

## A STUDY OF EFFICIENCY ANALYSIS AND THE ROLE OF AGRI-FOOD MARKETS IN THE RURAL DEVELOPMENT

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**Abstract:** *An increased competitiveness in agriculture, forestry and food industry is crucial in performance improvement and revitalisation of rural areas, creating workplaces, therefore being essential for rural development strategy. The purpose of this research is to identify the role and efficiency of the agri-food market within Agro Transilvania Cluj SA Centre of Dezmir, Apahida commune. The conducted study justifies in this sense the strategy of sustainable development of the rural space as key factor of functional and profitable integration of the rural market within the requirements set out by the European Union.*

**Key words:** *Rural development, agri-food market, economic analysis, efficiency*

### INTRODUCTION

A rural development policy in Europe is not an option for the future, but a necessity, even more so as the issue of agriculture development and implicitly of the rural space has major national connotations, representing a complex and current issue in Romania.[3]

The development of rural communities can be described as a process where the community is actively involved into mobilising every initiative for the valuation of own resources for the social and economic benefit of the community [5], [7].

An increased competitiveness in agriculture, forestry and food industry is crucial in performance improvement and revitalisation of rural areas, creating workplaces, therefore being essential for rural development strategy. Financial instruments financed by EAFRD can promote the long-term growth and diversification of the agricultural sector and facilitate investments in it and stimulate the development of commercially-vital programs, thus disclose new market opportunities and ways of improvement[8].

From a competitive perspective, some needs relate to the development of short food supply chains and their corresponding infrastructure, support given to cooperation actions, including in establishing short agri-food chains for a more efficient capitalization and trading on the agri-food markets. [4]

Compared to conventional markets, local food systems have the potential for greater economic impact on the local community because most of the revenue is retained locally whether food is purchased directly from the farmer or is purveyed by local stores and restaurants [9].

Improving the competitiveness of primary producers by better integrating them in the agri-food chain by means of quality schemes, adding value to agricultural products, promotions on local markets and within short supply chains, within groups and organizations of producers and inter-professional associations can be achieved by establishing and sustaining the activity of agri-food markets. [3]

The purpose of this research is to identify the role and efficiency of the agri-food market within Agro Transilvania Cluj SA Centre of Dezmir, Apahida commune. [2]

The following specific objectives are analysed:

✓ The evolution of total cash receipts from access to the agri-food market of daily vendors, for the period 2014 - 2016;

✓ The influence of seasonality on cash receipts from access to the agri-food market of daily vendors, for the period 2014 - 2016.

### MATERIALS AND METHODS

The research is made at the Agro Transilvania SA Centre of Dezmir, a village situated in the commune of Apahida, County Cluj, North-West region, Romania. The Agro Transilvania Centre, created by a Phare programme to promote economic and social cohesion in the area, ensure the selling and buying of agricultural and farming products in a civilised environment, at European standards, but also the development of a strong network of relationships among market users, so that both sellers and buyers focus on consumer needs. [6], [10], [12].

The data sources used come from the entity's technical and operational records, as well as from the annual financial statements of the entity for the period 2014-2016. [11], [12], [13], [14]

In determining the seasonality index trend, the hypothesis is known according to which the size of the random component is zero, and the emphasis is put on what is essential in the phenomenon development. The index has the following structure [1]:

$$y(t) = T(t) + S(t) + e(t)$$

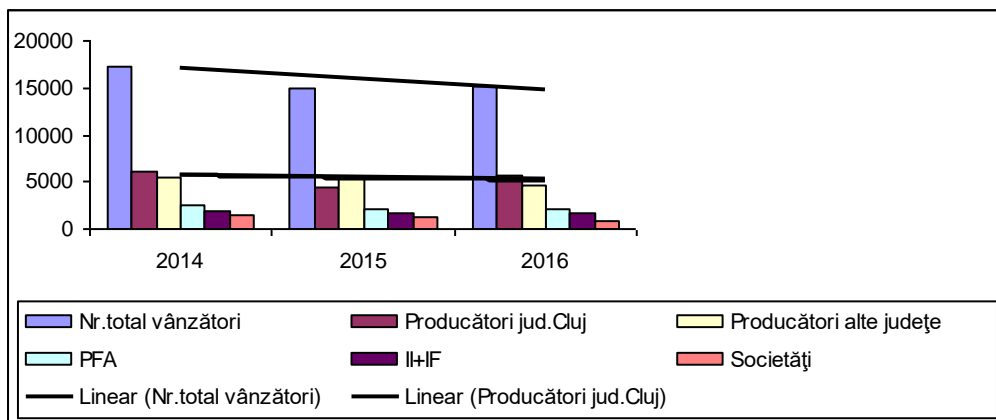
In the event of knowing the evolution of indicator affected by seasonal factors, the calculation of seasonal indexes resides in the following:

- ✓ determining the seasonal variation average ( $\bar{y}_i$ );
- ✓ determining the general average index variation ( $\bar{y}$ );
- ✓ calculating seasonal indexes by reporting to the general average according to the

$$\text{relation: } A_i = \frac{\bar{y}_i}{\bar{y}}$$

### RESEARCH RESULTS

The dynamics of the presence of daily vendors and according to their structure – in the agri-food market Centrul Agro Transilvania Cluj SA



**Figure 1. The dynamics of the presence of daily vendors and according to their structure – in the agri-food market Centrul Agro Transilvania Cluj SA**

Source: own processing after data from the company

For the vendor-producer category of Cluj County, their number dropped by 1646 vendors in 2015, then their number registered a growth by 1285 sellers in 2016, but as compared to 2014, the number of those present on the market is less by 361 vendors. The year 2015 records a declining number of vendors in all forms of vendor organization as compared to 2014. 2016 also records a declining number of sellers as compared to the previous year, except for organisation forms as Individual Enterprises and Companies. The

number of daily vendors in 2016 does not manage to reach the number of daily sales in 2014.

**Table1**

**The evolution of cash receipts from access to the agri-food market of daily vendors  
The researched phenomenon is the evolution of total receipts  
for the period 2014 – 2016.**

2014(J)		2015(K)		2016(L)	
z	c	z	c	z	c
3520	35	9667	45	10517	45
6958	45				
715	25	3422	30	2851	30
3203	30				
342	20	1691	25	1414	25
1500	25				
886	15	70	15	209	15
92	10	-	-	-	-
23	60	77	60	98	60
18	70	40	70	3	70
13	100	104	100	65	100

Source: own processing after data from the company

The evolution of cash receipts from access to the agri-food market of daily vendors

The results of the formula calculations by using EXCEL show that the total amount of cash receipts in 2015 as compared to 2014 dropped by RON 13,945, out of which RON -421,574 due to the diminishing of the daily vendors and by RON 407,629 due to the increasing of the agri-food market access fee.

The total amount of cash receipts grew in 2016 as compared to 2015 by RON 11,050, out of which by RON 11,050 due to the growth of daily vendors and the influence of the access fee factor is zero, as the fees have not changed in 2016.

The total amount of sales dropped in 2016 as compared to 2014 by RON 2,895, out of which by RON -66,142 due to the decline of daily vendors and by RON 63,247 due to the increasing of agri-food market access fee.

From the perspective of the increase and decrease of the rate of sale we have the following situation for the research period 2014 – 2016.

The cash receipts dropped in 2015 as compared to 2014 and represent a 97.72% percentage with a non-realisation of 2.28%. The decline of daily vendors results in a 68.80% influence and the increase of the agri-food market access fee by a 66.52% influence.

The amount of income increased by 1.85% from 2016 as compared to 2015 out of which 1.85% due to the increase of the number of daily vendors and as access fees to the agri-food market remained the same as in 2015, this factor has no influence.

The seasonal nature of access to the agri-food market of daily vendors

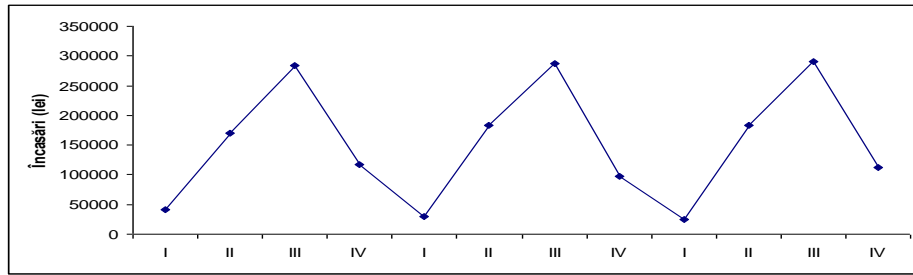
**Table 2**

**The tendency of receipts from access to the agri-food market affected by seasonal factors**

ANUL/TRIMESTRUL	2014	2015	2016
I	41.580	29.630	24.290
II	170.510	183.400	183.130
III	283.710	287.745	290.175
IV	116.965	98.045	112.275

Source: own processing after data from the company

The seasonality of the phenomenon is illustrated by the timing of the fig. 2



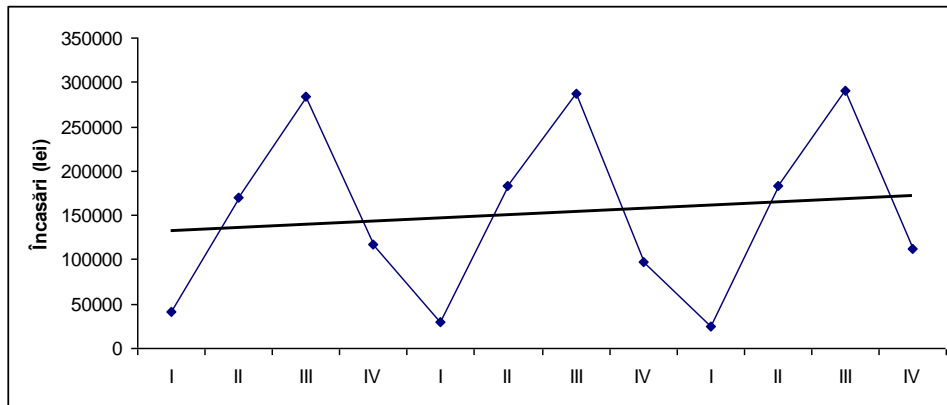
**Figure 2. Evolution of Quarterly Average Income of Day-Shop Sellers in Agro-Food Market - Agro Transilvania Center CLUJ**

Source: own processing after data from the company

**Table 3.**  
By deseasonalization using simple arithmetic mean, disseminated and presented data are obtained

ANUL/ TRIMESTRU	2014	2015	2016	$\bar{y}_i$
I	41.580	29.630	24.290	31.833,33
II	170.510	183.400	183.130	179.013,33
III	283.710	287.745	290.175	287.721
IV	116.965	98.045	112.275	109.095
$\bar{y}_j$	153.191	149.705	152.468	151.788

Source: own processing after data from the company



**Figure 4. Evolution of Quarterly Average Income of Day-to-Day Sellers' Access to Agro-Food Market – Deseasonalized**

Source: own processing after data from the company

Seasonal earnings indices of day-to-day sales in the agri-food market by average reporting method

$$A_1 = \frac{31.833,33}{151.788} = 0,2098; \quad A_2 = \frac{179.013,33}{151.788} = 1,1794;$$

$$A_3 = \frac{287.721}{151.788} = 1,8956; \quad A_4 = \frac{109.059}{151.788} = 0,7185;$$

## CONCLUSIONS

1. Identifying the seasonal nature of access to the agri-food market of daily vendors is closely related to the seasonal nature of their economic activity. Therefore we identify:

-first season defined as the calendar quarter, namely the months: April, May and June;

-second season defined as the calendar quarter, namely the months: July, August and September;

-off-season: defined as calendar quarters, namely the months: January, February, March, October, November and December.

In the second season of 2014, the number of daily vendors accessing the farmers' market is 7412, exceeding by 37.15% the number of daily vendors recorded during the first season, when 5404 daily vendors were recorded.

In the second season of 2015, the number of daily vendors is 7.140 users accessing the agri-food market, exceeding by 56.51% the number of daily vendors recorded during the first season, namely 4559 daily vendors.

In the second season of 2016, the number of daily vendors is 7.133 users of the agri-food market, exceeding by 60.54% the number of daily vendors present in the first season, namely 4.443 daily vendors.

By corroborating the number of daily vendors present during the three years researched, an average number of 7228 daily vendors in the second season, and 4802 daily vendors in the first season result.

As for the structure of the activities carried out by the daily vendors having had access to the agri-food market during the 2014 – 2015 period, we can mention that:

- the number of producers from Cluj County who were present on the market during the second season register an average flow of 2.274 individual producers, as compared to the average rate of those present in the market during the first season, namely 1229 individual producers.

- the number of producers from other counties present on the market in the second season registers an average flow of 2754 users, as compared to the average rate in the first season, namely 1.846 producers from other counties.

- the number of self-employed individuals present on the agri-food market during the second season registers an average flow of 615 self-employed, as compared to their average flow during the first season, that is, 685 licensed individuals.

- the number of individual enterprises and family enterprises having access to the agri-food market during the second season registers an average flow of 817 users, as compared to their average flow during the first season, that is, 517 users.

- the number of economic entities using the agri-food market for agricultural and horticulture trading during the second season registers an average flow of 525 units as compared to their average flow during the first season, that is, 335 companies.

2. The evolution of cash receipts from access to the agri-food market of daily vendors by means of the seasonal nature of the agricultural and horticulture activity of the vendors

In the second season of 2014, the cash receipts from daily access to the agri-food market of agri-food vendors was 183400 RON, that is, a rate of 66.38% in excess of the amount of cash receipts recorded in the first season, when 170,510 RON were recorded. In the second season of 2015, the total cash receipts was 287,745 RON, a rate of 56.89% in excess of the cash receipts recorded during the first season, namely 183.400 RON cashed from the access of daily vendors to the agri-food market. In the second season of 2016, the amount of cash receipts from the access of present daily vendors is 290,175 RON,

exceeding by 58.65% the total amount of cash receipts from the access of daily vendors present in the first season, namely 183,130 RON.

By corroborating the cash receipts from the access of daily vendors present in the second season, along the three assessed years an average annual receipt of 287,210 RON in the second season, and in the first season of 179,133.33 RON result.

The future society will be gathering in rural areas, concentrating on social, economic and environmental sustainability, and a new rurality. The conducted study justifies in this sense the strategy of sustainable development of the rural space as key factor of functional and profitable integration of the rural market within the requirements set out by the European Union. Among these, providing and organising, operation and efficiency of agri-food markets is defined as top priority.

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