

# The Criminal Safeguarding of the Environment and its Contribution to Realizing Sustainable Development

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## **Abstract**

*Today, the environment and the planet's many species are facing an unparalleled threat, making the lives of societies vulnerable to significant threats to their existence. This has necessitated the need to protect the environment from such threats by codifying the criminalization of all environmentally harmful behaviours as well as other types of protection. This paper, entitled "Criminal protection of the environment and its contribution to sustainable development", is an attempt to capture aspects of criminal protection of the environment and its impact on sustainable development by addressing the role of domestic laws and international treaties in reducing environmental degradation. The study concluded with several recommendations, the environment for the future is vital to the survival and well-being of the global community and to preventing ecocide under the pretext of implementing sustainable development goals. There is an urgent need to protect the environment more effectively by punishing those who hurt it and the need to legalize it. Acts of ecocide as an international crime.*

**Keywords:** Environmental Protection, Environmental Crime, Sustainable Development, Pollution

## **INTRODUCTION**

one common theme uniting the vast and rapidly growing literature on environmental crime is an emphasis on the need to better understand the nature of such crime in order to ensure that it can be effectively targeted by criminal law enforcement and governance regimes. In the first place, it is clear that criminal acts can and do cause significant harm to the environment; indeed, the impact of such acts is at the root of the growing global concern about environmental issues, and it indicates a key motivation for the development of international and transnational environmental criminal law. But such academic emphasis on understanding and measuring the "factual" environmental impacts of criminal offences has risks and limitations. First, it can tend to reinforce a somewhat atomised and "parcelised" understanding of environmental harm which may not always correspond to the true depth and breadth of harm caused by such acts. Second, it prioritizes analysis of the material manifestations of harm over broader conceptualizations, such as harms caused to environmental values or to the "environmental goods" which criminologists argue ought to be protected from harm. Third, and perhaps most importantly, such an approach can contribute to a tendency to view the issue of environmental crime and the development of appropriate criminal laws and enforcement schemes as a mere "technical" challenge - that is to say, developing law solely in response to, and driven by, measured, or detected material harm as it presents. By contrast, this chapter suggests it may be more fruitful to consider an alternative or complementary approach to developing an understanding of the nature and extent of environmental criminality which focuses on the potential of existing criminal law and procedural tools to respond to that harm. Such an approach could be extremely important in responding to the transnational characteristics and drivers of many varieties of environmental crime. (van and Nijman2022). **as follows:** The literature commonly describes The Criminal Safeguarding of the Environment.

A study entitled "Penal Protection of the Ecological Environment", submitted by the student Naqaz Raza of Al Arabi University Al Tabsi, Faculty of Law and Political Science, Algeria, 2021-2022. The study examined and assessed the effectiveness of criminal protection in the field of environmental protection. Punitive provisions that ensure the protection of the environment from various sources of danger.

A comparative study entitled "Protection of the penal environment", submitted by Nasreen Mohsen Nimah Husseini to the Journal of Babylon University of Humanities, Iraq No. 1 of 2019 vol. 27. The study dealt with

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the prohibition of Iraqi legislation on the protection of the air environment, a series of activities that are harmful to the environment or set out a specific way of doing it because of the damage or risks they entail to the environment offences against the environment are considered as formal offences or offences of abstract conduct punishable ", regardless of the verification of the outcome.

Scientific paper entitled "Criminal protection of the wild environment in comparative law", submitted by Khadija Mujahidi, Assistant Professor Law and Political Science Faculty, University of Blida, Algeria, National Criminal Journal, No. 1, vol. 62, March 2019, pp. 23-72. The study focuses on the efforts of legislators and international law to enact frameworks and laws criminalizing acts harmful to the environment, in order to preserve them and reduce their impact, these laws contain several environmental protection mechanisms.

Study submitted by students Slaoui Mohamed Shams al-Din and Shanina Khawla for a master's degree at 8 May 145 University Faculty of Law and Political Science in General University 2016-2017 Algeria. The study dealt with the substantive provisions of environmental crimes and their procedural protection.

The two researchers emphasized that the environment is a fundamental value of society, undermining protection and formulating a national policy for its protection, protection and preservation under sustainable development. Environmental protection remains inadequate at the national level unless accompanied by effective international protection.

Doctoral study entitled "Criminal protection of the environment", submitted by Bashir Mohammed Amin to the University of Jilali Al-Landas Faculty of Law Algiers, university year 2015-2016. The study discussed the crime of environmental pollution and the legal nature of environmental crimes, the elements of environmental crime, criminal liability for environmental crimes and penalties for environmental crimes. and, in the view of the sponsor, States sought to enshrine such protection through the enactment of several legislation and laws on the environment and its various elements, Criminal protection came only late after civil, administrative, and international legal norms were unable to provide environmental protection against pollution and all other forms of aggression, as civil, administrative, and international legal texts were ineffective in deterring the perpetrators of environmental pollution.

Study on the Scope of Criminal Protection of the Environment, Study in Jordanian Legislation, Dr. Nizam Tawfiq Majali, University of Mu 'ta, Journal of the Faculty of Law, University of Nahrin, No. 1, vol. 8, 2006, p. 24-50.

His study aims to highlight the aspects and scope of Algerian protection in accordance with the Jordanian legislature's approach to legislation that is particularly relevant to the protection of the environment. The study dealt with the following topics, the environment as a protected value in environmental legislation. The legitimate approach to the criminal protection of the environment and the elements of the environment included in the criminal protection.

I divided my research into several parts, Importance of The Criminal Safeguarding of the Environment and Link to Sustainable Development Goals, and Environmental Crimes and Offenses and Impact on the Environment, with Legal Framework for Criminal Safeguarding, and International Conventions and Treaties and National Legislation and Enforcement, and Role of Law Enforcement Agencies, and Strategies for Effective Criminal safeguarding, and Collaboration between Governments and NGOs, and Public Awareness and Education, Technological Innovations for Detection and Prevention, and Strengthening Penalties and Enforcement Measures

This paper aims to discuss The Criminal Safeguarding of the Environment and its Contribution to Realizing Sustainable Development. by: Focus on the Tools needed for Criminal Safeguarding, Legal Framework and International Conventions and Treaties and National Legislation and Strategies for Effective Criminal safeguarding and etc...

The most important proposals for environmentally effective criminal protection deal with provisions at the international and national levels, not just in terms, literature, and theoretical decisions.

In this research, I have adopted Three approaches: descriptive approach. To describe the status of environmental protection legislation at the national and international levels

The comparative approach is based on the examination of States' mechanism for dealing with The Criminal Safeguarding of the Environment issues' Analytical curriculum by studying Safeguarding of the Environment and how to deal internationally in practice to achieve its objectives.

### **Importance of Criminal Safeguarding**

The importance of criminal safeguarding for the environment cannot be overemphasized. Environmental crime takes various forms in that it poses threats to biodiversity and sustainable development in general. It includes illegal wildlife trade, smuggling and illegal logging, waste disposal and resource exploitation. In addition to these, various stringent activities in the sea and distributed environmental contamination are also notable acts of environmental crime. These crimes are carried out both at the local and international level. At the cross-national level for instance, some states facilitate the act of environmental crime by having environmental laws that are less stringent as compared to the international environmental laws. Also, weak institutions and ineffective justice systems provide the leeway for its prevalence. On the other hand, bribery of the law enforcement agencies has also been connected to the widespread of environmental crime. Well, the reason as to why there is a lot of advocacy for criminal safeguarding of the environment is because of the critical role environmental protection plays in sustainable development. Also, safe with the knowledge that such criminogenic situations inhibit the availability of opportunities for most of the poor in society who depend directly on the environment for food and other resources. Further, criminal safeguarding not only ensures that the current generation lives in a clean environment but also makes sure that the future generation has something to smile about. This is because, through this way, biodiversity will be conserved and the critical natural resources will be sustainable in the future. Such a quality of life that upholds that there is confidence and assures the survival of the human community is what is referred to as sustainable development. (Pudjiastuti2021) (Kashiwada, 2020) (Pardede et al.2023) (Chakraborty & Devi, 2023).

### **Link to Sustainable Development Goals**

Thus, despite the necessity to recognize the increasing criminal flourishments over the years and the efforts being made to combat such movements from preventing achievement of sustainable development goals, it is essential to seriously consider the potential role that can be played in terms of criminal law, which focuses on the need to seek better protection for the environment by resorting to more robust private and public legal actions. On the one hand, people are invited to have better awareness of the environment, such as organizing specific education programs for school students or even adults to have a better understanding of the root causes of environmental degradation and they will be informed of the channels open to them through the legal processes. Enforcement agencies, on the other hand, are encouraged to keep pace with the technological advancement in the manner to build an infrastructure environment facilitating the reporting of environmental complaints and offenders, and the enforcement action to be taken can be publicized widely. This is the only solution to the alarming number of environmental crimes that endanger human and animal health, threaten and harmful exploitation of natural resources, and contribute, on a large scale, to global environmental challenges today and in the coming years. On top of the existing ecocide crime list, the criminal safeguarding provisions need to be widened so as to better encompass a wider range of environmental crimes, such as nature and preservation offenses, water and air pollution offenses, waste management offenses, illegal trading offenses, energy efficiency and greenhouse gas emission-related offenses, and so on. These groups of regulations and directives focus on the control of air, water, land, and noise pollution and getting rid of pollution from its root in the process of production. Plants that can cause significant water or air pollution are under the obligation to employ a permitary system in controlling emissions, and their day-to-day operations will be intensively regulated under such a system with regular inspections conducted as well. The enactment of such an offense as well as the specific virus granted under the Environment Act 1953 provide a good example that Queen's Bench has authority to grant injunction to restrain any actual or apprehended breaches of environment regulations. Such development as regards to the expanding scope of legal actions and the modernization of underlying associated procedure laws are believed to be fundamental in promoting the effectiveness of any potential criminal law

strategy in combating environmental offenses. On critical analysis, considering the present substantive criminal law regulating actions harmful to environmental interest and the potential for creative development in such a field, it should be conceivable that much more valuable and effective opportunities are lying in the merger of criminal law with the concept of sustainable development. (Nurse2022).

### **Environmental Crimes and Offenses**

These global environmental problems prompt global concern about conservation of the ecosystem, protection of the environment, and prevention of exploitation of the environment. In recent years, the awareness and concern about the environment and its protection have given rise to a new stage of global environmental consciousness, which has found expression in the development of international environmental law. This body of law consists of the principles, rules, and norms that govern the behavior of states and intergovernmental organizations, as well as the relationships among them in the context of global and regional protection of the environment. These principles, rules, and norms have also been transformed into treaties and conventions to regulate and minimize the harm caused to the environment. However, despite the development of international law and various treaties and conventions, environmental crimes continue to be committed across all states and geographical locations. This chapter focuses on environmental crimes committed in India. (Heckenberg and White2020) (Bueger & Edmunds, 2020).

Environmental crimes are those that are committed against the protection of the environment and its destruction. They are not traditional crimes such as theft and assault but are crimes that cause harm to human health and the environment. These crimes fall into the category of private law activities, such as torts, nuisance, and negligence, and public law activities, such as regulatory offenses and taking actions that are detrimental to public interest. Committing a crime is a particular risk no matter who the perpetrator is, and 80 percent of risky activities have preventive measures. Non-identified preventive measures require rigorous penalties in the wake of increasing the cost of prevention and obtaining more anticipated effects than mere forced bribe for weaker penalties in case of undue enforcement, which has frequently been in the circumstances of occurrence of those crimes. With regard to the allocation of compensation for the resulting damage, it is rare that the punishment is either criminal or administrative, as there is a strong tendency to make the pollution victim resolve the dispute by private settlement. This means the crucial fact is to take off and freeze the effect from the mechanism of excessive private settlement by the statutory measures for compensation. This tort has the same grounds as an act to cause the resulting damage, and such an act based on simple negligence has been about half of the total crimes mentioned at the beginning. An increase in penalties is anticipated not only because of a cost-rise in prevention but also to enable deterrence effects in the allocation of those torts. And it is essential to allocate contingent benefits occurred from avoidance of pollution to spending for task-forcing measures for private enterprise who are the main subjects of pollution. (Ruggiero et al.2022) (Vaduganathan et al.2022).

### **Definition and Types of Environmental Crimes**

For has been briefly elaborated, the criminal safeguarding of the environment can be perceived as an integrated aspect of environmental management system. This concept derived from the impact caused by committed crime towards the environment which require certain actions to be taken for preventive measures by a responsible party. Discussing further, this topic involves whether the existing environmental quality is sufficient to support the continuity of life and the types of crime that lead to destruction of environmental quality. It is an important step for the environmental management system to ensure that the effort made in preventing crime in damaging the environment is effective and can further improve the environmental quality. This is to ensure that the sustainable development concept, which prioritize the balance between development and the quality of life can be achieved. (Xie, 2020).

### **Examples of Environmental Offenses**

The term environmental law has been defined in several ways, and it is difficult to establish a single definition. It is a term used to describe a network of treaties, statutes, regulations, and common law that are designed to protect the environment from damage and to explain the legal consequences of such damage towards governments, private entities, or individuals. One way to look at the term is to say that it is the collection of

laws, regulations, agreements, and common law that is designed to protect the environment. This can be achieved through prevention and control of pollution, sustainable use of natural resources, and conservation of the natural environment. A different way to look at it is to examine the concepts involved in environmental law, which primarily concern the idea of sustainability and the necessity to protect the environment for future generations. This second way of looking at it will help to explain what environmental offenses are and their consequences towards the environment and future sustainable development. (Boyle & Redgwell, 2021) (De Sadeleer, 2020) (Bodansky & van Asselt, 2024).

### **Impact on the Environment**

Impact on the Environment Impact upon the environment is an inevitable consequence of the extraction and production of anything. All industries will have direct and indirect effects on the earth. Obviously, damage caused by illegal activities of industry causing environmental harm is regrettable. With the exploitation of resources and setting up of production facilities, the increased rate at which environmental damage occurs grows. The most common effect on the environment through environmental crime is pollution. BIOD, for example, has had long-term effects due to nuclear tests done 30 years ago. The immediate and direct effects of pollution caused by environmental crime are the contamination of land, water, and air. This contamination is often carried far from the original source and causes damage in areas far from the crime scene. There are many other examples of environmental crimes that have had severe effects on the environment. The unlawful killing of wildlife, be it for trade like tiger skins and ivory or 'pest' control, has had huge effects on many different species. This loss of species disrupts the ecosystem and can often alter the physical environment. A famous example of this is when the introduction of rabbits, an unsuitable exotic species to Australia, caused soil erosion and visible land changes. (White, 2021) (St et al.2020) (Faroque and South2022) (Wu et al.2021).

### **Legal Framework for Criminal Safeguarding**

To begin, we must consider why it is that environmental protection by criminal law has been deemed necessary. Traditional civil and administrative law measures have shown themselves to be inadequate in preventing the gradual degradation of the environment. Governments have been slow to enforce penalties, and where they do exist, their scope and severity are often limited. Due to the often irreversible and grave consequences of environmental harm, it has been contended that the criminal law, with its punitive measures, will provide a more effective deterrent. This is supported by the fact that the idea of environmental offences as deserving penal sanctions is now widely recognised and reflected in international and transnational instruments. Furthermore, there is a common perception that successful prosecutions for environmental damage often result in mens rea-based offences. This being offences where requisite intent or knowledge has led to the wrongful act. Such offences are more easily prosecuted in common law systems through criminal law processes than through the complex and often lengthy proceedings typical of public law litigation. A recent example to illustrate this is the prompt introduction of criminal sanctions into domestic wildlife protection legislation to enable prosecution of those involved in illegal wildlife trade. This followed the UK's ratification of the Convention on International Trade in Endangered Species (CITES), which requires states party to take legal measures necessary to enforce its provisions and prohibit trade of species listed in CITES appendices. This shift towards criminalising endangerment of protected species has since resulted in said species being afforded more effective protection in criminal courts. Outside of these reasons, an interesting thesis by Walters suggests that one of the contributory reasons to the prevalence of environmental crimes is that many suspect that their actions are often lawful, a factor attributed to the complexity of environmental regulation and the fact that many harmful activities were at one time legal. This being so, the deterrent effect of criminal law may yet prove to be its most valuable enforcement tool.

Suppose we are to consider the effectiveness of criminal law as a deterrent or means of prevention. In that case, we should keep in mind that the ultimate objective is the attainment of sustainable and ecologically balanced development. This is, of course, reflected in the definition of sustainable development as that which meets the needs of the present without compromising the ability of future generations to meet their own needs. In discussing sustainability, we have already indicated that growing awareness and concern for the environment in law and society has led to what we shall term a philosophy of environmental integration. This philosophy

suggests that the law and policy in all areas must be aimed at promoting sustainable development and preventing all forms of environmental degradation. A methodology to achieve this can be seen in the growing practice of employing what is known as sustainability impact assessments, a systematic process of evaluating the potential impact of a policy or legislative proposal on achieving sustainable development. Such impact assessments are not exclusive to environmental measures, but it is clear that the success of environmental protection and sustainable development are considered to be linked. So, one would argue that proper integration of environmental protection and sustainable development will have been achieved when environmental considerations become an automatic and inherent part of all law and policy making. (Robinson, 2022) (Stefanus & Vervaele, 2021) (Minkova, 2023).

## **International Conventions and Treaties**

The environment is a vital component of any society, and the criminal safeguarding of it is an issue of increasing importance. Conventions and treaties are the primary vehicles for promoting international cooperation in the criminal safeguarding of the environment. They reflect a global consensus of what needs to be done to prevent damage to the environment and achieve sustainable development. They also clarify the obligations of states to introduce domestic measures and develop the international law of the environment. Fitzmaurice said that the essence of an international instrument lies not in the words but in the intentions of the parties. This is undoubtedly true with treaties related to criminal justice, with some treaties being much more effective than others depending on the level of true consensus of the parties. How the consensus is brought about can vary, but often it involves a series of conferences culminating in the adoption of a text, the final step usually being its ratification. The result is typically a document that is a compromise, often ambiguous, containing rights and obligations that are expressed in broad terms. They are also vulnerable to changes in economic and political circumstances.

International agreements for the criminal safeguarding of the environment can be found in various sources. Some are autonomous treaties and conventions, while others contain environmental clauses in treaties that pertain to other subjects. The earliest treaty was the Trail Smelter Arbitral Award between the USA and Canada in 1941. This recognised the principle that each country is obligated not to allow knowingly hazardous activities to take place in its territory and not to inflict damage on the environment of other states. (Tignino and Bréthaut2020) (McIntyre2020).

## **National Legislation and Enforcement**

Environmental harm is a global concern, and countries must make an active response to prevent it. Although the impact of environmental harm may be felt more greatly in some areas of the world, states must recognize that environmental protection is in the interests of the international community and, therefore, the whole. The national implementation of legislation is the first and potentially most significant step in reacting to environmental harm and seeking to prevent it from happening. Arguably, the cornerstone of international environmental law is the 'Stockholm Declaration' in 1972, which recognised the necessity of national implementation of legislation. Article 3 of the declaration states, "To achieve a more rational management of resources and thus to improve the environment, policies must be coordinated and integrated, a necessary step if environmental problems are to be prevented". This assertion is grossly inadequate. For effective prevention of environmental harm, policies must be coordinated and integrated and actively aim to change attitudes and prevent specific activities. Initiatives such as the Rio Declaration and the Kyoto Protocol have focused more attention on global issues and the need for coordination and integration on an international scale. However, it is submitted that the key to environmental prevention lies in the criminalization of actions harmful to the environment and the imposition of punitive measures on those responsible. The ICCSL was a potentially significant step in the right direction in setting out to codify the crimes against the environment; however, its effectiveness will be limited if states do not take action in implementing measures to prevent such crime within their territories. Thus, prevention must begin with national legislation.

Criminal law's primary function is the prevention of harm, and it is submitted that effective prevention of environmental harm will only come from the implementation of specific legislation with an aim to prevent environmental harm. While environmental issues have traditionally been beyond the scope of criminal law, the

late 20th century has seen a growing recognition of the necessity of 'green' legislation. The first steps were often symbolic measures in which token fines were imposed for minor environmental damage. However, there has been a growing realization that such measures are inadequate, and a trend has emerged for more comprehensive legislation with aims more in keeping with the preventative nature of criminal law. A significant example from this is the UK's 'Environmental Protection Act 1990'; while the act does not consist solely of criminal provisions, it does set out to prevent environmental damage and promote sustainable development which are aims consistent with the aforementioned resolutions of the Rio and Kyoto. In terms of criminal law, the act now consists of several provisions some of which impose strict liability offenses with large fines, and others which create more serious offenses with potential for imprisonment. The harsher measures created by this act reflect a growing understanding that traditional civil measures are inadequate in preventing significant environmental harm and a further understanding that there needs to be a deterrent. (Johnson et al., 2020) (Fajrini) (White, 2021).

### **Role of Law Enforcement Agencies**

The criminal justice system has a vital role to play if the goal of sustainable development is to be achieved. This is because, so long as environmental criminals believe that the chances of being apprehended and punished are minimal, enforcement standards will be set by the commission rate of environmentally harmful activities rather than by the laws designed to prevent them. Law enforcement agencies, including the police, public prosecutors and the courts, are the bodies within the state which have the primary responsibility for maintaining the 'law and order' necessary for development to occur within the rule of law, and for preventing those who would breach it from doing so. But insofar as many modern states are affected by 'the scourge of underdevelopment, poverty, and debt', the criminal justice system often gives a low priority to the prosecution of environmental crime. (Leider, 2021).

Most law enforcement agencies are more comfortable and skilled in dealing with 'ordinary' criminality, which presents immediate and apparent threats to individuals and communities, rather than the sophisticated and often regulatory offences which characterize most environmental crimes. Indeed, much conventional policing is funded by the very industries which are responsible for significant levels of environmental harm. Police may, therefore, regard environmental crime as economically beneficial in generating employment and development, not only for the industry concerned but for cleaning up the pollution or site damage later. In other instances, law enforcement agencies may be actively involved in environmentally destructive activities such as forest exploitation. (Faroque and South2022) (Wright, 2020).

### **Strategies for Effective Criminal Safeguarding**

Engle's comparative review of state practice and experience in multilateral environmental agreements highlights several sound and several less-than-effective strategies for preventing ecological harm. Sound strategy, which the author says often go unheralded, include improvements in national legislation and regulation, cooperation with and financial and technical assistance to developing countries, educational and public awareness campaigns, and various methods to lessen environmentally harmful activity, directly or indirectly. These techniques are aimed at facilitating sustainable development, reducing or eliminating environmentally harmful activities, or preventing or mitigating harm to natural resources. All are preventative but each could be the basis for a legal or administrative system that operates as an environmental crime control system. For instance, national environmental regulation, often undertaken to fulfill treaty obligations, could be fashioned to offer greater environmental protection through deterrence and might also include provisions for preventive and corrective detention of persons behaving in a manner harmful to the environment. The threat of extradition to face trial in a foreign country might deter a corporation from relocating to avoid strict environmental regulation. It would be subject to mutual legal assistance and extradition treaties to cooperate in cases involving transborder pollution. In contrast, the least effective strategies, such as diplomatic protests and creation of international environmental organizations and secretariats, generally fail to produce change in the environmentally harmful behavior of specific natural persons and corporate entities and provide little fodder for the development of environmental criminal justice systems. (Glavas et al., 2023) (Viscusi, 2022).

## **Collaboration between Governments and NGOs**

When the catastrophe of international environmental degradation is put into the equation, sustainable development is seen as a formidable proposition. This concept is enshrined in the Rio Declaration and repeated in countless international treaties and documents. Over the years, concepts of how it is attained have been expanded, but it requires a balancing act. This is the reconciliation of economic development and preservation of the environment and not allowing the trade-off of one for the other. An incremental approach has been proposed in which developing countries should slow the exploitation of natural resources to avoid the transitory benefit and long-term loss scenario. Past experiences have shown this to be a difficult process requiring various intervention forms. One suggestion is debt-for-nature swaps, in which creditors agree to cancel a proportion of a developing country's debt in exchange for investment in a local environmental project. In terms of enforcement, sustainable development could rely on the job being 'half-done' in that industries seeking to further or new damage the environment might be persuaded to engage in less harmful activities rather than being denied altogether. Though the viability of this is questionable in some cases, proven techniques to differentiate between harmful and less harmful activities can greatly benefit this approach. (Wassie, 2020) (Hossain et al.2022).

## **Public Awareness and Education**

There is a unanimous agreement in our society on the critical importance of public awareness and education for environmental protection. In this area, environmental criminal law makes a crucial yet highly controversial contribution to realizing sustainable development. Environmental crime often goes unnoticed or is seen as insignificant due to a lack of awareness in the general public about the enormous harm it causes to the environment. It does not have the same obvious impact as a sudden oil spill or toxic chemical leak and, therefore, fails to attract public attention and outcry. Generally, when thinking of crime prevention, we envisage deterrence through harsh penalties or imprisonment, and the focus of environmental criminal law is often centered on this punitive strategy. Here it is argued that this traditional crime prevention model is largely ineffective when applied to environmental crime because of its complex and non-deterrable nature and the insufficient resources available for implementation and enforcement. It is submitted that a more effective contribution to environmental crime prevention comes from a multi-faceted approach that includes an emphasis on regulatory obligations for corporations, the fostering of voluntary compliance and, most importantly, enhancing public awareness and education on environmental issues. This is reinforced by Article 64 of the ICC Statute and Article 5 of the SEA Protocol, which both require state parties to these instruments to implement a strategy for raising awareness of the harmful effects of environmental crimes on the public. Public awareness has the potential to indirectly prevent environmental crimes from occurring in the first place, as well as foster an increased political will for stronger enforcement and action against breaches of environmental laws. (Maruf) (Karjoko et al.2022).

## **Technological Innovations for Detection and Prevention**

Detection and prevention technology has also influenced environmental criminal justice development. Traditionally, crimes have been detected by direct observation, or a criminal has been apprehended for an environmental offence quite fortuitously concerning another crime. Little specific enforcement effort has been contributed, and few resources have been allocated to detect environmental crimes. This has begun to change with new technology for detecting and surveilling environmental offending. These technologies are designed to detect offending or prevent it from occurring. They range from satellite surveillance techniques to more spatially specific geographical information systems and the use of remote sensing and aerial photography. For example, Mendelson notes the ability of satellite surveillance to detect the soil tracks left by illegal off-road vehicles. This sort of data is helpful for a law enforcer, as it has been noted that much easily identifiable environmental damage is done by otherwise law-abiding citizens who would be deterred if they knew in advance that the activity was an offence. Other surveillance technologies are designed to prevent environmental crimes from occurring. An interesting example can be seen in the use of cellular zoning to prevent pollution from hazardous waste plants. (Masini & Lasaponara, 2020).



The general efficiency of these various technologies to the law enforcement process is noted as the trend away from a 'reactive' to a more 'preventative' posture in responding to environmental offending. This shift has profound implications for the contemporary conception of environmental criminal justice. Typically, criminal justice has been criticized as being generally reactive and responding to situations that have already turned into offences or crises. In terms of environmental offending, much damage can be done before an activity becomes classified as an environmental offence and the law are enforced. In the past, minor resources allocated to environmental offenses and the typically low rate of apprehension and conviction have meant that environmental law enforcers have not presented an attractive alternative to polluters who weigh the costs of complying with the law against the profits of offending (Jam et al., 2018). The possibility of changing this cost-benefit calculation by presenting a high risk of swift detection and prevention is an attractive proposition and holds promise for realizing the preventive ideal in environmental criminal justice. Through the innovation and assured funding of preventative techniques and allocation of more resources towards specific environmental protection agencies and away from the concept of the general prosecutor, there is a chance of breaking down the feared resource allocation barrier and creating a more specialized and clear-cut body of environmental criminal justice. (Li et al., 2021) (Pivello et al.2021) (Cornell, 2020).

### **Strengthening Penalties and Enforcement Measures**

There are huge varieties in environmental criminal penalties all over the world, ranging from thoroughly inadequate to excessively severe. Many are civil in nature, with penalties limited to fines, and also the ones that are criminal often allow for alternative sanctions and discretionary application of the law. The ability of many offenders to buy their way out of criminal charges with a small fine leads to the law being seen as toothless and the cost of doing business. A deterrent effect is essential, seeking a balance between overly punitive measures and incentives for concealing environmentally harmful activity. (Lynch, 2020) (van and Nijman2022).

Criminal environmental law should seek to establish liability for organizations, their management, and individuals. Preventing environmental crime entirely is unrealistic, and it is crucial to be able to have recourse against those who have caused environmental harm. Whether corporate criminal liability should be strict or vicarious is a matter of debate. However, modern laws have made it easier to prosecute corporations and ensure that fines and penalties are not easily passed on to consumers as a cost of doing business. Individuals who conduct activities that cause environmental harm should be held accountable, while the most appropriate penalties for minor offenders and low-level employees may be discretionary and involve alternative sanctions. (Bergkamp, 2021) (Maruf).

### **DISCUSSION**

It is undoubtedly essential to continue developing measures that will prevent further detriment to the environment. The preservation and protection of the environment for the future is vital for the survival and wellbeing of the global community and the prevention of ecocide under the pretense of implementing sustainable development goals. There is a pressing need to protect the environment more effectively by punishing those who harm it. The realization of ecocide as an international crime, the definition of which is: the extensive damage to, destruction of or loss of ecosystems of a given territory, is another issue which should be considered as a principle of customary international law. It should be realized that the harm of this nature impairs an ecosystem's ability to provide nature services to the communities who reside in said damaged areas. This can be tied into offences against humanity as the acts will be said to cause great suffering or serious injury to the body or to mental or physical health.

Of greatest importance, the old dictum that "the polluter pays" must be instated into national laws and practices and indeed into the conscience of environmental exploiters. This principle has been interpreted in many differing ways at the national level and has become the subject of considerable debate within the European Union. For example, the UK's implementation has been to clean up its environment and delegate residual pollution to the devolved sector, where the national treasury is issued money to propel clean-up initiatives.

It is yet to be expected that widespread adoption of this principle will be of severe detriment to international business and free trade. As such, efforts to safeguard the environment are often linked to protectionism and

anti-globalization and in the worst case are deemed valid reasons for armed conflict. Nevertheless, the truly global nature of the environment places reliance on the interdependence of the international community and as such, measures to safeguard the environment can, and should, facilitate global socio-economic development.

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