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A CASE STUDY OF CYANIDE GOLD MINING: THE İLİÇ LANDSLIDE ANALYSIS FROM THE PERSPECTIVE OF ECOCIDE AND INTERNATIONAL LAW

SİYANÜRLÜ ALTIN MADENCİLİĞİNE İLİŞKİN BİR VAKA ÇALIŞMASI: İLİÇ HEYELANI EKOKIRIM VE ULUSLARARASI HUKUK PERSPEKTİFİNDEN ANALİZLER

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Abstract

This study evaluates the incident associated with cyanide gold mining, and the ecological disasters that have occurred and/or may arise as a consequence, analyzed through the lens of international law and in terms of cross-border regulations. This evaluation will consider the inclination of international public opinion to characterize ecocide as an international and universal crime, particularly in recent years. This perspective examines the potential for preventing cyanide gold mining activities through international legal regulations concerning ecocide and ecocide crimes. It analyzes the disaster resulting from the 2024 inicdent at the cyanide gold mining site in İliç, Erzincan/Türkiye. This discussion explores the potential for international liability arising from aggressive, risky, and hazardous mining activities. Cyanide gold mining poses significant risks to the planet and its ecosystems, underscoring the necessity for robust environmental protection regulations. The definition and acceptance of ecocide as a universal crime has emerged as a significant phenomenon in this context.

Keywords: *Cyanide Gold Mining, Ecocide, International Resposibilty, International Law -Cross-Border Regulations and Dangerous Mining Activities.*

Öz

Bu çalışmada siyanürlü altın madenciliği ve madencilik faaliyeti sırasında meydana gelen kaza ve bu kazaya bağlı olarak oluşan ve/veya oluşabilecek ekolojik felaketlerin uluslararası hukuk açısından ve sınıraşan düzenlemeler bakımından değerlendirilmesinin yapılması amaçlanmaktadır. Elbette bu değerlendirme yapılırken son yıllarda ekokırımın uluslararası ve evrensel bir suç olması yönünde veya evrensel bir suç olarak tanımlanması hususunda uluslararası kamuoyunda oluşan eğilimin de göz önünde bulundurulması hususu özel olarak dikkate alınmaktadır. Bu perspektifte; ekokırım ve ekokırım suçların (olası) bir uluslararası hukuk düzenlemesine dönüşmesi olgusu gözetilerek, Erzincan, İliç/ Türkiye'de 2024 yılında siyanürlü altın madencilik faaliyetinin yapıldığı madende gerçekleşen kaza sonucu ortaya çıkan felaketin analizi ile siyanürlü altın madenciliği faaliyetinin hem uluslararası hukuk hem de ekorkırım suçlar bakımından durumu tartışılmaktadır. Bu tartışmaya bağlı olarak; agresif, riskli ve tehlikeli madencilik faaliyetlerinden doğması muhtemel uluslararası sorumluluk halleri de doğal olarak tartışılmaktadır.Siyanürlü altın madenciliğinin yarattığı risk ve ekolojik felaketlerin gezegeni ve ekosistemini tehdit etmesinden ötürü, bu alanda etkili gezegen ve doğa dostu koruyucu düzenlemelere ihtiyaç olduğu ve bu bağlamda ekokırımın evrensel bir suç olarak tanımlanması ve kabul edilmesi hususlarının önemli bir olgu olarak ortaya çıktığı görülmektedir.

Anahtar Kelimeler: *Siyanürlü Altın Madenciliği, Ekokırım, Uluslararası Sorumluluk, Uluslararası Hukuk-Sınıraşan Düzenlemeler ve Tehlikeli Madencilik Faaliyetleri.*

Introduction

The landslide at a gold mining site in *İliç*, Erzincan, Türkiye, has rekindled the debate on ecocide and hightened concerns regarding the incorporation of detrimental mining practices into the definition of ecocide offenses.[1] Cyanide-based gold mining is neither benign nor ecologically sustainable; the lethal consequences of cyanide can obliterate not only human populations but also the surrounding area and its natural ecosystem. Regretably, the preservation of nature is not prioritized in mining activities; rather, nature itself subjected to exploitation. Consequently, in the light of this tragedy, it is crucial to examine mining activities broadly and cyanide gold mining specifically within the context of international ecocide legislation.

On 13 February 2024, a landslide at a gold mining site (DW, 2024), operated by an American corporation in the *İliç* district of Erzincan, Türkiye, resulted in a humanitarian and environmental catastrophe. This exteme occurrence, because of its proximity to the water basin and the Euphrates River, could impact not only human life but also the entire ecosystem, affecting a broader area that includes other countries. Non-governmental organizations (TTB, 2024), professional associations nature, environment, and public health associations, along with specialists in these domains, contend that cyanide gold mining is an exceedingly hazardous and lethal endeavor. These organizations and experts have asserted that cyanide mining presents considerable hazards to both the environment and human health (Ülker, 2024).

The methods and strategies that resulted in the the *İliç* Çöpler gold mine catastrope on 13 February 2024 constitute a blatant infringement of the rights to life, health**,** and a sustainable environment (TBB, 2024). This catasthrope led to the entombment of nine workers beneath the earth, and the displacement of a substantial volume of cyanide-laden dirt towards the Euphrates basin, an essential water source (TBB, 2024). Emphasizing the intrinsic dangers of gold mining involving highly poisonous cyanide is crucial. Compromising the environment, and ultimately nature, for perilous profit through this method is exceedingly dubious. Mitigating this perilous and hazardous scenario is crucial on both national and international levels.

1. Factors Influencing the Preference of Cyanide Gold Mining and Associated Damages and Risks

The late 19th century saw the first successful use of cyanide in gold mining[2] (BBC News, 2024; Metalurji ve Toplum, 2024). The risks involved in this method are a major topic of debate today. In Türkiye, cyanide gold mining has been a controversial issue since the establishment of the *Bergama Ovacık* mine in 2001. Today, countries such as the Czech Republic, Hungary, and Germany widely debate, criticize, and even ban cyanide gold mining and its techniques (Laitos, 2013:870). After the grinding process, this method mixes the extracted ore from the quarry with cyanide to chemically separate the gold from the ore. This chemical process separates not only gold but also metals such as silver, copper, iron, and other heavy metals such as arsenic and lead, which have toxic effects (Ülker, 2024). The "cyanide extraction," technique dissolves the gold in the appropriately crushed or ground ore using cyanide (Ülker, 2024). One of the only economically viable methods for recovering gold ore is the use of cyanide solution. Its low initial investment and operating costs make it preferable. In addition, the investment and payback

[1] For this concept, please see Moribe, et al (2023).

[2] *"The USA first used the cyanide technique to extract gold in 1867. However, this technique was abandoned because it was not economical with the technology of that day and the use of cyanidation technique increased in the early 1950s after it was determined that gold in cyanide solution could be easily absorbed by activated carbon."* See, Metalurji ve Toplum (2024).

process is highly incentivized and short, making it more attractive than other methods (Mudder and Botz, 2004:64-66; Ülker, 2024).

The Istanbul branch of the Chamber of Environmental Engineers, a professional organization in Türkiye, asserts that cyanide is the most effective method for mining operators and companies, facilitating gold production at a reduced cost and with minimal investment (BBC News, 2024; Metalurji ve Toplum, 2024). This manufacturing strategy disregards environmental expenses, which constitutes the primary profit for mining businesses, especially those gold mining. Consequently, firms can evade expenditures required for environmental regulation and the establishment of sustainable and the estalishment and health-conscious mining operations, so generating surplus value or profit through this approach (BBC News, 2024; Metalurji ve Toplum, 2024). This scenario creates a compelling motivation for the utilization of cyanide, enabling mining corporations to achieve substantial revenues with minimal expenses (Freitas and Horta, 2023; 3).

TEMA Foundation[3], a prominent non-governmental organization in Türkiye, asserts that during cyanide gold exploration and extraction, the initial exploration phase involves drilling numerous boreholes (hundreds) in the field. These boreholes are often unreachable by land vehicles, necessitating the cutting down of a significant number of trees (thousands) in forested regions to facilitate vehicles access to the drilling sites, which also results in damage to agricultural and pasture areas (TEMA, 2024). It should be emphasised that the primary soil layer inhabited by living organisms is either removed or compromised due to the cyanide stripping process employed in mining operations (Anning *et al*, 2019:1117). Furthermore, the blasting techniques utilized for extracting gold ore lead to detrimental effects on the underground water supply, severe landslides in the vicinity of the mine, and excessive dust and noise pollution (Abdalla *et al*, 2010: 85-891-892; DW, 2024).

TEMA's research indicates that the application of sodium cyanide not only extracts gold from the ore, but it also releases heavy metals and hazardous elements such as arsenic, antimony, cadmium, lead, mercury, and molybdenum that are typically present in the soil. These elements and heavy metals are then transformed into deleterious. It indicates that samples collected from surface water, soil, aquatic flora and fauna, terrestrial vegetation, and avian species in proximity to a gold mine exhibit elevated arsenic concentrations, presenting a health hazard (European Commission (EUROSTAT), 2010:6-8). TEMA, which is vital for the conservation of habitats and biodiversity in Türkiye, asserts that cyanide gold mining elevates mercury concentrations in municipal water, associated with the tailings ponds constructed in the mining region (TEMA, 2024). It maintains that scientific research indicates that overflows and leaks in waste storage facilities result in cadmium contamination of drinking water, groundwater and soil (Mudder and Botz, 2004:64-66; Abdalla *et al,* 2010:885-891-892).

TTB[4] a prominent professional organization in Türkiye, explicitly articulates the following in its position paper on cyanide gold mining:

> Cyanide is the name of a group of chemicals containing carbon and nitrogen. Most cyanide compounds are powerful and fast-acting poisons. Cyanide can enter the body through inhalation, contact with soil and ingestion of water and food. While sodium cyanide separates gold from the soil, it also liberates elements/heavy metals such as arsenic, antimony, cadmium, lead, mercury and molybdenum from harmless compounds in the soil and transforms them into harmful forms. High levels of arsenic have been found in samples of

[3] The Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats.

[4] The Turkish Medical Association.

surface water, soil, aquatic plants and insects, terrestrial plants and birds around the gold mine (TTB, 2024).

The TTB, has clearly outlined the risks associated with the use of cyanide in mining. The TTB claims that cyanide tailings ponds are the cause of the dramatic rise in mercury levels in drinking water, and that scientific research indicates that cadmium contaminates water and soil as a result of leaks and overflows from these ponds, landslides, or dam failures (European Environment Agency, 2024). Consequently, the TTB opinion suggests all these toxic and harmful compounds, particulaly cyanide, mercury and other heavy metals, are readily absorbed into the body through inhalation, water and food consumption, resulting in various health problems (Acar, 2024; European Environment Agency, 2024).[5] Considering the effects of cyanide gold mining on living organisms in the mining region is crucial, as it can result in acute and chronic poisoning, anemia, heart failure, various cancers, kidney failure, mental illness, and abnormal births (anomalies), should not be ignored (TTB, 2024; Freitas and Horta, 2023:1).

2. Legal Status of Cyanide Gold Mining and International Regulations

Cyanide is a hazardous compound characterized by a carbon and a nitrogen atom connected by a triple bond (C≡N group). Hydrogen cyanide can be readily converted into a chemical weapon (Marauhn, 2016; Tucker, 2012). The 1925 Geneva Protocol[6] and the 1993 Chemical Weapons Convention[7] prohibit the use of hydrogen cyanide in warfare and armed conflict (KSYÖ – Kenar and Sezigen, 2017:77-79). Cyanide gold mining remains a prevalent and agressive commercial activity, despite the existing prohibition.

In cyanide gold mining, it is essential to consider not only cyanide itself but also other compounds that can become harmful through the release of elements and heavy metals such as arsenic, antimony, cadmium, lead, mercury, and molybdenum. These elements are typically harmless in their original soil compounds (Freitas and Horta, 2023:4). Consequently, although cyanide is central to the issue, its application also alters other heavy metals and toxic or hazardous compounds, resulting in the creation of harmful forms. The presence of these hazardous forms elevates the potential for harm to all living organisms. A comprehensive legal evaluation of the issue is essential, taking into accoount all the detrimental compounds and heavy metals generated by cyanide gold mining. Failing to evaluate the problem and associated risks from incomplete comrehensive and thorough standpoint could result in premature conclusions.

Four of the ten chemicals of public health concern identified by the World Health Organization (WHO) are heavy metals: cadmium, mercury, lead, and arsenic (European Environment Agency, 2024).[8] Despite the fact that these heavy metals, particularly mercury, are naturally present in the environment, they typically pose no significant risks due to their safe storage in minerals. Nevertheless, human activities generate hazards and risks. By discharging substantial quantities of mercury and other heavy metals into the environment, cyanide mining

[5] See also, opinion of the Turkish Thoracic Society on the Gold Mine Accident in İliç, Erzincan (Türk Toraks Derneği'nin Erzincan İliç'teYaşanan Altın Madeni Kazası ile İlgili Görüşü), https://toraks.org.tr/files/mf/site/turk-toraks-dernegi-nin-erzincan-ilicte-yasanan-alt-7a29b01c.pdf

[6] The Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare, usually called the Geneva Protocol.

[7] The Chemical Weapons Convention (CWC), officially the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction.

[8] See also; https://iris.who.int/bitstream/handle/10665/41401/WHO_TRS_647.pdf?sequence=1; and https://www.undrr.org/hips-cluster/heavy-metals

exacerbates this risk, allowing them to circulate freely for thousands of years (European Environment Agency, 2024).

Mining activities within a country should be regarded as an exercise of the nation's sovereign rights. In this context, states perform mining activities in compliance with their national laws and regulations. International regulations regarding the use of specific hazardous and harmful elements and compounds in mining activities are gaining significance. Consequently, it is a contentious and flawed perspective to regard the rights of states to engage in mining activities as absolute and unrestriced. The unconditional and forceful exercise of this right may lead to irreversible and unavoidable harm. Hazardous elements, including heavy metals and compounds, pose substantial risks to the global community, the environment and ultimately the planet, affecting all life-sustaining components, both biotic and abiotic (TTB, 2024).

No direct international law specifically regulates, limits, or prohibits cyanide gold mining. Regulations exist that govern the hazardous chemicals generated through cyanide and the associated risks and harms they present. The World Health Organization (WHO) emphasizes that the Minamata Convention, adopted in 2013 and ratified by 152 countries, is a significant international regulation concerning chemical elements that pose potential public health risks (UN Environment Progmamme, 2024; Kayhan, 2022:718-720).

Furthermore, the Convention on the Protection of the Environment through Criminal Law,[9] a Council of Europe regulation enacted in Strasbourg in 1998, is an additional regulation worthy of consideration (Özenbaş, 2013:924-925; Bozkurt and Çitköylü, 2024:513-514). This regulation enables the Council of Europe to incorporate criminal law and its principles into environmental protection initiatives. Despite a modest number of countries having signed and approved this agreement, it signifies a new age of environmental protection regulations.

The Aarhus Convention is another important treaty.[10] Many nations approved this Convention, which was presented for signing at the 4th Conference of Environment Ministers in Aarhus, Denmark, on 25 June 1998, and it was established as the Aarhus Convention in October 2001.[11] Article 1 of this Convention undescores the safeguarding of the rights of current and future generations to inhabit an environment conducive to their health and well-being, while ensuring access to information regarding environmental issues, public involvement in decision-making, and the right to judicial review (Hukukbook, 2024).

The Aarhus Convention accentuates public rights encompassing access to accurate information, involvement in decision-making, and access to justice in environmental issues (Aarhus Convention, 1998). It fosters communication and engagement between governments and the populace while allowing for judicial oversight. This guarantees citizens' access to public information regarding environmental protection fosters transparent and equitable regulation and creates a framework for environmental protection in accordance with international law (Aarhus Convention, 1998). The Aarhus Convention is significant in addressing concerns regarding cyanide gold mining.

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[9] The Convention has not yet entered into force. However, the ECtHR took it into account in its judgment. Please see Case of *Öneryıldız v. Türkiye; https://hudoc.echr.coe.int/tur#{%22itemid%22:[%22001-162089%22]}*

[10] Türkiye is not a party to the Convention. However, the discussion here is about the cross-border applicability of the Aarhus Convention. Please refer to Arpacık (2022) for an interesting and well-founded assessment.

[11] The exact wording of this convetnion is as follows: "Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters". This convention was prepared by the United Nations Economic Commission for Europe. Unfortunately, Türkiye is not a party to the Convention.

The Cyanide Management Institute, overseen by the United Nations Environment Programme (UNEP) and the International Council on Metals and Environment (ICME), was founded and in 2017, the "International Cyanide Management Code for the Production, Transport and Use of Cyanide in Gold Production" was ratified.[12] This code, however, lacks regulations and penalties concerning cyanide-induced environmental harm. The Code's principal aim is to develop relevant standards.

With regard the Rome Statute, while there is no explicit provision addressing cyanide gold mining, it would be advantageous for the international community and the public to investigate whether cyanide gold mining could be classified as a crime against humanity under Article 5 of the Statute. This context necessitates a discussion on whether the natural and environmental disaster resulting from the landslide in *İliç*, Erzincan, Türkiye, qualifies as a crime of ecocide. The European Union's approach to cyanide gold mining warrants emphasis. On 5 May 2010, The European Parliament, adopted a resolution advocating for a comprehensive ban on cyanide mining technologies and urged the European Commission to implement a regulation prohibiting their use (EUR-Lex, 2010; Bocse, 2021:286). Nevertheless, the EU Commission has not yet approved the Parliament's resolution or the request for a regulation (Bocse, 2021).

Moreover, it is crucial to consider the European Convention on Human Rights (ECHR), a pivotal law of the Council of Europe, in relation to this ecological catastrophe. The ECHR will serve as as a crucial legal foundation, particularly for infringements of the right to life, the safegguarding of private life, and entitlement to an effective remedy.[13]

3. The Case in the Context of Ecocide and International Law Violations

Cyanide gold extraction presents significant risks and is a subject of considerable controversy. Accidents and spills at mining sites can lead to the release of cyanide and various heavy metals and compounds, including mercury, arsenic, and cadmium, into the environment in hazardous forms, presenting significant risks to human health and other organisms.

Fatalities occurred when an immense earth mound excavated at the cyanide gold mine in *İliç*, Erzincan, collapsed. The mine site is in proximity to the Euphrates River and its watershed, an essential watershed in Türkiye and the Persian Gulf region (Çakır, 2024). The Euphrates traverses Türkiye, Syria and Iraq before merging with the Tigris, which begins in Türkiye and empties into the Persian Gulf.

The potential for the mixture of cyanide and other heavy metals to reach the Euphrates is significant as has the potential to impact not only Türkiye but also other countries, posing a risk a large population across a wide geographical area. Consequently, the issue should not be regarded as merely environmental contamination. The environmental impact and risks of the disaster may entitle Türkiye to responsibilities under international regulations. It is imperative to address the potential for an ecocide crime or ecocide to occur as a consequence of the accident in question, given the disaster's severe geographical impact and its magnitude.

While a universally accepted definition of ecocide is lacking at the international level (Bozkurt and Nemec, 2024:355-356), it is reasonable to characterize the situation as an ecological disaster due to the lethal risks associated with cyanide and other heavy metals. The ecological

[12] "International Cyanide Management Code for the Production, Transport and Use of Cyanide in Gold Production". It should be noted that the 'International Cyanide Management Code for the Production, Transport and Use of Cyanide in Gold Production' is a voluntary and performance-based best practices certification programme for the management of cyanide in gold and silver mining. See, https://cyanidecode.org/languages/turkish/

[13] Please see following pages.

contamination resulting from the accident in *İliç*, Erzincan, must be regarded as an important component in assessing the critical risk to all living organisms in the scope of ecocide. Given that the disaster inflicts harm on both nature and the planet, it is appropriate to categorize this event as an ecocide crime and to establish the legal framework accordingly.

Countries are progressively prohibiting cyanide gold mining due to the associated risks it poses, and judicial rulings may classify accidents resulting from this mining practice as ecocide crimes (Uhm, 2020; 105-107). Currently, the absence of a universally accepted international regulation on ecocide suggests that addressing this issue within the framework of existing international regulations may be easier to implement. Over time, a customary practice may emerge, leading to the establishment of corresponding rules. Ecocide may also be incorporated as a crime under the *jus cogens* principles, which represent fundamental norms of international law binding on all states.

This approach should not be disregarded as it appears to be an appropriate method for safeguarding nature and the world. Consequently, it is anticipated that the initiation of litigation and petitions claiming that the incident constitutes an ecocide crime under international law. Thus, the ecological disaster in *İliç*, Erzincan, presents a chance to analyze and assess the hazards and harms inflicted by cyanide gold mining as an act of ecocide. National and international initiatives and litigations should be foreseen in this regard. Climate and environmental activists have lodged a complaint with the International Criminal Court (ICC)[14], urging that the Erzincan, *İliç* ecological tragedy be classified as an ecocide and that a probe be initiated (Kaya, 2024).

The legal ramifications of the incident can be assessed as follows: Article 5 of the Rome Statute[15] delineates the classifications of offenses within the jurisdiction of the International Criminal Court (ICC), encompassing genocide, crimes against humanity, war crimes, and the crime of aggression. Currently, however, there is no designated title or category for 'ecocide crimes' within the defined classification of crimes (Rome Statute, 1998/2002). Nonetheless, cyanide mining operations may indirectly be classified as crimes against humanity, as the lethal risks and severe health detriments they can inflict. The stance and methodology of the International Criminal Court (ICC) will be pivotal in legal proceedings and may represent a significant milestone in the evolution of international law. It will be intriguing to witness how the ICC addresses and interprets cases concerning ecological disasters resulting from activities like cyanide mining, as this may influence future legal precedents and frameworks for environmental crimes.

An additional aspect of the issue regarding international law is to evaluate Türkiye's conceivable legal liability under the "Convention on the Protection of the Environment through Criminal Law," ratified by the Council of Europe in Strasbourg in 1998. The European Court of Human Rights (ECHR), the legal authority of the Council of Europe, has examined this Convention, despite Türkiye not being a signatory, and has interpreted and enforced it in prior instances involving Türkiye. The ECHR is developing jurisprudence concerning Article 2 of the European Convention on Human Rights (ECHR), which governs the "right to life," and Article 8, which pertains to the "protection of private life," particularly in relation to transboundary treaties (Bozkurt, 2023:219).

The legal significance of a nation's membership in the 1998 Convention on the Protection of the Environment via Criminal Law is negligible, given this regulation operates on a transboundary

[14] The liability that it is discussed here is only for the people involved. In other words, it may be the responsible persons who authorise this mining activity and do not take the necessary precautions.

[15] Türkiye is not a party to the Rome Statute. However, the discussion here is about the cross-border applicability of the Rome Statute.

basis. In the Öneryıldız Case, the ECtHR utilized the Convention on the Protection of the Environment through Criminal Law, to which Türkiye is not a signatory, to ascertain the interpretation of Article 2 of the ECHR. This decision was taken since the case addressed a separate issue (Bozkurt, 2023:219).

The ecological calamity in *İliç*, Erzincan, which resulted in violations of the right to life, privacy and an effective remedy, should be considered. It is highly probable that these facts will shortly result in concrete applications and lawsuits. It is a fact that the ECHR has identified violations against Türkiye in other applications, despite the fact that Türkiye is nt a party to the "Convention on the Protection of the Environment through Criminal Law" that was adopted by the Council of Europe in Strasbourg in 1998 (Öneryıldız v. Türkiye—Hudoc, an application (no. 48939/99).

The ECtHR has stated that transboundary regulations are essential for safeguarding the environment and ecosystems. Therefore, it is imperative to initiate proceedings forthwith under Article 2 and Article 13, "The right to an effective remedy" of the European Convention on Human Rights (ECHR) even subsequent to the exhaustion of domestic remedies. Consequently, individuals directly or indirectly impacted by the ecological calamity that may qualify as an ecocide crime possess the right to initiate this judicial procedure. It is essential to acknowledge that this scenario adversely affects not only humans but also other organisms, their ecosystems, the Euphrates River and ultimately the entire globe.

The breach of the Aarhus Convention[16] (Güneş, 2010:302-304) constitutes another legal recourse against Türkiye. There are perceived deficiencies in ensuring that citizens have access to complete public information regarding environmental protection and nature conservation, which is fundamental to the right to a healthy and ecological environment. Public criticism and concern have emerged regarding the transparency of inspection results communication, the effectiveness of inspections, and the concealment of associated risks (Kaya, 2024).

The public was excluded from the decision-making process regarding aggressive mining practices, raising concerns about the absence of clear, fair, and trustworthy regulations to prevent the disaster. Turkiye will soon need to address its obligations under the Aarhus Convention. In this context, the Aarhus Convention will be pertinent to the regulation of cyanide gold mining (Bozkurt, 2024:169).

Moreover, recent reports in the national media reveal that a new gold exploring initiaive has been sanctioned in *İliç*, Erzincan (DW, 2024; Yeşil Gazete, 2024). This emphasizes the prioritization of economic goals and profit maximization above human-centered considerations. The endorsement of hazardous projects, notwithstanding prior tragedies and disasters, highlights deficiences in transparent process management.

Consequently, aggressive and perilous mineral exploration and extraction activities, as along with the endorsement of such projects, ought to be seen as infringements of the rights of individulas and communities to exist in a clean and ecological environment as stipulated by the Aarhus Convention.

Türkiye is a party to the Minamata Convention, which is another potential violation of international law.[17] The Minamata Convention (The Minamata Convention, 2013), is a legal

[16] Please see footnote no. 10 above.

[17] Türkiye became a party to this convention on 22 October 2022. Please see;
https://cygm.csb.gov.tr/ulkemiz-civaya-iliskin-minamata-sozlesmesine-resmen-taraf-oldu-haber-

document that mandates basic management and mitigation measures for mercury-containing products, processes, and wastes that are generated in sectors that use, release, discharge, or emit mercury. It mandates that Parties, including the Republic of Türkiye, prohibit the production, importation, exportation of certain mercury-containing products and implement effective mercury waste management (Republic of Türkiye Ministry of Environment, Urbanizaion and Climate Change, 2022). Additionally, it necessitates that nations device strategies to mitigate the emissions and consumption of mercury.

The Republic of Türkiye Ministry of Environment, Urbanization, and Climate Change (2022), stipulated that countries must implement the, most sophisticated, precise, and efficient technologies to drastically reduce and eliminate emissions and releases from mineral exploration and extraction activities, particulaly from large industrial facilities (Republic of Türkiye Ministry of Environment, Urbananization and Climate Change, 2022). The ecological catastrophe in *İliç*, Erzincan, is a compelling case for the establishment of a violation situation under the Minamata Convention as indicated by these findings. This is due to the fact that cyanide gold mining discharges harmful heavy metals, particularly mercury. Consequently, it should be legally anticipated that the preference for this method violates the Minamata Convention.

The probability of a legal violation of this Convention suggests an anticipated increase in complaints, requests, and lawsuits, under both national and international law. These actions may seek to address the violation and obtain compansation for the environmental damage caused by cyanide gold mining.

Conclusion

Currently, although aggressive mining activities, particularly cyanide gold mining, are perceived as economically viable commercial endeavors. However, they remain a contentious issue in both international and national discorse due to the associated environmental damage and risks.

The hazards associated with cyanide gold mining have resulted in its prohibition in certain countries. Regrettably, it is still extensively employed as a mining method, in developing or underdeveloped countries, primarily by companies from Western and developed countries. Cyanide is a toxic chemical that poses dangerous and lethal hazards to the ecosystem and living organisms. Furthermore, cyanide mining releases other toxic elements that are generally innocuous (dormant) compounds in nature (in the soil), such as arsenic, antimony, cadmium, lead, mercury, molybdenum and heavy metals. In this context, the potetntial calamities should not be perceived as mere environmental damage.

The incident in *İliç*, where cyanide gold mining is conducted, cannot be classified as a trivial or commonplace accident. This accident will have implications for both national and international law. In this context, Türkiye's legal responsibility under the Aarhus Convention, Minamata Convention, and the Convention on the Protection of the Environment through Criminal Law, which can be accepted cross-border regulations, will emerge due to the accident that has occurred, along with all associated damages and risks stemming from the authorization of this mining activity. Moreover, responsibilities under international law may emerge in relation to violations of the ECHR, specifically concerning the right to life, the protection of private life, and the right to an effective remedy. If domestic remedies do not produce the necessary legal results, the possibility of individuals filing complaints and applications to the ECHR and to the ICC in the context of the Rome Statute should be discussed as a cross-border regime or regulation in relation to the ecological disaster. Because cross-border practices and approaches are needed to prevent ecological disasters. The fact that countries are not parties to convention and/or statute creates a

state of irresponsibility. Cross-border regulations and judicial decisions that can prevent this are gaining in importance.

International public opinion has highlighted the necessity of categorizing cyanide gold mining activities as ecocide crimes in efforts to halt and prevent such practices. The incident and the resulting ecological disaster are appropriately associated with the concept of ecocide. The inclusion of cyanide gold mining and other aggressive mining activities in ecocide crimes, particularly cyanide gold mining, has gained prominence in efforts to define these crimes on a universal scale.

There are significant efforts to establish ecocide as a universal crime within international public opinion and international law. The prevailing international regulations and protection mechanisms are insufficient to safeguard the planet, its ecosystems, and the local populations from the impacts of cyanide gold mining activities. The legitimate expectation of international public opinion emphasizes the inclusion of all forms of aggressive and cyanide gold mining activities that cause or will cause significant harm to the planet and its ecosystem within ecocide regulations. The implications of the incident and ecological disaster concerning international law will be significantly more substantial than they initially seem.

Defining ecocide as a universal crime under international law is essential for preserving the planet's vital value and the right to life of all species. Ecological disasters are anticipated to catalyze the transformation and development of international law.

References

Aarhus Convention

Abdalla, O. A., Suliman, F. O., Al-Ajmi, H., Al-Hosni, T., & Rollinson, H. (2010). Cyanide from gold mining and its effect on groundwater in arid areas, Yanqul mine of Oman. *Environmental Earth Sciences*, 60, 885-892.

Acar, C. (2024). The sliding cyanide heap at the gold mine in Iliç had been proposed to be more than doubled". https://yesilgazete.org/the-sliding-cyanide-heap-at-the-gold-mine-in-ilic-had-been-proposed-to-be-more-than-doubled/ (Accessed 23 March 2025).

Anning, C., Wang, J., Chen, P., Batmunkh, I., & Lyu, X. (2019). Determination and detoxification of cyanide in gold mine tailings: A review. *Waste Management & Research*, 37(11), 1117-1126.

Arpacık, C. (2022). Türkiye'nin taraf olmadığı Aarhus Sözleşmesi'ne farklı bir bakış: "'Maden, enerji ve nükleer söz konusu olduğunda çevreye bakmam' dersen sana Kovid ve kanser bakar" https://www.indyturk.com/node/518086/%C3%A7evre/t%C3%BCrkiyenin-taraf-olmad%C4%B1%C4%9F%C4%B1-aarhus-s%C3%B6zle%C5%9Fmesine-farkl%C4%B1-bir-bak%C4%B1%C5%9F-maden-enerji-ve (Accessed 23 March 2025).

BBC News (2024). Erzincan'daki altın madeni: Toprak kayması ve göçük altında kalan 9 işçi ile ilgili ne biliniyor? *BBC* (13.02.2024). https://www.bbc.com/turkce/articles/ckveyyg5l25o (Accessed 07 November 2024).

Bocse, A.-M. (2021). Hybrid transnational advocacy networks in environmental protection: banning the use of cyanide in European gold mining, 21, https://link.springer.com/article/10.1007/s10784-020-09492-6.

Bozkurt, K. (2023). Uluslararası hukuk ve ekokırım suçlar ekseninde Ukrayna-Rusya savaşına ilişkin değerlendirmeler, *Yeditepe Üniversitesi Hukuk Fakültesi Dergisi*, 20(2), 209-228.

Bozkurt, K. (2024). *İklim Değişikliği ve Ekokırım Uluslararası Hukukun Entropisi*, Legal Yayınları.

Bozkurt, K. and Çitköylü, A. (2024). Assessments on the Ukraine-RussiaWar in theAxis of International Law and Ecocide Crimes, *Yeditepe Üniversitesi Hukuk Fakültesi Dergisi,* 21(1*),* 505-523.

Bozkurt, K. And Nemec, E. N. (2024). Advancing ecocide in international law: A potential legal tool for safeguarding endangered species amidst climate change, *Inonu University Law Review* – In ULR 15(2): 350-357.

Case Öneryıldız v. Türkiye- Hudoc, an application (no. 48939/99).

Convention on Access to Information, Public Participation in Decision-Makingand Access to Justice in Environmental Matters.

Çakır, M. (2024). Tıbbi Jeoloji Uzmanı Dr. Atabey bölgedeki altın, demir, bakır madenlerine dikkat çekti: Yukarı Fırat uyarısı! https://www.cumhuriyet.com.tr/turkiye/tibbi-jeoloji-uzmani-dr-atabey-bolgedeki-altin-demir-bakir-2177318 (Accessed 09 November 2024).

DW (2024). News and current affairs from Germany and around the World. *Deutsche Welle*. (Accessed 11 November 2024).

EUR-Lex Access to European Union law, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52010IP0145.

European Environment Agency. (2024). Cıva: çevre ve insan sağlığı için kalıcı bir tehdit: https://www.eea.europa.eu/tr/articles/civa-cevre-ve-insan-sagligi (Accessed 01 November 2024).

European Commission (EUROSTAT) (2010). Eurostat 50304.2009.001-2009.846 Information Hub Enquiry 2010-001 Impacts of Gold Extraction In the EU.

Freitas, J. and Horta, D. (2023). Impacts of cyanide in gold mining and cyanide removal methodologies in liquid waste from gold processing, Revista de Metalugia, 59 (3), e247-e247

Güneş, A. M. (2010). Aarhus Sözleşmesi Üzerine Bir İnceleme, *Gazi Üniversitesi Hukuk Fakültesi Dergisi*, 14, 298-333, https://dergipark.org.tr/tr/download/article-file/789557#:~:text=Bu%20nihai%20metin%2025%20Haziran,tarihinde%20Aarhus%20S%C3%B6zle%C5%9Fmesi%20y%C3%BCr%C3%BCrl%C3%BC%C4%9Fe%20girmi%C5%9Ftir.

https://cyanidecode.org/languages/turkish/ (Accessed 05 November 2024).

https://cygm.csb.gov.tr/ulkemiz-civaya-iliskin-minamata-sozlesmesine-resmen-taraf-oldu-haber-https://civasizturkiye.com/belgeler/minamata-sozlesmesi-tr.pdf (Accessed 05 November 2024).

https://hudoc.echr.coe.int/tur#{%22itemid%22:[%22001-162089%22]} (Accessed 23 March 2025).

https://hukukbook.com/cevresel-konularda-bilgiye-erisim-karar-vermede-halkin-katilimi-ve-yargiya-basvuru-sozlesmesi-aarhus-sozlesmesi/ (Accessed 07 November 2024).

https://iris.who.int/bitstream/handle/10665/41401/WHO_TRS_647.pdf?sequence=1 (Accessed 06 November 2024).

https://rm.coe.int/168007f3f4#:~:text=the%20unlawful%20possession%2C%20taking%2C%20damaging,wild%20flora%20and%20fauna%20species.&text=by%20one%20of%20its%20nationals,fall%20under%20any%20territorial%20jurisdiction. (Accessed 05 November 2024).

https://webdosya.csb.gov.tr/db/chemicals/editordosya/Minamata%20En.pdf (Accessed 01 November 2024).

https://civasizturkiye.com/belgeler/minamata-sozlesmesi-tr.pdf (Accessed 05 November 2024).

https://www.bbc.com/turkce/articles/cx0vw39gx87o (Accessed 05 November 2024).

https://www.dw.com/tr/i%CC%87li%C3%A7te-5-i%C5%9F%C3%A7i-g%C3%B6%C3%A7%C3%BCk-alt%C4%B1ndayken-yeni-maden-ruhsat%C4%B1/video-69218226 (Accessed 06 November 2024).

https://www.eea.europa.eu/tr/articles/civa-cevre-ve-insan-sagligi (Accessed 06 November 2024).

https://www.europarl.europa.eu/doceo/document/P-9-2023-000296_EN.html#:~:text=On%20the%2010th%20anniversary%20of,water%20bodies%20and%20ecosystems%20from (Accessed 05 November 2024).

https://www.ttb.org.tr/kollar/halk_sagligi/haber_goster.php?Guid=fa64adc4-f61c-11ec-8f77-41ecdd8d2c36 (Accessed 05 November 2024).

https://www.undrr.org/hips-cluster/heavy-metals (Accessed 08 November 2024).

https://yesilgazete.org/256-yeni-ruhsat-verildi-ilicte-yeni-altin-madeni/ (Accessed 05 November 2024).

International Cyanide Management Code for the Production, Transport and Use of Cyanide in Gold Production.

Kaya, M. (2024). "Maden kazası uluslararası hukukta sorun yaratabilir", https://www.ekonomim.com/gundem/maden-kazasi-uluslararasi-hukukta-sorun-yaratabilir-haberi-735285 (Accessed 02 November 2024).

Kayhan, A. K. (2022). Civa Tehlikesi ile Mücadelede Küresel Uzlaşı: Minamata Sözleşmesi, *MÜHF-HAD*, 28(2), 713-743, https://dergipark.org.tr/en/download/article-file/2625726.

KSYÖ, Kimyasal Silahların Yasaklanması Örgütü, (2017). Kimyasal Savaş Yaralılarının Tıbbi Yönetimi İçin Pratik Rehber, Türkçe Çeviri Ed.: KENAR, L. & SEZİGEN, S. https://sbu.edu.tr/FileFolder/Dosyalar/eb408a43/2018_6/kimyasal_savas_yaralilarinin.pdf.

Laitos, J. G. (2013). Cyanide, Mining, and the Environment, *Pace Environmental Law Review*, 30(3), 869-949.

Marauhn, T. (2016). Chemical Weapons and Warfare, Max Planck Encyclopedias of International Law, https://moodle2.units.it/pluginfile.php/464019/mod_resource/content/1/CHEMICAL%20WEAPONS.pdf

Metalurji ve Toplum (2024). Siyanür, Altın, İnsan ve Çevre, https://www.metalurji.org.tr/hurdaci/sayi_1/hurdaci1_1014.pdf (Accessed 08 November 2024).

Minamata Convention and the Mercury Hazard.

Moribe, C. M., Pereira, F. D. L. B., and França, N. P. C. D. (2023). Ecocide: A new challenge for the international criminal law and for humanity, *Journal of International Criminal Law*, 4, 28-40.

Mudder, T. I. and Botz, M.M. (2004), Cyanide and society: a critical review, *The European Journal of Mineral Processing and Environmental Protection* 4(1), 62-74.

Özenbaş, N. (2013). Çevrenin Ceza Hukuku Yoluyla Korunması Kapsamında Çevrenin Kirletilmesi Suçları, International Conference on Eurasian Economies.

Rome Satute.

TBB (2024). Statement of the Union of Turkish Bar Associations on Iliç Çöpler Gold Mine Disaster (Türkiye Barolar Birliği İliç Çöpler Altın Madeni Faciası Açıklaması): "Olası zararların önlenmesinin mümkün olduğu durumlarda hukuken kazadan söz edilemez", https://www.barobirlik.org.tr/Haberler/ilic-copler-altin-madeni-faciasi-aciklamasi-olasi-zararlarin-onlenmesinin-mumkun-oldugu-durumlarda-84596 (Accessed 02 November 2024).

The Chemical Weapons Convention (CWC), officially the Convention on theProhibition of the Development, Production, Stock piling and Use of Chemical Weapons and on their Destruction.

The Convention on theProtection of the Environment through Criminal Law.

The Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare, usually called the Geneva Protocol.

TEMA (2024). (The Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats), https://www.tema.org.tr/basin-odasi/basin-bultenleri/tema-vakfindan-ilic-aciklamasi-ulkemizde-vahsi-madencilik-yapilmasini-istemiyoruz (Accessed 02 November 2024).

TTB (2024). (Turkish Medical Association Public Health Section), Opinion on Cyanide Gold Mining (Türk Tabipler Birliği Halk Sağlığı Kolu, Siyanürlü Altın Madenciliği ile İlgili Görüş), https://www.ttb.org.tr/kollar/halk_sagligi/haber_goster.php?Guid=fa64adc4-f61c-11ec-8f77-41ecdd8d2c36 (Accessed 03 November 2024).

Tucker, J. B. (2012). *The Role of the Chemical Weapons Convention in Countering Chemical Terrorism*, DOI: 10.1080/09546553.2011.611839105

Türk Toraks Derneği (2024). Opinion of the Turkish Thoracic Society on the Gold Mine Accident in İliç, Erzincan (Türk Toraks Derneği'nin Erzincan İliç'te Yaşanan Altın Madeni Kazası ile İlgili Görüşü), https://toraks.org.tr/files/mf/site/turk-toraks-dernegi-nin-erzincan-ilicte-yasanan-alt-7a29b01c.pdf (Accessed 04 November 2024).

UN Environment Progmamme (2024), Minamata Convention Ratification Map, https://minamataconvention.org/en/parties/overview (Accessed 23 March 2025).

Uhm, D. P. V. (2020). The Diversification of Organized Crime into Gold Mining: Domination, Crime Convergence, and Ecocide in Darién, Colombia.

Ülker, P. (2024). Altı soruda siyanürlü altın madenciliği. *Deutsche Welle*. (16.02.2024) https://www.dw.com/tr/alt%.4%B1-soruda-siyan%C3%BCrl%C3%BC-alt%C4%B1n-madencili%C4%9Fi/a-68279548 https://www.dwturkce1.com/tr/erzincan-i%CC%87li%C3%A7teki-tehlikeli-y%C4%B1%C4%9F%C4%B1n-ne-olacak/a-68387268 (Accessed 05 November 2024).