

Environmental crime and green criminology in South Eastern Europe—practice and research

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Abstract All contemporary societies are facing environmental crime as one among many modern threats to the environment and human / animal life and this is due to the unlimited exploitation of natural resources and pollution. The aim of the present paper is to describe different responses to environmental crime and the development of green criminology in South Eastern Europe. In this region environmental crime occurs under the influence of social conditions and circumstances in which the environment is used as a source of resources for survival, as well as economic factors which mean the environment is used as a resource for profit. For countries in South Eastern Europe it is typical that environmental criminals change their *modus operandi* and adapt to new socio-economic circumstances, use different loopholes in legislation and exploit gaps in infrastructure and enforcement leading to committing environmental offences without being processed and punished. In many countries of South Eastern Europe green criminology is still in its nascent stages but is focusing on similar obstacles and challenges to those identified elsewhere, such as multi-disciplinarity, cooperation with the natural sciences, and responding to particularities in the region, such as pollution of marine and coastal ecosystems, hunting tourism, and organized crimes such as timber logging.

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Introduction

The development of green criminology can be seen as originating from the late 1960s and the beginning of the 1970s, when environmental sociologists and critical criminologists first emphasized the problem of environmental pollution and destruction. Through history, three directions of green criminology are identified (radical-critical, sociological-theoretical, sociological-philosophical) [29, 42], which later combined under what is today known as *green criminology*, named as such by Lynch in 1990 [34, 43]. At the beginning of the 21st century environmental problems and green criminology still represent a new perspective in the field of criminology; therefore there is a need for new theoretical tools and practical suggestions. South [61] stresses that in the 21st century relevant criminology needs to be aware of the meaning of the environment, emphasizing the fields of environmental, human and animal rights and the threats they face. South connects criminological research in the field of environmental crime with Becks' theory of social risk [2] and emphasises the need for changes or adjustment of criminological theories to meet current challenges and the problems that arise from 'progress'. In the area of environmental issues, criminology can benefit from an interdisciplinary approach to researching and investigating different deviant phenomena affecting the environment. This leads to an ongoing debate about the appropriate terminology to be used. Moreover, criminologists are dealing with vivid and constantly changing phenomena that will influence changes in criminology as such [66 p. 3]:

The link between environmental issues and criminology finds its expression in environmental or green criminology, itself a development that has arisen from advances and concerns from outside the field as such. In this relatively new area of research and scholarship the concern is to stretch the boundaries of mainstream criminology to accommodate issues of global significance, while also utilizing the insights of conventional criminology to illuminate ways in which to understand and to respond to environmental harm.

Green criminology is still formulating its basic terminology but at the same time is expanding its field of study. For green criminology, it is the sociological perspective on environmental crime that is dominant [9, 11], with an interest in the damage to environment done by harmful practices and not simply by actions that break the law, as a criminal law perspective would emphasise. White [66 p. 8] has defined green criminology¹ as "*the study of environmental harm, environmental laws and environmental regulations by criminologists*". He tried to expand the research field of green criminology with the introduction of philosophical perspectives; anthropocentric, biocentric and eco-centric approaches to environmental harm. The field of study of green criminology is broadening and deriving key problem areas of environmental harm [66] such as 1) climate change; 2) waste and pollution; 3) problems affecting biodiversity; and 4) the increase of various transnational crimes. White [67 p. 6] has also begun to discuss *ecoglobal criminology* as a framework or paradigm within criminology.² Other possible directions in the field of green criminology most often

¹ At first, White [66] used both terms, environmental criminology and green criminology, together at the same time or both terms in succession, one after another, to avoid confusion and opposition.

² For White [67 p. 6] "*ecoglobal criminology refers to a criminological approach that is informed by ecological considerations and by a critical analysis that is worldwide in its scale and perspective*".

discussed by criminologists are *eco-critical criminology*³ [11], so called *non-speciest criminology*⁴ [3, 10] and *green-cultural criminology*⁵ [6]. The most sophisticated was the proposal of Herbig and Joubert [30], later broadened by Gibbs, Gore, McGarrell and Rivers III [25], about a totally new branch of criminology, where the field of interest merges at least partly with the field of green criminology—*conservation criminology*.⁶ Nevertheless, the development of the environmental crime field and green criminology is far from complete. Observing and studying everything emphasized above, criminologists in South Eastern Europe have tried to respond to environmental crime in the region and answer questions concerning environmental issues, forms of environmental crime, development of this new branch in the field of criminology and the range of its research, and the role of criminal justice systems in responding to environmental crime.

The area of South Eastern Europe is not easily defined, because there is no “correct” geo-vision [8 p. 123], but for the purpose of this paper we employ the narrow form of the definition for the region of South Eastern Europe, including only the countries of the former Socialist Federal Republic of Yugoslavia: Bosnia and Herzegovina, Croatia, Kosovo, Former Yugoslav Republic of Macedonia, Serbia and Slovenia. The region of South Eastern Europe lies on the Balkan Peninsula and is therefore sometimes referred to as the Western Balkans. It includes four biogeographical areas: Mediterranean, Central European, Alpine and Pannonian and is characterised by diversity of geography, ecosystems, ethnic groups, religions, culture and economies but the sharing of a common history [63]. In the 1990s, the collapse of socialist political systems and a series of conflicts and instability led to the dissolution of the Socialist Federal Republic of Yugoslavia and to important democratic changes in the region. Among other changes this had an important impact in the field of environmental protection and led to certain positive results, including intensive efforts to reduce corruption; new environmental protection legislation together with stricter financial regulations. On the other hand, one of the most pressing regional obstacles is the overall lack of coordination and inconsistencies between the criminal

³ A branch of critical criminology, called eco-critical criminology, was formed to contrast with the critical-criminological approach: the eco-critical criminological approach includes the analysis of non-human nature.

⁴ Non-speciest criminology is based on the belief that animal species are an important part of the environment (e.g. animal-centric philosophical perspectives) and thereby an important object of study for criminology. Beirne [4 p. 177] emphasized that theory and research on animal abuse should be developed by criminologists for the following reasons: 1) animal abuse can be a signifier of inter-human conflict; 2) animal abuse already is an existing object of criminal law; and 3) animal abuse represents a violation of rights.

⁵ Brisman and South [6 p. 30] argue that green criminologists should seek to imagine new ways of confronting critically the intersection of culture, crime, justice, and the environment. There are various ways to incorporate a concern with the cultural significance of the environment, environmental crime, and environmental harm into the green criminological enterprise. Therefore, these authors believe that green-criminology and cultural-criminology cross-fertilization would be mutually beneficial.

⁶ The so-called criminology of environmental protection is a social science, which uses an interdisciplinary as well as multidisciplinary research approach to understand environmental criminality, as well as threats and risks that are connected to it. The focus of conservation criminology begins with assessment of environmental risk. Its’ framework combines knowledge of three disciplines: 1) criminal justice and criminology; 2) risk and decision analysis; and 3) natural resource conservation and management. Gibbs and colleagues [25] believe that conservation criminology can enrich the knowledge base of theories, methods and governance about environmental issues by moving towards a more generalizable theory and beyond limitations of a single discipline.

justice agencies. In the field of environmental protection, administrative and judicial sanctions are generally weak. Furthermore, an overall lack of well-established bilateral processes with neighbouring countries, including data collection and monitoring systems, to respond to environmental issues has been identified [58]. Today the region of South Eastern Europe has a clear European perspective that includes aiming for a high quality of environment and sustainable development [63].

The characteristics and developmental changes in the region described above have had an impact on responses to environmental crime issues and the process of development of green criminology but these also depend on foreign knowledge and publications about this 'new' branch of criminology. The latest findings from surveys in the South Eastern European countries [38, 48, 49] show that environmental crime occurs under the influence of social conditions and circumstances, where the environment is used as a resource for survival, and economic factors where the environment is used as a resource for profit. What is more, environmental criminals have an incredible ability to change their *modus operandi* and to adapt to new socio-economic circumstances or legal changes in the field of environmental protection, closely connected with the unsuccessful or insufficient implementation of environmental protection legislation. For countries in South Eastern Europe it is typical that environmental criminals use different loopholes in legislation and exploit gaps in infrastructure and enforcement to commit environmental offences without being processed and punished. In some countries the problem of environmental injustice goes even further with rich and powerful groups (i.e., industrialists and managers) attempting to influence or impede environmental protection legislation. In either case there is a negative impact on the rule of law at the state level [14 p. 165].⁷

A literature review of criminological and other works on environmental crime in countries of South Eastern Europe reveals that work such as that by Pečar [56] on eco-crime launched a more organized and focused study of this 'new' form of crime. Initially surveys were restricted to specific forms of environmental crime, specific regions or later nations but from 2009 onwards, scientific research work on environmental crime in South Eastern Europe started to slowly develop and spread. The past sharing of a common state, similar culture, history, language and cooperation enabled the exchange of findings, cognitions and cooperation. The present paper therefore provides a presentation of research on environmental crime and green criminology in the countries of South Eastern Europe. Different perspectives of environmental crime and with it related issues are emphasized and the conclusion summarizes the most important findings about the development of green criminology and new challenges concerning environmental issues in the region.

⁷ The analysis of the connection between corruption and rule of law, conducted by the World Bank, showed that normally the economic sector is controlled by state institutions through bank loans. But in transitional countries (especially the Western Balkans) this relationship changes when powerful corporations, interest groups or organised crime [65] gain control over members of government, other politicians or civil servants. In cases where interest groups exert too much pressure on the adoption of legislation when laws are passed, through corruption and other illegal acts, experts refer to the phenomenon of 'state capture' [14 p. 172]. For example, in the field of environmental protection this happens when the government passes laws in favour of companies which do not act according to the highest environmental protection standards. In Slovenia, political influence and involvement of interest groups in large state investments was discovered in the case of the building of a thermal power plant in the town of Šoštanj.

Research on crimes against the environment in Slovenia and threats to the environment in South Eastern Europe

The beginning of the 21st century has seen a growth in environmental protection awareness and spreading of academic and professional debates on environmental issues and the causes of environmental harm. This trend has reached the South Eastern European territory but at first was not very successful in engaging the scientific field including the social sciences. Nonetheless, aware of these issues and environmental change, researchers from Slovenia posed a research question: “Is environmental crime in Slovenia, and in South Eastern Europe, a serious threat to the environment and humans?”.

With the aim of answering this question and studying environmental issues from social science perspectives a national research project on *Environmental Crime—Criminological, Victimological, Crime-preventative, Psychological and Legal Aspects*⁸ was launched covering eight research fields: criminology, criminal investigation, crime prevention, victimology, psychology, law, national security (system) and crisis management. The central goal of the project was to investigate the current situation concerning environmental issues in Slovenia and other countries of South Eastern Europe. Besides the research results produced, the project represented an important contribution to research on a national level, going beyond previous research on environmental crime and related issues in Slovenia. The most important achievements are as follows:

- 1) Cooperation with the scientific community on a national and international level in the form of conferences, meetings, workshops and academic networks, such as a ‘green criminology network’;
- 2) Incorporation of ‘green topics’ in the curricula of the Faculty of Criminal Justice and Security University of Maribor;
- 3) Cooperation with state experts and governmental agencies like the Ministry of the Interior (e.g., education of police officers about environmental crime and environmental issues), the Ministry of Environment and Spatial Planning (cooperation in preparation of the national programme for crime-prevention and suppression [59]);
- 4) Cooperation with civil society and non-governmental organisation (e.g., conferences, study visits; working meetings at the Ombudsman’s Office with representatives of various civil initiatives and NGOs);
- 5) Facilitating work with the media that resulted in mutual exchange of information and regular cooperation; and
- 6) First steps into the international research community concerned with environmental topics (e.g., North-Atlantic Treaty Organisation workshop, known as NATO ARW, Groupement européen de recherche sur les normativités—GERN

⁸ The project was funded by the Slovenian Research Agency. It was a 3 year (2009–2012) research project with a research team of eight researchers from FCJS UM (Gorazd Meško, (project leader), Igor Areh, Bojan Dobovšek, Katja Eman, Iztok Podbregar, Andrej Sotlar, Jerneja Šifer, Bojan Tičar, and Peter Umek) and two international partners (Charles B. Fields from Eastern Kentucky University and Tim Hope from Keele University). One of the research team members was a junior researcher, preparing a doctoral dissertation about environmental crime from comparative criminological and criminal justice perspectives.

and international conferences, such as Academy of Criminal Justice Sciences, European Society of Criminology, Academic Council of the United Nations System, American Society of Criminology etc.).

The project has had several implications for policy and practice. The results represent an important starting point for changes and the development of legal protection of the environment in the region of South Eastern Europe and raising awareness in civil society. The improvement of environmental protection policy can be achieved with research based political decisions and actions which lead to a safer society. A multidisciplinary approach and combination of different pro-active and reactive methods of responding to environmental crime are necessary for successful responses to environmental crime, taking into account awareness raising, prevention and deterrence.

The research project on environmental crime

One of the first findings of the national research project, based on a literature review, was that there was a lack of green criminology⁹ in Slovenia and elsewhere in the region. The one and only work from the last quarter of the 20th century in this field reaches back to 1981, when Pečar [56] discussed the new forms of criminality in his attempt to define the term environmental crime. He emphasized the role of criminology in responding to deviations against the environment, offered an etiologic classification of the known forms of environmental crime in Slovenia, defined the role of criminology and sciences related to it, and described the tasks of control institutions. Despite his forecast about the future, interest in green criminology in the subsequent years subsided. The review showed a rapid development in environmental protection law on the one hand and yet no interest from criminologists in studying crimes against the environment. Only in the past few years, since 2007, are we witnessing the re-invented green criminology as a significant branch of criminology in Slovenia. First, due to the high profits made in their trafficking, endangered animal and plant species, attracted the interest of researchers [16]. In 2008 the first analysis of detected environmental crime forms and their classification in the phenomenological scheme was offered [17]. In 2009, green criminology perspectives and research challenges concerning crimes against the environment in the Republic of Slovenia were presented [7, 19] and comparative criminology perspectives on crimes against the environment [24] have been emphasized. Besides criminological aspects, organized environmental crimes [18, 46, 55] were studied. A debate about criminological

⁹ Green criminology fundamentally refers to researching environmental criminality, legislation and related activities by criminologists. It represents more than just a simple discussion about the environment in general and about what is necessary to do for its conservation and protection [66]. Within the frame of green criminology, research about certain trends, phenomena and other environmental issues is required and this favours a multidisciplinary approach [61], especially cooperation between sociological and natural science fields. White [66] includes conceptual analyses as well as pragmatic interventions and also includes a multidisciplinary strategic approach (economic, legal, social and ecological evaluation). Such an approach contains organizational analyses as well as investigation of successful practices in the field of control methods, methods of evaluation, implementation of legal legislation and education [6].

perspectives on threats to the environment [48], Slovenian environmental protection policy [60] and situational crime-prevention measures [47] has followed.¹⁰

This 'new' beginning of criminological studies in this part of Europe has joined the global discussion about environmental crime, perpetrators and victims. The project Crimes against the Environment was expanded in the region of South Eastern Europe with a NATO Advanced Research Workshop *Managing Global Environmental Threats to Air, Water and Soil—Examples from South Eastern Europe*¹¹ The purpose of the workshop was to contribute to the critical assessment of existing knowledge about environmental threats as a new important topic and threat to national and global stability. With the aim of identifying directions for future research, environmental protection was recognized as a significant topic for emerging democracies and post-conflict states. Furthermore, close working relationships between governmental representatives, scientists, experts, public/state administrations and civil society were improved in sharing the task of seeking acceptable solutions for the reduction of environmental threats to individual, national and international security. The principal findings are presented in a book *Understanding and Managing Threats to the Environment in South Eastern Europe* (published early 2011 [48]). The publication has maintained the message of the meeting, that there is a need for multi- and interdisciplinary approaches to the understanding of environmental threats [15, 35, 45, 47, 54], the value of combined approaches for the natural and social sciences [50, 68], and the important role of science in responding to environmental issues [13, 46, 57, 60].

With time and newly gained knowledge about environmental crime, the questions about environmental issues became more complex and different perspectives and opinions about these issues have been presented and discussed at conferences [19, 22, 23], workshops¹² [28, 46, 47] and roundtables¹³ [20]. The general conclusion was

¹⁰ A national conference entitled Multidisciplinary Approaches to Reducing Threats against the Environment was organized with the aim to tackle environmental issues on the national level, emphasizing a multidisciplinary perspective on environmental crime and the need to respond to it, gathering experts from government and non-government fields. The crucial conclusion of the conference was that all participants deal with the same environmental issues but the problem was that they named them differently; therefore we need to start to talk the same language to be able to understand each other and work together. Papers from the conference were published in the special issue of the Journal of Criminal Justice and Security (orig. revija Varstvoslovje) entitled Criminal Justice and Security and Environmental Protection.

¹¹ The NATO ARW meeting took place in June 2010 in Ljubljana, Slovenia. The workshop received considerable media attention, with more than 40 experts and researchers from the countries of South Eastern Europe (Croatia, Bosnia and Herzegovina, Former Yugoslav Republic of Macedonia, Serbia, Slovenia, Bulgaria, Romania) and other parts of the world (Czech Republic, Canada, United States of America) participating. Objectives of the Workshop were the establishment of a network of researchers and experts in the area of environmental threats in the region of South Eastern Europe, exchange of new ideas and identification of more efficient responses to environmental threats and directions for future research and educational cooperation in the region.

¹² In September 2011, the GERN Workshop: *Green Criminology and Protection of Environment—Epistemology, Research, Policy Making and Action* (<http://www.fvv.uni-mb.si/GERNworkshop/abstracts.html>) was organized in Ljubljana. The objective of the workshop was to identify how promising green criminology is, what the extent of knowledge on environmental issues is, and what forms of environmental criminality should (or could) be studied in a social scientific manner. In addition, discussions on public awareness, prevention and law enforcement were tackled.

¹³ A roundtable about environmental crime and green criminology in September 2010 was actually the beginning of the confrontation with different obstacles that appeared during the research work, such as diverse viewpoints on the 'relationship' between environmental criminality and green criminology, and whether green criminology can successfully respond to emerging environmental issues and how.

that environmental crime, as a consequence of irresponsible human behaviour and illegal interference, is important to national and global security. The question of environment and environmental politics is becoming a more and more important part of public policy, dealing with a fundamental question for the survival of the human race. A network of researchers and experts to exchange ideas and research results, publish research findings and apply for joint research projects in the South East European region and elsewhere now exists and research work was collected and published in the book *Environmental Crime and Environmental Protection—Multi-disciplinary Perspectives* (orig. Ekološka kriminaliteta in varovanje okolja—Multi-disciplinarne perspektive) [49]. This is the first monograph on environmental crime in the Slovenian language, while other papers have been published in national and international outlets.

Environmental crime in the countries of South Eastern Europe

The NATO Workshop stimulated additional cooperation among researchers that resulted in the study and development of research on environmental issues in South Eastern Europe [21, 38, 47, 54, 62, 68] and the development of green criminology and other sciences [48, 49]. These joint research efforts are presented below.

In Bosnia and Herzegovina the rapid development of technologies has had an impact on the environment in the country [51], especially the use of powerful new energy sources and new industrial plants [54]. In the last decade in Bosnia and Herzegovina the most problematic environmental crime forms are: 1) water and air pollution (i.e., industrial plant emissions, along with increased amounts of ash and soot from thermal power plants) [53]; 2) de-forestation and timber trafficking; and 3) animal torture and trafficking (e.g., violent behaviour towards animals in the form of poaching and hunting endangered species for meat, trophies, or trafficking). 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) [62, 64].

For Croatia one of the top problems is inefficient waste management. Kulišić [35] and Levenat [36] emphasize that the manufacture and burning of hazardous waste in cement factories without sewage treatment is dangerous. In many situations, water and soil remediation is impossible, leaving some areas virtually (and permanently) barren and uninhabitable. Furthermore, game-poaching, hunting-tourism and over-fishing, along with deliberate animal abuse [5], illegal logging and illegal excavation of minerals [40], are the most prevalent environmental issues. Finally, the country has a long coastline and environmental threats, such as water runoff from urban areas, and pollution in the course of oil transport, present risks to marine and coastal life [52].

The most important environmental issues in Kosovo are air pollution, water pollution, and soil contamination [27]. Air quality is exacerbated by the transport sector, which possesses a large number of old vehicles that use low-grade fuel, and which employs trains running on diesel, rather than electricity. The thermal power plants have been causing serious amounts of water pollution. Finally, coal exploration creates open mines of lignite, which are later filled with water. The coal that is

extracted is usually transported in open wagons or truck-trailers, and stored in containers or facilities where it is not prevented from spreading ash into the air, soil, and water [27].

In the Former Yugoslav Republic of Macedonia, besides the general air, water and soil pollution, together with illegal waste disposal, the most problematic forms of environmental crime appear to be the devastation of forests due to illegal logging, as well as poaching and illegal fishing [45]. Illegal timber logging is one of the most productive organized crime activities in Macedonia, where criminal groups protect their work with an impressive arsenal of weapons. Organized crime also thrives in Macedonia as a result of bribery and corruption, undefined (or under-defined) criminal policies for environmental crimes, low penalties for those that do exist, lack of awareness on the part of the public, and, finally, organized crime's legal activities, which provide cover for their illicit endeavours [44].

In Serbia, the problem of excessive hunting and over-fishing stands out the most. What is more, the poaching has spread enormously and the state has a huge problem with hunting-tourism affecting protected animal species. These illegal acts often also involve the smuggling of animal and plant species, such as deer, birds, turtles, falcons, and even butterflies. Such activity can be facilitated by corruption at the highest level and can also be linked to corporate environmental crime. Pešić [57] emphasizes that corruption and incompetence have resulted in failure to prevent illegal discharges of toxic factory effluent, and other air and water pollution oversights. Finally, the imports of obsolete dirty technologies from the Western world, and the theft of timber, generally committed by organized crime groups, are again very close connected with corruption and bribery [38].

For Slovenia, the most typical forms of environmental crime include 1) water, air and soil pollution; 2) waste management, disposal and trafficking; 3) illegal trafficking of animal and plant species, minerals and fossils; 4) animal torture and illegal hunting. One of the major challenges in Slovenia is the dependence of municipalities (regions and people) on the industry and businesses in their area that are often major polluters causing local representatives to be indulgent and tolerant towards pollution due to economic and workforce dependence on these businesses (e.g., paint, varnish and resin factory Helios, chemical and metallurgy factory Cinkarna Celje, cement factory Lafarge Cement and Salonit Anhovo). Unique to Slovenia are rich water resources, forested land and nature areas that are still largely undamaged. Slovenia is spatially located in the transition zone between Western and Eastern Europe and the border between North and South, and is known for bringing together diverse worlds, from the Alps to the Dinarides, and the Pannonian to the Karst. It is also known as a transit country for organized criminal groups and this applies to environmental crime as well, with the last 3 years particularly dangerous because of the illegal transport of waste from Western Europe to the East and trafficking of animal and plant species in the opposite direction [49].

Perspectives on environmental crime in South Eastern Europe

Understanding the reasons for and the causes of environmental crime and harm leads to efficient protection of natural goods. 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 [12]. Furthermore, this has a positive impact on the development of the social sciences and higher education programs, and on research cooperation and knowledge transfer in the region.

Criminological, victimological and crime prevention perspectives on environmental crime have been the most often and most broadly studied. From the criminological perspective, the phenomenology of environmental crime in Slovenia was reviewed. Analysis shows that perpetrators of environmental crime in Slovenia can be divided into five groups: 1) environmental crimes of an individual; 2) environmental crimes of the rich and powerful; 3) environmental crimes of individual interest groups; 4) environmental crimes of the state or ruling authority; and 5) transnational environmental crimes. It is possible to conclude that the primary reason for committing crimes against the environment is human nature related to anthropocentric attitudes toward the environment. The reason for committing environmental crime lies in nature itself, because the environment represents resources for survival and for the opportunity to make profit (or to avoid cost). Very rare are the cases where offenders have a different reason for committing environmental crime, such as animal torture. A typology of victims of environmental crime and responses to victimization was developed. Deriving from the project definition of environmental crime and taking a broad environmental justice perspective, we can count eight groups of environmental victims: air, water, soft soil, mineral materials, human species, animal species, plant species, and microorganisms. With the aim of protecting environmental victims, environmental legislation has strengthened possibilities to protect the environment and people from potential environmental crime and possible environmental harm. Undoubtedly, for the response to this type of crime, good cooperation between law enforcement and other competent agencies is important [47]. Environmental crime prevention offers a more or less inexpensive and non-aggressive method for responding to environmental crime and protecting the potential victim [32]. The crime-prevention perspective focused specifically on situational crime prevention and in the process of transferring situational crime prevention techniques to environmental criminality a situational environmental crime-prevention model was formed. This involves the basic crime prevention principles with the aim of reducing the commission of crime by designing models that eliminate crime opportunities (e.g., redesigning enforcement strategies to cut off industry-specific criminal opportunities; improvement of enforcement effectiveness with the emerging knowledge of the offender's characteristics and with the increase of technical training [47]).

Criminal investigation perspectives have also been analyzed. Slovenian police investigate an average of 145 cases of crimes against the environment per year, a small number compared to other offences such as property crime. In-depth review of environmental crime scene investigation in Slovenia revealed that the main problem in investigations is that it is generally difficult to collect proper evidence on which indictments can be based [15]. Another worrying issue is the exposure of criminal investigators at environmental crime scenes where not only their health but also their lives may be endangered.

Despite the fact that knowledge about the circumstances, attributes, and consequences of environmental crime may be available, the usually unresolved issue is the

identity of the perpetrator. To be able to overcome this obstacle in the criminal investigation process, better cooperation between the competent agencies is necessary [15]. People rarely report environmental crime offences to the police, due to not knowing that a crime against the environment has been committed or due to the fear of being exposed and endangered.

Deriving from the criminal investigation perspective a survey on hot spots related to crimes against the environment on Slovenian territory was conducted in cooperation with Slovene Police. The use of Geographic Information System techniques together with analysis of police crime statistics showed that in the period from 2008 to 2010, illegal waste disposal presented the most often identified crime hot spots. Border areas, covered by forests, represent most often detected spots where different kinds of waste are illegally disposed of. Game poaching was detected in all regions all over the state but hot spots of animal abuse cases were identified in specific environments, such as Roma settlements, or other individual cases involving young offenders or poor people with other health problems who were not capable of taking care of their livestock. On this basis responsive and prevention measures were prepared in cooperation with police experts, including more frequent police patrols in the identified areas and intensified community policing with the social groups living in targeted areas. A specific focus of the survey was organized environmental crime where the most often detected forms are: 1) the illegal trade in animal and plant species; 2) the illegal trade in ozone-depleting substances, hazardous chemicals and harmful pesticides; 3) the dumping, illegal transport and trading of various types of hazardous or toxic, radioactive and other wastes; 4) the illegal felling and trade in timber; and 5) the illegal exploitation of mineral resources, where most of this excavation of materials is done without the appropriate licenses and opencast mining.

To provide a psychological perspective on environmental crime, a survey about victims of environmental crime, focused on mental and physical health and other factors, was conducted in three different Slovenian towns with specific, polluted environments: Celje, Gornja Radgona and Tenetiše, and in region of Zasavje. The research results showed that in Celje and Zasavje the link between air pollution and health problems was confirmed. In comparison with the Slovenian average, health data for both towns indicate a higher risk of cancer and chronic respiratory diseases. This confirms the findings of the study on the uneasiness of the population regarding environmental pollution. Residents of Celje and Zasavje reported anxiety, irritability, feelings of helplessness and depression. The results show the existence of significant chronic emotional distress, which increases the possibility of the occurrence of serious mental and physical illness affecting the population in polluted environments [1 p. 288]. The problem of mental health deterioration is often neglected because the effects of toxic materials are more evident for physical health. Exposure to toxic materials induces chronic stress, fear, anxiety, depression, feelings of helplessness, insecurity, cognitive inefficiency, avoidance of staying in the polluted environment, intolerance toward others, aggressive behaviour and distrust of public agencies which are responsible for prevention and intervention in the cases of environmental accidents.

The criminological issues arising from environmental crime are often closely related to (criminal) law. Taking the legal perspective included an in-depth study of environmental protection legislation that resulted in suggestions for improvements and necessary corrections in the field of administrative and criminal law. Slovenian

legal regulation in the field of environmental protection is divided into two major areas: pollution control and remediation; and resource conservation and management. Legal regulation is often limited to a single environmental medium, such as air or water - and the control of emissions of pollutants into the medium, as well as liability for exceeding permitted emissions and responsibility for clean-up. Similarly, criminal law has very little space for manoeuvre in the field of environmental protection. It often appears that certain provisions are not concrete and comprehensive enough and it may be necessary to introduce new concepts, with clear terms and definitions, and determine when the consequences occur, and what kind of consequence has to occur in order for criminal law to intervene. Finally, it is necessary to avoid excessive accumulation and undesirable duplication of the acts as much as possible. The European Union has an important influence on the adaptation of environmental protection legislation in Slovenia but the constant changes in laws and rules make the implementation of legislation hard and can sometimes present an obstacle in the process of criminal investigation and the entire criminal justice process. What is more, the cooperation of experts and control institutions in the field of environmental protection is weak [26] and there is little or almost no funding for a strategic approach to environmental justice.

The national security and crisis management perspectives were the last and the least studied perspectives on environmental crime. The environmental protection policy analysis revealed that in Slovenia there have been many sectoral and interdepartmental approaches and policies dealing with the question of environmental protection (and thus protection of society) in the widest sense. Researchers ascertained that it is still difficult to identify a single comprehensive and consistent 'environmental security policy' which would address how a wide variety of sources and types of threats to the environment are going to be tackled at the national level (i.e., from the national security perspective) [60 p. 11]. The analysis of the situation and past events in Slovenia confirmed that environmental crisis management strategies could have crucial importance for human and national security. One of the possibilities to support the decision-making process that is necessary for maintaining security is presented by the quantitative analysis of social risk [31].

The national research project resulted in an exhaustive review of existing knowledge and previous research in the field of environmental crime and green criminology in Slovenia and other countries of South Eastern Europe. The results represent a step forward in criminological debates on environmental crime and environmental protection in Slovenia and the region and will be influential in the development of green criminology and other social sciences which deal with the field of environmental crime alongside criminal justice, criminal investigation, victimology, criminal law and crime prevention.

The review of the development of green criminology in the region represents an important contribution to science on a national and regional level because it has not been done up to this time. The further development of green criminology as a scientific discipline and its field of research (i.e., environmental crime) in the region have been promoted and new methods of prevention in the field of environmental crime (i.e., situational crime prevention) were developed.

At the end of the basic project, the partial answer to the question of whether environmental crime represents a serious threat to the environment and humans in the

South Eastern Europe was gained. Although it is confirmed that environmental crime and resulting consequences, often in a form of environmental harm, degradation, devastation and destruction, are present and do affect the environment, humans and other living species in the region of South Eastern Europe [48, 49], a presumption that environmental crime is a (serious) threat to environment and society in general cannot be confirmed. A great deal of research work still needs to be accomplished to be able to arrive at more accurate findings concerning environmental crime and its threatening characteristics in this part of the Europe. Nevertheless, environmental problems are problems of the vitally important relationship between people and the environment [61, 66], which is true for all the countries of South Eastern Europe [48, 49].

The countries are, when compared to other parts of Europe and some other continents, still at the very beginning of research on the problems of environmental crime and environment protection. Nonetheless, as elsewhere, [6, 29, 33, 67] the knowledge available to the social sciences is not enough to completely understand environmental issues and impacts and work with the natural sciences in a multidisciplinary fashion will be needed.

Timely action in this area is very important, therefore the preparation of programs and forms of environmental crime prevention are highly pertinent. The basic project has had a positive impact on the development of programmes for environmental crime prevention and protection of environmental crime victims [1, 47], as well as on the forming of adequate methods and education for police officers, environmental protection inspectors, state prosecutors and other competent agencies and services [6, 15, 46, 60]. In the end, despite the research work undertaken and results collected, the question: *What does the future hold?*, remains.

Future of green criminology in the region of South Eastern Europe

In the 21st century, traditional criminology must be aware of the meaning of the environment [61 p. 225] and should be able to classify perspectives on the environment and humans and other living beings within it. Due to the difficult and long process of moving from anthropocentric to ecocentric perspectives on the relationship between environment and humans, criminology was incredibly slow in responding to environmental issues (e.g., harm, crime) [41 p. 266]. Following trends elsewhere, South Eastern European green criminology is developing and adapting to contemporary society. Green criminology is very fast becoming international and globalized, is attaching central importance to inequality, power and politics in the processes of criminalization, is increasing interest in victimization and in the violation of human rights [33], and is trying to innovate and evolve new forms of crime prevention [47]. Since this is a relatively young branch of criminology, there are still many different questions to raise. We are still defining a common subject matter for criminological debates, identifying new forms of environmental crime and harm and asking about the perpetrators and victims of environmental crime, the process of forming criminal legislation and responding to environmental crime phenomena, and about the best way to take forward environmental crime prevention design. The most outstanding challenge but also source of great potential is the multidisciplinary nature of the research questions and methods that may be common across the entire field.

In the region of South Eastern Europe the term green criminology represents a social study that uses multidisciplinary and interdisciplinary approaches for researching environmental crime, harm, legislation, regulations, protection measures and public responses to violations. In this part of Europe, green criminology is much more than just a debate on environmental issues, because due to the multidisciplinary subject of the study it also has characteristics of *critical criminology*, from which it actually originates. It is based on a critical criminological conviction to defend the environment as one of the basic human goods and human rights. Warnings about violations of human rights and environmental threats need to be made. Green criminology has characteristics of *public criminology* [39], because it actively participates in the preparation of programs of crime politics and stimulates the participation of crime experts in practice and in social activities, encouraging the presentation of their research work in professional and scientific debates. What is more, in the era of dominance of mainstream media, green criminology tries to cooperate with media and thereby informs realistic media reporting and thus raising the awareness of the public in a more accurate fashion.

Besides the national particularities concerning the phenomenology and etiology of environmental crime (irregularities in the process of waste management, water and air pollution, and soil contamination, committed by (state) companies; and various forms of transnational environmental crime), the findings of green criminology research are similar in different countries. Compared to Great Britain [4, 6, 61], the United States [37, 41] and Australia [66, 67], the existence of green criminology as a social science is still in its nascent stages in the majority of countries in South Eastern Europe. In Bosnia and Herzegovina there are many legal and policy-related dimensions to environmental issues but the criminal components are not considered important (enough) by the institutions of formal social control [54] to stimulate the development of green criminology. In contrast, in FYR Macedonia and Serbia, green criminology is a bit more established and has begun to be acknowledged as an independent discipline inside the criminological frame. Green criminology in Slovenia [21, 49] is somewhere on the border between the Central European countries (such as Germany, Italy and Austria) where this field is developing and the group of transition countries (like Croatia, Albania and Kosovo) which only discuss the possibilities or the very beginnings of the development of this new branch of criminology.

Green criminology in the region of the South Eastern Europe will be influenced by work produced in other countries but the particularities and specifics of their own environments (e.g. environmental protection legislation still under development; insufficient coordination and inconsistencies between criminal justice agencies; abuse of loopholes in legislation and gaps in infrastructure and enforcement by criminals to commit environmental offences without being processed and punished) means that green criminology in South Eastern Europe will need to develop its own unique flavour. From the global point of view, debates on environmental matters are never-ending and politically influenced with no real outcomes, while green critical criminologists have a problem when trying to engage in such debates as they may be unable to empirically prove their case and are often dismissed or ignored. From this point of view, the cooperation between green criminologists and policy makers in the region of South Eastern Europe has been successful; resulting in joint preparation of environmental protection legislation and policy regulations (i.e., Resolution on crime prevention in Slovenia).

It can be concluded that green criminology in the region of South Eastern Europe has the characteristics of a *criminology of environmental protection*; within the framework of its work, findings and proposals, green criminology has affected the politics of environmental issues as well as crime policies. It represents one of the important bonds between the criminal justice system, its parts, other sciences, and all other interested parties. It combines and connects different scientific knowledge bases and experiences. The most important of these is the connection between the social and natural sciences that is becoming generally accepted. As such, the criminology of the 21st century should provide an intellectual insight into the role of society in generating environmental degradation, and expand the methodological approaches available for criminological studies of environmental crime (i.e., the eco-centric or socio-ecological centred perspective, which emphasizes the equality of the human with the rest of nature).

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