

2. Can criminal law be an effective response for environmental disasters caused by mining?¹

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Abstract

While the extraction of natural resources can provide substantial economic benefits to a state, it also introduces significant criminogenic risks. The exploration and extraction stages are particularly prone to regulatory and environmental violations, resulting in both direct and indirect harm to the environment. Environmental crime, particularly in the mining sector, is highly lucrative and challenging issue to tackle due to its significant financial rewards, lower legal risks, and complexities in detection and enforcement. Criminal law plays a critical role in addressing environmental disasters caused by mining, providing a legal framework to hold individuals and companies accountable for actions that cause significant harm to the environment and public health. Green criminology plays a crucial role in bringing attention

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to the intersection of criminality, law enforcement, and environmental harms. Furthermore, the relevant high-profile cases at the international level are shaping future enforcement and highlighting the criminal judiciary's role in upholding environmental justice. Success or failure in prosecution of responsible individuals and legal entity has impact on deterrence. Knowing that violations can lead to criminal charges encourage mining companies to adhere strictly to environmental regulations and standards. However, the high-profile cases confirmed difficulties in detecting and investigation of environmental crimes. Specifically, enforcement agencies encounter several significant challenges that affect the success of their efforts. The primary issues include technical and financial constraints, as well as a lack of specialized knowledge. The Brumadinho dam collapse in Brazil stands as one of the most significant environmental disasters in recent history, underscoring the severe consequences of environmental crime and the potential role of criminal law in addressing such incidents. This case provides a poignant example of how the prosecution of corporate executives is challenging.

Environmental disasters caused by mining in Serbia highlight significant challenges and underscore the need for effective regulation, enforcement, and remediation measures. The mining industry in Serbia has been associated with several incidents that have had detrimental impacts on the environment and public health. For example, the mining activities at RTB Bor have led to severe air, water, and soil pollution. Veliki Krivelj, part of the Bor mining operations, experienced a tailings dam failure, leading to the release of toxic sludge. Environmental disasters caused by mining in Serbia highlighted the urgent need for comprehensive remediation efforts. Strengthening legal frameworks, increasing penalties, improving enforcement capabilities, and fostering international cooperation are crucial steps in addressing environmental crimes effectively.

1. Introduction

Environmental crime, which offers substantial material benefits and is very difficult to prove, has become increasingly attractive to organised criminal groups. Environmental crime is the third most lucrative category globally, with costs of up to 246 billion EUR annually.⁴ In its 2021 report, Europol highlighted environmental crime as a major issue within organised crime. It is anticipated that organised criminal groups will increasingly infiltrate and exploit the recycling and renewable energy sectors, as these industries are expected to grow significantly and attract substantial investments from both private and public sectors.⁵ Currently these crimes include illegal waste dumping, trafficking in endangered species, and illicit logging, all of which yield high profits with relatively low risks of detection and prosecution. As law enforcement agencies and regulatory bodies are often under-resourced or lack the technical expertise to tackle such crimes effectively, organised criminal networks exploit these weaknesses.⁶

In addition, to criminal networks, large corporations driven by profit also pose significant challenges to environmental protection. The complexity of corporate structures, global supply chains, and vast financial resources allow some companies to engage in environmentally harmful activities with limited accountability. The responsibility of corporations for environmental disasters caused by mining is a significant issue, as mining operations can lead to severe environmental damage, including water contamination, deforestation, soil erosion, and air pollution. Corporations involved in mining operations can be held legally accountable for

⁴ WWF, *Position Paper*, March 1, 2022, 1. <https://www.wwf.eu/?6109916/A-new-EU-Environmental-Crime-Directive>, 27.9.2024.

⁵ EUROPOL, European Union (2021) *Serious and Organised Crime Threat Assessment, A Corruption Influence: The Infiltration and Undermining of Europe's Economy and Society by Organised Crime*. https://www.europol.europa.eu/cms/sites/default/files/documents/socta2021_1.pdf, 27.9.2024.

⁶ *Ibid.*

environmental disasters under several forms of liability, including criminal, civil and administrative.⁷ Corporation can face criminal charges if environmental damage is result of illegal activities such as unauthorised mining, violation of environmental laws, or negligence leading to disasters. According to INTERPOL data, an amount of 12-48 billion dollars is obtained annually from illegal mining in the world. Technical capabilities to combat illegal mining vary from country to country. The existence of special forensic laboratories, the involvement of the police in the early stages of the investigation into illegal mining, the use of satellite data to monitor forest cutting, etc., as well as the timely exchange of intelligence relevant to the suppression environmental crime, but above all timely processing and analysis of information related to environmental crime.⁸

Criminal prosecution may target both the company and individuals within it, such as directors of executives responsible for overseeing operations. Victims of environmental disasters, including local communities or governments, can sue corporations for damages. Civil lawsuits seek compensation for harm caused by mining operations, such as polluted water sources, destroyed ecosystems, or health impacts on local populations. In relation to administrative sanctions, regulatory bodies may impose fines, suspended operations, or revoke mining licenses for violations of environmental standards. These sanctions aim to hold corporations accountable for non-compliance with environmental regulations.

Corporate responsibility for environmental disasters caused by mining is multi-faceted and governed by both legal obligations and ethical standards. While corporations may face legal consequences for causing environmental damage, challenges remain in proving negligence and ensuring accountability. Proving

⁷ See: Kostić, J. (2023) „European convention for the protection of human rights and fundamental freedoms and the right to a healthy environment“, *Glasnik of the Bar Association of Vojvodina*, Issue 4, DOI: 10.5937/gakv95-47884, 1380-1395.

⁸ INTERPOL, April 2022, *Illegal Mining and associated Crimes, A Law Enforcement Perspective on One of the Most Lucrative Crimes*, 14.

criminal accountability is crucial for general prevention of environmental crime, as it reinforces the message that such violations carry serious consequences, both for the individuals and corporations involved.

In the article, we will delve into international and European efforts to combat environmental crime, focusing on the legal frameworks, international and EU, that have been developed to address these challenges. The article also assesses high-profile mining disasters, and Serbian events. Through these cases, authors will examine how state responses have varied in terms of enforcement, prosecution, and penalties. Authors will look into whether criminal law is effective and broader implications of these criminal cases for general prevention. However, when prescribing new criminal offenses or tightening criminal sanctions, the boundary between excessive criminalization and the need and ability of the state to react effectively to new forms of criminality should be re-examined.⁹

2. International response to environmental crime

The international response to environmental crime has grown significantly in recent years, reflecting the increasing recognition of its global impact. Bodies like Interpol, Europol, and the United Nations Environment Program (UNEP) play crucial roles in coordinating efforts to combat environmental crime. Interpol's

⁹ Stojanovic Z. & Kolaric D. (2015) "Savremene tendencije u nauci krivičnog prava i krivično zakonodavstvo

Srbije" [Contemporary tendencies in the science of criminal law and the criminal legislation of

Serbia]. *Srpska politička misao* [Serbian Political thought], 2015, Vol. 49, No. 3, 113, doi. org/10.22182/spm.4932015 and Matić Bošković, M. & Kostić, J. (2024) "Penal Populism and (Ab)Use of Criminal Law", in: *Revisiting the Limits of Freedom While Living Under Threat*: 9-10 November 2023, Riga: collection of research papers in conjunction with the 9th International Scientific Conference of the Faculty of Law of the University of Latvia. University of Latvia Press, 79-88, DOI: 10.5937/gakv95-47884.

Environmental Security Program, for example, focuses on wildlife crime, pollution crime, and the illegal exploitation of natural resources.¹⁰

Several legal frameworks guide the global response to environmental crime, including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)¹¹, the Basel Convention on hazardous waste¹², and the Paris Agreement on climate change¹³, which indirectly targets environmental crime through sustainability goals.

Although the UN Convention Against Transnational Organized Crime (UNTOC) is primarily focused on organised crime, its broader framework can be applied to environmental crimes, particularly those involving illegal exploitation of national resources and cross-border activities.¹⁴ UNTOC promotes international cooperation, providing a legal framework for countries to criminalise participation in organised crime, including activities like illegal logging, mining, and trafficking of endangered species.¹⁵

¹⁰ INTERPOL, *Our response to environmental crime*, <https://www.interpol.int/Crimes/Environmental-crime/Our-response-to-environmental-crime>, 27.9.2024.

¹¹ The Convention on International Trade in Endangered Species of Wild Fauna and Flora has been signed by 184 parties in 1973. This Convention is designed to ensure that international trade in animals and plants does not threaten their survival in the wild. Text in English of the mentioned convention is available at: <https://cites.org/sites/default/files/eng/disc/CITES-Convention-EN.pdf>, 27.9.2024.

¹² The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was adopted on 22 March 1989 by the Conference of Plenipotentiaries in Basel, Switzerland, in response to a public outcry following the discovery, in the 1980s, in Africa and other parts of the developing world of deposits of toxic wastes imported from abroad.

¹³ The Paris Agreement on climate change was adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris, France, on 12 December 2015. It entered into force on 4 November 2016.

¹⁴ Text of the United Nations Convention Against Transnational Organized Crime and the Protocols thereto in English is available at: <https://www.unodc.org/documents/treaties/UNTOC/Publications/TOC%20Convention/TOCebook-e.pdf>, 27.9.2024.

¹⁵ See: United Nations, Office on Drugs and Crime, *Illegal mining and trafficking in precious metals*, <https://www.unodc.org/unodc/en/environment-climate/illegal->

In addition to binding international legal instruments, soft law guidelines such as the UN Guiding Principles on Business and Human Rights¹⁶ and the OECD Guidelines for Multinational Enterprises play a critical role in shaping corporate responsibility towards human rights and environmental protection.¹⁷ UN Guiding Principles set out the corporate responsibility to respect human rights, including environmental rights. Corporations are expected to prevent and mitigate adverse environmental and human rights impact linked to their operations. Corporations must take proactive measures to prevent environmental harm and remedy any damage caused. The OECD Guidelines offers a comprehensive framework for responsible business conduct, including environmental protection and sustainable resource management, and corporate governance. The Guidelines encourage multinational enterprises to integrate environmental and social considerations into their operations. The 2023 edition of the Guidelines provides updated recommendations for responsible business conduct across key areas, such as climate change, biodiversity, technology, business integrity and supply chain due diligence, as well as updated implementation procedures for the National Contract Points for Responsible Business Conduct. According to the Guidelines the enterprises should operate in such a way that the environmental contribution of the enterprise is

mining.html#:~:text=Illegal%20mining%20and%20trafficking%20in%20precious%20metals%20negatively%20impact%20peace and United Nations Office on Drugs and Crime, *Response Framework on Illegal Mining and the Illicit Trafficking in Precious Metals*, https://www.unodc.org/documents/Wildlife/UNODC_Response_Framework_Minerals.pdf, 27.9.2024.

¹⁶ United Nations Human Rights, Office of the High Commissioner (2011) *Guiding Principles on Business and Human Rights, Implementing the United Nation "Protect, Respect and Remedy" Framework*, United Nations, New York and Geneva, https://www.ohchr.org/sites/default/files/documents/publications/guidingprinciplesbusinessshr_en.pdf, 27.9.2024.

¹⁷ OECD (2023), *OECD Guidelines for Multinational Enterprises on Responsible Business Conduct*, OECD Publishing, Paris, <https://doi.org/10.1787/81f92357-en>.

continuously improved in their operations, production and provision of services (paragraph 68).

The UN legal efforts present the 2019 Resolution of the Economic and Social Council (ECOSOC) on combating transnational organised crime and its links to illicit trade in precious metals and illegal mining.¹⁸ The ECOSOC Resolution 2019/23 highlights the growing involvement of organised criminal groups in illegal trade related to precious metals and mining and calls for strengthening the security of supply chains, encourages states to improve cooperation, use data, and leverage technology to combat illegal mining and the illicit trade in precious metals. The ECOSOC Resolution encourages states to use the provisions of international conventions like the UNTOC and the UN Convention Against Corruption¹⁹.

Despite these efforts, challenges remain due to weak enforcement in certain regions, and growing sophistication of organised criminal groups involved in environmental crime.

3. EU legal efforts to combat Environmental crime

At the regional level, the European Union efforts are important to analyse. The EU has made significant legal efforts to combat environmental crime, recognizing the growing threat it poses to the environment, human health, and the economy. These efforts are reflected in both legislation and policy measures aimed at preventing, penalizing, and addressing environmental offences.

¹⁸ United Nations, Economic and Social Council Resolution adopted on 23 July 2019 (on the recommendation of the Commission on Crime Prevention and Criminal Justice) on Combating transnational organized crime and its links to illicit trafficking in precious metals and illegal mining, including by enhancing the security of supply chains of precious metals, E/RES/2019/23, <https://digitallibrary.un.org/record/3823141?v=pdf>, 27.9.2024.

¹⁹ United Nations, Office on Drugs and Crime, United Nations Convention Against Corruption, United Nations, New https://www.unodc.org/documents/brussels/UN_Convention_Against_Corruption.pdf, 27.9.2024.

The Court of Justice of the European Union enabled enforcement of environmental directives through criminal law with its landmark decision in case C-176/93 on 13 September 2005.²⁰ In this ruling, the Court established that criminal law could be employed to ensure the effective enforcement of environmental directives, marking a turning point in the EU's approach to environmental protection. Following this decision, the EU took important legislative steps to oblige member states to introduce criminal penalties for serious violations of environmental laws.

Adopted on 19 November 2008 Directive 2008/99/EC on the protection of the environment through criminal law, was the first significant step to ensure that serious infringements of EU environmental law are subject to criminal penalties.²¹ It mandated that member states criminalise certain environmental offenses, such as illegal waste management, pollution, and the unlawful trading of endangered species. The Directive provided a framework for ensuring that violations of environmental law are met with appropriate criminal sanctions, aiming to deter and penalise harmful activities that damage the environment. Bearing in mind the cross-border nature of environmental crime, an effort was made to standardize the level of criminal sanctions for perpetrators of crimes against the environment at the level of the European Union.

By 2020, twelve years after the adoption of Directive 2008/99/EC on the protection of the environment through criminal law, an evaluation by the European Commission²² revealed

²⁰ Faure, M. G. (2011) "The Environmental Crime Directive 2008/99/EC", *European Journal of Consumer Law*, No. 1, 193-208.

²¹ Directive 2008/99/EC of the European Parliament and of the Council of 19 November 2008 on the protection of the environment through criminal law, *Official Journal of the European Union*, L 328/28, Text in English is available at: <https://eur-lex.europa.eu/eli/dir/2008/99/oj>, 27.9.2024.

²² Commission staff working document, Evaluation of Directive 2008/99/EC of the European Parliament and of the Council of 19 November 2008 on the protection of the environment through criminal law, SWD (2020) 259 final of 28 October 2020.

significant shortcomings in the Directive's implementation. Despite the time given to member states to integrate the Directive into their national legal systems, the evaluation highlighted several critical issues. The evaluation found widespread deficiencies at all levels of the law enforcement chain, including investigations, prosecution, and the imposition of sanctions for environmental crimes. These deficiencies undermined the effectiveness of environmental criminal law, indicating that the measures introduced in 2008 were insufficient in practice to combat serious environmental violations across the EU. Although member states were obliged to fully implement the Directive, the evaluation revealed that the Directive was not uniformly or fully implemented. This inconsistency in national transpositions created gaps in the EU's overall environmental protection regime. Certain countries had failed to criminalise all offenses listed in the Directive or had imposed only minimal penalties, leading to weak enforcement of environmental laws. The evaluation pointed out that there were significant variations in how member states applied criminal sanctions for environmental offenses. In some countries, penalties for serious environmental harm were minimal, while others imposed stricter sanctions.²³ This divergence led to an uneven playing field, where the same environmental crimes could result in vastly different legal outcomes depending on the country. These variations undermined the Directive's goal of harmonising environmental criminal law across the EU.

The shortcomings identified in the 2020 evaluation ultimately led to the adoption of the new Directive in 2024. The new Environmental Crime Directive 2024/1203, adopted on April 11, 2024, and in force from May 20, 2024, significantly strengthens the EU's legal framework for protecting the environment through

²³ See: Matic Boskovic, M., Kostic, J. (2023) "Criminal Law as an Effective Tool to Protect Environment?" In: Bratislava legal forum 2023: Current Challenges of Criminal Law: proceedings. Právnická fakulta Univerzity Komenského v Bratislave, Bratislava, 79, 80 and 81.

criminal law, replacing the 2008.²⁴ Directive. It addresses previous shortcomings by establishing clear definitions of environmental crimes, stricter penalties, and measures to prevent and combat environmental crime more effectively.

According to the provisions of Directive 2024/1203 to effectively protect the environment, it is necessary to prescribe criminal offenses at the level of member states that protect the right to a healthy environment. The new Directive expended list of offences and includes a more comprehensive list of criminal offenses related to environmental harm.

The Directive introduces a graduated penalty system, including minimum-maximum imprisonment for natural persons. Considering the weight and seriousness of the consequences of environmental crime, at the national level of the member states, a minimum sanction of ten years of imprisonment should be prescribed if the death or serious injury of a person was caused or could have been caused by the criminal act (Article 5, paragraph 2, item a)). In addition, the new Directive introduces new measures that can be imposed on perpetrators of crimes that can be considered environmental crimes, such as restore the environment within a given period, if the damage is reversible, or pay compensation for the damage to the environment, if the damage is irreversible or the offender is not in a capacity to carry out such restoration, exclusion from entitlement to public benefits or aid, as well as exclusion from access to public funding, including tender procedures, grants, concessions and licences (Article 7, paragraph 2, item (a)). For legal persons, two methods of penalties are available: fixed fines ranging from 24 million to 40 million euro; and fines based on the total annual worldwide turnover of the legal

²⁴ Directive (EU) 2024/1203 of the European Parliament and of the Council of 11 April 2024 on the protection of the environment through criminal law and replacing Directives 2008/99/EC and 2009/123/EC, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ%3AL_202401203, 27.9.2024.

entity, ensuring proportionality based on the size of the offending organisation (Article 7, paragraph 2, items (a) and (b)).

The Directive strengthens enforcement mechanisms by ensuring that law enforcement actors, such as investigators and police officers, have adequate resources and specialised training. It promotes cooperation mechanisms both within and between EU Member States and requires the development of national strategies to enhance enforcement effectiveness (Articles 17, 18, 19 and 21).

The EU's law enforcement agencies, Europol and Eurojust, play a key role in combating environmental crime. Europol's Environmental Crime Unit coordinates investigations across member states, focusing on organised crime groups involved in illegal waste trafficking, wildlife crimes, and illegal logging. Eurojust facilitates judicial cooperation in cross-border environmental crime cases, ensuring that offenders are prosecuted and convicted effectively (Article 20).

4. Environmental disasters and institutional response in Serbia and worldwide

The worrying fact that it is very difficult to detect crimes that can be classified as environmental crime, as well as to collect and present relevant evidence. This requires significant material resources, special specialization of competent authorities, but also the cooperation of various authorities and institutions. All this contributes to the low rate of detected crimes against the environment, as well as the number of convictions. Specific focus will be on the environmental crime in Serbia.

Serbia has implemented various laws and regulations aimed at protecting the environment. According to the EU assessment, Serbia has achieved a high level of alignment with EU horizontal

legislation.²⁵ These include the Law on Environmental Protection,²⁶ the Nature Protection Law,²⁷ the Waste Management Law,²⁸ the Water Law,²⁹ the Air Protection Law,³⁰ the Environmental Impact Assessment Law³¹, the Chemical Law³², and the Environmental Enforcement Law.³³

The Criminal Code³⁴ of Serbia plays a crucial role in protecting the environment by establishing legal frameworks, defining offenses related to environmental harm, and prescribing penalties for those who violate environmental laws. In Serbia, the Criminal Code includes Chapter XXIV on environmental crimes and offenses, which may include pollution of air, water, or soil, illegal disposal of hazardous waste, destruction of natural habitats or protected areas, illegal logging or poaching, and other activities that cause significant damage to the environment. Individuals or entities found guilty of environmental offenses in Serbia may face a range of penalties and sanctions, including fines, imprisonment, confiscation of assets, and prohibition of certain activities.

In Serbia, addressing environmental pollution is primarily the responsibility of several governmental institutions and agencies at the national and local levels. These institutions play key roles in

²⁵ Screening report, Chapter 27. See: https://neighbourhood-enlargement.ec.europa.eu/document/download/6ece0482-e088-455c-b06a-2b704ba7fc7e_en?filename=screening_report_serbia_-_chapter_27_-_environment.pdf, 27.9.2024.

²⁶ *Official Gazette of the Republic of Serbia*, no. 135/2004, 36/2009, 72/2009, 43/2022, 14/2016, 76/2018 and 95/2018.

²⁷ *Official Gazette of the Republic of Serbia*, no. 36/2009, 88/2010, 91/2010, 14/2016, 95/2018 and 71/2021.

²⁸ *Official Gazette of the Republic of Serbia*, no. 36/2009, 88/2010, 14/2016, 95/2018 and 35/2023.

²⁹ *Official Gazette of the Republic of Serbia*, no. 30/2010, 93/2012, 101/2016 and 95/2018.

³⁰ *Official Gazette of the Republic of Serbia*, no. 36/2009, 10/2013 and 26/2021.

³¹ *Official Gazette of the Republic of Serbia*, no. 135/2004 and 36/2009.

³² *Official Gazette of the Republic of Serbia*, no. 36/2009, 88/2010, 92/2011, 93/2012 and 25/2015.

³³ *Official Gazette of the Republic of Serbia*, no. 135/2004, 25/2015, 109/2021.

³⁴ *Official Gazette of the Republic of Serbia*, no. 85/2005, 88/2005, 107/2005, 72/2009, 111/2009, 121/2012, 104/2013, 108/2014, 94/2016 and 35/2019.

developing environmental policies, implementing regulations, monitoring pollution levels, and enforcing environmental laws. Some of the main institutional responses to environmental pollution in Serbia include the Ministry of Environmental Protection, Environmental Protection Agency, Inspectorates, Local Governments, Public Health Institutions, Research Institutions and Academia, Civil Society Organizations, law enforcement institutions, public prosecution, and judiciary.

The effectiveness of the introduction of a whole set of environmental crimes in the Criminal Code is only limited. In 2022, most of the prosecutors work on environmental crimes were related to forest theft (1,187 cases), forest devastation (68 cases), and animal abuse and killing (129), while only the limited manner to the newly introduced environmental crimes, like import dangerous substance into Serbia and unlawful processing, depositing and stockpiling of dangerous substances (67 cases), environmental pollutions (20 cases), failure to undertake environmental protection measures (18 cases), damaging the environment (20 cases) and destroying, damaging, taking out of and into Serbia protected natural assets (16 cases).³⁵ Number of environmental crime cases compared to the total number of cases in the public prosecutor's offices is less than 0.5 percent.

Discussions with public prosecutors highlighted some of the main challenges in the prosecution of environmental crime, such as ensuring evidence in line with the criminal procedure requirements, on-time and efficient cooperation with police and inspectorates, lack of specialization among public prosecutors, lack of expert support, etc.³⁶ Inter-institutional coordination is often mentioned as one of the biggest challenges for the investigation and prosecution of environmental crimes. There is little communication

³⁵ The Republic Public Prosecutor's Office (2023), *Report on the work of public prosecutor's offices to combat crime and protect constitutionality and legality in 2022*.

³⁶ Matic Boskovic, M. (ed.) (2022) *Public Prosecution and environmental protection – legal framework and analysis of implementation challenges*. Belgrade: Prosecutors Association of Serbia.

and no formal coordination between various institutions and agencies whose work may affect environmental protection and the procession of violation of environmental rules. In addition, competencies and responsibilities are distributed between the various institutions. A severe segmentation of competencies in this field makes coordination and cooperation more difficult and decreases direct responsibility for the implementation of measures and legislation. In the field of environmental protection in Serbia, competencies are shared between different Ministries (Ministry of Environment, Ministry of Agriculture, Ministry of Mining and Energy, etc.), different state agencies, public enterprises (primarily local public utility companies), and local governments. Lack of cooperation between public prosecutors and relevant institutions, especially inspections, leads to obstacles in evidence collection, evidence storage, evidence interpretation, leading of investigations, and successful indictments and convictions.³⁷

Corruption poses significant challenges to environmental protection efforts in Serbia and can lead to regulatory capture, where government agencies responsible for enforcing environmental regulations are influenced or controlled by powerful industries or interest groups. This results in weak enforcement of environmental laws, lenient penalties for polluters, and regulatory decisions that prioritize economic interest over environmental concerns. Furthermore, corruption involves bribery and fraud in environmental permitting processes, environmental impact assessments, and enforcement actions. Companies or individuals may bribe government officials to obtain permits for environmentally harmful activities, manipulate environmental impact assessments to downplay the potential negative effects of projects or evade compliance with environmental regulations through fraudulent practices.

³⁷ Matic Boskovic, M., Kostic, J. (2023) "Criminal Law as an Effective Tool to Protect Environment?" *Op. cit.* 74-91.

Several high-profile cases involving environmental disasters have demonstrated how mining corporations have been held accountable, although the degree of responsibility and the outcomes have varies depending on the jurisdiction, regulatory framework, and legal strategies employed.

During 2010, the local community of Krivelj in Serbia was hit by a major environmental disaster in 2010. Then the ecological dam of the Cerovo mine spilled. Its function was to prevent the discharge of wastewater from the Cerovo mine plant into the Kriveljska river. Although in that period there was an effort to attribute the blame to nature, the aforementioned event could have been prevented. Namely, in 2007, the World Bank approved a loan intended for the construction of a new collector that channels the Kriveljska river below the Veliki Krivelj tailings, but that work was not completed. The project was closed, and part of the loan was withdrawn back to the World Bank. In addition, Serbia paid penalties to the World Bank for not using the requested money.³⁸

In Brazil, in January 2019, a Brumadinho dam containing mining sludge in an iron mine collapsed. The liquid waste burst out of the dam, released nearly 12 million cubic meters of toxic mining waste, and levelled nearby settlements, destroyed the railway bridge and released a wave of toxic sludge into the river. The disaster led to the deaths of 272 people. It stands as one of the deadliest environmental disasters in recent history, raising global awareness of corporate negligence and environmental harm. The mining company, the consulting firm and 16 individuals were accused in the criminal procedure.³⁹ However, the case illustrated the challenges of prosecuting corporate executives. While the scale of the disaster and the alleged failure of the company to maintain safety standards were clear, proving individual criminal

³⁸ See: “Борска еколошка бомба прети Србији”, *Политика*, 31.10.2015. <https://www.politika.rs/scc/clanak/342357/Borska-ekoloska-bomba-preti-Srbiji>, 27.9.2024.

³⁹ Bianchini, M. P. A., de Araujo, G. M. G., Oliveira, A.K.M. (2024) “Dam Failure and the Criminal Liability of Legal Entities”, *Veredas do Direito*, v. 21, e213439.

responsibility in complex corporate structures remains difficult. Corporate governance and decision-making in large multinational companies often involve layers of oversight, making it hard to pinpoint individual culpability.⁴⁰ The prosecution must demonstrate that executives were aware of safety risks and intentionally neglected them, which is a high legal threshold to meet. The Brumadinho case revealed weakness in environmental criminal laws in Brazil, where penalties for corporations and their executives do not always align with the gravity of environmental harm caused.

The Samarco Dam Disaster, also known as the Fundão tailing dam collapse, occurred in 2015 in Brazil, releasing around 60 million cubic meters of iron ore tailings into the surrounding environment. This catastrophic event is regarded as one of the largest environmental disasters in Brazilian history and has drawn global attention to the dangers of lax environmental oversight and the difficulties in holding corporate actors accountable. The disaster caused 19 deaths and displaced hundreds of families. The spill stretched over 600 kilometres, impacting local biodiversity, livelihoods, and access to clean water for communities along the river.⁴¹ The companies faced criminal charges, civil lawsuits, and hefty fines for their role in the disaster, which caused widespread environmental damage and loss of life. Investigations revealed serious lapses in dam safety management, with prior warnings about the structural integrity of the dam reportedly ignored or downplayed. Brazilian prosecutors charged Samarco executives

⁴⁰ See: Conectas, Human Rights, *Five years since the collapse of the Fundão dam in Brumadinho and the difficulties securing reparations and justice*, 24.1.2024, <https://www.conectas.org/en/noticias/five-years-since-the-collapse-of-the-tailings-dam-in-brumadinho-and-the-difficulties-securing-reparations-and-justice/>, 27.9.2024.

⁴¹ Kutter, V. T., Martins, G. S., Brandini, N., Cordeiro, R. C., Almeida, J. P. A. Marues, E. D. (2023) "Impact of a tailings dam failure on water quality on the Doce river: The largest environmental disaster in Brazil", *Journal of Trace Elements and Minerals*. Vol. 5, 100084.

with homicide and environmental crimes, but like the later Brumadinho disaster, prosecuting corporate executives proved challenging due to legal and procedural obstacles. In 2016, the companies reached a 6 billion US dollars settlement agreement with the Brazilian government to fund remediation and compensation efforts.⁴² However, the effectiveness of this settlement has been questioned, with many victims and communities still awaiting compensation. In January 2024 Brazilian federal judge in response to a civil action brought by state and federal public prosecutors order payment of 9,7 billion US dollars.⁴³ The Samarco dam disaster highlights a key distinction between civil liability and criminal liability in environmental cases. Civil liability, as seen in the Samarco case, can ensure that corporations are held financially accountable for the damage they cause. However, it is not always sufficient to guarantee that corporations will adhere to environmental rules. Criminal sanctions, including imprisonment for corporate executives or the suspension of operations, serve as powerful deterrent. They signal that environmental violations will not just result in financial penalties but could also affect corporation's ability to operation or result in personal legal consequences. Criminal liability, alongside robust regulatory oversight, is essential to deter future violations, enforce compliance, and ensure that corporations are not simply paying for environmental damage without changing harmful practices.

Mount Polley Mine disaster, which occurred in 2014 in Canada, is one of the most significant environmental disasters in the country's history. It involved the breach of a tailings dam at the Mount Polley copper and gold mine, leading to the release of millions of cubic meters of mining waste into the surrounding

⁴² See: Business & Human Rights Resource Centre, Shasta Darlington, CNN Money, *Brazil: \$6 billion settlement reached in Brazil mining disaster*, <https://www.business-humanrights.org/en/latest-news/brazil-6-billion-settlement-reached-in-brazil-mining-disaster/>, 27.9.2024.

⁴³ See: BBC, Peter Hoskins, *Mining giants told to pay \$9.7bn over Brazil dam disaster*, 26 January 2024, <https://www.bbc.com/news/business-68102511>, 27.9.2024.

environment. The disaster revealed major weaknesses in both regulatory oversight and corporate liability. An independent investigation concluded that the collapse was caused by a design flaw in the dam, which was exacerbated by poor maintenance and inadequate inspection by both the company and regulators. While the event led to significant environmental damage, the lack of criminal prosecution and the limited corporate accountability measures raised concerns about the effectiveness of environmental law enforcement. The disciplinary actions taken against their engineers nearly eight years after the Mount Polley Mine disaster underscore the challenges of holding individuals accountable in the aftermath of significant environmental catastrophes.⁴⁴ Engineers were ordered to pay fines and resigned their engineering licenses. While financial penalties and license suspensions represent a form of accountability, such measures do not necessarily address the full scope of environmental damage caused by the disaster. The disaster ultimately served as a wake-up call for the need for stronger oversight of the mining industry across Canada and has had a lasting impact on regulatory reform efforts aimed at preventing future disasters.⁴⁵

Conclusions

Environmental crime is very attractive not only to organized criminal groups, but also to large corporations that, in order to quickly obtain high profits, often violate environmental protection regulations. The consequences of such activities are very serious, bearing in mind that endangering the environment can endanger not only health, but also people's lives. Therefore, significant steps

⁴⁴ See: CTV News Vancouver, *Regulator fines engineers 8 years after Mount Polley disaster in B.C.* 13 March 2022, This report by the Canadian Press was first published March 13, 2022, <https://bc.ctvnews.ca/regulator-fines-engineers-8-years-after-mount-polley-disaster-in-b-c-1.5817612>, 27.9.2024.

⁴⁵ Nunn, N., Chewinski, M (2024) "A decade after a Mount Polley Mine Tailings Disaster". *BS Studies: Learning from Disaster*. No. 221, 21-30.

have been taken at the international level in recent years to fight environmental crime. In addition, the activities of various organizations, such as Interpol, Europol and the United Nations, stand out in this.

Although they represent soft law, the UN Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises are very important in the area of prevention of environmental threats. The aforementioned documents were created with the aim of contributing to strengthening the responsibility of corporations in terms of protecting human rights and the environment when performing their activities. According to them, every corporation should take proactive measures in order to prevent environmental damage, as well as to compensate for any damage caused.

Directive 2008/99/EC on the protection of the environment through criminal law was adopted in 2008 at the level of the European Union in order to have a preventive effect on environmental pollution by both natural and legal persons. However, over time it became clear that in order to improve environmental protection, it is necessary to establish a more efficient system of criminal law protection at the level of the member states. That is why the new Environmental Crime Directive 2024/1203 was adopted in 2024.

The high-profile cases analysed in the article show that mining corporation can be held accountable through civil liability and fines, but criminal liability for corporate executives remains rare and difficult to achieve. The effectiveness of holding companies responsible often depends on the strength of regulatory frameworks in place and the ability of governments to enforce environmental laws. Many of analysed cases also highlight the need for international standards and corporate accountability to ensure mining operations are conducted sustainably and ethically.

Given the global challenges in prosecuting environmental crimes and the existing legal and enforcement issues in Serbia, international corporate involvement should be approached with

significant caution. Cases such as Samarco, Brumadinho, and Mount Polley disasters illustrate the difficulty in holding corporations and their executives criminally liable for environmental harm. While civil liability and compensation are often imposed, ensuring that companies face criminal consequences have proven elusive. Serbia's authorities may encounter similar difficulties in prosecuting corporate entities for environmental offenses. While civil liability often results in compensations for environmental damage, it may not compel corporations to adopt sustainable practices or prevent future incidents. Civil settlements may address immediate damages, but they rarely include structural reforms or long-term commitments to environmental protection. Serbia would benefit from bolstering its legal frameworks, ensuring strong preventive measures, and taking a proactive approach to corporate accountability to safeguard its environment from potential harm caused by international corporations.

Despite the efforts in criminal law protection, it should be borne in mind that without adequate cooperation of the competent institutions at the national level with the public prosecutor's office and the police, as well as adequate financial, technical and human resources, it is not possible to suppress the harmful activities of corporations that endanger the environment. Such activities are often associated with organized crime and corruption, so they should be viewed through the prism of the fight against the aforementioned phenomena. Therefore, considerable attention should be paid to preventive measures. This implies improvement of efficiency in the work of various inspection authorities whose competence is the area of environmental protection. Inadequate inspection and regulation can also contribute significantly to the occurrence of environmental disasters, as can be seen from the example of the environmental disaster that occurred in Canada.

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