

STUDY ON THE EVOLUTION OF AGRICULTURE IN THE NORTH-WEST DEVELOPMENT REGION

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Abstract

This paper aims to present the evolution of agriculture in the North-West Development Region, during the period 2012-2017, analyzing in particular one of the two major components, namely the vegetal production. Considered the second region of economic interest of the country, the studied area is experiencing a decrease in the number of people working in agriculture, although this economic sector is the third in the order of participation in regional GDP.

In order to highlight the main tendencies of the vegetal production in the North-West Development Region, the areas cultivated with: various cereals, main oil plants, technical plants, vegetables, as well as the areas occupied by fruit orchards, were studied. Except the case of rye, oats and potatoes, the other crops have an upward trend. Grain maize occupies the largest area within this development region. In terms of production, rye and fruits show a downward trend compared to the other crops analyzed.

Key words: agriculture, agricultural production, cultivated area, North-West Region

INTRODUCTION

The North-West Region (North Transylvania) is one of the eight development regions of Romania, NUTS 2, according to Annex I of the EC Regulation No. 1059/2003 (Aurelia Ioana Chereji, 2016). It is, as the name says, in the north-west of the country, being "strategically positioned" at the border with Hungary and Ukraine. In its componse there are six counties: Bihor, Bistrita-Nasaud, Cluj, Maramures, Satu Mare and Salaj. It has an area of 34,159 km², representing 14.32% of the country's surface (North-West RDA).

As for the relief, it is made up of mountains (28%), hills (30%), plains and valleys (42%) (Introduction of the North West Region). It should be mentioned that agrotourism units show an upward trend in the last period, thus conveying the interest of tourists for this region (Marin A. Godja (Dănilă) D.I., 2017).

The North-West Region is considered to be the second economic area of the country, after Bucharest-Ilfov, thanks to the labor market, salaries, foreign investments, industrial parks with modern technologies.

Agriculture ranks third in the ranking of the economic sectors participating in regional GDP (*North-West Region Presentation*). Labor employment in agriculture places the North-West Region also in the third place (*Condei R. et al., 2015*).

MATERIALS AND METHODS

In order to achieve this study, statistical data was taken from the National Institute of Statistics (NIS) website. In order to objectively capture the major trends in the evolution of agriculture in the North-West development region, on the one hand, a number of indicators were analyzed and, on the other hand, a wide range of specialized materials were consulted.

The main indicators analyzed in the present study are: the civilian population occupied by activities in agriculture, forestry, fishing, in the North-West Region; areas cultivated with wheat, corn, rye, barley and beer barley, oat, sorghum, sunflower, rape, grain soybeans, sugar beet, potatoes, vegetables and fruit trees at the level of North-West Development Region; total production of wheat, corn for grains, rye, barley and beer barley, oat, sorghum, sunflower, rapeseed, soy beans, sugar beet, potatoes, vegetables and fruit trees for the North-West Development Region. The indicators of this study were analyzed for the period 2012-2017.

RESULTS AND DISCUSSION

Agriculture is an important branch of the national economy. With the accession to the European Union it became a sector sustained by the structural funds, alongside the measures to develop the rural space (*Dona I., 2015*).

From the data collected from NIS, it appears that, in the year 2017, out of the total of 1,179.8 thousand persons engaged in activities of the national economy in the North -West Development Region, 22.19% work in agriculture, forestry and fishing.

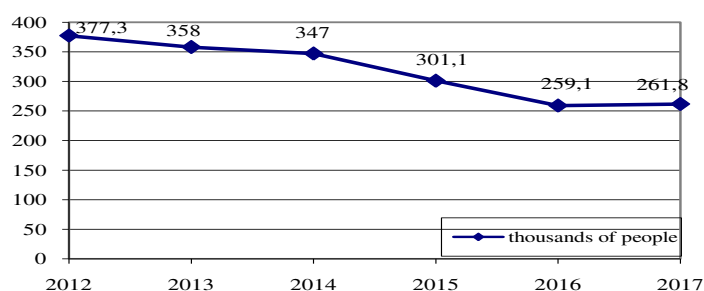


Fig. 1. Dynamics of the civilian population by activity in agriculture, forestry, fishing (thousands of people) in the North-West Region, 2012-2017

Source: NIS

Figure 1 highlights the dynamics of civilian employment in agriculture, forestry and fishing for the North-West Region during 2012-2017. There is a tendency to decrease the number of persons involved in specific activities in these sectors, by 30.61%, in 2017 compared to 2012, when the highest value of this indicator was registered.

This decrease is due to the diversification of activities in the area, especially due to the appearance of industrial parks.

According to NIS data, in 2014 the arable area of the North-West Region was 1,021,392 ha and the one occupied by orchards and fruit nurseries of 36,180 ha.

Within this development region, Bihor County has the largest arable area, the Bistrita and Salaj counties are of interest for the cultivation of fruit trees, and Cluj and Satu-Mare counties contribute to the region's vegetable production (*Manole Al.et al., 2014*).

In this context, the paper will present, in the following, the areas cultivated with the main agricultural and horticultural crops, as well as the yields obtained.

Thereby, Table 1 shows the areas cultivated with wheat, grain maize, rye, barley and beer barley, oat and sorghum in the period 2012-2017.

Grain maize is the crop that occupies the largest area in the North-West region. Analyzing the data presented, there is a decrease of the crops cultivated with rye (-37.66%) and oats (-20.41%). As we can see, the highest increase is registered for sorghum (65.61%), the future crop, which is expected to replace corn in dry areas.

Table 1

The area cultivated with the main cereals (ha) in the North-West Region during the period 2012-2017

Nr. crt.	Culture	2012	2013	2014	2015	2016	2017	%
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1.	Wheat	118,220	119,514	122,922	146,614	144,662	142,875	20.86
2.	Grain maize	237,459	256,501	265,360	276,771	279,496	254,391	7.13
3.	Rye	1,009	1,291	802	1,142	1,003	629	-37.66
4.	Barley and Beer Barley	28,209	37,976	36,770	40,956	44,304	42,783	51.66
5.	Oat	42,655	36,397	35,159	35,516	35,793	33,951	-20.41
6.	Sorghum	724	1,108	1,294	805	792	1,199	65.61

Source: Own calculation based on NIS, Tempo On-line Database, 2018

In table 2 we find data on the evolution of the areas cultivated with the main oilseeds in the period 2012-2017. For all these crops there are increases, the highest being in rapeseed, over 500%. Of the oil plants, the crop that meets the largest surface is sunflower.

Table 2

Area cultivated with the main oilseeds (ha) in the North-West Region during 2012-2017

Nr. crt.	Culture	2012	2013	2014	2015	2016	2017	2017/2012 %
1.	Sunflower	39,147	47,668	49,480	44,728	55,012	47,312	20.81
2.	Rapeseed	4,086	6,803	10,182	10,010	13,590	27,015	561.16
3.	Soy beans	8,098	4,564	4,694	5,917	13,541	19,025	134.93

Source: Own calculation based on NIS, Tempo On-line Database, 2018

For the analyzed period, the area cultivated with sugar beet recorded variations, as follows: the highest value was registered in 2014 - 5,637 ha and the lowest, 3,365 ha, in 2014 - 5,637 ha (Table 3). In 2017 there is a slight increase. For potatoes the area is continuously decreasing, in 2017 being 16.21% lower compared to 2012. The area cultivated with vegetables increased by 1.96% in 2017.

Table 3

Area cultivated with different crops (ha) in the North-West Region, 2012-2017

Nr. crt.	Culture	2012	2013	2014	2015	2016	2017	2017/2012 %
1.	Sugar beet	4,492	4,212	5,637	5,282	3,365	4,528	0.80
2.	Potatoes	44,941	40,177	43,393	39,880	39,078	37,657	- 16.21

3.	Vegetables	22,298	23,965	23,293	21,887	23,015	22,736	1.96
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Source: Own calculation based on NIS, Tempo On-line Database, 2018

Figure 2 shows the dynamics of orchard-cultivated areas. The highest value is in 2013, of 26,918 ha.

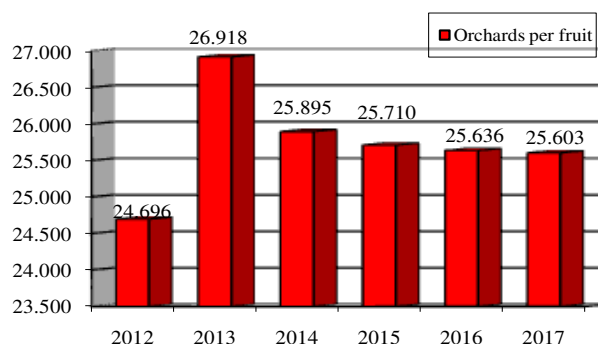


Fig. 2. Dynamics of orchards (ha) per fruit in the North-West Region during 2012-2017
Source: Own calculation based on NIS, Tempo On-line Database, 2018

The lowest value is in 2012, 24,696 ha. In 2017 there is an increase of 3.67% compared to the year 2012, of surfaces dedicated to orchards.

Table 4 highlights the production in the period 2012-2017 for different cereals. With the growth of cultivated areas (Table 1), we also recorded increases in production, except for rye (-29.24%). In oats, although the cultivated area decreased, there was a slight increase in production (14.05%). The highest increase is recorded for sorghum, 216.93%.

Table 4
Production obtained on the main cereals (t) in the North-West Region during the period 2012-2017

Nr. crt.	Culture	2012	2013	2014	2015	2016	2017	2017/2012 %
1.	Wheat	350,895	455,524	472,422	570,476	488,888	607,996	73.27
2.	Grain maize	648,234	1,094,982	1,226,272	873,385	1,191,614	1,503,998	132.02
3.	Rye	2,397	2,707	1,914	2,662	2,311	1,696	- 29.24

4.	Barley and Beer Barley	64,321	112,949	128,879	131,424	151,302	161,478	151.05
5.	Oat	75,512	71,534	70,814	69,997	83,007	86,118	14.05
6.	Sorghum	1,181	2,142	3,946	2,257	2,230	3,743	216.93

Source: Own calculation based on NIS, Tempo On-line Database, 2018

Analyzing the production obtained from the main oil plants (Table 5), we see increases for all the crops analyzed. It is worth mentioning that the highest increase is registered in rapeseed, in concordance with the growth of the cultivated area (Table 1).

Table 5

Production obtained on the main oleaginous plants (t) in the North-West Region during 2012-2017

Nr. crt.	Culture	2012	2013	2014	2015	2016	2017	2017/2012 %
1.	Sunflower	53,155	97,302	101,801	73,754	112,364	138,582	160.71
2.	Rapeseed	4,978	14,661	25,731	22,574	31,479	71,121	1,326.13
3.	Soy beans	11,913	7,632	9,947	11,673	33,013	45,225	279.63

Source: Own calculation based on NIS, Tempo On-line Database, 2018

For sugar beet, potatoes and vegetables, the production grows over the period 2012-2017 (Table 6). The highest increase is recorded for sugar beet, 51.28%. For sugar beet and potatoes, in 2014, the highest production values were recorded, of 238,311 tonnes and 692,621 respectively tonnes.

Table 6

Production obtained in different crops (t) in the North-West Region during 2012-2017

Nr. crt.	Culture	2012	2013	2014	2015	2016	2017	2017/2012 %
1.	Sugar beet	130,094	150,077	238,311	204,555	143,317	196,880	51.28
2.	Potatoes	462,044	567,128	692,621	521,761	553,993	609,025	31.81
3.	Vegetables	314,084	352,539	358,158	339,296	344,095	366,519	16.69

Source: Own calculation based on NIS, Tempo On-line Database, 2018

In terms of fruit production (figure 2), in 2012-2017, the highest value is recorded in 2014, of 290,756 tonnes, and the lowest in 2017, of 210,877 tonnes. Compared to 2012, in 2017 there is a 0.61% decrease.

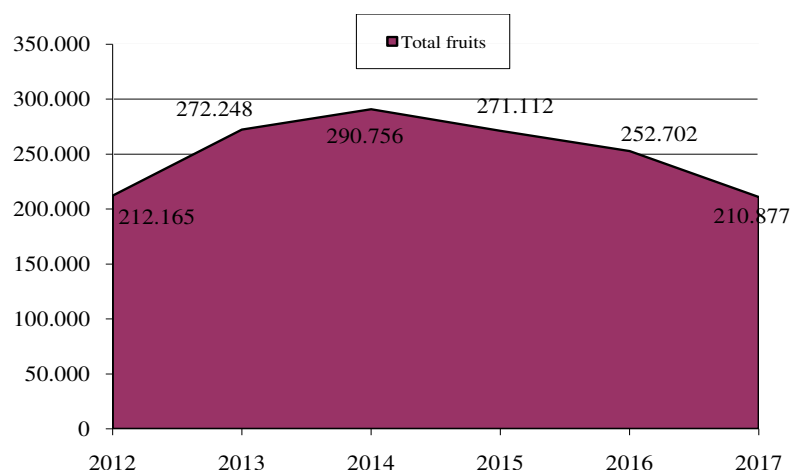


Fig. 3. The dynamics of fruit production (t) in the North-West Region during 2012-2017
Source: Own calculation based on NIS, Tempo On-line Database, 2018

CONCLUSIONS

The north-west region has a strategic geographic position and is considered to be the second area of economic interest of the country. It includes six counties and represents 14.32% of the country's surface. Agriculture is the third economic sector in the order of its participation in regional gdp.

22.19% of all the people employed in the north-west development region work in agriculture, forestry, fishing. But the population occupied with activities in this sector of the national economy is continuously decreasing. Compared to 2012, in 2017 there is a decrease of 30.61%. One of the reasons is the demand in the other sectors of activity.

Of the analyzed crops, in the 2012-2017 rye, oats and potatoes record surface declines. Grain maize is the crop that occupies the largest area in the north-west region.

As far as production is concerned, decreases are registered for rye and fruit. Apple production is on the rise, with the largest harvest in the north-west region.

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