

STUDIES ON THE PRODUCTION PROCESSES MANAGEMENT IN A VEGETABLE FARM

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Abstract

The paper reveals the results of a study undertaken in a agricultural unit based in Bălcăuți commune, Suceava county. The unit currently exploits an area of 986.22 ha of arable land, which places it in the category of large, industrialized and efficient agricultural units. The company that manages the agricultural unit practices an efficient management, having increased the area exploited from 18.17 ha in 2015 to a size of 986.22 ha in 2019. The unit is in the national top of potato producers. These results were possible both due to the efficient management and due to the favorable pedo-climatic conditions of the area for the potato crop. The dynamics of the arable areas allocated for the crops are determined according to the scientific rotation of the crops and according to the demands and the prices on the specific market. Since the start of the activity, the management of the company has made several decisions aimed at optimizing the financial indicators, the most important being the construction and commissioning of a hall for storing the primary agricultural products and their storage and subsequent sale at higher prices. Due to these decisions, the unit benefited from an increase in profit from 140,560 lei in 2016 to the value of 967,565 lei, which means a percentage increase of over 588%. A series of additional decisions are proposed in this paper that could further increase productivity, efficiency and optimize the company indicators.

Key words: management, financial indicators, work efficiency

Romania is in the top of the European Union countries in terms of the number of farms, about one million farmers developing this activity, unfortunately most of them working in the inefficient system of subsistence agriculture (National Rural Development Programme 2014-2020). At the same time, Romania has over 7.6% of the agricultural area exploited in the whole European Union. The agricultural production sector is particularly important and extensive. A high share of the population operates in agriculture and in fields related to agriculture. In 2017, the labor force employed in agriculture, forestry and fisheries was over 19%. (National Institute of Statistics, 2018).

For these reasons, in order to increase efficiency, it is necessary to increase the number of large, efficient, high-performance, possibly integrated farms, which to include as large and compact surfaces as possible (Brezuleanu S. *et al*, 2017). The present paper aims to analyze the evolution of an agricultural unit from its establishment, in 2015, until the present time. The agricultural unit is located in the perimeter of Bălcăuți commune, Suceava county and has activities in the primary production of vegetable

sector. The analysis focuses on the financial indicators and their evolution during the studied period, correlated with some technical indicators. It follows the evolution of production processes and management, which proves to be an efficient one, given the increase of the area exploited annually from the surface of 18.17 ha, in 2015, the year of establishment, to the surface of 986.22 ha, in 2019.

Due to the size of the exploited area, of 986.22 ha, according to the 2019 area declaration submitted at the Agency for Payments and Intervention in Agriculture, the unit is in the category of large, economically efficient farms.

The company has a wide range of technical equipment and other assets for the exploitation of arable land and a number of nine crops (wheat, corn, sunflower, rape, soybeans, peas, potatoes for consumption, potatoes for seed, barley).

The agricultural unit is among the most important potato producers in the whole country, being nominated on the 16th place nationwide in 2018, with an area of 70 ha cultivated with potato for seed and potato for consumption.

From the undertaken studies, it was found that the unit sold the obtained production, during 2017 – 2019 at prices between 0.44 lei / kg (in the

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case of maize) and 1.3 lei / kg (in the case of soybean).

Also, the turnover per employee was 266,274 lei in 2017, which evolved to the figure of 444,577 lei in 2018, due to the increase of the exploited area, the efficiency, the modernization of the technical means, the improvement of the management etc.

MATERIAL AND METHOD

The necessary studies for the elaboration of the present paper were carried out during the years 2018 – 2019, using primary data as the main source of information. In this regard, a series of interviews took place at the headquarters of the agricultural unit under study, in the Bălcăuți commune, Suceava County. The specific documents of the company on the evolution of the crop areas during 2015-2019, the financial accounting documents regarding the evolution of the economic indicators, the evolution of the technical capacity in terms of the investments made and aspects were analyzed thoroughly.

On the other hand, data from secondary sources, respectively Romanian and foreign specialized literature have been used, available and applicable at a national level.

Both the data obtained from the analysis of agricultural unit documents and those from the specific literature have been processed and interpreted in order to highlight the development of the studied unit.

RESULTS AND DISCUSSIONS

Since its establishment, in 2015, the agricultural unit subject of this paper has

developed activities regarding the exploitation of arable land on the territory of Bălcăuți commune, Suceava county and neighboring communes. The intention of the unit management was to purchase as much available land as possible, offered for sale by the local owners, in accordance with the general tendency of the Romanian farmers. However, to date, the company has developed mainly on areas taken over by lease, the share of the purchased areas being insignificant. This is due to the fact that most landowners are conservative in terms of land sale, which is a common problem throughout the country. On the other hand, the local owners willing to dispose of the land do not, in the vast majority of cases, own the updated property documents, these documents being an indispensable condition for trading any area.

Within the agricultural unit, the crops rotation is practiced scientifically, technically and economically, according to the market situation. Crop rotation is an indispensable prerequisite within an agricultural unit for its good results. Technically, once the crop has been harvested, it is necessary to determine, based on specific arguments, the crop that will take the place of the previous crop on the respective area, so that the soil can be prepared in optimum conditions and the next crop will rise to a maximum level of efficiency as a ratio between expenditure and quality / quantity obtained per ha.

Based on the crop rotation decided by the unit, the area evolution of the main crops, from the establishment up to 2019 can be seen in *figure 1*.

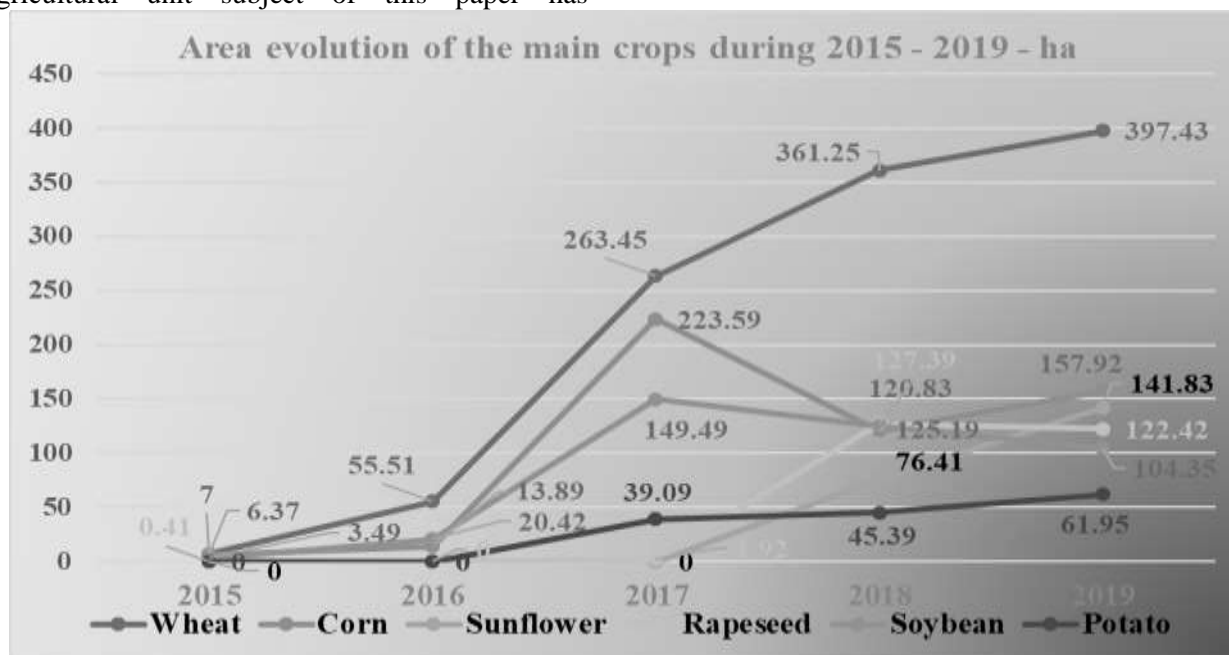


Figure 1 Area evolution of the main crops between 2015 – 2019 – ha (source: Agency for Payments and Intervention in Agriculture – A.P.I.A.)

As can be seen, the wheat crop benefited from the highest growth during the analyzed period, with a rise of 374% from 2016 to 2017, from 55.51 ha to 264.45 ha, and with 37.12% from the year 2017 in the year 2018, from 263.45 ha to 361.25 ha.

Regarding corn crop, it has increased by 1509% from 2016 in 2017, from 13.89 ha to 223.59 ha, and subsequently had a decrease of 45.96% from 2017 to 2018, from the area of 223.59 ha to the area of 120.83 ha.

As for the area allocated to the sunflower crop, due to its importance on the market, it benefits from an annual increase of the allocated areas, within the limits of technology-related constraints in crop rotation. This is because, as is known, the sunflower crop is more demanding in terms of soil nutrients.

It can be observed that in some years some crops had no area allocated within the crop's rotation structure. For example, in the same case of the sunflower crop, this happened because the crop has high demands on the soil and leaves the soil

relatively poor in nutrients. More specifically, the land leased by the unit had been previously cultivated with the sunflower crop, in certain situations, in which case the company used those specific land areas for other crops, in order to regenerate the land.

On the other hand, in the area allocation for certain crops, the context, the quantity of product existing and the price conveyed for the respective products on the market were also taken into account. A year with an extra production of a particular crop can cause its lack in the next year on the market.

Given the data of the economic unit that have been presented above, it can be stated that it is part of the category of large units, with efficient and industrialized productions, especially in the context in which the unit registered in A.P.I.A. with a area size of 986.22 ha.

The unit has registered profit every year, according to the balances drawn up and issued by the unit. The most relevant indicators in the balance sheets were centralized in the table 1

Table 1

Work efficiency within the studied unit

Year	2016	2017	2018
Exploited area size– ha	89,82	787,09	943,26
Employees number	1	3	8
Turnover – lei	266.274	1.883.198	3.556.616
Profit – lei	140.560	151.066	967.565
Turnover per employee – lei	266.274	627.732	444.577
Turnover per exploited ha – lei	2.964	2.392	3.770
Profit per employee – lei	140.560	50.355	120.945
Profit per exploited ha – lei	1.565	192	1.026

There is a general increase of the analyzed indicators values. Thus, regarding the indicator "turnover per employee", we can see an increase from the figure of 266,274 lei turnover per employee in 2016, to the figure of 627,732 lei in 2017 and 444,577 lei in 2018.

It can also be observed that the year 2017 has a higher value than the year 2018, a value that is not correlated with the size of the farm in terms of the number of ha exploited. The reason why the increase in turnover per employee is decreased in 2018 compared to 2017, while the size of the farm expressed in ha is higher, is given by several factors. One of the factors is the climatic conditions. These were more favorable in the agricultural year 2016 - 2017 so that the registered

productions were better this year. On the other hand, part of the production obtained in 2018 has been capitalized by a gap after harvesting, the related collection for this production being made after the end of the financial year 2018. For this reason, part of the production revenue obtained in 2018 is will reflect in the financial year 2019, within the balance sheet that will be finalized at the beginning of 2020.

As for the profit indicator, it does not show a sustained annual growth, as can be seen. However, this evolution of the profit value does not correlate with the performance of the economic unit studied. The figures of the registered profit are some correlated with the investments made during the course.

However, one of the problems which the company is facing is the lack of a sufficient number of tractors and, especially, a suitable storage space for cereals.

For this reason, the authors propose the acquisition, through a European funds E.A.F.R.D. financing project the purchase of an additional tractor, or even two tractors, to complement those already owned by the company.

Also, in order to increase the profit, an investment is proposed in a storage and conditioning space – cereals conditioning, which will allow the unit to keep the production with a certain lag after harvesting, after the prices rise on the market, and possibly with a plus added value through seed conditioning and selection.

CONCLUSIONS

➤ The company taken into study is a primary producer in the vegetable sector.

➤ As of 2019, it exploits an area of 986.22 ha of arable land, which places it among the large, industrialized and efficient agricultural units;

➤ The company executive that manages and owns the farm practices an efficient management, proven among others by increasing the exploited area from 18.17 ha in 2015 to the area of 986.22 ha in 2019 (Fig. 1, Tab. 1);

➤ The company is among the top potato producers at national level, according to the National Potato Federation in Romania;

➤ The dynamics of the areas allocated within the unit is made according to the scientific rotation of the crops and the requirements, respectively the prices on the market;

➤ The average yields were, in the agricultural years subject of the present analysis, between 2,400 kg / ha (green peas crop, in 2017) and 5,300, kg / ha in corn crop, in 2017. As regards potato crop, the production amounted to 45,000 kg / ha in 2017;

➤ The analysis of the prices on the market, studied for the main cereal crops and oil plants between 2014 – 2018 reveals a price range between 0.46 lei / kg in 2018 and 0.62 lei / kg in 2016 for corn and at the same time between 1.64 lei / kg in 2015 and 1.34 lei in 2014 for rapeseed;

➤ The revenues from the sale of the production were between 335,085.22 lei (the year

2016) and 4,559,322.59 lei, in the year 2018. These revenues were mainly due to the exploited areas, the unit increasing the total area allocated annually (Tab. 1);

➤ Having analyzed the main financial sheets of the company and other accounting and assets documents, the authors propose that an investment should be made by the company. Thus, the company owning the farm could and should attract an added value by the activity of the company by building a structure for storing the gross production from the moment of harvest until the market price rises. Moreover, the company could attract added value by conditioning and selecting the obtained seeds of the crops and selling them at a higher price.

➤ Also, the company should invest in some technical resources composed of tractors and other machinery as its turnover and profit allow these measures.

➤ These proposed investments could be made on the whole investment of the company or by a financing project in the next financial exercise, between 2021 – 2017.

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