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**DOCTORAL THESIS**

**SUMMARY**

**FELEACU HILL – RURAL GEOGRAPHY STUDY**

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## The state of knowledge in Rural Geography

In Romanian geography, generally, and in the field of Rural Geography in Romania, especially, one may distinguish three stages of evolution, each having its own features:

- A. The pre-war and inter-war period, until the setting of the communist regime (1948)
- B. The communist period (1948-1989)
- C. The present period, starting from 1990.

**The pre-war and inter-war** is the pioneering age in geography.

General issues regarding rural settlements are to be found in Friedrich Ratzel's works and in those of Paul Vidal de la Blache (1903, 1917, 1922), who examines the rural geography and the pre-industrial landscapes of the French "lands". He is followed by Jean Brunhes and Albert Demangeon.

In Romania, Vintilă Mihăilescu draws up the first proper study of Rural Geography, entitled *Should one recognize three types of villages: the compact (or concentrated) village, the dispersed village and the scattered village?* (1926).

**The communist period** was characterized by the bias of Rural Geography studies towards certain subjects, according to the ideology of the period, such as: collective agriculture (especially in the first half of the period), industrialization, urbanization and systematization of rural settlements. The first Rural Geography study regarding a village in the analyzed region is printed in 1969: *Feleacu, a "slope" village South of Chuj*, by **Petru Dan Idu**.

**The present period** is characterized by a significant outcome of Rural Geography studies. One should underline the activity of Professor **Vasile Surd** who also publishes a book dedicated to his native village, located in the analyzed region: *Micești (Micuș), a Transylvanian village* (2013). **Pompei Cocean** coordinated many works of reference, including *The development strategy of Aiton commune 2014-2050* (2014), concerning a commune in the study area. **Nicolae Ciangă** wrote remarkable rural tourism studies. A different perspective was given by the studies of Rural Geography that had a regional nature, mainly PhD theses, such as the ones concerning Banat (**Constantin Vert**, 2002), Putna catchment area (**Alexandra Tătaru**, 2008) and Boian Plain (**Iuliana Vijulie**, 2010).

In conclusion, the present period is characterized by the higher quantity and quality of the theoretical and applied studies of Rural Geography, compared to the previous periods.

## The state of knowledge regarding Feleacu Hill. The limits of Feleacu Hill

Feleacu Hill or Feleacu Hills (Al. Savu, 1987), Feleacu Hilly Range (T. Morariu and Al. Savu, 1970) or Feleacu Range (Gr. P. Pop, 2001a) is an area located between Apuseni Mountains and the Transylvanian Basin.

In 1957, Al. Savu performed a geomorphological mapping of the Someșan Plateau, where he included Feleacu Hill. He maintained his opinion in his PhD thesis (1963). He retained his opinion over the years, by including "Feleacu Hills" in the Someșan Plateau in his later works (1975, 1980, 1983, 1987).

The name that fits best is **Feleacu Hill**. Grigor P. Pop (2001a, 2001b, 2007) locates Feleacu Hill (which he names "Feleacu Range") in the **marginal unit of the Transylvanian Basin, the foothills and near-the-mountain basins of this unit**. Also, the mentioned author naturally separates the hilly unit ("Feleacu Range") from Iara-Hășdate Basin and Săvădisla-Luna de Sus Corridor, previously included (by Alexandru Savu) in the same unit and forcedly located within the Someșan Plateau. **Alina-Gabriela Mureșan** (2008) has the same opinion.

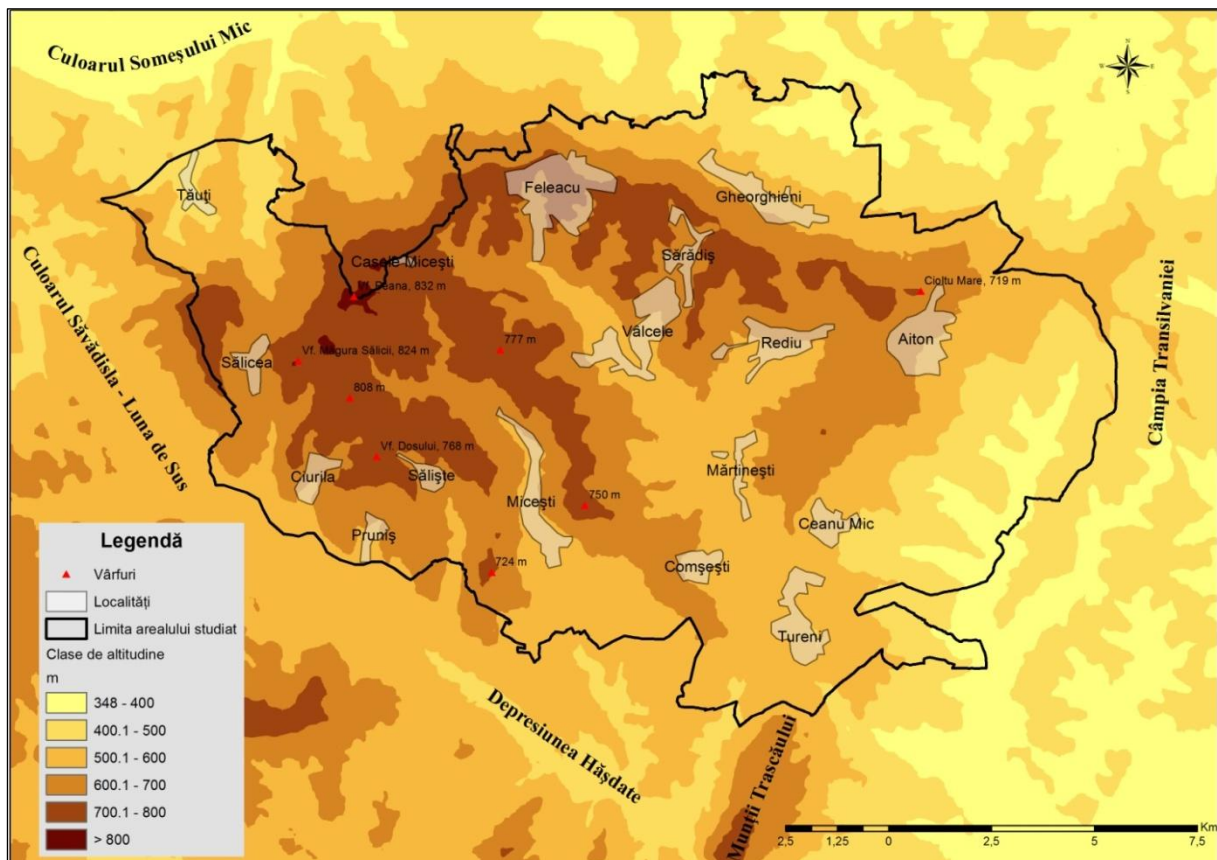


Fig. 1. Limits of Feleacu Hill and contour lines

**The limits of this unit** should not be considered only on physical-geographical bases, but also from the perspective of the objectives and the type of analysis, in this case a Rural Geography study. As in the case of any Human Geography study, statistical data needed for analysis are mostly aggregated at the level of basic administrative units (communes) and only seldom at the level of villages.

Taking this into account, Feleacu Hill includes entirely three communes: Feleacu (with the villages of Feleacu, Casele Micești, Gheorgheni, Sărădiș and Vâlcele), Aiton (comprising the villages of Aiton and Rediu) and Tureni (with the villages of Tureni, Ceanu Mic, Comșești, Mărtinești and Micești), and a part of Ciurila commune (the villages of Ciurila, Sălincea, Pruniș and Săliște) and a single village of Florești commune (Tăuți).

## METHODOLOGICAL COORDINATES

**The method** is the means by which one is getting to know, scientifically, the studied territory. In the drawing up of a Rural Geography study, both **quantitative and qualitative methods** are used.

**The quantitative methods** involve the transformation of concepts into variables and the measurement of such variables.

Among the **qualitative methods**, the following ones have a higher importance in Geography and in the geographical study of the rural settlements, especially: the observation, description, comparison, explanation, analysis and synthesis (P. Coteș, E. Nedelcu, 1976).

For a better knowledge of the studied geographical reality, it is advisable to **mix the quantitative methods**, which suppose a deductive linearity of the research, with the **qualitative ones**, that interpretative and inductive, involving a circular research process (J. Benedek, 2000, p. 15).

## PHYSICAL-GEOGRAPHICAL PREMISES FOR THE DEVELOPMENT OF RURAL SETTLEMENTS ON FELEACU HILL

### 4.1. Landforms and petrography

According to Gh. Pop (1957) and Gr. P. Pop (2001a), the studied area is a range of crystalline schists buried under Miocene (Badenian-Sarmatian), Oligocene and Eocene sediments. These crystalline schists emerge in Măgura Sălicii, and blocks of schists are found on Peana Peak *in situ*.

Another lithological peculiarity of Feleacu Hill is the presence of Feleac trovants.

**Orographically**, Feleacu Hill is a unitary individual range, oriented from West to East, along which there are certain summits: Peana (832 m), Măgura Sălicii (825 m), Dealul Feleac (744 m).

#### **4.1.1. Morphometry of the landforms**

It has a direct impact in the manner of the natural and anthropogenic organization of the territory. Feleacu Hill has heights of 600-800 m in the northern part of the unit, while altitudes below 600 m are found in the South, at the contact with the Transylvanian Plain (364 m on Caldă Mare Valley, near Aiton).

#### **4.2. Climate**

As a result of the position of Feleacu Hill in the shadow of Apuseni Mountains, the climatic parameters reflect a moderate temperate continental climate for lower hills and plateaus.

Average annual temperatures register values of 8°- 9°C. Annual precipitation amounts oscillate between 500-600 mm in the South – South-East at the contact with the Transylvanian Plain and 700-800 mm/year in the North, on the higher parts of Feleacu Hill.

#### **4.3. Hydrography**

Feleacu Hill is the watershed between two important catchment areas of the Transylvanian Basin: Mureş and Someş.

**4.3.1. The surface drainage network** on Feleacu Hill is of the Transylvanian peri-Carpathian type (I. Ujvari, 1972, M. Ielenicz, I. Săndulache, 2008, p. 228).

Valleys on the northern slopes of Feleacu Hill, like Tăuți, Gârbău, Becaş, Murători, Zăpodie, present a steep longitudinal slope as they are much deepened in the sedimentary deposits. They are right-hand tributaries of Someşul Mic (Gr. P. Pop, 2001a).

The southern slope of Feleacu Hill is drained by several permanent valleys: Racilor, Micuş and Hăşdate (this one represents the southern limit of the analyzed region). Along Racilor Valley, several reservoirs have been designed in order to control floods: Mărtineşti, Rediu, Trei Hanuri and Tureni. Caldă Mare Valley, considered the eastern limit of Feleacu Hill, is a tributary of Racilor Valley.

Hăşdate Valley has its spring in Gilău Mountains and represents the southern limit of Feleacu Hill. It collects the short valleys that come across the western and south-western slopes of Feleacu Hill: Sălicea, Ciurila, Pruniş, Sălişte, Micuş.

#### **4.3.2. The underground waters**

Feleacu Hill has a rich network of phreatic and deep underground waters.

#### 4.4. Vegetation and fauna

4.4.1. The natural **vegetation** is represented by the beech zone, the sessile oak zone and the oak zone, to which one may add intrazonal vegetation. The beech zone is representative for areas above 700 m. The sessile oak zone emerges at 400-700 m. The oak zone is well developed below 500 m.

4.4.2. **The fauna** is diverse and is represented by: wild boar (*Sus scrofa*), deer (*Capreolus capreolus*), rabbit (*Lepus europaeus*), fox (*Vulpes vulpes*).

#### 4.5. Soils

**Chernisols** are present at the eastern and south-eastern edge of Feleacu Hill. The most largely distributed are **luvisols**, specific for deciduous forests.

There is a high mixture of soils, characterized by either good fertility (such as chernisols), moderate fertility (luvisols) or low fertility (cambisols, protisols, salicisols).

### POPULATION

#### 5.1. Numerical evolution of population

Demographically, the analyzed period may be divided into two distinctive parts: the period until World War II, when the population grew constantly, and the post-war period, when there is a sharp demographic decline, especially towards the end of the communist regime.

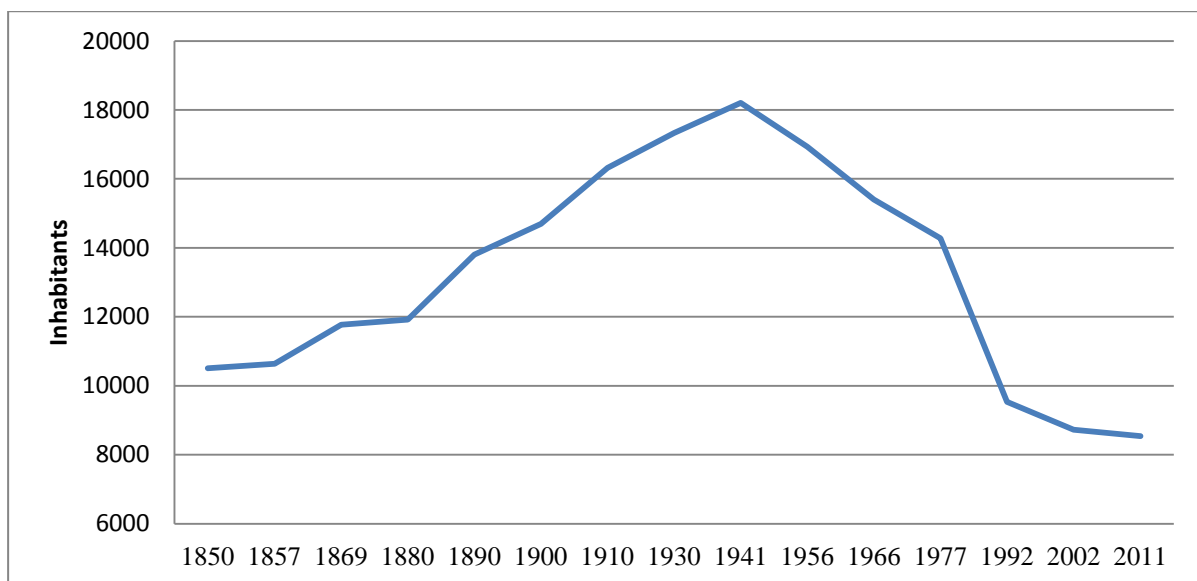


Fig. 2. Numerical evolution of the population on Feleacu Hill between 1850 and 2011.

Source: data processed by the author according to census data and E. A. Varga (2010)



The period 2002-2010 marks the start of the suburbanization period. There was a significant demographic growth of the settlements near Cluj-Napoca City.

## 5.2. Territorial distribution of population

The population density maintains its slightly declining trend. In Feleacu commune, population density was 63.3 inhabitants/km<sup>2</sup>, while the other three communes are still in the lower categories: **Tureni** (30.8 inhabitants/km<sup>2</sup>), **Aiton** (23.9 inhabitants/km<sup>2</sup>) and **Ciurila** (22.1 inhabitants/km<sup>2</sup>).

## 5.3. Population dynamics

### 5.3.1. Population natural dynamics

#### 5.3.1.1. Birth rate

In the communes of Feleacu Hill, the birth rate registers low values after 1990, between 7‰ and 10‰. One remarks Aiton commune, the “negative pole”, as it has the lowest birth rate, below 5‰.

#### 5.3.1.2. Death rate

The dynamics of the mortality rate between 1990 and 2008 does not suggest very clear trends. Between 2010 and 2014, the mortality rate decreases both at Feleacu and Florești, as well as in Ciurila and Aiton, where the values remained however very high (more than 20‰).

#### 5.3.1.3. Natural balance rate

From the analysis of the natural balance rate values between 1990 and 2014, it comes out that all the communes are characterized by negative values of the natural balance rate.

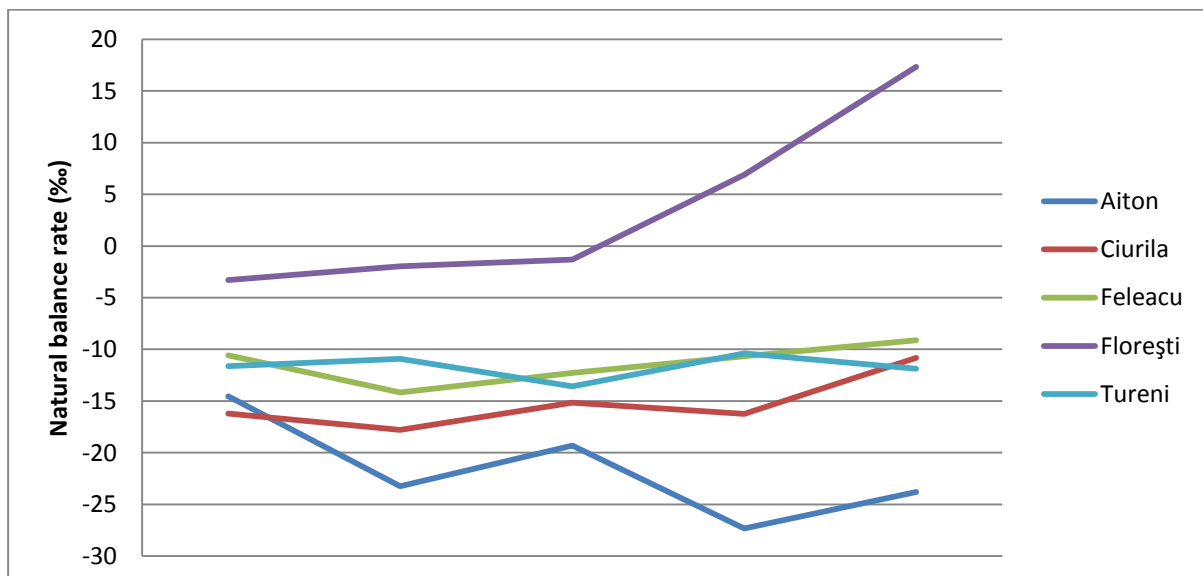


Fig. 3. The evolution of the natural balance in Feleacu Hill communes on 5-year periods (‰)

Source: data processed by the author according to INS – TEMPO ONLINE database

The tendency of improvement is obvious in the case of Feleacu, Ciurila and Aiton in the 2010-2014 period, compared to the previous period, in the context of low and, in Aiton commune, very low negative values.

### 5.3.2. Population migration dynamics

#### 5.3.2.1. Immigration rate

One notices a slow but constant increase in the number of immigrants in the studied area between 1990 and 2014. It comes out that the positive influx of population in the region was due more to the immigration than to the birth rate.

#### 5.3.2.2. Emigration rate

The highest values are recorded in the first years after 1990, but after 1993 the emigration rate decreases. The increasing trend of the recent years suggests a revitalization of emigration in the context of the economic crisis and its outcomes. The main causes of emigration are especially economic ones, as the emigrants try to increase the quality of their living standards.

#### 5.3.2.3. Migration balance rate

All the communes have predominantly negative values of the migration balance rate between 1990 and 1999, and positive values in the next decade, 2000-2009. Since 2010, the values of the migration balance rate have been positive in all communes, except for Tureni.

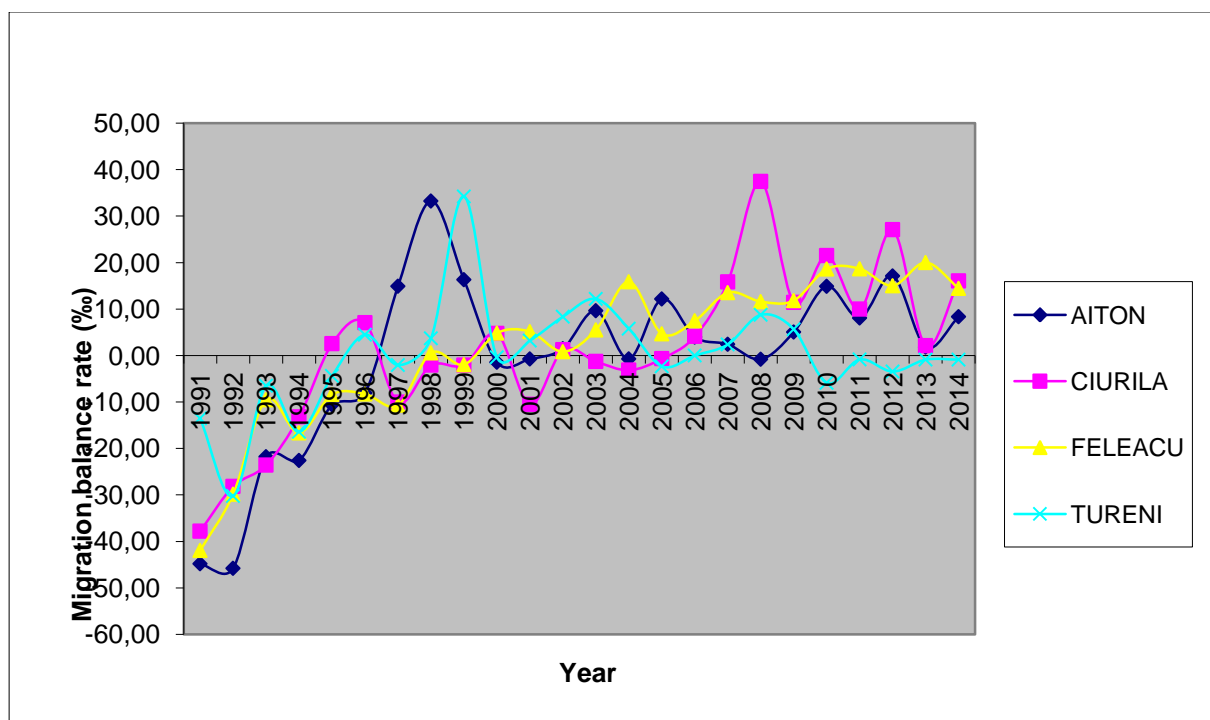


Fig. 4. The evolution of the migration balance rate (%) in Feleacu Hill communes in 1991-2014  
 Source: data processed by the author according to INS – TEMPO ONLINE database.

### 5.3.3. Total balance of the population

A negative value of the total balance of the population predominates in the context of a low birth rate, a high death rate (due to demographic ageing), a rather low immigration and a fairly constant emigration.

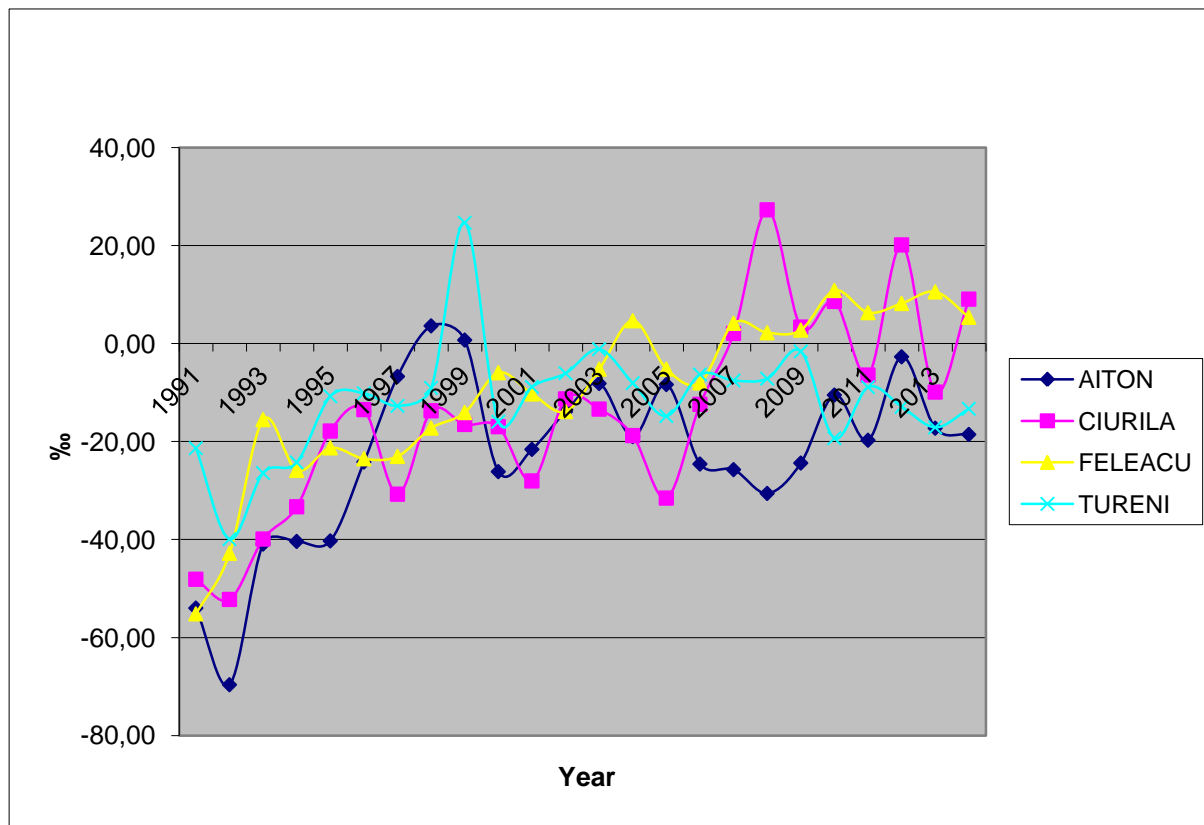


Fig. 5. Evolution of the total balance (%) in Feleacu Hill communes in 1991-2014  
Source: data processed by the author according to INS – TEMPO ONLINE database.

In the communes located next to Cluj-Napoca City, the positive evolution of the total balance in the latest years is caused mainly by the process of suburbanization.

### 5.4. Demographic structures

#### 5.4.1. Population sex structure

The feminization process reaches its highest values after 2010 according to the data of the 2011 census.

#### 5.4.2. Population age-group structure

In the context of constantly low birth rate after 1990, the young population continued to decline, while the elderly population recorded a growth. Therefore, the ageing process became acute, especially in the rural settlements located at larger distance from the main cities.

Aiton commune is the one where demographic ageing took alarming proportions. At the 2011 census, almost half of the commune population, namely 49.6%, was 60 years old or more.

#### **5.4.3. Population socio-economic structure**

One notices an important growth of the share of population employed in the primary and tertiary sectors. This fact is explained by the reconversion of the people who were previously hired in industrial activities but also by the sharp decline of the total employed population in the communes of the analyzed territory.

#### **5.4.4. National structure of the population**

Throughout the entire analyzed period, the Romanian population had an absolute majority in the region and in almost all the settlements. The Hungarians, representing 18% in 2011, are concentrated in only a few villages: Gheorghieni (where they have a majority of 90%), Tureni (almost 50%), Comșești, Aiton (over 20%) and Mărtinești (more than 10%). The Roma population is third in rank (3.8%). They are more numerous in Mărtinești.

#### **5.4.5. Religious structure of the population**

The Orthodox population has a majority at present, 65.1% (201). The Greek-Catholics, dominant in the first half of the 20<sup>th</sup> century, have now a very low number of followers. The Roman-Catholic population has a very weak presence in the analyzed space. The Protestant are located mainly at Gheorghieni, where they are more than 75%, Tureni and Aiton. The Unitarians, a denomination also characteristic for the Hungarians, were 2.5% in 2011. They are almost exclusively located in Tureni commune.

Especially after 1990, the new Protestant denominations emerged in the analyzed area. Among them, the most important numerically is the **Pentecostal** one, who had a share of 6.7% in 2011.

## **SETTLEMENTS**

### **6.1. Age of settlements**

Feleacu Hill is populated since ancient times, as demonstrated by the archaeological discoveries from Neolithic, Mesolithic, the Bronze Age and the Iron Age.

The first documentary attestation of the settlements belongs to the Middle Ages. There are 14 settlements mentioned between the 13<sup>th</sup> and 15<sup>th</sup> century (six in the 13<sup>th</sup> century, six in the 14<sup>th</sup> century and two in the 15<sup>th</sup> century) but they are probably much older than the year of their first attestation. Only three settlements appeared later in the documents: Ciurila in the 18<sup>th</sup> century, while Casele Micești and Sărădiș in the 20<sup>th</sup> century.

## **6.2. Favorable factors for the emergence and development of rural settlements**

### **6.2.1. The presence of upstream small basins, especially on the southern slope of Feleacu Hill**

#### **6.2.2. The existence of water resources on Feleacu Hill**

#### **6.2.3. Soil and subsoil resources**

#### **6.2.4. The emergence and development of communication lines**

### **6.2.5. The presence of Cluj- Napoca and Turda cities to the North and South of the analyzed region**

## **6.3. The evolution of the administrative-territorial organization**

### **6.3.1. The Dacian-Roman period**

According to M. Bărbulescu (2003), the limit between *Dacia Porolissensis* and *Dacia Apulensis (Superior)* was on Mureş River, down to the confluence with Arieş River, and then on Arieş. It comes out that the settlements on Feleacu Hill belonged to *Dacia Porolissensis*.

### **6.3.2. The medieval period**

Cluj County is attested in the documents in 175 while Turda County only in 1279. The counties did not experienced important territorial changes during this period.

### **6.3.3. The period of the Habsburg Empire (1691-1867)**

Most of the settlements of the analyzed territory belonged to Săvădisla area of the Lower District in Turda County. The other settlements belonged to Cluj County.

In 1850 all Feleacu Hill settlements were included in Cluj Military District. In 1852, they were included in Cluj Prefect's Office and most of them in Turda District, except for Feleacu, Gheorghieni and Tăuți who belonged to Cluj District. Counties were established again in 1861.

### **6.3.4. The period of the Austrian-Hungarian Empire (1867-1918)**

The administrative-territorial organization of the Hungarian state was established by the laws of 1870, 1871, 1876 and 1886 which set up the counties and communes as administrative-territorial units that have legal personality.

Thus, most of the settlements in the analyzed space were included in the new county of **Turda-Arieş**. The villages of Feleacu, Gheorghieni, Aiton and Rediu were included in **Cluj County**, Cluj District, while Tăuți commune – in Gilău District of the same county.

### **6.3.5. The inter-war period until 1950**

After the *Law of Administrative Unification* of 1925, **Turda County** received largely the territory of the former Turda-Arieş County. Most villages were included in Mihai-Viteazul District. Compared to the pre-war period, in the analyzed territory **Cluj County** lost

Aiton and Reditu villages to Turda County, but gained Ciurila and Sălicea from it, integrating them in Gilău District, together with Tăuți. Feleacu and Gheorghieni villages were comprised in Cluj District.

In 1938, Turda County was included in **Mureș Land**, with the seat at Alba Iulia, while Cluj County – in **Someș Land**, with its seat in Cluj. This organization lasted until 1940.

As a result of the Second Vienna Award, the analyzed territory was divided between two states. The border between Romania and Hungary was established for four years (1940-1944) on the range of Feleacu Hill. Of the villages within the analyzed territory, only Tăuți was included, together with Cluj City, in Hungary. In those four years, **Cluj-Turda County** functioned and comprised all the settlements of the region. After 1945, the structures that existed before the war came back into existence.

### **3.6. The communist period and after 1989**

The administrative organization was changed in Romania in 1950. The whole analyzed territory was included in **Cluj Region**, in Turda and Cluj Districts. Another consequence of the new organization was the creation of communes comprising several villages.

In 1968 the entire administrative system was revised and the counties were reinstated. **Cluj County** was set up in the present shape. Also, the communes created then remained as such until today.

In December 2008, **Cluj Metropolitan Area** was established. It included, from the very beginning, all the communes of the analyzed region.

## **6.4. Classification and typology of rural settlements**

### **6.4.1. Classification of rural settlements according to their demographic size**

At the last census, in 2011, most settlements passed to the category of small rural villages. Only Aiton (606 inhabitants), Tureni (929 inhabitants), Vâlcele (993 inhabitants) and Gheorghieni (1007 inhabitants) are middle-sized villages and there is only one large village, Feleacu, that has a population of 1827 inhabitants. One notices a decline of the rural population in the analyzed region from 16929 inhabitants registered in 1956 to 8723 at the 2002 census, which means a decrease by 48.4%. During five decades, the rural population on Feleacu Hill was reduced to almost half.

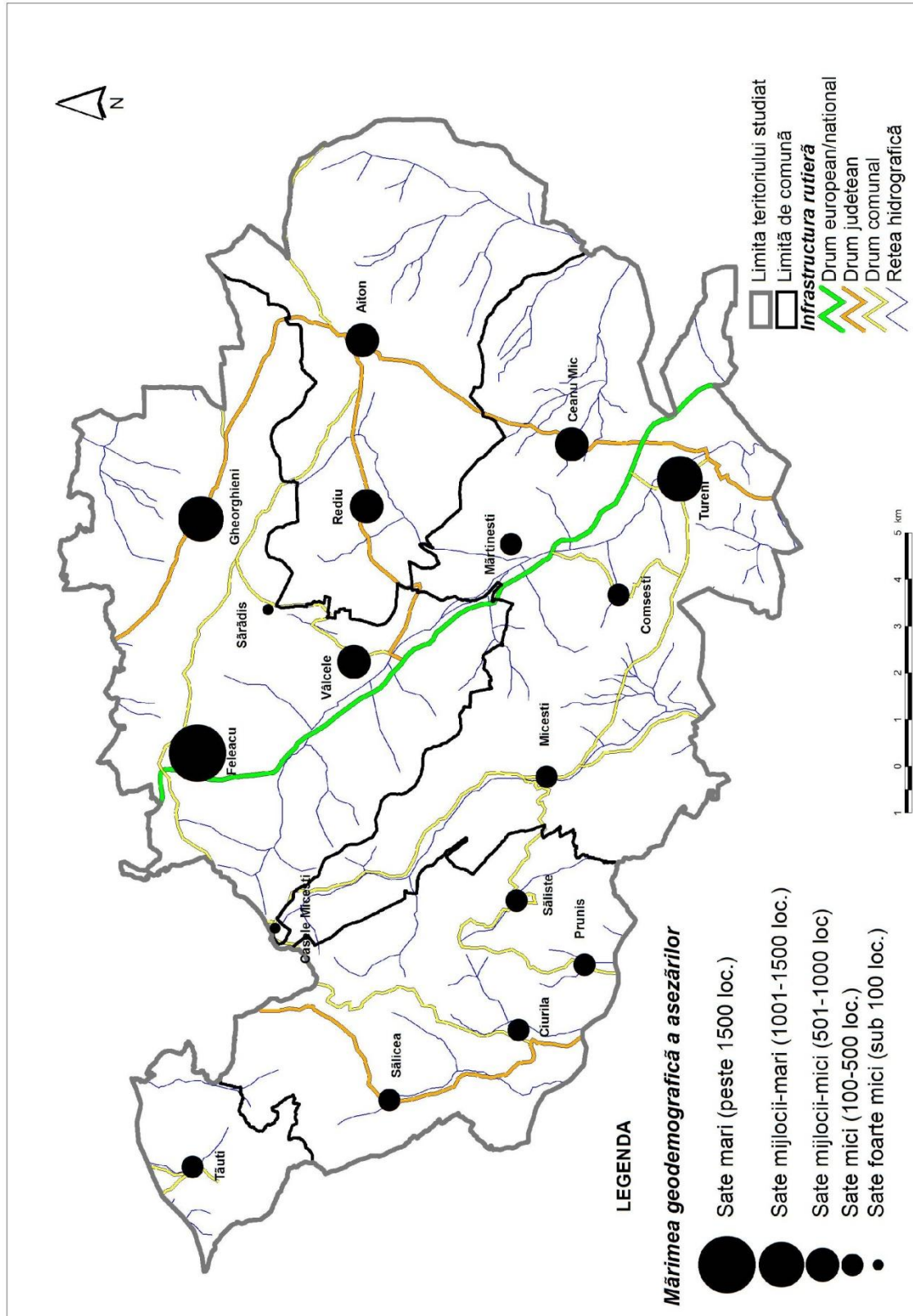


Fig. 6. Demographic size of the settlements on Feleacu Hill (2002)  
 Source: data processed by the author according to the 2002 census

#### 6.4.2. Classification of rural settlements according to shape, structure and texture

On Feleacu Hill, all villages have a *irregular* shape of their built-up area. This is explained by the old age of these settlements and their adaptation to steeper landforms, which

do not allow a geometrical development of their built-up areas. Most of these settlements have an *elongated* shape of their built-up area, along the streams: Mărtinești, Micești, Ciurila.

On Feleacu Hill, most villages have a *dispersed* structure of the built-up area, as households are separated by small agricultural lots.

#### **6.4.3. Functional types of settlements**

Most villages in the analyzed region have agricultural functions, to which one may add the services, especially in the case of settlements located along the road axis E 60 / DN 1 between Cluj-Napoca and Turda and the commune seats: Tureni, Feleacu, Aiton, Ciurila. The residential function is important in Feleacu, Gheorghieni, Tăuți and Sălicea, which tend to become dormitory settlements.

#### **6.4.4. Classification of settlements according to landforms and the main altitude levels**

There are summit villages (Feleacu, Casele Micești, Sărădiș, Sălicea, Gheorghieni), valley villages (Vâlcele, Rediu, Mărtinești, Tureni, Tăuți, Săliște, Micești) and the others that are located at the contact with the neighboring regions.

#### **6.4.5. Classification of settlements according to the main communication lines**

The first important road on Feleacu Hill was built by the Romans and linked Potaissa and Napoca passing by Tureni – Ceanu Mic – Aiton – Gheorghieni. Since the Middle Ages, traffic developed more on the new road which then became DN 1 (E 60) and facilitated the development of villages such as Feleacu, Vâlcele, Mărtinești, Tureni, who also expanded their built-up area towards the new communication line and along it.

#### **6.4.6. Quantitative distribution of rural settlements**

The average density of the settlements on Feleacu Hill is 7.4 villages/100 km<sup>2</sup>, higher than the national average of 5.6 settlements/100 km<sup>2</sup>. This indicator reflects the reality field, namely that this territory is favorable for the human habitat.

Regarding the *population density in the built-up area of the village*, the values range between 0.94 inhabitants/ha (Sărădiș) and 7.32 inhabitants/ha (Mărtinești) while the average is 4.55 inhabitants/ha, a usual value for the plateau and hilly areas.

*The dispersion of the settlements* reflects the degree of dispersion or concentration of the villages. The values range between 0.91 (Aiton commune) and 6.74 (Ciurila commune).

### **6.5. Institutions and facilities**

#### **6.5.1. Educational institutions**

The state of education in the villages on Feleacu Hill worsened lately because of the imposed restructuring at national level.



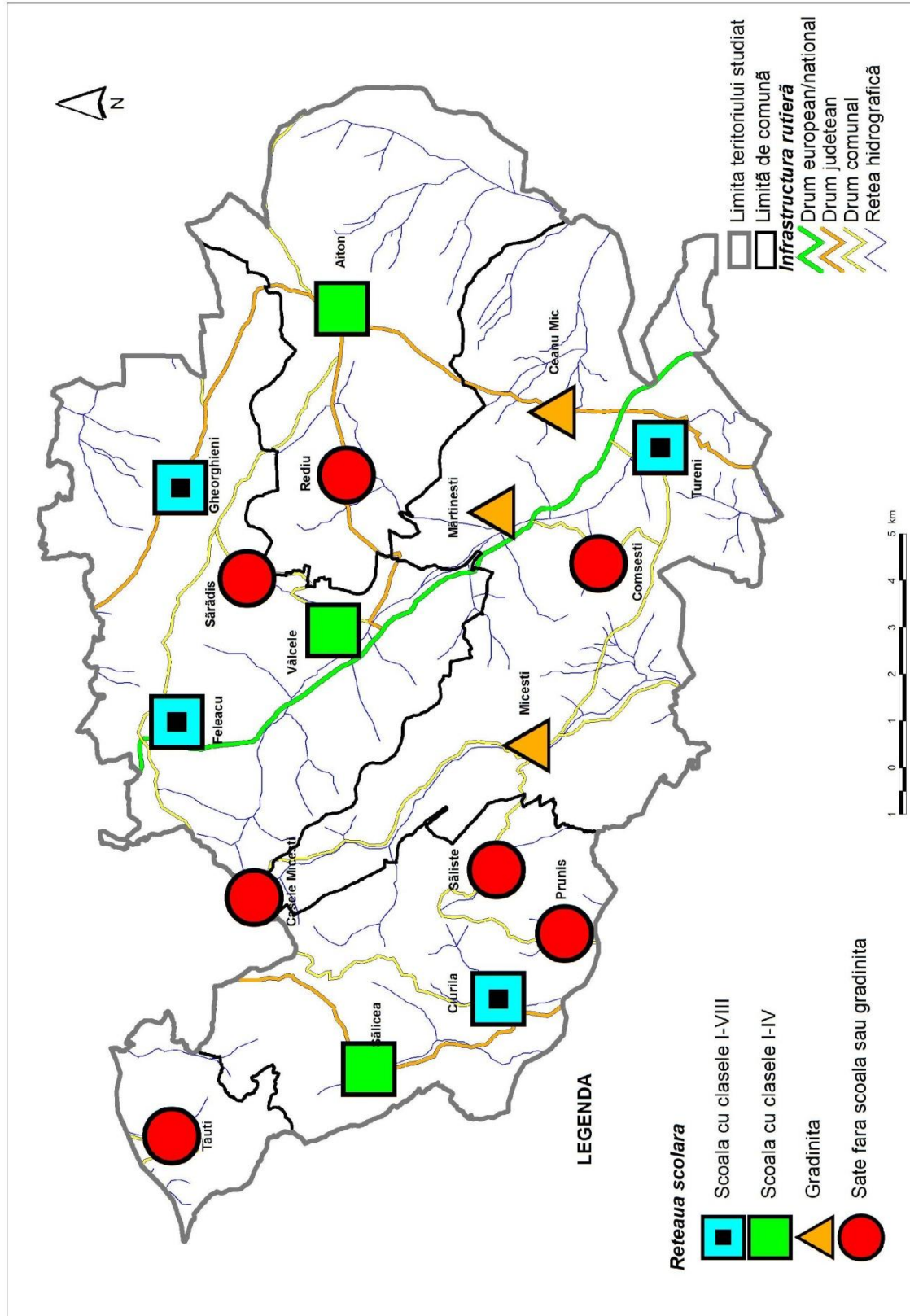


Fig. 7. Schools and nursery schools in the villages on Feleacu Hill. Source: the author

### 6.5.2. Religious institutions

In the analyzed territory, as a consequence of the majority of Romanian Orthodox population, **the Orthodox churches** are the most numerous.

### **6.5.3. Medical and health facilities**

General practitioners' medical practices still exist in three commune centres: Feleacu, Tureni and Aiton, as well as in the villages of Gheorghieni and Vâlcele.

### **6.5.4. Cultural institutions**

Cultural centers are present in all the villages except for Sărădiș and Casele Micești. However, they lost much of their initial meaning and function and sometimes they are unused for long periods. Public libraries function in every commune seat (Feleacu, Tureni, Ciurila, Aiton) but they are weakly equipped.

### **6.5.5. Retail facilities**

All villages, except for Sărădiș and Casele Micești, have retail stores for food and other products.

### **6.5.6. Transport facilities**

The analyzed territory is not crossed by any railway line and the closest railway station is Cluj-Napoca. From the perspective of public road transport, bus stations exist at Feleacu, Vâlcele, Mărtinești and Tureni, where buses and minibuses stop on their way from Cluj-Napoca to Turda. There are also CTP buses which link the villages of the area.

### **6.5.7. Telecommunication facilities**

The use of internet has become regular in the latest years, especially in the commune seats. Regarding mobile phones, the main issue is the missing signal in several villages. The post decreased in importance, as there are less people who use postal services.

## **6.6. Access to technical infrastructure and networks**

### **6.6.1. Power lines**

The fact that not 100% of the households are linked to the power system is due to the fact that they have been plugged off. In most cases, these are abandoned households or they are inhabited only temporarily, in certain periods of the year.

### **6.6.2. Gas network**

Gas was introduced starting from the last decades of the 20<sup>th</sup> century and the network is still expanding. The villages of Aiton commune (Aiton, Rediu), some villages of Feleacu commune (Feleacu, Gheorghieni) and Tureni commune (Tureni, Ceanu Mic, Mărtinești) have been almost entirely connected. In the other villages, wood is used as fuel.

### **6.6.3. Water and sewerage systems**

The water network is approximately 30 km long. Most of the present projects concerning the extension of the water network also include the introduction of the sewerage network, which is almost totally missing in the analyzed territory.

### 6.7. The ranking of settlements on Feleacu Hill

Generally, in Romania, the main manner of ranking human settlements started from the *demographic* criterion, to which the *administrative* criterion was added.

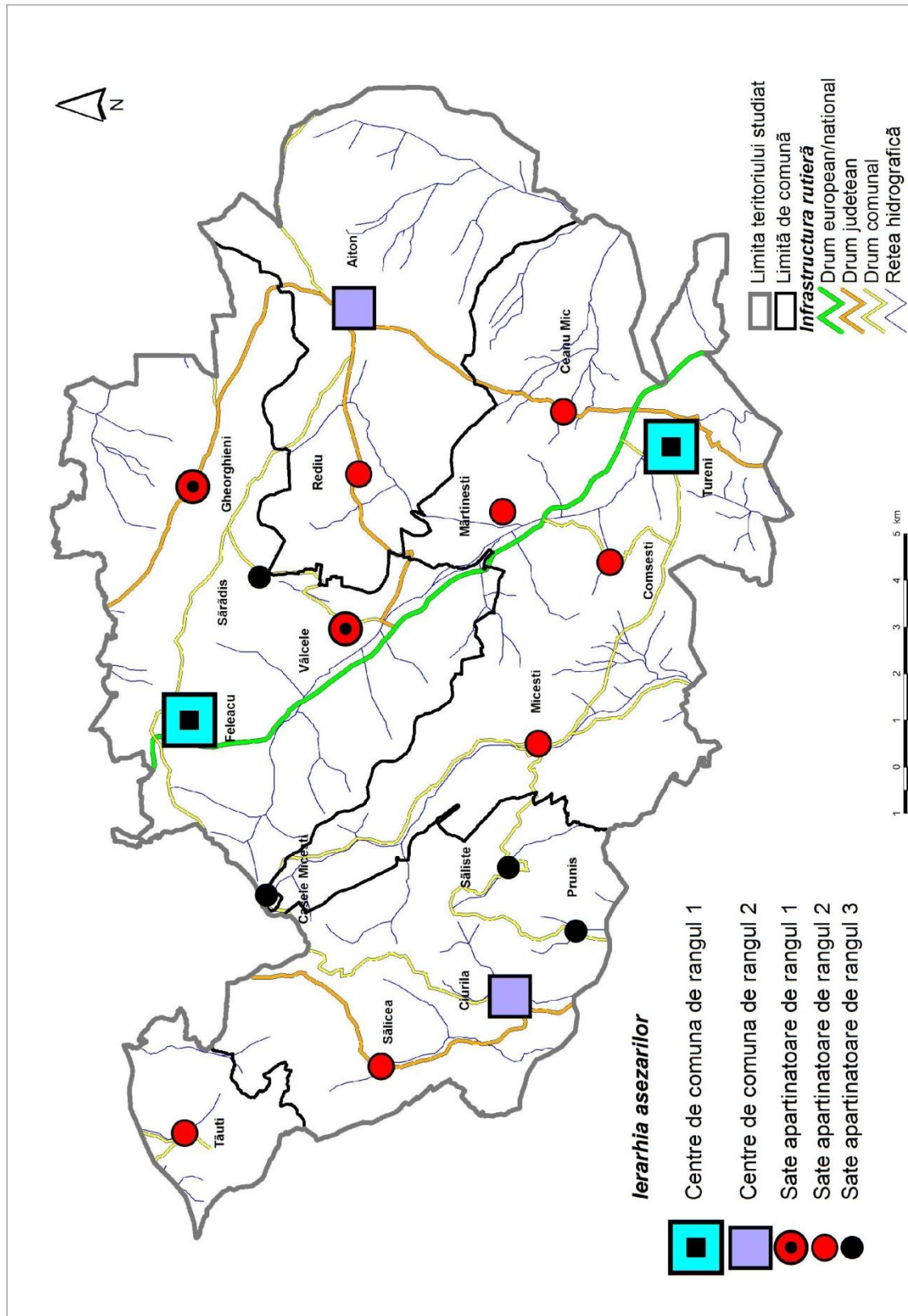


Fig. 8. The ranking of settlements on Feleacu Hill. Source: the author.

## THE RURAL HOUSEHOLD

According to the *functional criterion*, the traditional architecture of the settlements on Feleacu Hill involves the division of the inner space of the household into two yards: the main one, which hosts living and storing units, and the secondary one or the productive area (orchard, garden, etc). The two spaces may be separated or not.

At another scale of analysis, regarding the *types of households* that exist on Feleacu Hill, one notices that there are typical traditional houses (sometimes preserved as isolated buildings, in an advanced state of degradation) and modern buildings, which emerge more and more, including more urban elements than rural ones.

A traditional house on Feleacu Hill has usually 3 rooms, a central foyer connected to two rooms on either side.

As there is a trend and wish to improve the living standards in the rural areas, one may notice sometimes a chaotic style in the rurbanization of these villages, involving:

- Architectural changes to traditional houses (the extension of the house horizontally or vertically, the partial or total closure of the foyer, the annexation of new buildings).
- The use of an aggressive range of colors.
- The building of several houses on the same lot.
- The emergence of houses with urban-style architectural elements.
- The combination of different architectural styles and building materials.

## THE TRANSPORT INFRASTRUCTURE

### 8.1. Road infrastructure

**A3 "Transylvania" Motorway, Turda – Gilău sector**, crosses the southern part of the studied area on a short distance across Tureni commune territory.

**National road 1 (DN 1), Cluj-Napoca – Turda sector**, represents the main road communication axis in Feleacu Hill. It has an approximately North – South direction. On this sector, it corresponds to two European roads: E 60 and E 81.

**Vâlcele – Apahida bypass (DN 1N)** is a new road, built over the ridge of Feleacu Hill to connect DN 1 and the eastern part of Cluj-Napoca City.

Among the county roads, one remarks DJ 103G Cluj-Napoca – Gheorghieni – Aiton – Tureni, DJ 103M Vâlcele – Rediu – Aiton, DJ 107R Cluj-Napoca – Sălicea – Ciurila.

Communal (local) roads are more numerous and generally link villages that are not commune centers. Not all these roads are modernized.

### **8.2. Railway infrastructure**

The analyzed region is not crossed by any railway.

### **8.3. Airport infrastructure**

There is no airport on Feleacu Hill, although there were proposals to build or move Cluj-Napoca International Airport on the summit of Feleacu Hill. Since 2012, there is a private aerodrome at Sălicea.

## **THE RURAL ECONOMY**

### **9.1. The primary sector**

#### **9.1.1. Land use structure**

One remarks a slight decrease of the share of agricultural lands between 1990 and 2010 in all the communes of the analyzed territory.

The INS data suggest that there is an extensive-type of agriculture in this area. The agricultural lands cover more than the average county of 63% while agricultural productivity is low. For a large part of the families living in this area, crops and animal husbandry represent their main source of living.

Table 1. Land use structure (ha) in 2014

Commune	Arable lands	Grasslands	Hay fields	Orchards	Total agricult.	Forests	Non-productive lands	Other non-agriculture	Total
Aiton	2031	1007	739	-	3777	187	329	234	4527
Ciurila	2973	1870	762	84	5689	813	217	503	7222
Feleacu	1405	1288	857	57	3607	2084	118	270	6079
Tureni	2851	1638	1070	33	5592	1303	87	422	7404

*Source: INSSE, TEMPO-ONLINE (2016)*

The highest weight of agricultural lands is recorded in Aiton commune, located at the contact between Feleacu Hill and the Transylvanian Plain. As expected, Feleacu commune has the lowest share of agricultural lands, 59.34% in 2014.

#### **9.1.2. Arable lands. Crops and vegetal production**

**Arable lands** cover a little more than 50% in Aiton (53.77%), Ciurila (52.26%) and Tureni (50.98%) in 2014, above Cluj County average.

Maize is the main cereal crop in the studied area as it is better adapted to the specific morphological and climatic conditions. Barley covers significant areas and is more important than wheat in Tureni and Feleacu communes. Cereal crops represent 60%-70% of all the crops, reaching a peak of 71.9% in Ciurila commune.

Table 2. Areas covered by the main crops in Feleacu Hill communes in 2010 (ha)

Commune	Wheat	Maize	Barley	Oat	Other cereals	Sunflower	Sugar beet	Other industrial crops	Fodder	Potatoes	Vegetab.	Total
Aiton	136.41	243.27	82.48	24.71	0.15	0.10	0.18	0.08	207.57	5.81	5.24	706.00
Ciurila	82.67	120.79	70.02	33.52	1.65	2.20	31.05	20.00	30.05	32.28	5.00	429.23
Feleacu	16.04	162.23	70.06	19.22	10.53	1.10	0.01	0.58	53.94	57.22	12.91	403,84
Tureni	100.85	336.58	156.67	33.74	8.32	0.98	-	1.29	249.59	35.50	27,68	951.20

*Source: General Agricultural Census (2010)*

The potato is an important and representative crop especially in the higher areas of Feleacu Hill. Vegetable farming seems to be in sharp decline. One explanation for the general decrease of cultivated fields is the presence of unused arable lands.

Fodder is especially important in the two communes located in the South-East of the analyzed territory, Aiton and Tureni.

### **9.1.3. Grasslands and hay fields. Animal husbandry and production**

Together, grasslands and hay fields cover more than 2000 ha in each of the studied communes, except for Aiton, where they cover only 1746 ha according to the data provided by the INS (TEMPO-ONLINE database, 2016). Their weight is between 40% and 50% of the agricultural lands, reaching a peak of 59.47% in Feleacu commune, located at a higher altitude.

Table 3. Number of animals (heads) and bee colonies in Feleacu Hill communes in 2010.

Commune	Cattle	Sheep	Goats	Swine	Poultry	Horses	Donkeys and mules	Rabbits	Bee colonies
Aiton	191	2584	29	672	7660	101	2	50	20
Ciurila	259	4049	1201	499	2921	99	4	28	10
Feleacu	207	3928	63	537	7600	111	6	91	49
Tureni	659	7594	19	1197	8453	142	11	150	105

*Source: General Agricultural Census (2010)*

In 2010, there were only 1316 cattle heads and approximately half were located in Tureni commune, which continues to lead in animal husbandry farming. Large scale sheep husbandry still represents a sustainable and profitable venture, and the by-products are very much demanded on the local and national markets.

#### 9.1.4. Orchards and vineyards. Fruit growing and viticulture

Table 4. Areas (ha) covered by fruit trees in Feleacu Hill communes in 2010

Commune	Plum	Apple	Pear	Cherry	Apricot	Peach	Quince	Walnut, chestnut hazel	Other	Nursery	Total
Aiton	23.10	9.18	2.63	0.05	-	-	-	0.01	0.13	0.31	35.41
Ciurila	7.52	6.18	0.97	-	0.24	0.17	0.01	-	0.10	-	15.19
Feleacu	1.21	12.26	1.27	0.11	0.20	-	0.03	0.01	0.04	-	15.13
Tureni	6.95	7.93	1.51	0.76	0.89	0.07	0.53	0.63	0.57	-	19.84

*Source: General Agricultural Census (2010)*

The plum tree is dominant, covering 37.78 ha, representing 45.32% of the areas covered by orchards and fruit trees in Feleacu Hill communes. More than half of this area, namely 23.1 ha, is found in Aiton commune, where plum trees cover more than 65%.

The plum tree is immediately followed in terms of areal importance by the apple tree, that covered 35.55 ha or 41.54% in 2010. Apple trees are predominant in Feleacu commune.

Vineyards are not specific for this area.

#### 9.1.5. Forests. Forestry

In 2014, forests covered 4387 ha in the four communes, or 17.39% of the total territory. Almost half of this area, 2084 ha, is in Feleacu commune, whose territory comprises most of Făget Forest.

#### 9.1.6. Waters and ponds. Fishing

In 2014, according to INS data, the area covered by waters and ponds was 367 ha across the territory of the four communes in the study area.

#### 9.1.7. Other lands

Among the other non-agricultural lands, one remarks the **unproductive lands**. In 2014 they covered 751 ha representing almost 3% of the entire studied area.

#### 9.1.8. The analysis of the land use by means of CORINE LAND COVER

The analysis highlights the predominance of **non-irrigated arable lands**, present mostly in the southern and eastern parts of the region. **Secondary grasslands** also play an important role in the life of Feleacu Hill rural communities. **Broadleaf forests** represent the original natural vegetation of this area, and they are still preserved in a compact form in the northern and western parts of the studied territory. Among the other land use categories, only the **discontinuous urban fabric and rural space** covers a significant area.



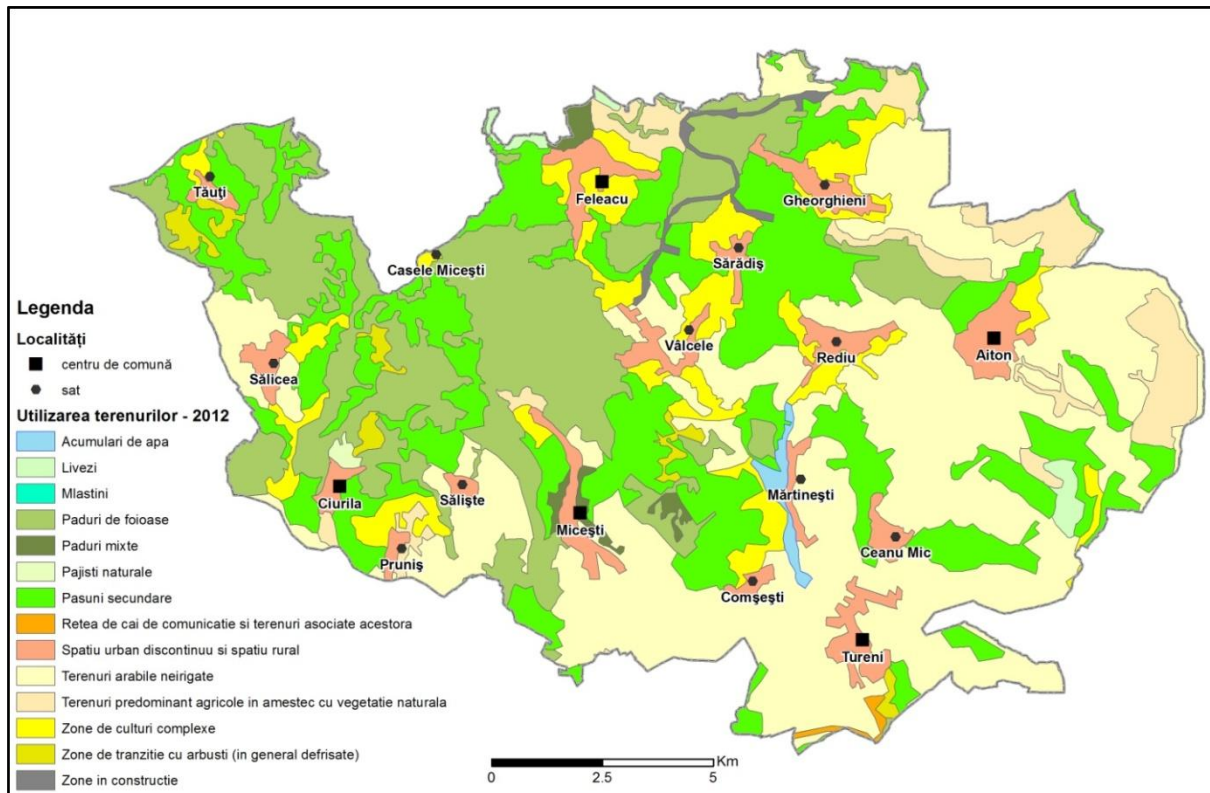


Fig. 9. Land use categories according to CLC 2012.

Source: [www.eea.europa.eu](http://www.eea.europa.eu)

## 9.2. Industry and constructions

Rural settlements on Feleacu Hill do not have any industrial tradition.

One remarks the presence of the following branches: food industry (Feleacu, Tureni, Săliște), wood processing industry (Feleacu), construction and building materials industry (Tureni), chemical industry (Sălicea, Pruniș) and energy industry (Vâlcele).

The ten companies identified as active in the processing have a total number of 135 employees and about half of them work at SC Serv Baratin SRL in Tureni, in the field of stone cutting, carving and processing.

There is a much larger number of companies that are active in the field of constructions. More precisely there are 19 companies but their total number of employees reached only 78 people at the level of 2015.

## 9.3. Trade and services

Commercial activities are present in almost all the settlements on Feleacu Hill. Generally, there are small companies involved especially in the retail of food products and beverages. Along the main access routes, larger companies developed storage units and large storage halls. They are mainly active in wholesale commercial activities.



Economic operators in the field of road transport and the services related to it are characterized by their almost exclusive location in the villages along the main road communication axis, DN 1.

#### **9.4. Tourism**

Feleacu Hill provides both a natural and anthropogenic complex tourism potential. From the point of view of tourism potential capitalization, the area has the advantage of its location near two important cities of Transylvania: Cluj-Napoca and Turda.

##### **9.4.1. The natural tourism potential**

*The morphological tourism potential* is influenced by the *landform* features of Feleacu Hill. Due to its altitude (825 m) and the absence of forest vegetation on the summit, Măgura Sălicii represents a spectacular panoramic viewpoint.

Because of its altitude, slope, morphological configuration, aspect, exposition and accessibility of the area, the northern slope of Feleacu Hill was favorable for the setting of a ski slope, named also "Feleacu".

*The hydrogeographical tourism potential* is a modest one. In the area, one remarks the reservoirs on Racilor Valley and Micuș Valley, that are important due to their aesthetic and landscape features and as fisheries.

*The biogeographical tourism potential* is represented mainly by Făget Forest.

##### **9.4.2. Anthropogenic tourism potential**

*Religious buildings* are represented by the churches belonging to different denominations. The oldest and most representative church is the Orthodox one in Feleacu village, built between 1486 and 1488 in Gothic style. Also in Feleacu, the monastery was established again. One may also point out the wooden churches of Săliște and Tăuți, the monastery of Florești/Tăuți, as well as the medieval churches of Gheorghieni (the Roman-Catholic one) and Aiton (the Protestant one), which are on the list of historical monuments.

*Manors* also bear witness of the former times and the events of those times. One such manor is located in Aiton.

*The ethnographical resources* are represented by the cultural traditions and values found in the villages on Feleacu Hill.

##### **9.4.3. Types and forms of tourism**

**The leisure-related tourism** is practiced especially in the forested and higher area of Feleacu Hill. Tourists enjoy the clean unpolluted air, the picturesque natural environment, the panoramic viewpoints from where they admire the surroundings.

*Bicycle touring* is intensely practiced on Feleacu Hill, especially in the warm semester of the year. *Winter tourism* is practiced by winter sports fans (ski, snowboard, sleds). The only facility that is properly arranged in this sense is Feleacu ski slope. *Extreme sports* are represented by paragliding or hang gliding but one may also visit *Adrenalin Park* or *Fun Park*.

**Cultural tourism** is developed due to a wide range of historical, religious or ethnographical attractions. Two types of cultural tourism are better represented on Feleacu Hill: religious tourism and rural tourism.

**Mixed or complex tourism** resulted from the association of several forms of tourism in order to meet the ever higher demands of the tourists.

*Specialized and visiting scientific tourism* is less important in the region, despite the presence of natural attractions that have a high scientific value. They also belong to various research fields.

**Tourism related to festivals and events** is a form of tourism favored by the high number of diverse local events: folk festivities, village / community days, as well as family-scale events.

**Transit tourism** is concentrated mainly along the main international and national road E 60 / DN 1.

From the point of view of the duration of the sojourn, it should be pointed out that the practiced forms of tourism are in most cases included in **short-stay tourism** and especially **week-end tourism**.

#### **9.4.4. Accommodation tourism infrastructure – the basis of tourism planning**

Until 2000 there were no accommodation units in the region. Between 2001 and 2015, the number of accommodation units (all of them agrotourism guesthouses) increased from 1 (in 2001) to 4 (in 2015). More than that, four-star Hotel Premier functions in Feleacu commune, on the territory of Vâlcele village, near the national road (DN 1 / E 60).

The total number of places increased from 5 beds in Feleacu commune (Teleschi Guesthouse) in 2001 to 80 beds in 2015, when the majority of places (50) were located in the two guesthouses ("La Mesteceni" and "Domeniul Regilor") in Ciurila commune.

#### **9.4.5. Tourism flows**

On Feleacu Hill, tourism flows registered a positive dynamics between 2002 and 2015. The value of arrivals increased in a spectacular manner from 95 tourists in 2002 (all registered at Teleschi Guesthouse in Feleacu) to 7791 tourists in 2015 (of which 5657 tourists also in Feleacu commune: 980 at Teleschi Guesthouse and 4677 at Hotel Premier).

We believe that this increasing trend will be maintained in the years to come, both because of the increase in the number of tourists at the existing accommodation units, and of the opening or "institutionalization" of new accommodation units in the study area.

The number of overnights at the accommodation units in the study area experienced a similar evolution to that of arrivals, in the context of short and very short stays (1-3 nights) in most cases.

The analysis of seasonality on the basis of INS statistical data indicates a relative stability of values and some exceptions from the usual situations. There is a slight increase in the summer months.

### **CONCLUSIONS**

Feleacu Hill is a complex area, where natural and anthropogenic elements interact.

The region is in a continuous transformation and modernization. The traditional rural space gradually disappears and is replaced by a suburban space that is more and more expressive in its territorial manifestations.

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