



## Criminal governance of environmental harm: A reform-oriented analysis of liability, enforcement, and institutional capacity

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### Abstract

Environment-related crimes must be considered from two perspectives, that of law enforcement and of criminal governance. Where there is an actual danger to the public peace and security or where there is damage to the environment and/or where the state fails in its duty to protect its people, this may constitute a criminal offense. In this study, we shall look into issues related to the criminal aspects of environment offenses. Rather, the primary purpose of this essay is to offer a theoretical perspective on how to integrate environmental crimes into the legal system and build a preventive and repressive regime for dealing with environmental harm. The case study reveals that environmental criminal law cannot provide an effective mechanism for the protection of natural resources if the legislation provides for vague provisions regarding the crimes, imposes low-level sanctions, lacks provisions for the prosecution of companies, and only conducts standard inspection procedures. Thereby, a successful approach to the development of environmental crime law entails certain factors: specific legislative provisions, sanctions proportional to the severity of the consequences or risks incurred, special prosecutorial and court units, strong scientific evidential base, and cooperation between environmental and criminal enforcement agencies.

**Keywords:** Criminal governance, environmental harm, corporate liability, environmental prosecution

### Introduction

Environmental violations have now become issues that impact public order and the public's ability to live in an orderly and balanced natural setting. They are a threat to public health, economic stability, and society's enjoyment of a protected environment. In scholarly analysis of the environmental rule of law, it is noted that this challenge represents a matter of governance that requires reliable enforcement and the involvement of technology (UNEP, 2023) <sup>[14]</sup>. Environmental harms, such as pollution from manufacturing, dumping, water contamination, resource depletion, and improper handling of hazardous chemicals, do not necessarily remain within the location where such a violation takes place. The fact that there exists an international trade in environmentally sensitive items makes clear that the issue cannot be resolved administratively alone (Yamaguchi, 2023) <sup>[17]</sup>.

Thus, it is evident that the use of criminal sanctions in addressing environmental crimes should not be limited only to punishing offenders whose actions resulted in harm. First and foremost, criminal law must act as a preventative and correctional mechanism. The aim is to ensure the identification of criminal acts in advance, to make the perpetrator responsible for creating an environmentally hazardous situation, and to convey an important message – namely that some environmental misbehavior can become an offense threatening the interests of the community. Recent research on threats suggests that there exists a relationship between environmental offenses and organized crime, as identified by Europol in 2022 <sup>[8]</sup>.

The key difficulty in this case lies in its practical realization; that is, most often, environmental misdeeds are perceived as minor administrative violations, and do not attract criminal penalties. Penalties are imposed, warnings are delivered, paperwork is exchanged, and criminal aspects of such violations are significantly diluted. Moreover, in cases of economic damage, which occurs during criminal acts

carried out as part of corporate or organized economic activities, the offender is not an ordinary person who committed a criminal act, but a profit-oriented corporation.

In light of these facts, the paper moves from comparative considerations about the existing legislation concerning environmental issues to a study of the matter from a perspective of criminal governance. That is, the question arises – how could one organize the criminal justice system in a way that allows the criminal law to work towards protecting the environment? Several important points should be mentioned in this regard.

### Conceptual Reorientation: From Environmental Regulation to Criminal Governance

Environmental regulation typically consists of permitting, inspections, administrative orders, and sanctions. While the above instruments are still indispensable, the constant supervision of industries, suppliers of services, agriculture, transport facilities, waste facilities, and other risky sectors is needed to protect the environment. Nevertheless, administrative measures alone are insufficient when illegal behavior has caused or potentially caused serious harm, involved a high risk of causing harm, or showed persistent neglect of legal duties.

Criminal governance means treating certain behaviors as posing threats to the community and the need to respond through criminal justice measures. The reason why there may arise criminal liability in such cases is that a breach of a certain regulation is likely to indicate danger, carelessness, intention, persistence, or economic opportunism. The newly adopted environmental crime regulations in Europe provide that the definition of offences, penalties, preventive measures, and criminal justice measures are all integrated into one criminal-law paradigm (European Parliament & Council of the European Union, 2024) <sup>[5]</sup>. Moreover, the objective is not limited to punishing offenders but includes the objectives of deterring people from committing offenses,

preventing crimes from being committed, restoring the condition of the environment, and maintaining faith in law. Theoretical consideration of a difference between an administrative offense and a criminal one is required to be established via the law. For example, any insignificant delay in submission of a document regarding the environmental impact assessment can't be considered an action of equal importance to the intentional polluting of the water system. Similarly, a technical mistake of a private firm should not be treated as seriously as pollution by an industrial entity that has deliberately failed to ensure compliance with safety requirements. The criminal justice system should thus define the seriousness of the conduct, the degree of threat posed by that action, the perpetrator's position, and public consequences.

The idea behind criminal governance implies that harm may not necessarily result in immediate destruction. There is also such an element as cumulative environmental harm, scientific complexity of certain kinds of damage, and risk in case serious environmental damage happens eventually. In its turn, an appropriate criminal response should include the actual damage to the environment or its serious endangerment. The results of a survey carried out throughout the world show that forest crimes, mineral crimes, pollution crimes, soil crimes, and waste crimes exist in many countries; however, penalties for these crimes and legal personhood differ significantly (United Nations Office on Drugs and Crime [UNODC], 2024) [15]. Furthermore, according to recent legal studies, a penal approach toward environmental harm needs to take into account the potential for deterrence and proportional penalties (Savaşan, 2025) [13].

### **Criminal Liability and the Structure of Environmental Offences**

Environmental criminal liability depends on carefully drafted laws defining the relevant conduct, the persons accountable for that conduct, their requisite mens rea and/or negligence, and applicable consequences. In case of imprecise statutory wording, it will become hard for investigators, prosecuting officials, judges, and regulated actors to agree on the nature of certain conduct – as a crime, an administrative offence, or even a technical infringement. Similarly, in Jordanian legal literature, scholars have emphasized the importance of criminal provisions and deterrence within domestic legislation on environmental protection (Alkseilat *et al.*, 2020) [1].

There are key elements of a well-constructed offence. The first one concerns definition of prohibited conduct. This conduct may include illegal disposal, emissions without prior authorization, transportation of harmful materials, falsification of documents, damage to valuable resources, destruction of natural assets, etc. The next element is related to identification of the protected legal interests. Depending on the specifics of the situation, it may involve such protected interests as water resources, air, soil, biodiversity, people's health, and environment as a whole. Another element is associated with the transition point between administrative offences and criminal offences. The Jordanian Environmental Protection Law features definitions for the terms "pollution," "environmental degradation," "environmental audit," "environmental impact assessment," and "environmental permits." Incorporating

these definitions in criminal enforcement will help in building offences (Hashemite Kingdom of Jordan, 2017) [9]. The importance of mens rea is hard to underestimate. While in most cases environmental crimes are committed out of negligence, not malice, there is still a need for criminal liability to account for such behaviour. It may come down to negligence, attempts to save money, lack of proper maintenance, non-compliance with conditions imposed by licences, and others. Criminalizing environmental misconduct should cover both cases of intent and various forms of liability in case of gross negligence, recklessness, and continued violations of licensing conditions.

Both concealment and obstruction of justice are as relevant to proving liability in an environmental case as each other. The environmental protection process is entirely based on proper information being provided. Failure to supply information, hiding of the environmental consequences, manipulation of information, and obstruction by inspectors must be treated as serious crimes. Such measures deprive the state of the opportunity to assess danger and take preventive actions. Consequently, such acts of obstruction must be considered core crimes and not just administrative offences.

### **Corporate Criminal Responsibility**

In most cases, environmental damage results from the activity of legal persons rather than the actions of one person. The potential sources of risk are factories, construction companies, waste management companies, transportation companies, agricultural businesses, extractive companies, and so forth. They all can produce risks that would surpass anything produced by one person. In the case under consideration, the environmental damage was caused by decisions made to cut costs, a lack of proper supervision, poor compliance systems, or profit maximization. As for corporate environmental crimes, scientists in the field have proven that the company practices of planned obsolescence can produce environmental damage, helping corporations achieve some short-term benefits (Bisschop *et al.*, 2022) [2]. Thus, legal entities should also bear responsibility in the case of violation. If only the employees who acted unlawfully were punished, the justice would be incomplete because the crime might occur because of decisions made at a higher level. By imposing sanctions on corporations, the legislation could focus on the organization that was responsible for the unlawful behavior. Comparative studies of corporate liability in environmental cases show that the confusion between corporate fault and the fault of individuals could be misleading (Wibisana *et al.*, 2021) [16]. Ordinary penalties would fail to deter corporations from acting illegally. Even if the fine would prove to be effective, it could be considered an ordinary cost that the business would incur. Therefore, there should be more efficient sanctions, including but not limited to suspension of the illegal activity, mandatory remedial action, compliance monitoring, publication of the decision, closure of the enterprise for a period of time, prohibition from participation in public tenders, and even prohibition from any activity.

Corporate liability should not exclude individual liability. Directors, managers, technical specialists, and other individuals should be criminally responsible if their fault contributed to the unlawful act or omission that produced environmental damage. Such a combination of sanctions is the best strategy. On the one hand, the corporation itself will

not evade responsibility because of its complexity. On the other hand, individuals will not hide behind the corporation.

### **Enforcement Institutions and Specialization**

First, environmental criminal cases are different from usual crimes in many ways. They often use scientific data, technical inspections, expert opinions, complicated cause-and-effect relationships, and the participation of several supervisory bodies. A general prosecutor or a general court may find it difficult to deal with these issues without relevant expertise. In no way does it imply that we need to exclude environmental crimes from the system of general criminal justice. What it means is that the criminal-justice apparatus must be able to deal with all the technical and legal peculiarities of such offenses.

A specialized environmental criminal-prosecution service will be beneficial in many aspects. First, it will develop relevant expertise in environmental laws, inspection practices, scientific evidence, corporate organization, and international collaboration. Second, it will be capable of detecting systematic violations of the environmental legislation and distinguishing crimes that require criminal prosecution from administrative violations. The report by Eurojust on environmental crimes provides numerous examples of legal and procedural problems of cross-border cases and proves the efficiency of special prosecutorial collaboration (Eurojust, 2021) <sup>[6]</sup>.

As much as important is the issue of special judicial competence. In order to resolve an environmental crime, a judge needs to evaluate the expert evidence, analyze complicated technical data, and distinguish administrative infringements from criminal behavior. Creating specialized courts or judges with specific training will contribute to consistency in decision-making, increase the quality of rulings, and decrease the number of cases that are wrongly dismissed due to insufficient evidence and procedural uncertainties. According to the annual report of Eurojust, investigations and prosecutions in the sphere of environmental crimes are relatively rare compared to other types of crime despite the extent of the problem (Eurojust, 2024) <sup>[7]</sup>. French legal literature also mentions that regional jurisdictions with specialized competencies were created for dealing with technically complicated cases of environmental crimes (Brihi & Dufourq, 2022) <sup>[3]</sup>.

The idea of institutional specialization should not be perceived solely in a formal sense. It is impossible to achieve institutional specialization just by renaming a committee or creating a new position. Real specialization implies appropriate training, funding, clear jurisdiction, procedural guidance, the possibility of consulting experts, and an effective mechanism of interaction between regulatory and criminal authorities. This particular example from France demonstrates how this framework can be effectively applied in practice through the assistance of the region-specific court services in conjunction with the Environment and Health Command (Ministry for Europe and Foreign Affairs, 2025) <sup>[11]</sup>. However, in the absence of such practical application, the framework is likely to continue being merely symbolic in nature and to contribute to the current discrepancy between legislative demands and their implementation.

### **Evidence, Scientific Proof, and Procedural Challenges**

The efficacy of environmental criminal laws depends largely on the availability and quality of evidence. As opposed to most crimes, the occurrence of environmental crimes does not rely solely on eyewitnesses or an inspection. Often, evidence for the presence of environmental crimes includes the use of several means and tools such as lab testing, environmental testing, expert opinions, satellite images, geospatial data, data concerning pollution, documents regarding the transport of waste, and comparison of allowed operations and their actual execution. The absence or unreliability of evidence might make proving an environmental crime impossible even in case environmental damage had actually occurred.

Inspection reports present one of the core evidential issues because they can be incomplete, lack standardization, and lack tests and documentation regarding the samples and the process of collecting them and establishing the chain of custody. The solution to this problem is ensuring that inspections follow all the necessary procedures. Thus, the samples have to be taken, stored safely, subjected to testing in appropriate laboratories, and associated properly with an accused person.. All procedures of collecting and testing the evidence should be recorded meticulously. Inspection reports need to contain information on time, location, method, and technical aspects of any inspection done in the course of criminal investigation.

Problems may arise in establishing causation. Harm to the environment can occur from different reasons and evolve over time. For instance, a prosecutor needs to show that a certain act or omission created risks or caused harm significantly. Establishing this requires joint efforts from legal agencies and environmental scientists. At the same time, there should be an opportunity to hold someone liable for causing serious endangerment to people or environment even when no environmental damage has been fully confirmed scientifically. In contemporary times, there is an increasing dependence on evidence in environmental crime cases, especially technology-based evidence. According to recent studies conducted by the OECD on the subject of waste regulation, digital technologies increase compliance and detection rates by improving information exchange and data collection in environmental regulations (Isarin *et al.*, 2024) <sup>[10]</sup>. Similarly, studies concerning remote sensing in pollution control show that this kind of evidence is helpful but raises some issues related to its admissibility in courts (Zhang *et al.*, 2024) <sup>[18]</sup>. Copernicus Land data are also discussed as useful for investigating illegal deforestation, groundwater exploitation, ground subsidence, and other transboundary environmental offenses (Copernicus, 2024) <sup>[4]</sup>.

### **Reform-Oriented Discussion**

The first step in a credible reform framework is the development of legislation that clearly identifies specific acts and their respective punishments. Environmental crimes should be formulated in the terminology of the criminal law. The environmental laws should establish the levels of seriousness of offences into five different classes: minor administrative offence; serious negligent environmental crime; intentional environmental crime; corporate environmental crime; environmental obstruction; and environmental crime involving hazardous substances. The classification would help identify the most suitable strategy

to deal with the offence. It would also differentiate between administrative and criminal procedures to avoid confusion.

The second reform step is establishing appropriate punishment based on the severity of the environmental harm caused, the degree of fault, the frequency of the infringement, the economic gain received from the act, and the past record of the infringer. The system that uses insignificant fines would not deter big companies from committing environmental offences if the cost of compliance with the law exceeds the cost of punishment. The punishment should change the perpetrator's behavior and restore order. Therefore, it should be supplemented with restoration elements such as cleaning up the contaminated area and restoring the damage.

The third reform step consists in the proper coordination of all actions. It is important to emphasize that environmental officials have a rather weak influence on the criminal law, and it is impossible to make a solid environmental case in court without the assistance of other government agencies. To solve this problem, it is necessary to develop a joint agreement that will regulate the rights and obligations of inspectors, prosecutors, police, laboratories, customs authorities, municipalities, and health workers. In accordance with the compendium of good practices developed by the OECD, environmental compliance assurance should be considered as three related parts: compliance promotion, compliance monitoring, and enforcement (OECD, 2022) [12]. Consequently, there must be established standardized forms for reports, automatic referral processes, standardized methods for preserving evidence, and joint training courses for all participants in the process.

The fourth step concerns the issue of compliance of enterprises. Criminal law should create incentives for companies to create and sustain preventive systems. Firstly, companies in industries that adversely affect the environment need to develop an extensive compliance program, carry out an assessment of potential risks, introduce procedures for reporting, develop an emergency plan, keep detailed records of training, and prove that any breaches of the law have been resolved. Secondly, the adoption of preventive systems reduces the liability of businesses for violations and the size of penalties imposed. Thirdly, failure to take steps to mitigate potential hazards or concealment of data on environmental crimes requires increasing penalties for violations of legislation.

The fifth step consists in improving judicial competence. The effectiveness of environmental criminal legislation is impossible if there are judges lacking necessary skills and sufficient knowledge about environmental issues in the courts. Judges may distort the facts of the case and make serious mistakes due to insufficient knowledge about the crime. To solve this problem, it is necessary to organize special courses for judges, form expert commissions to advise judges, and prepare procedural recommendations for judges. These measures will allow increasing public trust in judges.

### **Practical Implications**

It follows from the above discussion that the formulation of environmental criminal law must proceed in an integrated manner that takes into account all its aspects together. It involves the formulation of legislation, conducting investigations, prosecuting, interpreting, and ensuring

compliance on the part of enterprises. Reforms that seek to reform only some aspects of environmental criminal law and ignore others are not expected to yield any tangible results. Increasing penalties is of no significance if the prosecutors cannot prove the crime beyond a reasonable doubt. Forming specialized units would be meaningless if the legislative framework is ambiguous. Encouraging corporate compliance when the penalties imposed for violation remain insignificant would produce insignificant impact.

In formulating laws, legislators should ensure that they are clear enough to provide a distinction between various forms of crimes based on severity. In investigating crimes, the primary focus of prosecutors should be to develop a process capable of providing evidence and arguments to support cases. The environmental regulator has to prepare the inspection documents in the manner required by the criminal process. On the part of the court, there should be a move towards developing consistency and coherence in interpreting the law. Businesses should take corporate environmental law seriously as a matter of law and good governance practice.

There is also a need to ensure that there is transparency during environmental crime enforcement. The reason is that the society has a right to know whether environmental rules are followed. Moreover, the society deserves to know whether those responsible for committing crimes in their communities are punished. Transparency in enforcement may be achieved through reporting to the public and publishing judgments and information relating to compliance with environmental rules. This should be balanced against the rights of suspects in terms of fair trial and confidentiality of investigations.

### **Conclusion**

Environmental damage must be considered a matter of criminal governance when it impacts the health of the population, leads to resource depletion, threatens the safety of the community, or threatens the legal framework of environmental affairs. Rather than a lack of rules on environmental issues, the basic problem with many legal frameworks is the gap between such laws and their criminal enforcement. Such offenses are often vaguely defined, have minimal sanctions, lack sufficient accountability of corporations, have overlapping responsibilities among agencies, and suffer from insufficient technical evidence.

The better strategy would be the development of an approach based on the transition from administrative reaction to criminal accountability. In other words, such a legal framework will involve the definition of crimes, liability for legal entities, adequate sanctions, specialization in the prosecution of environmental crimes, judges and courts with special expertise, and procedures for collecting scientific evidence admissible in criminal trials. It must also be appreciated that there is an obligation on the part of businesses to adhere to regulations aimed at ensuring that the environment is not harmed. The criminal law is not meant to substitute the environmental laws but only serves to complement them whenever there are instances of negligence or even when someone has acted intentionally towards the environment.

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