)

Note: Collumn 1 = Wheat, Collumn 2 = Maize, Collumn 3 = Sunflower, Collumn 4 = Rape seeds, Collumn 5 = Soybean, Collumn 6 = Potatoes

Among vegetables, cereals play an important role. We admit that the national performances in cereal sector are not the best among EU countries, and the competitiveness is low, but still the cereal sector has its importance in national economy, even at Euro-regional and EU level. If we compare the area cultivated with the main Romanian cereals (wheat and maize) with the area allocated for the same crops in other EU countries we must recognize this (Figure 5). Despite of important areas allocated to cereals crops, the production and yields are weak. Not the same we say about other EU countries. That is why, the competitiveness of Romanian cereals sector is low and, in the same time, we can put in evidence that the consumption of cereals in Romania is close connected to “import-export game”.

At EU level, only a few countries concentrate the majority production of main crops (data for 2010: INS, 2011):

- 75.9% Wheat: FR, DE, UK, PL, IT, DK, RO;
- 74.5% Maize: FR, RO, IT, HU, DE;
- 90.7% Sunflower: FR, BG, RO, HU, ES;
- 82.7% Rape_seed: DE, FR, UK, PL, CZ, RO;
- 95.9% Soybean: IT, RO, FR, AT, HU;
- 79.2% Potatoes: DE, PL, NL, FR, UK, RO, BE.

It means that only country like France, Germany and Romania are the main providers of principal crops (Figure 6).

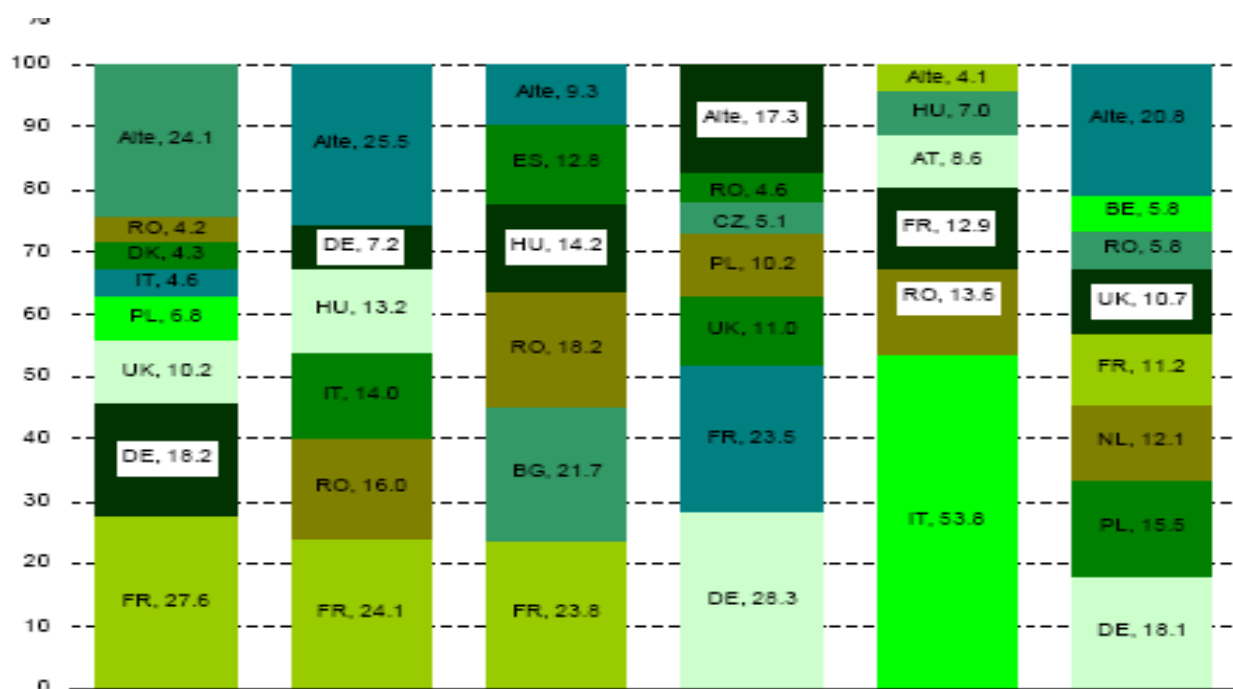


Figure 6. Production of main crops in EU, in 2010

Source: INS, 2011, Producția vegetală la principalele culturi în anul 2010, ISSN: 1842-0575, ISSN-L:1842-0575 (Based on Eurostat New Cronos Data)

Note: Collumn 1 = Wheat, Collumn 2 = Maize, Collumn 3 = Sunflower, Collumn 4 = Rape seeds, Collumn 5 = Soybean, Collumn 6 = Potatoes

Generally, the consumption declined, as a result of diminution of population (if we speak at national level, about total national consumption) and due to the degradation of the standard of life (in some areas or social structures) or the reorientation of the consumers to other food. The consumption was lower and lower for all products analyzed both at national and regional level.

The balance of trade shows us the main destinations and sources of cereals and the main foreign partners (countries) for Romania. As a particularity, for imports the main partners are the neighbours and for exports countries from EU (West) or from other continents.

Climatic conditions remain a major factor for cereals default to have as a bakery. For instance, year 2008/2009, excessively dry year, had a very significant positive influence on all quality parameters like: mass per storage volume, protein content, gluten content, index gluten index of deformation and rate of fall than in 2007/2008 taken as a witness. It should be noted that excessive drought resulted in the production of very low, which could lead to the conclusion that high values of quality parameters is negative relationship just because, well known, the production and quality. Year 2009/2010, year of excessive rainfall, significantly influenced positive content gluten, gluten index and index zelleny, slightly influenced the rate of deformation, and decrease was recorded on protein content, indicating the loss and the mass hectoliter, compared to the control.

If we considered the influence of technologic factor, the experiences and practices give us an idea about their importance and influences. Generally, additional dose of fertilizer translates into a very significant positive from the basis, the following indices increased: protein content, containing gluten, indicating gluten, sedimentation index, index of deformation-growth.

In the end, we would like to add that in the context of development and management process of the National Strategy for Export (SNE), appeared more and more evident the necessity of regional approach, or local, as regards the export competitiveness. The main reasons are:

- Romania is situated below the European average in terms of regional development and competitiveness; the gap is found at national and regional level, as well;
- The degree of internationalization of Romanian companies, from the regional perspective, is modest;
- There are significant disparities between regions in terms of economic performances export and inequalities between different counties and areas of a region.

Consequently, for all Romanian regions, developing public-private partnership (PPP), regional competitiveness strategies, involving associative structures of business and local authorities is necessary to increase the region's competitiveness in international trade.

Having in view all these reasons, we can say that SNE is also the result of the collaboration between the entities interested in export and associative structures of both businesses and public authorities.

ROMANIA IN EU INTRA-TRADE

In this subchapter we want to analyse the Romanian trade with agri-food products in EU zone. For this, we calculated the share of the main Romanian agri-food products in the total Romanian agri-food exports, and the share of the Romanian agri-food products in the EU intra-trade.

In this way, we want to determine the “winners” and “losers” of the pre-accession and post-accession period among Romanian agri-food products.

If we have in view the main Romanian agri-food products exported during the mentioned period, we can identify the “winners”, which are products still competitive (Table 1).

Table 1 - % of products in total agri-food export (FOB) – “winners”

YEARS	1991	1995	2000	2004	2007	2010
SHEEP (+ GOATS)	9.8	11.2	14.8	20	11.6	4.7
HONEY	0.6	0.8	3.2	4.4	1.8	1.7
WHEAT	5.7	27.3	4.9	0.9	7.1	19.9
BARLEY	0.03	0.2	3.4	1.2	4.1	5
MAIZE	0.2	7.4	5.1	8.5	11.6	20.9
RAPE SEEDS	0.04	0.03	5.2	1.9	12.1	17.1
SUNFLOWER SEEDS	0.04	0.8	7.1	15.4	16.1	11.5
SUNFLOWER OIL	2.4	16.5	5.2	11.4	5.4	6

Source: calculations from INS database (National Institute of Statistics)

We can say that important for Romanian agri-food trades are products like: cereals (wheat, maize), sheep/mutton/goats, oilseeds (rape and sunflower). Secondary, are products like: honey and sunflower oil.

When we try to identify the losers, those products which lost the markets and are not important in exports nowadays, we find a few traditional products which did not remain at a competitive EU level (Table 2).

Table 2 - % of products in total agri-food export (FOB) – “losers”

YEARS	1991	1995	2000	2004	2007	2010
CATTLE	18.3	7.1	20.2	12.5	14.1	5.4
PORK	21.2	12.5	0.2	0.1	0.04	0.3
APPLE, PEAR (+QUINCE)	4.5	1.9	0.01	0.02	0.7	0.3
WINE	7.5	6.1	7.2	5.2	2.5	0.8

Source: calculations from INS database (National Institute of Statistics)

From the table above we can conclude that important for Romanian trade were: cattle, pork, fruits (apple, pears) and wine. The dramatic negative decrease was in case of cattle and pork. The other two lost the markets and became less competitiveness.

In the end, we want to know the share of the Romanian agri-food products in EU intra-trade market, in FOB prices. This is another estimation of the competitiveness of the Romanian agri-food products at EU level (Table 3).

Table 3 - % of Romanian agri-food exports in EU intra-trade market (FOB)

PRODUCT	2004	2007	2008	2009	2010	2011
CEREALS	0.3	1.0	1.2	3.7	4.2	3.8
OILSEEDS	1.6	1.7	5.8	5.5	6.6	7.2
HONEY	7.4	5.3	5.8	10.1	9.4	8.4
SHEEP	31.8	26.5	32.4	33.7	32.0	36.5
WHEAT	0.07	0.8	1.3	3.9	3.7	3.4
MAIZE	1.2	1.8	1.9	5.5	7.3	6.7

Source: calculations from www.exporthelp.europa.eu

Having in view the data presented, we identify two types of products: active (honey, sheep) and passive (cereals, oilseeds). Among cereals, we underline wheat and maize and among oilseeds only rape. The active products have an ascendant trend and very good perspectives (competitiveness) and the passive products have a linear evolution under the pressure of different factors.

CONCLUSIONS

The results of the research can be summarizing as follows:

- A few traditional agri-food product lost the markets because of the less of competitiveness (pork, cattle), fruits (apple, pear) and wine;
- There are a few products which are still on the market and have a good potential with perspectives of grow like: cereals and sunflower oil;
- Competitive products are: sheep/goats, honey and oilseeds (rape).

ACKNOWLEDGEMENT

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Use Of Satellite Imagery In Monitoring Agricultural Areas

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ABSTRACT

In agriculture, a major benefit of satellite registrations crop is forecast problem by following up the development of crops in certain phenological stages. Then, the registration of pest attacks made possible intervention in the early stages of this phenomenon.

Development of the Earth's surface registration techniques in different spectral bands, specialized for certain components of the environment. Such as those of the last LANDSAT and SPOT satellites were able to follow some aspects of forestry and agriculture

Keywords: *Agriculture, agricultural plantations remote sensing spectral bands, vegetation*

INTRODUCTION

Remote sensing refers to the registration activities, observation and perception of distant objects or phenomena. In remote sensing, sensors are not in direct contact with objects or phenomena observed. Electromagnetic radiation is normally used as a carrier of information in remote sensing. Product sensing system is usually an image representing the scene observed. An important step is the image analysis and interpretation necessary to extract useful information from the image. In a narrower sense, remote sensing refers to the science and technology necessary for acquiring information about the Earth's surface (eg, the earth's surface, oceans and atmosphere) using sensors on board of vehicles (airplanes or balloons) or space (satellites and space shuttles) platforms. Depending on the scope, remote sensing can be divided into

- (1) Remote sensing satellite (when used satellite platforms)
- (2) Photography and Photogrammetry (when used to capture visible light images)
- (3) Thermal remote sensing (when used infrared spectrum)
- (4) Remote sensing using radar (when using microwaves), and
- (5) LIDAR (laser pulses are used when they are transmitted to the ground and the distance between the sensor and the ground is measured based on the return time of each pulse).

MATERIALS AND METHODS

The spectral response of vegetation is identified by the reflectance's spectral curve and depends on the health of the vegetation. The curve has an allure that has maximum and minimum. Minima in the visible portion of the spectrum are due to the chlorophyll pigments in leaves. The chlorophyll absorbs energy in the wavelength range 0.45 to 0.67 μm . Therefore vegetation health is perceived as green. Vegetation absorbs blue and red rays and reflects them on the green.

The reflection is performed in the wavelengths' band of nearby infrared from 0.69 to 1.3 μm . During this time plants reflects 40-50% of the incident energy on them. Foliage reflectance is achieved in the range of 0.7 to 1.3 μm , and depends on the internal structure of the leaf.

Measurement of reflectance in this range allows the identification of different species of plants.

The absorption and reflectance of plants in the visible and infrared range depend on the chlorophyll content, the amount of water and surface morphology of the plant. These spectral properties are expressed in the form of vegetation proper index VNIR (visible and near infrared (Fig. 1). Spectral reflectance of vegetation increases very steeply as the wavelength increases above 0.7 μm and 0.75 μm . This change in spectral reflectance is called feeding edge (Elachi and Jakob, 2006).

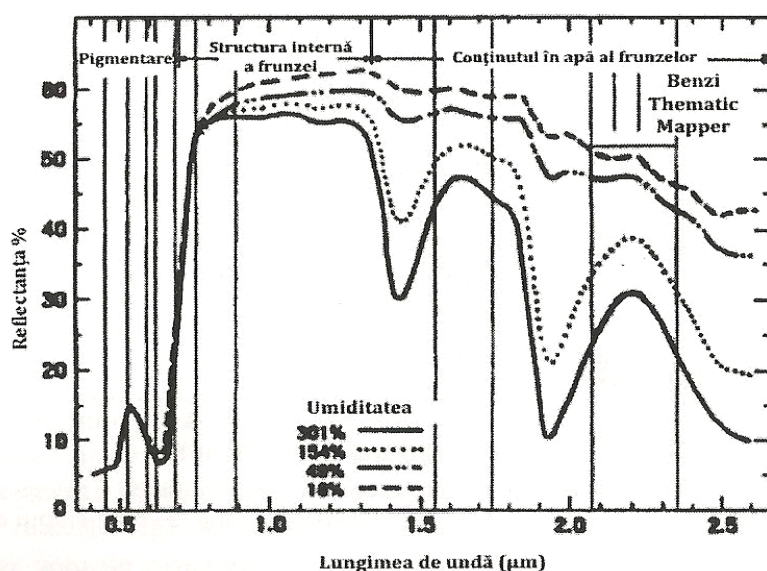


Fig 1 Spectral reflectance curve by wave length

Landsat satellite images. Landsat 7 functions from the date of 15th April 1999. The Satellite's system of sensors and images' quality were improved. On this mission were kept the bands: 1 to 4.5 and 7.

The ETM (Enhanced Thematic Mapper) included a new panchromatic band with a greater width, containing a part of the visible spectrum (especially green and red) and near-infrared part of. Its spatial resolution is 14.25 inches (15cm). Thermal infrared 6 band was improved by doubling the spatial resolution from 58.5 cm to 60 cm.

All of these eight images are converted into 8-bit system, this allows a number of digital processing operations. The system also includes the "dual-mode solar calibration" in line with internal calibration lamp. This led to a radiometric calibration accurate to 5%.

Satellite sources are qualitative. By making a combination of Panchromatic type using the panchromatic and a combination of three bands. These have as results natural colours or false colours images with a resolution of 15 cm (Lillesand, 2004).

The geographic interpretation of Landsat satellite sources. I have chosen Mostistea Valley micro-region.

Mostistea Valley micro-region is located in the north-western region of the Calarasi district, near by Ilfov district.

The geographic coordinates of the area are given by Tămădăul Mare village which is the northern part of the micro-region, located on the 26° 57' west longitude meridian and the 44° 47' parallel and the southernmost part determined by Frăsinet village coordinates, located on the 26° 44' west longitude meridian and the 44° 15' north latitude parallel. The micro-region is about halfway between Bucharest and Calarași

The facts were obtained from USGS for year 1991 and 2011.

The interpretation involves the analysis of spectral bands individually and compared to Mostistea micro-region.

The purpose is related to the choice of the relevant tape and combination bands in the overall analysis of the landscape or the level of components such as plants, water, settlements and land use.

The combination of 1-2-3 bands includes the following bands (blue, green, red) (Fig 2 and Fig 3). Therefore, it results a combination called also in natural colours. Band 1 (blue) allows highlighting vegetation. Band 2, in this band is the best chlorophyll spectral response from vegetation. Band 3 of the visible spectrum is red.

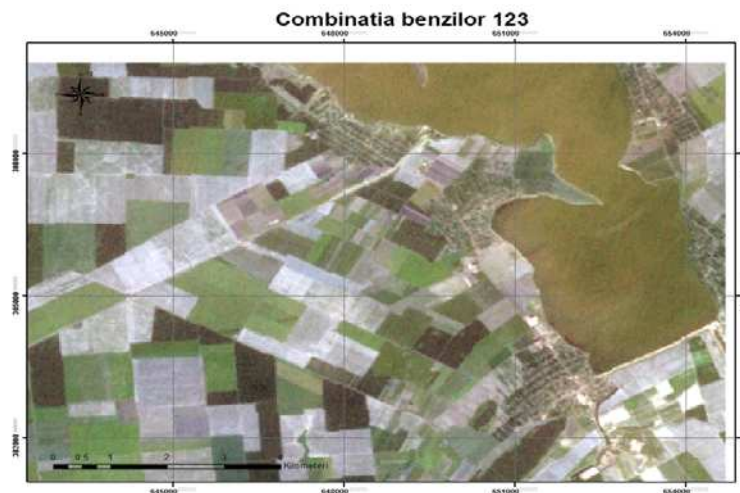


Fig 2 Combination of bands 123 in year 1991

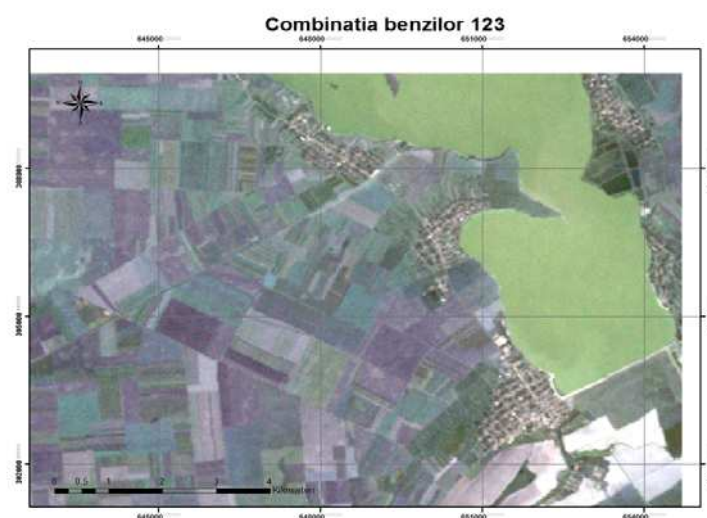


Fig 3 Combination of bands 123 in year 2011

The combination of 2-3-4 bands. This combination involves the placing nearby infrared. The nearby infrared vegetation response can provide information about the status of vegetation.

The image's analysis provides information on: the separation of green fields land without vegetation (Fig. 4 and Fig. 5).

There is seen clearly delimited the lake area as an effect of the nearby infrared band in which the radiation is absorbed by water to surface.

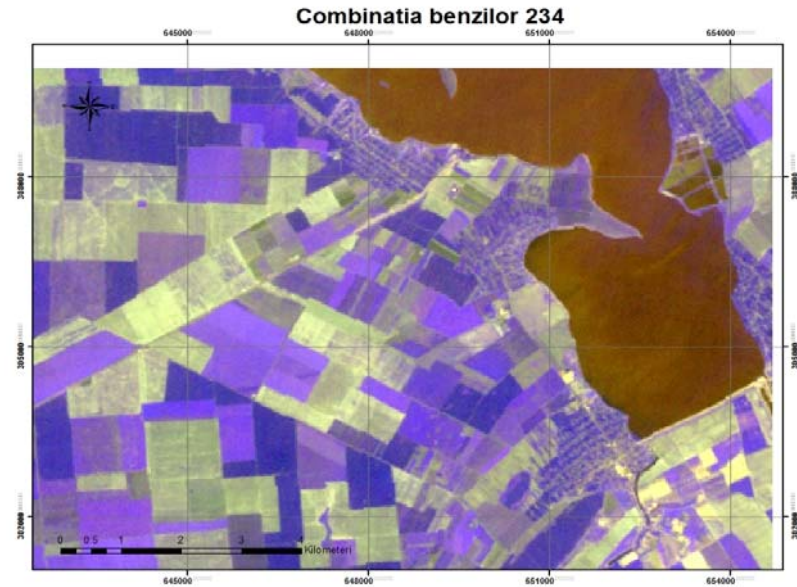


Fig 4 Combination of bands 234 in year 1991

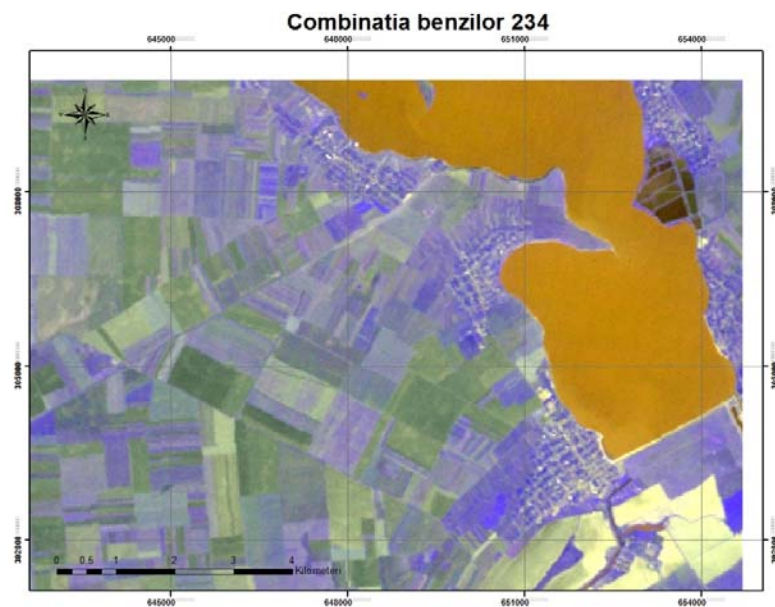


Fig 5 Combination of bands 234 in year 2011

The combination of 4-5-3 bands. In this combination we have two infrared bands, and in this combination the spectral signature of vegetation is strong.
The combination of the signal is the best for identifying the vegetation (Fig 6 and Fig 7).

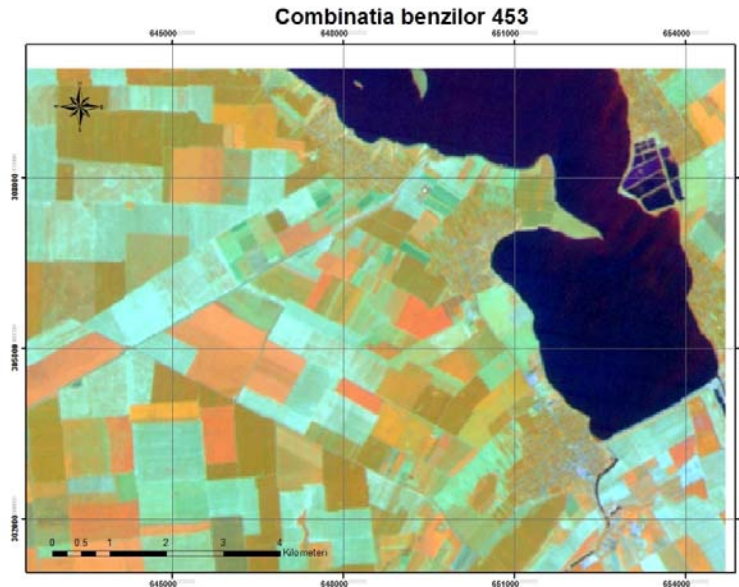


Fig 6 Combination of bands 453 in year 1999

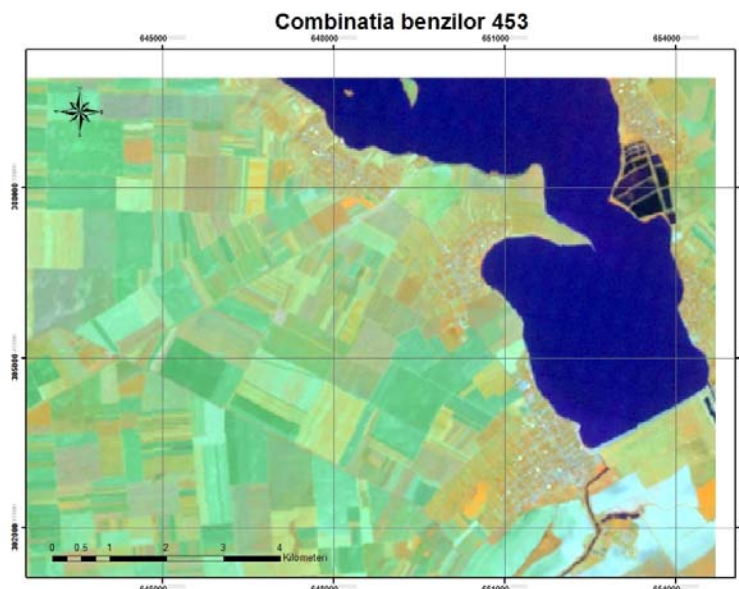


Fig 7 Combination of bands 453 in year 2011

Histogram The expression of the image's contrast results from the distribution percentage method of the spectral value or the numbers assigned to the pixels, which form the spectral satellite image for each spectral band separately. The graphic is represented by a rectangular axes system, which characterizes each spectral band image level. Histogram analysis shows a maximum concentration of dark pixels in the image. An image has a unique histogram but the reverse is not true in general since a histogram contains only radiometric and no spatial information. A point of some importance is that the histogram can be viewed as a discrete probability distribution since the relative height of a particular bar, normalised by the total number of pixels in the image segment, and indicates the chance of finding a pixel with that particular brightness value somewhere in the image (J. Richards and Xiuping Jia, 2006).

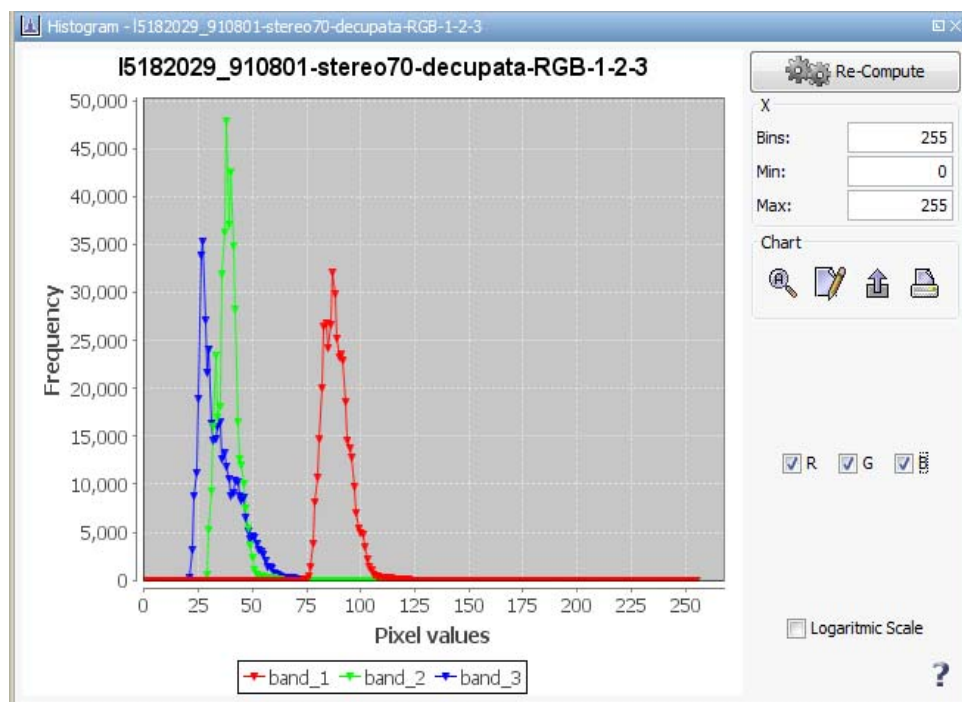


Fig 8. Histogram RGB 123

Also for comparison the Mostistea surface we used and satellite remote sensing imagery provided by SPOT in 2007 (Fig.9).

The current plans for SPOT – 5 envision the replacement of the SPOT – 4 HRVIR systems with high resolution (HRG) instruments. These system are designed to provide higher spatial resolution (5m, instead of 10m) in panchromatic mode; 10m (instead of 20m) resolution in the green, red, and near – IR bands; with 20 m resolution maintained in the mid – IR band due to limitations imposed by the geometry of CCD sensors used in this band. The panchromatic band used will return to the spectral range employed in SPOT – 1, 2 and 3 (0.51 – 0.73 μm). Also envisioned is the provision of resolution panchromatic data by combining two 5-m resolution images shifted along track and sampled every 2.5 m.

It is also envisioned that SPOT – 5 will incorporate envisioned that SOPT – 5 will incorporate a high resolution stereoscopic (HRS) instrument. The HRS instrument will incorporate fore and aft stereo data collection and facilitate the preparation of digital evaluation models (DEMs) at a resolution of 10 m on a global

The use of SPOT HRV and HRVIR data for various interpretative purposes is facilitated by systems combination of multispectral sensing with moderate spatial resolution, high geometric fidelity and the provision for multirate and stereo imaging.

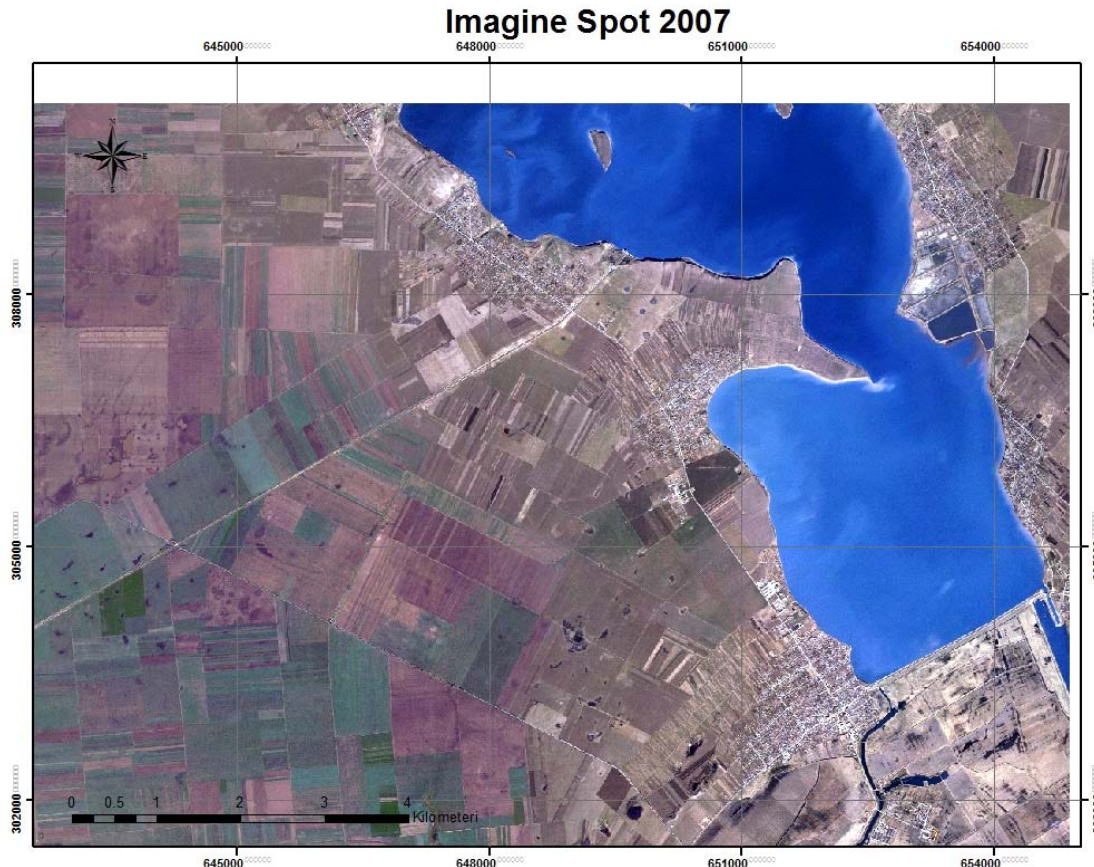


Fig 9. Spot images in 2007 Mostistea area

CONCLUSIONS

Within this framework were three combinations of spectral bands analyzed for studying vegetation. The optimal combination was made so that the spectral behaviour of the studied area. The bands choice must be made depending of the soil type, climate and vegetation.

In combination 1-2-3 is observed that the separation of vegetation is very poor.

In combination 2-3-4 is the infrared band and we can separate green fields depending on the type of vegetation which covering the land.

Combination 4-5-7 shows the best combination of existing differences in the studied crops in area Mostistea.

To study terrestrial phenomena are chosen images under favourable weather conditions without clouds. The visual interception for assessing crops status is more difficult than intercepting the visual image of the crops type. It is also difficult to identify the different effects produced by disease, insects' attacks, and nutrient deficiency because of the variety of plants, plant maturity, the rate of planting soil or various colours. Some problems of interpretation may arise after dry periods, so interpretation must be done on images that are acquired in a short time after rain

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Preparing Of Compost By Using Different Types Of Substrates

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ABSTRACT

The using of organic fertilizers is essential, which do not pollute the environment and also contribute for a more delicious and healthier food and sustainable yields in a distant period of time. On the planet billions of tons of organic waste are created every year which contain all the necessary elements and compounds: proteins, vitamins, salts, active biological substances etc. By applying new techniques in the composting we have achieved to obtain a quality product in its entire volume, and to preserve as well the activity of the red Californian worm /RCW/ for a maximum long period of time. By applying a specific proportion in the mixture of sediments from wastewater treatment plants and straw, and by adding technologically activated mineral rocks, we have achieved to obtain a compost having the specific organoleptic characteristics and to reduce in full the unpleasant smells.

Key words: *environmental protection, sustainable agriculture, compost, wastewater treatment plants*

INTRODUCTION

Agroecological technologies to be well applicable into practice, requires technological innovation, changes in agricultural policy, socio-economic changes, but mostly a deeper understanding of its complex interactions between permanent resources, people and their environment. Environmental protection is another major result, which reflects not only on the quality of the final production of agricultural crops, but also on the stability of agroecosystems and soil fertility. The use of organic fertilizers is essential, which do not pollute the environment and also contribute for a more delicious and healthier food and sustainable yields in a distant period of time [1]. Most studies show, that in the first year of conversion to organic farming, the yields of conventionally grown vegetables are higher than those grown organically [2], but in subsequent years the reported yields, for example of tomatoes, there are no statistical differences between the two farming systems [3]. In recent years, fertilizes have established themselves as a promising component of an integrated system for a procurement of food in agriculture [4].

On the planet billions of tons of organic waste are created every year which contain all the necessary elements and compounds: proteins, vitamins, salts, active biological substances etc. They contain as well a considerable amount of energy [5.6]. In the course of the last two or three decades of the 20th century in several countries of the world there has been conducted a commercial exploitation which deals with the red Californian worm (*Lubrocum rubellis*) and the tiger worm (*Perionus escavatus*) [7].

The aim of the present study is optimizing the technological actions into preparing compost from red Californian worm /RCW/ and composting the sludge from wastewater treatment plants of municipal waste.

Optimizing the technological actions into preparing compost from RCW

The private farm for compost from the RCW at Berievo village, municipality of Sevlievo /firms "Biohum" Ltd. and "Goton" Ltd./, partner in different venues of UARD (University of Agribusiness and Rural Development), has been successfully expanded. From the previous 200 square meters occupied in 2011, the farm is presently increased to 10 da and it is the biggest farm of its kind on the territory of Bulgaria. The RCW which are in use, are imported from Italy due to their selection for fast reproduction. The increasing of the surface of the industrial installations has been carried out in accordance with the Measure 112 for stimulation of young farmers (up to age 40). Meanwhile, a number of application documents have been sent to other programs projects in similar venues, which comes along with the help provided by the Italian scientific and developmental base, consisting in counseling and financing. Evenmore, the plan for the further development of the farm includes packaging workshop and scientific laboratory.

The process of producing the compost has been optimized in order to obtain a homoform production in the volume of the entire substrate, equally rich on humus compost, and, as well, to maintain the best possible physiological conditions for the development of the worms. For the present moment there has been essentially used a manure of unchangeable bedding which contains semidegradable straw in proportion 6:1 in favor of the manure.

After no more than 3 months time, the beddings are divided in two. During that period the worms had engendered a new litter and their population had been doubled. In respect of the largely used by now practice which consists in covering the new bed, where the worms are to be moved, with a 5 cm thick bedding of manure, in the farm of the village of Berievo a new method has been put in place. It significantly improves the complete and homogenic assimilation of the manure by the worms in the bottom part of the substrate.

During the initially adopted practice of the standard method of covering the beds with 5 cm lightly putrid manure it had been seen that in the most of the cases that layer hadn't been well assimilated and the resulting compost was of inferior quality. The reason for this was that the worms tried to move upwards where there is a better aeration. We have experimented the version of placing the top layer of worms of the old bed directly in the bottom of the new one as a bedding. We have come to a conclusion that the substrate is assimilated in its entire volume which results into preparing a standard compost.

According to the described methods for winterizing of the worms, over the compost is placed a 20 to 40 cm thick layer of manure for food, on top of which is placed a layer of fresh manure of the same type. This procedure is repeated every 10 to 15 days. After placing the fresh manure follows a layer of 10 to 20 cm of straw or 10 cm of dry leaves [8]. However, as a result of the thick layer of the new manure and the fact that the straw is getting packed under the snow, the access of oxygen decreases as the carbon dioxide, ammonium and other nocive gases are accumulated, which may lead to their encrease and the reach of their toxic levels which may end in destroying the worms. We have adoperated an alternative method consisting in covering the already divided 20 cm thick ground with a layer of 30 cm lightly putrified manure. In this way a good aeration takes place, and in the same time, as a result of the ongoing process of fermentation, the lightly putrid manure keeps the temperature slightly higher.

There are data [9] which demonstrate that while longer, the composting periods augment the possibility of creating a considerable quantities of humic acids as well as fulvoacids. On one hand the latter are newly synthesized but on the other hand they are also a product of the

previously created humic acids, consequently transformed. According to these data, we let the substrate remain in the beds with RCW for approximately 2 years. Very likely this is the main reason why the compost obtained by us is high in organic matter, under the form of humic acids. Table 1 shows the results of the chemical analysis done by us for the purposes of its application in customers domain. The analysis is performed in the accredited Laboratory Complex for testing at the Agrarian University at Plovdiv. The numbers are given without the standart deviations on the basis of repeting the tests as we fully trust the Laboratory results on the ground of its proven reliability and precision in applying the quality norms.

Table 1. Quantity of analysed substances and mineral elements in the obtain compost by red Californian worms

Index	Unity of measure	Standards/validated methods	Result	Norm
pH	-	БДC EN 13037:12	7,23	-
Dry matter	%	БДC EN 13040 :07	88,55	-
Organic compounds	%	БДC EN 13039:12	52,53	-
Total nitrogen	mg/g	БДC EN 13654/1:04	42,8	-
Phosphorus	mg/kg	БДC EN 13650:03	1349	-
Potassium	mg/kg	БДC EN 13650:03	9797	-
Natrium	mg/kg	БДC EN 13650:03	1822	-
Calcium	mg/kg	БДC EN 13650:03	11554	-
Magnesium	mg/kg	БДC EN 13650:03	6350	-
Copper	mg/kg	БДC EN 13650:03	51,31	70
Zinc	mg/kg	БДC EN 13650:03	193,14	200
Manganese	mg/kg	БДC EN 13650:03	512,3	-
Iron	mg/kg	БДC EN 13650:03	20,69	45
Cadmium	mg/kg	БДC EN 13650:03	< 0,5	0,7
Chromium	mg/kg	БДC EN 13650:03	12,33	70

Composting the sludge from wastewater treatment plants of municipal waste.

Apart the treatment of the barn manure, we have investigated the possibility of finding new substrates for obtaining compost from RCW. The European legislation stimulates the no-waste biotechnologies aiming the useful treatment of the organic waste and in particular the use of the sediments created by the modern wastewater treatment plants of municipal waste: “The sediments of wastewater treatment plants is to be treated as useful no-waste, according TC COM 2007/59 of the Commission of European Matters, p.3.3 and the Appendix 1, applicable in regard of the nutritive components/feed mixtures for a specific biological species, in particular, the RCW (*Lumbricus rubellus*) and the possibility of being used on grounds registred according the Law of animal raising, specifically the Law for the veterinarian and medical activities” [10].

We have developed the existing methodologies in such a way that the only common part is the usage of RCW for composting the substrate. Our proposition is a new technology that may become an integrated part of the wastewater plants structure. It is understood that the wastewater plants should be furnished with modern biotechnological methods for treatment of the waste in such a way that combined with our technology may shorten the technological time of some of the previous standart stages of the wastewater station. The investigation process has been conducted within the wastewater plant for municipal waste of the town of

Sevlievo, while the substratus was collocated in the beds with RCW in the village of Berievo. One mandatory condition is that the substratus is free of heavy metals. We have demanded that a protocol of chemical analysis should be issued stating that there weren't any heavy metals above the acceptable levels. The protocol of the contents analysis testifies that in the obtained sludge there isn't any above normal quantity of heavy metals.

Our experiment was not only conducted by using RCW but also by adding zeolite to the substrate as well as the German bioproduct "Bioaktiv". Both products are of natural origine. "Bioaktiv" will be largely mentionned in the further chapters as it has been used in different investigations pointing to its diverse ways of application, in one case as its variety as modified creda (CaCO_3), and in the other as modified epsomit ($\text{MgSO}_4 \times 7 \text{H}_2\text{O}$). These two natural minerals are modified with a patented technology, so that when the minerals are immersed in water or in feed mixtures, they contribute to release of active oxygen [11]. The zeolite in use is activated by drying without thermal treatment. The zeolite [12,13,14] as well as the "Bioaktiv" [15] have the distinguished capacity for adsorbing noxious gases such ammonium, carbon dyoxide, hydrogen sulfide, methane, which are released throughout the fermentation process. The so mentionned gases (with the exception of carbonate dyoxide) not only suppress the growing and the development of the plants but are also greenhouse gases. By the input of the Bioaktiv the active oxygen helps the further decompose of the organic matter stimulating as well the development of some types of microorganisms, for instance such as species *Bacillus* [15]. The development of microorganisms, low order and undefined fungi, and actinomycetes, adds in great measure to the acceleration of the composting through the engendered by them hydrolytic exoenzymes, decomposing different types of organic polymers [16,17,18,19].

The experiment has been conducted in two variants. One consists of a mixture of sediments, activated zeolite and Bioaktiv, the other is the same mixture with the supplement of straw in proportion 6:1 in favor of the mixture with the sediments, which is analogical to the rest of the unchangeable bedding, collected in the barn during the previous composting. We have come to the conclusion that: in the first applied mixure the worms grow considerably, but their vital and multiplying activities decrease with time. In the second variant the worms develop and multiply in the same pace as those raised in the barn manure. The quality characteristics of the obtained compost are defined organoleptically, as well through the change in pH of the ground to light alkaline reaction. It was found that it needed less time for the compost to change into the characterial for the compost color, i.e. dark gray-brown, and for the clearing of the smell of the initially emited gases. It is a question of future research to establish the chemical ingredients of the obtained compost, from the sludge of the wastewater plants and from the biological tests.

CONCLUSION

The use of organic fertilizers is essential, which do not pollute the environment and also contribute for a more delicious and healthier food and sustainable yields in a distant period of time. By applying new techniques in the composting we have achieved to obtain a quality product in its entire volume, and to preserve as well the activity of the RCW for a maximum long period of time. By applying a specific proportion in the mixture of sediments from wastewater treatment plants and straw, and by adding technologically activated mineral rocks, we have achieved to obtain a compost having the specific organoleptic characteristics and to reduce in full the unpleasant smells.

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BOOK Review

Old issues, new relations in agriculture

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Summary

Foreword

Introduction

Chapter 1. Property, land and peasants in capitalist economy

- 1.1. Property and land in economic theory. Problems under discussion
- 1.2. Land ownership in terms of conceptual issues
- 1.3. Property and land on time. Past closer near to the present but not in the future
- 1.4. Relations dynamics between the land ownership and the social organization
- 1.5. Legibility of land ownership
 - 1.5.1. Cadastre
 - 1.5.2. Land registry
 - 1.5.3. The real estate advertising
- 1.6. The impact of economic changes on public ownership from agriculture
- 1.7. The meadows – a land resource with multiple functions unknown yet
- 1.8. Peasant ownership between land reforms in land market
 - 1.8.1. Sale-purchase process
 - 1.8.2. Co-operation and association
 - 1.8.3. Land lease
- 1.9. Ownership and capitalism in agriculture
- 1.10. Ownership and market
- 1.11. Ownership and the state
- 1.12. Ownership and the economic and financial crises
- 1.13. Big ownership versus small one

Bibliographic references

Annex 1

Chapter 2. Consolidation of land ownership by merging plots

- 2.1. Scientific nature of land ownership consolidation process by merging plots
- 2.2. Negative effects of fragmentation
- 2.3. Merging plots – conceptual approaches
- 2.4. Main issues which sustain the need for triggering merging plots process
- 2.5. Adoption and promotion motivations for the land merging plots
- 2.6. The principle of land merging plots
- 2.7. Scientific features of land merging plots
- 2.8. Distribution issues of land lots merged
- 2.9. Beneficiaries

- 2.10. Merging plots within the process of land ownership movement
- 2.11. The relation between merging and concentration
- 2.12. The relation between merging and territorial organization
- 2.13. Historical landmarks of merging
- 2.14. Action models of agrarian policy toward promoting merging of plots
- 2.15. Scenarios and options for land plots merging
- 2.16. Instead of conclusions
 - Bibliographic references
 - Annex 2
 - Annex 3
 - Annex 4
 - Annex 5

Chapter 3. Agricultural exploitations

- 3.1. Domain of knowledge
- 3.2. Behavior towards the market and destination of production
- 3.3. Prevailing agricultural systems
 - 3.3.1. Traditional system
 - 3.3.2. Industrial system
 - 3.3.3. Ecologic system
- 3.4. Procedure of agricultural structures formation
- 3.5. Concept and scope
- 3.6. Typology
- 3.7. The production scope (efficiency)
 - Bibliographic references
 - Annex 6

Chapter 4. Romanian agriculture support schemes during 1990-2013. Actions failed

- 4.1. Part I. Romania, 1990 to present
 - 4.1.1. Stage I. Indirect support, during 1990-1993
 - 4.1.2. Stage II. Intermediate support, during 1994-1997
 - 4.1.3. Stage III. Direct support, during 1997 to present
- 4.2. Part II. European Union, 1962-2003
 - 4.2.1. Markets support
 - Conclusions
 - Bibliographic references

Chapter 5. The peasant economy within a different dimension

- 5.1. Capitalist market and peasant households
- 5.2. Agricultural prices
- 5.3. The history bypass and how the proletarian from the year 50s became capitalists today
- 5.4. Labor division
- 5.5. Peasant in society
- 5.6. Financial priorities
- 5.7. Peasant and time
- 5.8. Ownership and the freedom of the peasant
- 5.9. Peasant Land Market
- 5.10. Land ownership and market
- 5.11. Few arguments for which the peasant can not be capitalist
- 5.12. Land ownership protection
- 5.13. The peasant world
- 5.14. Who are the capitalists from agriculture?
- 5.15. Extensive and intensive farms

- 5.16. Red March
- 5.17. Insurances societies in the peasant life
- 5.18. The effect of the reforms on agricultural research
- 5.19. The land prices and the lease land
- 5.20. The land property as a support of the relationship between investors and workforce
- 5.21. The features of land property, with special reference to the natural one
- 5.22. The peasant and communist universe

Bibliographic references

The book entitled "Old issues, new relations in agriculture" by Gabriel Popescu, professor with the Academy of Economic Studies from Bucharest, appear in a crucial moment – because Romania, as member state of EU, prepare its documents for the next programming period 2014-2020. In this context, the book can be a source of inspiration for policy-makers, researchers, teachers and practitioners in order to start the elimination process of several contradictions of development that has undergone in the last 200 years in rural areas and, in particular, in Romanian agriculture.

Processes and phenomena analyzed in this book are addressed with the highest sincerity and responsibility to three dimensions: (i) the peasant which are treated as a right "engine" for agriculture and rural development, (ii) the national history of agrarian doctrines - which are presented in connection with the international ones and (iii) the public management of agricultural issues, in Romania. Throughout the whole book these dimensions join together and highlight features "hidden" of the peasants, of land ownership, of new agrarian relations, etc. Every time the author tries to include authentic elements, also.

Processes and phenomena identified and analyzed by the author could design prerequisites for proper solutions, whatever the prevailing political doctrine at a time. In this context, the author, professor Gabriel Popescu, believes that training of young people is equally responsibility in both of the public administration and peasants family.

The book includes the concept of peasant, as revealed it in economic literature from the XX-the century, and the personal perception of the author from its childhood, especially for the younger generations. These pictures are opposite to the today peasant, which is often marginalized, confused, impoverished, though stunned by the hole surrounding reality. The purpose of this approach is to explain, on the one hand, to the reluctance of farmers to market, to association structures, etc. and, secondly, to identify the causes that generate some of the failures of current agricultural policy.

The fragility of current agricultural policy towards traditional peasant who, although charged the burden of years, is still prevalent in rural areas, could have a useful impact if we think that in the context of general growth model changing by the European Commission – sustainable growth, smart and valuation based traditional element – it (the new peasant who has just begun to emerge or the traditional ones) should be involved in supporting the new elements. By his approach the author tries to fill a "knowledge gap" regarding the Romanian rural areas and agricultural problems appeared in the period 1946-1990; also, the author don't underestimate the effects of some necessary modernization and adaptation of existing social base. For the professor Gabriel Popescu is clear that the social base of regeneration Romanian rural area is strongly conditioned by the quality of public policies, by the financial resources allocation and by general and local capacity to assimilate all of them correctly. Also, the author stress that this capacity must be activated and oriented in an European spirit and in national interest.

A such presentation help us to understand the importance of "added value of the past" and represents a remarkable opportunities for understanding European values and how to realize a better orientation of the Romanian rural society to performance and market.