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Kurgans as landscape elements protected by the European Community

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Abstract. Our research aims at overviewing the present and the past of kurgans, which are our national values, furthermore it also aims at throwing light on their future under the new agricultural system of the EU in connection with cross-compliance. We will present both the historical background of the formation of Cumanian mounds, and their relationship with human society in the past centuries. They were of administrative, religious and burial importance in the early centuries. From botanical aspect they are valuable as landscape elements at present because of the specific way they were formed. Unfortunately, the different agricultural activities resulted in their continuous deterioration and their number also decreased over the past centuries. There were remarkable changes in agricultural regulation concerning Cumanian mounds in the EU – and in Hungary too – in 2010. They were declared protected landscape elements therefore they became part of cross-compliance. In our research we will check the results of the new regulation in relation to the changes in the state of Cumanian mounds in Békés County. Although our research has been carried out for a short time, the positive effects of the new regulation can be seen from nature conservation point of view.

Key Words: unique landscape value, rural development, agricultural environment protection, cross-compliance.

Introduction. Cumanian mounds have a great importance in the history of the Carpathian Basin from cultural and nature protection viewpoint. These man-made formations have suffered from a serious ruination lately. In Hungary several attempts have been made to save them, but there was an urgent need for taking the necessary measures to solve the problem, and these measures were introduced in agricultural regulation later, which were linked up the EU and national agricultural subvention, whose aim is to protect the Cumanian mounds still existing. It is a much-debated question if it is worth realizing environment and nature protection and the appropriate conditions by legal regulations and sanctions.

The definition, formation and importance of Cumanian mounds. An illustrious Hungarian ethnographer, István Győrffy, says that the soil pyramids "are located mainly in flood free, relatively high (5-10 metres)" and 20-50 m in diameter "in elevations occupying smaller areas, and appearing as flat, cone- or hemispheric elevations. These are in almost every case ancient burial mounds, at the same time they were accepted as border mounds." These mounds stand as the oldest historico-cultural relics from the past. There are several types of them, whose origin goes back to 4,000 BC-12th century AD. Most relics from the age of the Árpáds can be found in these kurgans and their surroundings. Cemeteries, tombs, churches, settlements, cloisters, monasteries (Szelekovszky 1999, 2005).

Although 'kurgan' is part of everyday language, its reliability is disputable if we take into consideration the results of archiological excavations. Kurgans are frequent in Hungary, but at the same time most kurgans in Transylvania, South- and East Russia, and in Central Asia are not linked to Cumanian ethnic groups coming from Asia. The archiological excavations disclosed that most mounds originate from the Copper Age, and they are tombs from the early Bronze Age, settlements from the Bronze Age, Sarmatian, German and Hungarian Conquest-Aged cemeteries, churches and tombs from the Árpád Age and some of them still have their burial traces (Tóth 1988).

Even the uncultivated kurgans which are covered with grass are often flanked by cultivated lands, and they are like oases standing out from the culture desert, and they provide several animal species and flora with shelter (Tóth 2004).

Since the mounds are different from their surroundings in their geological and geomorphological features, they are suitable for reconstructing and mapping their ancient natural environment. Such an attempt is the reconstruction of Csípő-halom, which provides insight into the geomorphological and botanic states of Hortobágy 6,000 years ago (Barczi et al 2006).

It is a very sad fact that - apart from some attempts - people living in these areas have not done anything for the mounds to survive, except those having built the mounds around 4,000-3,000 BC. It is sorrowful that despite our EU membership we need to worry about the future and survival of kurgans, which are the oldest man-made mounds (Szelekovszky 2005).

Destruction of kurgans and the causes. There used to be over 40,000 Cumanian mounds in Hungary. The records kept by the Körös-Maros National Park reveal that 1,533 of them were situated on the land which is now part of Békés County. The surroundings of most mounds have been always used as arable lands. They continuously decreased in number over the centuries mainly because agriculture and religion lost their significance (Tóth 2002). Owing to the intense agricultural works and large-scale production, which were so characteristic in the second half of the 20th century, several of them were destroyed. The mounds which were in the way of plants were simply demolished, carried away, ploughed up, and sown. Even today the currently existing mounds are surrounded with cultivated lands, mainly with arable lands.

The history of their international and national protection, regulation. There was no regulation to protect kurgans in Hungarian history for a long time. The first organization that called attention to kurgan protection was *Alföld Kutatásáért Alapítvány*. It contributed to the act of 1996 on Nature Conservation, which prescribed the preparation of a national Cumanian mound cadastre which list kurgans by name. The act designated them as "ex lege" protected sites. Since there was no executive regulation made for the act mentioned previously, their destruction has not stopped and the reduction in number kept going on. During the preparation of Cumanian mound cadastre 380 mounds were found in Békés County, which had not had of nature and landscape conservation importance, and 264 of them was not exposed to agricultural works (Figure 1).

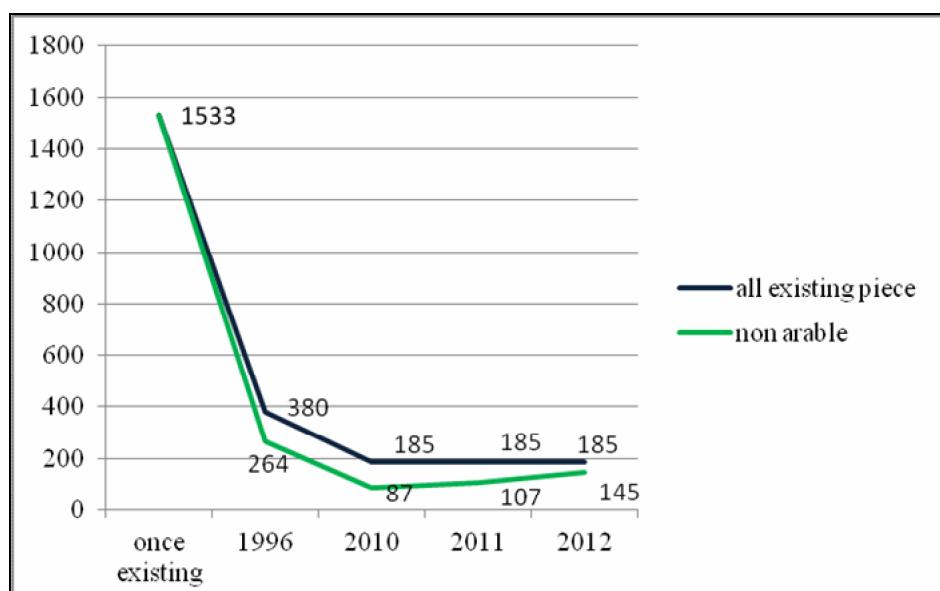


Figure 1. Kurgans and their state on today's in the Békés county area.

After Hungary had joined the EU a lot of support became available for farmers in the agricultural sector. Farmers are required to fulfill different regulations and requirements in order that they can apply for the EU support. Cross-compliance system is also part of these requirements. Cross-compliance was introduced by Council Regulation (EC) No 73/2009 owing to the reform in Common Agricultural Policy in 2003. With forming and introducing this regulation the EU- and Hungarian legislative bodies did not aim at fining farmers or reducing the amount of support for them but they aimed at spreading the right farming methods, supporting the environmental-friendly and green agricultural production, and increasing the number of the farmers who keep the rules year after year. All the European population benefit from the public goods produced by the acceptable methods used by farmers. The EU renumerates Hungary for its community work with over 300 billion HUF every year. Cross compliance supports the eligibility for applying for the supports, and in this way it dispels both the international and state member worries about the EU's agricultural support (Wilson 2008).

The new regulation has two basic elements: the farming requirements which are governed by the law, and the required standards in the agricultural and environmental conditions (Dwyer et al 2000). The first group of the regulation is related to the following issues: nature conservation, environment protection, animal marking, animal- and plant health, and animal welfare. These regulations are due to be introduced 2009 to 2013.

The later one, which is related to the right agricultural and environmental condition, was introduced by Council Regulation (EC) No 1782/2003, and came into force by 4/2004. (I.13.) FVM in Hungary in 2004. At present Hungary complies with the corresponding EU regulations by 50/2008. (IV.24.) FVM. It contains nine elements as the other basic pillar of cross-compliance. These elements determine the regulations which are related to the healthy and sustainable agricultural environment, agricultural environment protection, rural development, landscape ecology, mosaicism, landscape, and the required criteria to observe them. There were continuous changes in the regulation owing to the amendments. It contained six regulations until 2010 such as terrace cultivation rules, crop rotation rules, criteria of weed-free zones, soil protection against erosion, burn bans, protection of soil structure, and observation of grazing rules (Vidékfejlesztési Minisztérium 2011).

The regulation was modified by the Regulation No. 32/2010 (III.30.) FVM in 2010 in accordance with the Council Regulation (EC) No. 73/2009 and two new criteria were involved into the regulatory system. One of them is the irrigation rules, owing to which the number of conditions in regard with the agricultural environment increased. During the modification another criterion was passed into law, which – besides the environmental factor – designated the notion of landscape as sites to be protected. As a result of this, sweep-pole wells and kurgans also became protected sites in Hungary. In accordance with the modified regulation the farmers who have kurgans on their lands are obliged to protect these sites and give up some cultivation methods such as ploughing and disking, both of which may cause soil disturbance in kurgan bodies.

Results and impacts of the new regulation. The introduction of the regulation started with a survey of their state. In order to carry out the survey we used the national Cumanian mound cadastre as a background database. The survey was performed by the Agricultural and Rural Development Accredited Paying Agency. Since I work for the Agency as an on-the-spot controller and a civil servant I participated in the spot-checks. The survey carried out in 2010 concluded that there remained 185 Cumanian mounds in a state with landscape importance. They were involved in several steps. Of the total of 185 mounds 87 were non arable and 98 arable. Between 2011 and 2012 the number of arable mounds reduced from 78 to 40 mounds (Table 1 and Figure 1).

Table 1
The results of the state survey and the cheques until now

Examined year	2010 (state survey)	2011	2012
non arable (piece)	87	107	145
arable (piece)	98	78	40

Although we are in the beginning of our investigation and we have investigated three consecutive years since the modified regulation came into force the results revealed that there was a significant turn: kurgans had an increased protection, their destruction stopped, and even their botanic state is going through a continuous improvement (Figure 1). The results were analysed with chi-squared test (Figure 2). The test result showed a significant change in the number and state of the kurgans due to the new EU regulation.

State of kurgans	The coming into force of the new regulation	before (state survey)	after	total:
	arable (piece):	98	40	138
	non arable (piece):	87	145	232
	total:	185	185	370

$$\chi^2 = \frac{f=1}{\frac{370*(98*145-40*87)^2}{138*232*185*185}} = \frac{370*(14.210-3480)^2}{1.095.747.600} = \frac{370*(10.730)^2}{1.095.747.600} =$$

$$= \frac{370*115.132.900}{1.095.747.600} = \frac{42.599.173.000}{1.095.747.600} = 38,8768$$

$$\chi^2 = 38,8768 > \chi^2_{chart} = 10,8276 \quad p = 0,001 = 0,1\%$$

Figure 2. The change of the state of the kurgans.

The efficiency of the regulation can be also analysed on the basis of the results, which help us draw conclusions in connection with the success and impacts of similar agricultural regulations. As part of this analysis the state of the kurgans was examined at the time when the law came into force.

During the spot-checks in our county in 2010 we found 87 non-arable mounds, and 20 mounds the cultivation of which was given up by the well-prepared farmers immediately after the change in the regulation came into force. In 2011 there were 78 mounds the cultivation of which continued despite the regulation. These results were analysed with the chi-squared test (Figure 3a).

After studying the data it can be stated that in the case of 20 mounds farmers gave up their cultivation immediately, and this confirms our hypothesis: there is a deficiency in both the flow of information and its understanding; in addition some conclusions can be drawn in connection with the operation and efficiency of the national agricultural expert consulting network.

The coming into force of the new regulation (01.11.2012.)	state of kurgans	arable (piece)	non arable (piece)	total:
	because of regulation independently:	78	87	165
	following the regulation taking effect immediately:	0	20	20
	total:	78	107	185

$$\chi^2 = \frac{f=1}{\frac{185*(78*20-87*0)^2}{78*107*165*20}} = \frac{185*(1560-0)^2}{27.541.800} = \frac{185*(1560)^2}{27.541.800} =$$

$$= \frac{185*2.433.600}{27.541.800} = \frac{450.216.000}{27.541.800} = 16,3466$$

$$\chi^2 = 16,3466 > \chi^2_{chart} = 10,8276 \quad p = 0,001 = 0,1\%$$

Figure 3a. Immediate answer to the new regulation by the farmers.

The farmers who did not give up cultivating the mounds were penalized with a serious sanction in terms of their SAPS support in 2011. The degree of the sanction amounted to 1%-3% of the total support, the exact amount of which depended on the size of the total area applied for and the number of the mounds cultivated by the client. In 2012 owing to the sanctions the number of the mounds which were in a good state kept increasing (145 mounds in total), and we found 40 mounds which were still under cultivation. The farmers stopped cultivating 38 of 78 mounds as a result of the sanctions between 2011 and 2012. The previously mentioned results were also analysed with the chi-squared test (Figure 3b).

The sanction	state of kurgans	arable (piece)	non arable (piece)	total:
	because of regulation independently:	40	107	147
	as a result of the sanction:	0	38	38
	total:	40	145	185

$$\chi^2 = \frac{f = 1}{\frac{185*(40*38-107*0)^2}{40*145*147*38}} = \frac{185*(1520-0)^2}{32.398.800} = \frac{185*(1520)^2}{32.398.800} =$$

$$= \frac{185*2.310.400}{32.398.800} = \frac{427.424.000}{32.398.800} = 13,1925$$

$$\chi^2 = 13,1925 > \chi^2_{chart} = 10,8276 \quad p = 0,001 = 0,1\%$$

Figure 3b. The effect of the sanction in the first year among the hosts.

Conclusions. Cumanian mounds, which contributed to the religion, administration and history of the Carpathian Basin, passed through a serious degradation over the long centuries and thousands of years. The degradation significantly affected both their number and their state. Recent researches carried out in the past decades revealed that besides their historic-cultural importance they are also important from nature conservation and landscape protection aspect. As a result of this new laws were introduced to protect them, the impacts of which proved to be insufficient, the degradation continued even around the millennium. Owing to the change in the agricultural regulations in 2010 Cumanian mounds were designated as protected landscape elements and they became part of cross compliance. This resulted in positive changes in the state of the mounds still existing.

This paper is destined for more than observe and analyse a regulation which achieves its aim through sanctions without taking into consideration man, namely the farmer who is an integral part of the environment. Cumanian mounds should be protected for them and their descendants. Our intention is to understand farmers' interests and feelings since it is they who actively form their surroundings. Therefore we have the intention to make new means to introduce similar regulation in the future in relation to landscape issues (after drawing the conclusion of the new landscape regulation), and these means should perform a thorough examination and should analyse and observe the interest of all participants. In our investigation we are conducting a survey with the help of a questionnaire compiled by experts among the people concerned, and after processing the data an operational program can be prepared for legislation. We are resolute to continue our research.

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