

The Evaluation of Rural Space through the Analysis of the Rurality Index. Case Study: the Villages of Sălaj East of Jibou

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Abstract

This paper aims to underline the present state of development of the rural space from the Eastern part of Sălaj county, by analysing the *rurality coefficient* applied to 14 communes for the interval 1990-2008. The indices implemented for the evaluation are: *agriculture, work force and population*. The case study was accomplished based on the statistical data obtained from *the County Directorate of Statistics of Sălaj County and from the evidences in the communes' mayor's offices*, the intervals of calculation being established at every two years. The values of the rurality coefficient was obtained by applying two mathematical formulae – by the HDI calculation method – which demonstrates its positive or negative significance.

The analysis of the results demonstrates the role of Rus village as a local polarizing center and the importance that this territorial-administrative unit would have regarding the sustainable development and planning of the rural space under study.

The conclusion drawn from the interpretation of the indicators' results proves that during an interval of 18 years, the values of the rurality coefficient maintained high, although some economic sectors recorded important modifications (at the indices' level), emphasizing the strongly rural character of the Someșului Valley and Codru areas..

Keywords: *rural area, synthetic rural index,, sustainable development, territorial planning, Sălaj county, Romania, assessment methods, rurality coefficients, interaction, indices*

Rezumat. Evaluarea spațiului rural prin analiza indicelui ruralității. Studiu de caz: așezările rurale din Sălaj, la est de Jibou

Studiul evidențiază dezvoltarea spațiului rural din estul județului Sălaj, utilizând dinamica temporală a valorii *indicelui sintetic al ruralității*, aplicat la 14 comune, în intervalul 1990–2008. Au fost reținuți pentru evaluare indicatorii: *agricultură, forța de muncă și populația*. Studiul de caz a fost realizat pe baza datelor statistice obținute de la Direcția Județeană de Statistică Sălaj și din evidențele primăriilor, pentru intervale de calcul stabilite la fiecare doi ani. Valorile coeficientului de ruralitate a fost obținută prin aplicarea a două formule matematice - metoda de calcul HDI - ceea ce demonstrează semnificația ei pozitive sau negative

Analiza rezultatelor demonstrează rolul comunei Rus de centru polarizator local și importanța pe care o va avea această unitate administrativ – teritorială în dezvoltarea durabilă și planificarea spațiului rural studiat.

Concluzia desprinsă din interpretarea indicatorilor demonstrează că, în timpul celor 18 ani analizați, valorile coeficientului de ruralitate s-au menținut ridicate, deși unele sectoare economice au înregistrat modificări importante (la nivel indicatorilor), scoțând în evidență caracterul puternic rural din zonele Valea Someșului și Codru.

Cuvinte-cheie: *spațiul rural, indice sintetic de ruralitate, dezvoltare durabilă, planificarea spațiului, județul Sălaj, România, metode de evaluare, coeficienți de ruralitate, interacțiune, indicatori*

INTRODUCTION

In the case study, it was proposed the assessment of the rural space from Sălaj, by means of the analysis of the rurality coefficient and the motivation of the designation of Rus commune as a local polarising centre, in the Eastern part of Sălaj county. The definition of *rural space* has known a multitude of interpretations. In a geographic sense, *rural space* refers to “a territory with a diversity of physical phenomena, economic activities and structures, of variable functions and relationships,

the main characteristic being *thoroughness*, understood as the sum of real elements, which have as a purpose to establish the relationships and connections between them” (Ianoș, I., 2004).

The English specialist Keith Halfacree¹ (1992) defined *rurality* by two particularities of rural: *locality* – as an administrative territory of local

¹ Keith Halfacree - PhD, Lancaster University (1992) BSc (Geography Hons) (1st Class), Bristol University (1987)

importance and *the social representation* as a mental perception upon rurality concept.

Cloke Paul J. calculated in 1997 a *rurality coefficient* for England and Wales. The value of the *rurality coefficient* expresses the position of a territorial administrative unit related to the maximum and minimum value of each rural component, establishing at the same time the lower or higher degree of rurality and the modifications appeared during a time interval. If *rurality* is defined in terms of variables randomly selected, the *rurality coefficient* is formulated by the analysis of the main components which takes into account the scope of research, as this can be permanently updated. The results of the *rurality coefficient* proved to be a useful instrument for the comparative studies between rural areas, as it offers perspective solutions in the planning of rural/ urban areas.

But according to **OCED** (Organisation for Cooperation and Economic Development) methodology, depending on the capacity of integration in national economy, *rural areas* were divided in three categories: *economically integrated, intermediate* and *remote*.

The attempt of evaluating the *rural space* of each county administrative unit induces the analysis of some *factors* as: the number of inhabitants, economic activities developed by active population, the settlements' degree of comfort, as well as of some *indices* with regard to: population density, the weight of built territory, natural and socio-economic characteristics which define it.

THE STUDY AREA

The studied geographical space overlaps two of the territorial units of planning situated in Sălaj county, which join the Someș corridor: the Someșului Valley and Codru (Fig. 1). This area is characterised on the one hand by the lack of towns, and on the other hand, by a high density of rural settlements. The change of economic and legislative structures after 2000 facilitated the grouping of 14 localities in this space, which is predominantly agrarian: *Băbeni, Benesat, Cristolț, Gâlgău, Gârbou, Ileanda, Letca, Lozna, Năpradea, Poiana Blenchii, Rus, Șimișna, Surduc and Zalha*, whose function as an economic micro-region was coordinated by Rus commune from 2004.

By applying the OCED methodology regarding the classification of rural space upon the studied Sălaj area, it can be noticed that a *remote rural space* (Fig. 2) is transplanted on a relief dominated

by hills and plateaus, lacking direct access to the main circulation arteries and an *intermediate rural space* joins the Someșului corridor, being known as an important artery of railway and road circulation. The two categories of rural spaces have different characteristics, a fact which is reflected in the economic structure and in the potential of development of the territorial administrative units which compose them.



Fig. 1. The territorial planning units in Sălaj county

MATERIALS AND METHODS

The analysis is part of an ample research project. In order to draft and finalize results, it was firstly taken into account the availability of statistical data offered by the local and regional administrative decisional factors. The selection and establishing of the indicators for the assessment of the degree of development of the communes at local level was done on the basis of their capacity to monopolize the economic activities from the tertiary sector. The established period was the interval 1990-2008, as the data which exist in agricultural records are complete and they allow the comparison of spatial dynamics in the geographical space from Sălaj.

The assessment of rural space was done by establishing and analysing the value of *rurality coefficient* for the period 1990-2008, having as basis the dynamics of the following indices: *agriculture (agricultural surface), work force represented by the employees in agriculture and industry and the population* for each commune. There were used data from the communes' agricultural records and statistical data obtained from *Sălaj County's Directorate of Statistics*. The intervals of calculation were every two years and the values were expressed in percentages, similar to the methodology used by Toma S., (2008), for another Romanian geographical space.

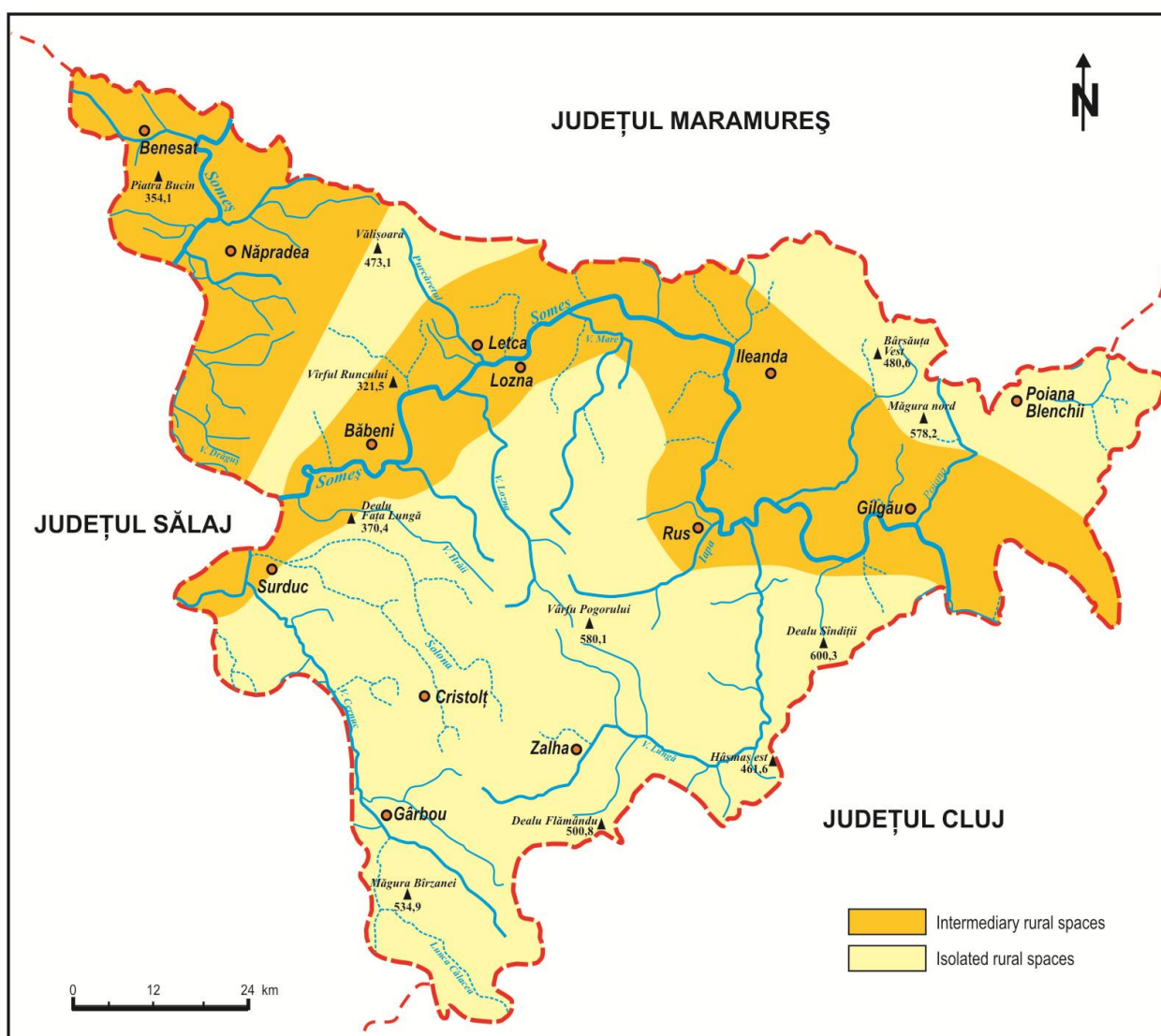


Fig. 2. The classification of the rural space from the Eastern part of Sălaj county (according to OCED methodology, 2008)

1. The agriculture index represents the weight of the agricultural surface in the total surface, expressed in percentages. The higher its value, the

more pronounced rural character the locality will have, as it is shown in Table 1.

Table 1. The agriculture index (%)

Locality	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008
Băbeni	48.71	48.71	48.71	48.71	48.71	52.88	49.80	49.80	49.80	49.74
Benesat	68.90	68.90	71.06	71.06	71.26	72.03	71.65	71.82	71.82	71.82
Cristolț	59.13	59.13	59.13	59.13	59.13	60.21	59.11	59.11	59.11	59.11
Gâlgău	46.26	46.64	46.64	46.64	46.64	49.98	46.60	46.60	46.60	46.59
Gâr bou	67.02	65.82	66.22	66.22	66.22	67.89	66.22	66.22	66.22	66.22
Illeanda	54.41	54.43	54.43	54.43	52.81	52.74	52.77	52.77	52.77	52.76
Letca	69.83	69.83	69.83	69.83	69.83	70.57	69.83	69.83	69.83	69.81
Lozna	34.33	34.56	34.56	34.56	35.05	30.55	34.81	34.81	34.81	34.81
Năpradea	50.59	50.73	50.73	50.73	50.73	54.00	53.23	53.23	53.23	53.23
Poiana Blenchii	54.00	53.98	53.98	53.98	53.98	57.34	53.98	53.98	53.98	53.98
Rus	55.99	55.99	55.99	55.99	55.99	57.85	55.98	25.61	25.61	25.61
Simișna	-	-	-	-	-	-	-	64.60	64.60	64.60
Surduc	43.64	43.96	43.96	43.96	43.96	47.29	43.75	43.75	43.75	43.75
Zalha	51.29	51.35	51.35	51.35	51.35	55.69	51.27	51.27	51.27	51.27

Source: Values obtained using data offered by NIS

Based on these data, the chart from Fig. 3 was achieved in a Cartesian system of coordinates in two dimensions, where percentages (%) were written on the ordinate axis, from 25 to 75, representing the minimum and maximum values,

and on the abscissa it was written the time interval, every two years for the period 1990-2008. In the chart, there were written the values of the agriculture index for the 14 communes in Sălaj, each of them being coloured in a different way.

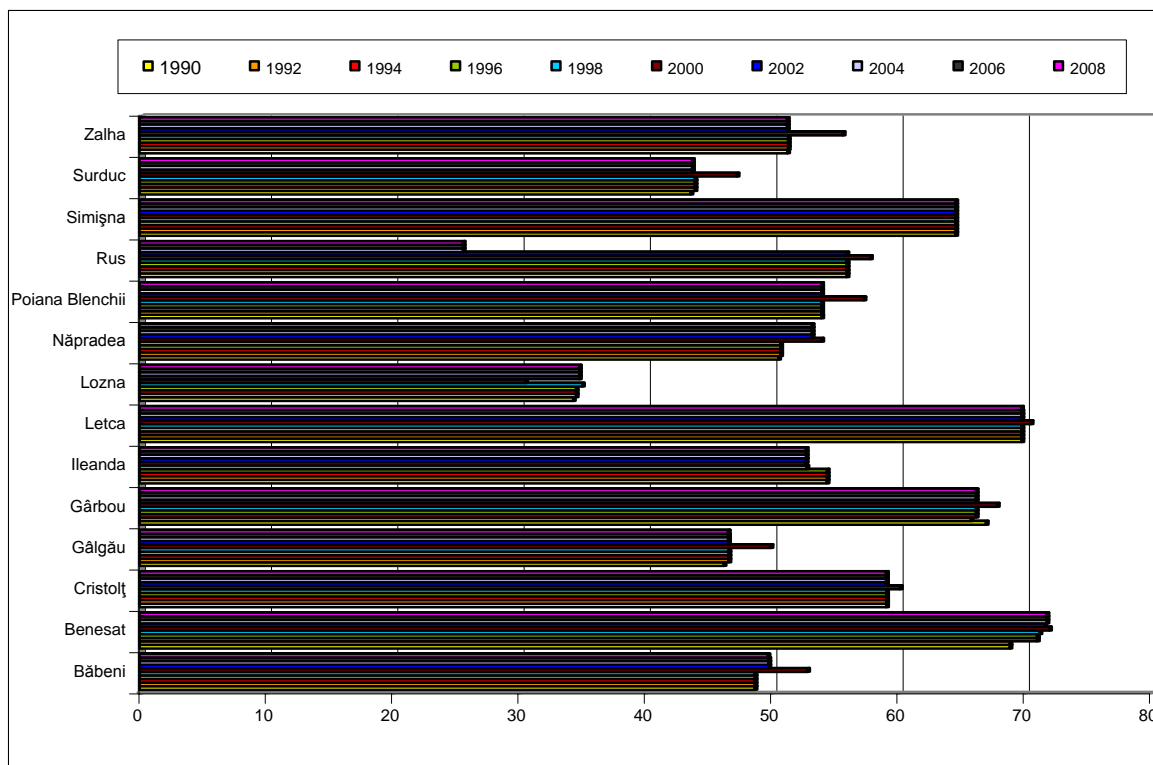


Fig. 3. Variation of the indicator agriculture for the rural space from the eastern part of Sălaj county, 2008

2. The work force represented by employees in agriculture and industry - represents the weight of employees calculated on fields of activity; it was calculated depending on the total of employees expressed in percentages (%) (Table 2 and 3). Taking into account the work force index, its

analysis offers a correct image of the economic profile of the locality. The higher the percentage of employees in agriculture and the lower the percentage of employees in industry, the more emphasized the degree of rurality of the commune is.

Table 2. The work force represented by employees in agriculture index (%)

Locality	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008
Băbeni	4.04	4.65	8.17	7.01	15.15	3.17	4.12	4.12	4.12	4.14
Benesat	10.00	10.68	15.72	12.94	19.60	10.00	10.90	2.10	2.10	2.90
Cristolț	18.86	17.24	8.86	8.33	14.06	2.81	3.33	6.00	5.90	6.00
Gâlgău	23.36	25.00	8.73	4.90	4.77	1.95	1.77	2.83	2.76	2.70
Gârbou	36.71	32.20	26.98	15.90	17.77	5.81	9.09	2.63	2.63	2.51
Ileanda	39.36	17.19	28.48	2.11	14.31	5.50	3.85	0.51	0.70	0.92
Letca	7.77	9.15	2.60	4.21	0.96	4.16	3.94	1.25	1.25	1.35
Lozna	18.66	14.44	16.00	16.12	27.14	7.69	7.69	4.00	4.00	4.02
Năpradea	36.02	33.33	24.57	24.54	27.61	6.34	2.12	8.25	8.34	8.38
Poiana Blenchii	19.48	14.28	3.63	15.87	1.66	4.70	5.47	5.08	5.65	5.00
Rus	17.39	16.56	2.94	7.81	2.88	5.64	7.07	5.37	3.70	3.51
Simișna	-	-	-	-	-	-	-	12.8	13.1	31.2
Surduc	23.71	11.17	6.79	9.97	7.90	7.85	0.39	3.55	3.44	3.41
Zalha	15.30	21.73	2.27	5.69	1.68	1.85	0.81	8.62	8.57	8.68

Source: Values obtained using data offered by NIS

Table 3. The work force of the employees in industry index (%)

Locality	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008
Băbeni	50.2	62.12	31.43	20.15	20.16	2.36	21.62	3.50	3.40	3.49
Benesat	64.21	57.62	39.61	41.13	24.85	12.07	15.08	40.09	40.10	40.10
Cristof	1.84	1.84	1.86	66.6	28.50	28.54	5.32	5.32	5.54	5.56
Gălgău	0.69	9.01	12.60	23.60	16.55	7.08	3.45	2.32	2.40	2.39
Gărbou	1.50	1.51	1.51	1.53	5.00	16.10	16.18	7.87	7.90	7.90
Ileanda	13.00	8.40	4.81	6.11	8.72	8.53	30.51	28.90	28.90	28.74
Letca	46.10	59.31	6.92	51.27	37.01	1.65	51.96	25.01	25.01	24.90
Lozna	6.60	2.29	1.38	2.25	2.26	3.07	3.08	3.03	3.04	3.03
Năpradea	2.20	0.70	0.70	0.70	0.79	11.7	3.69	3.67	3.67	3.65
Poiana Blenchii	10.3	9.10	2.75	2.76	2.76	7.02	9.88	9.60	9.54	9.94
Rus	9.90	3.68	2.20	3.07	3.07	4.80	2.86	3.25	3.61	3.64
Simișna	-	-	-	-	-	-	-	2.01	2.05	2.47
Surduc	36.66	34.57	57.21	43.71	49.33	32.60	71.90	54.2	54.01	59.09
Zalha	4.00	1.00	1.02	1.02	0.89	12.09	52.89	52.82	52.85	52.55

Source: Values obtained using data offered by NIS

In Fig. 4a, for the the work force of the employees in agriculture index, on the ordinate there were written the percentages (5), from 0 to 40, representing the minimum and maximum values

and on the abscissa it was written the time interval, for the period 1990-2008. Using the same model, we obtained the chart from Fig. 4b, regarding the work force of the employees in industry index.

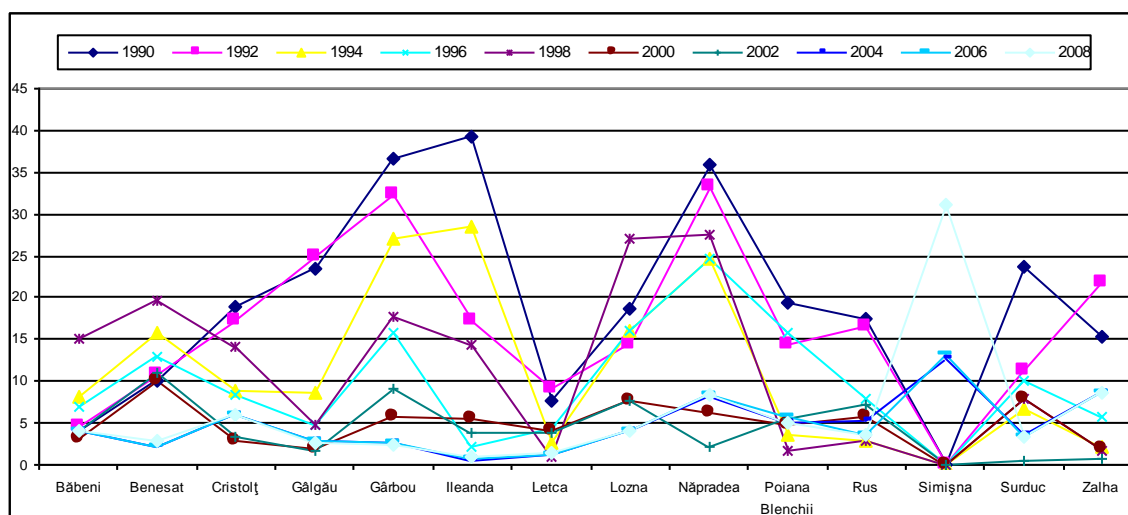


Fig. 4a. Temporal and spatial variations of work force of the employees in agriculture index

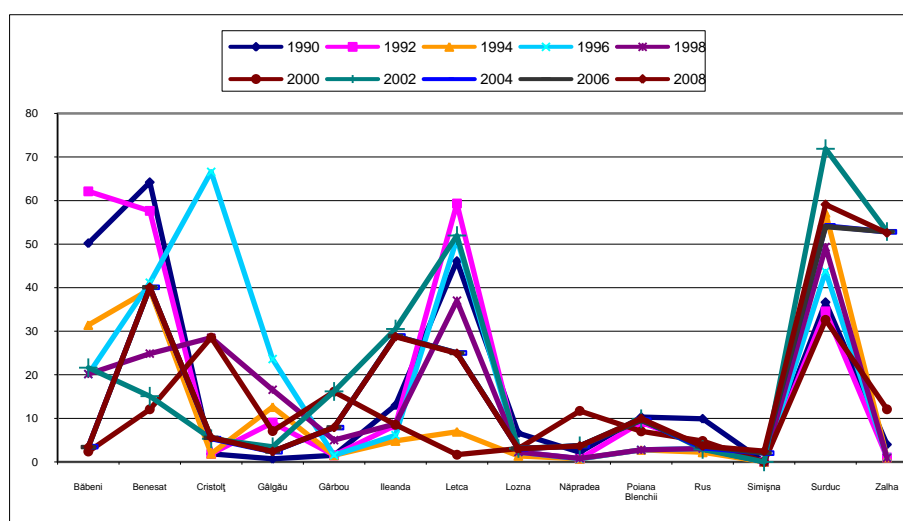


Fig. 4b. Temporal and spatial dynamics of work force of the employees in industry index

3. *The population index* – represented by the natural growth rate and migration rate

The indicator population – represented by the natural growth rate and migration rate, offers a picture of the human potential from a locality and it is calculated as the difference between natality and mortality values per 1000 inhabitants (‰). The more the locality presents an accentuated

demographic decline (marked by the negative values of the natural growth rate and high values of migration rate), the more the locality possesses a higher degree of rurality. Regarding the communes from Sălaj, there were taken into account the yearly values of the natural growth during the interval 1990-2008 (Table 4, Fig. 5a).

Table 4. The natural growth during the interval 1990 – 2008 (‰)

Locality	1990	1995	2000	2005	2006	2007	2008
Băbeni	-8.37	-28.91	-21.50	-18.89	-17.15	-8.99	-11.84
Benesat	-4.39	-4.88	-6.02	-18.71	-7.90	-11.05	-13.63
Cristof	-5.72	-1.17	-13.59	-7.17	-12.57	-10.11	-10.33
Gălgău	-7.03	-11.68	-4.77	-7.47	-11.79	-9.65	-11.42
Gărbou	-2.77	-12.50	-11.78	-12.32	-10.81	-14.07	-7.16
Ileanda	-6.58	-9.63	-6.57	-9.80	-9.49	-8.68	-10
Letca	-15.58	-11.73	-21.47	-21.88	-19.40	-9.23	-13.42
Lozna	-22.15	-20.81	-23.85	-23.48	-21.47	-18.23	-8.51
Năpradea	-6.52	-9.88	-3.71	-6.38	-6.36	-4.77	-4.79
Poiana Blenchi	-2.33	-5.35	-6.48	-1.56	-10.84	-5.50	0
Rus	-10.49	-9.89	-9.85	-20.16	-11.91	-8.64	-10.62
Simișna	-	-	-	-42.94	-48.18	-32.69	-43.57
Surduc	-2.91	-5.33	-7.78	-10.24	-11.11	-7.58	-11.27
Zalha	-9.29	-17.93	-19.07	-15.49	-19.60	-26.34	-11.05

Source: Values calculated using data offered by NIS

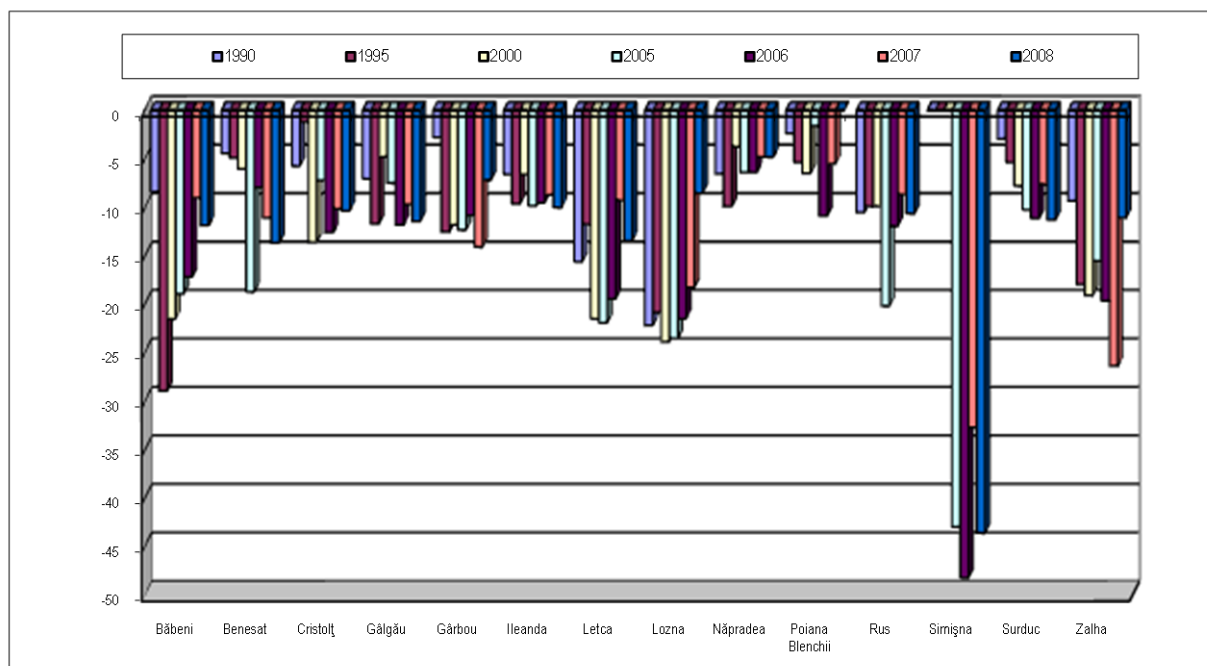


Fig. 5a. The evolution of the natural growth during the interval 1990-2008

The migratory growth is represented by the difference between immigrants and emigrants rate, calculated per 1000 inhabitants (‰). For Sălaj area, the values of the migratory growth for the interval 1990-2008 are presented in Table 5 and Fig. 5b.

In Table 6 it was presented the evolution of population per communes during 1990-2008, based on which we obtained the chart in Fig. 6. From the interpretation, it can be noticed that rural population

is characterised by a constant decrease of the number of inhabitants for all communes, except for the commune Surduc, where the value increased until 1995. During the interval 2000-2005, due to the general tendency of population decrease from the agricultural environment in Sălaj county, the most accentuated loss of inhabitants was recorded by the commune Rus.

Table 5. The migratory growth 1990-2008 (‰)

Locality	1990	1995	2000	2005	2006	2007	2008
Băbeni	-0.46	-0.46	-0.51	-0.50	-0.51	+0.52	+0.52
Benesat	+0.55	+0.55	+0.55	-0.59	-0.59	-0.59	-0.59
Cristof	-0.62	-0.62	-0.62	+0.65	+0.65	+0.65	+0.65
Gălgău	-0.35	-0.35	-0.36	+0.37	+0.37	+0.37	+0.37
Gârbou	-0.75	-0.75	-0.39	-0.39	-0.39	-0.39	-0.39
Ileanda	-0.38	-0.38	-0.38	-2.04	-2.04	-2.04	-0.41
Letca	-1.19	-1.19	+0.44	+0.44	+0.44	+0.44	-0.47
Lozna	-0.83	-0.83	-0.83	-0.83	-0.83	-0.83	-0.83
Năpradea	-0.33	-0.33	+0.34	+0.33	+0.33	+0.33	+0.33
Poiana Blenchii	-0.66	-0.66	-0.67	-0.78	-0.78	-0.78	-0.78
Rus	-0.35	-0.35	-0.35	-1.97	-1.97	-1.97	-1.97
Șimișna	-	-	-	-0.71	-0.71	-0.71	-0.71
Surduc	+0.24	+0.24	+0.48	+0.25	+0.25	+0.25	+0.25
Zalha	+0.74	+0.74	+0.74	+0.74	+0.74	+1.00	+1.00

Source: Values calculated using data offered by NIS

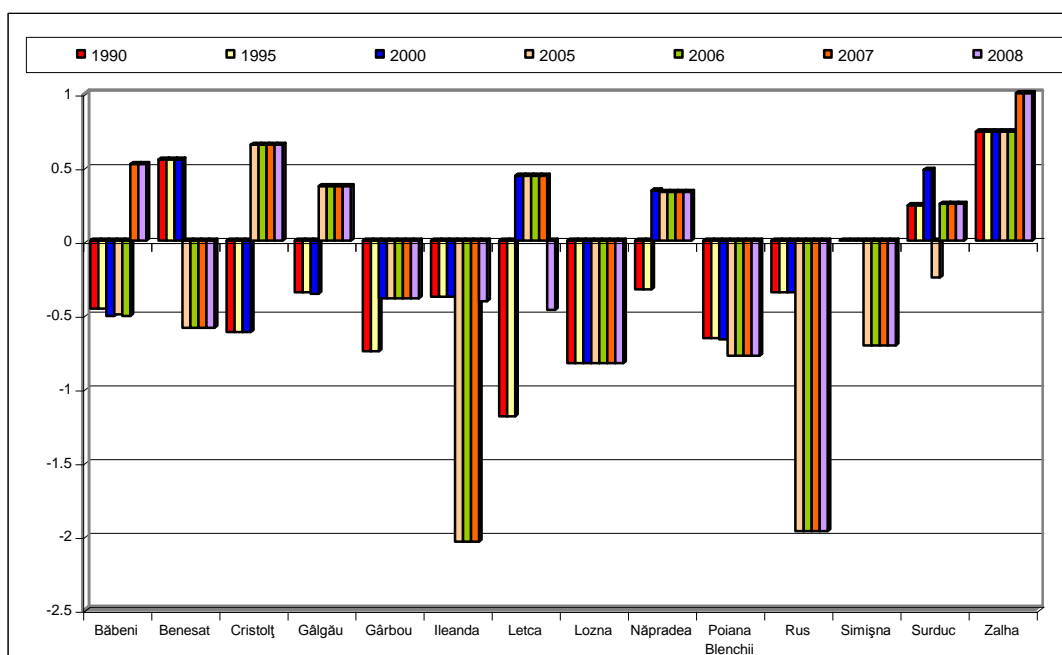


Fig. 5b. The evolution of the migratory growth during the interval 1990-2008

Table 6. The values of population during 1990 - 2008 (inh.)

Locality	1990	1995	2000	2005	2006	2007	2008
Băbeni	2,454	2,144	1,932	1,928	1,912	1,892	1,847
Benesat	2,019	1,836	1,664	1,626	1,635	1,626	1,589
Cristof	1,888	1,711	1,621	1,513	1,514	1,458	1,426
Gălgău	2,956	2,808	2,774	2,662	2,611	2,567	2,522
Gârbou	3,138	2,793	2,530	2,317	2,304	2,264	2,243
Ileanda	2,838	2,582	2,569	2,391	2,413	2,391	2,400
Letca	2,844	2,503	2,256	2,180	2,154	2,103	2,085
Lozna	1,346	1,205	1,124	1,088	1,056	1,060	1,049
Năpradea	3,042	2,928	2,963	2,976	2,954	2,934	2,890
Poiana Blenchii	1,706	1,500	1,369	1,287	1,279	1,266	1,235
Rus	3,076	2,797	2,539	1,170	1,174	1,142	1,125
Șimișna	0.00	0.00	0.00	1,361	1,328	1,305	1,293
Surduc	4,072	4,148	4,086	3,865	3,846	3,835	3,796
Zalha	1,619	1,352	1,186	1,084	1,054	1,011	997

Source: Values calculated using data offered by NIS

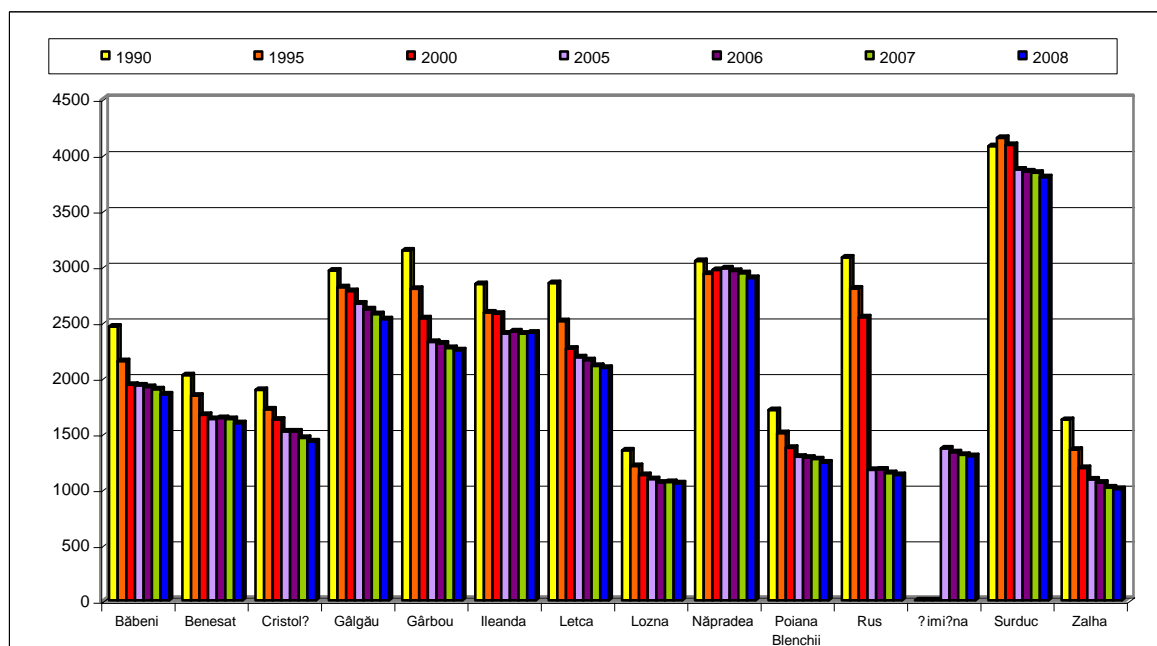


Fig. 6. The evolution of the population during 1990-2008 period

4. The rurality coefficient – the results of the preliminary analysis

The preliminary results of the analysis of the rurality coefficient for the rural area from the East of Sălaj were emphasized by the following aspects:

- *The agriculture index* proves that rurality at the level of localities is high, the agricultural surface occupying between 25% and 72% out of the total surface. The maximum value is of 72.03% in the commune Benesat and the minimum value is of 25.61% in the commune Rus.

From the chart interpretation, it can be noticed that the value of the indicator in most of the communes: Băbeni, Benesat, Cristolț, Gâlgău, Gârboiu, Letca, Năpradea, Poiana Blenchiei, Surduc and Zalha had a constant evolution from 1990 until 1998, and after that an increase of a few percentages followed, until the year 2000 (when the maximum values were recorded). Between 2000 and 2002, a decrease follows and a coming back of the initial values (the period 1990-1998) which maintained constant until 2008, for each commune.

For the commune Rus, it can be noticed an appreciable change of size of the agriculture index during the interval 2002-2004, its value being reduced at half from the initial value, respectively from 55.99% in 1990 to 25.61% in 2002, the latter maintaining until present.

- for *the work force of the employees in agriculture and industry index* it can be noticed that, although in 1990 the weight of population occupied in agriculture was differentiated in the 14 communes, during the interval between 4.04%

(minimum) of the commune Băbeni and 39.36% (maximum) of the commune Ileanda, in 2008, the 14 communes were enclosed in the interval 0.92% (minimum) of Ileanda and 8.68% of the commune Zalha. As a particularity, in 2008 it can be noticed the maximum percentage of employees in agriculture for the commune Șimișna (31.2%), although in 2002 this only represented 12.8%. In general, it can be noticed the homogenisation of the values of work force occupied in agriculture after 2004, which maintained constant until 2008 for the communes in Sălaj.

In the same time, it can be noticed a lack of uniformity regarding the work force of employees in industry during the interval 1990-2004 for all localities which are part of the analysed area. It can be noticed a slight unification of values after 2004, until 2008, but the intervals of the values are significantly different compared to those of the work force of the employees in agriculture. Significant increases of the employees occupied in industry were registered in the communes: Zalha (4.00% in 1990 and 52.55% in 2008), Surduc (36.66% in 1990 and 59.09% in 2008) and Ileanda (13.00% in 1990 and 28.74% in 2008), the first having at present the highest percentage of the employees in industry. Important decreases of the work force from industry appeared in the communes Băbeni (50.2% in 1990 and 3.49% in 2008), Benesat (64.21% in 1990 and 40.10% in 2008) and Letca (46.10% in 1990 and 24.90% in 2008).

From the interpretation of the chart it can be noticed that the minimum values of the employees

in industry were recorded during the interval 1992-1998 for the communes Gârbou, Poiana Blenchii, Năpradea and Rus, following an increase during the interval 2000-2002 and the coming back to the initial values after 2004. The commune Rus presents a decrease of the value of the work force in industry index, respectively from 9.90% in 1990 to 3.64% in 2008, with insignificant variations during the time interval analysed. During this period, the tertiary sector knew a constant development, absorbing over 5% from the work force from the other activity sectors.

- *The population index* represented by the components of natural and migratory growth reveals the fact that during 1990-2008, *the natural growth* had sub-unitary values, from -48.18‰ (minimum) for the commune Şimişna to 0‰ (maximum) for Poiana Blenchii. In 2008, the negative values of the natural growth augmented for a part of the communes: Băbeni, Benesat, Cristolţ, Gâlgău, Letca, Ileanda and Surduc, therefore we can speak about an accentuated deficit of population. Communes as Zalha and Năpradea met a slight increase, the values remaining negative. Poiana Blenchii and Lozna are localities which record an increase of natural growth, consequently, at the level of 2008, the values for Poiana Blenchii reached the balance value 0, while in Lozna the value increases from -22.15‰ (1990) to -8.51‰ in 2008. *The migratory growth* has got values between -2 and +1 during the analysed interval, too. Only the commune Rus, starting with the year 2002, presents an obvious lower value as compared to the value registered in 1990, respectively from -0.35 ‰ to -

1.97‰ in 2008. In the communes Surduc and Zalha the migratory growth is constant and positive during the entire analysed period.

The demographic values prove that the number of the communes' inhabitants from the East of Sălaj county faced a continuous decrease during the analysed interval. Analysing the results, it can be noticed an accentuated tendency of population decrease after 2007, the year when Romania joined the EU. At the same time, we can observe the case of the commune Rus which between 2000 and 2005 reduced its population with 1,369 people, respectively from 2,539 to 1,170 in 2005, and in 2008, it reached 1,125 people.

The rurality coefficient, whose value is between 0 and 1, was calculated based on *agriculture, work force of the employees and population* indexes. These indices are relative and they express the position of each territorial-administrative unit compared to the locality which has the maximum and/or minimum value of each characteristic.

The rurality coefficient is based on the way of calculating the coefficients of human development (HDI), the used formula being different and depending on the significance of the index as compared to the degree of rurality. In Fig. 7, two options are presented, thus: the higher value of indices with positive significance, expresses a lower rurality degree, and the coefficient is calculated using the formula a); for the indices with a negative connotation, a higher value means the deepening of the rurality degree and it is calculated using the formula b).

<p>a. $I_j = (X_j - X_{min}) / (X_{max} - X_{min})$ Where: <i>I</i> = synthetic rurality index <i>J</i> = 1...14 villages <i>X_j</i> = value of village <i>X_{min}</i> = value < <i>j</i> <i>X_{max}</i> = value > <i>j</i></p>	<p>b. $I_i = (X_{max} - X_i) / (X_{max} - X_{min})$ Where: <i>I</i> = synthetic rurality index <i>I</i> = 1...14 villages <i>X_i</i> = value of village <i>X_{min}</i> = value < <i>i</i> <i>X_{max}</i> = value > <i>i</i></p>
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Fig. 7. The calculation of the rurality index (by Al. Isaic-Maniu, 2009, abridged by Puia O., 2010)

For the evaluation of the rural area from Sălaj, it was calculated *the rurality coefficient* of *agriculture, work force and population* indices, having the years 1990, 2000, 2005 and 2008 as reference. The results we obtained are presented in the following:

a. The rurality coefficient of agriculture index has got a positive significance and it is calculated by the formula $I_j = (X_j - X_{min}) / (X_{max} -$

$X_{min})$, consequently the value 1 represents a low rurality degree, and 0 the highest degree of rurality.

In Table 7, we can notice:

- In 1990, *the lowest rurality degree* was held by the commune Letca (1.00), followed by Benesat (0.97) and Gârbou (0.92); the communes with *an accentuated degree of rurality* were: Lozna (0.00), Surduc (0.26) and Gâlgău (0.33).

Table 7. The rurality coefficient by the indicator agriculture

LOCALITY	1990	2000	2005	2008
Băbeni	0.40	0.53	0.52	0.52
Benesat	0.97	1.00	1.00	1.00
Cristolț	0.69	0.71	0.72	0.72
Gâlgău	0.33	0.16	0.45	0.45
Gârbou	0.92	0.90	0.87	0.87
Ileanda	0.56	0.33	0.58	0.58
Letca	1.00	0.96	0.95	0.95
Lozna	0.00	0.00	0.19	0.19
Năpradea	0.45	0.56	0.59	0.59
Poiana Blenchii	0.55	0.64	0.61	0.61
Rus	0.61	0.65	0.00	0.00
Șimișna	-	-	0.84	0.84
Surduc	0.26	0.40	0.39	0.39
Zalha	0.47	0.60	0.55	0.55
TOTAL	0.51	0.53	0.59	0.59

Source: Values calculated using data offered by NIS

- In 2000, the lowest rurality degree was held by the commune Benesat (1.00), followed by (0.96) and Gârbou (0.90); the communes with an accentuated degree of rurality were: Lozna (0.00), Gâlgău (0.16) and Ileanda (0.33).

- In 2005, the lowest rurality degree was held by the commune Benesat (1.00), followed by Letca (0.95) and Gârbou (0.87); the communes with an accentuated degree of rurality were: Rus (0.00), Lozna (0.19) and Surduc (0.39).

- In 2008, the situation was identical with the situation from 2005.

b. The rurality coefficient of work force index is represented in Table 8 through the situation of the work force of the employees in agriculture and industry index, where the value 1 represents the lowest rurality degree and 0 the highest degree of rurality.

Table 8. The rurality coefficient by the work force in agriculture and industry index

LOCALITY	1990		2000		2005		2008	
	Employees agriculture	Employees industry	Employees agriculture	Employees industry	Employees agriculture	Employees industry	Employees agriculture	Employees industry
Băbeni	0.00	0.77	0.16	0.02	-	0.04	0.10	0.01
Benesat	0.16	1.00	1.00	0.33	-	0.39	0.06	0.66
Cristolț	0.41	0.01	0.11	0.86	-	-	0.16	0.05
Gâlgău	0.54	0.00	0.01	0.17	0.31	0.00	0.05	0.00
Gârbou	0.92	0.01	0.48	0.16	0.15	0.00	0.05	0.09
Ileanda	1.00	0.19	0.44	0.22	0.00	0.48	0.00	0.46
Letca	0.10	0.71	0.28	0.00	-	0.01	0.01	0.39
Lozna	0.41	0.09	0.71	0.04	0.57	-	0.10	0.01
Năpradea	0.90	0.02	0.55	0.32	1.00	-	0.24	0.02
Poiana Blenchii	0.43	0.15	0.34	0.17	-	-	0.13	0.13
Rus	0.37	0.14	0.46	0.10	-	-	0.08	0.02
Șimișna	-	-	-	-	-	-	1.00	0.00
Surduc	0.55	0.56	0.73	1.00	0.22	1.00	0.08	1.00
Zalha	0.31	0.05	0.00	0.33	-	-	0.25	0.88
TOTAL	0.43	0.26	0.37	0.26	0.16	0.13	0.24	0.26

Source: Values calculated using data offered by NIS

For the work force of the employees in agriculture the situation is the following:

- In 1990, the lowest rurality degree was held by the commune Ileanda (1.00), followed by Gârbou (0.92) and Năpradea (0.90); the communes with an accentuated degree of rurality were: Băbeni (0.00), Letca (0.10) and Benesat (0.16).

- In 2000, the lowest rurality degree was held by the commune Benesat (1.00), followed by Surduc (0.73) and Lozna (0.71); the communes with an

accentuated degree of rurality were: Zalha (0.00), Gâlgău (0.01) and Cristolț (0.11).

- In 2005, the lowest rurality degree was held by the commune Năpradea (1.00), followed by Lozna (0.57) and Gâlgău (0.31); the communes with an accentuated degree of rurality were: Ileanda (0.00), Gârbou (0.15) and Surduc (0.22).

- In 2008, the lowest rurality degree was held by the commune Șimișna (1.00) followed by Zalha (0.25) and Năpradea (0.32); the communes with an

accentuated degree of rurality were: Ileanda (0.00) Letca (0.01), Gâlgău and Gârbou (0.05 - 0.05).

Regarding the work force of the employees in industry the situation is the following:

- In 1990, the lowest rurality degree was held by the commune Benesat (1.00) followed by Băbeni (0.77) and Letca (0.71); the communes with an accentuated degree of rurality were: Gâlgău (0.00), Cristolț and Gârbou (0.01 - 0.01) and Năpradea (0.20).

- In 2000, the lowest rurality degree was held by the commune Surduc (1.00), followed by Cristolț (0.86) and Lozna (0.71); the communes with an accentuated degree of rurality were: Zalha (0.00), Gâlgău (0.01), Benesat and Zalha (0.33 - 0.33) and Năpradea (0.32).

- In 2005, the lowest rurality degree was held by the commune Surduc (1.00), followed by Ileanda

(0.48) and Benesat (0.39); the communes with an accentuated degree of rurality were: Gârbou and Gâlgău (0.00 - 0.00) Letca (0.01) and Băbeni (0.04).

- In 2008, the lowest rurality degree was held by the commune Surduc (1.00), followed by Zalha (0.88) and Benesat (0.66); the communes with an accentuated degree of rurality were: Ileanda (0.00), Gâlgău and Șimișna (0.00-0.00), Băbeni and Lozna (0.01-0.01).

c. The rurality coefficient of population index

- by the natural growth and migration rate, generally had a negative connotation, as it is presented in Table 9. It is calculated by the formula $I_i = (X_{min} - X_i) / (X_{max} - X_{min})$, expressing the values of human potential during the period 1990-2008 for the 14 communes from the East of Sălaj.

Table 9. The rurality coefficient of Population Index – Natural Growth and Migration Rate

LOCALITY	1990		2000		2005		2008	
	Natural growth	Migration rate	Natural growth	Migration rate	Natural growth	Migration rate	Natural growth	Migration rate
Băbeni	-0.69	-3.33	-0.11	-14.88	-0.58	-1.95	-0.72	-1.49
Benesat	-0.89	-1.42	-0.88	-3.45	-0.58	-2.02	-0.68	-2.63
Cristolț	-0.82	-4.02	-0.50	-16.11	-0.86	-1.06	-0.76	-1.36
Gâlgău	-0.76	-3.42	-0.94	-13.22	-0.85	-1.28	-0.73	-1.64
Gârbou	-0.97	-4.31	-0.59	-13.55	-0.73	-1.86	-0.83	-2.43
Ileanda	-0.78	-3.48	-0.85	-13.44	-0.80	-3.13	-0.77	-2.45
Letca	-0.33	-5.28	-0.11	-4.33	-0.50	-1.23	-0.69	-2.51
Lozna	0.00	-4.48	0.00	-18.44	-0.17	-2.20	-0.80	-2.88
Năpradea	-0.78	-3.37	-1.00	-5.44	-0.88	-1.31	-0.89	-1.69
Poiana Blenchii	-1.00	-4.11	-0.86	-16.66	-1.00	-2.16	-1.00	-2.83
Rus	-0.58	-3.42	-0.69	-13.11	-0.55	-3.08	-0.75	-4.06
Șimișna	-	-	-	-	0.00	-2.11	0.00	-2.76
Surduc	-0.97	-2.11	-0.79	-3.88	-0.79	-1.76	-0.74	-1.77
Zalha	-0.64	-1.00	-0.23	-1.00	-0.66	-1.00	-0.74	-1.00
TOTAL	- 0.65	- 3.12	- 0.54	- 9.82	- 0.64	- 1.86	- 0.71	- 1.67

Source: Values calculated using data offered by NIS

For the natural growth – natural deficit – and migration rate, it can be noticed:

- In 1990, the lowest value of the natural growth was recorded in the commune Poiana Blenchii -1.00 and the highest value in the commune Lozna 0.00 (stagnation of the population). The migration rate presents the maximum value -1.00 for Zalha and the minimum value -5.28 for the commune Letca.

- In 2000, the lowest value of the natural growth was recorded in the commune Năpradea -1.00 and the highest value in the commune Lozna 0.00 (stagnation of the population). The migration rate presents the maximum value -1.00 for Zalha and the minimum value -18.44 for the commune Lozna.

- In 2005, the lowest value of the natural growth was recorded in the commune Poiana Blenchii -1.00 and the highest value in the commune Șimișna 0.00 (stagnation of the population). The migration rate presents the maximum value -1.00 for Zalha and the minimum value -3.13 for the commune Ileanda.

- In 2008, the lowest value of the natural growth was recorded in the commune Poiana Blenchii -1.00 and the highest value in the commune Șimișna 0.00 (stagnation of the population). The migration rate presents the maximum value -1.00 for Zalha and the minimum value -4.06 for the commune Rus.

Analysing these previous data, it can be noticed a high instability of the population from Sălaj, the number of inhabitants being more and more reduced. If we take into account that the migration

of the population is specific to young and adult age groups, we can draw the conclusion that the number of inhabitants is decreasing.

CONCLUSIONS

The present research consisted in a synthetic analysis of the rurality coefficient, but the aim of this paper was also to identify the factors which determined the commune Rus to pretend to be a local economic nucleus after 2004, when the entire rural area functioned as an economic micro-region. Analytical results were completed with the information obtained from field observations, to the interpretation of which specialists from Sălaj participated. In confirming the results, it was established that the geographical space from the East of Jibou, overlapping the territory of Sălaj county, is characterised by a strong rurality, and political-administrative factors contributed to the increase of importance of a locality on local area, too.

Several measures regarding the territorial-administrative re-organising of Sălaj county in 2002-2003 established the coming out of the commune Șimișna by the division of two villages (Șimișna and Hășmaș) from the commune Rus, entered into force by Law nr. 531 from September, 23rd, 2002, published in Monitorul Oficial 720, from October, 3rd, 2002 (M. Of. 720/2002). In this respect, the values of the rurality coefficient were modified, in favour of the commune Rus, which became a polarising centre in the micro-region.

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