

DIGITIZATION DEVELOPMENT OPPORTUNITIES IN HUNTING MANAGEMENT IN HUNGARY*

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ABSTRACT: *In the course of my scientific research so far, I have investigated many areas of professional administration from the point of view of how information communication devices (especially smartphones and drones) can improve and make the administration of the area more efficient. Of these, hunting management stands out for me and is particularly important, which is the main focus of this study. There are several reasons for this. On the one hand, I hunt myself, and as a senior official of the county's hunting civil organizations, I have a broader knowledge and network of contacts about the background of the area's administration and operating rules than the general citizen's perspective. On the other hand, in this area, I came to the formulation of a research result, which I hope will be able to be put into practice in the future, to convince the legislator of its raison d'être. There are many opinions regarding what hunting can be considered: a leisure activity, a form of sport, or a way of life. I myself am a supporter of the latter definition, since we are talking about a complex activity that cannot be grasped solely from the aspect of one characteristic. Accordingly, the regulation of hunting is also a complex area of law covering several branches of law, which includes elements of civil law, criminal law and, of course, administrative law, but can also be approached from an environmental law point of view.¹ I believe that this fact also clearly shows that it is useful and by now even expected that the authorities can carry out better administrative processes in relation to the administration of the area with the help of the best possible technical support. In the following, I would like to support the applicability of drones and smartphones, especially by presenting the concept of the e-register of hunting.*

Keywords: hunting management; wild animals; ICT tools; drone; mobile app.

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¹ See more in: Balázs, Szabó: The technical and technological development of the Hungarian public administration in the 21st century. in the first two decades of the century c. PhD dissertation, University of Miskolc, 2020.

1. APPLICABILITY OF DRONES

Among the previously mentioned devices, I must mention unmanned vehicles in this case as well. Their potential use in the sector may become more and more important, but currently the Hungarian hunting authorities² do not use them. According to my proposal, it is definitely advisable to include the staff of the hunting department in the drone pilot training of the county government offices, and to provide them with drone(s). Even now, I see several areas of authority where these devices may have a right to exist. One of these is the fight against poaching, another is the professional technological support of wildlife damage assessment (which is also supported by the Wildlife Damage Management Protocol adopted in 2023), as well as territorial mapping (exact determination of hunting area boundaries), a series of tests, which even when demarcating hunting area boundaries can play a huge role.

Effective action against poaching is the responsibility of both the hunting inspectorate (hunting department) and the police. In 2018, a pilot program was started in England, in the framework of which drones are deployed in order to catch poachers. There are several documented cases where illegal so-called people took part in pack/drive hunting, and drones were one of the key factors in their search. Unfortunately, the phenomenon of poaching is not unknown in Hungary either, but in our country it occurs more often among individual hunts, especially at night. In this case, detection is already much more difficult, but at the same time, a thermal camera sensor can be installed on the drones as an accessory, which can be used to search for people in the hunting area even at night. In this case, on the other hand, preliminary information is also needed as to who the persons who are legally present in the area, in the given district, which can be found out from the entries in the registers (as an official document). However, in order to do this, all the registration books displayed in the hunting area (which can only be paper-based within the current legal framework) must be checked, which may require a journey of several (up to ten) kilometers in certain cases. To eliminate this, I will present a new solution later on.

Another field of use of drones can be the technical support of assessing wildlife damage through accurate on-site measurements. As I mentioned earlier, the damage caused by the increased game population in agriculture and forestry is a serious problem for our country, the game damage. These days, this can also appear as a multibillion-dollar item in a national context, which is why it is extremely important to determine the exact damages in terms of deciding legal disputes.³

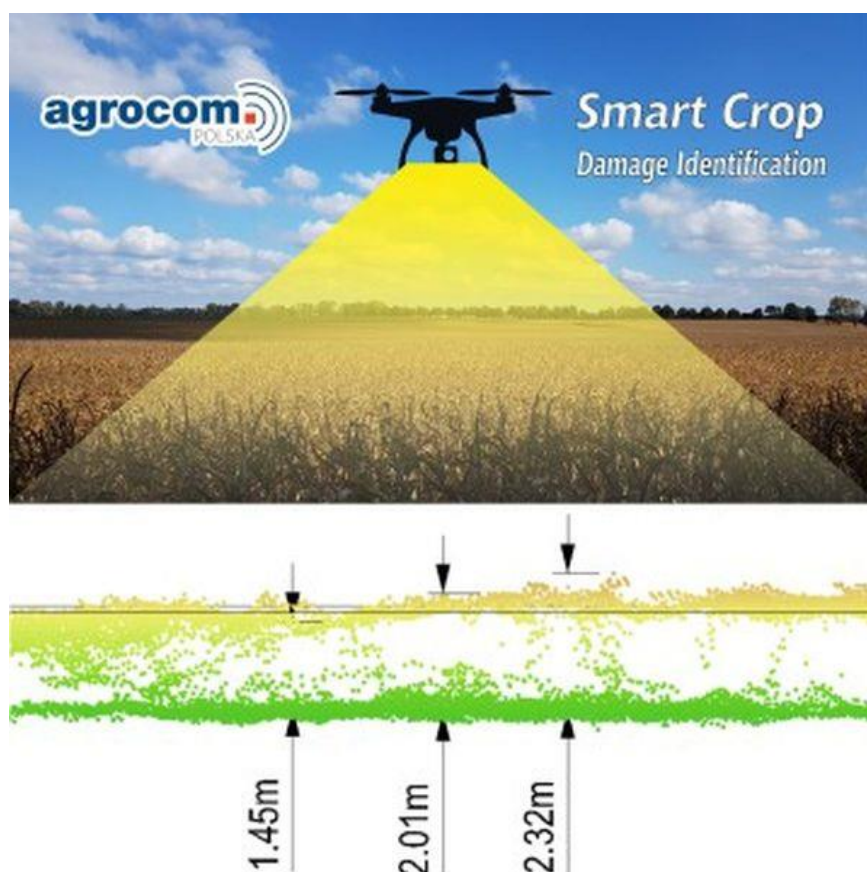
According to my proposal, the use of these tools should be made mandatory in the unified wildlife damage protocol system due to the uniform measurements (which of course cannot 100% replace the field/ground surface, otherwise known as traditional measurement methods), since we can talk about an existing technique that is actually more effective, can make these procedures faster. As a practicing hunter, I can clearly state that

² See more is: Gyula Balázs, Csáki-Hatalovics – Balázs, Szabó: Hunting management; In: András Lapsánszky (ed.) Public administration law: Chapters from our specialized administrations. 679 p., Budapest: CompLex Wolters Kluwer, 2013.

³ In a significant part of the cases, it is not possible to reach an agreement between the person entitled to hunt (hunting company) and the farmer of the agricultural/or forestry area, so in order to resolve the dispute in the first instance, the competent clerk must appoint a judicial wildlife damage expert. Unfortunately, significant differences can arise between the calculation methods used by experts and the results derived from them.

the assessment of natural and wildlife damage in agricultural and forestry areas causes serious difficulties in many cases, the results are often questionable and imprecise. The Polish Agrocom Polska's intelligent wild damage and natural damage identification system can help in this⁴. The essence of this is the so-called Smart Crop Damage Identification (SCDI) system, which is a 3D, high-resolution camera system mounted on a four-rotor drone. It provides the opportunity to assess the damaged area with aerial photography and LIDAR image processing, and in addition, the damage can also be recorded on traditional (2-dimensional) images. The method can be said to be accurate, extremely fast, and saves a lot of field work for the owner of the area, the wildlife manager, or the damage assessor.

The Smart Crop system in working:



Source: <http://erdo-mezo.hu/2017/11/26/preciz-modszert-fejlesztettek-ki-a-lengyelek-a-vadkar-dronos-felmeresere/> (last see: 2023.10.12.)

⁴ Source: : <http://agrocompolska.pl/scdi-intro/> (last see: 2023.05.14.)

It is also clear from the diagram: one of the foundations of the solution is that the system detects differences in height and size between different plant individuals, and beyond that, it provides its user with authentic, high-resolution image material. Thanks to this and a well-designed software, it will be possible to survey an area (up to several tens of hectares) in a significantly shorter time, and the damage caused there can be estimated more precisely than with previous sampling procedures. Perhaps this will also contribute to reducing conflicts and frictions between the hunting authorities, hunters and the agricultural sector. I believe that the reason for this could be a development in line with the concept of the Good State and fully realizing its objectives, which could clearly result in a more efficient, more customer-friendly (Czékmann Zsolt; Szabó Balázs, 2013) public administration service that better serves the needs of the customers, and the increased number of wildlife damage cases ending in public administrative lawsuits would also be significantly reduced. can reduce.

2. THE POSSIBLE ROLE OF SMARTPHONES, OR MOBILE APPLICATIONS, IN HUNTING MANAGEMENT

I believe that device-based modernization could be significantly achieved with the above-mentioned methods of use, but in addition, I have one more concrete proposal, mainly for the legislator.

The start of our specific hunting activity begins with the previously mentioned registration books. Here we – as persons entitled to hunt – have to decide on the spot (mostly within an inhabited area), where and in which safety zone we want to hunt, when we will start it, and how long our hunt will last, whether anyone besides us will participate in the on a hunt or not (as an unarmed companion or as a hired or guest hunter with a hunting license).

After that, we make our hunting activity official and active with our signature.⁵ At the given moment - upon registration - we also obtain information on whether someone (or several) has already registered before us in one of the neighboring security zones or not, and how long the hunt lasts. We won't know about fellow hunters who sign up after us, so this can be a problem later on if we hear a stray shot, which we can also think is evidence of poaching based on our existing information. This normally entails notifying the police, but until we are again at the registration book/hunting log, we cannot be sure that our own hunting partner fired a shot, or that poaching actually occurred. Regarding the *de lege ferenda* proposal for the introduction of digital or e-hunting diaries explained below, I think that this may be the only way to avoid the problems mentioned earlier in the future.

2.1. The e-hunting diary/register

The basis of this would be a computerized database, to which those entitled to hunt would join, providing all the necessary information for the authorities (hunting inspectorate, competent police department) and the system for each hunting unit. Geospatial applications and technologies clearly enable accurate representation on a digital map interface. In addition to the connection of the persons entitled to hunt (hunting areas, companies), another very important condition is that the hunters also register in the system

⁵ The official sample can be found in the Directive of Agricultural Ministry, 79/2004. (V.4.), part 13.

and download an application specially developed for this purpose to their smart devices⁶. Enrollment in the given hunting area could be done through this application, similarly to the traditional procedure, by entering our name, hunting area, the date of the start of the hunt, and by indicating our accompanying staff (without weapons). After registration, both the other members of the hunting company and the competent authorities can immediately see how many persons with a hunting license are currently in the given area (with an accuracy of up to a few meters, thanks to the GPS beacons in smartphones). Thanks to this, in theory, it cannot happen that stray shots are taken, or that we do not know the whereabouts of fellow hunters coming after us after our registration. Basically, the system would be completely online using info communication tools and would implement the widest range of information flow between all the parties involved.

As with all innovations and developments, objections may be expressed here. One of the arguments of those who oppose this system can be the difficult use of modern devices, which can cause difficulties for the older generation and also require financial expenditure. I believe that the administration of the future is absolutely moving in the direction of digitized, mobility-based solutions, so it is definitely worth starting to prepare for the new systems in time. In Hungary, digital illiteracy is still present, a significant part of which is the older generation. In their case, it is often not only the acquisition of technical equipment management knowledge that is a problem, but also the lack of intention to use it from the start. This may be based on concerns about digital systems and compliance with data security rules. For this reason, in the case of such older hunting partners, convincing them of a new solution is a much more difficult task. I believe, however, that hunting - as a dangerous business activity - absolutely requires more transparent, information-rich solutions. One of the useful elements of this would be the e-registration book, with the use of which the following extremely important objectives and tasks would be realized:

- efficient, fast (immediate) flow of information between the parties concerned (members of hunting companies and authorities), up to 24 hours a day in 2 directions,
- an effective solution to reduce poaching⁷, thereby increasing public safety by facilitating the work of the police,
- protection of wildlife from disturbing and damaging activities by unauthorized persons (e.g. antler pickers, illegal garbage dumps, motorcyclists without a permit).

Among the possible objections (even on the side of the Ministry or civil interest representatives⁸), the next is the question of identification. In the unofficial opinion of the ministry, without proper identification, the system is inoperable. According to their

⁶ Balazs, Szabó: The technical and technological development of the Hungarian public administration in the 21st century. in the first two decades of the century c. PhD dissertation, University of Miskolc, 2020.

⁷ This can have a serious positive effect on the national economy as well, if it is possible to improve the quality of the game population and to protect the game from premature death (by poaching). In the case of a trophy game, this can range from a few 10,000 forints to as much as 10 million forints (e.g. in the case of an outstanding bull or fallow deer) in Hungary today.

⁸ The administration of the area is currently the responsibility of the Ministry of Agriculture. Among the hunting civil organizations, the National Hungarian Hunting Chamber (which represents the interests of sport and professional hunters) and the National Hungarian Hunting Protection Association (which represents the interests of hunting companies and those entitled to hunt) should be highlighted. With regard to both interest representation bodies, I can say - as the chairman of the supervisory boards of their county territorial bodies - that these bodies basically support development and innovation, and only point out applicability to the older generations as an objection. On the other hand, there is a little more resistance in the ministry.

arguments, the moment of signing in a traditional paper-based registration book or hunting diary can hardly be replaced. I believe that this could even be handled perfectly with customer gatekeeper registration, which is even more reliable than signature. I base my statement on the fact that, as a practicing hunter, I have come across countless cases where apparently, at least presumably, the hunter engaged in the hunting activity did not sign, that is, register, but someone else did it instead⁹. A common example of this can be a mandatory wildlife damage prevention hunt for hunters, which, if the hunter scheduled for that day cannot or does not want to complete it¹⁰, can simply ask his hunting partner to sign in or later to sign out, thus creating the appearance that fulfilled the obligation imposed on him. With the help of the e-log I have outlined, only those who have a customer gatekeeper registration would be able to register, thus the empty registrations (that is, the physically unguarded area, but administratively occupied areas¹¹) could be eliminated.

Opponents may even think that the customer gatekeeper registration is not necessarily reliable enough, since it may even happen that we gave our ID to someone (a fellow hunter) so that she can do the official registration for us. My own opinion in this regard is that our customer portal access data - since they are not only used during hunting, but also during many other administrative official procedures, e.g. document matter, tax matter - they can be considered unconditionally confidential data, which should not be shared with others. Accordingly, I do not see this as a relevant problem, but if necessary, we can tighten the identification. In my opinion, biometric identification could also be used in addition to entering the Customer Portal outlined so far (entering a username + password). The vast majority of smartphones marketed today – this is certainly true for newly released devices – are capable of fingerprint-based identification, and some even recognize iris, retina, and face. I myself definitely see the use of fingerprints as a feasible feature-based identification method. A possible argument against fingerprint-based identification is that it represents an excessive entry into the private sphere of citizens. In this regard, I believe that since hunting is particularly dangerous - if only because of the use of firearms - it therefore requires increased security measures, transparency and accurate, authentic traceability and control. I think that the application of the combination of the customer gatekeeper + biometric identification can fully meet these needs and can greatly help reduce the number of hunting accidents.

An additional counter-argument may arise that "biometric identification is a solution that is once again a problem for the older generation", but I still believe that the transition to the system must be started, because the modernization of public administration is undoubtedly moving in this direction.

The implementation of the official applicability of the e-registration book that I have outlined is currently in the phase of a social consultation, as a result of which it may become possible as a test, specifically as an optional option, from March 1, 2025,

⁹ This is a practice developed in the past decades, in which the information we can learn from the hunting log is also called into question.

¹⁰ Most of the time, the essence of the hunts to prevent game damage is that the hunters try to protect the agricultural culture from the game damage caused by the game. This is a rather long and tiring way to prevent wildlife damage, and in many cases it is ineffective.

¹¹ This can be a problem just because another of our fellow hunters might have wanted to indulge her passion in the given area, but due to our "apparent enrollment" she is not given the opportunity to do so, since the Vtv. according to its rules, as a general rule, only one hunter may be present in a security area at a time.

according to the current plans. A significant number of hunting companies have already expressed a desire to use this or a similar system, even if it is not officially accepted, but to facilitate their internal administration and control.

In the course of my research, I came to the conclusion that the legal environment (the hunting law) should make it possible to enroll in the "traditional" hunting log certified by the hunting authority as well as the e-log solution. Equivalent enrollment alternatives must be laid out not only in the law, but also in its executive order.

The e-log system provides continuous follow-up opportunities not only for the professional hunter, the person entitled to hunt, but also for the hunting authority itself. Entries required during individual hunts in the e-log (shooting, killing game, detection of poaching) can be done in the hunting area. If the person entitled to hunt has chosen the e-log solution, in that case the table registration can be continuously monitored, since the system can automatically generate an authentic, up-to-date list at any time. This can help with the plan numbers prescribed for those entitled to hunt (number of game to be killed per game species and sex). This is particularly important when it is possible to kill a certain number of trophy game for the part of a person entitled to hunt. If the system continuously monitors the qualitative and quantitative data of the killed game, it cannot happen that the previously approved plan numbers.

Another very important reason and advantage of the e-diary is that the system allows all hunters to use and enter only the game identification number added to them in advance when recording the game they have killed. In this way, it is possible to avoid the unfortunately frequent use of prohibited multiple game IDs, which in the end also means the commission of a crime. It also eliminates the problem if a hunter happens to be a member of more than one authorized to hunt, and thus has the game ID of several companies, accidentally exchanging them. In the case of the e-diary as well, the order of enrollment is carried out as prescribed by law. The difference lies in the fact that here it is not necessary to travel to the pre-arranged hunting logs, but you can register from anywhere and then unregister when the hunt is over.

Fulfillment of the accounting obligation required by law is simplified, since the e-log system is also an up-to-date record, which can be easily converted into a report that can be submitted to the authority by using the appropriate function.

In the end, I can say that the concept of the e-diary proves that the time has come for mobile applications recognized by the authorities and implemented in the hunting administration, which can be used with the creation of an appropriate legal environment.

The introduction can be helped by the fact that such a system/application developed in Hungary is already used in several European countries, including Ireland, to manage and administer state forest hunting areas.

3. CLOSING THOUGHTS

I believe that the increased demand for smart devices, as well as the rapid increase in the spread of devices, proves that the population is increasingly ready to accept and use these devices. Every day, we can experience in our immediate environment that smartphones have completely become a part of our everyday life, with a slight exaggeration, the majority of citizens cannot imagine their existence without them. Hunting management and the closely related law enforcement, forestry,

environment/nature conservation and agricultural management are five areas where the number of affected customers is probably in the millions (probably several millions), so I think it is clear that the areas coordination between, the technical-technological development of individual areas. If solutions are applied in practice that make the relevant administrative procedures faster and more efficient, then a large number of customers will confirm to the state that the development was not only a correct and good decision, but also produced demonstrable and measurable results.

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