PERSPECTIVES REGARDING THE EVOLUTION OF THE ROMANIAN ECONOMY AND THE AGRICULTURAL EQUIPMENT MANUFACTURING INDUSTRY

Raluca Alexandra CEOCEA [a], Costel CEOCEA [b], Ștefan ȚÎȚU [c, d], Alina Bianca POP [e], Aurel Mihail ȚÎȚU [f*]

[a] *Gheorghe Asachi Technical University of Iaşi, Romania*
[b] *Vasile Alecsandri University of Bacău, Romania*
[c] *The Oncology Institute "Prof dr Ion Chiricuță" Cluj Napoca, Romania*
[d] *"Iuliu Hatieganu" University of Medicine and Pharmacy Cluj Napoca, Romania*
[e] *Technical University of Cluj-Napoca, Northern University Centre of Baia Mare, Romania*
[f] *Lucian Blaga University of Sibiu, Romania*

ABSTRACT
This article is based on a case study of a Romanian company named SC Mecanica Ceahlău SA. The main aim of the paper is to present the development perspectives of the Romanian economy and the agricultural machinery industry. Determining the external and internal context of the organization's operations required determining its relationship to the organization's environment, including the company's strengths, weaknesses, opportunities, and threats in SWOT analysis and, positioning the organization in the competitive environment specific to the field in which it operates. Particular attention was paid to examining the development context of the Romanian economy and the strategic directions developed in the production and sale of agricultural machinery and equipment. In an agriculture undergoing technical and social restructuring as Romanian agriculture is currently presented, the increase of the endowment with technical equipment depends on the capacity of the existing producer organizations on the market to cover the demand for them, both in terms of quantity and from a qualitative point of view.

KEYWORDS: *agriculture, agricultural equipment, economy, gross domestic product, industry.*

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1. INTRODUCTION

The present study was conducted in an organization in Romania - SC Mecanica Ceahlău SA in the context of the analysis of the evolution of economic and social indicators at its regional level. This organization operates in several regions of the country.

The northeastern region of the surveyed organization currently accounts for about 12% of the total gross domestic product of the economy.

In structure, the region's agriculture has one of the largest contributions to the regional gross domestic product (about 15%), above the national average (about 13%).

In terms of industry, the main products are coal, petroleum, natural gas, gasoline, diesel, synthetic yarns and fibers, fertilizers, cement, paper and board, wood, wooden furniture, fabrics, sugar. The share of this sector in regional gross domestic product is below the national average. The largest share in the industry is played by the manufacturing industry, followed by the electricity, heat, gas and water sectors and the extractive industries.

* Corresponding author. E-mail address: *mihail.titu@ulbsibiu.ro*.

Construction is participating with a share close to the national level (5.5% compared to the national average of about 6%).

A few studies have been identified in the literature that analyze issues related to the evolution of economic and social indicators, including the authors (Valev, 2020; Schwarcz et al., 2021; Land & Michalos, 2018). Issues related to sustainable agriculture have been addressed by (Zulfiqar ET AL., 2019; Harwood, 2020 and Junaydullaevich, 2020).

Another topic of interest addressed by Sinha (2020), Aydoğan and Vardar (2020) and Qamruzzaman and Jianguo (2020), involves gross domestic product. Topics of the gross domestic product and labor force disparity index were discussed by (Coscieme et al., 2020; Shabani & Shahnazi, 2019; Yu et al., 2020 and Kalleberg, 2020). Pawlak (2021) and Sharma (2021) addressed the issue of agricultural potential.

Safdar and Gevelt (2020) addressed the issue of the manufacture of tractors and agricultural machinery and Kirui (2019) discussed the level of mechanization in agriculture. The topic of irrigation systems is of interest to Garcia (2020).

In terms of the services sector in this region, it is worth mentioning the high (around 13%) share of "education, health and social assistance, public administration and defense" services in GDP, which ranks first in the region. the regions (National Forecast Commission, 2006).

The branches "trade, hotels and restaurants" (10%), "transport, storage and communication" (about 9%) and "real estate, business services" also contribute significantly to the gross domestic product. Gross regional income (more) than 11%) (National Forecast Commission, 2006).

2. PERSPECTIVES REGARDING THE EVOLUTION OF THE ROMANIAN ECONOMY

The organization contributes 15.1% to the country's total employment, while it has the highest employment rate in agriculture at 42.7%, followed by 33.7% in services (18.8% in business services and 14.7% in services), 9% for social services), industry and construction by 23.6%. The north-eastern region is characterized by both its dependence on agriculture and as well as the proximity of the border with Moldova and Ukraine.

At the regional level for the next period, estimates of the development of gross domestic product in the less developed regions (north-east, south, etc.) indicate developments above the national average and ratios at or below the national level. more developed regions.

Annual regional gross domestic product developments are supported by the increase in activity volume in all areas. However, developments in the construction industry are remarkable, with the average annual rate in all regions exceeding 10%. The service sector also supports economic growth in each region, with an annual average rate of over 6%, but due to existing capacities, industry remains the sector contributing to the convergence trend with different growth rates.

This development of economic growth at the regional level will not lead to a significant change in the share of the regions in the gross national product in the medium term, the differences will be 0.1-0.2 percentage points, some regions will maintain the current share (South, South-West Oltenia, North-West). Thus, in the horizon of 2010, Bucharest will continue to be the largest contributor (21%) with a weight of between 12 and 12.5% in the southern, north-western, and central regions, and the north-eastern and southern regions. The East accounts for 11.9 percent and 11.4 percent of GDP, respectively.

Although no significant structural change is expected in the next period, we highlight two trends:

- Due to the sustained growth rate of gross value added in construction, their share of regional gross domestic product is on the rise, ranging from 7.8% in the southern region to 10.7% in the south-western region.
- Services will also increase their share of each region's gross domestic product, exceeding the 40% of GDP threshold in all regions by 2010 and reaching about half of the region's GDP, in the

North-East (49%) and the North-West (49.5%)). the tertiary sector's GDP in the Ilfov region of Bucharest will exceed 65% of GDP in 2010.

The improvement in the deviation from the national level is also reflected in the index of the difference between the regions of the gross domestic product per capita and the region with the lowest value - the North-East region. According to the National Forecasting Committee, the gap is narrowing slightly due to higher regional economic growth in less developed regions.

The indicator of inequality of GDP (gross domestic product) per capita compared to the highest-level region (West) highlights the fact that in both north-eastern regions the inequality index (region / maximum regions) is worsening. and the Northeast region. in other regions.

Labor force estimates at the regional level have considered the inequalities that remain but are declining due to the differentiated economic development of the regions.

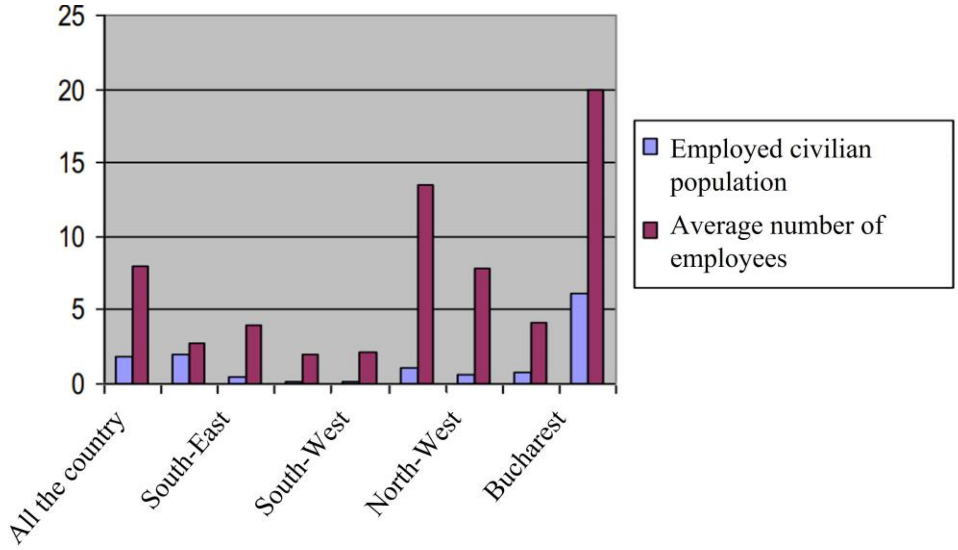

Figure 1. Labour force
Source: original contribution

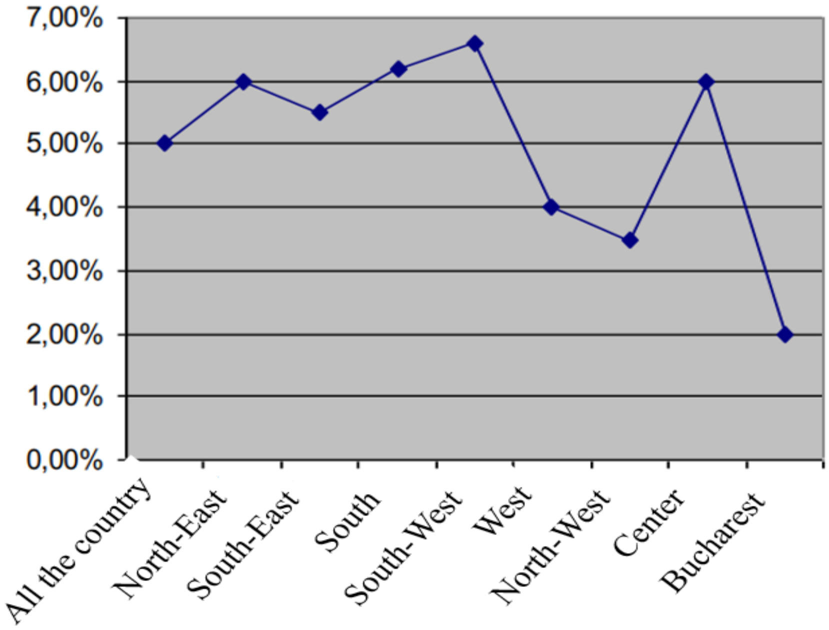

Figure 2. Unemployment rate by region
Source: original contribution

Among the civilian population employed at the end of the year, regional disparities decreased slightly, from 1.6 to 1.5, with maximum values in the North-East region (around 15% of total employment) and minimum values. with the western region (about 10% of total national employment).
Regarding the North-Eastern region, there are significant differences between the counties in the development of the main socio-economic indicators. Therefore, the highest rate is estimated in Vaslui County and the highest increase in net income in Neamt County.
Due to the future development of the regions, the population employed in all regions of the country is expected to increase in the next period through projects implemented locally at the regional level in disadvantaged or less developed areas.
Above-average (1.5%) growth was forecast in the North-East (1.9%) and Bucharest (6.5%) regions, and below-average growth in the other regions.
Unemployment rates and unemployment rates have also fallen in all 8 regions. Regarding net average earnings, the differences between regions (except for the Bucharest region, where wages are much higher than the national average) started to decrease by 1.17, while in the most developed region (south-western region) the difference in average net earnings is above the minimum. region (northeast region).
In the following years, the increase in average net earnings in all 8 regions varied between 10.5% and 13.2%.

3. EVOLUTION OF THE SECTOR

The organization in which the case study was conducted belongs to a rather under-represented sector of activity in the stock market.
The company's activities, although not directly affected, are closely related to the development opportunities of agriculture in Hungary, which has lagged in recent years due to natural disasters and has even faced several problems.
Romania has significant agricultural potential, covering 14.8 million hectares, of which about 3.1 million hectares can be irrigated.
The general agricultural census conducted by the National Institute of Statistics in Romania provides accurate information on the cultivated area (Table 1).

Table 1. Agricultural holdings and cultivated area, according to the categories of use of the agricultural area used

Categories of use of the agricultural area used	Cultivated area (hectares)
Cereal grains:	
a) common wheat	2461499.92
b) durum wheat	7778.16
c) rye	26521.41
d) barley	336080.78
e) barley	217955.33
f) oats	183174.15
g) corn	2710420.47
h) sorg	11091.80
I) rice	475.22
j) other grain cereals	8885.37
Leguminous plants for grains:	
a) peas	15172.54

Categories of use of the agricultural area used	Cultivated area (hectares)
b) beans	35449.79
c) other grain legumes	2210.31
Industrial plants	
a) in for fiber	423.89
b) hemp for fiber	1092.62
c) hops	337.88
d) tobacco	4447.29
e) oilseeds	1059578.31
f) medicinal and aromatic plants	12263.34
g) other industrial plants	6199.09
Potatoes	185726.83
Sugar beet	28878.62
Roots for fodder	7303.15
Fresh vegetables, melons, and strawberries	81727.92
a) in the field	
- fresh vegetables	39846.13
- watermelons and melons	23181.06
- strawberries	1060.85
b) in gardens, for sale	
- fresh vegetables	12576.54
- watermelons and melons	2346.15
- strawberries	245.69
c) in greenhouses and solariums	
- fresh vegetables	2252.04
- watermelons and melons	172.18
- strawberries	47.28
Flowers and ornamental plants	458.34
Forage plants	574899.02
Plants to produce seeds and seedlings, for marketing	12932.26
Other arable crops	7664.90
Arable land at rest	791562.42
Total land planning	8773748.70
Family gardens	168864.74
Pastures and meadows	4644004.74
Permanent cultures	344091.92

Source: adapted from National Institute of Statistics (2020)

The manufacture of tractors and agricultural machines in Romania is a traditional industry, agriculture being an important branch of the national economy.
The degree of endowment with tractors and agricultural machinery is lower than that existing in the countries of the European Union. The concept provided in the Government Program on the development of agriculture in hilly, mountainous, and plain areas, the needs of irrigation, superior processing of products, require the development and completion of the base of tractors and agricultural machinery.

In Romania, there are about 35 companies producing tractors, agricultural machinery and spare parts, including both traditional specialized companies, large companies that have renewed some sectors for the production of agricultural machinery and tools and former repair shops.
Romania's endowment with tractors and agricultural machinery is statistically one of the weakest in Europe, with a load of approx. 58.6 ha / tractor, while the European average is approx. 13 ha / tractor, and Germany has approx. 9 ha / tractor, Belgium approx. 7 ha / tractor and Austria only approx. 4 ha / tractor.
Since a large part of them have a high degree of wear, the National Development Plan explicitly mentions the need to improve the endowment of Romanian agriculture and modernize the material base. Special attention will be paid to the irrigation facilities that Romanian agriculture is in great need given the climatic evolutions of recent years. The fact that the analyzed organization introduced these facilities into production may be an important source of revenue in the coming years.
There are no official forecasts regarding the number of agricultural equipment that will be assimilated by Romanian agriculture in the next period, but the premises are favorable especially for companies that are able to offer a wide range of products and services and that focus on innovation, as is the case with the analyzed organization.

Table 2. Agricultural machinery and equipment used in Romanian agriculture

Agricultural machinery and equipment	Total
Tractors	
a) up to 54 CP	520935
b) between 55 HP - 80 HP	2023921
c) between 81 CP - 134 CP	40777
d) over 135 CP	27443
Pedestrian	48069
Plows, cultivators, combine harvesters, harrows, rotary diggers	2408628
Mechanical traction seed drills	2039476
Fertilizer spreaders	180845
Herbicide and treatment machines	236905
Combine	1037325
Mower	149903
Irrigation equipment:	
a) mobile	28124
b) fixed	9727
Electronic equipment for mechanization and automation	
a) for accounting records	1749
b) for the genetic evidence of the animals	164
c) for microclimate in greenhouses and animal shelters	603
Other agricultural machinery and equipment	104821
Animal traction equipment	
a) plows	926654
b) grape	691306
c) cultivators	400608
d) seeders	374661
e) which and carts	1871242
f) other equipment with animal traction	27451

Source: adapted from National Institute of Statistics (2020)

4. SWOT ANALYSIS OF THE AGRICULTURAL EQUIPMENT AND MACHINERY PRODUCTION SECTOR

By the SWOT analysis and the main economic indicators, it was concluded that this sector has development prospects, and for this purpose the detachment of ancillary activities and the reorganization of the production flow on profit centers are considered.
Synthesis of the SWOT analysis of the agricultural equipment and machinery production sector:
Strong points:

- There are specialized companies with large production capacities, which can cover approx. 90% of domestic market demand;
- Highly qualified workforce;
- Long experience in design and manufacture, tractors and agricultural machinery;
- Specialization of some companies on certain types of equipment, phenomenon that appeared with their privatization;
- The sector has undergone a strong restructuring process, technical, organizational, and financial;
- The majority share of the private sector;
- The premises are created for the development of the horizontal industry for components (gearboxes, pumps, radiators, bearings, tires, etc.) and the development of the service sector by privatizing the mechanization sectors specialized in repairs and reconditioning;
- In most companies, the quality management system has been implemented and certified, a process that continues.

Weaknesses:

- Significant technological gap compared to external competitors;
- Low labor productivity compared to EU companies;
- The low level of utilization of production capacities, as well as the low degree of modernization of technologies and products, correlated with the insufficiency of investments in the sector and with the current reduced possibilities of agricultural producers to purchase new tractors and agricultural machines.

Sector development opportunities:

- Accelerating the reform of the agricultural sector, which will increase the agricultural areas by associating the owners and will require increasing the degree of endowment with tractors and other agricultural machines;
- Develop services in agriculture to ensure fast and efficient service for machines, equipment, and spare parts, by setting up service companies;
- The Government is considering support actions, pursuing a policy to support the development of this sector, respectively through the Program on supporting agricultural producers and service providers in agriculture for the purchase of tractors, combines, agricultural machinery and equipment, as well as irrigation facilities;
- The emergence of payment or leasing purchase facilities, lending.

Constraints that may threaten the development of the sector:

- Delaying the reform of the industrial sector;
- Competitiveness below the European average.

The strategic objectives proposed by the analyzed organization are meant to ensure the development of the enterprise in accordance with the objectives of sustainable development and increase of competitiveness proposed at national level.
If we consider the usable area of Romania that could be used in agriculture and the result of agriculture all related to the production capacities of other European countries and the value of their finished result, the conclusion would be that Romania still has great steps to take to reach the latter these countries.

One of the problems facing agriculture is the very low level of mechanization. From this point of view, the analyzed organization could benefit in the future, but everything will depend on its ability to cope with the new requirements in the field of technology. It should be noted that about 89% of production capacity is much older than 10 years, a period in which technical progress in agriculture has experienced strong dynamics, one of the reasons for good results in agriculture in Western European countries is the use of new technologies.
The analyzed organization uses both conventional and unconventional technologies, which fall within the norms of Environmental and Labor Protection, being authorized for this purpose.
Conventional technologies are found in the primary sectors (melting, holding, casting, forging, plastic injection), mechanical processing sectors (guillotines, presses, lathes, milling machines, grinding machines, etc.), welding, assembly and painting sectors, heat treatment sectors.
The unconventional technologies used are laser cutting, plasma cutting, robot welding under inert gas protection, press welding, numerically controlled mechanical processing equipment, semi-automatic heat treatment lines, etc.
In the vision of the company's management, there is also the objective of carrying out a prototyping workshop, which will contribute to the rapid materialization of all the designers' ideas, to the execution and testing of the prototypes without generating interruptions in the production process.
The company has a strong core of designers structured on distinct design workshops such as: product design; design technologies and SDVs. The endowments, the experience of the specialists, the good quality of the realized products have allowed that in the last years his company can obtain production licenses from some prestigious companies from Germany and Italy.
The organization of the company is made on elastic functional compartments, able to adapt on the fly to the requirements of the knowledge-based economy, so that it can respond promptly to the demands of the competition in the field of agricultural machinery construction.

5. CONCLUSIONS

The organization analyzed named SC Mecanica Ceahlău SA is one of the leaders in the production and marketing of straw and hoe seed drills, with a 20% share of the domestic market.
The examined organization enjoys a good image due to its long operating time and the large number of working, reliable cars shipped domestically and for export.
The reputation, long presence, and market dynamics of the organization under study were mainly due to the creative ability and efficient management of the staff.
However, the problems that Romanian agriculture has faced in recent years have also affected the development of related industries, as has the case of agricultural equipment and machinery.
Particular attention was paid to examining the context of the development of the Romanian economy and the strategic directions developed in the production and sale of agricultural machinery and equipment.
Although the forecasts for the next five years mentioned a favorable evolution of the Romanian economy with very high GDP growth rates, the current situation proves the fragile stability of the Romanian economy in the context of unfavorable conditions both internally and externally.
A positive factor is the entry of structural funds in Romania, with favorable effects on the evolution of the economy, including the exchange rate, development, and modernization of agriculture, even though the absorption rate will probably be low, judging by the experience of countries in the region that joined the European Union in 2004.
On the other hand, experts estimate that the share of foreign investment will remain high, which, according to some forecasts for the economy, will reduce the external imbalances of the Romanian economy. Romania's economic outlook is strongly influenced by its external climate, given the importance of European Union markets for Romanian exports, its high external financial needs, and the contribution of knowledge that a foreign investor can attract to new and existing companies.

The external factors affecting Romania's economic outlook in the coming years are:

- Access to structural funds,
- Increasing the export potential,
- Connecting to European Union networks,
- Shocks that may occur in terms of exchange,
- Access to international capital markets.

Agriculture remains one of the most important sectors of the Romanian economy.

In conclusion, special attention will be paid to companies that manufacture and market technical solutions, agricultural machinery and equipment designed to increase the efficiency of this sector of activity. In the context of technical progress and accelerated technological development, the requirements for adaptability and innovation for individual organizations are increasing, and the demand for high-performance equipment within agricultural processes is growing in parallel. However, a satisfactory profit margin cannot be achieved without investment. After many years of weak agriculture, which has severely affected the sector, the effects have been felt in the industry as well, with many of the companies involved in the design and manufacture of agricultural machinery and equipment facing bankruptcy. Trade facilitation efforts, which have led to a trend towards liberalization, have taken place at both regional and global levels and have led to a regular and gradual reduction in barriers to international trade. Most industrialized countries support the ongoing process of developing and implementing effective and efficient agricultural measures aimed at increasing both their own and farmers' incomes. Rebuilding and strengthening the competitiveness of Western and EU-integrated countries, the rise of Japan and the emergence of new industrialized countries among developing countries will further increase industrial rivalry between states. The economic growth registered by Romania allows for consistent investments in the modernization of Romanian agriculture, a process that is only possible with high performance and modern equipment.

The demand for these resources is constantly increasing, and many of the projects launched in agriculture to obtain structural funds must be considered by agricultural machinery and equipment companies when developing agricultural strategies.

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