HUNTING TOURISM: MODERN CHALLENGES FOR FUTURE GENERATIONS IN THE REPUBLIC OF MOLDOVA

TURISMUL DE VÂNĂTOARE: PROVOCĂRI MODERNE PENTRU GENERAȚIILE VIITOARE DIN REPUBLICA MOLDOVA

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Abstract: *This study will briefly outline some of the cultural, historical and institutional challenges for developing of hunting tourism in Republic of Moldova. We also discuss some of the land use issues relating to conversion of farmland into forest land. We then highlight some of the challenges for developing a sustainable hunting tourism based on forest and agricultural lands. The study concludes with a discussion of some of the opportunities that hunting tourism may provide for local people.*
Keywords: *wildlife, conservation, deficiency, natural resource, people*

Rezumat: *Acest studiu va prezenta pe scurt câteva dintre provocările culturale, istorice și instituționale pentru dezvoltarea turismului de vânătoare în Republica Moldova. De asemenea, discutăm unele dintre problemele de utilizare a terenului legate de conversia terenurilor agricole în terenuri forestiere. Subliniem apoi unele dintre provocările pentru dezvoltarea unui turism de vânătoare durabil bazat pe păduri și terenuri agricole. Studiul încheie cu o discuție a câtorva oportunități pe care turismul de vânătoare le poate oferi localnicilor.*
Cuvinte cheie: *animale sălbatice, conservare, deficiență, resurse naturale, oameni*

Introduction

Located in the southeastern part of the European continent between Ukraine and Romania, Republic of Moldova (RM) has limited natural resources compared with other developing European countries such as Albania or Bosnia. Agriculture has been the dominant land use over the last few centuries, and poor land practices has led the country with some of the richest soil in the world to now have a greatly diminished economy with few alternatives. This, in turn, jeopardises the security of RM. New alternative land use based on wildlife resources could diversify and greatly improve the economy.

In Sweden for instance it was the development of mining, forest and hydroelectric industries from indigenous raw material that enabled Sweden to become a modern industrial nation. Developing a hunting tourism program for

RM based on forest and agricultural lands may provide a similar strategy that could greatly improve the economy of RM. This strategy must encourage farmers to invest money, land and time in commencing commercial wildlife practices aimed at developing an agro-hunting-rural tourism economy. There are numerous cultural, historical and political challenges that need to be overcome in order to develop a viable hunting tourism program in RM. We hypothesised that the land use histories as reflected in ownership pattern affected the sustainable wildlife management. However, the opportunities are equally great as the challenges, and the development of a hunting tourism program for RM can result in economic independence, security, and social health for future generations.

1. Habitat description

Having a hilly character, the country is slightly inclined from the northwest to the southeast, and gradually descends from 400 to 150 m altitude. Republic of Moldova (RM) has a temperate-continental climate. The mean annual temperatures vary from +7.8°C N to +9.9°C S and average annual precipitations vary from 486mm S to 617mm N. The depth of snow during winter may vary usually around 0-20 cm. The hydrographical network consists of 3 260 rivers and rivulets with a total length of above 16 000 km. There is a wide range of soils in RM, the most prevalent being chernozems (black earth) covering 75 percent of the country. Of the total area of 3 384 357 ha 57.6% are used as agricultural lands, 9.1% as localities lands, 17.84% as reserve fond occupied by pastures, forest protected belts and roads, 1.8% of lands are destined to industry, transports communications etc., 11.4% to the forest fond, 0.06% land to nature protection, historical-culture value, etc., and 2.2% to water funds [16]. At present, the hunting fund covers a surface area of 2.8 million hectares with the largest part being occupied by open landscape [20]. Hunting lands are considered areas of land, forest and water funds that constitute the habitat for wildlife [23]. Forests comprise 329 000 ha or about 9.7% of the country's territory. Qualitatively, the forests of RM consist predominantly of broad-leaved trees (97.8%). The current group structure of stands is mostly unbalanced. The average forest age is 40 years, with young trees representing 26.3%, middle-life trees 43.7%, pre-exploitable trees 17.5%, and exploitable trees 12.5% (Gulca and Herbst, 2005). The situation has worsened because about 800 forest units with a surface from 5 to 1500 ha are distributed differently in agrarian ecosystems (Fig. 1), and wildlife habitats are fragmented by 1680 localities with an average density of 119 inhabitants per km^2.

2. Wildlife evolution

According to Averin et al. (1975) during XVIII-XIX centuries were disappearing from this region European bison, aurochs, Saiga tatarica, tarpan,

moose, red deer, bear and lynx. The vestiges of forests harbour at the beginning of the XX century only two species of ungulates: roe deer and wild boar. After the 2nd World War the forest cover decreased to 4% that led the populations of roe deer, wild boar, and marten to the limit of disappearance (Tiscevici and Bordiug, 1973). Together with people restoration, in the beginning of second half of XX century, occurred a slow natural recovery of wildlife when leading factors of natural mortality were wolf predation and disease/starvation.

During the period of 1954-1982 were made ten reintroductions of red deer, four introductions of maral from the Natural Reservation Askania Nova, Ukraine, seven introductions of sika deer and two introductions of fallow deer. An interesting feature of this period was the simultaneity of actions for wildlife restoration and protection (e.g. hunting prohibition or reintroductions of red deer) with actions that led to wildlife (like European mink *Luterola luterola*, otter *Lutra lutra*, bustard *Otis tarda*) extinction (e.g. bog draining or steppe fallowing on thousands of hectares). During the period 1960-1970 over 20 000 ha of slopes were worked (subsequently these areas were lost as a result of erosion and gliding); also over 80 000 ha of marshes were drained; as a result land utilisation reached at the end of the 80th the limit of 90% (Capcelea, 1996). According to Gania (1968) in the post-war period application of dust DDT (15-20 kg/ha) was made almost over all forest areas of Moldova (209 000 ha) that led to death of many wild vertebrates. Concentration of agricultural production, intensive chemization and irrigation, livestock industrial development was in permanent need of new land and more fodder. The reduction of wildlife habitats caused extinction of many wild predators and raptors. Moreover, most of the predators and raptors were persecuted as harmful for agriculture, livestock and people. Wolf considered as most dangerous, disappeared in the middle of 80th completely from that territory. Sometimes during winter wolf could migrate for a short time from Romania crossing the frozen Prut River. Unfortunately, stray dogs, now counted at more than 10 000 individuals, occupied wolf's niches. A steadier component of predators' community is fox, the number of which varies between 25 000 individuals during 1967-1968 period (Uspenskii, 1972) and 15 000 individuals during last five years.

3. Carrying capacity

Sustainable wildlife management imposes as a condition to know as accurate as physical potential provided by land for the existence of hunting species. The conditions of any hunting unit to assure food, shelter, and breeding optimal conditions for a certain number of species are named carrying capacity. The term of carrying capacity, introduced in wildlife science by Leopold (1933), became one of the most common phrases in wildlife management. The author of this term and many other wildlife researchers understood by carrying capacity

mainly the nutritional capacity as the base factor determining the number of animals in a given habitat. Some of them are referring as well to other factors which affect to a certain degree and often limit the caring capacity for hunting lands.

According to (Caughley & Sinclair, 1994), that term covers a variety of meanings and unless we are careful and define the term we may merely cause confusion. These authors understand under ecological carrying capacity the natural limit of a population set by resources in a particular environment; economic carrying capacity is thus the population level that produces the maximum sustained yield for culling or cropping purposes in the context of particular land use requirements. With a goal to establish criteria for carrying capacity in RM we have analysed methods and opinions from different countries (Gulca, 1997). Because from all 2 800 000 ha of hunting grounds only a part are suitable for red deer, roe deer, wild boar and pheasant (Table 1) we estimate minimum and maximum optimal number of hunting animals for these habitats. Taking in consideration the optimal number of main hunting species at the end of winter and their average annual natural growth we estimated minimum and maximum sustained yield, which could be used partially for hunting tourism.

Table 1: Possibilities of sustained hunting for main game species in Republic of Moldova

Species	Suitable habitat area, ha	Optimal number, individuals				Annual natural growth, %	Sustained yield, individuals		Actual number, individuals
		IV carrying capacity		I carrying capacity			IV carrying capacity	I carrying capacity	
		1000 ha	Total	1000 ha	Total				
Red deer	150000	1	150	20	3000	15	23	450	450
Roe deer	325000	12	3900	60	19500	20	780	3900	3800
Wild boar	325000	4	1300	20	6500	40	520	2600	1750
Hare	2800000	20	56000	100	280000	35	19600	98000	70000
Pheasant	325000	140	45500	700	227500	35	15925	79625	86500

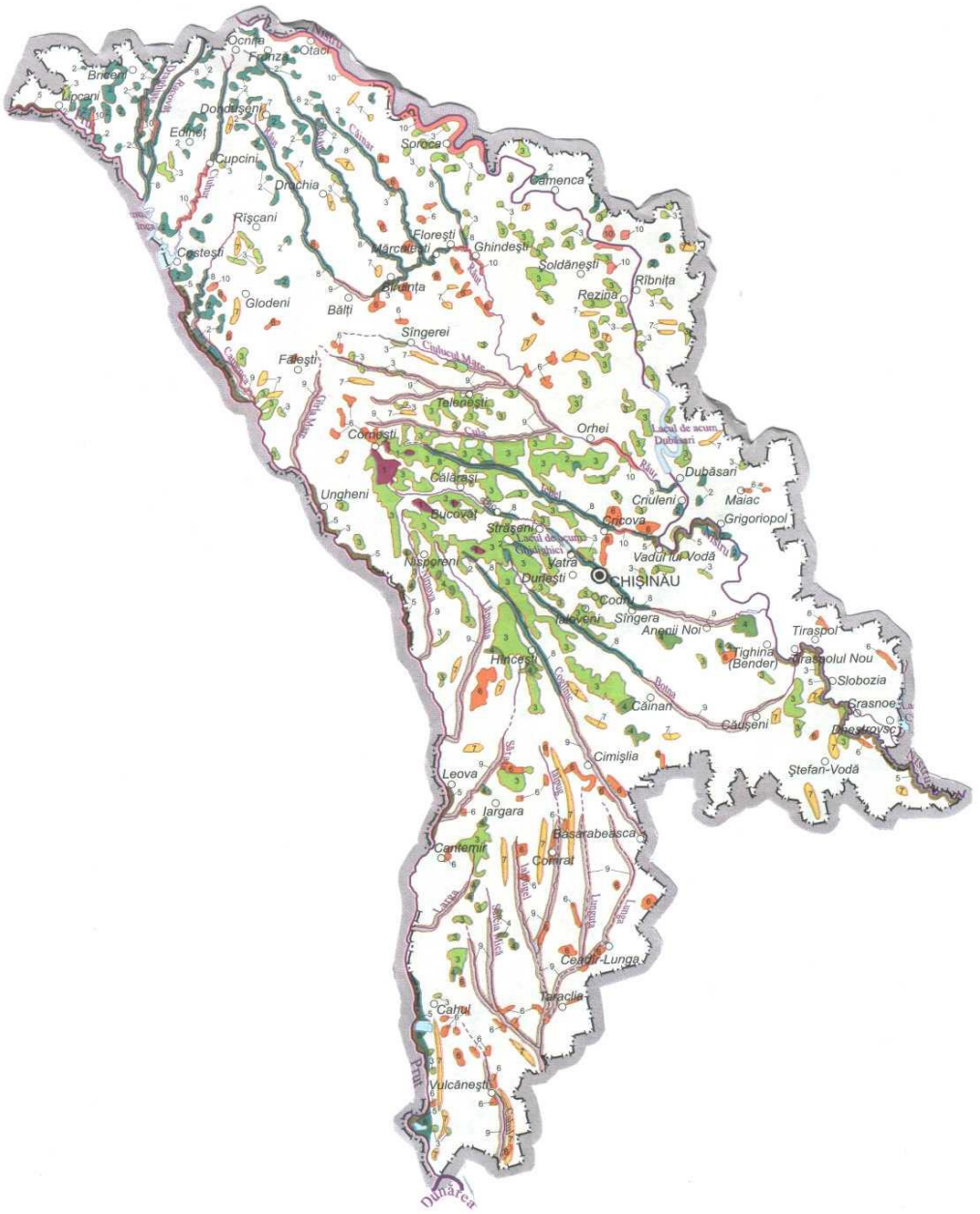

Fig. 1 *The vegetation map of Republic of Moldova*
(Source: Atlas of physic and socio-economic geography of Republic of Moldova, 2005)

4. Management and legislation

In the beginning of XX century concerning to the Game Law (1923), hunting animals belonged to the owner of the land where it was found. In the post-war period wildlife became the domain of the state but with an evident lack of a legislative base necessary for wildlife management. Taking in consideration the critical state of wildlife number, at the end of the 1950ies, were elaborated the legislative and economic bases for wildlife management. In the beginning of 1980ies all hunting lands were in the administration of the Forest Ministry and were divided in three categories: annexed to the state, cooperative and collective organisations; state forestry enterprisers; reservations and prohibited zones for hunting.

On the other side 70% of ploughing lands, high density of human population (108 inhabitants per km^2), small forest area (8%), draining of marshes, large utilisation in the agricultural economy of poisonous chemicals, poaching etc., (Iacovlev, 1983) diminished all stipulated tasks. Hence with the goal to change the situation, in 1981 was approved the “Law about protection and use of wildlife” which in1985 was changed by “Fauna Law”. Nevertheless, game economy was never profitable. Wildlife management was aggravated as a result of the collapse of the former Soviet Union, which had reduced substantially state subventions and protection capacity of authorities. Also the war in the 1992 and spreading of guns to people had promoted poaching both on the level of local people and on the level of chiefs and judges. Taking in consideration this situation the “The regulation on game economy” as annex of the Wildlife Law was approved in 1995. In compliance with item 9 of this regulation, administration of hunting husbandry is performed by the State Forestry Agency “Moldsilva” (SFAM). Also, by Article 11, item (2) of the Forest Code state administration of forest and hunting funds are performed by the Government, local public administration authorities, state forestry authorities and others.

Hence, there are three principal authorities responsible for management and control of the hunting fund: first, forest authority, which wants to improve the hunting economy but does not have sufficient money to do this work; second, the environment authority, which wants to protect wildlife but without exploitation; and third, local authorities who even nowadays feel game problems through wishing to participate in the privileged hunting as long ago. A fourth actor in the hunting problem not authorised but more active, is the Society of Hunters and Fishers of RM (SHFRM).

The central forest and environment authorities, taking into consideration the critical situation of wildlife ungulates, promoted decision “On the prohibition of sport hunting for hooved animals during the season 1996–1997”. Nevertheless, the official estimates showed that the number of ungulates remained almost unchanged during the next years. Another attempt to ameliorate the situation was Governmental Decision No. 769 (1997) “On the approval of the provisional

regulation regarding the leasing of hunting lands for necessities of the hunting economy in RM". The leasing method of hunting management had the goal to protect and conserve game animals with help of leaseholder's finances. The rent payment was planned to invest in creation of state hunting farms and wildlife restoration, however, in reality this money was spent for other purposes. Conception of development of the national hunting economy (1997) recognised importance to elaborate a Game Law and to divide hunting fund in hunting units with clear natural or artificial limits. These important tasks for development of the hunting tourism have not yet been achieved until nowadays, moreover the "Law concerning the modification and completion of some legislative acts" (2001), approved again game management on open lands by the SHFRM.

As a consequence, agricultural lands as part of wildlife habitats are administered by local authorities and managed by SHFRM while the central forest authority manages the forest fund. But the wildlife does not ask who is manager, and in winter many species prefer the forest while in summer they prefer corn or other fields. In this situation it is impossible to assure efficient wildlife management on 1,000 to 3,000 hectares of forest split into 5 to 30 bodies without taking the surrounding agricultural lands into consideration. Similarly, nothing can be done in agricultural lands during the winter without the food and refuge supported by the forest. The problem is much more complicated, since agricultural lands are divided among a multitude of private owners, who do not accept wildlife damage to their agricultural crops without any compensation. But according to fifth theorem of Leopold (1930), which express the relationship between recreational value, game density, and human density, "only the landholder can practice game management cheaply. He mentioned that the reason is that game management normally consists of many small jobs scattered through the whole gamut of the seasons, and the farmer or the forester can perform these jobs "on the side," often without any separate cash cost.

5. Hunting tourism

We believe that hunting tourism has arisen in RM with independence. From the beginning, during the 1991-1998 period hunting for foreigners has been practiced for more than diplomatic, payment of services at the state level or as a sign of gratitude. But hunting tourism is more important for wildlife conservation, to create new jobs, and for developing of hunting sector. During period 1997-2001 were conducted field observations and were identified deficiencies for organising of hunting tourism with three hunting teams from Italy, Cyprus and Netherlands. Deficiencies were grouped into four categories: game resources (separate management of agricultural and forestry lands as habitat for game; unprofitable management of game fund; inefficient control of damages caused to game; weak technical capacity of state structures responsible for game protection; negative anthropogenic factors (poaching, lack of interest

from local people); legislative framework (lack of interest from land owners to increase carrying capacity; lack of state financial support; lack game law; inadequate management of game fund; lack of dividing hunting fund in hunting units; lack of efficient mechanism to prevent and to punish hunting infractions; hunting limits (wrong estimation of game populations; late approval of quotes for hunting; indifference of hunting enterprises with regard to trophy quality; lack of selection to maintain the good sexual and age proportion of the game); services for hunting tourism (weak technical assistance in the field; low capacity for accommodation; bad roads; small game populations; low guarantee to shoot the game; lack of information about quality of trophies).

Further forestry companies were analyzed based on indicators of service capacity: game resources, quotas for trophy game, hunting methods, actual and potential infrastructure, links with intermediary organisations and international hunter companies, regular customers etc. Three categories of hunting tourism capacity were proposed: highest for forest enterprises Tighina, Hancesti, Straseni and scientific reservations "Plaiul Fagului" and "Codrii"; average for forest enterprises Edinet, Chisinau, Telenesti, Razeni, "Manta-V" and scientific reservation "Padurea Domneasca"; and lower for forest enterprises Balti, Glodeni, "Silva-Sud", Calarasi, Nisporeni, Soroca, Orhei, Iargara, Soldanesti, Comrat, Ungheni and scientific reservation "Prutul de jos".

6. Future tasks and problems hunting tourism

Pasturing practice after historical slash and burn farming now has been found to be one of the main factors for shrinking wildlife habitats. For biggest area of RM pasturing is realised without taking into consideration season, state of vegetation and optimal number of livestock per hectare. Subsequent decreasing of pasture quality led to conquering of (20-40%) forests by livestock. This evident retiring of wildlife in favour of domestic animals is motivated in society, by poor pastures, dry climate, deficit of forage, and growing number of livestock. We think that afforestation of public pastures and private agricultural lands could solve the problem with illegal pasturing and logging (Gulca, 2005). We believe that simultaneously that practice will encourage farmers to invest money, land and time in commencing commercial wildlife practices aimed at developing an agro-hunting-rural tourism economy. In this context with a goal to apply some forest management models and practices from other countries to Moldova we would suggest a combination between patches of up to 0.1 ha on private land as in India, switched focus to farm and community forestry as in Philippines and increasing involvement of the private sector as in China. Of course the direction should be hold to Japan, Finland, Sweden and Norway models including proportion between private and public forests (Gulca, 2006). Or, in southern Sweden, the primary idea in the 1930s was to increase the demand for wood and thus increase the value of the forests.

A former company "Ritm contemporan" after leasing in 1997 about 1 000 ha of forests (closed to village Heciul Vechi, Balti county) for hunting reasons, increased the number of wild boars from 20 to 100 individuals during next two years. Because the Ministry of Environment did not approve the quota for shooting before the beginning of the hunting season, the company could not organise hunting tourism properly and later about 50 wild boars were killed by poison, because its extremely high density provoked damages on corn crops in nearby private lands. Alternatively, (according to Kline, 2001), if local residents bear the costs of tourism without receiving any benefits, they may be unsupportive of not only tourism but also the conservation of natural areas on which tourism is based. Sustainable tourism development must meet the needs of the host population in terms of improved living standards while satisfying the demands of tourism and protecting the natural environment (Seidl 1994, quoted by Kline, 2001). Thus we should develop restoration goals for wildlife in the light of both historic possibilities and current realities, (Morrison, 2002). In that context we are inclined back to the beginning of XXth century, when concerning to the Game Law (1923), in Romania game belonged to the owner of land where it was found. Or, a point that "plants are part of land while animals are not" shall be stressed between England where (according to Freyfogle and Goble, 2009) wildlife belonged to the landowner (a person had to own land to hunt) and United States, where wildlife belonged to the people and hunting was open to all. The Roosevelt doctrine of conservation according to Leopold (1930), determined the subsequent history of American game management in three basic respects:

1. It recognised all these "outdoor" resources as one integral whole.
2. It recognised their "conservation through wise use" as a public responsibility, and their private ownership as a public trust.
3. It recognised science as a tool for discharging that responsibility.

7. Discussion and Conclusions

The recreational and economical values of wildlife on actual territory of RM were mentioned by Dmitrie Cantemir in his work "Descriptio Moldoviae" (1715). According to the Law "Concerning natural resources" (1997), RM profits mostly from soils, forests, waters, wildlife, and mineral solid substance (clay, sand, and limestone). Soil has among them a particular value for the national economy that constitutes a principal natural resource [9]. With 60 percent of hunting grounds in private hands, and 40 percent owned by the public, a great deal of the nation's wildlife lives during the winter on public forest land and during the summer on private agricultural land. Despite of many attempts realised by state and public authorities to restore and conserve wildlife populations, there were not significant changes in game abundance, neither in recreational value during the last 20 years. In that context a major challenge of the project of wildlife

law is to establish the legal relationship between the private owner of land and publicly owned wildlife. What rights do landowners themselves have in such wildlife? What legal protections do landowners enjoy when engaged in wildlife-related activities? What can they do when wildlife causes harm? And, finally, what legal issues arise when landowners allow outsiders to hunt on their lands?

National forests have an increasingly significant impact on tourism in communities located near them. Such increasing demand will place growing pressure on public forests to provide the types of ecosystem services desired by many forest visitors. These changes will lead to increasingly difficult decisions concerning national forest management because managers try to balance multifunctional objectives. Already one of the main direction in hunting management during last ten years to create in every forest district (medium 4000 ha) one fenced area (2-4 ha) to increase the number of wild boars was criticised and abandoned in many places. The role the forest authority intends to play in hunting tourism development is not clearly defined. Should the forest agency be more actively involved in hunting tourism development planning or in wildlife conservation? In which forests shall forest agency encourage and in which forests shall discourage hunting tourism? How would the role of forest authority differ depending on carrying capacity, forest district, and relations with villages? The new wildlife law has to answer for these questions if society thinks about next generations.

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