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**BIO AND GEODIVERSITY CONSERVATION AS SUPPORT TO
SUSTAINABLE DEVELOPMENT AND ECONOMIC
AND SOCIAL GROWTH IN THE AREA HAȚEG-RETEZAT
(RO 0023; RO-0056 EEA FM 2009–2010)**

ABSTRACT

The project “**Bio and geodiversity conservation as support to sustainable development and economic and social growth in the area Hațeg-Retezat**”, initiated by the Romanian Academy, as leader, under a consortium with the University of Bucharest and the Inter-communal Association “Țara Hațegului”, funded through the European Economic Area (EEA) Financial Mechanism with the support of Norway, Iceland and Liechtenstein, with a value of 2,083,337 €, has two important objectives: 1. Set up the Research and Training Center of the Romanian Academy in bio and geodiversity and sustainable rural development in the area Hațeg-Retezat and 2. Doing research work in the fields of bio and geodiversity, traditional agriculture as support to a strategy for sustainable rural development, for the consolidation of private-family farms with organic farming practice.

Key words: geodiversity, biodiversity, sustainable rural development, organic farming.

JEL Classification: Q01, Q57.

The project “**BIO AND GEODIVERSITY CONSERVATION AS SUPPORT TO SUSTAINABLE DEVELOPMENT AND ECONOMIC AND SOCIAL GROWTH IN THE AREA HAȚEG-RETEZAT (RO 0023; RO-0056 EEA FM 2009-2010)**”, next referred to as the Project HAȚEG-RETEZAT, initiated by the Romanian Academy as promoter under consortium with the University of Bucharest and the Intercommunal Association Țara Hațegului as partners, was won on a competitive basis, with finance from the European Economic Area Financial Mechanism, supported by Norway, Iceland and Liechtenstein.

The total project value amounts to 2,083,337 euro, out of which the foreign finance from the EEA mechanism is 1,579,865 euro, while the difference is the co-financing from the three partners in the project.

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The project is extremely complex and it is carried out along several scientific research directions, targeting the following important objectives:

The first objective is represented by the establishment of the Research and Training Center of the Romanian Academy in the building that was donated to the Academy by General Henri Mathias Berthelot in the year 1926. The project has in view the rehabilitation of this building at the standards of the 21st century, to set up four laboratories, conference halls and accommodation rooms in the former castle and its annexes, as well as to set up a museum unit as a tribute to the memory of General H.M. Berthelot. The investment for the rehabilitation and fitting up of the research laboratories and accommodation rooms amounts to 991,362 euro.

In the future, researchers, teaching staff, students and Ph.D students from the Romanian Academy and the higher education units will carry out their activity in this research center.

The second objective is represented by carrying out research work for the identification of methods and instruments that should ensure the bio and geodiversity conservation in the Scientific Reserve Gemenele-Retezat and in the Geopark Țara Hațegului, as well as to conduct studies on the traditional eco-agriculture in the zone; 32 researchers from the Romanian Academy institutes and teaching staff from the University of Bucharest participate to this scientific research activity.

The research work, carried out along three complementary directions of action, is conducted as follows:

– for the **Biodiversity** component, by two research teams, one from the Center of Agro-forestry Biodiversity Research and Study Center “Acad. David Davidescu” and the other from the Institute of Biology of the Romanian Academy, under the coordination of Professor Dr. Alexandru Bogdan, corresponding member of the Romanian Academy, and of Dr. Mădălin Enache, senior researcher. The project envisages the establishment of a gene bank, for the conservation of certain species from the investigated area;

– for the **Geodiversity** component, the research work is carried out by a team from the University of Bucharest, under the coordination of Prof. Dr. Dan Grigorescu, the initiator of the project on the Dinosaurs Geopark Țara Hațegului, which in 2005 became a member in the European Geopark Network and in the World Geopark Network, both recognized by international organizations, such as UNESCO, IUGS (International Union of Geological Sciences) and IUCN (International Union for the Conservation of Nature and Natural Resources);

– for the component **Traditional Eco-agriculture** in the area Țara Hațegului, the research work is carried out by a team of researchers from the Institute of Agricultural Economics of the Romanian Academy, under the coordination of Dr. Violeta Florian.

The third objective, having in view the design of a strategy for the **Sustainable rural development in the area**, is covered by a research team from the Institute of Agricultural Economics of the Romanian Academy, under the coordination of the Acad. Păun Ion Otiman, in partnership with the Intercommunal Association Țara Hațegului and the other research teams. The specific research works under this objective target the identification and development of solutions for raising the living standard of the people living in the area Țara Hațegului and Retezat through the implementation of models for the revitalization of the social and economic life and the use of economic instruments for sustainable development.

At the same time, on the basis of our research works under the project, we have in view to create socio-economic databases on the current socio-economic situation of the investigated communes, on the sustainable rural development opportunities, occupational diversification, entrepreneurial spirit, socio-economic determinants of traditional organic farming, on farmers' ecological, production and commercial behaviour in the investigated area; a **Strategy of Sustainable Rural development for the area Hațeg-Retezat** will be developed and a **Business Guide** will be issued for the people living in the area. This socio-economic objective also has an important ecological component: as a result of the project, with the support from the Intercommunal Association Țara Hațegului, an area of 7 hectares is to get ecologized by planting 1,000 trees.

By its environment, bio and geodiversity, sustainable development components, by the institutional construction it will create (research center and gene bank), the project will reach certain desiderata mentioned in the Strategy Natura 2000 and in other European Directives on habitat and its conservation, up to the 2020 horizon at least. This fact is a proof of the sustainability and viability of the Romanian Academy approach.

The sustainable development component is meant to shape and develop the business entrepreneurial spirit under the background of conservation and best use of bio and geodiversity, together with the local people's awareness campaigns with regard to the traditional ecological agriculture.

What were the considerations that lay at the basis of selecting the theme and objectives of the project **Bio and Geodiversity Study as Support to Sustainable Development and Economic and Social Growth** as well as of the project location in the area Hațeg-Retezat?

I shall try to present the project motivation starting from the considerations that lay at the basis of selecting the area **Hațeg-Retezat** in our investigation.

In selecting this area we had in view several considerations, namely: a) the involvement of the Romanian Academy even since 1935 in the investigation of flora and fauna (biodiversity) and in the rural economy and sociology research

work; b) existence of an important scientific research base of the Romanian Academy in the area Hațeg-Retezat; c) the Romanian Academy has significant agricultural, forestry areas and real estate into ownership, and it administrates a forest area of 10000 ha in the Retezat Park in the scientific reserve Gemenele and in the locality Berthelot.

The first systematic biodiversity research works were initiated immediately after Transylvania was reunited to the Mother Country, by Prof. Alexandru Borza, the director of the Botanical Gardens from Cluj, the academician who established the Retezat National Park with a total area of 15000 ha² in the year 1935.

The systematic research on biodiversity, which has been conducted for almost 80 years in Romania, or for almost 200 years if we also take into consideration Baumgarten's research on the vascular plants in the Retezat area from 1816, represent another strong argument for the biodiversity research work continuation.

Professor Alexandru Borza, supported by Acad. Emil Racoviță, the rector of the University from Cluj, came with a series of strong scientific arguments, as well as with unequaled sentimental arguments in expressing the motivation for the establishment of the National Retezat Park, such as: *“holy land for science, a sacred monument of nature, symbol of our national riches”* or a *“gigantic sanctuary of nature”*.

As a result of the scientific and environment protection activity carried out by the Romanian Academy branches from Cluj and Timișoara, the National Park Retezat obtained the Biosphere Reserve International Status from the part of UNESCO. We also mention that the Gemenele Reservation lies in the center of the National Park Retezat, with an area of 1850 ha, under the scientific supervision of the Romanian Academy.

The large-scale anthropic intervention in the Retezat Massif, by **building up the hydro-energetic system on the river Râul Mare**, with the 167 m high rubble-stone dam, by which the dam accumulation lake was created on over 50 hectares, brought about significant changes in the structure of flora and fauna in the area, which represents a significant reason for the continuation of research works on the dynamics of flora and fauna under these new conditions.

In the year 2000 the Natural Park Grădiștea Muncelului-Cioclovina was established, that comprises three natural reservations of significant scientific, speological, paleontological and zoological importance: the Cave Tecuri, the Cave Șura Mare and the fossil deposit Ohaba-Ponor.

The geological and paleontological research works carried out by Ilona and Franz Nopcsa in the year 1895, which were systematically continued by researchers from the University of Bucharest after 1975, discovered dwarf dinosaur egg nests that represented the support for establishing the **Dinosaur Geopark**

Țara Hațegului, protected area of national interest since 2004, which entered the **European Geopark Network** (2005).

The Dinosaur Geopark Țara Hațegului includes the following natural reservations of great scientific interest:

- The **Moor from Peșteana** is a natural botanical reservation where the plant populations of *Drosera rotundifolia* (the common sundew) were identified, which is a carnivorous plant, a glacier relict species;

- The calcareous grassland **Calcarele de la Fața Fetii** is a scientific reservation located in the area of the commune Râu de Mori, hosting plant species of extreme scientific interest;

- **Vârful Poieni** is a natural botanical reservation located on the territory of the commune Sălașu de Sus, which is the only area of the country where the species *Plantago holesteum* can be found;

- **Pădurea Slivuț** (Forest Slivuț) is a natural botanical reservation located near the town Hațeg;

- **Fânațele cu narcise de la Nucșoara** (Grassland with daffodils) is a natural botanical reservation located in the area of the commune Sălașu de Sus;

- **Paleofauna reptiliană Tuștea** (Reptilian paleofauna from Tuștea) is a natural paleontological reservation (dinosaur eggs) located on the territory of the village Tuștea, the commune General Berthelot;

- **Locul fosilifer** (fossil site) with dinosaurs Sânpetru is a natural paleontological reservation (dinosaur species, crocodiles, turtles) located on the territory of the village Sânpetru, commune Sântămăria-Orlea;

- **Fânețele de Pui** (Haylands from Pui) is a natural botanical reservation located on the territory of the commune Pui. The vegetation growing on this land represents fragments of the late Quaternary glaciation vegetation.

The first **systematic rural sociology and economy research works** were conducted in Țara Hațegului, at Clopotiva, in the period 1934–1935 by the founder of the rural sociology school from Bucharest, acad. D. Gusti and his team, resulting in a monumental book.

The rural sociology and economy research included in the above-mentioned monograph represents a basis for comparison with regard to the current economic and social situation from Țara Hațegului; on this basis, we can accurately investigate the way in which the rural economy, agriculture, ethnography, the local customs and traditions experienced an evolution (or involution, where appropriately).

The real estate properties under the ownership of the Romanian Academy in the area Hațeg-Retezat represented another important criterion with regard to the project establishment location.

In the first place, in the year 2001, the castle, the agricultural and forest land that had been donated by the French general H.M. Berthelot, in the locality with

the same name in the proximity of Hațeg, went back into the ownership of the Romanian Academy; this represented the starting point of the idea of building up the research and continuous education and training center in the field of bio and geodiversity, of organic agriculture and sustainable rural development based in the commune Berthelot. The castle rehabilitation, which is in a poor condition, represents a duty of honour for the Romanian Academy as the greatest scientific and cultural institution of the country, both for the memory of the donator and of the family Nopcsa, who built up the castle in the past. At the same time, the scientific and educative destination of the castle and its annexes should represent the resuming, after more than six decades, of the “*desire of the Romanian Academy to guide and help the rural people in the region*”, as we shall next see.

The Berthelot castle has a long history, which is worth mentioning in the present context. The first writing referring to the castle from Fărcădin (the former name of the village General Berthelot) is by Coralia Maria Jianu (Museum of Dacian and Roman Civilization from Deva) and by David B. Weishampel (Hopkins University Baltimore, USA). The eldest son of the baron László Nopcsa (according to the writings of Jókai Mór in the book *Sărmanii bogați – The Poor Rich* – in the year 1860), Ferenc Nopcsa, was born in Fărcădin, in the year 1874, in this castle, we presume. The baron László Nopcsa is known to be (according to N. Wardegger, 1991) “*a passionate collector of archeological pieces coming from the lapidaries from Zam, Mintia, Fărcădin*”. Referring to the castle of the Nopcsa family from Fărcădia, Aron Densușianu, on the occasion of the visit he made in Țara Hațegului in the year 1864, mentioned that “*several Roman monuments lay in the baron Nopcsa’s yard, gathered from ruins, which contained figures and inscriptions. In the reception room, a multitude of busts and small statuettes*”, and the statue with the “*toga tied up on the left shoulder that was cut into marble with so much artistry and elegance*” was considered by baron Nopcsa to represent emperor’s Trajan’s bust; Aron Densușianu next wrote that “*at the entrance staircase in the castle there was a funeral lion, followed by a series of statues representing men without heads*”. All these pieces disappeared, after the castle went into public property with the setting up of the communist regime, after 1948, hence there is no possibility of investigating their origin (probably Dacian or Roman origin).

The last owner of the castle of Nopcsa family from Fărcădin, the baron Elek Nopcsa and his sons, Ferencz, Elek and Ilona, left Romania after Transylvania got united with Wallachia in 1918; the castle and the estate from the locality were expropriated, according to the provisions of the Agrarian Reform Law for Transylvania and Banat, going into the Romanian state ownership.

It is important to mention that in the year 1895, Ilona Nopcsa found prehistoric animal bones (dwarf dinosaurs bones, as it will be proved later on) on the family’s estates from Transylvania. It is here that Ferencz Nopcsa’s activity as a paleontologist began, who discovered and described the dwarf dinosaurs from Țara Hațegului for the first time.

After the year 1919, another historical period began for the castle from Fărcădin, the general Berthelot period. The Romanian state, for his special merit in the modern organization of the Romanian army, donated the castle and the estate from Fărcădin-Hațeg to the French general H.M. Berthelot, who also received Romanian citizenship.

We present next the donation document:

“The undersigned Al. Constantinescu, in the quality of Ministry of Agriculture and State Domains, in the execution of the provisions of the Law of 28 October 1922 and authorized by the Council of Ministers by the Journal no. 591 of 27 March 1923, declare that I gift general Berthelot, Romanian honour citizen, into full and absolute ownership, on an irrevocable and free of charge basis, as a sign of appreciation of his never-fading merits for the Romanian people, with the farm Fărcădin, located in Hunedoara county, free of any charges. This farm, with an area of about 173 cadastral yokes, consists of the following: 79 yokes of arable land, 17 yokes of meadows and pastures, 13 yokes orchards, 7 yokes vineyards and a group of dwelling buildings and annexes, surrounded by a small park, mill and different other buildings, in a word with everything that was left to the state after this expropriation, as well as 50 yokes of forest land from the same expropriation. The determination of the donated areas in the field will be subsequently made by a signed statement, which will be part of the present act and that, together with this act, will be tabulated according to the law.

The subscribed general Berthelot, represented by Mr. Dem. Constantinescu, on the basis of the certified proxy no. 228 of 12 December 1922 at the Romanian Legation from Paris, declare that I accept this donation. The present act is free from stamp and registration fee, according to the Law of 28 October 1922, and to the Journal of the Council of Ministers no. 595 of 27 March 1923”. (Romanian Academy Records, Berthelot Donations Fund, E-101, f 3).

After a short time of using this property (1922–1926), as he returned to France, his native country, General Henri Mathias Berthelot donated the castle and the estate from Fărcădin to the Romanian Academy, whose honourable member he had become.

Among the Romanian Academy donators, the French general Henri Mathias Berthelot (1861–1931) undoubtedly holds a special place. He knew our country and people in the most difficult years of the First World War, in October 1916, as chief of the French military mission in charge of the rehabilitation of the Romanian army withdrawn in Moldova and of the development of operational plans for the great battles in the summer of 1917. For everything he did for Romania, in the most difficult war years, general Henri Mathias Berthelot’s name has remained inscribed in the book of heroes and great friends of our people for ever”.

As a proof of appreciation for all the services rendered “not only to the organization of our forces and to leading their operations, but also as supporter of our military and diplomatic action, for the union of the Romanian countries”, the Romanian Academy elected him among its honourable members (5 June, 1926).

We shall next present general H.M. Berthelot’s will:

“I the undersigned Henri Mathias Berthelot, division general, member of the High War Council, military governor of Strasbourg, decorated with the military medal Great Cross of the Legion of Honour, the War Cross, 1st Class Chevalier of the order “Mihai Viteazul”, at present with the domicile in Strasbourg, rue Brulée no. 13, enjoying my full freedom of spirit;

Willing, on the one hand, to thank the Romanian people for all the gratitude and love proofs that have been plentifully bestowed upon me and, on the other hand, to maintain the good relations and intellectual links between Romania and France, I declare that I dispose as follows, since the day of my death, of all the part of my wealth found in Romania, both in movable and immovable assets:

I bequeath to the Romanian Academy from Bucharest, Calea Victoriei no. 125, the estate that was given into my full ownership by the Romanian state, by the special law of 28 October 1922, through the donation act of 31 March 1923, registered at the Ilfov Court of Justice (Notary section, summary statement no. 16582 of 7 July 1923) that is located in the commune General Berthelot (Farcadin in the past), Hunedoara county.

...

This legacy comprises all the rights upon the ground and underground, as well as the buildings, plantations, improvements of all kinds and all the real estate assets located on this property at the moment of my death.

...

The Romanian Academy will have the right to use all the interests and the fortune I bequeath since the day of my death and it will become, since that day, the exclusive owner of the above-mentioned fortune, without any constraint or reserve other than those from the clauses that follow.

Done today, December 1st, year 1926, at Strasbourg, in three identical copies, each written by my hand, dated and signed by me. One copy goes to the Romanian Academy, another to my will executor, general Rosetti, and the third copy remains into my possession”.

The farm from Fărcădin was administered by one of the graduates of the Agricultural school “Tache Atanassiu” of the Romanian Academy, named Dodu Iorgu, “an industrious and correct element”.

In the year 1942, a convention was signed by the Romanian Academy and “Țara Hațegului”. Animated by the “*desire to guide and help the villagers in the region, the cooperative “Țara Hațegului” intended to set up an agricultural and livestock education center, to sell the milk produced in the region, to focus more on fruit-farming and to develop an agricultural and cultural vocational activity for the*

rural people by organizing winter courses and by any other means appropriate for the intended purpose". Appreciating "these aspirations of community interest, with the desire to contribute to their promotion", the Romanian Academy put at the disposal of the Cooperative "Țara Hațegului" 147 hectares, "consisting of: 27 ha arable land; "29 ha natural hayfields in the Hațeg river plain (the river Galbena); 15 ha natural pastures, located under the old vineyard and in the river plain; 3 ha old vineyard on the Dricului hill; 22 ha fruit-tree plantations in the neighbourhood at the back of the village mansion; 1 ha yard and land under buildings; 10 ha under pebbles partly covered by small river plain forests; 40 ha under forests on the Manota hill, located in the area of the commune Silvașul Superior, with the right to cut down only one felling area each year according to the specifications of the present arrangement, to be revised by the cooperative".

Concluded for ten years, with the possibility to prolong it in case the Romanian Academy is satisfied by the way "its properties are operated", the convention stipulated the Cooperative's obligation to deliver "part of its yearly income, the amount of 20000 kg wheat each year", to "make all the necessary repair and maintenance works for the buildings and assets it operates on its own expenses", to enlarge the stable from the large orchard, while "preserving the characteristics and lines of the present building, to do the maintenance works for the water mill on the Hațeg river so as to hand it over in good condition by the end of the convention". According to the provisions, "from the main building on the estate, the main pieces are reserved for the Romanian Academy, for its free use: the office, bedroom and bathroom from the eastern part" (Art. 8). At the same time, the following specifications were made: "The taxes on the estate, which forms the object of the present convention, go into the Romanian Academy responsibility. In case the legal framework into force, referring to the Romanian Academy taxes, suffered any modifications, by which further fiscal duties for the Romanian Academy were created, these duties would go into the responsibility of the Cooperative, so that the income of the Academy from this estate would not suffer any decrease in the future through taxes that are not stipulated at present. The registration fees for the present convention, it is next specified, are supported by the Cooperative".

In case the cooperative was not able to fulfil its obligations, "with the exception of well-justified force majeure cases", the convention could be cancelled by the Academy, "without legal action in court, only by the effect of this commissory pact, and consequently the cooperative will be evacuated from the above-mentioned real estate, by presidential ordinance, according to Article 66 bis civil pr. or by any other legal modality". In its turn, the Cooperative "Țara Hațegului" guaranteed the "exact fulfillment" of all its obligations. It was stipulated that the firm under which it had to operate this estate would be: "Romanian Academy-Farm "General Berthelot". The Exploitation of the Cooperative "Țara Hațegului".

In the year 1948, by the Decision issued by the Council of Ministers, the assets of the Romanian Academy donated by the general H.M. Berthelot, as well as all its private properties, passed into the use of the Ministry of Agriculture, and the castle had several successive tenants, one more irresponsible than the other. In the year 2001, when the Academy got back the castle into ownership, as well as its annexes and the seven-hectare land area surrounding it, these were in a deplorable condition, as a result of the “concern” of the communist leaders for the historical and architectural heritage of the Romanian people.

I once again mention that the Romanian Academy has the historical and also moral duty to rehabilitate the monuments it received as donations and to use them in an appropriate scientific, cultural and social way.

That is why the castle from Berthelot should regain, by the initiation of this project of the Romanian Academy, its function envisaged by the leaders of the Romanian Academy in the year 1942, i.e., “*to organize an agricultural activity and education center, to develop a solid agricultural and cultural activity for the rural people*”.

The other properties of the Romanian Academy in the neighbourhood: the chalet from Gura Zlata, rehabilitated at three-star tourism level in the year 2007, the chalet Rotunda, to be brought back into the Academy’s use, after an (at least) unhappy partnership (let us not describe this association under other more negative terms) since 2001, the chalet Gemenele from the Scientific Reserve bearing the same name from the Retezat massif, the chalets from the entrance points into the reservation, as well as the forest area of 2772 ha into ownership and 10000 ha into administration are all arguments for the solid scientific and patrimonial position of the Romanian Academy in the Hațeg-Retezat zone.

The overall importance of the Hațeg-Retezat zone as historical, economic, tourism and social area should also be added to the other above-mentioned considerations.

The old capital of the Dacians, Sarmizegetusa Regia, lies in the Hațeg Depression, which became Ulpia Traiana after the Roman conquest; the great historian Nicolae Iorga appreciated this special place, with palaces, basilicas with bathrooms and amphitheatre whose stone walls were brought to light after the digging works conducted by Prof. C. Daicoviciu, which can be admired nowadays.

Two great scholars of Transylvania in the 19th century, who knew Țara Hațegului very well, being teachers in several villages in the area and in the town of Hațeg, namely Ion Pop Reteganul and Romulus Vuia, left memorable pages referring to the life, economy, customs and traditions of the people who lived in these area.

The leading intellectuals of Romania, Aron and Nicolae Densușianu, born in the commune Densuș from Țara Hațegului, where the oldest church from Romania is located, as well as Ovid Densușianu investigated the spoken language, habits and customs, the villages and many families from Țara Hațegului.

Aron Densușianu, after the travel he made in Țara Hațegului in the year 1865, wrote in the journal “Familia”, among other, about the archeological losses from Sarmizegetusa, highlighting that “*the largest part of the ruins from Ulpia Traiana, inscriptions, monuments, sculptures, statues and so on were used as stone for people’s buildings or as ornaments in the yards of the Hungarian and Romanian people from this region*”. In this respect, it is worth mentioning the description of the castle from Fărcădin by Aron Densușianu, whom we have mentioned above.

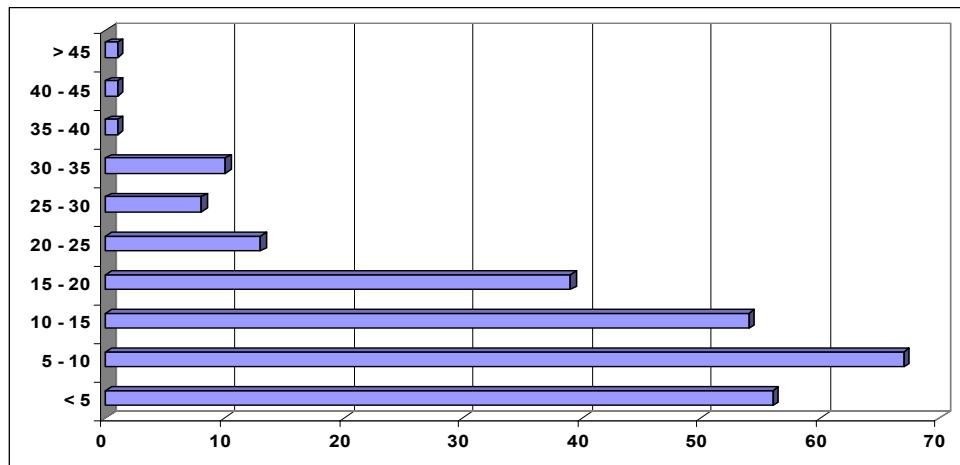
The most consistent sociologic and economic research work was conducted in Țara Hațegului and mainly in the village Clopotiva by the team of the founder of the Sociology School from Bucharest and of the Romanian Social Institute, acad. Dimitrie Gusti. The output of the monographic research made by the royal student team conducted by the sociologist and geographer Ioan Conea is the largest monograph of the rural locality Clopotiva (counting more than 550 pages).

Among the many aspects investigated in Clopotiva, which are also relevant for the Romanian agriculture nowadays, in general, and in Țara Hațegului, in particular, are the research works referring to the size of the agricultural holdings. The fragmentation of the agricultural and arable land can be also found in Clopotiva, after 75 years.

Table 1
The size of agricultural holdings in Clopotiva (1935), (ha)

Area (ha)	Number of holdings	Area (ha)	Number of holdings
under 5 ha	56 holdings	25–30 ha	8 holdings
5–10 ha	67 holdings	30–35 ha	10 holdings
10–15 ha	54 holdings	35–40 ha	1 holding
15–20 ha	39 holdings	40–45 ha	1 holding
20–25 ha	13 holdings	over 45 ha	1 holding

Source: Conea, I., *Clopotiva un sat din Hațeg. Monografie sociologică*, 1935.



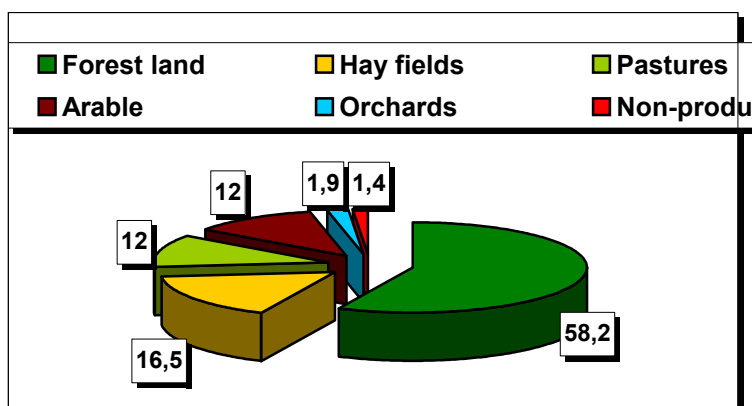
Graph 1. Distribution of holdings by land size classes in Clopotiva, 1945 (ha).

The largest part of properties (82%) consists of land under forests and natural mountaineous meadows (hay fields and pastures), while the arable land accounts for only 12% of the total area.

Table 2
The land areas by categories of use in Clopotiva, 1935

Categories	Land area (ha)	Structure (%)
Forest land	2764	58.2
Hay fields	686	16.5
Pastures	576	12.0
Arable	575	12.0
Orchards	86	1.9
Non-productive	66	1.4
TOTAL	4755	100.0

Source: Conea, I., *Clopotiva un sat din Hațeg. Monografie sociologică*, 1935.



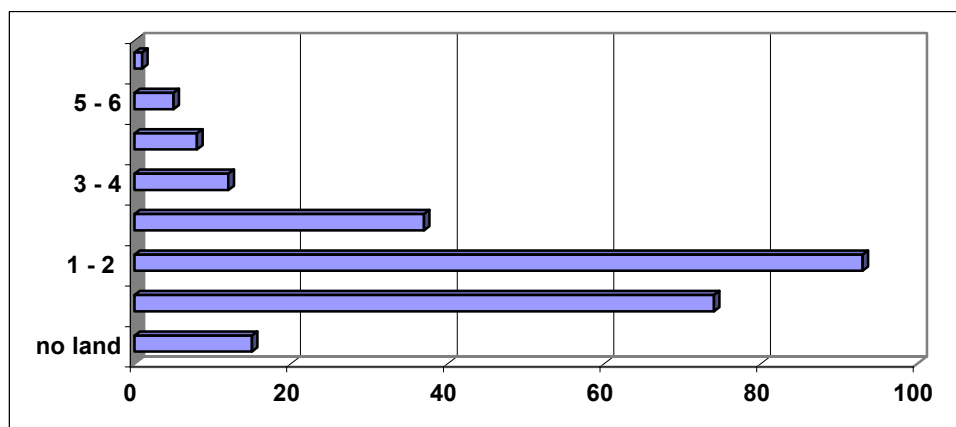
Graph 2. Land areas by categories of use in Clopotiva, 1935 (%).

The arable land area per household in the commune Clopotiva in the year 1935 was quite small. Only 6 households had over 5 ha in the plain zone of the locality, while 187 households (61.2%) had less than two hectares each, which is a totally non-significant area for supplying the necessary food for their families that consisted of 5-6 members on the average.

Table 3
The distribution of households by size classes in Clopotiva, (1935)

Land area (ha)	No. of households	Land area (ha)	No. of households
Without land	15 households	3-4	12 households
< 1	74 households	4-5	8 households
1-2	93 households	5-6	5 households
2-3	37 households	6-7	1 household

Source: Conea, I., *Clopotiva un sat din Hațeg. Monografie sociologică*, 1935.



Graph 3. Distribution of households by arable land size classes in Clopotiva, 1935.

Without having current definitive data yet with regard to the holding size structure in Clopotiva (2009), we find that the high land fragmentation phenomenon is still present nowadays, the average arable land area being only 1.1 ha, the same as in the year 1935.

With reference to the main agricultural branch in Hațeg, i.e. animal husbandry, and mainly sheep raising, the present decline (2009) compared to the year 1935 is more than obvious. The sheep herds in the year 2009 represent 11% of the sheep herds in the year 1935.

The present rural economy in the area Hateg-Retezat features higher diversification compared to the inter-war or communist period. Yet, the rural economy, which will be thoroughly investigated, is still at a much lower level compared to a rural economy that should ensure a decent living standard in the area and particularly alleviate the severe poverty that is still a critical issue in the area.

Table 4
Livestock herds in the village (1935, 2009)

Species Years	Cattle total	Cows	Sheep	Goats	Pigs	Horses	Poultry
1935	1060	442	3872	548	239	231	1915
2009	354	280	426	627	256	41	2102
%	33.4	63.3	11.0	114.4	109.4	17.7	109.8

Source: Conea, I., *Clopotiva un sat din Hațeg. Monografie sociologică*, 1935.

The rural tourism is among the rural economy branches that have developed the most in the Hațeg area after 1990. It seems to me that the prediction of the authors of the sociological research works in Hațeg in the year 1935 is probatory in

this respect: “*At Gura Zlata, the valley opens up. From the right side, the Zlata “impetuously” comes from the foot of the Retezat mountain and flows into the river that changed its name from Lăpușnic into Râul Mare (the Great River) at Vadul Apelor. At the confluence with the Zlata, the valley opens up like a round piece between the mountains. It is there that the academician Brătescu-Voinești built his house, **laying the basis of a future balneary resort***”

Along the Great River valley, at the confluence with the river Zlata up to the end of the gorge, on an 18–20 km distance, more than 100 boarding houses and family vacation houses were built in the last two decades and mainly in the last five years. This phenomenon is also found in the other parts of the Hațeg zone, in the extremely picturesque valleys starting from the Retezat Massif.

From a first inventory of the rural economy from Țara Hațegului, we find out that the top economic priority in the area is agriculture, in general, and organic (ecological or biological) agriculture in particular, which meets the optimum conditions here for the sustainable rural development.

Starting from the new philosophy, the new outlook on the sustainable development of agriculture and rural area, we consider that under the present conditions, agriculture is not only an economic branch generating agricultural products and profit; first of all, it is a **neo-rural agrarian lifestyle** and a new culture, **agriculture**, and the rural area, under the sustainable rural development background, cannot be considered only a production space, but a living environment in the first place.

Taking into consideration the natural framework from Țara Hațegului, and the fact that this depression, from the geographic and ecological point of view, is a (relatively) close space and above all, starting from the findings concerning the largely traditional agricultural practices, we intend to carefully investigate **the authentic agricultural products, of local and regional origin**, which can be promoted by the organic farming practice on as many agricultural holdings as possible in this area.

We consider that by an adequate information and consultation of farmers and local agricultural administration structures, both Țara Hațegului and its agricultural holdings (on request) can be declared and certified as organic agricultural holdings and organic agricultural production areas.

On the basis of the organic farming practice, the nutritive value and the selling prices for certain traditional local products can be increased (i.e., for potatoes, plums from the local populations from Răchitova and the products resulting from their processing, the *telemea from Retezat* (a local type of feta cheese), *virșli* from Hațeg (a traditional type of sausages), (Sălașu de Sus or Râu de Mori).

The organic farming, as a holistic production management system that promotes and improves the agro-eco-systems health, protects the biodiversity, the biological

cycles and the microbiological activity in soil, obtaining high-quality and healthy agricultural products that can be sold at much higher prices than the conventional products, presents a series of advantages for both farmers and consumers.

The main characteristics of the organic farming are the following:

- long-term protection of soil fertility, by maintaining and increasing its content in organic matter, biological control encouragement and careful execution of mechanization intervention works;

- indirect application of nutrients for crops, by using relatively insoluble nutrient sources that reach the crops by the action of the micro-organisms present in the soil;

- nitrogen supply from leguminous crops and biological nitrogen fixation, as well as the efficient recycling of the organic matter from natural sources;

- weed, disease and pest control mainly based upon the use of natural predators, organic fertilization, resistant crop varieties and (preferably) thermal, biological intervention, with a limited chemical control;

- extensive livestock management, with focus on the livestock behaviour needs and comfort, nutrition, housing, growth and development under mostly natural conditions;

- above all, the contribution to the increase of food and feed quality and to the increase of population food safety implicitly;

- special focus on the agricultural system impact upon the environment and the conservation of wildlife and natural habitats.

By applying these characteristics to the agricultural production in the Hațeg area, both the farmers and the consumers, as well as the environment, will gain.

In order to complete our arguments referring to the importance of the Hațeg-Retezat project, we would like to present other two arguments, which does not belong to us, but to our predecessors, describing the beauty and importance of the Hațeg-Retezat area:

“Transylvania is extremely beautiful, and the most beautiful part of it is this very corner that has been called Țara Hațegului since old times” together with the statement made by the great sociologist acad. Dimitrie Gusti: *“What a rich and great amount of Romanian local civilization is gathered in a single mountain village, in that priceless living ethnographic museum, called Țara Hațegului”*.

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