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	RESEARCH ARTICLE 
<h2>Environmental Crime and Ecosystem Protection: Sociological Dimensions and Social Repercussions in the Era of Globalization</h2>	
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<b>Keywords</b>	Environmental Crime; Ecosystem Protection; Criminal Sociology; Pollution; Environmental Legislation; Sustainable Development; Social Impact.
<b>Abstract</b>	
<p>Environmental degradation has become one of the most pressing global challenges of the contemporary era. Rapid technological advancement, industrial expansion, armed conflicts, and the misuse of modern scientific innovations have intensified human interference with natural systems. As a result, ecosystems are increasingly threatened by air and water pollution, soil contamination, biodiversity loss, ozone layer depletion, and the transboundary spread of hazardous substances. Despite the establishment of numerous international agreements and national environmental regulations aimed at controlling pollution and promoting sustainable development, environmental violations persist and continue to endanger both human societies and natural ecosystems. Environmental crime—whether intentional or negligent—represents a serious deviation from legal and moral norms, producing long-term ecological and social consequences. This study examines environmental crime from a sociological and legal perspective, with particular attention to crimes committed against the ecosystem and their repercussions on social life. It explores the conceptual foundations of crime and environmental crime, analyzes their manifestations within contemporary societies, and discusses the legislative and institutional mechanisms designed to confront them. The paper seeks to answer the following central questions: What are the primary crimes committed against ecosystems? What are their social and environmental repercussions? And what preventive and corrective mechanisms can be adopted to strengthen environmental protection? By integrating criminal sociology with environmental law, this research contributes to the growing academic discourse on environmental justice and underscores the urgent need for coordinated legal, social, and institutional responses to environmental crimes in the age of globalization.</p>	
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### 1- The Problematic:

In view of the intentional and unintentional violations against the environment by the human being, it became necessary to determine laws regulating the behaviors of man with his environment, for the protection of the environment is the

responsibility of all, and it is the major concern of all states and concerns humanity as a whole. For every age there is an issue that imposes itself upon scholars, researchers and those concerned with this universe, and the issue of this age is the environmental crimes brought about by man especially in the era of globalization and technological and scientific development, which imposed a national legislative policy as a translation of what has been concluded from international agreements for the protection of the environment from all forms of assaults. From here the question arises: what are the crimes committed against the ecosystem and what are their repercussions on social life, and what are the means of confrontation?.

### 1-1: Definition of Concepts:

**Crime:** The word crime from the linguistic point of view means it is derived from the word “jaram” which means transgression and sin, and its plural is “ijram” and “jorum”, and it is jarama, yajrim, jarman, and ijaram and ajrama, adhnaba, thus he is mujrim and jareem. It was used in the Arabic language to indicate hateful earning, not commendable, and it is also intended as carrying out a sinful act. From this clarification it appears that crime in its linguistic meaning ends to being an act which is not approved and contrary to right and justice. (Sahi, 2022, p. 83)

**Crime from the sociological perspective:** is a kind of departure from the rules of conduct drawn by society for its members, meaning that it is a deviation from collective norms which is characterized by a considerable amount of qualitative and quantitative criminality (Merah, 2017, p. 15)

**Crime in Algerian law:** The penal legislation in Algeria does not stipulate a definition for crime, and therefore it tends to define each criminal act separately, but in legal doctrine the concepts about crime have multiplied, and many jurists went to that it is “every act for which the law imposes a punishment” (Merah, 2017, p. 16)

**Environmental crime:** Jurisprudence defines the environmental crime as: an act or omission intentional or unintentional issued from a natural or legal person, that harms or attempts to harm one of the environmental elements, whether in a direct or indirect way such as cutting trees or destroying plants and pollution as positive acts, or the abstention of the ship captain from reporting an oil spill at sea or not reporting the use of dangerous materials (Ziane, 2017, p. 92)

**Environment:** Every place wherever its location and whatever its area including what it contains of living components (plants, animals and human) and non-living components (climatic factors, soil and its physical, chemical and topographical characteristics) with all what arises between the components from different and various relations. The environment is the totality of things that surround us and affect the existence of living organisms on the surface of the earth including water, air, soil, minerals, climate and the organisms themselves. It can also be described as a group of interrelated systems with each other to a degree of complexity which affect and determine our survival in this small world and with which we deal periodically. (Feedoo Website, 2024)

**The linguistic** origin of the word environment goes back to the root “bawa’a” which means to settle, to reside and to dwell, whose noun is “bi’ah” synonymous with abode or home. It also means “tabawwu” that is settling, descending or inhabiting, or our surrounding and the comprehensive milieu. The Almighty said: “And those who had settled in the Home” (Al-Hashr: 9), meaning those who resided in the city before you. (Bedour, 2022, p. 540)

**As for terminologically:** if we start from the Stockholm Conference which used for the first time the term environment “environnement”, we find that it defined the environment with a comprehensive concept that indicates or expresses more than natural elements, as it defined it as being water, air, soil, minerals, sources of energy, water and social and climatic resources at one time and place in order to satisfy the unlimited needs of man and his future aspirations (Nourani, 2021, p. 9)

The environment in the English language according to the Logman dictionary means Natural or social Environment condition in which people live; and it means the surrounding conditions affecting the human growth. (Bedour, 2022, p. 540)

**Pollution:** Pollution in language is a word indicating dirt, corruption and impurity, and its verb “lawwatha” means to pollute something, polluting it, and it is said he soiled his garment with mud meaning he stained it, and it became polluted thereby. It is of two types: material pollution which is the mixing of any foreign thing with the components of the substance

itself, thus it is said he polluted the water with mud meaning he made it turbid; and moral pollution which means corruption of a thing or changing its characteristics, and it is close to spoiling the components of the environment. (Al-Ashawi, 2010, p. 28)

**Environmental pollution:** Scholars of environment and climate have differed in reaching a precise and specific definition of the scientific concept of environmental pollution, and whatever the definition may be, the scientific concept of pollution is primarily linked to the ecological system. It is a term that means all the ways by which human activity causes harm to the natural environment. Pollution may be visible such as waste or in the form of black smoke emitted from a factory, and it may be invisible without smell or taste. Some types of pollution may not in reality cause pollution of land, water and air, but they are sufficient to weaken the enjoyment of life for people and other living organisms. Noise emitted from traffic and machines for example can be considered a form of pollution that spoils the pleasure of life in societies (Ghraiba, 2010, p. 122)

**Ecosystem:** It is a specific geographical area and what it contains of living factors such as plants, animals and other living organisms, and non-living factors such as climate and rocks, and the delicate balance that brings them together in such a way that each factor affects directly or indirectly the other factors. Any change that occurs in its temperature for example will often affect the plants that will grow there, and consequently the animals that depend on these plants must adapt to the change that has occurred or move to another ecosystem that suits them or die (Samara, 2024)

**1-2- Crimes Committed Against the Ecosystem:** The expression environmental crimes refers to the total of illegal activities that affect the environment and bring benefit to some individuals and groups. Among these crimes:

**-1- Forest fires:** Forest fires are considered part of natural disturbances and necessary for the regrowth of the regrowth of other trees. "They are in principle resulting from natural causes, as lightning causes less than 10 percent of the fires that break out in the world, however 90 percent of forest fires are resulting from human causes. Among the most common causes of the outbreak of fires we mention criminal acts, irresponsible behaviors, throwing of waste and the re-ignition of fire."

In a study conducted by Dr. Maryam Hajla about forest fires between the impact of climatic factors and the repercussions of environmental crime, where she carried out a statistical reading of the tables related to fire hotspots in Algeria concerning Algeria's fires during the period 1967 to 2012, she presented main causes of the fires and concluded that there are two main causes of the fires which destroyed our forests on a wide scale. The first cause is during the years of drought which affected the climate in Algeria, especially in the summer of 1983 which recorded intense fires. As for the third cause, it is due to the harsh political conditions that Algeria lived through of wars and crises and the period of the Black Decade 1990-2000... The year 1994 witnessed devastating fires over an area of 271598 hectares, equivalent to 6.6 percent of the total forest areas in Algeria. The doctor also added that in the recent years Algeria witnessed a severe wave of fires in many regions of the country and some provinces in the year 2021 in areas most importantly Tizi Ouzou the most affected - Khenchela, Jijel, Bejaia, Setif, Tebessa - Constantine, and other regions, which left agricultural and animal losses, victims and the fleeing of families from their homes (Hajla, 2021, p. 72)

In the same context, the political analyst Rabih indicated that this region (meaning the region of Tizi Ouzou) is known to record a large number of fires every year due to the nature of the terrain and the vegetation cover, but each time they were viewed as natural fires..... especially that those fires began in a geographically close scope. Doubts started at the level of social media, while the state security institutions took the appropriate measures and began to investigate through what they possess of capabilities and experience, and it became clear that the fires, unfortunately, were by a perpetrator and are classified as a criminal act....

The Algerian Prime Minister confirmed to the media that criminal hands were behind the fires, while the investigations ended with the arrest of 30 persons involved in the forest fires... leaving human, animal and plant losses and damage to agricultural crops..... (Al-Araby, 2022)

### 1-1 Effects of Forest Fires:

#### A- Health Effects:

1- Degradation of ecosystems and biodiversity

2- Extinction of some animals

3- Decline in air quality due to the burning of trees which function to purify the air

4- Soil degradation, as fires kill the beneficial microorganisms in the soil responsible for decomposing the soil and enhancing microbial activities in the soil

**B- Psychological and Social Effects:** Due to the material, animal and even human losses, many inhabitants are exposed to psychological shocks because of the great losses in property and lives. The effects of forest fires on mental health are considered a major concern, as unexpected evacuation operations can cause psychological trauma, which places severe pressures on the population for long periods of time, and this affects mental health.

In addition to social and family problems, we find a crack in family relations due to losses and loss of shelter which results in family disintegration, school dropout, and the emergence of other phenomena such as theft, illegal and unlicensed charcoal trade by some opportunists... and crimes of arson... etc

**C- Economic Effects:** Large economic costs such as the costs of firefighting and material damages (homes, infrastructure and vehicles), destroyed forests, loss and degradation of ecosystem services and others, loss of uses and costs of renewing vegetation cover and landscapes and the effects on economy, tourism and recreation. (Meshiach, 2021)

Destruction of water complexes (Al-Dhiab, 2023)

**1-2- Crime of Pollution:** The modern concept of pollution includes everything that affects all vital elements including plants, animals and human being, and what affects the composition of the non-living natural elements such as air, soil, lakes and seas. Man began his life on earth trying to protect himself from the dangers of nature, and after thousands of years he ended by trying to protect nature from himself.

#### **Types of pollution:**

**Acceptable pollution:** It is a degree of pollution in which the balance of the ecological system is not affected and it is not accompanied by any dangers or major problems. Living organisms can coexist with it in a normal manner and it does not constitute a danger to the life of human, animal and plant...etc

**Dangerous pollution:** It results from industrial activity and this stage is considered one of the advanced stages, as the quantity and quality of pollutants exceed the ecological limit at which the negative impact on environmental, natural and human elements begins, which requires taking rapid measures to limit the negative effects. This is done through treating industrial pollution by using modern technological means such as establishing treatment units capable of reducing the percentage of pollutants so that it reaches the internationally permitted limit, through enacting laws, legislations and taxes on factories that contribute to increasing the level of pollution.

**Destructive pollution:** This type represents the stage in which the ecological system collapses and becomes unable to give due to the radical imbalance in the level of equilibrium. The Chernobyl incident that occurred in the nuclear reactors in Ukraine is the best example of destructive pollution. In the case of this pollution the ecological system needs many long years to restore its balance through the intervention of the human element and with a very high economic cost. (Ghraiba, 2010, p. 123)

#### **1-3 Effects of Environmental Pollution:**

**A- Health effects:** As a result of pollution, human health is exposed to various chronic, infectious or even fatal diseases represented in diseases of the respiratory system, heart, throat and chest, nasal congestion, skin inflammations, and the spread of cholera epidemic, malaria and polio virus and other serious diseases. "Air pollutants cause the death of about 50 thousand persons annually" (Qaied, 2013, p. 208)

"Air pollution leads to people suffering from heart diseases which results in the death of 2.4 million persons annually, and studies have confirmed that 25 percent of heart disease cases are related to air pollution and that air pollution causes lung problems and cancer which cause the death of 1.8 million persons annually. Factories, oil pumps and car exhausts

may cause air pollution with smog that leads to inflammation of the mucous membranes and tearing of the eyes, it also causes coughing, difficulty in breathing and allergy. Inhaling air polluted with gases and particles exposes the human to lung cancer, strokes, chronic obstructive diseases and respiratory and pulmonary infections” (Ghazali, 2020, p. 230)

Also the presence of radiation in the air negatively affects the cells of the body and causes damage to its genes. Regarding the effects of air pollution with nuclear radiation, the inhabitants of the Algerian desert were affected by nuclear radiation as a result of the first French nuclear test in Algeria on 13 February 1960 which was called the Blue Jerboa, under the direct supervision of the then French president Charles de Gaulle. The intensity of the explosion conducted on the surface of the earth reached five times the explosion resulting from the Hiroshima bomb. France admitted four tests in the region of Reggane, and 13 tests in In Ekker in the province of Tamanrasset in southern Algeria, but the researcher and professor of physics and nuclear chemistry at the University of Oran Keldoum Al-Abboudi stated that France conducted 57 nuclear tests in Algeria, which made the atmosphere saturated with nuclear radiation that caused damage to the environment and human being, and congenital deformities appeared on a wide scale in the regions of the Algerian desert. France used 150 Algerians as experimental rats in the first explosion, where they were tied to poles in the perimeter of the experiment to study the effect of radiation on human. The French researcher specialized in nuclear tests Bruno Barillot confirmed that the authorities of the French occupation used 42 thousand Algerians as experimental rats in its nuclear explosions. (Ghazali, 2020, p. 231)

**1-3 Water Pollution:** Water is life, and all living organisms depend on it. “Water is considered polluted whenever its color, taste or smell changes, and this pollution may be in a direct or indirect form which reduces its suitability for the natural uses assigned to it. Water becomes polluted by nature or by human action, and the activity carried out by man is considered the main source of water pollution due to the increasing scientific and technological activity and the development of human industrial and agricultural activities.” (Younes, 2007, p. 70) The continuity of life of human, animal, plant and other living beings is linked to water, and Allah the Almighty says in His Noble Book: “And We made from water every living thing.”

The Algerian Water Law defined water pollution as the introduction of any substance into the aquatic environment that would change the physical, chemical or biological characteristics of water and cause risks to human health, harm wild and aquatic animals and plants, affect the beauty of sites or hinder any other normal use of water (Law No. 03/10, 2003, Art. 6)

**A- Health effects:** Water pollution with industrial waste, pesticides or leakage of gasoline products into groundwater, rivers or seas leads to serious consequences on the health of human, animal and plant. The consumption of contaminated drinking water may lead to health problems such as inflammation of the digestive system, typhoid fever, cholera fever, diarrhea, hepatitis, polio, respiratory problems, reproductive problems, heart problems and cancer diseases as a result of exposure to toxic and radioactive chemical substances such as lead and mercury, and infection with skin irritation and skin diseases, in addition to neurological damages and congenital deformities.

**B- Social effects:** This effect is embodied in the nature of the relations that arise between individuals and groups, or what is known as social change under the influence of the problem of environmental pollution. Although it is originally closely related to the results of the health effects of environmental pollution, there is no doubt that as a result of the spread of diseases some social effects will emerge, including family disintegration. In this context,

In this context, a field study on the social effects of environmental pollution in the Iraqi society reached the following:

- 1- The aggravation of the phenomenon of family disintegration and the social problems resulting from the death or illness of one of the family members.
- 2- The low standard of living of most families in the Iraqi society and consequently the emergence of the problem of child labor and the negatives resulting from it.
- 3- The necessity for the social system to adapt negatively by satisfying the needs of individuals at the expense of the environment, its beauty and its purity.

4- The rise of sound intensity above the normal rate in the environment leads to a decrease in vital activity, excitement, anxiety, internal discomfort, tension, confusion, lack of harmony and healthy adjustment and weak thinking among persons exposed to that. (Bourzeg, 2015, p. 108)

**Visual pollution:** Visual pollution is represented in the elements of the environment surrounding our contemporary cities, where it has become a serious danger and may become epidemic if we do not work to stop it as soon as possible. The absence of manifestations of beauty in our cities will gradually lead to the corruption of taste and the habituation to ugliness, and this is the most dangerous symptom of this type of pollution, which may one day eliminate humanity. In addition to the phenomenon of population migration from areas to other areas and what results from this of side problems such as the problem of population density, traffic congestion and the spread of unemployment and the dangerous phenomena resulting from it such as the spread of the scourge of drugs and the increase of begging cases or even multiple immoral phenomena such as prostitution. It may even lead to cases of divorce or even suicide, as these migrations lead to the formation of random and chaotic neighborhoods whose needs cannot be met and the environment cannot absorb them. The attentive observer realizes from this the seriousness of pollution on the social structure and its cohesion. (Bourzeg, 2015, p. 108)

**C- The economic effects of environmental pollution:** The environment is considered a natural resource that provides society with a number of basic services that support human life, as it supplies it with raw materials and the necessary energy to transform them into goods, then it receives these materials and energy in the form of wastes resulting from the process of production and consumption. For the environment to continue providing these basic services, it is required that the volume of productive and consumptive wastes does not exceed the absorptive capacity of the environment. Its economic effects are embodied in those high costs borne by states in order to prevent the occurrence of pollution and to clean the environment. It was found that the cost of controlling carbon gas emissions in the year 1991 represented 2% of the national income of developed countries. (Bourzeg, 2015, p. 109)

In addition to other crimes related to pollution such as the phenomenon of global warming.

**1-4- Global Warming:** It means the rise of the temperature of the planet Earth in general, and its trapping between the surface of the earth and the air, so that the situation becomes similar to a glass house. The phenomenon of global warming is due to the increase in the percentage of pollutants of various gases, most importantly carbon dioxide, methane, nitrogen oxide and chlorofluorocarbon, in addition to some other gases and suspended particles in the atmosphere, and also to the rise in the percentage of carbon dioxide gas in the atmosphere (Qaied, 2013, p. 213). The phenomenon of global warming in our world today has led to very major climatic changes. The average temperature of the planet continues to rise, and according to a new United Nations report, the Mediterranean region is considered a hot spot for the phenomenon of global warming. Over the coming decades, the Intergovernmental Panel on Climate Change (GIEC) expects that temperatures will rise faster around the Mediterranean Sea compared to the global average. As a result, the area of burned forests may double two or three times depending on the efforts made to reduce greenhouse gas emissions. With the presence of vast areas of dry vegetation cover, the spread of fires will be faster and intervention will be more difficult. (Meshiach, 2021)

Perpetrators of environmental crimes constitute a serious threat to our daily lives, to our planet and to future generations. Environmental crimes are not restricted by borders, such as trafficking in ivory, overfishing of protected fish species, cutting trees and dumping hazardous waste. Often the methods used to smuggle wildlife across countries and continents are the same as those used for trafficking in weapons, drugs and human beings. In reality, environmental crimes are often committed alongside other serious crimes (INTERPOL, 2024)

From here the seriousness of the problem of environmental pollution becomes evident, and it is clear how this phenomenon is taking on expansion and spread, because the individual through what he discards of wastes causes pollution as a result of his behaviors, and he does not give it attention because he does not look at the problem of pollution through its causes but looks at it through its residues, which are multi-dimensional and can be summarized as follows:

1- The increase of family disintegration due to death that the individual may be exposed to as a result of diseases arising from it and what results in weakening the social spirit.

2- The weakness of the productivity of society due to the spread of diseases among the members of society.

3- It contributes to the spread of the phenomenon of school dropout and child labor.

4- The spread of psychological diseases such as anxiety and depression and what results from them of negative manifestations that lead to the emergence of other phenomena with negative repercussions such as deviance like drugs and other risks which sociology seeks to treat in order to achieve social development. Thus the problem of environmental pollution

5- Is a natural problem with a social and political background.....

6- The spread of poverty among some families who lost their properties and the spread of social scourges and those who exploit circumstances.

## **2-1- The Legal Elements of the Environmental Crime and Criminal Responsibility:**

Every crime has elements upon which it is based (first branch), and by proving them by the Public Prosecution criminal responsibility results from it (second branch). However, in the field of environmental crimes, the legal treatment sometimes is characterized by special provisions in line with their increasing seriousness.

**The first branch:** The elements of the environmental crime in the Algerian legislation: The environmental crime has three elements within the framework of its special treatment, due to its connection with the public interest and because it is a common heritage of humanity, namely the legal element, the material element and the moral element.

The legal element represents the essence of criminal law and its cornerstone. It requires the existence of a criminalizing text prior to the occurrence of the criminal act, according to the conception of the opening article of the Algerian Penal Code, without going into the doctrinal debate regarding the extent to which the criminalization text is considered an element of the crime. It imposes several obligations on the legislator, the most important of which is the clarity and precision of criminalization texts... But the environmental criminal rule contradicts this, due to its insufficient clarity which affects the way it is applied, which imposed the adoption of the technique of criminalization by reference to the executive authority, which reflects the weakness of the legislative authority in codifying these crimes.

According to the legal element, crimes in general, including environmental crimes, are divided according to their seriousness into felonies, misdemeanors and environmental contraventions.

As for environmental felonies, they are few and counted on the fingers. An example is what the rules of the Penal Code stipulate regarding the crime of intentionally setting fire to the property of others such as forests and cultivated fields and cutting trees, as these acts are punished by temporary imprisonment from 10 to 20 years. (Ziane, 2017, p. 94)

As for environmental misdemeanors, they take forms that are difficult to enumerate. We mention by way of example and not limitation air pollution by gas, dumping and incineration in waters subject to national sovereignty which would harm the environment, the ship captain pouring fuel or mixing it in the sea, and this within the framework of the Environmental Protection Law.

As for contraventions, for example: mistreatment of domestic animals in public and in secret, hunting of non-domestic animals threatened with extinction, operating an animal breeding establishment without license, non-compliance with the provisions stipulated in the traffic law relating to equipping vehicles with emission-reduction devices that cause pollution and others. (Nourani, 2021, p. 94)

Environmental crimes in terms of their nature are divided into crimes of assault against animal, plant, and against natural resources.

It should be noted that the issue of the environment has not yet received sufficient legislative attention, and the reason for that is the modernity of environmental law in general, and that criminal law can contribute in a more positive role in the protection of the environment by establishing the necessary controls, foundations and conditions to protect the environment or to contain environmental pollution.

By following and monitoring environmental law in developing countries, it was possible to observe two stages of its development before and after the Stockholm Conference on Environment and Development 1970, as follows:

**The first stage:** During the period preceding the holding of the conference, the issued legislations were characterized by focusing on the allocation, regulation and exploitation of resources while neglecting the treatment of the negative effects of exploiting those resources, such as the absence of legislations related to the protection of water resources from pollution and the existence of some legislations that consecrated the granting of monopoly rights, licensing and exploitation of resources as in forest and land laws in which the focus was on possession rights instead of regulating the exploitation of those holdings.

**The second stage:** after the holding of the conference especially in the seventies period, developing countries faced many environmental problems, among the most important of which is related to the irrational exploitation of renewable and non-renewable resources, and what accompanied that of the serious attempts of some states to establish legislations mainly concerned with the management and sustainable exploitation of these resources. For example, environmental laws included provisions regulating environmental law, planning the use of water resources, preserving them and controlling their pollution, in addition to other standards of water quality and purity. (Naaman, 2011, p. 30)

**International treaties and agreements:** International treaties and agreements are considered a fundamental reference and an important source in establishing the foundations of environmental protection law. Among these agreements:

- 1- The Rio de Janeiro Treaty on Biological Diversity signed on 05/06/1992 and ratified by Algeria on 05/06/1995 pursuant to Presidential Decree No. 95-163, through which Algeria sought to preserve biological diversity..
- 2- The Convention on the Prohibition of the Use of Environmental Modification Techniques for Military or Any Other Hostile Purposes, opened for signature in Geneva on 18/05/1977 and ratified pursuant to Presidential Decree No. 91-344 dated 28/09/1991.
- 3- The Vienna Convention for the Protection of the Ozone Layer concluded in Vienna on 22/03/1985 and issued pursuant to Presidential Decree No. 92-354 dated 23/09/1992. (Ben Drah, 2021, p. 186)

**The Algerian legislator and the environmental crime:** Algeria knew its first legislative text related to the environment with the issuance of Law No. 83-03 dated 05/02/1983, a period exceeding twenty years after independence 1962. This summarizes that the environmental matter was not within the concerns of the Algerian authorities, and this is due to several historical reasons as a result of the French colonial policy in Algeria of planting mines along the eastern and western borders of Algeria and the scorched earth policy, and political reasons as well due to the lack of political stability after independence and the disturbances that were known during that period. (Ben Drah, 2021, p. 182)

Considering that the field of defining environmental crime is wide, the Algerian legislator classified it according to its seriousness into felonies, misdemeanors and contraventions.

- 1- Article 87 bis of Order 66/159 containing the Penal Code stipulates: assault on the environment or the introduction of a substance or its leakage into the air and the underground, or its throwing onto them, or into waters including territorial waters, that would make the health of human or animal or the natural environment in danger.... The legislator punished it with death penalty, and Article 87 bis 04 stipulates imprisonment from 5 years to 10 years and a fine from 1,000,000 to 5,000,000 DZD for anyone who causes the introduction mentioned in Article 87 or encourages it by any means whatsoever. (Sensouri, 2021)
- 2- The environmental crime in its capacity as: felony: Article 500 of Order 76-80 containing the Maritime Law stipulates the felony of the ship captain, whether Algerian or foreign, intentionally dumping radioactive waste in waters belonging to the national domain, and punished this act with death penalty. (Order 76-80, Art. 500)
- 3- As for Article 90 of Law No. 03-10 dated 19 Jumada al-Awwal 1424 corresponding to 19 July 2003 relating to the protection of the environment within the framework of sustainable development, it states in its content that imprisonment from 06 months to two years and a fine from one hundred thousand dinars 100,000 DZD to one million dinars 10,000,000 DZD or one of these two penalties only shall be imposed on every captain of an Algerian ship or commander of an Algerian aircraft, or any person supervising dumping or incineration operations at sea on

board Algerian equipment or fixed or mobile floating platforms in waters subject to Algerian jurisdiction, thereby committing a violation of the provisions of Articles 52 and 53, and in case of recidivism the penalty is doubled.

### Conclusion:

In view of the escalation of environmental challenges facing the world in general and Algeria in particular, most notably climate change and the spread of environmental crimes, it has become necessary to combat environmental crimes which are nourished and developed by deviant and criminal ideas far from the values and social norms of the group. These crimes may be transcontinental and fall within the framework of crime and organized crime. Accordingly:

- 1- Activating the role of the family as the first institution in the upbringing of generations and as a mechanism of social control and its preventive role in protecting the environment and instilling environmental moral and cultural values in the child so that he acquires environmental awareness from childhood such as the importance of personal cleanliness and cleanliness of the place, not throwing waste except in the places designated for that, and how we preserve plants and animals...etc
- 2- Activating the institutions of socialization to contribute to spreading awareness to protect the environment and combat all forms of environmental crimes and enacting deterrent laws to limit these serious violations.
- 3- The concerted international and security efforts to record rapid and appropriate responses at all levels, these responses include cooperation between legislators and investigation authorities and the monitoring and surveillance of various environmental activities.
- 4- Taking all precautionary and preventive measures to confront environmental crimes before their occurrence in order to avoid material and human losses.
- 5- Taking precautions that reduce the occurrence of environmental crimes through combating the phenomenon of poverty and developing poor societies and involving local communities in the management of natural resources.
- 6- Increasing environmental awareness and readiness to take measures to protect the environment.
- 7- Developing practical skills that help in protecting the environment and learning skills of agriculture and grazing and methods of protecting animals and plants and recycling waste...etc
- 8- Establishing a school curriculum in which environmental education is integrated and values of preserving the environment are instilled.

### Ethical Considerations

This research is based on theoretical analysis, legal texts, and secondary sources, including published academic literature and publicly available legal and environmental documents. The study does not involve human participants, personal data collection, interviews, or experimental procedures. Therefore, ethical approval from an institutional review board was not required.

The author adhered to principles of academic integrity, ensuring proper citation of sources, accuracy in reporting information, and avoidance of plagiarism. The research was conducted in accordance with internationally recognized ethical standards for scholarly work.

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### References

1. Al-Araby, A. (2022, September 24). *Algeria fires 2021: When citizens united to confront a fabricated national disaster*.
2. Al-Ashawi, S. (2010). *International responsibility for environmental protection* (1st ed.). University of Legal Sciences; Dar Al-Khaldounia.
3. Ben Drah, A. I. (2021). The general and substantive provisions of environmental crime in Algerian law. *Journal of Legal and Social Sciences*, 6(4).
4. Bourzeg, N. (2015, September). The problem of environmental pollution: A socio-scientific perspective. *Journal of Human and Society Sciences*, 16.
5. Feedoo Website. (n.d.). *Definition of environment*. Retrieved February 2, 2024.
6. Ghraïba, K. M. (2010, June). Environmental pollution: Its concept, forms and ways to reduce its danger. *Journal of Environmental Studies*, 3, 121–133.
7. Hajla, M. (2021). Forest fires between the impact of climatic factors and the repercussions of environmental crime. *Sociologists Journal*, 2(2).
8. INTERPOL. (n.d.). *Natural resources are limited*. Retrieved February 1, 2024.
9. Law No. 03-10 of July 19, 2003, relating to the protection of the environment within the framework of sustainable development, Official Gazette No. 43 (July 20, 2003).
10. Merah, S. (2017, June). The media and security treatment of crime: An analytical study of the Algerian Police Journal. *Algerian Police Journal*, 8(1).
11. Naaman, H. A. E. (2011). *International humanitarian law and environmental pollution in Iraq* (Master's thesis, Arab Academy in Denmark, Faculty of Law and Political Science).
12. Nourani, Y. Z. (2020–2021). *Environmental pollution crimes between national and international systems* (Master's thesis, Ziane Achour University, Djelfa, Algeria).
13. Sahi, F. (2022). The phenomenon of crime: Concept, causes and forms. *Research Journal*, 7(1).
14. Samara, S. (n.d.). *Definition of the ecosystem*. Mawdoo3.com. Retrieved February 1, 2024.
15. Sensouri, I. (2020–2021). *The specificity of environmental crime* (Master's thesis, University of 08 May 1945, Guelma).
16. Younes, Y. I. A. (2007). *Environment and environmental legislations* (1st ed.). Dar Al-Hamed for Publishing and Distribution.
17. Ziane, M. A. (2017, September). The legal confrontation of environmental crime in Algerian legislation. *Al-Manar Journal for Legal and Political Studies*, 2.