„BABEȘ – BOLYAI'' UNIVERSITY

CLUJ – NAPOCA

FACULTY OF BIOLOGY

INTEGRATIVE BIOLOGY DOCTORAL SCHOOL

Traditional ecological knowledge and bio-cultural adaptations in Ieud village, an ancient settlement from the land of Maramureș.

- PhD thesis summary -

PhD candidate:

Ivașcu Cosmin Marius

Scientific coordinator:

Prof. dr. Laszlo Rakosy

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Contents

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Introduction

The aim of the present study is to analyze the human-nature interaction from a scientific perspective, using as a case study a rural community from Maramureș Land. We analyzed how the locals perceive and relate to their natural environment and the resources it provides trough basic traditional agricultural practices, by means of cultural ecology.

The theoretical framework of the analysis of the natural-cultural landscape of Maramureș Land is obtained by using a fundamental concept of cultural ecology known as traditional ecological knowledge. The pre-industrial and traditional societies of Europe or other continents have tried to use the available natural resources in a sustainable manner that limits the negative effect of human activity (Berkes, 2008). Sustainable use of the available resources was done by a series of prescriptions, traditions, customs, beliefs and institutions through which the community controlled the access to them. This control facilitated the conservation of these resources for the use of future generations. These beliefs, prescriptions and customs of a traditional culture that relate to the environment are part of traditional ecological knowledge.

Even though the present subject may seem abstract, predisposed to speculation rather than exact research of certain facts and phenomena, traditional ecological knowledge represents also empirical experience earned and passed on through generation because of human-nature interaction (Berkes, 2008).

This undertaking is of proximal importance and urgency given the fact that present day ecological crisis leaves room for the belief that the human-nature relationship was a purely a conflictual one. Starting with the enlightenment, mankind has been represented as being in a state of permanent conflict with nature, but this is the sole justification of the present day industrial society (Berkes, 2008).

CHAPTER I

Theoretical and methodological considerations

Our interdisciplinary study has had some objectives that can be considered as being of epistemological importance, but also of ontological importance. But we had some other objectives as well:

- Since many European scientists are disregarding the existence of traditional ecological knowledge in the livelihoods of European rural communities, our aim was either to confirm or invalidate this claim.
- How does a community that is engaged in traditional subsistence activities perceive its environment? Which are the similarities between the local perception of nature and the scientific representation.
- Are the are any beliefs, ideas or attitudes in the local worldviews that can be successfully integrated in nature conservation undertakings
- The role of traditional ecological knowledge and traditional practices in the genesis of a cultural landscape with remarkable biodiversity

Traditional ecological knowledge is a system of local knowledge regarding nature, used by indigenous and traditional societies to adapt to their environment. Traditional ecological

knowledge are used in a manner that is creating a dynamic equilibrium between the social and ecological system. Maintaining this equilibrium and avoiding the depletion of the local resources, was mandatory since the survival of the communities was at stake (Berkes, 2008; Menzies & Butler, 2006).

To confirm the existence of traditional ecological knowledge in a traditional Romanian village, we conducted a case study in the village Ieud, situated in an ethnographical region known as Maramureș Land. The fieldwork was accomplished in the period 2014-2016. In this period, we spent over 79 days with the locals in the village. Some other fieldtrips were done also in 2017 and 2018.

Our main method of research was semi-structured interview but also free listing. For analyzing the evolution of the landscape in the region of Maramureș but also in our village were we have conducted the case study, we used the Hapsburg maps available on the internet (www.mapire.eu), but we have also researched the cadastral maps from the XIX century found at the National Archives from Baia Mare (Satu Joudu in Ungaria. Comitatul Maramuresiu. Deregatoria de contribuțiune Viseulu de susu 1863; Fond prefectura județului Maramureș. Hărți cadastrale).

Although the study of traditional ecological knowledge is very common among researchers found especially in North America, nowadays this concept is starting to be used also by European scientists. Moreover some very recent studies have shown that traditional ecological knowledge are used by many European rural communities concerning their subsistence activities (Babai & Molnár, 2014; Iuga, 2016; Ivașcu & Rakosy, 2016: Ivașcu și colab. 2016; etc.).

Traditional ecological knowledge can contribute to various fields of scientific research like epistemology or philosophy of science, adaptive management or other fields related to natural sciences (Fig. 5) due to their basic traits as being: cumulative, dynamic, integrative, historic, local, holistic, moral and spiritual (Menzies & Butler, 2006). Due to this fact traditional ecological knowledge are a prime source of information regarding the shaping and history of cultural landscape with remarkable biodiversity.

The ongoing process of developing a new environmental ethics can successfully integrate the spiritual aspects of traditional ecological knowledge, due to the existence of beliefs and attitudes in a local culture (in our case the Romanian folk culture) which have a conservation value.

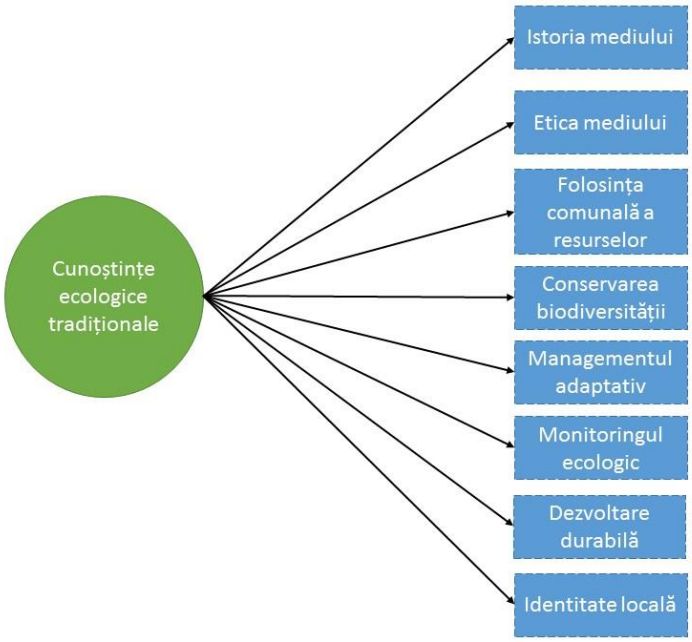

Fig. 1 The contributions of traditional ecological knowledge to various research fields within social and natural sciences

CHAPTER II

Romanian predecessors of ethnobiology and cultural ecology

In this chapter, we highlight the contributions of the Romanian ethnographer Simion Florea Marian to the development of ethnobotany and ethnozoology. The research done by S. Florea Marian was very detailed regarding the folk names, beliefs and legends and other folk customs related to birds (Marian, 1883), insects (Marian, 1903) and plants (Marian, 2008-2010).

The famous Romanian hidrobiologist Grigore Antipa, was another pioneer of Romanian ethnobiology. He studied the knowledge and tools of rural fishermen around the country, but also the folk names of fishes. He had some innovative ideas regarding the use of the riverside of the Danube, which makes him a predecessor of adaptive management.

The founder of modern Romanian Geography, Simeon Mehedinți, was a predecessor of cultural ecology in Romania, due to his researches in human geography and ethnography. His studies investigate the link between environment and culture in an original way.

CHAPTER III

Elements of historical ecology and environmental history regarding Maramureș Land

3.1. The importance of mountains within the local society of Maramureș during the centuries

Initially, the pasture land in the mountains were under local community jurisdiction. In later centuries, the mountains and their pastures came under the ownership of the local nobility. Pastoral pendulations towards the mountain pastures represents the main exploitation method for these lands. Conflicts among the villages from Maramureș or with villages from neighboring regions for the use of the mountains were very common in the past.

3.2. The importance of forests within the peasant communities of Maramureș. From common forests to the formation of the compossessorate

Forests represent the ecosystem with maximal historical and cultural importance for the Romanian people. Besides the role played in ethno genesis and in military strategy, forests have been an economical (provided shelter, hunting opportunities, building materials and grazing sites) and cultural (sacred trees, plants, etc.) pillar of society. In the Middle Age, the forests were used as commons by the community. By XVII century, historical sources mention forests owned by local nobility and also a series of protection measures for oaks and sessile forests (Ardelean, 2012). It is possible that the compossesssorates (a social union instituted with object of shared exploitation of the forest resources) started to emerge during the XVIII century under Habsburg administration. In Maramureș, there were two types of compossesssorates: noble and urbarial. The noble composessorates were the most common in Romanian villages, the second were found where the community was composed of predominantly by bondsman who were given right to use the land by a feudal owner (Iuga, 1936).

3.3. The genesis of the natural – cultural landscape

Human presence în Maramureș has been historically attested since the Neolithic. During Bronze Age people are starting to gather around the valleys of the main rivers. Forest clearings for agro-pastoral activities have started since the Neolithic and have intensified in the dacian period (Giurcăneanu, 1988), with this being the main factor to the fragmented landscape splattered with

forests, cultivated land, pastures and meadows. Bio-cultural activities (agriculture and shepherding, forest use) have fragmented the continuous forest that existed here. This practices have developed further in the medieval period, fact attested by documents dating from the XIV century.

The Hapsburg topographical maps are a very important source to track the evolution and transformations of the natural-cultural landscape of Maramureș. By analyzing the first Hapsburg military survey dating back to 1763-1787, we concluded that forest occupied 70-75% of the land and that shepherding on the peaks of Rodnei and Maramureșului Mts. was practiced even back then. The maps also provide insight on access roads and trails that connected these pastures from the alpine and subalpine region.

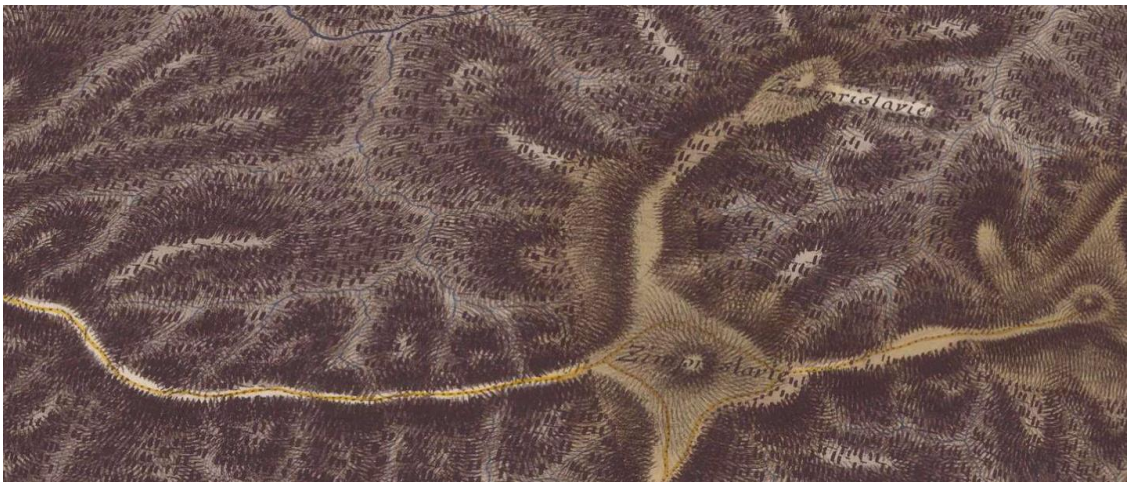

Fig. 6 Zimbroslavele on the topographical josephine map from 1763 – 1787, the direction of the forest cuttings that took place are well represented. Sursa: www.mapire.eu

Riverside forests have suffered over the years the most dramatic reductions in size and continuity. The fertile land and the ease of access to water has made it optimal for agriculture and shepherding. With this said, the Iza River has suffered almost complete forest clearings along its course up to its overflowing into the Tisa River (Fig. 7), (Fig. 10).

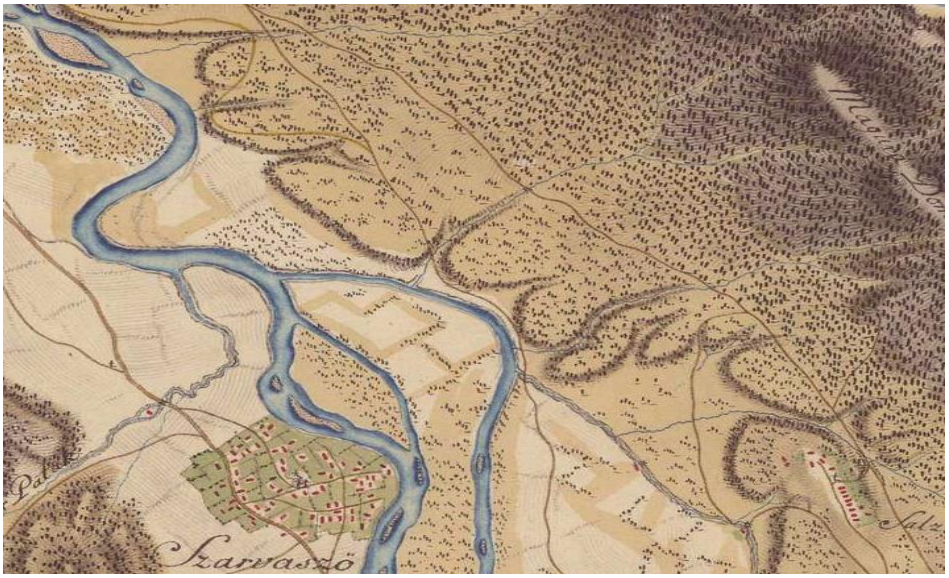

Fig. 8 Swamps, riverside forest, meadows and arable land along the Tisa river near Sarasău. It can be seen that a piece of the island is used as a meadow. It is also observable that many meadows are separated by tree skirts. Sursa: www.mapire.eu

Fig. 10 Arable land and terraced hills along Iza river, between Șieu and Cuhnea (Bogdan Vodă). Most hills are used as arable land up until mid level. Sursa: www.mapire.eu

On the second topographical habsburgical map dating from 1819-1869 (Franziszeische Landesaufnahme) it can be observed that more toponims have been added and that the forest on the hillside has an even more fragmented appearance than in the previous map. In the mountain

area the situation is similar, with new or larger pastures being observed. Forests represent now 65-70% (of the total surface of Maramureș Land) and have lost even more terrain as they have been replace by pastures, meadows and arable land. Thus the genesis of a certain cultural landscape is absolutely related to the subsistence activities of the local human communities, which in turn, also leads to bio-cultural adaptation by means of coevolution and dynamic relationships between the natural system and the social system.

CHAPTER IV

Traditional ecological knowledge in Ieud village. An ancient settlement from Maramureș Land

4.1. The natural environment of the village Ieud

In this first subchapter we have described the natural frame of Ieud village from a geographycal, geological, botanical and zoological standpoint.

4.2. Historic and demographic data on the age of the settlement and of the community

Ieud village is one of the oldest settlements from Maramureș Land being historically mentioned since the XVI century, the locals having a privileged status (Popa, 1997). This subchapter contains the history of the community and it's importance in the cultural-political structure of Maramureș County over time. A demographic analysis using existing scientific data is also presented.

4.3. Some physical anthropology data regarding the local community

From an anthropological standpoint, the local population of Ieud village is unitary with the population from the neighboring villages of Dragomirești and Cuhea and also with the population from the entire region of the historical Maramureș (Știrbu și colab., 2004). These general

characteristics integrate, by anthropological standards, the population of Ieud into the general anthropological classifications of the Romanian people (Necrasov și colab., 1968).

4.4. Ethnobotanical knowledge. Plants and their importance within the local community

Etnobotanical knowledge are deeply embedded in the traditional ecological knowledge and it shows how a certain population relates to and uses plant from the environment close to it. Etnobotanical research represent an important aspect for research fields like: linguistics, cultural history, pharmacology or even economy.

Local plant knowledge has been investigated by collecting for vernacular plant names and also traditions and superstitions regarding them, or other information of ecological importance. We have separated the cultivated from the naturally occurring plants to better differentiate the plants of local natural-cultural significance. As expected, the utility factor plays a crucial role in traditional plant knowledge.

The botanic lexicon regarding plant morphology and anatomy is very rich, by example:

Bociulie - capsule

Corci - means bundle or bush, more shoots starting from the same root

Mursă – plant sapt (xylem and phloem) in woody species

Oarzăn, oarzân – fruits that ripen early

Pițiană – pointy and narrow (or lanceolate) leaf

In the past, approximately 30 species (with different cultivars) of herbaceous plants were cultivated for alimentation purposes and 8 tree species (also with many cultivars). Also, there were laws forbidding to cut wild apple, cherry and pear trees. The custom still exists today, but people mostly use the wild tress as grafting material. The common wallnut and the plum were use in dendrolatry practices.

Locals are able to differentiate plants up until genera or even species approximately 218 vasular plants, mosses and mushrooms. The majority of plants cultivated in gardens (*Paeonia* sp., *Ocinum basilicum*, *Vinca minor*, *Buxus sempervirens*, *Origanum majorana*, *Thuja* sp., etc.) have ritualistic appliances and are used during religious ceremonies, but also as decorations.

The right time for mowing and grazing the pastures was usually known by men because they did most of the work regarding raising animals. They also have aquired over time traditional veterinary knowledge. Women were accustomed with plants used for human therapy, food and decorations.

Some plants from the spontaneous flora were transplanted into the flower gardens of the locals: snowdrops (*Galanthus nivalis*), snowflakes (*Leucojum vernum*), crocuses (*Crocus vernus*), globeflower (*Trollius eurpaues*) and wild roses (*Rosa rubiginosa*).

Other plant ocupy a special place in the local world view (Weltanschauung), so implicitely they have been more important for the culture and everyday life. Somene of the plants are: the silver fir (*Abies alba*) and the two antagonical plants (holly-unholly): basil (*Ocimum basilicum*) and the deadly nightshade (*Atropa belladona*).

4.5. Ethnozoological knowledge. Folk names, clasification, beliefs and the perception of the wild fauna

Etnozoology is the study of the importance and knowledge of animals in traditional cultures. This includes the identification and classification, ethology and biology, distribution and also use as a food and medication source (Stoicescu-Apostolache, 2003).

Local people from Ieud village use many names for animal species in the adjacent environment and they can even distinguish between genera and species 85 invertebrates, 16 types of fish, 9 amphibians, 10 reptiles, 57 birds and 36 mammals.

The locals still have numerous belief and legends about animals (especially wolf and bear) and they have an unique classification system for them which corresponds in parts with the lineean one.

Fig. 2 Taxonomical classification of larvae known as „codați”

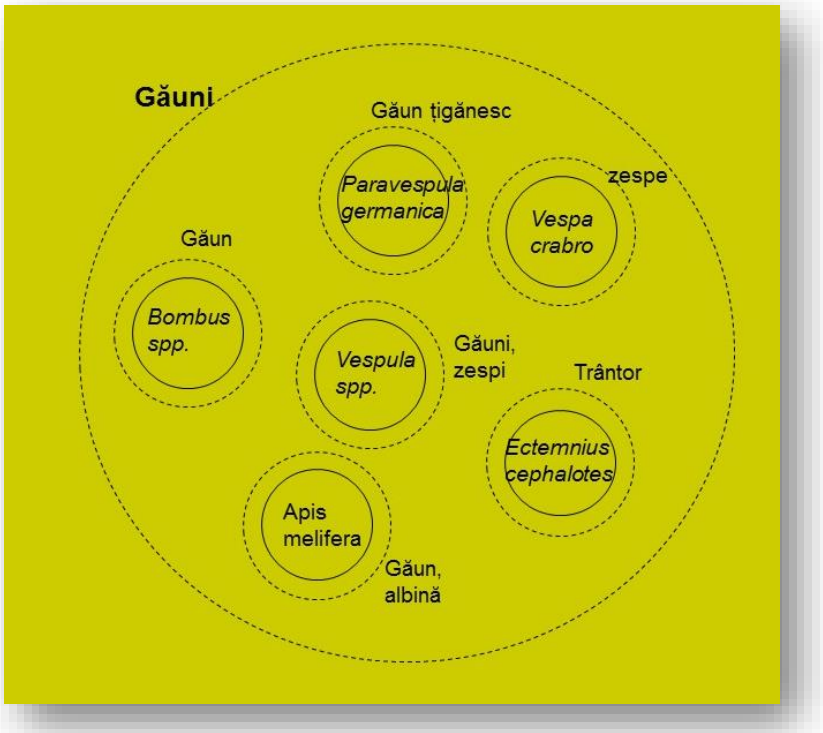

Fig. 3 Local taxonomical classification of bees and wasps know as „găuni”

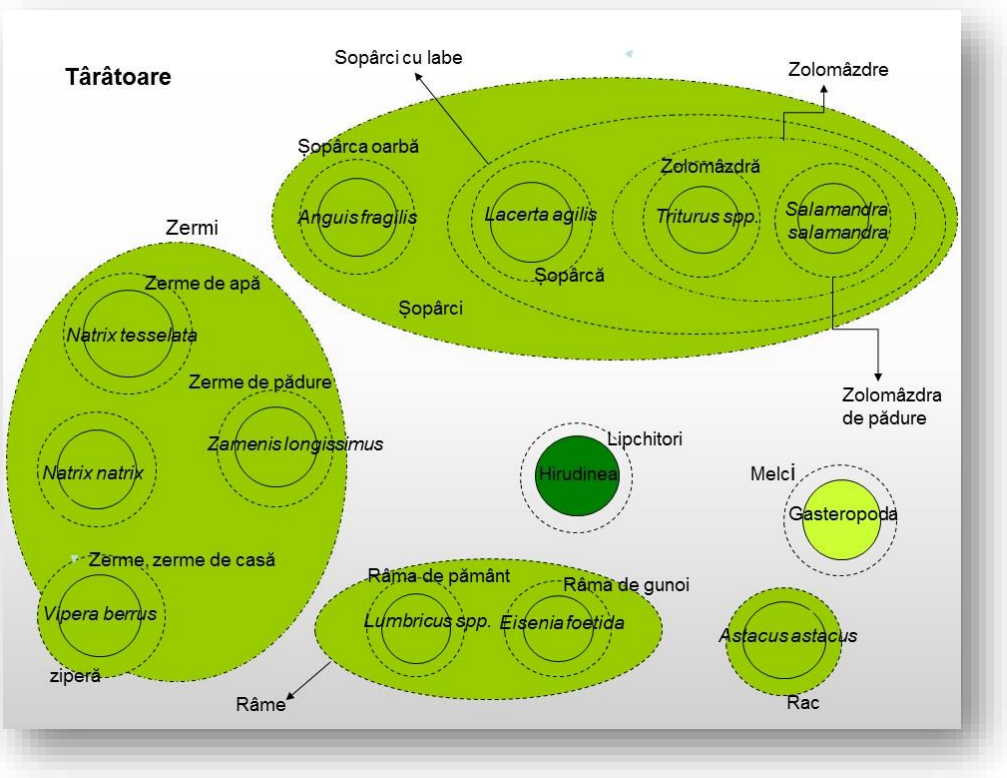

Fig. 4 Popular name for crawlers („târâtoare") refers mostly to reptiles, but also batracians, snails, cancer, earth worms (fam. Lumbricidae).

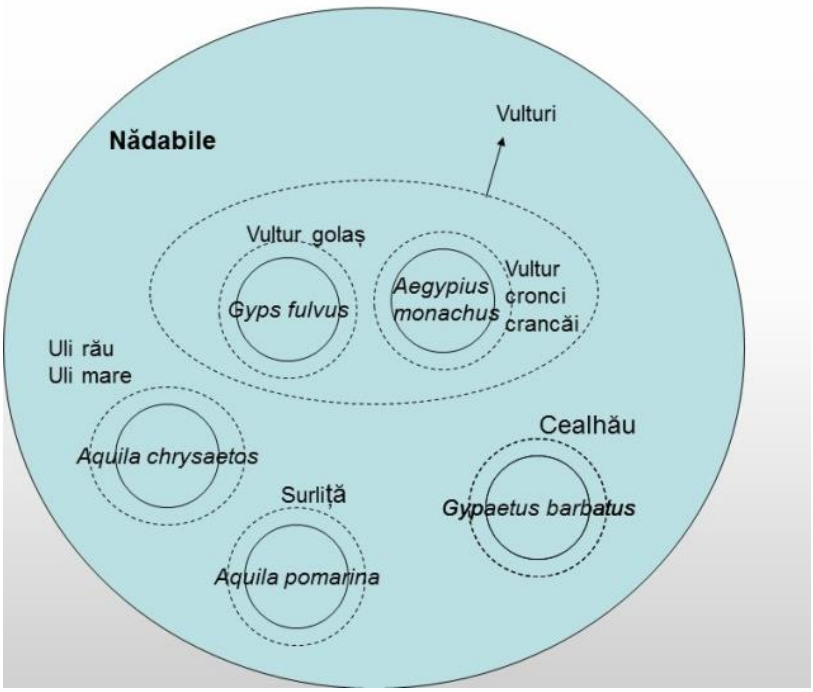

Fig. 5 Local taxon „nădabile" includes vultures and eagles

4.6. The traditional management of hay meadows

Haymeadows are one of the most important ecosystems in Europe from a conservation point of view (Dahlström și colab., 2013). Hay and haymeadows have a long history as biocultural resource on the territory of Maramureș. Haymeadws are mentioned in the documents from the XIV as being an integral part of the landscape at that time.

Haymaking and hay meadow management are indispensable elements of practices related to animal husbandry. The local community has developed considerable knowledge about hay and hay meadow management to ensure the survival of their animals during winter.The locals have several classifications of hay, according to several types of criteria, including topographical origin, slope exposure, structure, and characteristic dominant species. Based on these factors according to the locals there are several types of hay: due to topography (garden hay, lowland hay, hilly hay, swamp hay, terrace hay, forest hay), according to slope exposure (facing hay, backside hay), according to structure or dominant species (fdry hay, sweet hay, leafy hay, feeble hay, hedgy hay, lettuce hay, stick hay etc.).

Mowing is done after close monitoring of the condition of the hay. It is usually done from bottom to top, starting from the gardens and moving towards the hills. Mowing respects the division of the village in three almost equal levels. Garden hay is mowed sometimes even in May. The meadows near the village around the feast of Saint Peter (June 29). The second level (mejdele de mijloc) is mowed around the feast of Sânt-Ilie (Saint Elijah, celebrated on July 20). To ensure a high yield of the meadows, the locals have developed a series of practices that ensure the quality of the hay and the productivity of the meadow(Table 9).

Table 9. The calendar of traditional practices regarding hay meadow management

Month	an	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Activity	leaning, incl. emoval of tones, uppression of nosses, ferns nd flattening nthills		cleaning, raking old leaves		mowing of the lower areas (gardens)	mowing of the lower areas (arable fields, village meadows)	mowing of the middle meadows (hilly area with secondary forest)	mowing of the upper meadows (≥1000 m)	hay is left to dry, haystacks are made	cleaning manure is brought out in the field to decompose		
			manure is spread out									
			scattering of hayseeds					cutting shoots of unwanted woody species				
					grazing	grazing			Grazing after the 14th (the Feast of the Cross)	grazing (October–8 November, the celebration of Archangels Michael and Gabriel)		
			burning of old vegetation									
			ıot a general, and a relatively new practice)									

The locals have developed a number of practices in order to matain the quality of the hay and of the hay meadows. Excepting the avoidance of chemical fertilizers and using just manure, an interesting practice is the spreading of hayseeds (*stroh*) on the low quality meadows. Some species like *ferega de câmp* (*Pteridium aquilunium*), black locust (*Robinia pseudoacacia*), and mosses are kept under control by the community using various local methods.

4.7. The interdependence of agriculture and pastoralism. The local sistem of dividing the village territory in three areas

The first mention of arable fields within the village territory dates back also to the XIV century. The fact that terraced hills reach the altitudes of around 1000 m altitude, point out the importance of agriculture practiced here in the past.

The village territory is divided in three almost equal levels. The first level (mejdele de jos) corresponds to the lands near the village, consisting of arable fields and meadows. The second level (mejdele de mijloc) is further away, consisting of hilly areas with small patches of secondary forests and meadows (in the past there were arable fields here as well). The third level (mejdele de sus) corresponds to the altitudes of 1000 m and above, nowadays these meadows are used mostly as pastures.

The most detailed historical informations regarding agriculture, land use and some other livelihoods is offered to us by the cadastral habsburg map from XIX centruy (Fig. 34).

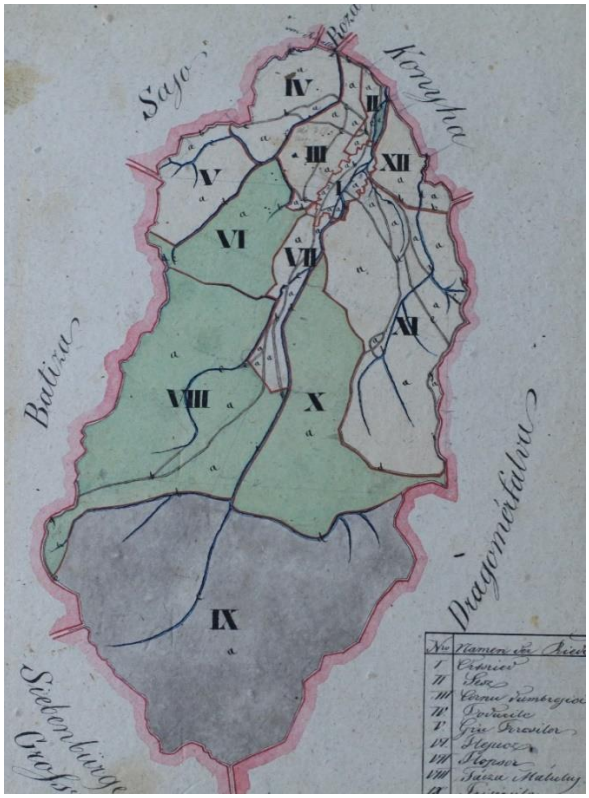

Fig. 6 Main lad use types, depicted on the cadastral map from 1863. Source: National Archives Maramureș

Nowadays due to the recent changes in the Romanian society, the locals have almose completely cultivating cereals. Most of the arrable terrains have been transformed in leys or semi – natural hay meadows according to the data offered to us by APIA Bucharest (Fig. 36)

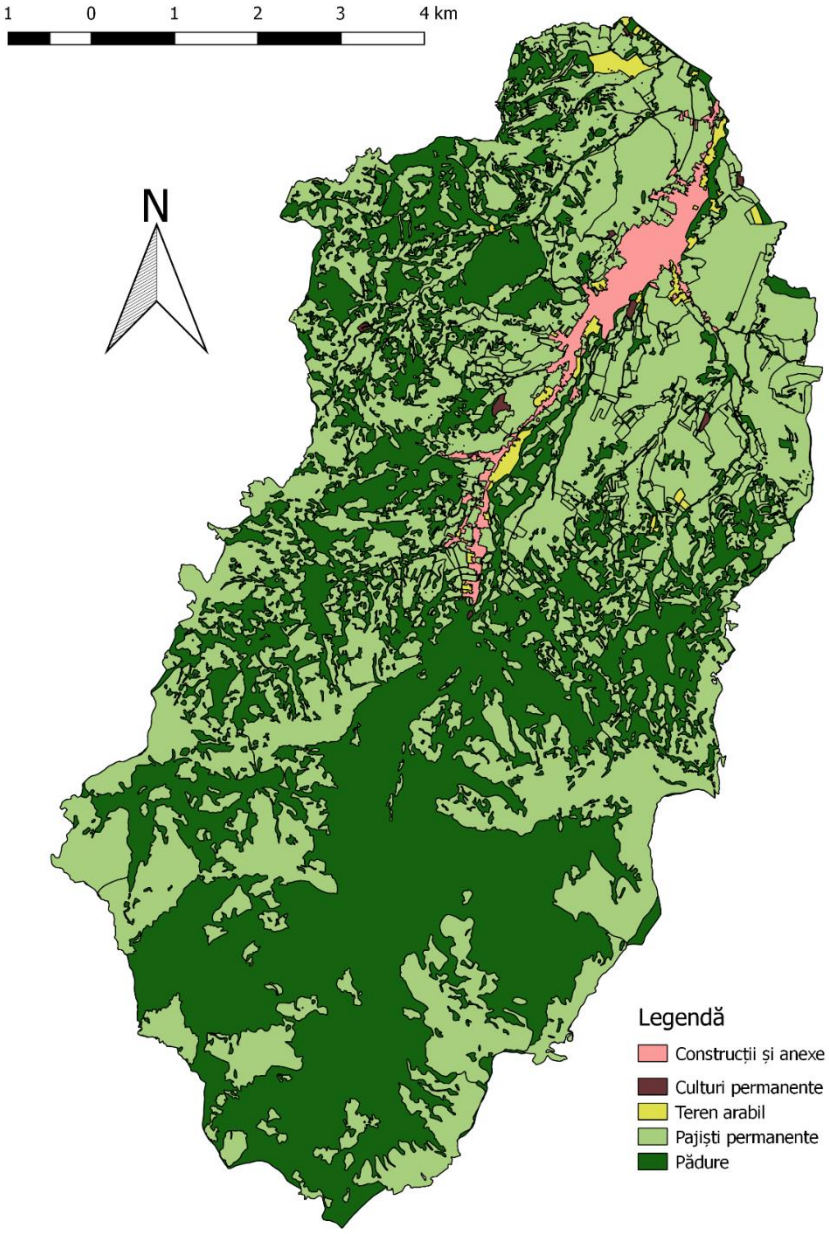

Fig. 7. Current land use in Ieud village. Map done by Sabin Belu. Source: APIA București.

The cultivation of plants was carried out in accordance with the environment and the harsh winters here. Ploughing was done after close monitoring of the weather and according to the

biology of the plants that would be cultivated. An interesting interdiction regarding the cultivation of plants is that referring to Săptămâna Floriilor (Flowers' week, the week before holyday of Palm Sunday), during this time it was prohibited to cultivate anything else other than flowers, because nothing would spring up, the cereals or vegetables cultivated would bear only flowers. Another interesting belief and practice is that off-cultivating the vegetables in the garden on a full moon (during daytime) was supposed to help plants develop better.

The pastoral pendulation

Agriculture and animal husbandry are intertwined activities; this is why pastoralism also respects the three levels of the village territory that are imposed by the community. Currently this system of commons is disintegrating because of the decreasing numbers of animals. The traditional ecological knowledge behind pastoralism is extremely dense. The shepherds know very many plants and plant communities that increase the milk production of the animals. They are also practicing a rotation of the pastures to allow the vegetation cover to regenerate. The most important moment in the pastoral year was the departure of the animals in the mountains. On this occasion the community took part in a special custom called *Ruptu sterpelor* (the breaking of barren).

The pastoral system practiced in Ieud is regarded as being a double cycling pendulation system by some (Idu 1999) or pastoralism in the meadow zone with sheepfold in the mountains by others (Vuia 1964). It consists of four different phases:

▶ First phase, spring (primavaratul) – the grazing of the sheep was assured on the alternate grazing of the three levels of the village territory on specific dates. All locals respected the dates; plants that required earlier cultivation were barred by the owners so that they would not be damaged by the grazing animals.

▶ Second phase, summer (*văratu*l) – was done in the alpine pastures in summer, the shepherds would leave the village territory with the animals (cows, sheep, goats; the horses and oxen would be brought at a later time in the mountains) for the alpine pastures to graze the animals.

▶ Third phase, autumn (*tomnatul*) – the returning of the shepherds to the village territory in the autumn and the grazing of the terrains from the upper level (from higher altitudes) to below. By this time haystacks have been made and most of the crops have been harvested, so the terrains could be commonly grazed again.

▶ Last phase, winter (*iernatul*) – is the indoor feeding of the animals, mostly with hay, it was done in the household or on scattered temporary housings (*colibe*) and barns all over the village territory. The sheep are kept under the open sky, but they are enclosed (Fig. 8).

Fig. 8 Sheeps kept in winter time under the open sky.

4.8. The traditional ecological knowledge of forests. The use and perception of wooden species

Similar to other parts of Romania, the forest has played an important role in the culture and economic life of the community from Ieud. The Hapsburg military surveys offer us some very interesting information about the extension of the forest 300 years ago. According to the first Habsburg military survey (1763-1787), the forests cover around 70-75% of the village territory. On the second military survey (1806-1869) forests cover nearly 50-60% of the land cover.

The XIX century cadastral map, offers us some very detailed information on the species composition of forests, structure, age and land cover. On that map, we can observe that deciduous forests were more abundant then coniferous forests (Fig. 9).

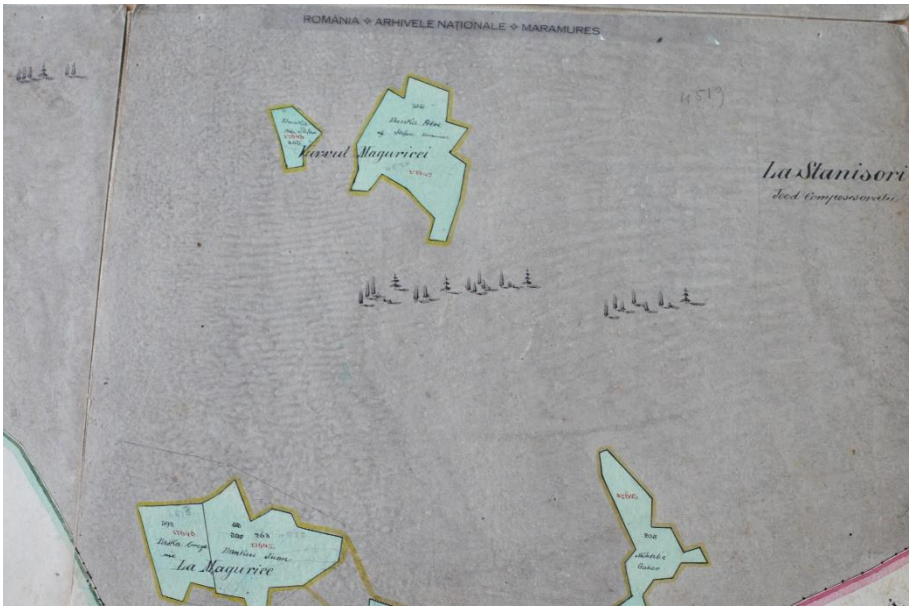

Fig. 9 . The compossessorate forest of Ieud on the cadastral map of 1863. Source: Arhivele Naționale Maramureș.

Since forests were so important in the cultural and economic life of the locals, they label them also according to ecological succession and by extension (e.g codru – ancient forest; pădure, pădurea mare – forest, ample forest; huceag – copse; sprânceană de pădure – a small patch of forest surrounded by fields, zmidă etc.),

The community acknowledges the ecosystem services provided by forests, since they know that their most valuable meadows are found near forests. Moreover all animals (sheep, cows and goats) graze forests on specific dates, depending on the type of forest (the dominant wooden species) and the grasses that make up the understory. Traditional forest use is based on the selective exploitation of species for the local needs or the household, thus there is detailed local knowledge about each tree species and its employment for the appropriate tool. Even for firewood, the locals prefer to use certain species (*Robinia pseudoacacia*, young beech tree, black alder etc.).

Fig. 10 A fir tree is adorned with flowers and round bread

The fir tree (*Abies alba)* is used in certain local customs with a somehow sacred character Fig. 60), In the local worldview the top of the fir tree is represented as being a cross.

The notion of ecotype is also present within the classifications of the community. The ecological criteria by which wooden species are classified are the following: facing forest, backside forest, wetlands, the top of the hills and mountains, the ridge, the bottom of the mountain, wooden species grown in open fields.

In the past the wood for construction was cut only on a full moon (during daytime) and on a feasting day (Wednesday and Friday). These practices were considered to better conserve the wood and avoid wormholes. Some people asked also the priest for a special service before starting work in the wood. The period in which the exploitations of forests could start would have been from 6 August (The Transfiguration) to 26 march (Annunciation).

Concluzii

The local community of Ieud village still has vast thesaurus of traditional ecological knowledge, practices, beliefs and legends. The subsistence activities (agriculture, shepherding and forest use) of this community still take place according to certain beliefs, prescriptions and community rules which actually represent the traditional ecological knowledge of the community.

1.1 Ethnobotany:

The locals can identify a large number of plants, mosses and fungi (aprox. 218 taxa) and mushrooms (26 taxa). They cultivate aprox. 30 species of herbaceous alimentary plants 8 species of fruit-bearing trees.

Many plants are still used by locals from Ieud village given their economical, medicinal and even supernatural properties (silver fir, deadly nightshade, basil). Locals can also describe some plant communities or specific vegetation of certain habitats. This communities etnobotanical knowledge is just starting to erode thanks to socio-economical factor, but so far it is well preserved.

1.2. The perception of fauna:

Locals from Ieud village have a substantial vocabulary of vernacular names for the fauna of Maramureș Land. May beliefs and legends abound animals are present, especially about the wolf and the bear. Locals have their own system of classifying animals which partially overlaps with the lineean system used today. The taxa includes: larvae, cosași (Orthoptera), butterflies

(Lepidoptera, Odonata), găuni (Hymenoptera), gâze (Insecta), gonge (Coleoptera, Dermaptera and Gryllidae), fish, crawlers (Reptilia, Amphibia, Lumbricidae, etc.), nădabile (Gypaetus, Gyps, Aquila, Aegypius) etc.

2. Agriculture, hay meadow management, traditional forestry and pastoralism

These four systems of traditional resource management represents the seond level of traditional ecological knowledge by which the community subsistence is achieved.

Agriculture and shepherding was being done after the splitting of the village territory into three bio-economic sectors. In present day, this co-owned system is falling apart due to the lowering of the animal count owned by the locals. Locals have completely abandoned the cultivation of maze, barley, buckwheat, wheat and rye. In the past, you could find arable land up to 1000 m altitude.

Shepherding is the main focus of many community guidelines and rules that determinate where and when the herds go. Sheep grazed in the spring in the first sector of the village territory represented by arable land outside the village. Beginning with 23 of April all animals were moved to the second bio-economic sector of the village territory. After a stationary of 3-4 weeks, all animals were moved up at over 1000 m altitude where they stationed for 2-3 weeks. Until Whitsun (in June) all animals have left the villages territory and they were installed at the high mountain sheepfolds to be returned only after 14th of September (Day of the Cross). Given the small number of the sheep being kept now, most of the animals spend their summer within the village border at altitudes lower than 1000 m.

Traditional ecological practices and knowledge connected to meadow use and hay production are many and are still used in Ieud village. The meadows are being carefully monitored and mowed only when the capsules *Rhinanthus minor* are ripe. Locals avoid the use of artificial fertilizer and fire on their meadows. They use organic fertilizer, spread out the anthills and remove the small tree/bush seedlings. An important measure used to increase the quality of the hay is to spread seeds from the last year’s hay production over the pastures or eroded terrains, in spring, after rainfall.

3. The worldview

The dichotomy between nature and culture present in modern society is absent at the local level of the community of Ieud. Certain religious festivals transcend the artificial barriers of nature and culture (The Transfiguration, The Epiphany, Pentecost etc.).

Migration to Western Europe has a negative impact on the community since it leads to land abandonment and a cessation in the transmission of traditional ecological knowledge from a generation to the other.

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