Bringing hazardous materials into Serbia and illegal processing, disposal, and storage of hazardous materials – a criminal offence under article 266 of the Criminal code -Concept, application, challenges-*

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This paper scrutinizes Article 266 of the Serbian Criminal Code in the context of hazardous material regulation, highlighting its pivotal role in aligning Serbia’s criminal law with global environmental standards and safeguarding public health. Through a detailed analysis, the study examines the effectiveness of Article 266, identifying enforcement challenges and proposing improvements to enhance its application and impact. It presents a legal framework analysis, evaluates alignment with international treaties, and suggests recommendations for better hazardous waste management. The research underscores the importance of international cooperation and the need for increased public awareness and education on environmental laws. The findings indicate that while Article 266 establishes a solid foundation for hazardous waste regulation, there is a crucial need for legislative refinement in the area of waste management, especially enhanced enforcement mechanisms, and broader educational outreach to ensure effective environmental protection and compliance with international norms.


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Introduction

In an era marked by environmental crises and heightened global awareness of ecological sustainability, the intersection of environmental law and criminal justice has never been more critical. The regulation of hazardous substances represents a significant area within this intersection, addressing both the direct and insidious threats these materials pose to public health, environmental integrity, and socio-economic well-being.

This paper focuses on Serbia’s legislative response to these challenges, specifically through Article 266 of the Serbian Criminal Code, which addresses these concerns by criminalizing the import, processing, disposal, and storage of dangerous substances, thereby playing a key role in Serbia’s environmental protection efforts.

The regulation of hazardous substances is a concern shared globally, evidenced by various international conventions and treaties aimed at managing environmental risks. Therefore, Serbia’s adoption of Article 266 is in line with these international commitments, reflecting a concerted effort to address environmental challenges within its legal framework.

Despite its comprehensive nature, Article 266 faces numerous challenges in its enforcement and application. These challenges include the identification and classification of hazardous materials, evolving types of environmental hazards, and jurisdictional issues in enforcement.

As Serbia continues to navigate the complexities of environmental protection and legal regulation, Article 266 stands as a critical component of its legislative arsenal. So, this work seeks to contribute to the ongoing discourse on environmental law and policy, offering a detailed analysis of one of Serbia’s key legal instruments in the fight against environmental crime.

The paper aims to provide a nuanced understanding of Article 266, evaluating its efficacy and identifying areas for improvement in the context of Serbia’s environmental and legal framework. So, the objectives of the paper are: to investigate Serbia’s adherence to global environmental standards through Article 266 and its alignment with international treaties; to conduct a comprehensive analysis of Article 266’s legal framework within both Serbian and international contexts; to assess the challenges in enforcing and implementing Article 266, including logistical and regulatory hurdles; and to propose recommendations to enhance the effectiveness of Article 266 for better management of hazardous substances and international cooperation.

The paper is meticulously structured to sequentially address these objectives, ensuring a logical flow that guides from a broad understanding of the global context to a focused analysis of Serbia’s legal framework. It begins with an exploration of the global environmental landscape and the critical role
of hazardous substance regulation. It then transitions to a detailed examination of Article 266, its legislative intent, and its operational mechanisms. The analysis progresses to identify and evaluate the challenges of enforcement and implementation within Serbia’s unique legal and environmental context. The paper concludes by synthesizing these insights into a set of targeted recommendations designed to bolster the effectiveness of Article 266 and to foster alignment with international environmental protection efforts.

By providing a detailed examination of Article 266 within this framework, the paper aims to contribute significantly to the discourse on environmental law and policy. It seeks not only to elucidate the complexities of regulating hazardous substances in Serbia but also to offer insights that may inform similar legislative and policy endeavors globally, thereby advancing the collective pursuit of environmental sustainability and legal efficacy in the face of enduring and emergent environmental challenges.

**International documents of importance for the prevention of illegal cross-border movement of hazardous materials**

The illegal cross-border movement of dangerous substances poses significant risks to public health, safety, and the environment. Recognizing these dangers, the international community has established a framework of agreements and conventions designed to regulate and prevent such activities. The international legal framework plays a pivotal role in addressing the challenges of illegal cross-border movements of dangerous substances. Through a combination of preventive measures, control mechanisms, and cooperative efforts, these documents collectively contribute to the global endeavor to safeguard public health, safety, and the environment from the risks posed by hazardous substances. The most important international acts in this field are as follows:


The Basel Convention, adopted in response to public outcry over toxic waste dumping in less developed countries, establishes a comprehensive regime for controlling the transboundary movement of hazardous wastes. It emphasizes the reduction of hazardous waste generation and the promotion of environmentally sound management practices. The adoption of the Basel Convention was primarily driven by growing international concerns about
‘toxic trades’, where hazardous wastes were being exported from developed to developing countries, often without adequate regulation or consent. The Convention also sets forth a mechanism to identify and take necessary measures against illegal trafficking of hazardous wastes (Clapp, 2001:44).

The Convention’s primary objective is to control and reduce the movement of hazardous waste across international borders, ensuring that such waste is managed in an environmentally sound manner. It introduces the concept of „prior informed consent”, requiring exporting countries to obtain permission before exporting hazardous waste. The Convention also emphasizes the reduction of hazardous waste generation and the promotion of cleaner production methods (Krueger, 1999).

The Basel Convention establishes a framework for documenting and tracking transboundary movements of hazardous waste. Despite its regulatory mechanisms, the Convention has faced challenges in ensuring compliance and enforcement, especially in countries lacking the necessary infrastructure to manage hazardous wastes safely (Nemeth, 2015). Critics argue that the Basel Convention, while pioneering, does not go far enough in prohibiting the transfer of hazardous wastes to less developed countries. These criticisms have led to amendments and protocols aimed at strengthening the Convention, such as the Ban Amendment, which proposes a complete ban on the export of hazardous wastes from developed to developing countries.

Despite its challenges, the Basel Convention has had a significant impact on global hazardous waste management. It has raised awareness about the risks associated with hazardous waste and has prompted countries to develop national laws and regulations in line with the Convention’s principles. Furthermore, the Convention has fostered international cooperation in managing hazardous wastes, contributing to global environmental protection efforts (Basel Convention, 2024).


The Stockholm Convention targets persistent organic pollutants (POPs), which are chemicals that persist in the environment, bioaccumulate through the food web, and pose a risk of causing adverse effects on human health and the environment. This is a global treaty aimed at protecting human health and the environment from the adverse effects of POPs (Li et al., 2006). As Hagen and Walls (2005) elucidate, the Convention adopts a risk-based approach to manage and reduce the impacts of twelve specifically listed POPs of historical concern. Many of these POPs, including ten no longer produced in the United States, have been subjected to significant regulation due to their
persistence and bioaccumulation in the environment. The treaty particularly addresses unintentional by-products like dioxins and furans, promoting best practices and technologies to minimize their release. Furthermore, the Convention imposes obligations on participating countries to eliminate or restrict the production, use, and trade of these harmful substances and is crucial in preventing the illegal trade and movement of these substances across borders (Stockholm Convention, 2024).

The Vienna Convention on the Physical Protection of Nuclear Material (1980)

The Vienna Convention is a pivotal international treaty that focuses on the protection of nuclear material and facilities. It primarily addresses measures related to the prevention, detection, and punishment of offenses involving nuclear material, particularly during international transport and it obligates signatory states to ensure the security of nuclear materials within their territory, in transit, and at international nuclear facilities. Additionally, the Convention was amended in 2005 to include the protection of nuclear facilities and material in peaceful domestic use, storage, and transport. Article 7 of the aforementioned convention specifically provides for the criminalization of unauthorized receipt, possession, use, transfer, alteration, disposal, or dispersal of nuclear material, its theft, evasion, or obtaining by fraud (Marković, 2022:502).


The Rotterdam Convention, established in 1998, is an international treaty designed to regulate the global trade of certain hazardous chemicals and pesticides, ensuring that importing countries are informed and consent to the import of these substances. It operates on the principle of Prior Informed Consent (PIC), a procedure that empowers countries to make informed decisions on the import of hazardous chemicals by providing them with essential risk assessment information, enabling them to refuse imports of substances they cannot manage safely. The Convention lists chemicals that have been banned or severely restricted for health or environmental reasons by Parties and facilitates information exchange about their characteristics (Rotterdam Convention, 2024). It plays a crucial role in protecting human health and the environment from potential harm caused by these chemicals, particularly in countries with less regulatory infrastructure.
European Union regulations on waste management


The EU regulation that is particularly important for the prevention of illegal cross-border movement of hazardous materials is the EU Waste Shipment Regulation (EC) No 1013/2006 (European Parliament and Council, 2006). It plays a critical role in controlling the shipment of waste within and outside the EU borders, ensuring that waste is managed in an environmentally sound manner and preventing illegal waste trafficking. When transporting waste across international borders, the owner must adhere to a specific procedure, which includes notifying the intended transport, ensuring proper packaging and labeling, and following prescribed safety protocols. This procedure, detailed in regulations and supplementary annexes, outlines all necessary conditions and documentation for such transportation (Prlja et al., 2012:161,162).

The EU’s waste management policies are continuously evolving to address emerging challenges and integrate technological advancements in waste handling and recycling. These regulations demonstrate the EU’s commitment to sustainable waste management practices and a transition towards a more circular economy (European Commission, “Towards a Circular Economy: A Zero Waste Programme for Europe,” 2014).
Evaluating the Alignment of Article 266 of the Serbian Criminal Code with International Environmental Laws and Standards

In evaluating the alignment of Article 266 of the Serbian Criminal Code with international environmental laws and standards, it’s evident that Serbia has made significant strides towards integrating global norms into its national legislation. Article 266, specifically addressing the criminalization of the import, processing, disposal, and storage of hazardous materials, resonates with the objectives and provisions of several key international documents.

Firstly, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (1989) sets a global standard for controlling hazardous waste movements and preventing illegal dumping. Article 266 aligns with the Basel Convention by establishing a legal framework that not only criminalizes unauthorized hazardous waste activities but also incorporates the principle of “prior informed consent”, thus echoing the Convention’s emphasis on transparency and international cooperation in hazardous waste management.

Similarly, the Stockholm Convention on Persistent Organic Pollutants (2001) focuses on eliminating or restricting the production and use of environmentally persistent organic pollutants. Article 266’s broad scope, which includes managing hazardous substances beyond just waste, supports the Stockholm Convention’s goals by penalizing activities that could lead to the release of these persistent pollutants into the environment.

The Vienna Convention on the Physical Protection of Nuclear Material (1980) and its amendment emphasize the protection of nuclear materials and facilities. While Article 266 does not exclusively focus on nuclear substances, its provisions for the management and criminalization of hazardous materials handling indirectly support the Vienna Convention’s objectives by ensuring that activities involving potentially radioactive substances are regulated and subject to criminal penalties if mismanaged.

The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998) promotes informed international trade of hazardous chemicals. Article 266 complements this by penalizing the illegal import and management of such substances, thereby reinforcing the Convention’s principle of informed consent and safe handling of hazardous chemicals within Serbia.

Lastly, the EU regulations on waste management, particularly the EU Waste Shipment Regulation (EC) No 1013/2006, aim to control the shipment
of waste to ensure it is managed in an environmentally sound manner. Article 266’s focus on the illegal movement and management of hazardous materials aligns with the EU’s efforts to prevent illegal waste trafficking, showcasing Serbia’s commitment to aligning its legal framework with European standards.

In conclusion, Article 266 of the Serbian Criminal Code reflects Serbia’s dedication to incorporating international environmental laws and standards into its national legislation. Through its comprehensive approach to managing hazardous materials, Article 266 not only adheres to the spirit of international conventions but also addresses specific challenges within Serbia, demonstrating a balanced integration of global environmental norms and national legal requirements.

It warrants mention that, although Article 266 of the Serbian Criminal Code exhibits rigorous normative conformity with global environmental legal frameworks and standards, the efficacy of its practical execution engenders significant scholarly discourse, a topic that will be explored in further detail within this paper.

What is very important to point out here is that the necessity for ongoing legislative reforms, particularly of other non-criminal regulations that provide the substantive context for the criminal law provision of Article 266, is underscored by the dynamic nature of environmental hazards and the evolving international standards in hazardous waste management. These reforms are crucial not only for maintaining alignment with international conventions but also for ensuring that Serbia’s legal framework remains responsive to new types of environmental threats and technological advancements in waste management. Moreover, updating these foundational regulations will enhance the practical enforceability of Article 266, ensuring that it effectively addresses the complexities of modern hazardous waste challenges and reinforces Serbia’s commitment to global environmental protection efforts. This process of continual legal adaptation is essential for Serbia to fulfill its international obligations, protect public health and the environment, and promote sustainable development within its jurisdiction.

Legal Analysis of Article 266 of the Criminal Code

The criminal offense of bringing hazardous materials into Serbia and illegal processing, disposal, and storage of hazardous materials from Article 266 of the Criminal Code is regulated in the special twenty-fourth chapter dedicated to criminal offenses against the environment.
The object of protection in all these criminal acts, including the criminal act referred to in Article 266, is the environment as an independent good, or more precisely, the human right to a preserved environment (Stojanović & Perić, 2011:210).

This criminal offense has a basic and serious form, then a qualified and special serious form. The basic form (paragraph 1) is made by anyone who, contrary to regulations, brings radioactive or other hazardous materials or hazardous waste into Serbia, or who transports, processes, disposes of, collects, or stores such materials or waste. For the existence of this offence, it is sufficient that an abstract danger to the environment has been created.

Therefore, from the cited provision described in paragraph 1, the object of this criminal offense is radioactive or other hazardous materials, as well as hazardous waste, for the exact determination of which it is necessary to consult other non-criminal regulations (Marković, 2022:504). In the first place, it is the Law on Radiation and Nuclear Safety and Security (“Official Gazette of the RS”, No. 95/18 and 10/19) which in Article 5, paragraph 109) defines radioactive material as material containing radioactive substances, while paragraph 107) defines a radioactive substance as any substance that contains one or more radionuclides whose activity or specific activity cannot be ignored from the point of view of protection against ionizing radiation. Radioactive waste (Art. 5, paragraph 110) is radioactive material in a gaseous, liquid, or solid state, the further use of which is not planned or foreseen.

In order to define the other intended objects of operations in the form of other hazardous materials and waste, the Law on Waste Management is relevant, which in Article 5, paragraph 18) defines hazardous waste as waste that, due to its origin, composition, or concentration of hazardous materials, can cause danger to the environment and health people and has at least one of the dangerous characteristics determined by special regulations, including the packaging in which the hazardous waste was or is packed.

The action of committing this criminal offense is determined alternatively in the form of six actions: bringing in, transporting, processing, disposal, collection, and storage of the mentioned hazardous materials. When it comes to the first specific action - bringing in, it must be carried out “against the regulations”. As this criminal offense is blanket in nature, it is necessary to take into account, first of all, the Law on Environmental Protection, the Law on Waste Management, as well as by-laws that regulate the issue of permits for import, export, transit and storage of waste (such as Rulebook on the content of documentation to be submitted with the request for a permit for the import, export and transit of waste) (Marković, 2022:503).
In this way, Article 57, Paragraph 1 of the Law on Environmental Protection absolutely prohibits the importation of hazardous waste, and any action contrary to the aforementioned legal prohibition constitutes a criminal offense under Article 266 of the Criminal Code. The situation is the same with radioactive waste, given that Article 4, paragraph 5 of the Law on Radiation and Nuclear Safety prohibits the import of radioactive waste and spent nuclear fuel of foreign origin into the territory of the Republic of Serbia. Otherwise, importation can be done in any way - by road, rail, river, sea transport, etc. (Stojanović, 2018:842).

When it comes to other acts of committing a crime, for a criminal offense from Article 266 of the Criminal Code to exist, it is sufficient that the transportation, processing, disposal, collection, or storage of radioactive or other hazardous substances or hazardous waste is contrary to the relevant regulations in this area. This is, first of all, the aforementioned Law on Waste Management, which in Article 59 stipulates that permits must be obtained for performing one or more activities in the field of waste management, namely: permit for waste collection, permit for waste transport, permit for waste storage, as well as a permit for waste treatment. One integral permit may be issued for the performance of several activities by one operator.

So, a crime can be committed in waste management if it’s done by a party that either lacks a required permit or possesses a permit but not for the specific task being performed (like having a permit for transport but engaging in hazardous waste disposal without authorization). Furthermore, a crime may also occur if the individual has the right permit for a waste management activity but conducts it improperly (Drenovak - Ivanović et al., 2020:130).

The perpetrator of this criminal offense can be any natural person or legal entity. Otherwise, environmental crimes are often committed by legal entities, i.e. powerful (international or national) corporations (Batrićević, 2018:140). The practice has shown that legal entities are primarily responsible for crimes related to environmental pollution and disposal of hazardous waste (Lukić, 2012:223).

The punishment provided for the basic form is imprisonment from six months to five years and a fine.

When it comes to the more severe form of this criminal offense provided for in paragraph 2, it is committed by the person who, by abusing his official position or authority, allows or facilitates the introduction of materials or wastes described in the basic form into Serbia, or enables such materials or wastes to be transported, process, dispose of, collect or store. Therefore, the more serious form of this criminal offense exists if the execution of the basic form is allowed or enabled by abuse of official position or authority, and, as a rule, it can only be done by an official (Drenovak - Ivanović et al., 2020:130).
So, the perpetrator of this form of criminal offense can only be an official - the term of which should be taken in the context of Article 112, paragraph 3) of the Criminal Code and who in the specific case abuses his position or authority - the meaning of which should be taken in the same sense as in the case of the criminal offense abuse of official position from Article 359 of the Criminal Code (Lazarević, 2011:824). The act can be committed by doing or not doing (omission) when an official fails to take certain measures that he was obliged to take based on the law and other regulations (e.g. to prohibit the import of hazardous waste) (Stojanović, 2018:843).

For this more severe form, a prison sentence of one to eight years and a fine is prescribed.

In paragraph 3 of Article 266, a special form of this offense qualified by a more severe consequence is assigned. A more serious consequence consists in the fact that due to the execution of the basic form of the offense, the destruction of animal or plant life on a large scale or the pollution of the environment to such an extent that it requires a longer time or large costs to eliminate it. Therefore, with this qualified form, for the sake of proper application, it is necessary to crystallize in practice clear interpretations of the legal standards “destruction on a large scale”, “longer time” and “large costs” which are used in incrimination. According to the legal opinion adopted at the session of the Supreme Court on April 17, 2006, (Bulletin of Judicial Practice of the Supreme Court, 2006:11), “large-scale damage” in certain criminal offenses exists when the value exceeds the amount of 6.000.000,00 dinars, but this opinion does not apply to the criminal offense under Article 266 of the CC, nor other criminal acts from Chapter XXIV of the Criminal Code (Drenovak - Ivanović et al., 2020:130). Given that the consequences of this form are determined in an extremely general and imprecise manner, Lazarević (2011) rightly argues that this will likely create interpretation challenges in judicial practice, resulting in delays in criminal proceedings.

A prison sentence of two to ten years and a fine are provided for this qualified form.

In paragraph 4, the situation is foreseen when the court decides to impose a conditional sentence on the perpetrator for one of the previous three forms of this criminal offense, that it can determine the obligation of the perpetrator to take certain prescribed measures of protection against ionizing radiation or other prescribed protection measures within a certain period. The control of the application of these protection measures is carried out by the competent inspector for environmental protection, based on the authorization from Article 86 of the Law on Waste Management.
At the end of the incrimination in question, in paragraph 5, a special more serious form of this criminal offense is provided, which consists in organizing the execution of its basic form. The term organization should be understood as the association of two or more persons to jointly perform the activities described in the basic form of this part (Lazarević, 2011:689-690). There is a debate in theory regarding when the criminal act is considered complete in this scenario. Lazarević (2011) believes that it is sufficient that some form of organization has been created and that it is not necessary that the basic form of this criminal offense has been committed, while Stojanović (2018) advocates the view that it is necessary to commit at least two basic forms of this criminal offense, organized by the executor of this form, while he did not participate in their execution.

Marković (2020) argues in favor of the second interpretation, stating that merely organizing is insufficient for the execution of the basic form. This is because paragraph 5 would then address the criminalization of preparatory actions, which seems unlikely given the harshness of the penalty. This penalty, as stipulated in Article 266, is notably severe, involving a prison sentence of three to ten years, making it one of the strictest sanctions in this context. The above interpretation should be accepted as clear and logical, and is also shared by Drenovak-Ivanović et al. (2020), who maintain that for this type of serious offense, it’s enough if just one criminal act from Article 266, paragraph 1 of the Criminal Code is committed. This applies especially if the organization was established with the intent to carry out several such offenses.

Intention is the only form of guilt in this criminal offense. Given that the object of the act is an essential element of the existence of the criminal act itself, the perpetrator must be aware that it is dealing with radioactive or other hazardous materials or hazardous waste (Marković, 2022:506).

**Article 266 in Practice: Application and Enforcement**

When it comes to the application of the criminal offense from Article 266 of the Criminal Code, statistical data and judicial practice, unfortunately, do not provide a bright picture. The aforementioned criminal offense follows the general trend of all environmental crimes whose share in the total number of convictions is very low (the highest recorded since the adoption of the Criminal Code to date is in 2006 when the share of these crimes in the total established criminality was only 2.44%) (Marković, 2022:508).

According to the data of the Republic Institute for Statistics of the Republic of Serbia, for adult perpetrators of criminal offenses, in the period
from 2006 to 2022\textsuperscript{1}, the number of reported, accused, and convicted when it comes to criminal offense under Article 266 of the Criminal Code is shown in Chart 1.

**Chart 1. The ratio of the number of reported, accused, and convicted for a criminal offense under Article 266 of the Criminal Code in the period 2006-2022.**

The first thing to notice is the fact that the implementation of the criminal offense from Article 266 of the Criminal Code in Serbia is more than symbolic and that in the sixteen years of its existence, only 19 legally binding judgments were passed by which certain persons were convicted for its execution. Although there is a noticeable trend of increasing reports and accusations from 2017. onwards, it is too small a figure when one takes into account the numerous cases of illegal storage and transportation of hazardous waste in the public and media, such as non-compliance with prescribed storage procedures and labeling of hazardous waste\textsuperscript{2} or finding large quantities of illegally buried hazardous waste at several locations in Serbia. Obviously, the trend of not reporting this environmental crime, which is also a general characteristic of environmental crime in the world in


\textsuperscript{2} “Hazardous waste in Serbia: It is not known how much there is, how it is stored and marked.” Available at: https://n1info.rs/biznis/opasan-otpad-u-srbiji-ne-zna-se-koliko-ga-ima-kako-se-skladisti-i-oznacava/, accessed on 18.1.2024.

\textsuperscript{3} “How long will we live with hazardous waste in our yard.” Available at: https://www.bbc.com/serbian/lat/srbija-43560981, accessed on 18.1.2024.
general, has not bypassed Serbia either, where “the dark figure of crime” that represents the difference between the number of offenses that are reported and the number of those that have been committed, is particularly high in the cases of environmental criminal offenses (Bejatović & Šikman, 2014:18; Batrićević, 2018:141).

When it comes to the (few) legal opinions of judicial practice regarding the application of the criminal offense from Article 266 of the Criminal Code, it should be mentioned the judgment of the Supreme Court of Cassation, Kzz. 1472/18 of January 22, 2019 related to the case of buried hazardous waste in Vukićevica, Obrenovac Municipality (See more: Drenovak - Ivanović et al., 2020:132-141; Sindjelić et al., 2021:56-66), in which it is stated that the verdicts of the Basic Court in Obrenovac and the Higher Court in Belgrade establish that the accused, knowingly and in a sane state, illegally disposed of hazardous materials and waste, violating specific provisions of the Waste Management Law regarding safe disposal practices. The Supreme Court of Cassation confirmed in this verdict that this act constituted the criminal offense of illegal import, processing, and storage of hazardous materials in Serbia, dismissing the defense’s claim of a legal violation in the judgment process.

In the judgment Kzz 1527/20 of 14 July 2021, the Supreme Court of Cassation also emphasizes the necessity of the existence of a subjective element in this criminal act. According to the Supreme Court of Cassation, the factual description in the first-instance verdict demonstrates all legal elements of the crime of importing, processing, and storing hazardous materials in Serbia under Article 266, Paragraph 1 of the Criminal Code, for which the accused, as the director of “BB” LLC, was found guilty. This includes both the objective aspect of the crime, involving the collection and storage of waste in violation of Waste Management Law without the required permits, and the subjective aspect, which encompasses the accused’s accountability, intention (awareness and will), and knowledge of the illegality of their actions.

In the absence of a serious number of proceedings for the criminal offense referred to in Article 266 of the Criminal Code, even the highest court instances do not have the opportunity to significantly deal with the quality application of this criminal law provision. Therefore, publications such as the Guide to Procedures in the Case of Improper Hazardous Waste Management (Sindjelić et al., 2021) and Public prosecution and environmental protection: normative framework and analysis of problems in application (Vučković, Komlen - Nikolić & Samuilov, 2022) must certainly be more accessible to all key actors in the detection and prosecution of this form of environmental crime in order to reduce the “dark figure” in this area.
It is precisely in these publications that some reported cases of the criminal offense referred to in Article 266 of the CC are listed, of which we single out two where the proceedings have been legally terminated and they are an example of good cooperation of all relevant participants in the proceedings:

1. **Pancevo Case**: Police uncovered substantial hazardous waste across three sites, prompting a search warrant from the preliminary proceedings judge. Despite possessing comprehensive permits for hazardous waste management, the accused lacked authorization for waste storage at these locations. An extensive forensic analysis revealed significant quantities of hazardous waste, leading to an indictment for violating Article 266, paragraph 1, of the Criminal Code. The accused, upon extradition from Romania, received a one-year prison sentence, a 500,000 dinar fine, and a security measure for the confiscation and mandatory destruction of the waste, subsequently managed by the Ministry of Environmental Protection (Sindjelić et al., 2021:44-47; Vučković, Komlen - Nikolić & Samuilov, 2022: 56-60).

2. **Kikinda Case**: An investigation by Kikinda Police, upon reviewing operational intelligence, found that a Novi Sad-based company was improperly storing both hazardous and non-hazardous waste in leased facilities within Kikinda’s industrial zone, in violation of their storage permits. Visual inspections and expert assessments confirmed the illegal storage of hazardous waste in quantities far exceeding permitted levels. This led to a criminal complaint against the company and its director for storing hazardous waste thirty times the legal limit. The court’s final judgment imposed bans on all waste collection, treatment, and disposal activities for two years, confiscated the company’s illicit gains and assigned the cost of criminal proceedings to the responsible individual. (Sindjelić et al., 2021:68-72).

Detecting and prosecuting crimes involving the illegal import, processing, disposal, and storage of hazardous materials in Serbia is crucial, as citizens often lack awareness of what constitutes such an offense, including common examples like the disposal of old batteries. Furthermore, the public very often does not know about the absolute prohibition on the import of hazardous materials and waste, which highlights a general lack of environmental awareness among the public regarding the significance of environmental pollution and its consequences (Marković, 2022:509). The lack of knowledge becomes particularly concerning when considering the impact on vulnerable groups of citizens, such as how violating environmental regulations can lead to breaches of children’s rights (Batrićević & Stevanović, 2023).
The insufficient awareness among citizens regarding criminal activities associated with hazardous waste can be seen as a result of a lack of information and inadequate education across all segments of the public about what constitutes hazardous waste and how to properly manage it. Initiatives to inform and educate the public about hazardous waste and its proper management are crucial activities aimed at elevating citizens’ knowledge and understanding of these issues, intricately connected to the broader topic of environmental pollution. Three recently conducted case studies will highlight specific problems directly linked to hazardous waste:

**Why should used creosote-impregnated wood waste be characterized as hazardous?**

Wood products are a following element of human society. Wood is a renewable construction material and is used in the manufacture of various timber products. Every year, a large number of old and damaged wooden structures such as wooden railway sleepers, utility poles, residential buildings, fence posts, furniture, and bridge constructions are demolished and dismantled for repair or replacement. Mechanical and biological degradation is the main disadvantage of using timber for railway sleeper production.

Creosote is used as a wood preservative all over the world for the purpose of protecting wood products from biological degradation. Large quantities of creosote-impregnated sleepers have been installed in the average railway system. Impregnated wooden railway sleepers are usable for up to 50 years and it is considered that the protective agent used for impregnation is safe for the environment while the sleepers are in operation. Damaged creosote-impregnated wooden railway sleepers become wooden waste. Creosote consists of more than 1500 different chemical compounds (Gallacher et al., 2017). The vast majority of those compounds manifest toxic characteristics individually (have the potential to cause cancer or birth defects). The main constituents of creosote, up to 85 % are so-called polycyclic aromatic hydrocarbons (PAHs). U.S. Environmental Protection Agency (EPA) in 1976 made up a list of 16 PAHs to estimate risks to human health from drinking water (Andersson & Achten, 2015). Those 16 “priority PAHs” represent only 15 % of all of those present in creosote. Furthermore, referred to the Waste Catalogue (Instructions for Determining the index number, Environmental Protection Agency, Republic of Serbia, 2010.) waste creosote, which was declared as waste, is hazardous regardless of the composition or concentration of dangerous substances. It would be listed under the index number 03 02 01* as non-halogenated
organic wood preservatives. On the contrary, out-of-service wooden railway sleepers are declared as non-hazardous waste under the index numbers 17 02 01 and 17 02 04* as Construction and demolition wastes (including excavated soil from contaminated sites).

Waste creosote impregnated wooden railway sleepers should be always listed as hazardous because they contain a complex mixture of different chemical compounds with mutual health and environmental effects that cannot be calculated (Nikolić, Radović & Tešović, 2023a). Characterization of waste like this as hazardous would impact its processing, disposal, and storage practices.

Managing the hazardous chemical waste in laboratories: are we on the right path?

It is noteworthy that even professionals working in laboratories in Serbia harbor uncertainties regarding the management and primary separation of hazardous chemical waste generated during laboratory analyses, experiments, and research. The complexity in effectively sorting this waste at the primary stage arises due to the imperative of preventing undesirable interactions and the production of potentially more hazardous secondary substances.

Research on this matter (Radović, Nikolić & Tešović, 2023b), led to the conclusion that all surveyed chemists and physical chemists (n=11) agreed about the need for additional education on laboratory hazardous chemical waste and its primary sorting, considering it an integral part of their daily work. Furthermore, an analysis of the current legal regulations in Serbia concerning the management of hazardous waste (Law on Waste Management and Waste Management Program of the Republic of Serbia for the Period 2022-2031) exposed a deficiency in explicit and unequivocal protocols outlining specific methods for the primary sorting of hazardous chemical waste in laboratories.

Exploring trends in environmental pollution and hazardous chemical waste reporting

In light of the frequent coverage of environmental pollution (EP) and hazardous chemical waste (HCW) in the global media, an analysis of reporting data from the websites of five selected daily newspapers (Financial Times (International edition); The Australian Financial Review; The Wall Street Journal; China Daily (English); The Times of India) and
seven scientific journals websites (Nature-all journals; Science-all journals; Environmental Pollution; Journal of Hazardous Materials; Waste Management; International Environmental Agreements: Politics, Law and Economics; Review of European, Comparative & International Environmental Law) on these topics from 2000 to 2022 revealed specific trends (Radović, Nikolić & Tešović, 2023c).

Notably, the year 2013 witnessed the highest number of articles on these topics (a total of 20,449 in all selected daily newspapers and scientific journals). During the 2000-2022 period, The Wall Street Journal recorded the highest ratio of published articles on HCW to the number of published articles on EP (expressed as HCW/EP in %) - 149.52%. This can be explained by assuming that the editorial board of The Wall Street Journal recognizes the importance of informing the general public about EP and HCW topics.

Moreover, the study unveiled a significant increase in the publication of articles covering EP and HCW topics in the following scientific journals: Nature, Science, Environmental Pollution, and the Journal of Hazardous Materials throughout the COVID-19 period (2000-2022), compared to the pre-COVID-19 timeframe (2017-2019).

Upon analyzing the aforementioned case studies, it becomes evident that the continuous dissemination of information and education is of paramount importance for both the general public and professionals. These efforts should center around topics such as the identification, characterization, and management of hazardous waste, with a necessary emphasis on reporting criminal activities arising from actions contrary to the provisions of legal regulations governing hazardous waste.

**Conclusion**

In recent years, the global increase in cross-border waste transport via road, rail, and water has included hazardous waste, posing significant risks to human health and the environment. This hazardous waste, found in various forms including solids, liquids, and gases, often consists of manufacturing by-products and discarded items like cleaning agents and pesticides and is exacerbated by the rising challenge of e-waste. This trend amplifies environmental pressures from both domestic and industrial waste, irrespective of its physical state, recyclability, or level of danger (Ćesarević, 2023:74).

Also, organized criminal groups have expanded their illicit activities to encompass environmental crimes related to waste management. These groups, involved in waste trafficking and smuggling, display distinct characteristics unlike those of “traditional-classic” criminal organizations, resembling...
commercial enterprises where each member has specific roles, structured similarly to business entities with various forms of control and disciplinary accountability for members (Bugarski, 2015:1101).

The comprehensive analysis of Article 266 of the Serbian Criminal Code in this paper reveals the critical role of this legislation in Serbia’s environmental and public health safety framework. The study highlights that while Article 266 is robust in its conceptualization, aligning with international norms like the Basel and Stockholm Conventions, it faces significant enforcement and implementation challenges (Česarević, 2023; Clapp, 2001; Hagen & Walls, 2005).

It should be emphasized that there is a great need for improved collaboration between institutions for effective enforcement of Article 266 and, also, the necessity of constant legislative reforms primarily of other non-criminal regulations in the field of hazardous waste management that give content to the criminal law provision from Article 266, according to international standards in this area. This is particularly pertinent in the context of the evolving nature of hazardous materials and the complexities of jurisdictional enforcement (Nemeth, 2015; Marković, 2022).

The international framework, as outlined in conventions like the Vienna and Rotterdam Conventions, along with EU waste management regulations, plays a pivotal role in shaping Serbia’s approach to hazardous waste management. The emphasis on global cooperation and alignment with international standards is crucial for Serbia to effectively mitigate the risks posed by hazardous substances (Stockholm Convention, 2024; Vienna Convention, 1980; Rotterdam Convention, 1998; European Parliament and Council, 2006).

Furthermore, the authors underscore the importance of raising public awareness and understanding of environmental laws. Considering that a lack of environmental consciousness can lead to a rise in environmental crimes, promoting environmental awareness through media outlets and educational systems, from elementary level to higher education and universities, is seen as an effective strategy for preventing such crimes (Batrićević, 2018:144). So, the lack of awareness, as evidenced in the case studies presented, underpins the need for comprehensive educational and outreach programs to bolster environmental consciousness and compliance (Batrićević, 2018; Bugarski, 2015).

In conclusion, it is important to say that there is a need for a multi-faceted approach to combating environmental crimes related to hazardous substances in Serbia. This approach should integrate legislative refinements, enforcement enhancements, international cooperation, and public education. Such a strategy is imperative for Serbia to address the challenges of environmental protection effectively and align itself with global environmental safety standards.
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Unošenje opasnih materija u Srbiju i nedozvoljeno prerađivanje, odlaganje i skladištenje opasnih materija – krivično delo iz člana 266. Krivičnog zakonika

-Koncept, primena, izazovi-

Olga Tešović a, Željka Nikolić b, Nebojša Radović c

Ovaj rad proučava član 266. Krivičnog zakonika Srbije u kontekstu regulative opasnih materija, ističući njegovu ključnu ulogu u usklađivanju srpskog krivičnog zakonodavstva sa globalnim standardima u oblasti zaštite životne okoline i zaštite javnog zdravlja. Kroz detaljnu analizu, studija ispituje efikasnost člana 266., identifikujući izazove u sprovođenju i predlaže poboljšanja za unapređenje njegove primene i uticaja. Rad predstavlja analizu pravnog okvira, procenjuje usklađenost sa međunarodnim ugovorima i sugeriše preporuke za bolje upravljanje opasnim otpadom. Istraživanje naglašava važnost međunarodne saradnje i potrebu za povećanjem javne svesti i obrazovanjem o zakonima iz oblasti zaštite životne sredine. Nalazi ukazuju na to da, iako član 266. uspostavlja čvrstu osnovu za regulaciju opasnog otpada, postoji presudna potreba za zakonskim poboljšanjima u oblasti upravljanja otpadom, a posebno za poboljšanjem mehanizama za sprovođenje i šire obrazovne aktivnosti kako bi se osigurala efikasna zaštita životne sredine i usklađenost sa međunarodnim normama.

KLJUČNE REČI: Krivični zakonik Republike Srbije, pravno regulisanje opasnih materija, zaštita javnog zdravlja, ekološki kriminal, upravljanje opasnim otpadom

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