

## DEMOGRAPHIC VULNERABILITY OF RURAL SETTLEMENTS IN THE SOMEȘ PLATEAU<sup>1</sup>

VICTOR SOROCOVSCHI<sup>2</sup>, CSABA HORVÁTH<sup>3</sup>, ȘTEFAN BILAȘCO<sup>4</sup>

**ABSTRACT** – The different geographical characteristics allowed the differentiation of multiple subunits in the Someș Plateau. From the 219 identified rural settlements, 16% are commune centers and the remaining 84% are related villages. In the assessment of the demographic vulnerability of rural settlements, there are several criteria of which the number of inhabitants is one of the most important. Certainly, determining the appropriate interval of each vulnerability degree has a subjective character depending on the characteristics of the settlements. In the Someș Plateau, four degrees of demographic vulnerability were differentiated according to the number of inhabitants: low (over 1000 inhabitants), medium (501-1000 inhabitants), high (between 101 and 500 inhabitants) and extreme (below 100 inhabitants). A common feature in all geographic subdivisions is that the share of settlements with high vulnerability is the largest.

**Keywords:** rural areas, demographic vulnerability, Someș Plateau

### 1. GENERAL CONSIDERATIONS

Part of the Transylvanian Basin, the Someș Plateau represents the most complex north-western section of the Transylvanian Plateau. An important feature of the Someș Plateau is the dominant agricultural character, manifested also in the nature of the human settlements. The different geographical characteristics allowed the differentiation of multiple subunits with distinct features (Figure 1).

Thus, 219 rural settlements were identified, which are distributed erratically within the six geographical subdivisions. The average density of rural settlements varies between 5.7 settlements per 100 km<sup>2</sup> (Sălătruc Hills) and 23.7 per 100 km<sup>2</sup> (Someș Corridor).

In the Dej and the Șimișna - Gârbou Hills, the average density values of the rural settlements are similar (7.4 per 100 km<sup>2</sup>), but in the Putrcăreț – Boiu Mare Plateau, they are higher than in the Cluj Hills (12.6 settlements per 100 km<sup>2</sup> and only 6.6 per 100 km<sup>2</sup>).

When studying the distribution of rural settlements in the main subdivisions of the Someș Plateau, it is noted that the share held by the Cluj Hills is the highest (24.2%), followed by the Șimișna-Gârbou and the Dej Hills, which have similar values (Figure 2). The Someș Corridor (14.2%) and the Putrcăreți-Boiu Mare Plateau have identical weights, the smallest percent belonging to the Sălătruc Hills (7.8%), which also the smallest area.

---

<sup>1</sup> The work was supported by CNCSIS – UEFISCSU, project number PNII – IDEI 2549/2008 “ESTIMAREA VULNERABILITĂȚII AȘEZĂRIILOR RURALE DIN PODIȘUL SOMEȘAN LA HAZARDE NATURALE ȘI ANTROPICE, ÎN VEDEREA DEZVOLTĂRII DURABILE” [Assessment of the vulnerability of rural settlements in the Someș Plateau to natural and anthropogenic hazards for sustainable development].

<sup>2</sup> Researcher, Ph.D., Romanian Academy, Cluj Subsidiary, Geography Section, Cluj-Napoca, Romania.  
E-mail: svictor@geografie.ubbcluj.ro

<sup>3</sup> Senior Assistant, Ph.D., Babeș-Bolyai University, Faculty of Geography, 5-7 Clinicilor Street, Cluj-Napoca, Romania. E-mail: hcsaba@gmail.com

<sup>4</sup> Researcher, Ph.D., Romanian Academy, Cluj Subsidiary, Geography Section, Cluj-Napoca, Romania.  
E-mail: sbilasco@geografie.ubbcluj.ro

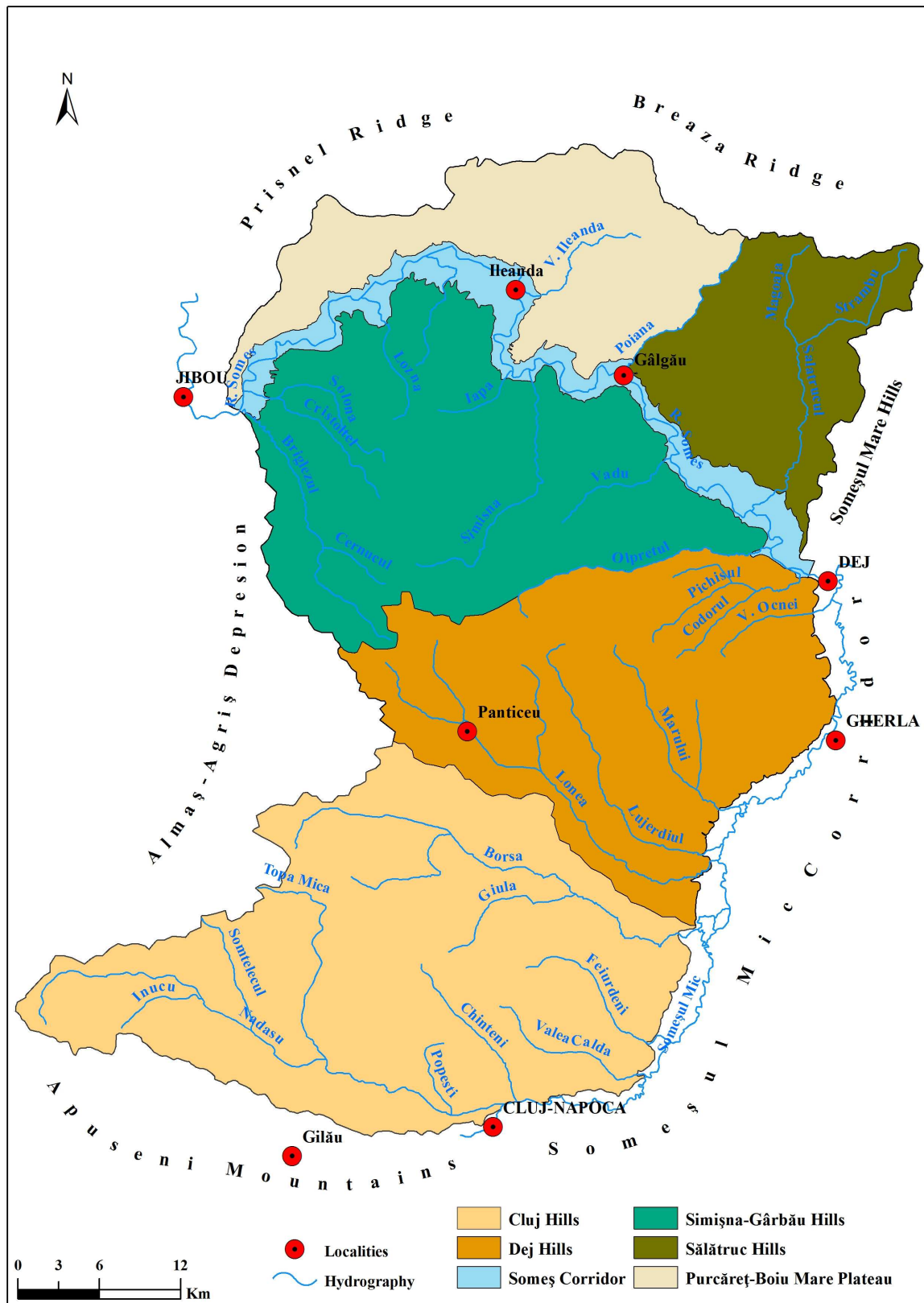
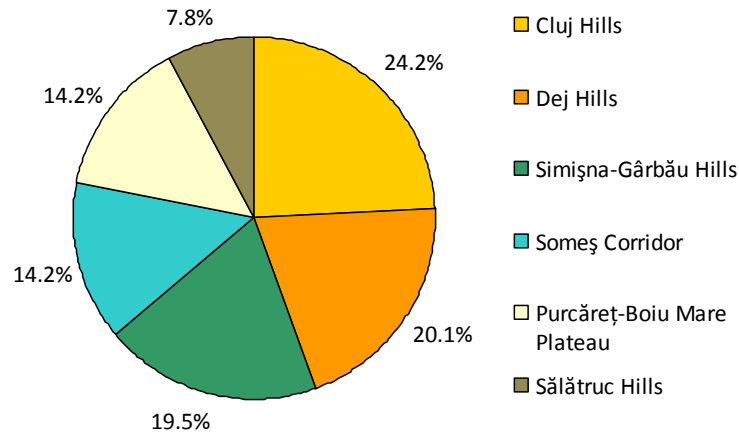


Figure 1. Geographic subdivisions of the Someș Plateau

## DEMOGRAPHIC VULNERABILITY OF THE RURAL SETTLEMENTS IN THE SOMEȘ PLATEAU

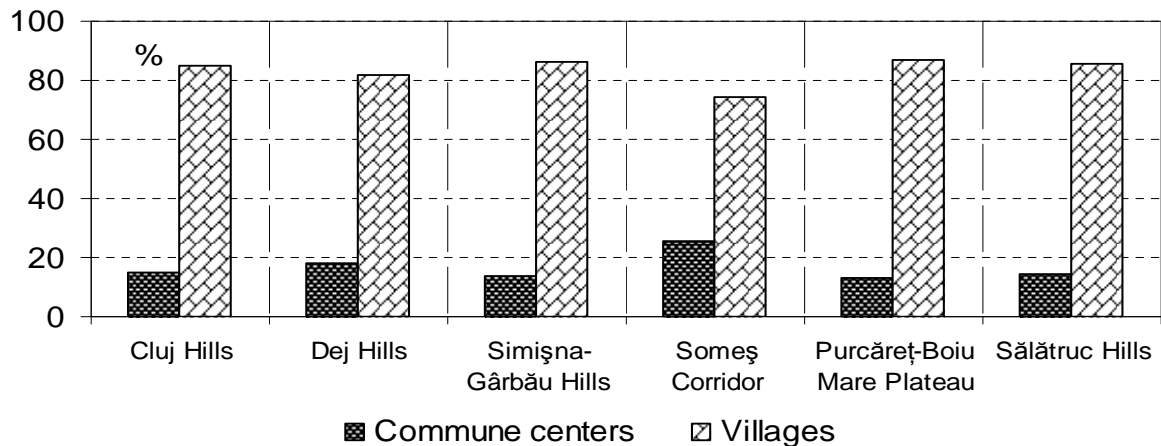
From the 219 identified rural settlements, 16% are commune centers and the remaining 84% are related villages. Most commune centers are located in the Someș Corridor (25.8%) and the fewest in the Sălătruc Hills (12.9%), in the other subdivisions the values varying between 14.3% and 18.2% (Figure 3).



**Figure 2.** The share of rural settlements in the geographic subdivisions of the Someș Plateau

### 2. DEMOGRAPHIC VULNERABILITY OF RURAL SETTLEMENTS

In the assessment of the demographic vulnerability of rural settlements, there are several criteria, from which the number of inhabitants is one of the most important. Certainly, determining the appropriate interval of each vulnerability class has a subjective character depending on the characteristics of the settlements in the studied region. Therefore, in the Someș Plateau, four degrees of demographic vulnerability were differentiated according to number of inhabitants: small (over 1.000 inhabitants), medium (501-1.000 inhabitants), high (between 101 and 500 inhabitants) and extreme (below 100 inhabitants).



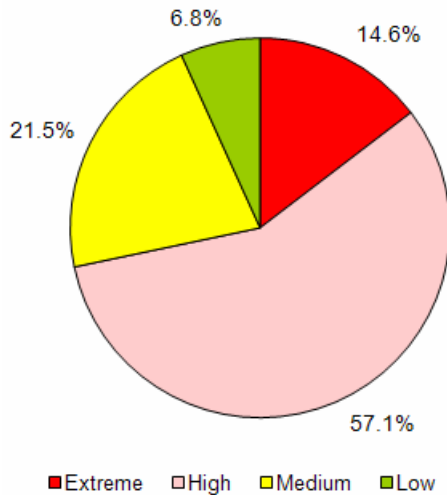
**Figure 3.** Weight of commune centers and villages from the entire number of rural settlements in the geographic subdivisions of the Someș Plateau

#### 2.1. Vulnerability of rural settlements in the Someș Plateau and its geographic subdivisions

In the Someș Plateau, more than half of all rural settlements fall within those with high vulnerability (57.1%). This phenomenon is characteristic for all the geographic subdivisions of the Transylvanian Plateau. These are followed by the settlements with medium vulnerability, holding a fifth of the total (21.5%) and those with extreme vulnerability (Figure 4).

Villages with low demographic vulnerability are few, holding a very small percentage (6.8% of all rural settlements).

This means few rural settlements with a population higher than 1.000 inhabitants. This category of rural settlements has a higher social facilities potential.



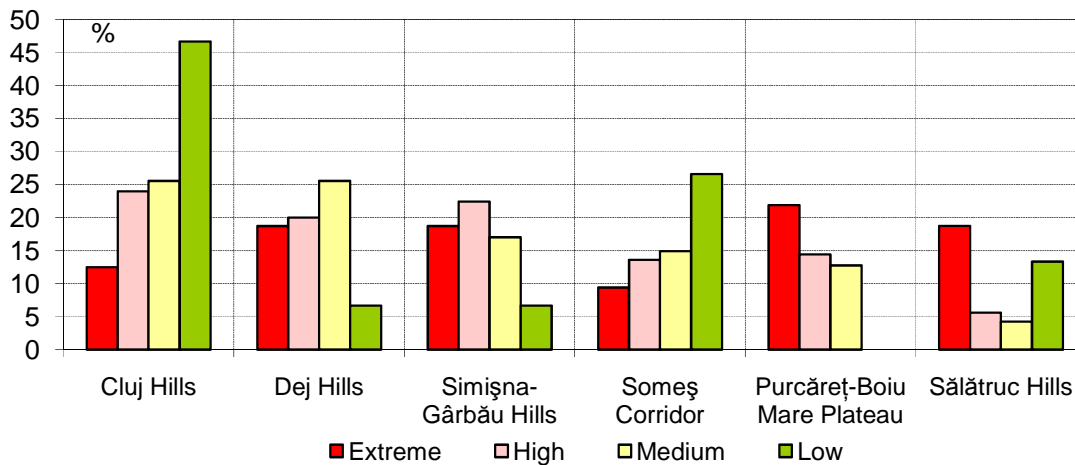
**Figure 4.** Weight of rural settlements with different degrees of vulnerability

The assessment of the vulnerability of the settlements in the geographic subdivisions of the Someș Plateau can be done taking into consideration two aspects. The first aspect refers to the share of the different degrees of vulnerability of all the rural settlements of the plateau and the second refers to the weight regarding the entire geographic subdivision.

Settlements with high vulnerability are more common in the Purcăreți-Boiu Mare Plateau, accounting for 21.9% of all settlements included in this category in the Someș Plateau. Identical weights, of 8.7%, appear in the Șimișna-Gârbou and Sălătruc Hills (Figure 4.). A few settlements included into the high vulnerability class appear also in the Someș Corridor (9.4% of total) and the Cluj Hills (12.5%).

Rural settlements with high vulnerability can be found mainly in the Cluj Hills (24.0%), Șimișna-Gârbou Hills (22.4%) and Dej Hills (20.0%). The percentage of rural settlements from this category is very low in the Sălătruc Hills (5.6% of total) and in the Someș Corridor (13.6%).

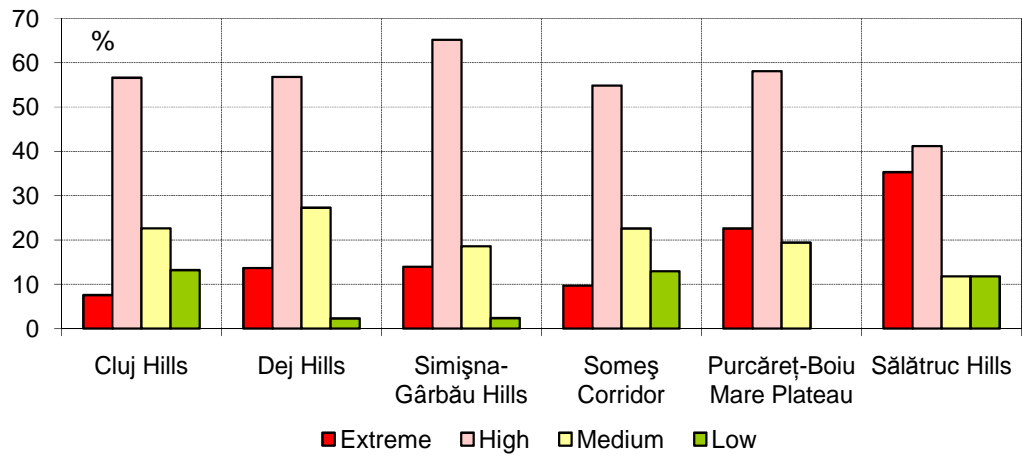
The rural settlements with medium vulnerability located in the Cluj Hills and Dej Hills represent one quarter of all villages included in this category in the Someș Plateau (Figure 5). Lower percentages appear in the rural settlements of the Șimișna-Gârbou Hills (17%), the Someș Corridor (14.9%) and the Purcăreți-Boiu Mare Plateau (12.8%), and the lowest in the Sălătruc Hills (4.3%).



**Figure 5.** Weigh of rural settlements with different degrees of vulnerability on the main subdivisions of the Someș Plateau

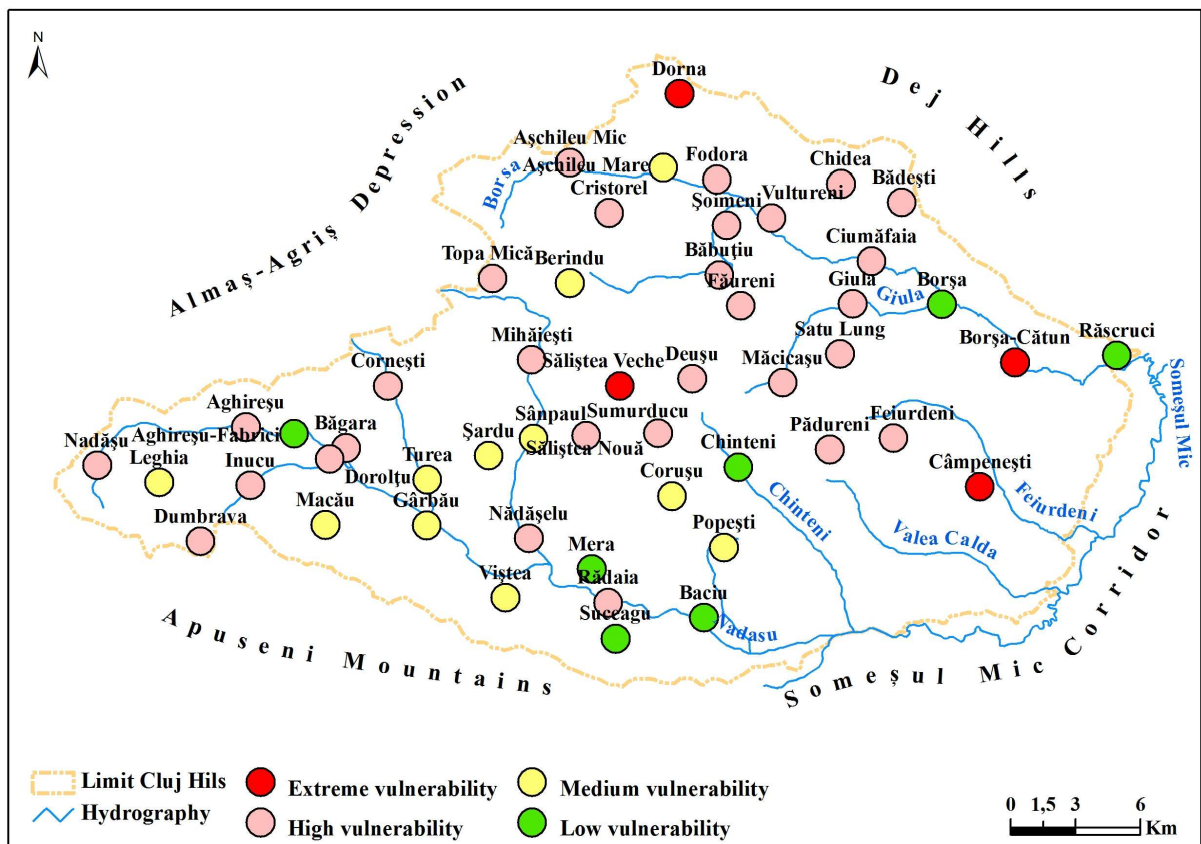
Rural areas with low vulnerability are more frequent in the Cluj Hills, accounting for almost half (46.7%) of rural settlements included in this category (15 villages). In the Someș Corridor, there are four villages included in the category of rural settlements with low demographic vulnerability, two in the Sălătruc Hills and one in the Șimișna -Gârbou Hills and Dej Hills, each representing 6.7% of the total.

DEMOGRAPHIC VULNERABILITY OF THE RURAL SETELMENTS IN THE SOMEȘ PLATEAU



**Figure 6.** Percent shared by different vulnerability degrees of all settlements in each subdivision of the Someș Plateau

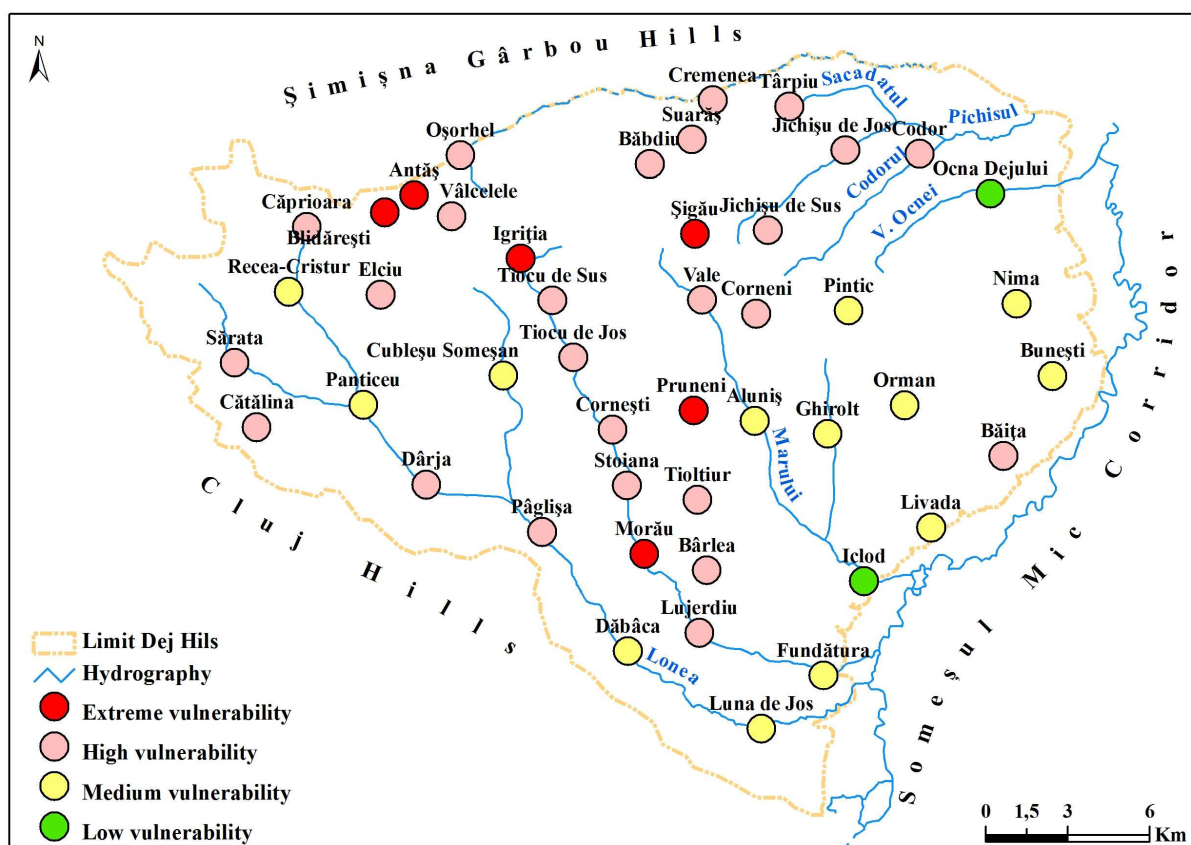
Following the weight that different vulnerability categories hold of all rural settlements, some evident territorial nuances can be observed in each geographical subdivision of the Someș Plateau, induced by the settlements appearance and development conditions. An important role is played by the morphological and morphometric features of the landscape, as well as by the position and the access roads to the polarizing centers, mineral resources, etc.



**Figure 7.** Vulnerability degrees of the rural settlements in the Cluj Hills

A common feature for all subdivisions is the high weight of settlements with high vulnerability. In the Dej and Șimișna-Gârbou Hills, the lowest percentage belongs to the settlements with low vulnerability, while in the Cluj Hills and the Someș Corridor, the settlements included into the extreme vulnerability category are less frequent (Figure 6).

In the Cluj Hills, only four settlements (Borșa Cățun, Sălișteea Veche, Dorna and Câmpeștei) are included into the category of rural settlements with extreme vulnerability, representing 7.5% of the total. In contrast, there are seven settlements with low vulnerability and they are located along the main valleys. Settlements with medium demographic vulnerability are situated especially in the southern part of the Cluj Hills (Figure 7).



**Figure 8.** Vulnerability degrees of the rural settlements in the Dej Hills

In the Dej Hills, there are more rural settlements with extreme vulnerability (13.6%) and they are located along the high interfluves in the north and west and rarely in the valleys (Morău). In the eastern part of the Dej Hills, characterized by lower altitudes, the settlements have mainly medium vulnerability (Figure 8). Settlements with medium degree of vulnerability are also located along the few smaller valleys: Lonea (Recea Cristur, Panticeu, Dăbâca, Luna de Jos), Cubleş (Cubleșu Someș) and Mărului (Aluniș).

In the Șimișna-Gârbou Hills, rural settlements with extreme vulnerability can be found in the south-central part, characterized by high altitudes (Figure 9). Only one village is included in the category of settlements with low vulnerability (Șimișna).

In the Someș corridor, the seven villages with medium vulnerability represent 22.6% of rural settlements (Figure 9). Along with these, there are four other villages with low vulnerability (Cășeu, Cățău, Ileanda, and Surduc).

DEMOGRAPHIC VULNERABILITY OF THE RURAL SETELMENTS IN THE SOMEȘ PLATEAU

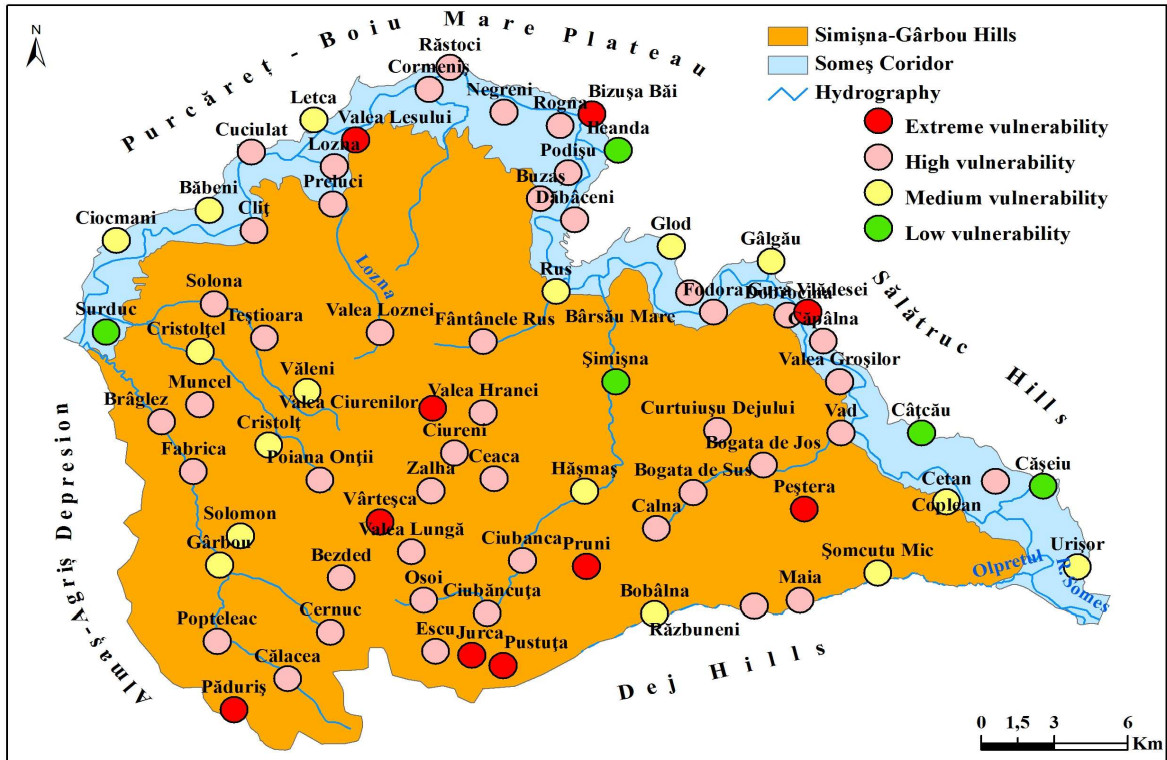


Figure 9. Vulnerability degrees of the rural settlements in the Șimișna-Gârbou Hills and the Someș Corridor

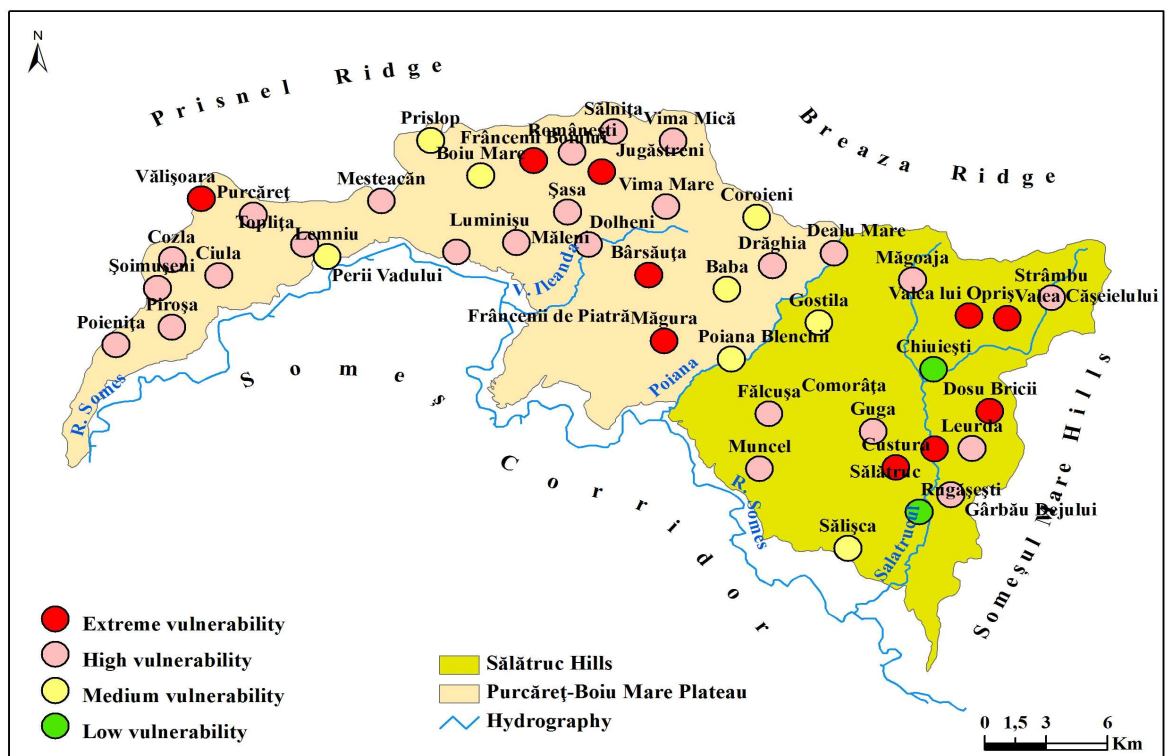


Figure 10. Vulnerability degrees of the rural settlements in the Purcăreț-Boiu Mare Plateau and the Sălătruc Hills

In the Purcăreți-Boiu Mare Plateau, settlements with extreme vulnerability represent 22.2% of the total, most of them being located in the eastern part of the subdivision. The only exception is Vălișoara, which lies in the west (Figure 10).

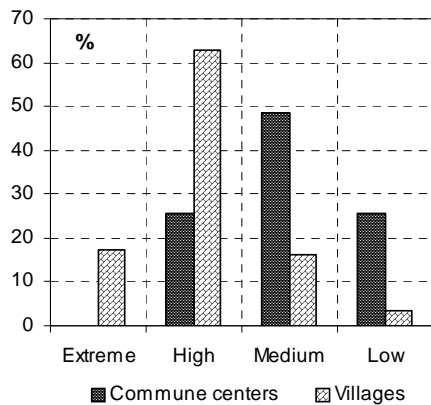
The Sălătruc Hills have similar features, the villages with extreme vulnerability occupying a high share (35.3%) of all rural settlements. Only one village was included in the category of settlements with low vulnerability (Chiuiеști).

**2.2. Vulnerability degrees on different categories of rural settlements**

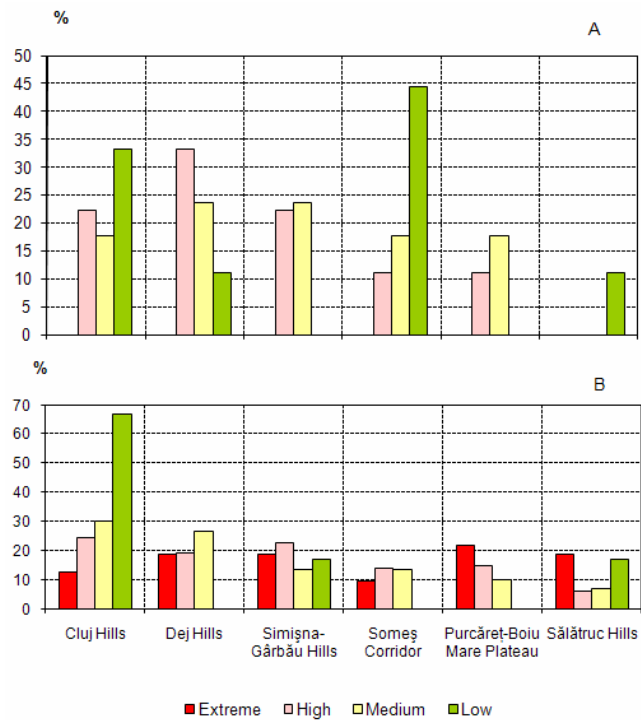
The analysis of the demographic vulnerability of rural settlements should be differentiated on settlement categories as well (communes and related villages) because, in most cases, the contrasts between the two groups are obvious from the very beginning.

In the extreme vulnerability class, only villages are included, namely 17.4% of all villages. The high vulnerability category includes 63% of villages, while commune centers represent only one quarter of all rural settlements in this category (25.7%). As regards the analysis of medium and low vulnerability, the number of commune centers return higher percentages compared to villages (Figure 11).

The analysis on geographical subdivisions reveals the above-mentioned regularities, but there are some regional peculiarities in the weight of different vulnerability categories (Figure 12).



**Figure 11.** Vulnerability degrees on different rural settlement categories



**Figure 12.** Vulnerability degrees of commune centers (A) and villages (B) in the subdivisions of the Someș Plateau

**3. AREAS WITH DIFFERENT VULNERABILITY DEGREES**

Throughout the Someș Plateau, several areas of different sizes were designated, corresponding to four previously established degrees of vulnerability for the rural settlements (Figure 13).

As a general feature, it can be noted that most part the area under analysis is included in the class of high rural demographic vulnerability. Another feature is that areas with extreme vulnerability are scattered and small. A higher concentration is found in the eastern part of the Purcăreți-Boiu Mare Plateau, on the central interflaves of the Sălătruc Hills, and the eastern and central part of the Dej Hills.





Rural settlements with medium vulnerability occupy larger areas in the southern and eastern part of the analyzed region, in the Cluj Hills, Dej Hills, and Sălătruc Hills.

Areas with low vulnerability occupy large areas in the southern and eastern part of the region, some areas at the extremities of the Someș Corridor and isolated parts in the larger valleys (Nadăș, Borșa, Șimișna, and Sălătruc).

## REFERENCES

- BENEDEK, J. (2002), *Riscurile umane* [Human Risks], in: *Riscuri și catastrofe*, Editor V.Sorocovschi, Edit. Casa Cărții de Știință, Cluj-Napoca.
- MAIER, A. (1986), *Dinamica populației în Dealurile Clujului și Dejului* [Population Dynamics in the Cluj and Dej Hills], in: *Probleme de Geografie Aplicată*, Universitatea Babeș-Bolyai, Cluj-Napoca.
- MAIER, A. (1973), *Câteva considerații asupra rețelei de așezări rurale de pe latura sudică a Podișului Someș* [On the Rural Settlement Network in the Southern Side of the Someș Plateau], in: *Studii și cercetări de Geof., Geol., Geogr., Seria Geogr.*, 2, tome XX, Edit. Academiei Române, București.
- MAIER, A. (2001), *Podișul Someș. Populația și așezările* [The Someș Plateau. Population and Settlements], Editura Gh.Barițiu, Cluj-Napoca.
- POP, GR. (1975), *Unele aspecte cu privire la populația zonei deluroase Surduc-Dej* [On the Population of the Hilly Area of Surduc-Dej], in: *Lucrări Științifice, Seria Geografie*, Oradea.
- ROTARIU, T. (2004), *Riscuri demografice* [Demographic Risks], in: *Riscuri și catastrofe*, Editor V.Sorocovschi, Edit. Casa Cărții de Știință, Cluj-Napoca.
- SOROCOVSCHI, V. (2007), *Vulnerabilitatea componentă a riscului. Trăsături, tipuri și modele de evaluare* [The Vulnerability Component of Risk. Features, Types and Assessment Models], in: *Riscuri și catastrofe*, an VI, nr. 4, Editor V.Sorocovschi, Editura Casa Cărții de Știință, Cluj-Napoca.
- SOROCOVSCHI, V., SCHREIBER, W., BILAȘCO ȘT., HORVATH, CS. (2009), *Identificarea caracteristicilor morfometrice, morfologice și demografice ale așezărilor rurale din Podișul Someș* [Identification of the Morphometric, Morphologic and Demographic Characteristics of the Rural Settlements in the Someș Plateau], in: *Geographia Napocensis*, an III, 2, Edit. Casa Cărții de Știință, Cluj-Napoca.
- SURD, V. (2001), *Geodemografie* [Geodemography], Edit. Presa Universitară Clujeană, Cluj-Napoca.
- SURD, V., PUIU, V., ZOTIOC, V., MOLDOVAN, C. (2007), *Riscul demografic în Munții Apuseni* [Demographic Risk in the Apuseni Mountains], Edit. Presa Universitară Clujeană, Cluj-Napoca.
- VERT, C. (1995), *Analiza geodemografică* [Geodemographic Analysis], Edit. Mirton, Timișoara.