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**Doctoral School of Environmental Sciences**

**The Thesis of the Ph.D Dissertation**

**Criminal-geographic analysis of crimes against the environment and nature**

**By**

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## **Precedents of the work, goals**

Society makes an ever bigger effect on its geographic environment during its progress and spatial expansion. It damages the balance of the latter more often than not and it can threaten even its very being (Enyedi 1983).

Today this negative anthropogenous effect on the environment and nature is defined and sanctioned correctly by the Criminal Code, the legal context can be described as adequate. Despite of this, neither society nor law enforcement do show interest in it. Crime prevention does not move in this direction either (Erdei 2002, 2011).

People are interested in crime, because it has an effect on their own life, and life quality. When most people mean by life quality their current economic state, financial relations and personal safety, they do not think about environmental crimes as dangerous issues. The negative effects of environmental crimes appear delayed and irreversible, if not immediately.

Based on criminal geography, I pitched the term of environmental criminal geography as an inter-discipline dealing with spatial and temporal aspects of delinquency. Although it connects to criminal geography, it examines natural geographic elements (water, soil, air, living beings). I used mostly the methods of criminal geography through statistics and criminal maps, but this is the only branch of delinquency which objects are environmental-natural elements.

Actuality of environmental crimes are unquestionable today, as we are living in the age of extinctions (Ábrahám 2006, 2012). In my work I analyse the relations of man and environment, or more accurately, the effects (or offences) of man on the environment and nature. I also stress that how did man change the appearance of Earth through these crimes, and what are the effects of it on our daily lives. The fact that these natural disasters have become daily and they can be perceived even by us makes this direction of the criminality research actual and justified kutatását (Erdősi 2002, Lorenz 2002, Lynch 1990)..

### **The main goals were the following:**

The goal of this work was to examine the spatial distribution of the environmental delinquency at the level of the country, counties and settlements; furthermore, to analyse the connections between the sociological-natural factors and environmental delinquency.

It was a goal to examine the changes in the number of the crimes of the following types and their perpetrators:

- Violation of the environment,
- Violation of nature,

- Violation of waste management.

Another goal was to examine at national level the indicators of these crimes committed between 2005 and 2018, which point out the dominating crimes in each county, their geographic and environmental origins.

Another goal was to pitch a more detailed survey level in Pest county. It was a goal to examine the divergences in the dispersion of the wood stealings and I try to separate crime-emitting and crime-drawing areas.

Another goal was to examine the connections between wood stealings and natural-economical factors, on the spatial level of the residencies of police questores, which mainly covers the subregions.

The last goal was to analyse and compare the settlements with the most and least cases of wood stealing.

### **Hypotheses**

H1: Among our country's counties, the least economically developed ones and the ones with the smallest knowledge basis does not show the worst environmental delinquency indicators.

H2: Some environmental crimes (violation of waste management) appear more frequently in cities than in villages.

H3: Tourism has a great impact on nature violation's indicators. The majority of the perpetrators are from foreign countries. Crimes revealed in Budapest Airport and on borders have the biggest impact on the indicators of nature violation, and we can make the most important steps against them on the country's borders.

H4: Years with prosilient environmental crime values are not tendency-like changes.

H5: Geographic environment has an impact on perpetrators. Based on the socio-geographic analysis of them, it can be shown that unemployment and non-attendance at school is an important negative factor of these type of crime.

H6: Population and authorities are interested mostly in crimes against persons and property, they are not concerned about the aftermaths of environmental crimes, or its effects are at least delayed.

## **2. Material and Methods**

My first and foremost source of information about environmental crimes is the database of the police called RobotzsaruNeo (RzsNeo) System. With its help one can learn about environmental delinquency in the most far-reaching obejtive way, based on the number of the

known felonies. I show the run of environmental delinquency and its spatial differences using the data of this system. I analyse the felonies of the years 2005-2018. Data pool of waste management violation is much larger, so I examine the years 2005, 2006, 2012 and 2018. Between 1997 and 2005 there were no usable indicators. In 2005 the Criminal Code was modified and the use of Robotzsaru (Netzsaru) database became obligatory. From then on, one can show the tendencies and draw inferences. There are much fewer numerical data about crimes against the environment than against property, but their changes are explainable, so I found them capable of analysis.

One can get the broadest picture from the data registered by the police, namely criminal statistics, because they contain all registered felonies, notwithstanding whether they are brought before judicial body or not. International comparing is not easy. There are no general regulations in the EU for criminal statistics, methods of data collection are not harmonized.

Databases pay attention neither for the legislation of the countries, nor for the national characteristics of criminal-statistical data collection (f. e. Interpol database) (Kerezsi 2020).

The source of social and economical data on the level of settlements was the stocks of Hungarian Central Statistics Office (KSH): the Statistical Yearbooks of the counties, the population censuses of 2001 and 2011, and the spatial statistics of the Information database. For data on the county level, I used the latter (http1,2).

During the survey, I utilized the data of the Integrated Law Enforcement and Prosecutor Crime Statistics (ENyÜBS). Data are available from [www.police.hu](http://www.police.hu). The source of laws was CompLex Jogtár. I also used the data of analysing and evaluating divisions and the annual reports of police stations and headquarters because they often contained useful information for my environmental criminal-geographic survey.

### **The examined geographic area**

The examined area of the criminal-statistical analysis is the whole country. The residencies of the police headquarters meets the geographic areas of the counties. During the survey the environmental crimes committed in the area of the residencies of police headquarters were analysed. Crimes, plaintiffs, perpetrators and criminal efficiency were analysed at the national level.

The analysis of the connections between natural-economical factors and wood stealings was conducted on the level of the residencies of police offices, which in most cases meets the areas of the subregions. Furthermore, I analysed and compared the two settlements with the

highest case number with the one with the lowest value.

### **Data analysis**

Criminal-statistic data were retrieved from the electronic management system called RobotzsaruNeo (RzsNeo) and from the database of ENyÜBS. I analysed the data on the level of settlements, counties and the country. Figures, diagrams and criminal maps were made by myself, since I did not find works dealing with it.

Using Microsoft Excel I recorded the data in tables and made the figures and diagrams. For maps and some figures GIS and PhotoShop were used (<http3>).

Sociogeographic data of the perpetrators were retrieved from RzsNeo and suspect protocols. Data such as sex, age, family status, education, nationality and financial circumstances are from the protocols, based on the pronouncements of the suspects. Although this pronouncement is not mandatory, but in 80% of the cases it was made by suspects.

## **4. Results**

In this work I surveyed the ways concept of environmental criminality geography fits in the system of environmental and geosciences. Based on my survey, I edited the taxonomy diagram.

I inspected the geographical distribution of the crimes at three territorial levels – the country, counties and settlements. I also surveyed at national level the changes in the number of the three most widely known environmental crimes (violation of environment, nature and waste management regulation) and their progenitors. Also on the national level, I inspected the criminal statistics of environmental crimes between 2015 and 2018, which showed that what types of crimes dominate in the counties, and what are their socio-geographical reasons. I drew up maps of Hungary depicting the detailed analysis of crime geography, and „hot spots” (environmental criminal infection). I did the analysis of Hungary in the aspect of environmental crime geography through comparing counties and showing the important environmental crime values and evolution of structure. I stated that some half of environmental violations are committed through soil pollution. Among nature violations, smuggling of protected species (mostly not from Hungary) or their derivatives dominate. In our country, the most harmful violation of nature is cutting and stealing wood in protected nature areas. For this reason, I inspected the spatial and temporal characteristics of these crimes, including their environmental damages and social effects. I stated that in several counties social factors

(poverty, lack of education) played a larger role in committing the crimes than geographic ones (forest cover, protected areas).

I stated that concerning environmental criminality, the most infected county of Hungary is Pest. I surveyed the general criminal-geographical state of the county, including the spatial distribution of the criminality, along the territorial responsibility of police departments. I inspected the spatial distribution of wood thefts and delimited the geographic units emitting and drawing criminality. The inspection of wood thefts and natural, social factors was conducted at the spatial level of the territorial responsibility of police departments, which often correlated with the subregions and districts. I compared and analysed the two most infected settlements and the least infected one. I came to the conclusion that concerning criminality, the most important risk factors are unemployment, low income and the lack of education.

Based on the socio-geographic inspection of the known perpetrators, most of them are unemployed local men over 30 years. A large proportion are Roma nationals.

Based on the results, I made suggestions on improving criminality mapping and practice of statistics. I drew attention to develop the police's green strategy, to enhance environmental provisions and to improve cooperation. Through the suggestion of a model in the police's fight against environmental crimes I outlined the tasks of the organizational units. Results of this work would be useful at the first place in fight against crime and prevention, in land and urban development, in law enforcement leadership and in education.

### **Answers for the hypotheses**

H1: Among our country's counties, the least economically developed ones and the ones with the smallest knowledge basis does not show the worst environmental delinquency indicators.

During the analysis of the delinquency values and data of the counties it was proved that the most environment violations were committed in Pest county and Budapest. Pest also has the highest number of violations against waste management. Violation of nature were committed most frequently in Pest and Csongrád counties. These two counties are in the midfield of economic development. The highest GDP is in Budapest ([http15](http://15)). The knowledge basis of each region expresses the knowledge of its population and the development of education and training infrastructure. Knowledge basis of Budapest is exceptional. In Csongrád county, most of nature violations were committed in the region of Szeged, which also has superior knowledge basis.

H2: Some environmental crimes (violation of waste management) appear more frequently in cities than in villages.

Most nature violations were registered in the region of Budapest Airport. The number of environment violations is significant in Budapest. During the analysis of waste management violations I came to the conclusion that 80% of them were committed in cities, mostly with communal waste. The cities with the most cases were the following: Békéscsaba in Békés county, Szeged in Csongrád county, Debrecen in Hajdú-Bihar county, Tatabánya and Tata in Komárom-Esztergom county, Zalaegerszeg in zala county, Salgótarján in Nógrád county.

H3: Tourism has a great impact on nature violation's indicators. The majority of the perpetrators are from foreign countries. Crimes revealed in Budapest Airport and on borders have the biggest impact on the indicators of nature violation, and we can make the most important steps against them on the country's borders.

In my work I showed that the majority of nature violations were committed on the country's borders, through the loitering of protected species. The perpetrators were tourists in most cases, who loitered different souvenirs (corals, shells, dissections) and objects made of protected animals (snakeskin purses, crocodile-skin shoes, snake schnapps) when returning from travels. The number of nature violations considerably dropped in 2011, and increased in 2012. In both cases, the reason was the crimes registered in the region of Budapest Airport. In 2011 26 felonies were committed, and in 2012 this number was 111. Since the majority of registered nature violations were loitering of protected species, so they have the biggest impact on the statistic values.

H4: Years with prosilient environmental crime values are not tendency-like changes.

In environmental crimes tendencies are barely showable. Prosilient case numbers appeared in nature violations, when in 2012 the demand for capsules made of protected species *Hoodia gordonii* has increased. The number of environment violations was increased by oil pollution during stealings of transformers and electric cables. The number of waste management violations increased slightly in 2018, which origin was the case numbers of Pest and Tolna counties. There was no particular explanation for this change.

H5: Geographic environment has an impact on perpetrators. Based on the socio-geographic analysis of them, it can be shown that unemployment and non-attendance at school is an important negative factor of these type of crime.

During the analysis of geographic factors I showed that geographic environment (forests) had a lesser impact on the case numbers of wood stealings than I expected before. The larger

cover of forests do not go hand in hand with more delinquency. From the sociogeographic analysis of the perpetrators I drew the conclusion that on settlement where the most inhabitants are single, low-educated, unemployed or low-paid, the case number of wood stealing are the highest.

H6: Population and authorities are interested mostly in crimes against persons and property, they are not concerned about the aftermaths of environmental crimes, or its effects are at least delayed.

Inhabitants are interested mostly by crimes which influence their subjective feel of safety. Based on that, authorities and the media favour the presentation of crimes against persons and property. Based on an 1988 study, I pointed out in chapter 4.7.3 that Hungarian population has been being neutral concerning activities threatening or damaging the environment to the present day.

## **5. New scientific results**

I pitched the term of environmental criminal-geography and I placed it in the system of environmental and geographic sciences.

I was the first in Hungary to examine the criminalgeographic features of the counties in respect of nature and violations for several segment of criminality in such various ways.

I was the first to analyse the socio-geographic features of the perpetrators in the light of nature and environment violations.

In this work I tried to digest the possibilities and factors which could improve the state of environmental delinquency in Hungary. I set up a new structural model for effective environmental law enforcement. I described the tasks of the organizational elements and units for the sake of effective working.

My results are usable during analysing and evaluating work. I made several factual proposals for the area of Hungary to decrease the number of environmental felonies and to increase the number of detected crimes.

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