

THE PHENOMENOLOGY OF REGISTERED ENVIRONMENTAL CRIME IN BOSNIA AND HERZEGOVINA

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Abstract

Environmental crimes and their harms are largely neglected in contemporary Bosnia and Herzegovina [BiH]. Efficient and effective environmental protection is hindered by limited (empirical) knowledge about the phenomenology and aetiology of these crimes and the lack of formal reaction mechanisms. This study examines the phenomena and typology of environmental crime in BiH based on the legalist perspective in green criminology. Therefore, the main objectives of this study are to determine forms, extent and distribution of registered environmental crime in BiH. The data stem from the Agency for Statistics at the state level, as well as from Entities offices of statistics. The study findings indicate that environmental crime does exist in BiH. The most frequent registered forms are the forest theft, following by the illegal hunting and fishing, the torture and killing of animals and the devastation of forests. It is widely assumed that in this field there are a considerable number of cases that go unrecorded. Creation and implementation of criminal justice policies are crucial for any successful response to environmental threats and they need to have in mind such findings.

Key words

Environmental crime, green criminology, phenomenology, Bosnia and Herzegovina

INTRODUCTION

Bosnia and Herzegovina [BiH] is an independent, sovereign and democratic country situated in the western part of the Balkan Peninsula. With a surface area of 51,209 km², it is characterised by exceptional natural, landscape and architectural diversity (Ministry of Foreign Trade and Economic Relations of BiH, 2008). Forest and freshwater ecosystems, as well as agricultural land play a dominant role in their landscape and resource pattern. Out of the total territory of BiH 63% is covered with forests and other wooded land, which is one of the highest values in Europe (Nikolov, 2015). About 20% of the land is arable, and 2% is under permanent crops (United Nations Economic Commission for Europe, 2011). BiH is rich in waters with a dense river network in the Sava River Basin, and with a less developed network of surface waters in

the Adriatic Basin, with significant karstic ground watercourses (Ministry of Foreign Trade and Economic Relations of BiH, 2012). Natural resources also include deposits of minerals such as salt, manganese, silver, lead, copper, iron ore, bauxite and coal. The richness of the living world with a high degree of endemic and relict forms in BiH is a result of spatial ecological heterogeneity, geomorphologic and hydrological diversity, specific geological past and climate diversity (Ministry of Foreign Trade and Economic Relations of BiH, 2012).

Being the centre of heavy industry, resource and energy base of the former Yugoslavia, BiH was exposed to serious pollution of its basic natural resources in the pre-war period. During the 1992 – 1995 war, BiH faced a decrease in economic activities in all sectors, and the country emerged with an utterly ruined infrastructure and industry and devastated economy. As a consequence of the war, vast areas of land were left covered with landmines; significant quantities of different types of waste were left behind as well as thousands of hectares of cut or destroyed forests (Ministry of Foreign Trade and Economic Relations of BiH, 2012). In the period of post-war rehabilitation and reconstruction BiH faced acute social, economic and environmental challenges. Even though the country experienced a strong economic growth and reconstruction due to large international aid it is still struggling in some aspects such as privatisation, managing the transition process, implementing structural reforms, creation of a functioning legal system, and high unemployment¹ (Matsson, 2015). Today's economy of BiH is based on natural resources and, as such, it has often been environmentally unsustainable. Pollution of water, air and land, cutting of forests and unsustainable mining are the results of such an economy and use of unclean technologies (Ministry of Foreign Trade and Economic Relations of BiH, 2012).

Yet, understanding and addressing environmental criminality in contemporary BiH struggling with aforementioned challenges and introduction of European standards necessary for the European Union [EU] accession process is undoubtedly challenging task. A comprehensive (reliable and evidence-based) review of environmental crimes and their harms does not exist in BiH. Primarily because criminological thought, even for the analysis of conventional crimes, is an extremely new subject in BiH, and therefore it should be made clear in advance that the field of the environmental protection or crime has not been sufficiently studied as yet, when compared to other developed countries in Europe and wider (Petrovic & Muratbegovic, 2008). Environmental management has not been a priority in the economic recovery process in BiH, and it suffers from suboptimal institutional, policy and legal frameworks. Consequently, policies, plans and programmes fail to consider environmental impacts (United Nations Economic Commission for Europe, 2011). The country does not face a large-scale problem of environmental crime according to the official crime statistics. Numerous environmental issues associated with systematic corruption have been identified in official state reports as internal challenges that pose a serious threat to the social, political, security and any other stability of the country (Ministry of Security of BiH, 2016).

¹ The unemployment rate in 2016 was one of the highest in the region (25.4%), while youth unemployment rate one of the highest in the world (54.3%) (Agency for Statistics of BiH, 2017). For instance, the share of young people in the EU-28 in 2016 who were neither in employment nor in education or training, expressed in relation to the population of the same age, stood at 15.2% (Eurostat, 2017, p. 84).

In order to improve a limited empirical understanding of environmental crime in BiH, this study examines the phenomenology of registered environmental crime through the lens of the legalist perspective in green criminology. Therefore, the main aims of the study are to determine forms, volume and distribution of registered environmental crime in BiH, including efficiency and effectiveness of formal reaction mechanisms. Criminal justice responses that are based on research findings are crucial for any successful responses to environmental threats and evidence-based proposals for solutions normally receive more public attention and approval, especially in the field of environmental protection (Cohen, 1998, in Eman, Mesko, Dobovsek, & Sotlar, 2013). This study hypothesizes that environmental crime in BiH is heterogeneous type of crime. Furthermore, it seeks to answer the following research questions: (1) to what extent does environmental crime occur in total number of registered crimes in BiH, (2) what the change of dynamics of registered environmental crime in BiH is, and (3) which types dominate the structure of registered environmental crime in BiH. Questions are tested by using the method of secondary data analyses concerning criminal offences against the environment.

RESEARCH ON ENVIRONMENTAL CRIME IN BOSNIA AND HERZEGOVINA

Given the gap in green/environmental criminological literature in BiH, little is known about the nature and extent of environmental crime in general, and in particular, knowledge concerning those crimes is lacking at different levels of governance in country. Various reasons contribute to this. Environmental crime has not been a scientific research priority over years in BiH. Even though scientific results are considered the most reliable way of planning high-quality criminal policy, only a few empirical studies on environmental crime have been conducted. Scientific and professional papers in a wider sense theorize environmental protection legislation and environmental security issues. Although in a limited extent, enthusiastic individual efforts in the research of legal, sociological, security and other aspects of environmental protection in the preparation of final thesis by graduate and postgraduate students throughout BiH are noticeable.

The results of theoretical research on environmental criminality as well as environmental issues, suggests that environmental crime in BiH has become particularly present in the post-war period. Pressures that have had an impact on the environment in the country include the rapid development of technologies, especially the use of powerful new energy sources and new industrial plants (Muratbegovic & Guso, 2011). According to the most recent World Health Organization (2017) pollutant statistics, BiH is the worst-placed country in Europe, and the Balkans and Eastern Europe are ahead of other countries. According to data from 2014, BiH is a country with the highest concentration of harmful particles in the air, with 55.1 micrograms per m³ followed by Macedonia with 42.7, Bulgaria with 30.3 and Poland with 25.4 (World Health Organization, 2017). According to data from 2012, along with Bulgaria, Albania and Armenia, it is classified as a country with the highest mortality rate attributed to home and air pollution (World Health Organization, 2017). A 2015 report by the European Environment Agency [EEA] estimated that over 44,000 years of life are lost in BiH each year due to particulate matter, nitrogen dioxide or ozone pollution (European Environment Agency, 2015). Air pollution generally arises from industrial activities and transport sector and mostly affect major urban centres (i.e. Sarajevo, Zenica and Tuzla). According to comprehensive environmental crime study in South Eastern Europe in

2012², BiH faces water and air pollution (i.e., industrial plant emissions, along with increased amounts of ash and soot from thermal power plants), de-forestation and timber trafficking; and animal torture and trafficking (e.g., violent behaviour towards animals in the form of poaching and hunting endangered species for meat, trophies, or trafficking) (Eman, Mesko, Dobovsek, & Sotlar, 2013). World Wildlife Fund [WWF] claims that BiH together with other Eastern European countries represents a major source for putting illegal or suspicious wood on the EU market. According to the WWF, the amount of illegally harvested wood in BiH has been estimated to be 1.2 million m³ (Hirschberger, 2008)³. Soil degradation is increasing, and land use changes and loss of agricultural land are caused by sudden urbanization, industrialization and changes to commercial development (Ministry of Foreign Trade and Economic Relations of BiH, 2012). Nevertheless, the most worrying is the continuing growth in industrial capacity as coal and natural mineral mines are opening, and construction of hydro-accumulation lakes is being undertaken. While there have been attempts to regulate these industries, new categories of crime have emerged from the flouting of these environmental rules (e.g., hazardous waste and the involvement of organized crime) (Eman, Mesko, Dobovsek, & Sotlar, 2013). Since 2003, generated municipal waste has been constantly increasing. Due to a lack of adequate treatment and disposal facilities, non-hazardous and hazardous waste from production activities and medical waste often end up at existing municipal waste disposal sites, which represent the main sources of eco-toxic substances (Ministry of Foreign Trade and Economic Relations of BiH, 2012). In a survey of the most important environmental concerns facing the Balkans for the period 2009 – 2011, polluted watercourses, poor waste management and air pollution have been identified as dominant in BiH (Mihajlov, 2010). According to results of the Aarhus Centre in BiH (2014) survey on 465 randomly selected participants from the Sarajevo Canton, waste (57% of respondents), air pollution (37% of respondents) and water pollution (20% of respondents) are identified as the three most important environmental issues. Citizens are generally dissatisfied with the state of environment overall, as well as *the micro community* where they live, be it their neighbourhood, the municipality or the City of Sarajevo overall. In addition, citizens point to systemic failures as one of the key causes for the poor state of the environment, but also recognize their own lack of awareness and irresponsibility at individual level, as contributors to this state (Aarhus Center in BiH, 2014). Completely contrary to the perception of citizens, the analysis of court decisions in the field of criminal justice in 2012 (Delalic, Pilipovic, & Petrovic, 2012) has shown that prosecutor's offices in BiH are dominantly prosecuting only one criminal offence - forest theft⁴. The fact that only one criminal offence against the environment in BiH accounts more than 96% of the confirmed

² A NATO Advanced Research Workshop Managing Global Environmental Threats to Air, Water and Soil - Examples from South Eastern Europe, June 2010, Ljubljana, Slovenia. For more information see Mesko, Dimitrijevic & Fields (2011).

³ Official national data suggest much lower figures. For instance, the Ministry of agriculture, water management and forestry of the Federation of BiH reported that only 38,603 m³ of timber was illegally harvested in 2012, with a total value of BAM 1,902.347 (Ministry of agriculture, water management and forestry of the FBiH, 2013).

⁴ An analysis of the criminal protection of the environment in BiH was carried out on the basis of data submitted by ten cantonal and five district prosecutors' offices and the Brcko District Prosecutor's Office of BiH related to criminal offences against the environment during 2012 (Delalic, Pilipovic, & Petrovic, 2012).

indictments suggests that other criminal offences are either not reported or that the relevant prosecutor's offices treat other criminal offences against the environment in BiH inconsistently (Delalic, Pilipovic, & Petrovic, 2012). The previous period has marked the same; more precisely, in the total amount of completed cases before the judicial authorities in BiH, in the five-year period (2007 – 2011), courts resolved 3,646 criminal cases in the field of environment protection out of which 97%, that is, 3,570 cases related to criminal offences of forest theft (Council of Ministers of BiH, 2012). When it comes to misdemeanour protection, there is a large disparity in the representation of certain laws in BiH, and a vast majority of cases referred to offences under provisions of the Law on Waters of the Federation of BiH (Delalic, Pilipovic, & Petrovic, 2012). The Environmental Performance Index [EPI] of Yale University ranks countries according to how close they are to established environmental policy goals. The 2018 EPI ranks BiH 158th out of 180 countries, with a score of 41.84 in overall environmental performance. This performance placed it far behind other countries in the region; Slovenia (34th place) Albania (40th place), Croatia (41st place), Macedonia (65th place) and Serbia (84th place) (Wendling, Emerson, Esty, Levy, & de Sherbinin, 2018). The country has poor results in most categories': biodiversity and habitat protection, climate protection, air pollution and agriculture, and received zero scores for water resources and wastewater treatment. According to the International Monetary Fund (2015), BiH may be growing after decades of hardship. Attention on environmental policymaking and enforcement could boost the country's performance in future years (Wendling et. al., 2018).

THE PRESENT STUDY

Methodology

Although the definition of environmental crime is not universally agreed, it is most commonly understood as a collective term to describe illegal activities harming the environment and aimed at benefitting individuals or groups or companies from the exploitation of, damage to, trade or theft of natural resources, including, but not limited to serious crimes and transnational organized crime (Nellemann, et al., 2016). It is clear that violator could be anyone or every one of us (corporations, companies, groups, individuals, state, etc.). Environmental crimes' special characteristics are victims, because besides or directly through the environment (biotic and abiotic natural elements) it harms people as well (Eman, 2012). In this study, following its aims and scope, the legal analytical approach to the study of environmental crime has been used. The legalist perspective defines environmental crime as violations of criminal laws designed to protect the health and safety of people, the environment or both (Clifford & Edwards, 1998). Thus, Situ and Emmons (2000, p. 3) define it as "an unauthorised act or omission that violates the law and is therefore subject to criminal prosecution and criminal sanctions." In that manner, under environmental crime is considered a catalogue of offences against the environment, which has been stipulated in BiH Criminal Codes. Analyses focus specifically on environmental crimes committed by individuals and, in particular, those offences for which individual offenders are caught and convicted. As such, focus is on crimes that Situ and Emmons (2000) classify as *personal environmental crimes* which include ecological and wildlife/animal crimes committed by individuals without organizational or corporate affiliations (Lynch, 2018). Resulting from a lack of socio-cultural values and traditions and reflecting the personality of the individual, these crimes are committed from the reasons of human comfort and prestige, while the profit imperative, though very small, cannot be completely excluded (Eman, 2013). Situ

and Emmons argue that these types of crimes, on their own, are responsible for limited short-term harm to environment. Personal environmental crimes are, however, generically harmful over time and in the aggregate (Lynch, 2018).

BiH is politically decentralized and it is comprised of two entities, the Federation of BiH and Republika Srpska, which have shared sovereignty over the Brcko District of BiH. Each level of government has its own legislative, executive, administrative and judicial institutions. Environmental protection in BiH has been governed at entity and Brcko district of BiH levels, with a wide range of legislative and regulatory acts (of varied legal force and authority) which regulate diverse issues pertaining to environment protection as a whole, or some of its specific elements soil, water, air, animals, plants, as well as their interactions. The most serious criminal wrongdoings of natural persons which are subject to the most stringent criminal sanctions are environmental criminal offences. As such, they are stipulated in a separate chapter of criminal codes of the Federation of BiH, Republika Srpska and Brcko District of BiH, as follow:

- Criminal Code of the Federation of BiH (2017)⁵, Chapter 26 - Criminal offences against Environment, Agriculture and Natural Resources (Articles 303 – 322);
- Criminal Code of the Republika Srpska (2017)⁶, Chapter 29 - Criminal offences against Environment (Articles 370 – 393);
- Criminal Code of the Brcko District of BiH (2018)⁷, Chapter 26 - Criminal offences against Environment, Agriculture and Natural Resources (Articles 297 – 316).

Criminal Codes of Federation of BiH (2017) and Brcko District of BiH (2018) prescribe almost identical environmental criminal offences, but somewhat different from Criminal Code of Republika Srpska (2017) (in terms of their names, length of sentences, a qualified form of a criminal offence etc.). Criminal Code of the Federation of BiH (2017) and Brcko District of BiH (2018) cover following 20 criminal offences against environment, agriculture and natural resources: Pollution of the environment, Endangering the environment with installations, Endangering the environment with waste materials, Endangering the environment by noise, Production of harmful preparations for the treatment of animals, Veterinary malpractice, Unauthorized rendering of veterinary services, Failure to comply with regulations for suppressing animal and plant diseases, Concealing the existence of a contagious animal disease, Contaminating fodder or water used by livestock, Destruction of plantations, Careless actions in circulation of pesticides, Devastation of forests, Forest theft, Causing forest fire, Torturing and killing animals, Illegal hunting, Illegal fishing, Damage, destruction and illicit export of cultural monuments and protected natural objects, and Illicit research and appropriation of cultural monuments.

Criminal Code of Republika Srpska (2017) contains 23 offences against the environment. In addition to above mentioned, it prescribes other offences against the environment as well: Damaging facilities and devices for protection of environment, Failure to execute decision on environment protection measures, and Importing dangerous substances into the Republika

⁵ Criminal Code of Federation of BiH: Official Gazette of Federation of BiH, Nos. 36/03, 37/03, 21/04, 69/04, 18/05, 42/10, 42/11, 59/14, 76/14, 46/16, and 75/17.

⁶ Criminal Code of Republika Srpska: Official Gazette of the Republic of Srpska, No. 64/17.

⁷ Criminal Code of Brcko District of BiH: Official Gazette of Brcko District, Nos. 10/03, 45/04, 06/05, 21/10, 52/11, 33/13, 26/16, 13/17, and 50/18.

Srpska. In order to achieve effective protection of the environment in accordance with the EU Directive on the Protection of the Environment through Criminal Law (2008) Criminal Code of Republika Srpska (2017) stipulates several offences against the environment that are not incorporated into the Criminal Code of Federation BiH (2017) and Brcko District of BiH (2018). These are: Endangering the environment by noise or ionizing radiation, Destruction of habitats, Unauthorized exporting and importing of specially protected plant or animal species or genetically modified organisms and Endangering the ozone layer. EU Directive on the Protection of the Environment through Criminal Law (2008) has not been transposed into environmental laws of Federation of BiH nor Brcko District of BiH. Activities on these issues at the cantonal level in Federation of BiH are mainly related to federal legislation (Council of Ministers of BiH, 2012).

Criminal Codes does not, however, provide a definition environmental criminal offences or environmental crimes, nor does any other law. According to the legal literature, the offences against the environment in above-mentioned chapters are so called *real environmental criminal offences* (i.e. environmental offences in a narrow sense). The object of protection of these offences is the environment as a whole or some of its integral elements which are found in the lithosphere, pedosphere, hydrosphere, biosphere and technosphere (Jovasevic, 2011). Most environmental criminal offences are blanket nature and have their bases outside the criminal law in other environmental protection legislation (Eman, 2012). Most of these provisions are designed as abstract endangerment crimes, while negligent behaviour is regularly punishable, and the attempt is often punishable.

In order to get indicators on reported, accused and convicted adult offenders of environmental criminal offences which are an important tool to study the phenomenology of environmental criminality and decisions of formal social control institutions, official crime statistics has been used. The study is based on the justice statistics provided by the Agency for Statistics of BiH for the period 2011 – 2017, the Federal Office of Statistics for the period 2008 – 2017, and the Republika Srpska Institute of Statistics for the period 2011 – 2017. In terms of the study, crime ranges from the filing of a report for criminal offence to a final decision of the proceedings by the competent judicial authority. Reported person is an adult against whom procedure was terminated by one of the following decisions: order issued, or decision passed not to conduct investigation, investigation interrupted or terminated, or indictment filed. Accused person is an adult against whom an indictment was filed to a court, and against whom a procedure was legally ended by a decision of the court either to terminate the procedure, to dismiss or reject the charge, to acquit the person of the charge or to pronounce the person guilty. Convicted person is an adult who was found guilty of a criminal offence and on whom one of the criminal sanctions was imposed, or a person who was found guilty and released from punishment. Data are presented in absolute and relative numbers.

Limitations

The study limitations have to do with using official data. Environmental crimes are largely hidden crimes. It can be assumed that the number of crimes reported does not equal the actual number of occurred environmental crimes. As a result, the validity of official crime statistics may be decreased (Sahramakia, Korsellb, & Terhi, 2015). Most information on crime in BiH is dealt with by the police, the Ministries of Interior and the Ministries of Justice. Yet, the availability of official crime data is limited both at the national level and at the level of the Entities

and Brcko district of BiH. Such data that are available are fragmented and of a general nature (United Nations Office on Drugs and Crime, 2010). For example, due to the limited and slow data-sharing process, the author only gained aggregated data on reported, accused and convicted adults for environmental criminal offences for Brcko District of BiH for the period 2011 – 2016, while data separated according to particular offences were not available. Annual data on adult offenders from the Agency for Statistics of BiH are available from 2011, when for the first time Republika Srpska Institute of Statistics began with the publishing of statistics on crime and since then it has been published regularly in the annual dynamics. It is important to state that data from Republika Srpska Institute of Statistics for the period 2011 – 2016 have been delivered following legal provisions from earlier Criminal Code of Republika Srpska (2013)⁸.

Environmental crime is typically defined on a continuum ranging from strict legal definitions through to broader harm perspectives (White, 2015). The use of strict legal as well as socio-legalist definitions of environmental crime and related interventions has been criticized for failing to recognize the impact of power on environmental law (Gibbs & Boratto, 2017). Critical green criminologists tend to use more expansive definitions of environmental crime or harm than strictly legal definitions because of the many environment-related harms facilitated by the state, as well as corporations and other powerful actors. These institutions have the capacity to shape official definitions of environmental crime in ways that allow or condone environmentally harmful practices (White, 2011). In response, green criminology provides an umbrella under which to theorize and critique both illegal environmental harms (that is, environmental harms currently defined as unlawful and therefore punishable) and legal environmental harms (that is, environmental harms currently condoned as lawful, but which are nevertheless socially and ecologically harmful) (White, 2015).

FINDINGS

In order to examine the extent of which environmental crime occurs in total number of registered crimes in BiH, data provided by the Agency for Statistics of BiH for the period 2011 – 2017 were used.

Data on adult persons who committed a crime, Agency for Statistics of BiH aggregates by obtaining statistical crime surveys from Entities statistical offices and District Brcko of BiH. Statistical survey covers reported, accused and convicted adults by groups of criminal offences (i.e., classified by the protected assets/values). Out of a total of 15 groups of criminal offences, Table 1 summarizes data for the five most represented in the total number of registered crimes in BiH. A total of 182,494 adult criminal offenders were reported, 94,380 were accused, and 87,288 convicted in the period 2011 – 2017 in BiH for all criminal offences. Criminal offences against property were the most represented. In the number of reported adults, participation of property crime was 41%, while for accused this percentage was 39% and for convicted 39%. Section *other criminal offences* includes 10 groups of criminal offences as follows: against civil rights and freedoms, against sexual integrity, against marriage and family, against human health, against labour relations and social security rights, against the economy and payment transactions, against security of computer data, against the Administration of Justice, against public order and against general

⁸ Criminal Code of Republika Srpska: Official Gazette of the Republic of Srpska, Nos. 49/03, 108/04, 37/06, 70/06, 73/10, 1/12, and 37/13.

safety of people and property. These groups of criminal offences account for below 5% of the total number of reported, accused or convicted offenders for all criminal offences in seventh year period. Environmental criminal offenders accounted for 9% of the total number of reported, accused and convicted offenders. Environmental criminal offences are thus the third most-reported criminal offences, or the fourth when it comes to charges and convictions. In addition, an average of 2,404 offenders for criminal offences against the environment in BiH was reported, while an average of 1,205 offenders were accused per year. Furthermore, an average of 1,068 offenders was convicted annually. The ratio between the number of reports and the number of indictments is almost two to one, while 89% of filled indictments ended successfully with convictions.

Table I. Structure of registered crime in BiH for the period 2011 – 2017

Group of criminal offences against	Offenders (reported)		Handled by the prosecuting authorities		Convicted persons	
	f	%	f	%	f	%
Property	78,668	41	36,621	39	33,903	39
Public order	18,718	10	12,846	13	12,015	14
Environment	16,830	9	8,438	9	7,478	9
Life and body	13,782	7	9,311	10	8,409	10
Traffic safety	8,228	4	6,642	7	6,435	7
Other criminal offences (10)	46,268	25	20,522	22	19,048	22
Total	182,494	100	94,380	100	87,288	100

Source: Authors' calculation based on data in statistical bulletins of the Agency for Statistics of BiH

In order to discover trends in environmental crime in BiH, data provided in statistical bulletins of Entities offices for statistics, as well as of Agency for Statistics of BiH were used. Figure 1 presents reported, prosecution and conviction environmental offenders' rates per 100,000 population in Federation of BiH for the period 2008 – 2017. These rates slightly decreased during the first three years of their statistical coverage in Federation of BiH. Between 2010 and 2014 rate on recorded offenders has been steadily increasing. Between 2014 and 2017 it underwent an apparent decrease, from 79 to 42 recorded offenders per 100,000 population. Prosecution and conviction rates were fairly consistent in the period 2010 – 2015, reaching a peak in 2015, and then drop significantly in 2016 and 2017 (from 49 to 34 prosecuted offenders, and from 46 to 31 convicted offenders per 100,000 population). The overall trend was slightly decreasing for reported offenders, while slightly increasing for prosecuted and convicted offenders for the last ten years, as shown in Figure 1. In addition, the average number of reported offenders in Federation of BiH was 62 per 100,000 population annually, with an average decrease of 1.9%. An average of 41 offenders was accused annually, with an average annual decrease of 1.8%. Moreover, the average number of convicted offenders annually was 37 per 100,000 population, with an average annual growth of 1.5%. This can be interpreted that almost two third of reports for environmental crim-

inal offences per 100,000 population ended successfully with indictments, while 90% of filled charges ended with a conviction.

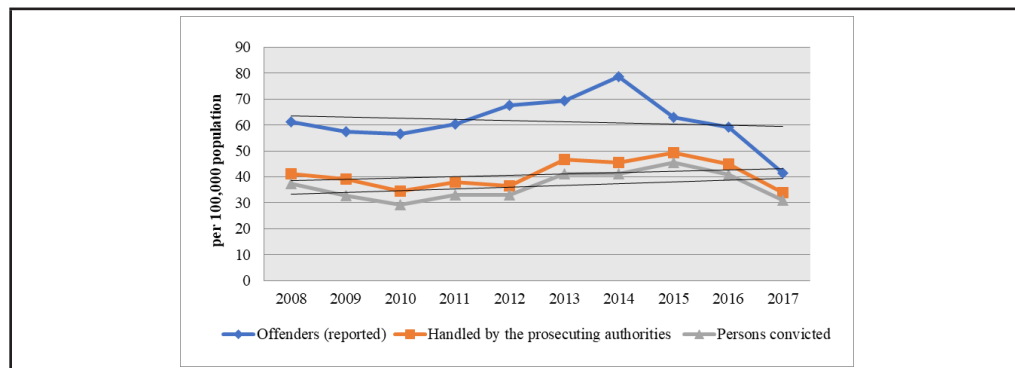


Figure I. Trends in registered environmental crime in Federation of BiH for the period 2008 – 2017

Source: Authors' graph based on data in statistical bulletins of the Federal Office of Statistics

Figure 2 presents environmental crime rates for reported, prosecuted and convicted offenders per 100,000 population in Republika Srpska for the period 2011 – 2017. From 2011 rate on reported offenders has been steadily increasing and reaching a peak in 2015 (from 63 to 119 offenders per 100,000 population). In 2016 and 2017, it declined for almost double (from 119 to 58 offenders per 100,000 population). Prosecution and conviction rates were not varying considerably between 2011 and 2014, while declining slightly from 2014 to 2017. In addition, the average number of reported offenders in Republika Srpska was 81 per 100,000 population annually, with an average growth of 5.5%. An average of 22 offenders was accused annually, with an average decrease of 10.8%. Moreover, the average number of convicted offenders was 18 per 100,000 population annually, with an average decrease of 11.2%. This may be indication that slightly more than a quarter of reports for environmental criminal offences per 100,000 population ended successfully with indictments, while 82% of filled indictments ended with a conviction.

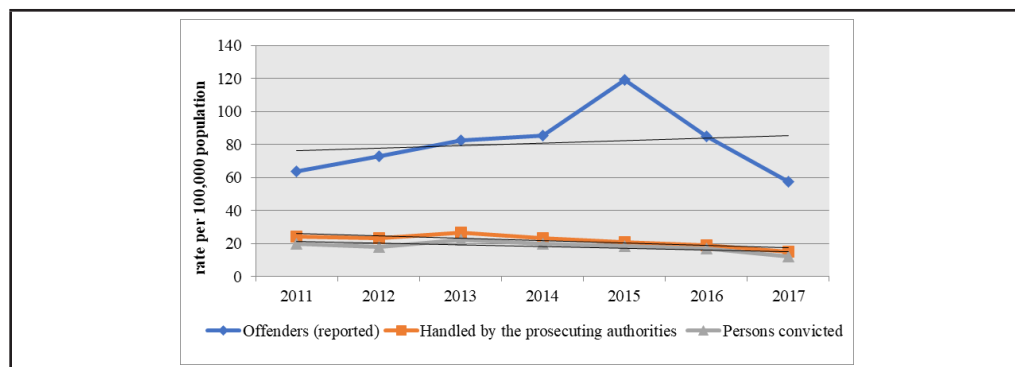


Figure II. Trends in registered environmental crime in Republika Srpska for the period 2011 – 2017

Source: Authors' graph based on data in statistical bulletins of the Republika Srpska Institute for Statistics

The number of reported, accused and convicted offenders for offences against the environment in Brcko District of BiH varies considerably in the period from 2011 to 2014, as shown in Figure 3. These numbers have been increased for more-less double in 2012 comparing to 2011, but from 2012 to 2014 decreased for almost three times. Between 2014 and 2016, number of reported, accused and convicted offenders was fairly consistent.

Additionally, in the period from 2011 to 2016, an average of 67 offenders was reported (average annual growth of 4.7%), 23 accused (an average growth of 17.6%) and 20 convicted (an average annual growth of 20.4%) per year. These data may indicate that slightly more than one third of reports for environmental criminal offences ended successfully with filled indictments, while 87 % of indictments ended with a conviction.

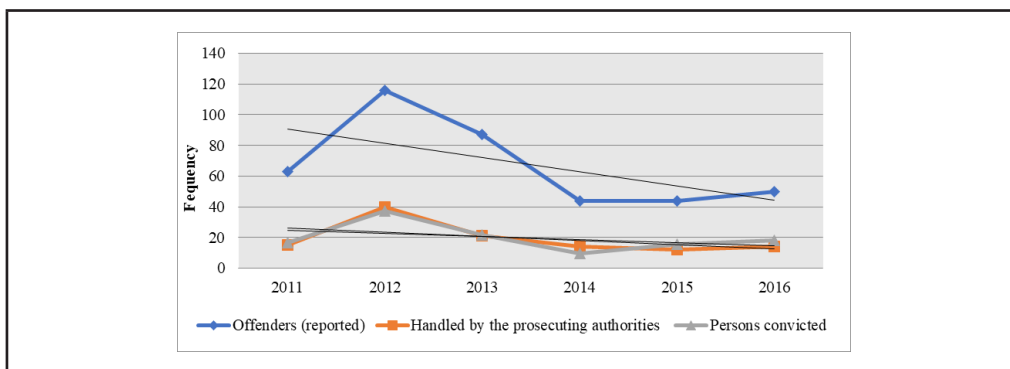


Figure III. Trends in registered environmental crime in Brcko District of BiH for the period 2011 – 2016

Source: Authors' graph based on data in statistical bulletins of the Agency for Statistics of BiH

In the structure of registered criminal offences against environment, agriculture and natural resources in Federation of BiH for the period 2011 – 2016, the most frequent one is forest theft. It accounts 97% of all reported, 98% of all accused and 97% of all convicted criminal offences from this group (Table 2). Illegal hunting, torture and killing of animals, devastation of forests and illegal fishing, are four groups of environmental criminal offences that, beside forest theft, stand out the most and are the most often reported and prosecuted form of environmental crime in Federation of BiH. Section other criminal offences includes 15 environmental criminal offences according to the Criminal Code of Federation of BiH (2017) that account for below 1% of the total number of reported, accused or convicted offenders in six-year period. It is important to state that four of them (producing injurious preparations for the treatment of livestock, treatment by unqualified veterinary surgeon, concealing the existence of a contagious animal disease and unconscientious acts in the circulation of pesticide) have not been registered at all.

Table II. Structure of registered environmental crime in Federation of BiH for the period 2011 – 2016

Article	Offenders (reported)	Handled by the prosecuting authorities	Convicted persons
	f	f	f
Forest theft (316)	8,536	6,844	5,576
Illegal hunting (319)	95	37	36
Torture and killing of animals (318)	78	48	36
Devastation of forests (315)	40	18	20
Illegal fishing (320)	15	7	32
Other criminal offences (15)	61	20	31
Total	8,825	6,974	5,731

Source: Authors' table based on data provided by the Federal Office of Statistics

Among the registered criminal offences against the environment in Republika Srpska for the period 2011 – 2016, the forest theft accounted for the largest share, followed by illegal hunting, torture and killing of animals, devastation of forests and illegal fishing (Table 3). The forest theft accounts 93% of all reported, 93% of all accused and 92% of all convicted criminal offences from this group. Section other criminal offences includes 18 environmental criminal offences according to the Criminal Code of Republika Srpska (2013) that account for 1.1% of the total number of reported, and below 1% of accused or convicted offenders in six-year period. It is important to state that eight of them (noise affecting the environment, illegal construction and operation of facilities and equipment, producing injurious preparations for the treatment of livestock, unconscientious acts in the circulation of pesticide, treatment by unconscientious veterinary surgeon, failure to comply with an order on measures for the protection of the environment, importing hazardous material into the Republika Srpska and exporting protected plants or animals) have not been registered at all.

Table III. Structure of registered environmental crime in Republika Srpska for the period 2011 – 2016

Article	Offenders (reported)	Handled by the prosecuting authorities	Convicted persons
	f	f	f
Forest theft (430)	5,549	1,841	1,477
Illegal hunting (437)	177	71	68
Torture and killing of animals (433)	58	16	8
Devastation of forests (431)	45	14	12
Illegal fishing (437)	37	24	19
Other criminal offences (18)	68	10	15
Total	5,934	1,976	1,599

Source: Authors' table based on data provided by the Republika Srpska Institute of Statistics

What has to be kept in mind is that these statistics do not provide information regarding the impact of environmental crimes. A recorded case may consist of the illegal logging of thousands of m³ of timber, or of the illegal logging of one or more trees for the purpose of the theft (quantity of timber cut exceeding two m³ is punishable as prescribed in Criminal Code of Fed-

eration of BiH). The effects of illegal logging are wide ranging, some of the most obvious being loss of habitat and biodiversity, erosion and land degradation, desertification, as well as social disruption and adverse economic impacts (Markus-Johansson et al., 2010). Illegal forest activities, in the form of illegal logging and trade in illegally logged timber, are problems recognised by all the countries in the South Eastern Europe and were already common in the years before the social and economic reform (Markus-Johansson et al., 2010). In addition, it is a regional fact that statistics on wood use and wood production do not comply (Dragovic, Ristic, Püzl, & Wolfslehner, 2017).

Forestry is one of the most important nature-based resource sectors in BiH. Following official crime statistics, forest theft should be recognized as a serious environmental problem in BiH. As Markus-Johansson et al. (2010) found, main drivers behind the continuing high rates of illegal logging and other related illegal forest activities are the socioeconomic conditions, especially in rural, forested regions. High unemployment figures and low salaries encourage illegal logging, both for firewood and commercial use. Other factors with an important role in stimulating illegal forestry activities include the favourable price of illegally logged wood; the deficiency in wood supply for the wood processing industry; and gaps in the legal and policy framework (Markus-Johansson et al., 2010). In the period 2012 – 2016, the estimated damages of forest theft in Federation of BiH amounted to BAM 10,226.342 (EUR 5,228 645.6). Altogether 146,780 m³ of forests were destroyed. The total amount charged for fines imposed during this period was BAM 116,782 (EUR 59,709.6) or 1.14% of the estimated amount of damages on the basis of timber (Ministry of agriculture, water management and forestry of the FBiH, 2017). Fines on individuals engaged in illegal forestry activities are not effective as a deterrent: since the fines are lower than the potential profit that can be generated, there is no disincentive to carry out illegal activities (Markus-Johansson et al., 2010). This raises questions of the expediency of filing a reports and endangering of forests keepers when other authorities do not protect state property or do not solve criminal and misdemeanour charges for forest theft and other illegal forest activities in timely manner (Muratbegovic & Guso, 2011; Ministry of agriculture, water management and forestry of the FBiH, 2017). The poor organization of the forestry administrations, limitations in human resources and slow judiciary reaction, bring into question the implementation of the government's Action Plan to Combat Illegal Activities in the Forestry Sector and Wood Industry in Federation of BiH (Ministry of agriculture, water management and forestry of the FBiH, 2017).

Although accounts for less than 1% of the total number of reported, accused and convicted environmental offenders in BiH, criminal offence of forest devastation is another serious threat to the country's forest ecosystem. It is defined as any unlawful activity which lowers the forest land fertility and thus puts at risk or makes impossible the sustainability of forest production or silviculture on that land, or endangers forest survival and multiple-use functions (e.g. larger-scale felling approximating the forest clearing or clear cutting, too intensive selection cutting, tree girdling, any activity that can cause weeding, runoff and soil loss by water or wind, etc.) (Law on Forests of Republika Srpska, 2013)⁹. It is difficult to estimate real situation of these criminal activities given that they are generally conducted in areas whose isolation and geographical distance from the populated areas make it impossible or at least to greatly com-

⁹ Law on Forests: Official Gazette of the Republika Srpska, Nos. 75/08 and 60/13.

plicate the implementation of supervision and timely reaction by the competent state authorities. Therefore, it may be quite justified and reasonably assumed a particularly high percentage of so-called dark figures of criminality in this field (Batricevic, 2012).

The criminal offence of illegal hunting in our country is reported much more frequently than other criminal offences that protect animals. However, the fact that this criminal offence is often carried out by professional hunters, within and behind the guise of regular and organized hunting activities, produces quite justified doubts about a considerable number of cases that go unreported (Legal Protection of Animals - Laws, Practice and Legal Science on Animal Welfare, 2013). The same assumptions should be made in relation to registered criminal offences of illegal fishing in BiH. As of illegal hunting, this criminal offence can be carried out within and behind of completely legitimate and organized fishing activities, whether economic, or sporting (Batricevic, 2012). Therefore, available statistical data should be taken with reserve and proceed from assumption that in reality, number of offenders of these criminal offences significantly exceeds the number of officially reported, accused and convicted persons.

Beirne (1999) defines animal abuse as acts which contribute to the pain or death of an animal or otherwise threaten the welfare of an animal. Due to characteristics of the object of criminal offence of torturing and killing of animals, but also the manner and circumstances surrounding the animal abuse phenomena, "only a tiny fraction of these cases is recorded in official data" (Beirne, 2004, p. 49). Furthermore, Beirne (2004) have stressed that animal abusers whose acts eventually enter official statistics not necessarily typify animal abusers as a whole; but perhaps they are simply less adept at avoiding detection. From the other side, Beirne (2004) assumes that perhaps the acts of those who commit greater abuse or who commit it more regularly are somehow less likely to be recognized, detected, and recorded. Criminal offence of torturing and killing of animals is the third most commonly registered environmental criminal offence in BiH for the period 2011 – 2016. Although accounts for less than 1% of the total number of reported, accused and convicted environmental offenders, torturing and killing of animals should not be underestimated by experts or general public. Social tolerance of animal abuse allows many individuals who, under other circumstances, would avoid committing cruel acts, to learn and practice very cruel treatment of animals. From this perspective, violence and cruelty against humans is nothing but the final step of a longer process in which animal abuse usually preceded (Lucia & Killias, 2011).

CONCLUDING REMARKS

In this study, it was discovered several important facts that contribute to knowledge of environmental crime in BiH. One of the first findings based on a literature review is a lack of past empirical studies focusing on environmental crime, knowledge and awareness in the general public and research interest among community of experts in criminology, law, criminal justice and so forth. There was rapid development in environmental protection legislation at the beginning of XXI century on the one hand and yet no interest from criminologists in studying environment crimes and their harms in BiH. As Eman, Mesko, Dobovsek, & Sotlar (2013) emphasized five years ago, South Eastern Europe countries are still at the very beginning of research on the problems of environmental crime and environment protection. BiH is lagging behind all other countries in this field. Certainly, one reason is that there are many legal and policy-related di-

mensions to environmental issues, but the criminal components are not considered important (enough) by the institutions of formal social control.

The review of the aggregated data of the Agency for Statistics of BiH in the period 2011 to 2017 showed that environmental crimes comprise less than one-tenth of all registered, accused and convicted criminal offences in BiH. Nevertheless, they are third most-reported criminal offences or the fourth when it comes to accusations and convictions. The ratio between the number of reports and the number of indictments is almost two to one, while 89% of indictments ended successfully with criminal convictions.

The overall environmental crime trend was slightly decreasing when it comes to reported offenders, while slightly increasing for prosecuted and convicted offenders for the last ten years in Federation of BiH. A different situation is evident in Republika Srpska where overall environmental crime trend was slightly increasing for reported offenders and clearly decreasing for prosecuted and convicted offenders for the last seventh years. In Brcko District of BiH is evident decreasing trend both in reports, prosecution and conviction for environmental criminal offences in the period 2011 – 2016. Almost two third of reports for environmental criminal offences per 100,000 population in Federation of BiH and slightly more than a quarter in Republika Srpska ended successfully with indictments. Additionally, in Brcko District of BiH somewhat more than one third of reports ended successfully with indictments. The biggest disparity between reported and charged offenders is evident in Republika Srpska. In more than 80% of cases (from 82% in Republika Srpska, 87% in Brcko District of BiH to 90% in Federation of BiH) filled indictments ended with a conviction in all three jurisdictions. In the end, as investigations rarely lead to accusation it may be considered as an indicator that the enforcement chain of environmental crime has been quite limited in BiH.

Predominantly, from 2011 to 2016 the forest theft and the devastation of forests, following by the torture and killing of animals and illegal hunting and fishing are most often environmental crime forms institutions of formal social control in BiH deals with. In Federation of BiH forest theft accounts 97% (93% in Republika Srpska) of all reported, 98% (93% in Republika Srpska) of all accused and 97% (92% in Republika Srpska) of all convicted environmental crimes. This leaves extremely small share of other forms in registered environmental crime, bearing in mind that some of the prescribed criminal offences have not been registered at all. This may be interpreted either as a success of the criminal justice system, or as an indicator of its failure to diligently identify and report crimes which fall under this category (Sina, 2014).

The analysis revealed that crimes against the environment exist in BiH. More importantly, it is widely assumed that in this field there are a considerable number of cases that go unreported and which are therefore not reflected in official statistics. The number of reported crimes is heavily dependent upon the willingness of the public to inform the authorities of suspected environmental crimes and upon the enforcement approach of the investigating authorities (Sina, 2014). Moreover, on the one hand, this could indicate the tendency to make these crimes rare, while, on the other hand, these data may be interpreted as indicators of the low level of environmental awareness in our society, that is, the fact that such behaviours are rarely identified as illegal. It seems that the second interpretation is more probable. Small number of reported, accused and convicted persons for different environmental crimes actually indicates that citizens, as well as competent state bodies, in a small number of cases are able to recognize criminal offences against the environment, and conduct an efficient response (Batricevic, 2012).

Having in mind that BiH is country with economy in transition and with relatively slow progress in EU integration process, rising awareness on need for prevention and combat with illegal activities represent one of the mayor challenges for its society (UNODC, 2011). Bearing in mind the environmental, social and economic impacts of environmental crime, a continuous lack of empirical studies as well as results of official reports on the state of ecological system and its (non) protection in BiH, this study can be considered as scientifically and socially justified and suitable for further research. Expected contribution of the study lies in the better understanding of the phenomenology of environmental crime in BiH. Valid and reliable data, as well as their correct interpretation are crucial for the creation and application of efficient criminal justice policies. In that manner, assessing causes and conditions that favour inconsistency between the number of registered, accused and convicted persons for these offences, including the analysis of pronounced criminal sanctions, as well as the typology of offenders should be conducted. Having in mind a reasonable assumption of a particularly high percentage of dark figures in the field of environmental crime in BiH, further analysis should encompass alternative ways for measuring the volume, structure and other characteristics of environmental crime in BiH, such as fear of crime and victimization studies, expert surveys as well as observational studies.

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