CASE STUDY UPON A FAMILY FARMING SYSTEM LOCATED IN TORMAC LOCALITY, TIMIȘ COUNTY, ROMÂNIA

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Abstract: *The entire social sphere in the world is constantly changing and an aiding factor is agriculture, directly influencing the economic field but also other fields with a strong impact on the social environment. All around the world, agriculture is influenced by natural and technical factors, factors that goes beyond human control. Through this paper we intend to present a case study on a family farming system located in Tormac. The area of this locality offers an conducive environment to a diverse range of crops due to the plain area in which it is located, with a continental temperate climate and high fertility soils (Oancea, 2012, Astrid, 2017). The presented data was collected from two plots from different areas for a period of 4 to 5 years. For the first plot the data colecting period was between 2015 and 2020 and for a period of 4 years for the second plot, between the years 2016-2020. The first plot extends on an area of approximately 272 ha and the second plot covers an area of 210 ha (Mihut, 2018). In the first exploatation, sunflower, soybean, corn, wheat, alfalfa and rapeseed crops were established and in the second exploatation the planted crops were maze, oats, rape, alfalfa, wheat, sunflower, corn, soy and vegetables, placed on different surfaces each year to respect the process of crop rotation (Florescu, 2014, Dragoescu, 2019).*

Keywords: *diverse crops, family farming, systems, multiannual data*

INTRODUCTION

Agriculture can be defined as a basic branch of material production (predominantly food) based on the cultivation of a limited number of plants and the growth of domestic animals, in order to obtain food and raw materials needed in human nutrition and certain sectors of the economy. It is also an important factor in economic growth in many countries of the world, with an important role in balancing domestic economic development and the settlement of social conflicts generated by the food problem, thus having an impact on the social environment.

It is estimated that over 40% of the globe population is agriculturally involved, making agriculture the most globally spread occupation (MARIN, 2013; DUMA, 2017).

Romania has a very high agricultural potential, with great suitability for cereal plants due to land with high fertility and to temperate continental climate that allow cultures to be developed within optimal parameters (OKROS, 2016; MARIN, 2017).

The area of land available is 14,800,000 ha, of which 9,400,000 ha are represented by arable land, pastures and natural meadows that occupy an area of 4,800,000 ha. Areas covered by forests stretch over 6,600,000 ha, waters and puddles cover 800,000 ha and 1,500,000 ha are represented by other surfaces.

The Commune of Tormac is located in south-eastern Timiș County. It is bordered north by the communes of Nițchidorf and Sacoșul Turcesc, south by the Commune of Gătaia, west by the communes of Voiteg and Liebling, and east by Caraș-Severin County (DICU, 2016; NITA, 2018).

Agriculture is the main economic activity in this commune, through land cultivation, the main cultures being represented by cereal crops, but also oil plants and fodder plants are present on narrower surfaces.

From a climate point of view, the area studied in this paper has a temperate

continental climate with an average annual temperature of 10.9^0C. The area of the commune is under the influence of southwest hot air masses generated by the Mediterranean cyclones, so the winters are gentler, the thermal media for winter being around 1.5^0C.

The spring is early and presents large thermal variations with frost hazard recorded especially in April and May.

From July to the beginning of September, tropical air masses predominate, which determine an average temperature during the summer of 20-22^0C.

Autumns are longer with more constant temperatures and air masses that cause an increase in precipitation. The average annual amount of atmospheric precipitation is between 700-750 mm (DRAGOSLAV, 2016; MIHUT, 2014)

By cumulating features such as annual average temperature, annual average amount of precipitation and soil fertility in the commune, this area is suitable for growth and development of optimal agricultural crops (BERBECEAN, 2014).

In this paper, agricultural productions resulting from a family agricultural system for a period of 5 years (2015-2020) for the first holding and for 4 years for the second one (2016-2020). The areas of these holdings differ from year to year: for the first farm, for 4 years, it was 272 ha and for the second farm, for 5 years, it was 210 ha.

A wide variety of plants were grown in the two holdings. The first holding cultivated sunflower, soybean, maize, wheat, oats, alfalfa and rape, and the second one cultivated sweet maize, oats, wheat, maize, soy, sunflower, alfalfa and vegetables (BORCEAN, 2009; NITA, 2007).

MATERIAL AND METHODS

The share of agriculture in the Romanian economy decreased steadily after 1990 (the rate of decline was slower in the first years of transition and faster after 1997). However, the contribution of agriculture to GDP growth remains substantial (12.8% in 2001) compared to the EU average (1.7%).

The regional distribution of agricultural lands according to the way of use is differentiated in relation to the relief conditions, with the pedo-climatic characteristics and the suitability for crops. Overall, only 25% of all agricultural lands have a superior quality, with a good and very good productive potential.

The agricultural production showed very different specific dynamics, both sectorial (vegetable and animal), as well as in regional profile, depending on the diversity of the conditions of agro-pedoclimatic suitability, but also on the degree of use of the production factors.

The vegetal production registered a higher growth rate, because it supposes lower material and financial efforts, in the conditions of the nonexistence of the capital market and of the advantageous credits.

Over the last decade, livestock numbers have declined significantly, including queen herds. below the current level, which represents a technological minimum, can lead to the compromise of the genetic background in animal husbandry.

Data obtained from MADR and INSSE and with the support of the Agricultural Chamber of the City Hall of Tormac were used for the elaboration of this paper.

RESULTS AND DISCUSSIONS

In this chapter there are presented the areas cultivated in two agricultural holdings during the years 2015-2020 for the first holding and from 2016 to 2020 for the second one. Each holding cultivated different plants such as cereals, oil plants, textile plants, fodder plants, etc.

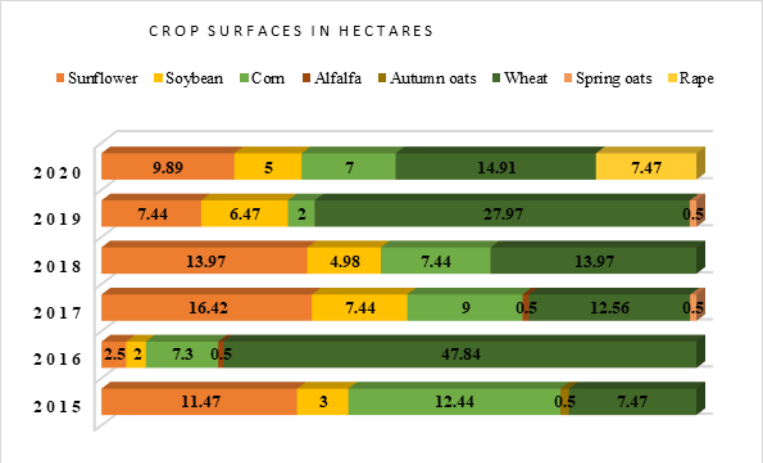

Fig. 1. The crop surfaces in hectares for the first Holding

In the year 2015, the following plants were cultivated: sunflower, soybean, maize, wheat and oats.

Corn was the most cultivated, on an area of 12.44 ha, followed by sunflower on 11.47 ha, wheat on 7.47 ha, soy on 3 ha, and oats on 0.5 ha. In 2016, the plants cultivated were wheat on 47.84 ha, sunflower on 2.5 ha, corn on 7.3 ha, alfalfa 0.5 ha, and soy on 2 ha.

The plants cultivated in 2017 were sunflower, wheat, maize, soy, alfalfa, and oats. Sunflower was cultivated on an area of 16.42 ha, wheat on 12.56 ha, maize on 9 ha, soybean on 7.44 ha, alfalfa and oats on 0.5 ha.

In 2018, the cultivated plants were wheat, sunflower, maize, and soybean. Sunflower and wheat were cultivated on 13.97 ha, maize and soybean on 7.44 ha and 4.98 ha. In 2019, the plants cultivated were wheat on 27.97 ha, corn on 2 ha, sunflower on 7.44 and soybean on 6.47 ha.

Wheat was the largest culture, covering an area of 14.91 ha, sunflower on 9.89 ha, rape on 7.47 ha, corn on 7 ha, oats on 5 ha, and soybean on 5 ha, in the year 2020.

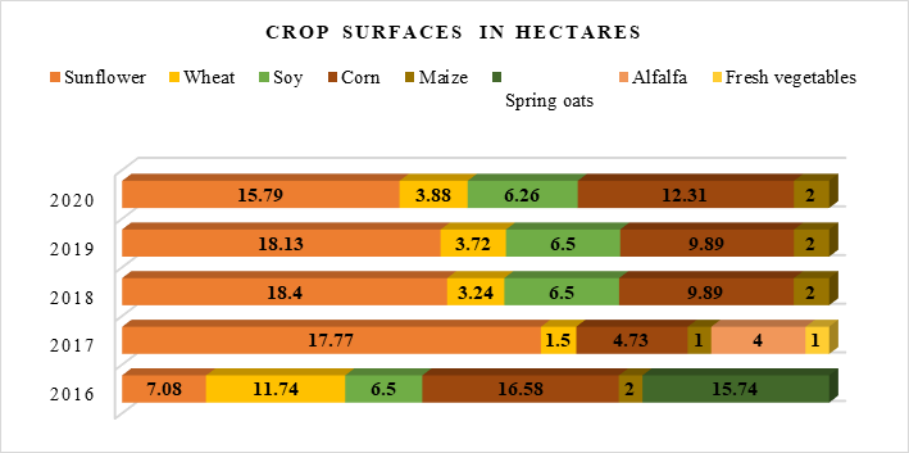

Fig. 2. The crop surfaces in hectares for the second Holding

In 2016, the holding agricultural land was cultivated with corn on 16.58 ha, spring oats on 15.74 ha, wheat on 11.74 ha, sunflower on 7.08 ha, soybean on 6.5 ha, and maize on 2 ha.

In the year 2017, the plants cultivated were sunflower, wheat, alfalfa, sweet maize, maize, and vegetables. Sunflower was cultivated on 17.77 ha, corn on 4.73 ha, wheat on 1.5 ha, alfalfa on 4 ha, maize and vegetables on 1 ha each. Sunflower was the largest culture, cultivated on 18.4 ha, maize on 9.89 ha, soybean on 6.5 ha, wheat on 3.24 ha and maize on 2 ha in the year 2018.

In 2019, the plants cultivated were sunflower on 18.13 ha, wheat on 3.72 ha, soy on 6.26 ha, corn on 12.31 ha, and maize on 2 ha. For the year 2020, the plants cultivated were sunflower, wheat, soy, corn, and maize. Sunflower was cultivated on 15.79 ha, maize on 12.31 ha, wheat on 3.88 ha, soybean on 6.26 ha, and maize on 2 ha.

CONCLUSIONS

- The first holding cultivated sunflower, soybean, corn, wheat, oats, alfalfa, and rapeseed.
- Holding no. 1 cultivated, overall, in 2015 – 34.88 ha, in 2016 – 60.14 ha, in 2017 – 46.42 ha, in 2018 – 40.36 ha, in 2019 – 43.888 ha and in 2020 – 44.86 ha.
- Year 2016 was the year with the most crops of all experimental years (2015-2020).
- Rapeseed occurs as a crop plant only in the year 2020, the rest of the species being constantly cultivated over the years.
- Holding no. 2 cultivated sunflower, wheat, corn, soy, maize, oats, alfalfa and fresh vegetables.
- The areas cultivated over the years were: in 2016 – 59.64 ha, in 2017 – 30 ha, in 2018 – 40.03, in 2019 – 40 ha and in 2020 – 40.24 ha.
- The largest share of cultivated area was in 2016. As new plants cultivated by Holding no. 2 were maize and vegetables.

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