HUNTING TOURISM AND SAFETY ASPECTS OF HUNTING FAUNA USE IN SERBIA

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Abstract: Hunting tourism is a special (selective) form of tourism and an integral part of hunting, and it is implemented with efforts to preserve and regenerate its main motive and resource (hunting grounds and game populations), at least to the extent defined as simple reproduction. It brings a significant share of revenue to the hunting sector, which is mainly focused on the improvement of habitat conditions, as well as the production, breeding and protection of game and to a smaller extent on the construction and maintenance of facilities for the accommodation and board of tourist hunters. Hunting is an important recreational, sporting and touristic activity characterized by the potential presence of various safety risks, which can cause injury and even accidental death of participants in the hunt and their hunting dogs, but also of other persons, and cause damage to property in the hunting grounds and beyond. Data suggest that almost every year in Serbia one death is caused by hunting firearms during hunting.

Key words: hunting tourism, game, hunting ground, Serbia

INTRODUCTION

Hunting tourism is a special (selective) form of tourism that includes the movement of tourists motivated by specific interests (game hunting), or movement and active stay of tourist hunters in a specific natural environment called the hunting ground. The main motive for this type of tourism as the subject of hunting is game, which is a common national good in Serbia. Tourist hunters pay compensation for the hunted game and its parts (trophy, meat), supporting services for hunting (trophy processing, transportation throughout the hunting ground, rental of hunting weapons, etc.), accommodation and board in hunting facilities (villas, houses, cottages), as well as other services, on the basis of price lists issued for each hunting season by the hunting ground user. In addition, hunting tourism is a complex human activity of special social and economic interest, aimed at planned and sustainable hunting permeated with the spirit of humane and chivalrous attitude towards game and nature in general (Šelmić et al., 2001, Prentović, 2006, 2008, 2014).

Hunting is the oldest human activity that goes on ever since the origin of man. It has been changing through ages, both with regard to the character of motivation (from the primary activity enabling the survival of man and the entire social groups, representing one of the important forms of economic activity, until the present time when it is on the one hand a recreational hobby and on the other an activity focused on the production, protection and planned rational use of game), considering the means and methods of game hunting (Šelmić, Gačić, 2011, Danilović, Gačić,
One of the important features of hunting is its safety delicacy, reflected in the presence of a number of safety risks during the execution of activities (Prentović, 2007, Zilkens et al., 2011, Junuzović, Eriksson, 2012, Loder, Farrell, 2014, Šprem et al., 2014). These activities pose potential risks to people (hunters and other persons), hunting dogs, material goods, as well as wild and domestic animals.

Despite the fact that hunting tourism has great economic importance, and that during hunting there are often incidents caused by hunting firearms, they have rarely been studied in detail in Serbia. The aim of this paper is to present and analyze the resources of hunting tourism in Serbia, safety risks in the hunt and the consequences of unprofessional and undisciplined use of hunting firearms.

METHOD

The analysis of the resources of hunting tourism in Serbia was made on the basis of data from the Statistical Bulletin - Forestry in the Republic of Serbia (2009-2013) collected in the LOV-11 (Republic Statistical Office) report. The used data relating to workers employed in forest enterprises, hunting societies and forestry companies (the total number of employees and their structure by level of expertise), data on hunting lodges (area), information on hunters and hunting grounds (total number, total area, forest area), and data on the number of hunting facilities (pheasant farm and feeding stations for the game). In addition, the data on the estimate spring count and registered harvest of major species of game (brown hare, pheasant, wild ducks, red deer, roe deer, wild boar and wolf).

The consequences caused by untrained and undisciplined use of firearms for hunting covered the period from 2004 to 2015. Only the data pertaining to those incidents which occurred during hunting or in the hunting ground (wounding and killing people with hunting weapons) were used. The data were collected by searching articles published in printed and internet editions of hunting magazines (“Lovačke novine”, “Lovac”), as well as internet editions of daily newspapers (“Večernje novosti”, “Politika”, “Dnevnik”, “Telegraf”, “Kurir”, “Blic”).

RESULTS AND DISCUSSION

Hunting grounds and hunters

Hunting tourism mainly takes place in the natural environment (hunting grounds) and is based on the use of game as an important and partly renewable natural resource, which is in this sense primarily the subject of shooting and rarely of observation (recording) (Šelmić et al., 2001, Gačić et al., 2013b, Prentović, 2014). Hunting grounds in Serbia were supposed to be established under the Law on Game and Hunting (Official Gazette of RS, No. 18/10) one year after the Government of the Republic of Serbia passed a Decree establishing 32 hunting areas (Official Gazette of RS, No. 91/11). However, although this deadline largely expired, hunting grounds in the central part of Serbia have not been established under the new law. On the other hand, the Provincial Secretariat for Agriculture, Water Management and Forestry established 148 hunting grounds in the region of Vojvodina within nine hunting areas, of which 18 are special-purpose hunting grounds, 13 hunting grounds in the area of registered fish ponds, 115 hunting grounds in the wild (i.e. “open hunting grounds” managed by hunting associations), and one a private hunting ground.

The number and size of hunting grounds in the region of Vojvodina (Prentović et al., 2012) and in the region of Belgrade (Gačić et al., 2012) is significantly higher than in the official data reported by the Republic Bureau of Statistics (Table 1). This is explained by the fact that drafting of the Program of development of hunting areas has not been finished yet (which is stipulated by §46 of the new law). In addition, the information system on all hunting grounds - Hunting ground cadastre and central database have not been completed (this is determined by §53). Also, the Hunting Development Strategy of the Republic of Serbia, which is defined by the new law (§45) as the basic document for the management and protection of wildlife in Serbia for a period of 15 years has not been produced yet.
According to the statistics for 2013, hunting grounds in Serbia employ over 800 employees of various degrees of expertise, mainly game wardens and hunting specialists (75%). Technical arrangement of these hunting grounds is satisfactory, due to a large number of existing hunting buildings and facilities: 377 hunting lodges with a total area of 54,386 m², pheasant farms and shelters (total 953), as well as feeding stations for small and large game (25,800 and 10,000).

Within its numerous associations and several alliances, the Hunting Association of Serbia has about 75,000 hunters (Table 1), which is five thousand hunters fewer than in 2000 (Šelmić et al., 2001). The number of hunters has been drastically reduced due to the adverse economic and social situation in our country, and their associations and federations are weakened in terms of organization and staff. In addition, more importantly, the motivation of hunters (hunting members of the organization) to do volunteer work in the hunting area is significantly reduced.

### Abundance and shooting of major game species

Hunting tourism is an integral part of hunting as the science of breeding and protection of game and its sustainable use. It brings a significant share of revenue to hunting, which is mainly directed towards the improvement of habitat conditions, as well as the production, breeding and protection of game, and to a small extent towards the construction and maintenance of facilities for the accommodation and board of tourist hunters (Prentović, 2009, 2014). Long-term and short-term planning of the development of hunting tourism in Serbia is a very difficult task, both due to the unfavorable situation (social and economic) in the country and the region and because of the low abundance of game species that occupy a major place in the hunting tourism offer of this country (Table 2).

Some authors (Šelmić et al., 2001) specifically argue that game is spent (shot) through hunting tourism implementation, which makes its offer limited by game abundance. These authors suggest that this offer should be based on shooting plans produced both on the macro-geographical scale (by regions for the whole autonomous province and the republic) and on the micro-geographical scale (by hunting grounds).

Hunting tourism is implemented with the efforts to preserve and renew its main motive and resource (game populations) at least in the proportions defined as simple reproduction. Game is a significant (although not great) economic potential in Serbia. However, it is much more important as the best bioindicator of the condition and quality of the environment (Šelmić et al., 2001, Gačić et al., 2002, Šelmić, Gačić, 2011, Gačić et al., 2012, Gačić, 2013). In recent years, many indigenous populations of game and their land-based and aquatic habitats have been significantly compromised, which is the reason for the implementation of numerous initiatives and activities of various social organizations and state authorities aimed at facilitation of their protection and improvement (Gačić, Danilović, 2011, Mijović et al., 2012, Gačić, 2014).

**Table 1.** The number (N) and area (ha) of established hunting grounds in Serbia (2013)

<table>
<thead>
<tr>
<th>Region</th>
<th>N</th>
<th>Hunting area</th>
<th>Non hunting area</th>
<th>Total area</th>
<th>Forest covered area</th>
<th>Number of hunters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgrade</td>
<td>10</td>
<td>197,867</td>
<td>106,155</td>
<td>304,022</td>
<td>26,903</td>
<td>5,417</td>
</tr>
<tr>
<td>Vojvodina</td>
<td>118</td>
<td>1,749,067</td>
<td>248,033</td>
<td>1,997,100</td>
<td>99,447</td>
<td>18,357</td>
</tr>
<tr>
<td>Šumadija and West Serbia</td>
<td>84</td>
<td>2,209,457</td>
<td>342,120</td>
<td>2,551,577</td>
<td>784,835</td>
<td>30,288</td>
</tr>
<tr>
<td>South and East Serbia</td>
<td>81</td>
<td>1,992,604</td>
<td>313,051</td>
<td>2,305,655</td>
<td>677,003</td>
<td>20,741</td>
</tr>
<tr>
<td>In total</td>
<td>293</td>
<td>6,148,995</td>
<td>1,009,359</td>
<td>7,158,354</td>
<td>1,588,188</td>
<td>74,803</td>
</tr>
</tbody>
</table>

*Source: Republic Bureau of Statistics, Bulletin (no. 580), Belgrade*
There are no precise and systematized data either on the total revenue from hunting tourism in Serbia or on the actual revenues generated in the management of the main populations of game species (roe deer, wild boar, brown hare, pheasant). Some authors (Prentović et al., 2012) have argued that in many hunting grounds roe deer is not sufficiently used as a very attractive segment of the hunting touristic offer, even though it is the most abundant and the most valuable species of large game in economic terms. Therefore, they propose improvements in the hunting management and marketing of hunting tourism. Similarly, official data on the number ratio in spring and the registered annual harvest of other major game species (Table 2) indicate that they are not sufficiently used in many hunting areas, particularly in Central Serbia.

The hunting grounds managed by the state enterprize “Vojvodinašume” (17 hunting grounds the total area of 109,824 ha) the situation is much more favorable compared to all hunting grounds in Central Serbia (Gačić, 2013). However, the same author found that the population of

<table>
<thead>
<tr>
<th>Species</th>
<th>Year</th>
<th>Vojvodina</th>
<th>Central Serbia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NR</td>
<td>AH</td>
</tr>
<tr>
<td>Red deer (Cervus elaphus)</td>
<td>2009</td>
<td>3,126</td>
<td>587</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>3,122</td>
<td>595</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>3,946</td>
<td>785</td>
</tr>
<tr>
<td>Roe deer (Capreolus capreolus)</td>
<td>2009</td>
<td>49,392</td>
<td>3,875</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>52,482</td>
<td>4,517</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>51,931</td>
<td>4,175</td>
</tr>
<tr>
<td>Wild boar (Sus scrofa)</td>
<td>2009</td>
<td>5,332</td>
<td>2,592</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>5,784</td>
<td>2,394</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>9,869</td>
<td>3,142</td>
</tr>
<tr>
<td>Wolf (Canis lupus)</td>
<td>2009</td>
<td>*</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>25</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>22</td>
<td>4</td>
</tr>
<tr>
<td>Brown hare (Lepus europaeus)</td>
<td>2009</td>
<td>297,961</td>
<td>53,304</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>243,926</td>
<td>31,044</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>220,424</td>
<td>12,923</td>
</tr>
<tr>
<td>Pheasant (Phasianus colchicus)</td>
<td>2009</td>
<td>144,063</td>
<td>66,952</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>109,828</td>
<td>58,589</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>103,975</td>
<td>54,377</td>
</tr>
<tr>
<td>The common quail (Coturnix coturnix)</td>
<td>2009</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>*</td>
<td>25,228</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>*</td>
<td>31,244</td>
</tr>
<tr>
<td>Wild ducks (Anas sp.)</td>
<td>2009</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>129,779</td>
<td>8,370</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>235,040</td>
<td>8,544</td>
</tr>
</tbody>
</table>

*Source: Republic Bureau of Statistics, Bulletin (no. 521, 552 and 580), Belgrade * (no data available)
the main species of big game (red deer and wild boar) in the hunting grounds managed by the SE “Vojvodinašume” among other things, is characterized by:

- Reduced vitality;
- Greater abundance than optimal (planned) or (more rarely) insufficient abundance;
- Unfavorable population structure (sex, age and genetic);
- Poor quality of trophies and unsatisfactory health condition.

In the hunting grounds in the city of Belgrade managed by hunting associations (10 hunting grounds totaling ≈300,000 ha) of the population of almost all species of game are threatened by felling and conversion of forests to agricultural land, illegal hunting, construction of transport infrastructure, burning vegetation in the hunting ground, the expansion of settlements and industrial zones, the presence of an increasing number of stray dogs and cats without the owner or owner control, and pollution of land, watercourses and air (Gačić et al., 2012, 2015).

Problems of hunting in Serbia are numerous and complex (Danilović, Gačić, 2014, Gačić, 2013, 2014, Gačić et al., 2012, 2013a, 2015) and can be classified into the following main groups:

1. problems posed by changing environmental conditions due to intensive forest and agricultural production, and other human impact on nature;
2. problems caused by inadequate planning and management of hunting grounds;
3. problems posed by inadequate level of organization of hunting associations and state enterprizes that manage hunting grounds;
4. problems resulting from adverse socio-economic relations.

Safety risks in hunting

Hunting represents a delicate (and even risky) activity in terms of safety, because the major and necessary “tool” used for it are various hunting firearms. Therefore, this specific hobby and an important recreational and sporting activity requires the use of decisive security measures that can prevent unwanted (and even fatal) consequences during hunting (Prentović, 2014).

The situations in which the potential risks are manifested are contacts of the participants in the hunt with a dangerous, and particularly a wounded wild animal (Šprem et al., 2014), reptiles (e.g., snakes), insects (bees, hornets) and other infection-bearing animals (ticks, mosquitoes, fleas, flies). In addition, they are manifested during unfavorable weather conditions (e.g. extreme high or low air temperatures, a large amount of atmospheric precipitation, atmospheric electrical discharges) as well as on terrains with unfavorable configuration (e.g. high altitudes and steep terrain slopes). The greatest safety risk and danger to all participants in the hunt is caused by the use of hunting firearms (Jnuzovic, Eriksson, 2012, Loder, Farren, 2014). The consequences of that risk can be injury, illness, and even the accidental deaths of participants in the hunt, as well as damage to the hunting ground and beyond.

Improper and careless handling of hunting firearms often causes serious injury, and even accidental death of both the negligent hunter and other persons or animals. The data analyzed suggest that in Serbia almost every year one death is caused by hunting firearms (Figure 1). In addition, wounding is a common occurrence and is one of the serious injury to the participants in the hunt, sometimes life-threatening. During the hunt, the hunter can hurt themselves, another hunter, hunting assistant or person residing in the hunting area...
for various reasons, as well as his dog or someone else’s hunting dog. Wounding may cause rapid death if a person’s vital part or near a vital part of the body are affected, then big or small scars on the body, as well as temporary or permanent disability.

There are various ways and circumstances of the improper use of hunting firearms, which is the reason for incidents with fatal outcomes. An analysis of texts from hunting magazines and daily newspapers devoted to these incidents in the hunting grounds of Serbia (period 2004-2015) suggests the most common accidents in the use of hunting firearms, as follows:

- Inattention in conditions of limited visibility, whose effect is sensory deception;
- Improper handling of hunting firearms due to a lack of training or negligence;
- Illegal hunting in areas which are not part of a hunting ground (less than 200 m from a village and other facilities);
- Failure to comply with the regulations governing safety standards in the hunting ground;
- Alcohol consumption before and during hunting;
- Inadequate storage of hunting firearms in the place of residence;
- Hunting with stolen hunting firearms.

In order to achieve the safety of all participants in the hunt, it is necessary to implement a range of preventive and operational measures. This issue is regulated in more detail by the Regulations on security measures in the hunting grounds (Official Gazette of RS, No. 76/11), which prescribes the measures to be adhered to by the legal and physical entities in a hunting ground.

Accidents during hunting very often occur in remote and difficult terrains, sometimes in bad weather conditions (e.g., rain, snow). Such sites are generally far from medical institutions and their staff cannot arrive to the scene quickly. General preventive safety measures assume long-term activities not only of entities in the area of hunting, but also of other (educational, security, health) social factors aimed at building a hunting-security culture of potential participants in the hunt. In order to eliminate potential risks in the hunt, when organizing a hunt, it is essential to provide certain medical conditions, not only for taking adequate measures of health prevention, but also adequate first aid and medical care for all injured participants in the hunt (Prentović, 2014).

**Normative-legal regulation of hunting tourism**

The activity of hunting tourism is regulated by a number of laws, bylaws and other regulations, which is not a favorable circumstance in terms of their practical implementation (Prentović, 2007, 2014). In addition, the activity of hunting tourism is regulated by international conventions whose provisions on nature conservation, hunting and tourism were ratified by the state. The most significant are:

- **Law on Tourism** (Official Gazette of RS, Nos. 36/09, 88/10, 99/11 – 2nd Law and 93/12);
- **Law on Hunting and Game** (Official Gazette of RS, no. 18/10);
- **Nature Protection Law** (Official Gazette of RS, Nos. 36/09, 88/10 and 91/10 - correction);
- **Law on Environmental Protection** (Official Gazette of RS, Nos. 135/04, 36/09, 36/09 - 2nd Law, 72/09 - 2nd Law and 43/11 - Decision 2009);
- **Law on Arms and Ammunition** (Official Gazette of RS, no. 20/15);
- **Veterinary Law** (Official Gazette of RS, Nos. 91/05, 30/10 and 93/12);
- **The Animal Welfare Act** (Official Gazette of RS, no. 41/09);
- **Law on Forests** (Official Gazette of RS, Nos. 30/10 and 93/12);
- **Law on Ratification of the Convention on Biological Diversity** (Official Gazette of the FRY - International Treaties, no. 11/01);
- **Law on Ratification of the Convention on International Trade in Endangered Species of Wild Fauna and Flora** (Official Gazette of SFRY, no. 16/05);
- **Law on Ratification of the Convention on the Conservation of Migratory Species of Wild Animals** (Official Gazette of RS- International Treaties, no. 102/07);
The current state of hunting tourism in Serbia is not much better in comparison to its state a decade ago according to the results of research and evaluations of some authors (Prentović et al., 2012, Gačić, 2013, Danilović, Gačić, 2014, Prentović, 2014) despite the fact that almost five years passed since passing of the Law on Tourism and the Law on Game and Hunting. Moreover, it is even worse in some aspects. For example, the number of hunters in the region of Vojvodina is considerably smaller (instead of around 24,000 it is now about 17,000), and the estimated number and registered harvest of the main species of small game (brown hare and pheasant) have been significantly reduced in recent years. In addition, this negative trend was found in the city of Belgrade in many hunting grounds managed by hunting associations (Gačić et al., 2012, 2015) More importantly, the unfavorable situation related to illegal hunting has not improved in recent years.

CONCLUSION

Natural conditions and other hunting touristic potentials, especially in the region of Vojvodina represents a good basis for successful and sustainable implementation and further development of hunting tourism. Planning of the hunting tourism development in Serbia is a very difficult task, both due to the unfavorable (social and economic) situation in our country and the region, and because of the low abundance of game species that occupy a major place in the hunting touristic offer of this country. While some preconditions have been fulfilled in terms of material-technical and human (personnel) resources and knowledge transfer, as well as normative and legal regulations, there are still shortcomings of objective and subjective nature, that have a limiting effect on the overall results of hunting economy and especially touristic turnover in hunting grounds of Serbia.

In order to eliminate the above shortcomings and problems in the management of the majority of hunting grounds in this country as hunting touristic destinations, it is necessary to implement the following as soon as possible:

Resolve the inadequate situation in the field of management organization in hunting and hunting tourism by adjusting the normative-legal regulations and implementing these solutions;

Harmonize normative-legal regulations in the field of veterinary medicine with the regulations of EU member countries, in order to increase the turnover from hunting tourism in this country;

Use adequate investments to improve the material and technical base of hunting tourism, so that it can satisfy modern standards in the field of touristic industry;

Use adequate educational policy and permanent trainings to raise the levels of professional
qualification and educate the lacking personnel profiles and other employees in hunting grounds, hunting touristic agencies and other organizations.

Hunting tourism represents a delicate (and even risky) activity in terms of safety, because its major and necessary “tools” are various hunting firearms. Therefore, this specific hobby and an important recreational and sporting activity requires the use of strict safety measures to avoid unwanted (and even fatal) consequences during the hunt. The data analyzed suggest that almost every year in Serbia one death is caused by hunting firearms during hunting.

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