

## Urgent agricultural issues of soil protection

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### SUMMARY

*The primary aim of this study is to draw attention to the importance of legal problems of soil protection. The basis for my study is the ombudsman's 2016 principle of soil protection. This resolution summarizes the most pressing soil protection measures in 15 points that need to be taken as soon as possible to preserve soil resources. To narrow the wide range of topics, I will examine three points: (1) preservation of soil resources, (2) soil sealing, (3) brownfield instead of greenfield. Hungary is in a special position concerning this most ancient natural resource, as only 11% of all the land covered area of Earth consists of soil, the EU average is less than 30%, while in Hungary it is more than 60%. Despite the existing protective legal requirements, soil degradation is a constant issue. The persistence of population growth spells the need for more arable land, but as a result of the stressful impacts caused by people we are running out of useable topsoil. Assessing both the short and long term process of land reclamation, it can be stated that more and more farmland becomes permanently and imperviously covered for other purposes each year, and as the arable land area decreases, the impervious surface area grows despite all respective decisions, regulations and prohibitions.*

**Keywords:** soil protection, soil degradation, soil sealing

### INTRODUCTION

According to the UN's latest estimate nearly 7.6 billion people live on Earth today. At the present pace of population growth the world population will reach 9.8 billion by 2050 (KSH 2017). More and more food will be needed, but arable land, though a conditionally renewable resource, its availability is extremely limited. According to John Crawford our planet loses 75 billion tons of soil per year, 80 percent of all soil gets damaged, and this trend may lead to the disappearance of arable land in 50–60 years (Crawford 2012). In Europe, the degradation of soil is now 17 times faster than its recover. It is estimated that with today's intensive farming, an average area of 0.2 hectares of land can provide food for one man (FAO 2017). As a result of continuous soil degradation and an increase in population, the per capita production area may be shrunk to 0.1 hectares per person by the middle of the century (Kastori 2011). In Hungary a significant decrease in the agricultural area has been observed in recent decades, while the area extracted from cultivation (e.g. settlements, industrial facilities, roads, and areas for waste disposal) has increased. The rate of this process is now lower, but it is still ongoing (Németh and Várallyay 2015). Agricultural areas are also at risk of degradation in their natural state, but final extraction from cultivation, meaning its cover by impervious surfaces brings about the physical destruction of the soil (Posta 2002). Destroyed soil cannot be re-created by soil recovery methods, these soils can no longer be subjected to agricultural cultivation (Megyes 2006).

Soil protection is needed because maintaining the fertility of the soil and preserving its functionality requires constant conscious activity (Várallyay 2000). Soil protection is defined by the law as the protection, preservation and improvement of the fertility and quality of the land while preventing its physical, chemical and biological degradation (Act 2007 on the

Protection of Land CXXIX. 2. §). Soil protection is also included in our constitution. Article P of the Fundamental Law has placed our natural resources under constitutional protection, specifying the protection of arable land, making its preservation the responsibility of the state and the duty of everybody. In its decision, the Constitutional Court emphasized that this obligation is not only to the state but also the civil society and every citizen [16/2015 (VI.5)].

The basis of my study is the ombudsman's 2016 principle of the protection of the soil. The resolution summarizes the most pressing soil protection measures in 15 points that need to be taken as soon as possible to preserve soil resources. To narrow the wide range of topics, I will examine three points, that I consider most important. These are: (1) preservation of soil resources, (2) soil sealing, (3) brownfield instead of greenfield. The general aim of this study is to compare the domestic regulations with the practice of the selected three points.

### MATERIAL AND METHODS

The materials used in the research part of the study include the ombudsman's 2016 principle of the protection of the soil, and legal documents of soil protection in Hungary at national regional and local levels. The sources were the official governmental website, online international law information services (e.g. Wolters Kluwer), Hungarian legal experts' contributions.

The methods used in the text include comparative analysis of the different types of legal acts and the current practice of the three examined issues.

### RESULTS AND DISCUSSION

Next, on the basis of the 2016 Consensus on the Protection of Soil for the Future Generations, I will analyse three issues of domestic soil protection. The

resolution summarizes the most important steps to be taken to preserve soil resources in 15 points, which should be implemented as soon as possible. Of the 15 points, I deal with three points.

### **Preservation of soil resources**

*“The first general challenge to the preservation of Hungary’s soil resources is the need to stop its quantitative decline and deterioration, thus preserving the multifunctionality of the soil and its ability to perform certain functions.”* (Ombudsman 2016)

Domestic legislation describes the concept of soil from five different aspects. It is a contingently renewable natural resource. From an economic point of view there are the means of agricultural production and forestry, according to its location it is defined as the solid surface of the Earth with its habitat, the most important characteristic of which is its fertility (Barati 2002). The elements of the concept of earth as a natural resource are well-known, but in social consciousness there is less evidence for the persistence of the idea that land has a preeminent social and economic organizational function, since it maintains and reproduces the basic conditions of individual and community existence for the society which is organized by the state. Jurisprudence typically highlights the function of productive assets in the multifaceted functions of earth. In the Act No. CXXIX/2007 on the protection of arable land soil is considered as a means of production, it determines human activity with it as such and soil protection is also related to this purpose. Also, the emphasis laid on the production tool function of land will lead to its classification as capital (Tanka 2017). In the EU, according to Community law, domestic agricultural land is considered as capital. The principal purpose of capital as a production factor is to be used in capitalization. If land is considered to be capital, the main purpose of its utilization is neither food production within agriculture or forestry nor is it nature conservation, because these aims are subordinated to capital gains. Land use subordinated to capital gains may result in all the legal relationships of the land being entrusted to the owner of the capital, and thus society cannot control the acquisition, the purpose of use and the protection of the soil property on a collective administrative level.

### **Soil sealing**

*“The growth of impervious surfaces must be stopped within cities. Impermeably covered areas are growing continuously within the settlements, while the green areas are shrinking at the same time, eliminating in particular the ability of soil to precipitate and exercise its microclimatic effect.”* (Ombudsman 2016)

Due to the area occupied by buildings, structures and enclosed surfaces, destruction of the soil is significant. Presently we have reached the state where ecologically valuable areas and the ecologically less valuable or highly transformed network created by humans are present to an almost equal extent. Approximately 83.6% of Hungary’s 9.3 million

hectares is a production area and 62.2% of it is agricultural land, which is outstanding both in Europe and worldwide. The average of the European Union agricultural area is super ceded in Hungary by 20.8 percentage points, while the area of arable land is 18.3 percentage points higher (Kapronczai 2011). These characteristics show favourable land availability, but the trend shows that, although the population of Hungary is declining, due to a larger scale decline in the agricultural area the per capita usable agricultural area is still decreasing (Farsang 2011). During the accession of Hungary to the EU, the objective of the management was to develop the optimal ecological ratio of the cultivation branches by reducing the proportion of arable land for the benefit of grassland, forests, reeds and fishponds. The decline in arable land can be observed from data from 1990 to 2013, but despite the continuous decline of the population, the proportion of areas extracted from cultivation has increased significantly to the detriment of other cultivated areas. While in Hungary there were 8.24 million hectares of land under cultivation in 1990, it decreased to 7.7 million in 2007. In 1990, the area taken out of cultivation was 1,067 million hectares, and in 2016 it reached 1,927 million hectares (Ministry of Agriculture 2017). Due to territorial reorganization more than 70% of the population in Hungary lives in cities today. The separation of residential and food supply areas also leads to an increase in the size of built-in and enclosed surfaces. There are no incentives for stimulating economical land use. The new spatial plans prohibit or constraint the sprouting of new settlement areas only in the protection zones, otherwise they contain no quantitative or other limits. In the case of land reclamation from agricultural production, due to the limitations of the arable land area, the directive should implement that the withdrawal be primarily exercised in the less fertile areas (Tóth et al. 2013). When the administrative authority gives priority to any other function of the land than its food-producing role, it gives way to allowing the termination or physical destruction of soil as once it is imperviously covered it can no longer become soil again in the future.

### **Brownfield instead of greenfield**

*“Authorization of greenfield investments should be prohibited while brownfield sites are available. For future generations, efforts should be made to ensure that new soils are no longer covered and used for industrial use while areas of previously abandoned industrial sites are still available.”* (Ombudsman 2016).

To analyse this third point, it is necessary to briefly describe the concept of brownfield and greenfield investments. Greenfield investment is a new industrial enterprise that has been established in an area under agricultural cultivation. The site is entirely new, without any architectural or business precedents. According to the Land Act, greenfield investment is final land demarcation from cultivation. A brownfield area is an area previously used for industrial or commercial purposes. The site may be

burdened with low concentrations of hazardous waste or other pollutants, but it is possible to reuse the site after cleaning. In Hungary, the area of land permanently utilized for purposes other than agriculture per year fluctuates. 4000–7000 hectares of land is permanently withdrawn from agricultural production annually due to the realization of investments, while the number of previously permanently covered areas for development, unused or underused is significant (Ministry of Agriculture 2017). Where the rationalization of land use is concerned the vacancy and unused state of the many massively built industrial sites constructed during socialism and abandoned after the change of the regime makes the support of brownfield investments particularly timely. The increase in the volume of investment targets means a further decline in land areas. Loss of function due to land reclamation usually appears as a mere external cost for the investor, as the size of land protection contribution is negligible compared to the significance of the change – the loss of value caused by it. Another problem is the lack of complex assessment for greenfield investments which involve the long term significance of the abolition of the soil functioning as a soil for the disposal of agricultural land in industrial facilities. In the absence of a complex assessment of soil functions – greenfield investments do not primarily exclude the highest-quality agricultural land from extraction from cultivation. On the contrary, they are often found in low-lying, agricultural areas, which are in turn deemed favourable for infrastructural investments in the short term. Good quality land abandonment is often justified by the questionable argument that the industrial exploitation of the land produces a greater profit than the otherwise environmentally more advantageous agricultural activity.

## CONCLUSIONS

The following statements can be made in relation to the three most urgent socio-protection measures for the future generators of soil protection:

- Legal science typically emphasizes the production tool function of the soil, which is – and should also be in jurisdiction – absolutely surpassed by the multifunctionality of soil. Soil has important social and economic functions. In addition to its fertility, the quality of the soil in terms of other functions is fundamental. From a broader ecological point of view, the quality of the soil is demonstrated by the combination of its three main tasks – providing long-term biological production, environmental quality, and plant, animal and human health.
- The Act No. CXXIX/2007 does not provide adequate protection for the whole of the soil and for its constituents, the edafon itself does not appear. Domestic legislation does not guarantee the protection of the versatile task of the soil. At present soil is not treated with due diligence and is not sufficiently rigorously protected by society and our current legislation.
- The most important indicator of land protection is the evolution of permanent land disclosure from agriculture, the extent to which the state's public authority decides what quantity and quality of land is extracted from cultivation, thereby excluding those plots from at any time serving our food production. Assessing both the short and long term process of land reclamation, it can be stated that more and more farmland becomes permanently and imperviously covered for other purposes per annum, and as the arable land area decreases, the impervious surface area grows despite all respective decisions, regulations and prohibitions.

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