

# Factors influencing the leasing fees of hunting grounds in Hungary

Norbert Abauji<sup>1\*</sup>, Szabolcs Troján<sup>2</sup>, Éva Vadváriné Gál<sup>3</sup>, and Miklós Marosán<sup>4</sup>

<sup>1</sup>Széchenyi István University of Győr; Albert Kázmér Faculty; Wittmann Antal Plant-, Animal- and Food Sciences Multidisciplinary Doctoral School; Mosonmagyaróvár; Hungary

<sup>2</sup>Széchenyi István University of Győr, Albert Kázmér Faculty, Department of Agricultural Economics, Mosonmagyaróvár, Hungary

<sup>3</sup>Hungarian National Chamber of Civil Law Notaries, Budapest, Hungary

<sup>4</sup>University of Veterinary Medicine, Department of Exotic Animal and Wildlife Medicine, Budapest, Hungary

**Abstract** The history of hunting customs and traditions, as well as game management, in Hungary is long and rich, forming an essential part of Hungarian culture. By the end of the 20th century, changes had been introduced to the political and social structures, as had been the case in the field of hunting. In Hungary, the right to hunt is an integral part of land ownership. Those who own land that is classified as hunting land are entitled to exercise this right. Furthermore, landowners may lease this right within the boundaries of the hunting area established by the relevant hunting authority. The lease shall be concluded by a lease contract between the parties, namely the landowner and the hunters' association. The Hungarian Parliament enacted Act LV of 1996, which modernised the decree on game protection, game management, and hunting. Furthermore, the act delineates the fundamental elements of a hunting lease contract, yet it lacks sufficient detail regarding the leasing fee. Since 1996, a method for determining the leasing fee for hunting has been lacking. This is despite the fact that there has been a need for such a method for more than 25 years. The current situation is such that the contracting parties and the public authorities are unable to determine the leasing fee for hunting in a realistic manner. This lack of clarity has resulted in disagreements between the contracting parties. Furthermore, the current situation is such that there is no accurate and useable method for determining the leasing fee for hunting. A nationwide data collection has commenced among Hungarian hunting associations, based on a literature review and the methodology. The objective is to determine which factors influence the leasing fees and to what extent. The hedonic price method, which has already proven its worth in previous similar research, has been employed to draw up a multivariate regression equation of national validity. This permits the examination of the situation in all counties, and thus the establishment of whether the leasing fee used in the leasing contract of a particular hunting ground matches its characteristics. The objective of this research is to develop a comprehensive and transparent model for the determination of leasing fees for hunting, based on a synthesis of national and international literature.

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\* Corresponding author: [abauji.norbert@gmail.com](mailto:abauji.norbert@gmail.com)

## 1 Introduction

In Hungary, hunting rights are an integral component of the land ownership rights enjoyed by owners of lands classified as hunting grounds. The owners of such lands may lease this right within the hunting ground boundaries established by a hunting association [1]. A lease may be entered into between the relevant parties, namely the landowner and the hunters association, by the conclusion of a lease contract. While the requisite elements of a hunting lease contract are clearly delineated in legislation (boundaries, timeframe, etc.), the law provides minimal guidance on the determination of the leasing fee. Furthermore, it has not yet been possible to determine the factors influencing the leasing fees at a comprehensive, nationwide scale. Such information would be beneficial in determining the leasing fee in a particular instance. The preceding analysis indicates that it is challenging to ascertain the underlying factors that shape the leasing fees of hunting grounds in Hungary, as well as their relative importance. Consequently, it is imperative to conduct comprehensive, targeted research that encompasses all hunting grounds within the country. The research findings and data provide valuable assistance in determining leasing fees to the extent possible, as well as in resolving occasional conflicts, legal disputes, and litigation that may arise between the lessor and the lessee, as well as in interpreting the corresponding court decisions.

To date, there is a paucity of research on the factors that influence the leasing fees of Hungarian hunting grounds. Furthermore, there is a dearth of literature that would provide the necessary information to map fee areas properly. It is therefore our contention that further research, based on the available domestic and international literature, is required in order to eliminate this deficiency.

## 2 Previous research on the factors determining the leasing fees

In 1989, Hungary's political system underwent a fundamental transformation. The Soviet occupation that followed World War II resulted in the establishment of a socialist system in Hungary that remained in place for decades. It was only replaced by a parliamentary democracy at the end of the 20th century. The political reforms of 1989 brought about a transformation in the regulation of hunting.

In Act LV of 1996, the National Assembly modernised its decree on game protection, game management and hunting, rendering hunting rights an integral part of the ownership of the hunting grounds [2].

Following the aforementioned act's implementation, Kóhalmy and Márkus initiated research into the correlations between hunting economics. This led to the development of related models and methods. Hunting economics is the study of the relationships between habitat conditions and the economic aspects of rearing and managing game and other activities. At the time of their research, the field was regarded as a kind of "blind spot," despite the fact that hunting is a human activity dating back to prehistory. Kóhalmy and Márkus were the first in Hungary to propose a method for establishing leasing fees for hunting grounds in the absence of appropriate guidance directives following the aforementioned act's implementation. In developing the method, efforts were made to consider aspects of a given hunting ground that could be easily and relatively quickly assessed while avoiding significant material expenditure, and at the same time remaining generally applicable under various conditions [3]. However, it could be argued that their system should be more accurately described as a guideline than a method. Consequently, there is still a need to develop an accurate and unambiguous method that can be applied in the course of the leasing process.

The only research that investigated the factors determining the leasing fee in depth was conducted by Battay, who relied on Scandinavian research material. The hunting rights in

Scandinavia differ from those in Hungary. Nevertheless, Battay's investigations have demonstrated that the Scandinavian framework can be successfully applied in Hungary under the prevailing conditions. Battay's doctoral thesis examined the hunting leasing fees of Bács-Kiskun and Nógrád counties based on the composition and quality of the game in question and the characteristics of the grounds in question. The study also examined the habitat features of the hunting grounds, the shares of forest cover and their distances from Budapest by road. A multivariate regression equation was developed to simplify the calculation of the leasing fee, taking into account the aforementioned factors. The paper notes that this result, when considered alongside data from other counties, may provide insights that are applicable nationwide [4].

It is our contention that an advanced version of Battay's method can be fruitfully applied at the national level. During the course of the research, it was demonstrated that a multivariate regression equation suitable for conducting a successful examination can indeed be created by using tools of geoinformatics and expanding the range of influencing factors. Such an equation may prove to be of significant assistance to both the contracting parties and the authorities.

The hedonic price method is predominantly employed in the sale of property, representing an enhanced iteration of a linear regression [5]. The method, developed in the 1960s, examines the value of natural and environmental services as a function of their influence on the value of various market commodities [6]. The method is based on the premise that the value attributed to a service is a function of the service's intrinsic properties [7]. The greater the number of properties of the service that are identified, the more accurate the method will be. Its success depends on whether all properties with a significant effect on the value are identified [5].

When considering the international scene, it can be observed that the aforementioned hedonic price method is employed in the determination of leasing fees for hunting rights. Lundhede et al. have conducted an analysis of Danish hunting leasing fees based on a number of factors. According to the aforementioned assumptions, the leasing fee is determined by a number of factors, including the location and size of the hunting ground, the game population, a number of geographical, natural and local historical factors, and societal and social relations. Lundhede et al. posit that the leasing fee is a composite value, and a regression model was created to determine the leasing fees of hunting grounds [8].

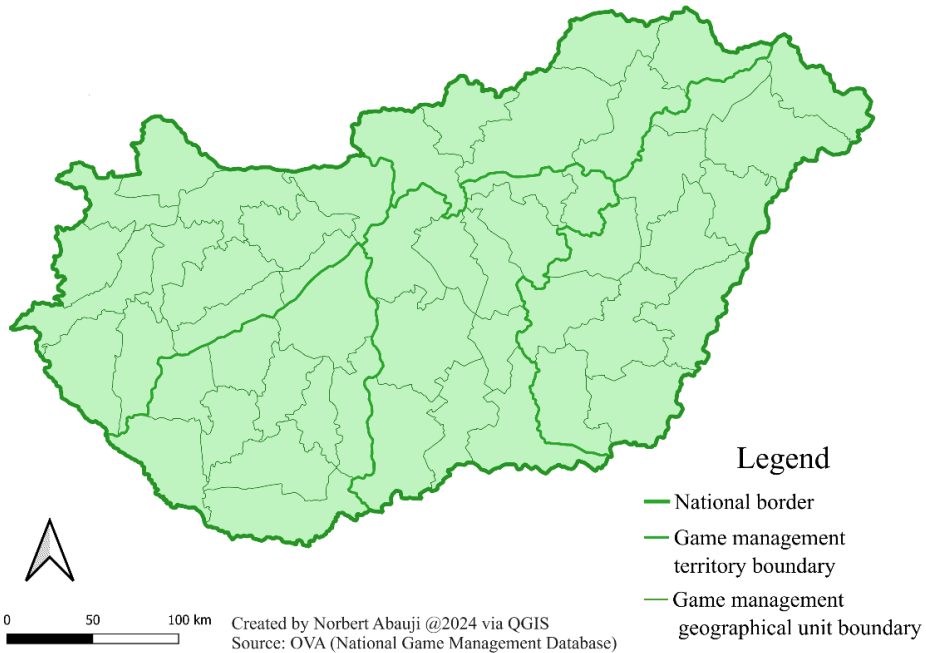
In the course of their research, Tei Mensah and Eloffsson examined the factors that influence hunting ground leasing fees in Sweden. The researchers employed an empirical approach to analyse the factors influencing the economic values associated with the respective game species, utilising data from Sweden. The findings of Mensah and Eloffsson indicate that the fees are significantly influenced by the distances of cities from the hunting grounds and the sizes of the former, as well as the sizes and game populations of the latter [9].

### **3 The factors influencing the leasing fees in Hungary**

The hunting customs and traditions, as well as the management of game, have a long history in Hungary, forming an integral part of the country's cultural heritage. The change of the nation's political system (1989) and Hungary's accession to the European Union (2004) both brought about notable shifts in the field of hunting. The introduction of new legislation and regulations governing leasing fees for hunting grounds has led to disputes between landowners and hunting associations. Consequently, it is of great importance to examine the circumstances and problems influencing leasing for hunting purposes.

The most recent data available from the National Game Management Database (2022) indicates that there are a total of 1447 game management units in Hungary. These include

game management administrative areas, forest management units and hunters' association grounds, among others. The units are divided into five game management territories and 52 geographical units. (Figure 1).



**Fig. 1.** Game management territories and geographical units in Hungary.

The regulations pertaining to the leasing of hunting grounds in Hungary are set forth in *Act LV of 1996 on the protection, management, and hunting of wildlife*. The legislation outlines the specifics of the leasing contract, stipulating that such contracts may be entered into for a specified duration and that they must include certain elements. The aforementioned elements are as follows: the estimated species composition and number of specimens in the game population of the hunting ground at the time of leasing; the descriptions of the game management and hunting facilities within the hunting grounds; the ownership and usage circumstances of the grounds; and obligations with regard to bearing the establishment and ownership costs of the grounds. Furthermore, the contract must include language obligating the leaseholder to maintain both the game population and the leasing fee at the specified level set forth in the approved game management schedule throughout the duration of the lease contract.

Furthermore, Article 17 of *Act LV of 1996 on the protection, management and hunting of wildlife* stipulates that the leasing fee shall be determined by taking into account the composition of the game population of the hunting ground in question and the mode of usage of the area. It is evident from the legal regulation that the determination of the leasing fee is a matter to be agreed upon by the two contracting parties, given that this fee is established while considering the composition and mode of utilisation of the game population in the hunting ground in question [10].

The legal regulation underwent comprehensive amendment with changes taking effect in 2017, with long-term considerations in mind. Instead of the ten-year cycles previously employed, the enforcement options of the hunting rights of landowners have been set for twenty years from the time of the amendment coming into force [1].

Battay, having a comprehensive understanding of the relevant legislation and regulations, was able to demonstrate, through his doctoral thesis research, that there is currently no viable

method for establishing the leasing fees of hunting grounds in Hungary. Although there is a clear need for a method that would simplify the application of the law, his work exploring the factors determining leasing fees encountered difficulties. This was due to the fact that only two counties would allow access to the data, which was contrary to his initial expectations. The relevance of the topic has remained unchanged since that time. As previously stated in the literature, the lack of an exact method in spite of the relevant legal regulation specifying that the hunting authority must approve leasing contracts based on the available conditions, continues to be an unsolved problem. This presents challenges for the application of the law by the relevant authorities [4].

Furthermore, the results of questionnaire surveys have indicated that the leasing of hunting grounds in Hungary is a distorted market, where personal connections, communities and the need to cooperate exert the greatest influence. In the course of leasing, the parties – a community of landowners as the lessor and a hunters association as the lessee – do not establish the leasing fee using a business approach. The fee is often so insignificant that landowners frequently fail to collect it, despite the annual cost of game damage being considerable. Furthermore, it has been demonstrated that landowners typically hold a negative perception of hunters [4]. These factors may also be perceived as aggravating elements in the current research, necessitating an urgent investigation to ensure that these characteristics do not cause further difficulties in the future.

## **4 The object and methodology of the research**

A nationwide data collection effort has been initiated among hunters' associations in Hungary, based on an overview of related literature and methodological conclusions. The aim of this effort is to determine the factors that influence leasing fees for hunting grounds and to assess the comparative weight of each of these factors.

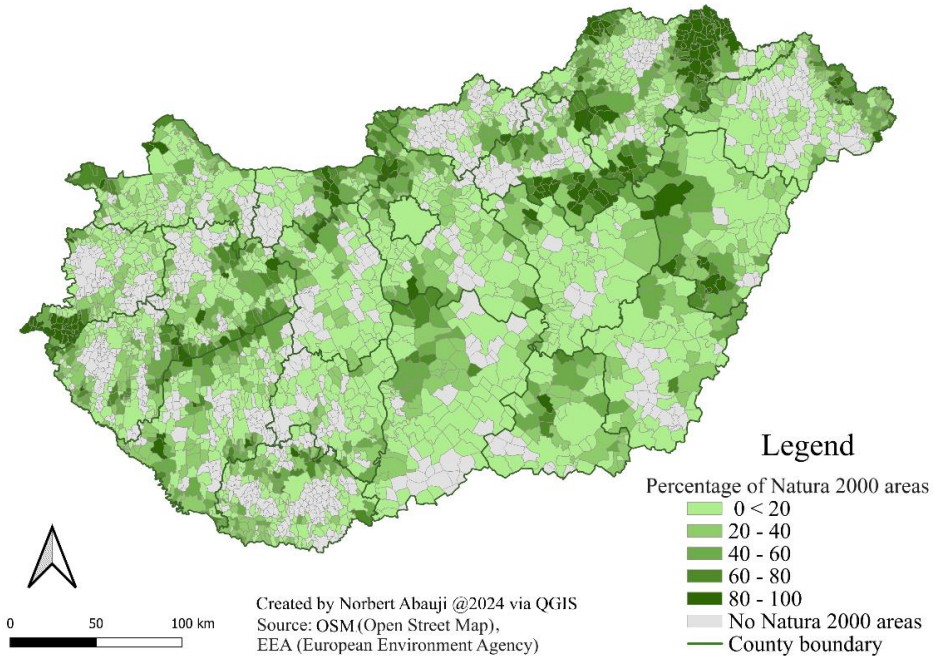
The objective of this comprehensive, nationwide effort is to collect new data on the leasing fees of hunting grounds and, using the results of this work, provide guidance applicable on a national economic scale. This will be achieved by providing a basis to resolve issues and conflicts between contracting parties.

The hedonic price method, which had already proven its worth in previous research that examined similar questions, has been employed in the present study. This method has been applied in Hungary, where the circumstances available permit the development of a multivariate regression equation of national validity. The equation is applicable to all counties, enabling the determination of whether the leasing fee set in the leasing contract of a particular hunting ground aligns with the ground's characteristics.

The present work continues to consider the factors previously examined in Hungary, namely the distance from the capital city of Budapest, the territorial and habitat features of the hunting ground, and the quality of the game population. In this research, we also consider the size of the hunting ground, the share of Natura 2000 areas, the soil conditions and agricultural game damage. (Figure 2).

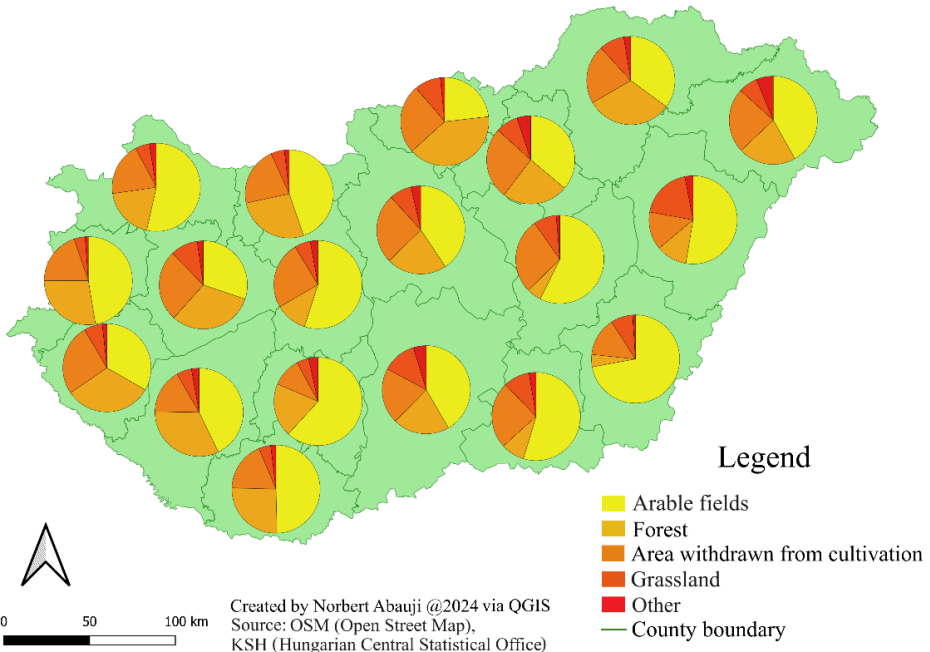
In my thesis, I plotted the ratio of the country's land areas among the territorial-habitat properties on a map according to the branches of cultivation, per county. With regard to the game population, the number of kills per year data were included in the table because they provide a reliable indication of the actual data. (Figure 3-4).

Subsequently, we intend to supplement this method with geographical distances of the hunting grounds and game management and agricultural statistical data. This data will be obtained from the hunting authority, the National Game Management Database, the Hungarian Central Statistical Office, the land registry offices and county-level game management literature. Additionally, we will obtain information on leasing fees from hunters associations. The results will be presented using geospatial data models.



**Fig. 2.** Percentage of Natura 2000 areas in Hungarian municipal areas (2021).

With regard to the quantity of data to be collected, the data are of a national scale, representing a considerable amount of information. This national representation is precisely our objective. The objective is to establish a general and easily understood model that can be applied by hunters' associations and that may also assist in resolving legal disputes.



**Fig. 3.** Land use trends in Hungarian counties (2019).

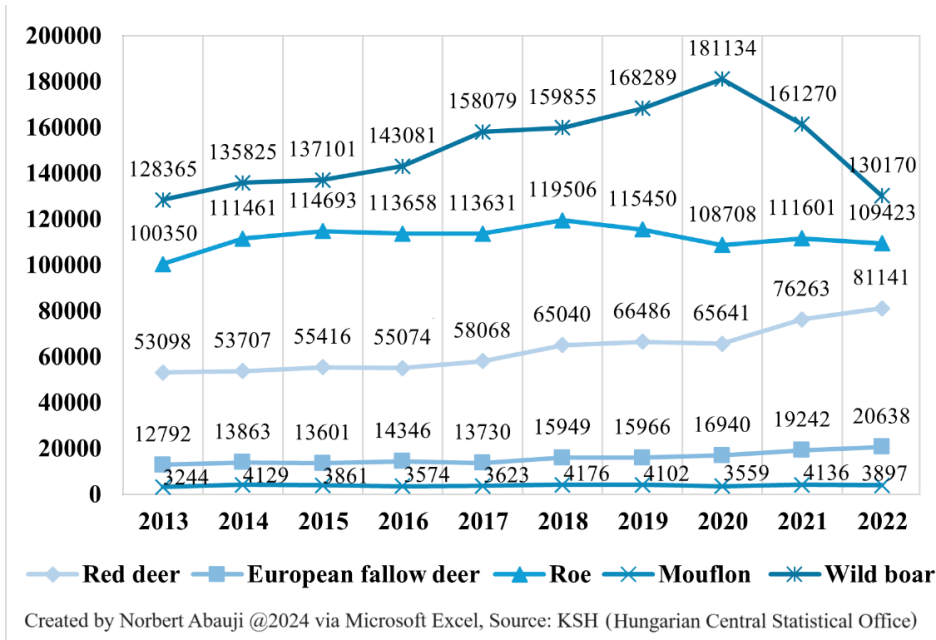


Fig. 4. Number of kills per year in Hungary (large game).

## 5 Conclusion

In Hungary, the rules of leasing hunting grounds are provided for in *Act LV of 1996 on the protection, management and hunting of wildlife*. The law regulates the details of leasing contracts, specifying the mandatory elements of the contracts and that such agreements may be concluded for definite periods, but provides little guidance on what directives to apply when establishing the amount of the leasing fee. As a result, this puts both the contracting parties and the authorities in a difficult situation when determining the leasing fee. To date, little research is available in Hungary on the present topic. In order to settle problematic issues between lessees and lessors or in the course of the application of law by the authorities, an exact method is required that eliminates this deficiency. Our research has built a general and easily understood model for establishing the leasing fees for hunting grounds, based on domestic and international literature.

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