

ANTHROPOGENIC INFLUENCE ON THE LANDSCAPE OF BAISOARA COMMUNE, CLUJ COUNTY

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➤ MOUNTAIN GRASSLAND

- Mountain grasslands are between the most diverse ecosystems, from species diversity point of view, and have evolved as a result of hundreds of years of extensive agricultural activity that designed and maintain open and semi-open habitats below the timberline.

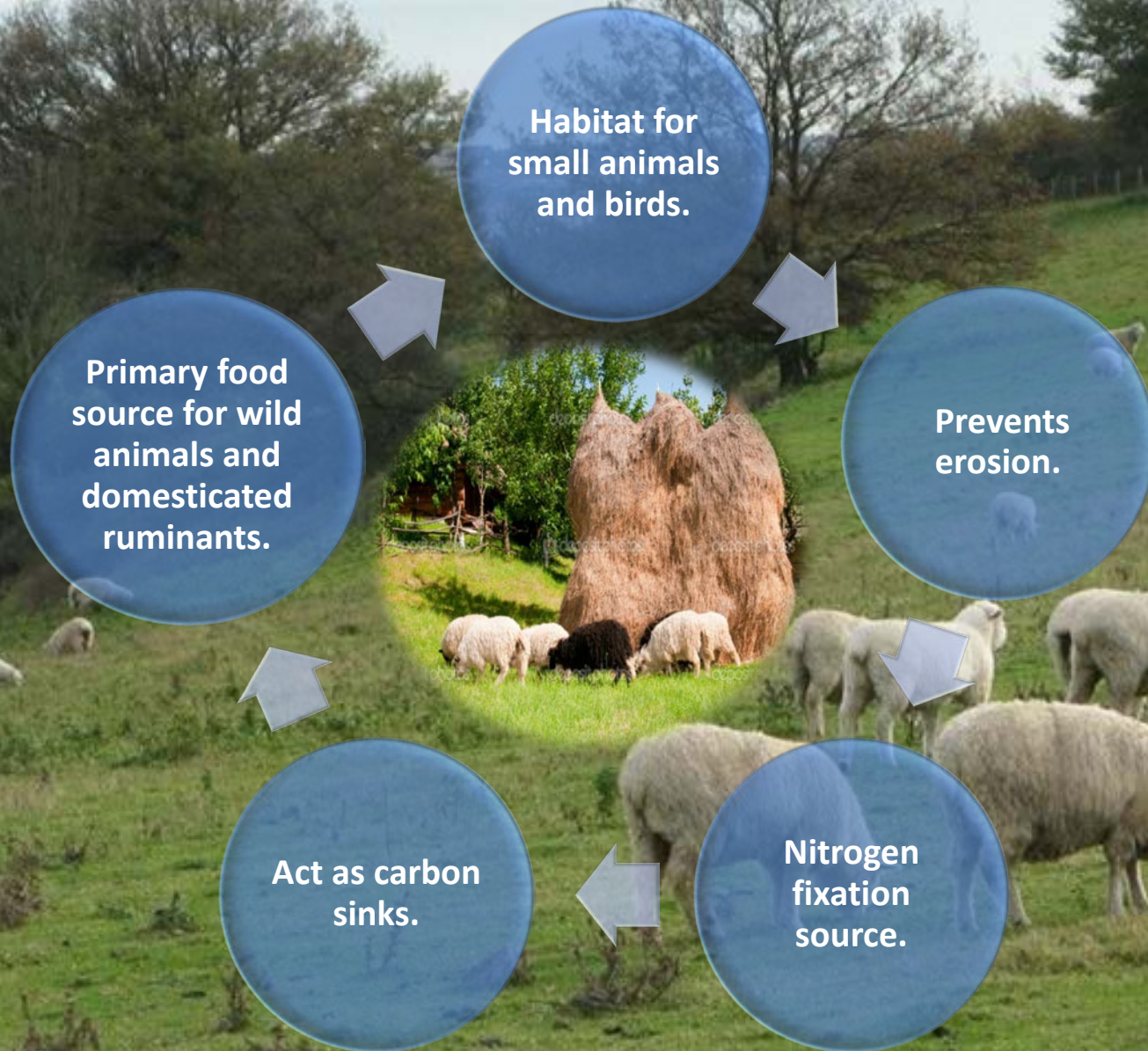


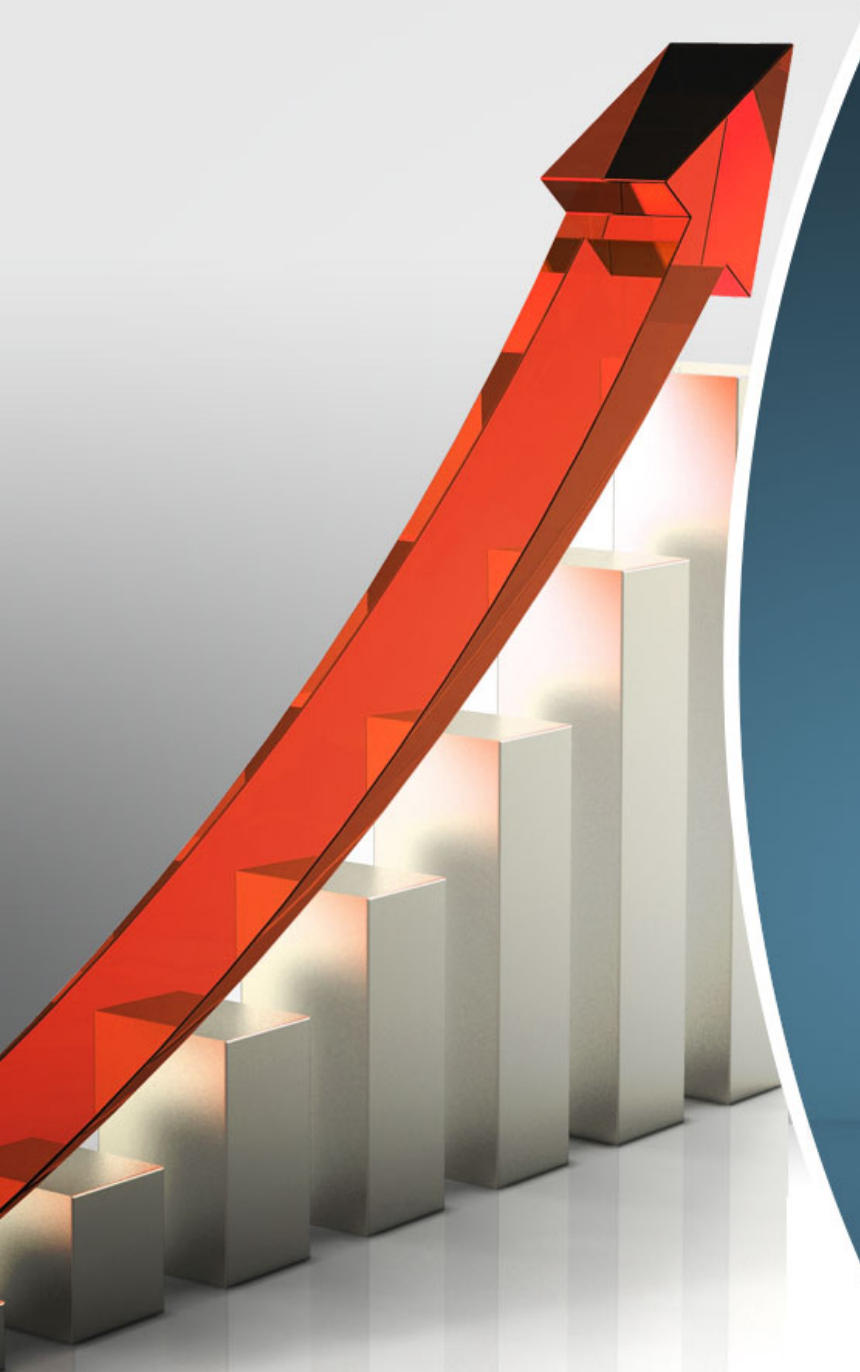
- Worldwide, grasslands cover about 3500 million ha, more than the double of arable land.

- On the European continent it is the opposite: only 180 million ha of grassland for 300 million ha of arable land.

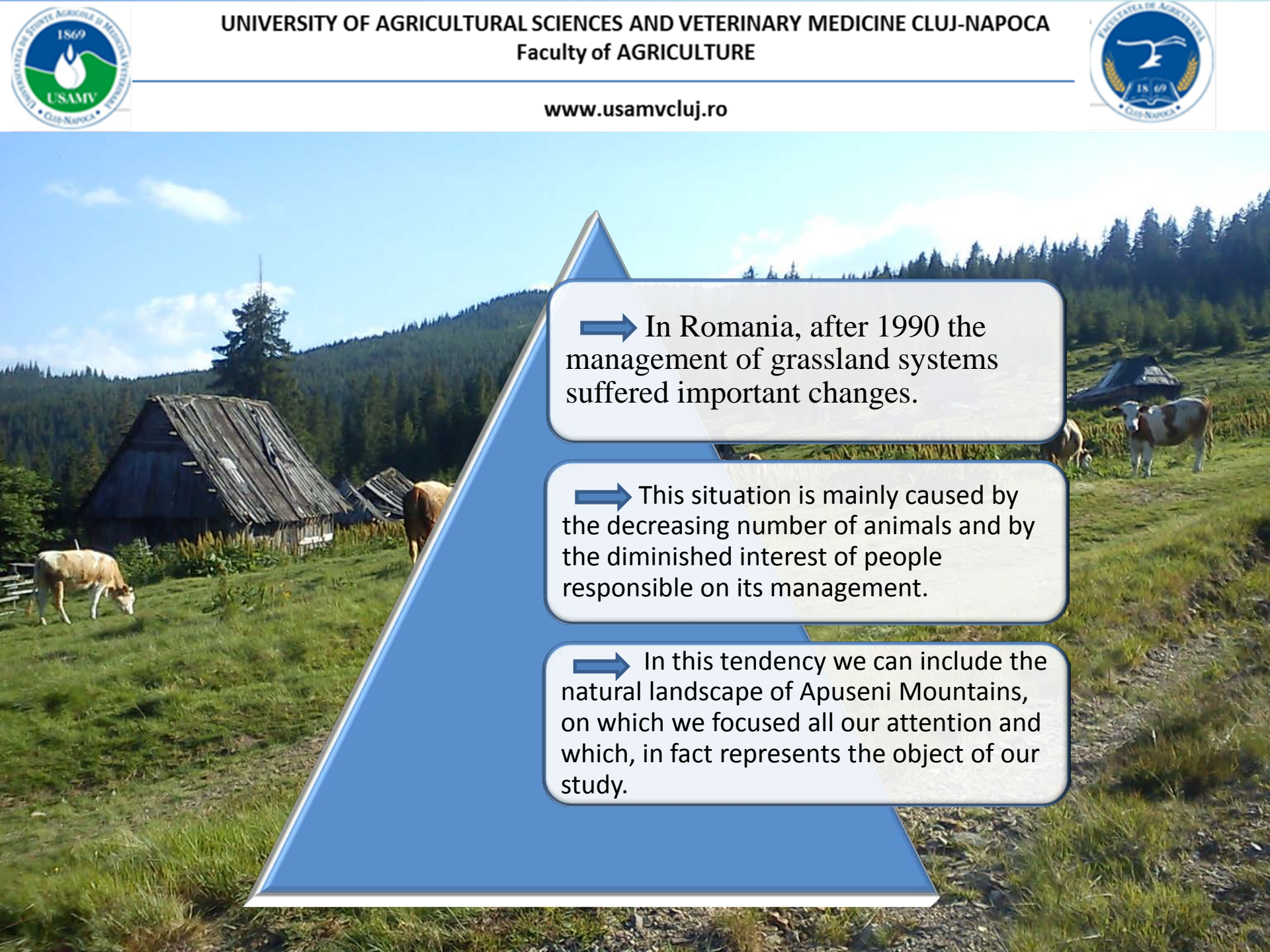


➤ Multi-functionality of grassland





The importance which agricultural and pastoral practices have on the development process and on landscape transformation is explained first of all by the fact that all human societies are dependent by these agro-pastoral structures since those are the one which insure the subsistence basis and represent the column of all other economical activities (Pedrosa et al., 2007).

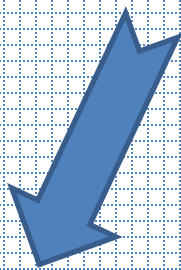


➡ In Romania, after 1990 the management of grassland systems suffered important changes.

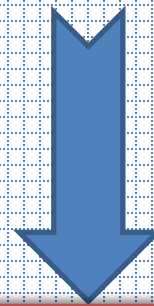
➡ This situation is mainly caused by the decreasing number of animals and by the diminished interest of people responsible on its management.

➡ In this tendency we can include the natural landscape of Apuseni Mountains, on which we focused all our attention and which, in fact represents the object of our study.

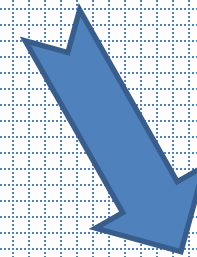
- The aim of this study was to evaluate the quality of mountain grassland (which belongs to Baisoara commune, Apuseni Mountains) under the influence of the management applied and the level of anthropogenic influence.



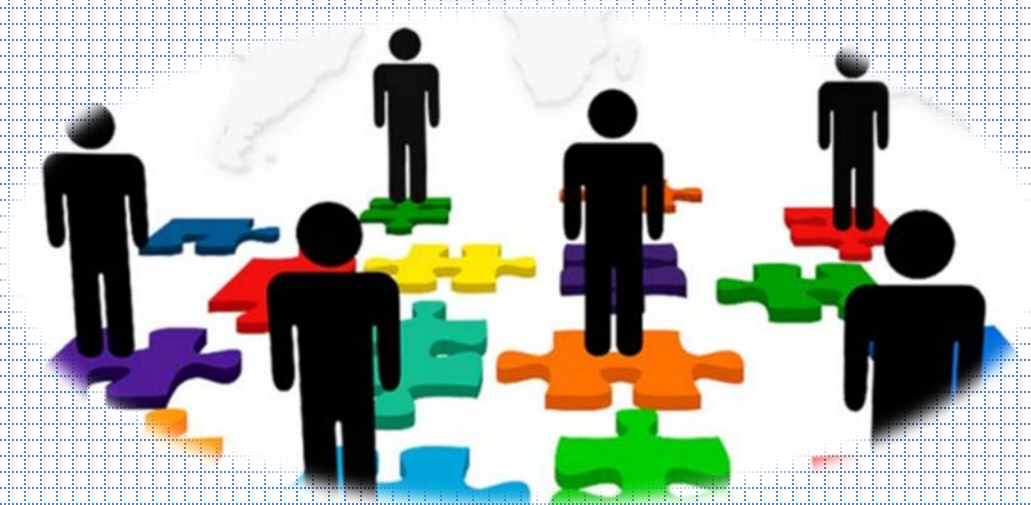
✓ The floristic structure

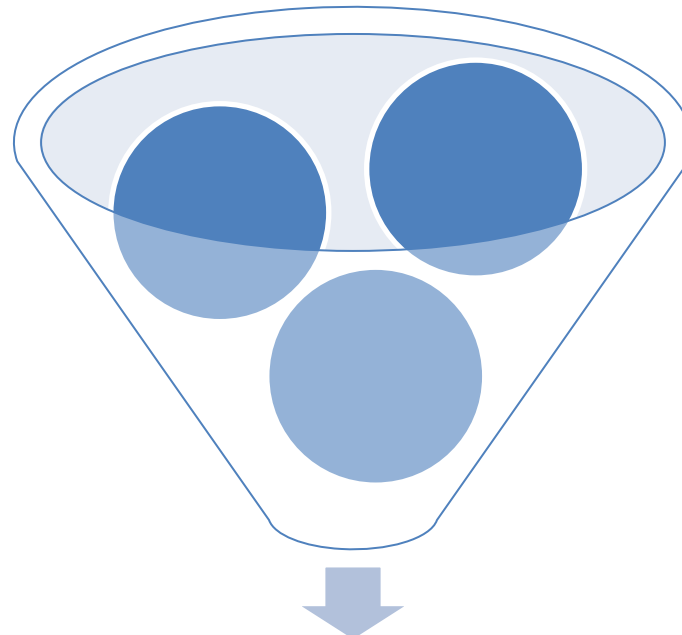


✓ The evolution of livestock

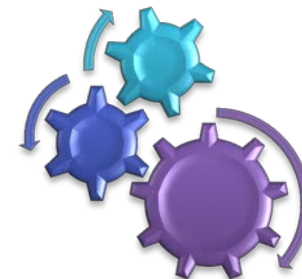
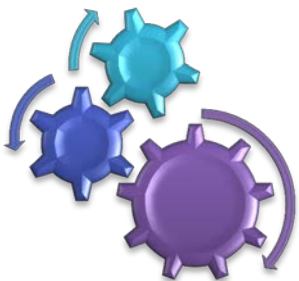
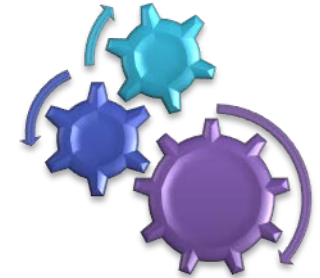
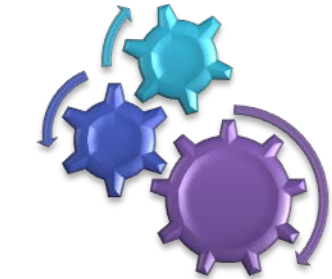


✓ Demographic tendency





Materials and methods





- **Baisoara commune is situated in the South-West of Cluj County, on 38 kilometers away from the County residence and 35 kilometers from the nearest city– Turda .**

- **The natural pedo-climatic conditions are less favorable for agricultural plants cultivation, being a restrictive factor in which concerns the cultivated species and their cultivation areal.**

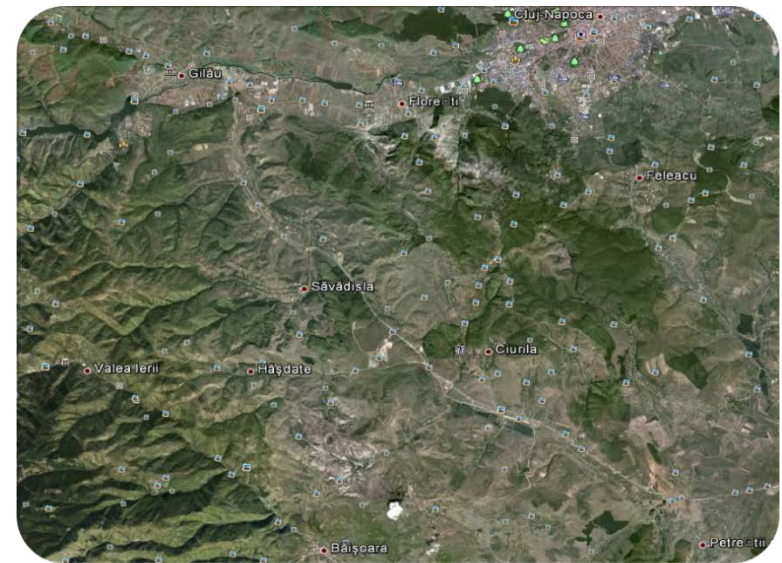


Fig. 1. Sattelite image of Băișoara commune (Google Earth)

The study area is characterized by a mountainous climate, which is, in fact, representative for all West and North-West regions of Romania.

Thus the climate is very rough with long winter (the first frost occurs on the middle of September and lasts until April) and short summer, with abundant precipitation and a medium temperature for July month around 16,6°C.

The pedological substrate is included in Spodisoluri class with Prepodzoluri type (soil mainly characterized by low natural fertility and strong acidity).

The annual average temperature is between 2°C and 6°C.



- In order to fulfill the objectives proposed we used

Data regarding the demographic evolution (from The National Institute of Statistics)

Data regarding the evolution of the number of animals (from the Agricultural Registers of Băisoara commune).

Data regarding the evolution of the agricultural surfaces (from the Agricultural Registers of Băisoara commune).

- The vegetation study was made on Gabriela pasture, which is situated on 1530 m altitude.

- The pasture covers an area of 24 ha, being mainly used by local's animals between June and September.

- The study was made on the autumn of 2010 using Braun–Blanquet method.

- This method implies the description of the vegetation from a 100 m² area.

Vegetation structure and the percent of participation of the main species were undertaken by the researcher.



With the results obtained we calculated the degree of vegetation coverage and the grazing capacity and we were able to underline the direction of this pasture evolution.

✓ RESULTS



➤ Demographic evolution on Baisoara Commune

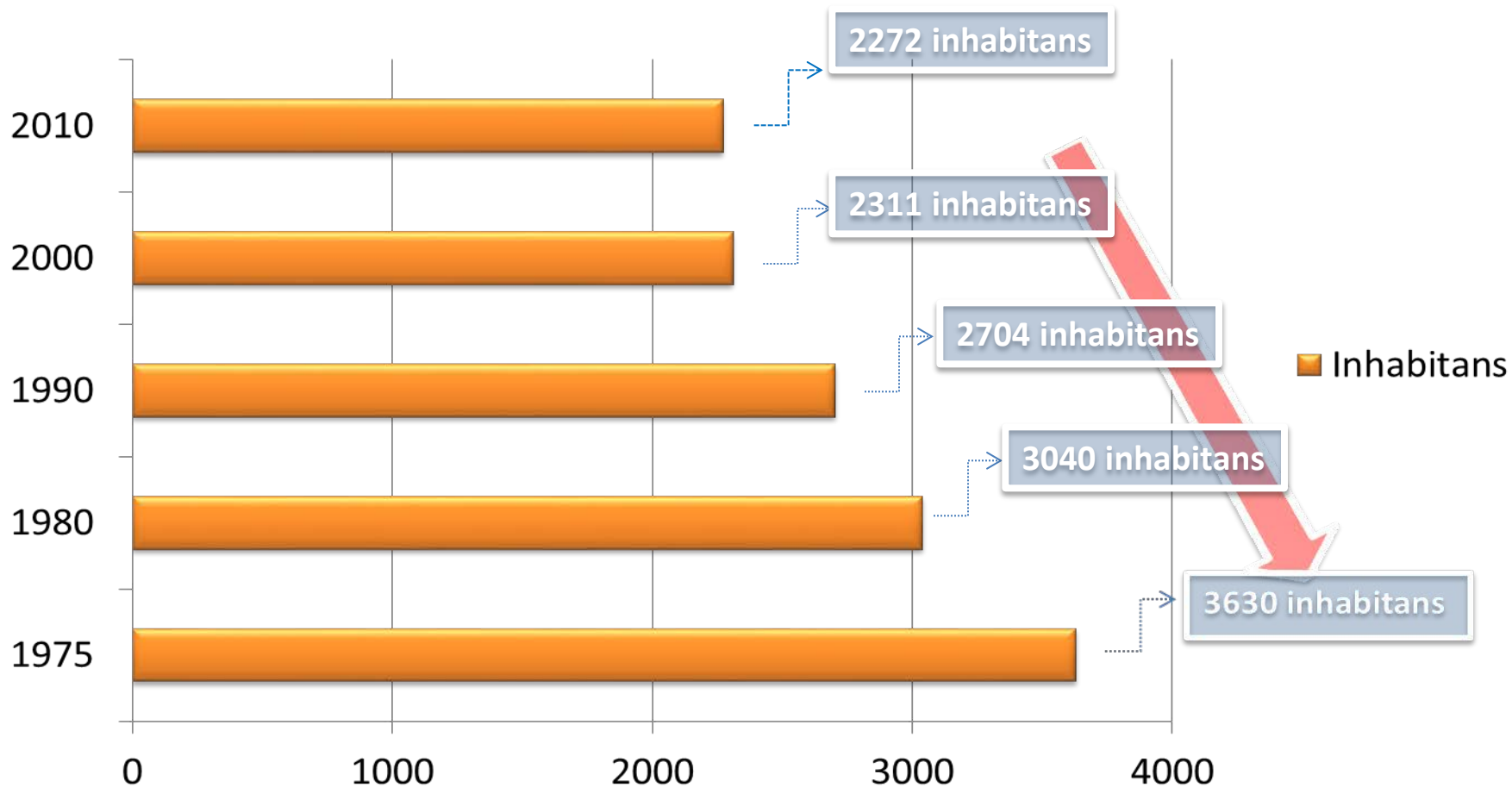


Fig. 2. Demographic evolution on Baisoara Commune

➤ The evolution of animal number in Baisoara Commune

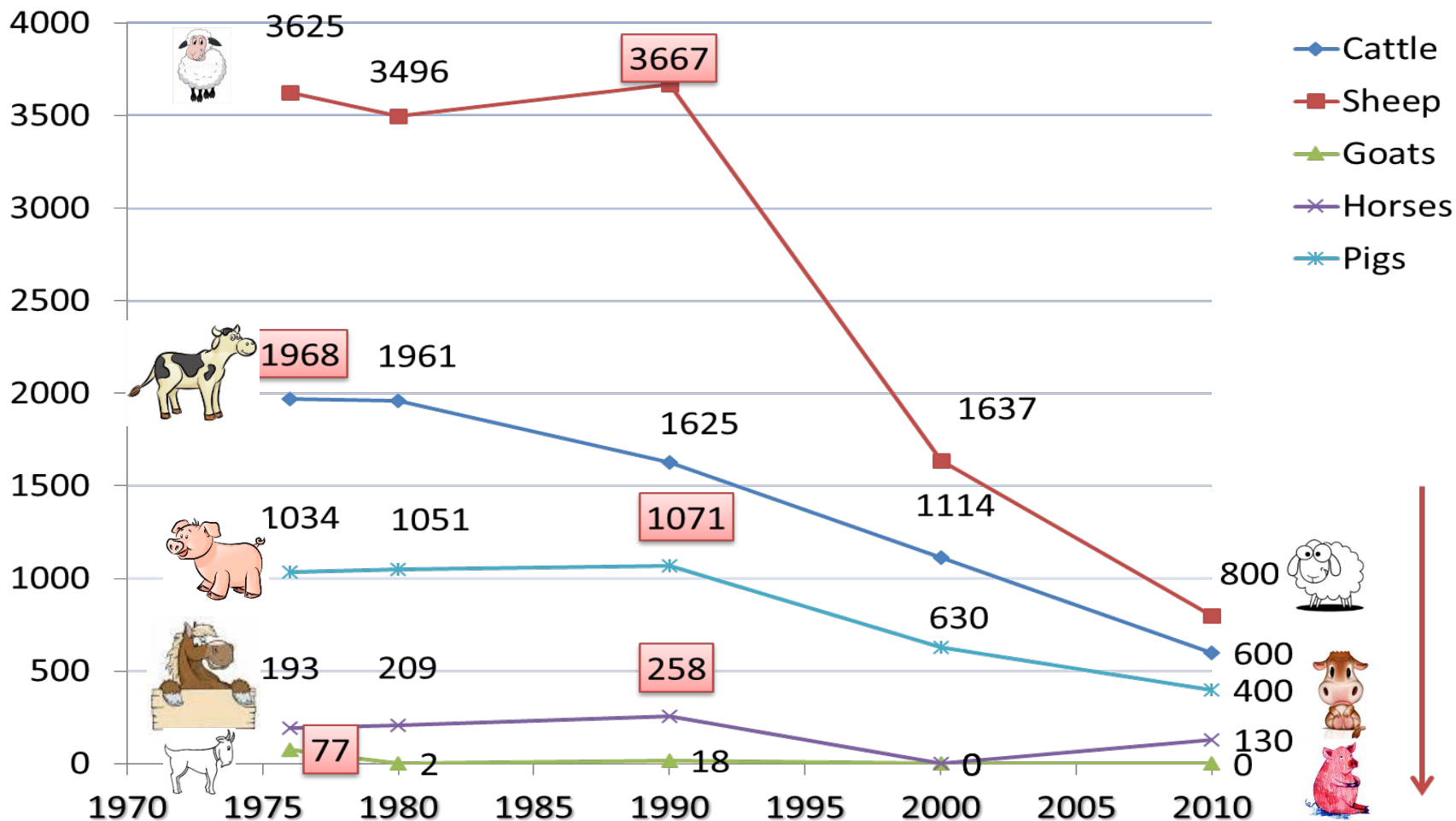


Fig. 3. The evolution of animal number in Baisoara Commune

Table 1

➤ The evolution of agricultural surfaces

Year	Total surface of the Commune [ha]	Agricultural surfaces [ha]	Agricultural surfaces after land use [ha]		
			Arable land [ha]	Natural grassland [ha]	Hay-meadows [ha]
1976	10062	4275	1189	1748	1136
1980	10062	4275	1189	1945	1139
1990	11104	4275	1187	1932	1139
2000	11104	4829	685	2109	2035
2010	11104	4829	688	2109	2032

Source: Statistic notebook of Baisoara Commune, 1975, Central department of statistics from Cluj-Napoca ; Local document of Baisoara Commune, Cluj County, 1990-2010.

➤ Floristic structure of *Festuca rubra* grassland

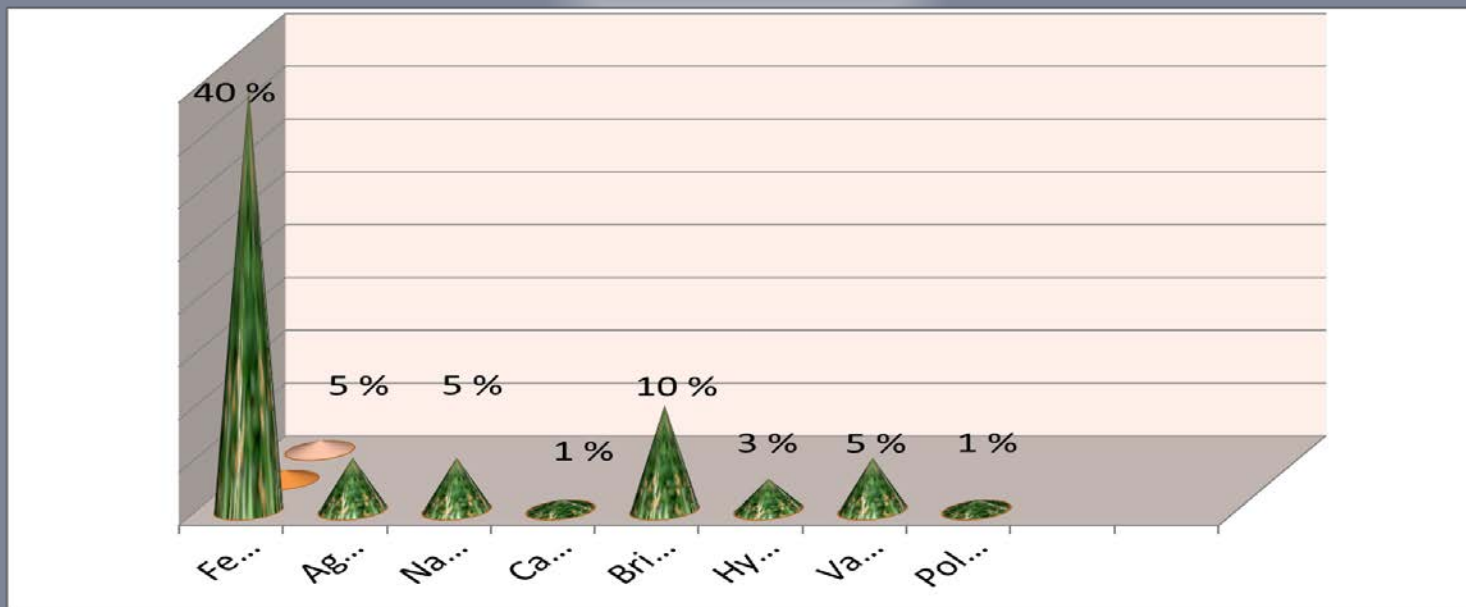
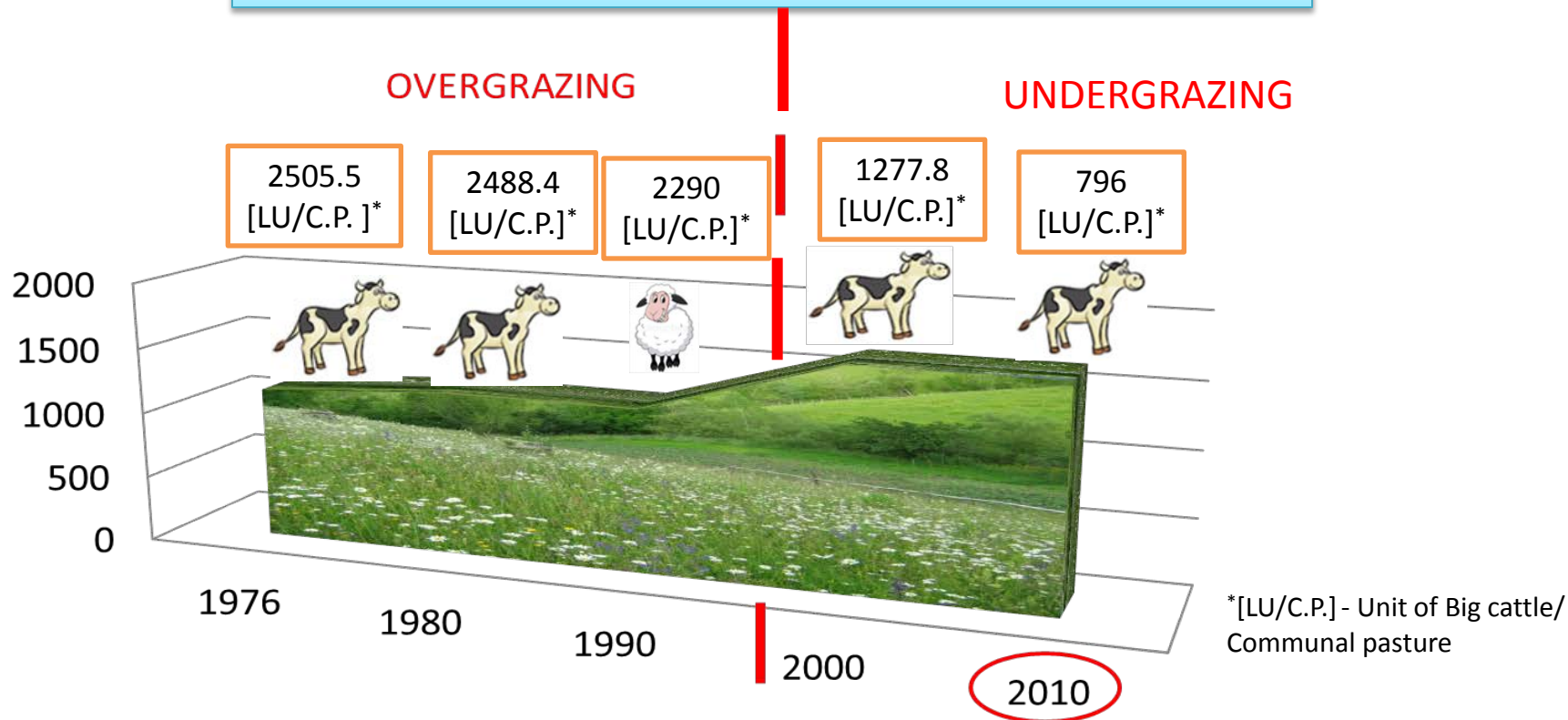


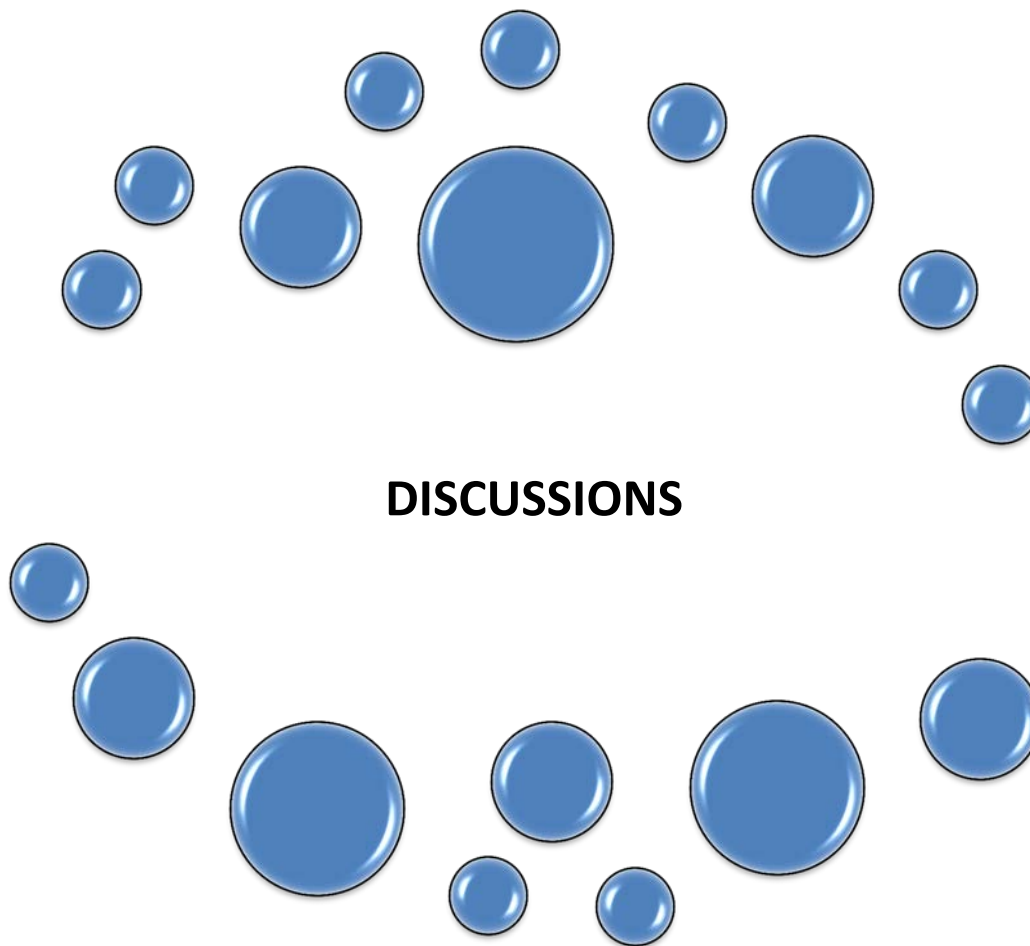
Fig. 3. floristic structure of *Festuca rubra* grassland

➤ Grassland exploitation with animals/cargo with animals



	1976	1980	1990	2000	2010
■ Grazing capacity* [LU/ha]	1153,6	1233,6	1228,4	1657,6	1656,4

Fig. 4. Cargo with animals



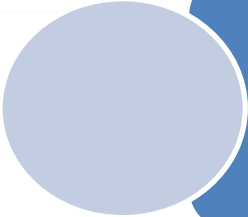
➤ **Through the results obtained we can notice how the anthropic factor influenced the development of the study area.**

- **Once with the restraining of economic activities (for example on the year 2006, when the mining activities have been stopped) there were reduced al inhabitants possibilities to insure a minimum income for their families, which led to the migration of young people to other areas or abroad to search for a job.**
- **In this way most of the people who remained faithful to this area were the elderly action which led to the aging of population from Baisoara Commune.**

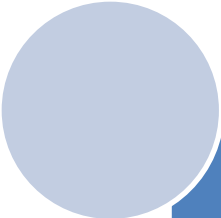


- **These together with the lack of maintenance activities (destroying weeds, woody vegetation) drawn a wild landscape and led to afforestation of large areas of natural grasslands.**
- **The migration entailed a proportional decrease of livestock and agricultural areas. As a result of demographic changes and of the decrease in the number of animals lots of surfaces with natural grasslands were abandoned or under grazed.**






The study showed a degree in the demographic structure of the commune which led to a lower diversity of the crop system, mainly based on the cultivation of oat, corn and rye. A degree tendency was observed also when we analyzed the evolution of the number of animals.

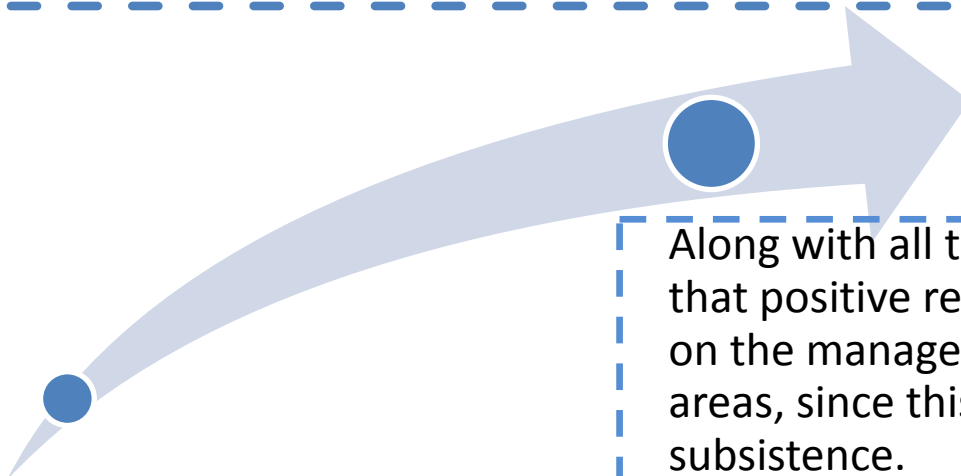


The vegetation study revealed as representative grassland for Baisoara commune the grassland type *Festuca rubra*, which is basically characterised by low quality of the forge and low degree of vegetation covering. The deficiency of the management applied favored and still favors the appearance of non-value species which leads to the degradation of the vegetation carpet.



The obtained results showed a close relationship between grassland status and the number of animals, which led us to the conclusion that the level of intensification of the crop system determines the direction of its evolution.

- **A possible solution could be the development of tourism in this area, since Baisoara Commune is after all a ski resort.**



Along with all these one can forecast that positive results will be noticed also on the management apply to grassland areas, since this are the basis of our subsistence.

This could open new possibilities of development for inhabitants: jobs, new incomes and the motivation to cultivate larger areas and to increase the number of grown animals, since they could have a possibility to capitalize the secondary products obtained.

A field of yellow dandelions in bloom, with a semi-transparent grey rectangular box overlaid in the center. The text "THANK YOU FOR YOUR ATTENTION!!!" is written in bold, black, uppercase letters within the box. The background shows a dense field of green leaves and yellow flowers, with a fence and trees visible in the distance.

**THANK YOU
FOR YOUR ATTENTION!!!**