

# The Legal Framework for Establishing International Liability for Environmental Pollution

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## Abstract:

Advancements in science and technology have brought about a multitude of environmental challenges, with environmental pollution being a prominent concern. This has led to a disruption in the ecological balance, manifesting in climate change, global warming, diminished precipitation, biodiversity loss, the proliferation of diseases and epidemics, and the encroachment of desertification. Despite the establishment of civil and criminal liability frameworks in international and national laws to address environmental pollution, the issue continues to persist. Safeguarding the environment is a shared responsibility that falls upon individuals, states, and international entities. Achieving this necessitates raising environmental awareness and implementing well-founded environmental legislation with effective enforcement mechanisms.

**Keywords:** Environmental pollution, international liability, civil liability, penal liability, international charters.

## Introduction:

In recent years, the pace of competition between countries in achieving economic security has increased, as it is considered the primary factor for achieving sustainable development in its various forms at the level of each country, especially those major industrial countries. These countries have exploited international charters and domestic legislation that grant them the right to exploit their natural resources, in addition to exploiting their modern scientific and technological superiority, without considering the provisions of international agreements, domestic legislation, and the principles emanating from international conferences related to environmental protection and preservation from pollution.

This has impacted the natural environment and has led to the absence of life in it for various living beings, whether plants, animals or humans, as a result of the imbalance in the environmental equilibrium and the emergence of what is now known as the phenomenon of global warming, resulting from the greenhouse gases emitted from various factories, centers and vehicles.

Indeed, the phenomenon of global warming has caused an increase in the Earth's temperature, which in turn has resulted in the expansion of the desertification phenomenon at the expense of green spaces that provide the environment with the necessary oxygen reserve for the continuity of the life of living beings. This has also resulted in the melting of ice masses at the level of the frozen poles, and consequently the rise in the sea and ocean water levels, which poses a direct threat to various coastal cities. Not to mention the increase in the percentage of polluting gases in the environment, such as nitrogen gas, carbon dioxide, and

other harmful gases to the natural environment, which in recent years have caused the phenomenon of acidic rainfall, which in turn has led to the pollution of soil, plants, surface and groundwater, and air, resulting in the emergence of some new diseases and epidemics.

The significance of this study lies in examining the key international conferences and agreements on environmental protection and preservation, as well as identifying the various (international, civil, criminal) liabilities resulting from environmental pollution, and the sanctions prescribed for these liabilities in case they are proven.

Based on the above, we can raise the following question: What is the legal system for establishing international liability for environmental pollution, and what are the consequences resulting from it if proven?

In order to answer this question, we adopted both the descriptive and analytical methods. The descriptive method was utilized to describe the various international charters and some domestic legislation related to environmental protection, as well as to describe the different liabilities and sanctions prescribed in case of violation of these charters and legislations. As for the analytical method, it was used to analyze the various international conferences and agreements related to environmental protection and preservation.

So as to reach an answer to the stated question, we followed the following plan: We divided this article into two sections: The first section deals with the international conferences and agreements related to environmental protection and preservation from pollution, and the second section investigates the various liabilities emanating from environmental pollution and the consequences resulting from them if proven. Finally, we concluded this article with a series of findings and recommendations.

### **Section I: The Role of International Conferences and Agreements in Establishing International Responsibility for Environmental Pollution:**

We will address this topic in two sections, the first section will discuss the international conferences related to environmental protection and conservation, while in the second will examine some of the international agreements related to the protection of the environment and its conservation from pollution, as follows:

#### **A) The Role of International Conferences in Establishing International liability for Environmental Pollution:**

In this section, we will discuss the international conferences related to the protection of the environment and its preservation from pollution, which are as follows:

##### **1- The Stockholm Conference of 1972:**

This conference was held in the city of Stockholm, Sweden, during the period from June 5 to June 16, 1972, with the participation of 113 countries, representatives of the specialized agencies of the United Nations, and in addition to 400 international non-governmental organizations<sup>1</sup>. This conference was the first major United Nations conference on environmental issues, as it included a preamble, 26 principles, and 109 recommendations<sup>2</sup>. The preamble included the responsibility of states and governments for the policies and work programs that must be adopted to protect the environment and preserve it from pollution within their regional jurisdiction<sup>3</sup>.

Some of the principles addressed in the conference were the close relationship between the environment and human rights<sup>4</sup>, the rational exploitation of resources, and the need to put a definitive end to the dumping of toxic and non-biodegradable waste. The conference also called

for taking all necessary measures to prevent environmental pollution<sup>5</sup> and the need to balance the considerations of development with the requirements of the natural environment. It also recognized that population growth and its demands have a significant impact on environmental pollution, and therefore, states must utilize scientific and technological progress to serve economic and social development in order to confront environmental pollution<sup>6</sup>. It also emphasized the necessity of cooperation between states in enacting legislation related to international responsibility for environmental pollution<sup>7</sup>.

Furthermore, this conference established a fundamental principle within the framework of international organization, which is the liability of the state for any damage caused to other states beyond the limits of its territorial jurisdiction. This conference was a cornerstone for the United Nations General Assembly to establish a supervisory body called the United Nations Environment Program (UNEP), which was the first UN program dedicated to environmental affairs and international cooperation in the field of human environment protection<sup>8</sup>.

### **2- The Nairobi Conference of 1982:**

The Nairobi Conference of 1982, sponsored by the United Nations, was held in Nairobi, Kenya, from April 10 to 18, 1982. The conference aimed to review the outcomes of the earlier Stockholm Conference and address the key challenges that hindered effective environmental protection against degradation and pollution<sup>9</sup>. It included 10 resolutions that affirmed the principles of the Stockholm Declaration and strengthened the United Nations Environment Programme (UNEP). The conference emphasized the importance of international cooperation in addressing environmental problems, based on the idea that prevention is better than cure<sup>10</sup>, as environmental damage, once it occurs, is often irreversible and cannot be restored to its original state<sup>11</sup>. The resolutions also highlighted the hazards posed by weapons and the serious environmental damage they can cause, which may be difficult to remediate<sup>12</sup>.

### **3- The Rio de Janeiro Conference of 1992:**

Twenty years after the Stockholm Conference of 1972, the Earth Summit was held under the sponsorship of the United Nations from June 3 to 14, 1992, amid unprecedented media hype under the slogan "Environment and Development". The conference was attended by 178 countries and more than 1,400 non-governmental organizations<sup>13</sup>, where the participants addressed several issues, including: protecting the atmosphere and freshwater resources, protecting seas, oceans and coastal areas from pollution, hazardous waste and preventing illegal trafficking in hazardous and toxic waste.

This conference highlighted that the various social, economic, and environmental factors are interconnected and arise together, and that success in one sector requires working in the other sectors to ensure sustainability over time. It ended by concluding three agreements: The first agreement relates to the protection of living organisms, both plants and animals that are threatened with extinction. The second agreement relates to climate change and combating the greenhouse effect caused by greenhouse gases in the atmosphere, as well as working to reduce its causes. The third agreement relates to the protection of forests and green spaces, as the factor that restores the balance between oxygen (O<sub>2</sub>) and carbon dioxide (CO<sub>2</sub>) in the atmosphere.

Most importantly, the Rio Declaration was issued by the conference, which was adopted by all UN member states at the time. This declaration contained 27 principles for managing life on the planet<sup>14</sup>, including the principle of balance between the environment and sustainable development<sup>15</sup>, the polluter-pays principle, and the principle of common but differentiated liabilities of states in protecting the environment from pollution.

The summit also concluded that sustainable development can be achieved for all the peoples of the world, regardless of whether they are at the local, national, regional or international level. It acknowledged that integrating the economic, social and environmental dimensions and achieving a balance between them requires new visions on the way of production and consumption, the way of living and working, and the way of decision-making.

The agenda program for the 21st century is among the main outcomes of the summit. It is a strong action plan that calls for new investment strategies to achieve comprehensive sustainable development in the 21st century. Its recommendations ranged from new methods of education, new ways of preserving natural resources, and new ways of participating in a sustainable economy<sup>16</sup>.

In conclusion, the Earth Summit achieved many great accomplishments, including: the Rio Declaration and its 27 universal principles, the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity, the Statement of Forest Principles, and the establishment of the Commission on Sustainable Development.

#### **4- Johannesburg Conference of 2002:**

Ten years after the Earth Summit in Rio in 1992, the Johannesburg Conference (Rio + 10) was held in South Africa from August 26 to September 4, 2002. The conference aimed to once again bring together leaders of states and governments, businesses, and non-governmental organizations to agree on a set of measures, including: recognizing sustainable development as a comprehensive goal for institutions at the national, regional, and international levels; the need to enhance the integration of sustainable development into the activities of all relevant United Nations agencies, programs, and funds; and the role of institutions in intensifying efforts to bridge the gap between international financial institutions, multilateral development banks, and the rest of the United Nations system.

The main outcomes included the Johannesburg Declaration and around 300 international partnership initiatives aimed at achieving the Millennium Development Goals. Specifically:

- In the water sector, the Plan of Implementation encouraged public-private partnerships based on regulatory frameworks set by governments.
- In the energy sector, there was an emphasis on diversifying energy supplies and increasing the use of renewable sources.
- In health, there was a commitment to combat HIV/AIDS, with a focus on countries' rights to interpret the TRIPS agreement to improve access to medicines.
- In agriculture, comprehensive negotiations were planned on the WTO Agreement, including issues of market access and export subsidy reductions.
- In biodiversity, the Plan called for an international regime to ensure fair and equitable sharing of benefits from genetic resources.

There was also a call to establish a global solidarity fund to eradicate poverty, and 10-year programs to support regional and national initiatives for sustainable production and consumption<sup>17</sup>.

#### **5- United Nations Conference on Sustainable Development (Rio+20) 2012:**

Twenty years after the Earth Summit in Rio 1992, the United Nations Conference on Sustainable Development (UNCSD), also known as Rio+20, was held in Rio de Janeiro, Brazil from June 20 to 22, 2012, as an implementation of the General Assembly resolution (A/RES/64/236)<sup>18</sup>. The purpose was to reaffirm the political commitments made at previous

Earth Summits and to set the global environmental agenda for the next twenty years by assessing the progress made towards achieving the objectives of Agenda 21 and the gaps in implementation, as well as discussing new and emerging issues.

The conference focused on two main themes: (a) the green economy in the context of sustainable development and poverty eradication, and (b) the institutional framework for sustainable development. It also addressed seven priority areas: decent jobs, energy, sustainable cities, food security and sustainable agriculture, water, oceans, and disaster risk and pollution<sup>19</sup>.

In summary, despite the differing viewpoints and conflicting interests between the major industrialized countries and the developing countries in the midst of the negotiation battles within these conferences, they have prompted the legal foundation for arranging international responsibility in both its civil and criminal aspects for the risks resulting from environmental pollution.

### **B) The Role of Certain International Agreements in Establishing International Liability for Environmental Pollution:**

In this section, we will examine some of the international agreements that have established international liability for environmental pollution, whether they are general agreements or agreements specific to a particular domain of the natural environment, such as:

- Agreements on the protection of the atmosphere
- Agreements on the protection of the environment from hazardous substances
- Global agreements on the protection of the marine environment

#### **1- General agreements:**

In the following, we will discuss some of the general international agreements for environmental protection, such as, for example, the Aarhus Convention and the Espoo Convention.

##### **a- The Aarhus Convention (Convention d'Aarhus):**

The Aarhus Convention is a multilateral environmental agreement that aims to ensure increased and transparent opportunities with reliable regulatory procedures for citizens to access environmental information and establish a new relationship of trust and interaction between civil society and various governments, in order to build an environmentally responsible society. It grants citizens the right to public participation and the ability to appeal to the judiciary in government decision-making processes on cross-border, national and local environmental matters<sup>20</sup>. It focuses primarily on the interaction between public authorities and the public on environmental issues. The success of the Aarhus Convention is largely attributed to the work of its Compliance Committee, including the ability of individuals to bring cases of alleged non-compliance with the convention before the committee<sup>21</sup>.

##### **b- The Espoo Convention:**

The Espoo Convention is an environmental agreement that was signed in Espoo, Finland in 1991 and entered into force in 1997. It legally binds the signatory countries to assess the environmental impact of activities in a transboundary context. As of 2014, the number of countries that have ratified the convention reached 44 country<sup>22</sup>.

#### **2- Atmospheric Agreements:**

There are several environmental agreements that fall under this category, which we can summarize as follows:

**a- The Convention on Long-range Transboundary Air Pollution :**

This convention is known as the Convention on Long-range Transboundary Air Pollution. Its objective is to limit and gradually reduce air pollution across borders as much as possible. It encourages the member states to utilize their policies and strategies to combat the discharge of air pollutants through the exchange of information, research, and monitoring. This convention is legally binding, as it aims to prevent any future transboundary air pollution. The convention has been strengthened by eight protocols to expand and develop it further, these protocols are:

- The 1984 protocol on the long-term financing of the cooperative program for monitoring and evaluating the long-range transmission of air pollutants in Europe.
- The 1985 Helsinki Protocol on the reduction of sulfur emissions.
- The 1988 protocol on the control of nitrogen oxides emissions or their transboundary fluxes.
- The 1991 protocol on the control of emissions of volatile organic compounds or their transboundary fluxes.
- The 1994 Oslo Protocol on further reduction of sulfur emissions.
- The 1998 protocol on heavy metals.
- The 1998 protocol on persistent organic pollutants.
- The 1999 Gothenburg Protocol for the abatement of acidification, eutrophication, and ground-level ozone<sup>23</sup>.

**b- Vienna Convention for the Protection of the Ozone Layer, 1985:**

It is a multilateral environmental agreement, agreed upon at the Vienna Conference of 1985 and entered into force in 1988. It serves as the general framework for the international efforts to protect the Earth's stratospheric ozone layer (O<sub>3</sub>)<sup>24</sup> from depletion or erosion<sup>25</sup>. The convention aims to encourage parties to cooperate through regular monitoring, research, and exchange of information regarding the effects of human activities on the ozone layer. It also aims to take legislative or administrative measures against activities that may have negative impacts on the ozone layer. This goal has been largely achieved. According to the latest scientific assessment of ozone depletion, the ozone layer over the latitude bands (30-60 degrees north and south) is expected to be restored by 204<sup>26</sup>9. The assessment suggested that the ozone layer over the South Pole should recover by 2065.

In general, we can say that the parties to the Vienna Convention are making significant achievements in addressing a major global environmental problem<sup>27</sup>. This is achieved through close cooperation in all matters related to the following: managing scientific research and exchanging information on the state of the ozone layer, chemicals and processes that affect the ozone layer, exchanging information on chemical and process alternatives to substances that deplete the ozone layer, exchanging information on the impacts of ozone layer changes on health and the environment<sup>28</sup>, developing measures to control human activities that have a harmful impact on the ozone layer, developing protocols for the convention, developing and transferring relevant technology and knowledge, and receiving technical and scientific advice from the Ozone Research Managers Meeting. This meeting consists of government experts on health and environmental dimensions aimed at improving the ozone layer and works with the World Meteorological Organization to review current research and monitoring programs to ensure coordination and identify any gaps that need to be addressed<sup>29</sup>.

**c- United Nation Framework Convention on Climate Change (UNFCCC) of 1992:**

This convention was adopted in 1992 during the Earth Summit in Rio de Janeiro, Brazil, and entered into force in 1994. It has been ratified by 197 parties, comprising 196 countries and the European Union. The convention aims to stabilize greenhouse gas emissions in the atmosphere at a level that would prevent dangerous interference with the climate system.

The first practical and binding implementation of this agreement was through the Kyoto Protocol, which was adopted in 1997 and entered into force in 2005. It has been ratified by 192 parties, with the exception of the United States, which has never ratified it. This protocol required 37 developed countries to reduce their emissions by an average of 5% compared to 1990 levels, and the European Union to reduce emissions by 8%, during the period from 2008 to 2012. As for the rest of the countries, they were not bound by specific rates but were involved in the process of combating climate change through incentive mechanisms<sup>30</sup>.

The protocol was extended at the Doha Conference in 2012 for a second commitment period, aiming to reduce overall greenhouse gas emissions in developed countries by at least 18 percent between 2013 and 2020 compared to 1990 levels. A final settlement was reached, driven by the European Union, which wanted to link its commitment extension to the Kyoto Protocol with the adoption of a roadmap for a global agreement. Consequently, France and the European Union committed to participating in the second commitment period of the Kyoto Protocol starting from January 1, 2013.

#### **d- Convention of Hazardous Materials:**

There are many international conventions that have addressed the various materials that pollute the environment and cause it severe and dangerous damage. The scope will not accommodate addressing them all, so we will focus mainly on the three agreements mentioned below:

##### **- The International Agreement for the Transport of Dangerous Goods by Road (ADR) of 1957:**

It is known as the United Nations Convention of 1957, concluded on September 30, 1957, and entered into force on January 29, 1968. It has undergone several amendments<sup>31</sup>. This convention included the following categories of dangerous materials (explosive materials, compressed and liquefied gases, flammable gases such as propane and butane, asphyxiating gases such as carbon dioxide, toxic gases such as chlorine, third-class flammable liquids, flammable solids, self-reactive materials, materials liable to spontaneous combustion, materials that emit flammable gases upon contact with water, oxidizing materials, toxic materials, radioactive materials, corrosive materials).

The convention also included the following safety regulations for the transportation of hazardous materials: (classification of dangerous goods, packaging and storage provisions, shipping procedures and labeling of containers and vehicles, transportation, loading, unloading, and handling conditions, vehicle equipment, operation, and documentation, construction and approval of vehicles). These regulations are, of course, to prevent the leakage of hazardous materials into the natural environment and its pollution.

##### **- The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1989:**

This convention was adopted on March 22, 1989 in response to the annual global production of hundreds of millions of tons of hazardous waste that threatens human health and the environment, and the urgent need for international measures to deal with the transboundary movement of this waste, and to ensure its environmentally sound management and disposal. It brought forth the following key executive principles:

- Minimizing the generation of hazardous waste and disposing of it as close as possible to the source, to the extent possible, and reducing transboundary movements to a minimum that is consistent with the environmentally sound and efficient management of such wastes.
- Providing assistance to developing countries and countries with economies in transition.
- Prohibiting the export of toxic and other wastes if the importing country has not provided written consent for the import.
- Prohibiting the illegal traffic in hazardous wastes and other wastes.

In September 1995, the parties to the convention adopted an amendment to prohibit the export of hazardous wastes from developed to developing countries for final disposal or recycling.

In December 1999, the Basel Protocol on Liability and Compensation for Damage Resulting from the Transboundary Movement of Hazardous Wastes and their Disposal was adopted. This protocol addressed the damage that may result from the transboundary movement and disposal of hazardous and other wastes.

The protocol established a strict liability regime for those proven responsible for the illegal traffic in these wastes across borders. It sets material and time limits for liability, with insurance guarantees and financial mechanisms to compensate for losses<sup>32</sup>.

#### **- The Minamata Convention on Mercury (2013):**

The Minamata Convention on Mercury is an international treaty adopted on January 19, 2013. It is named after the city of Minamata in Japan, where the local population suffered severe and irreversible mercury poisoning from industrial wastewater in the late 1950s.

The convention was adopted and signed on October 10, 2013 at a diplomatic conference held in Kumamoto, Japan. It entered into force on August 16, 2017, after being ratified by 50 countries. The Minamata Convention is a global treaty to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds<sup>33</sup>.

Human activities contribute in the largest part of mercury releases into the environment. Each year, up to 9,000 tons of mercury are released into the land, sea, and air due to certain human activities, including: artisanal gold mining, coal combustion, non-ferrous metal production, cement production, cosmetics, some fluorescent lamps, some batteries, and dental amalgams. Poisoning mostly occurs through the consumption of contaminated fish and inhalation, as mercury can evaporate at normal temperatures.

Therefore, the Minamata Convention aims to reduce mercury mining and regulate its trade, limit the use of mercury in products and processes, eliminate its use in artisanal and small-scale gold mining, and monitor mercury emissions into the air, water, and encourage the proper disposal of mercury waste<sup>34</sup>.

#### **e- Other Conventions:**

Despite the arsenal of international conventions covering many areas and multiple substances, there is not enough space to mention them all. Therefore, we have chosen to address some of them that are relevant to the content of the second part of this paper, namely those related to the issue of international liability resulting from environmental pollution. They are as follows:

#### **- The International Convention on Civil Liability for Oil Pollution Damage (CLC) of 1969:**

This international maritime treaty was adopted to ensure adequate compensation for oil pollution at sea from oil tankers, i.e. ships carrying oil as cargo. As of April 2014, 133 countries had ratified it. This convention established strict liability for ship owners. In cases where the

ship owner is found guilty of oil pollution, they will be held responsible. Regarding insurance, if a ship's cargo exceeds 2,000 tons of oil, ship owners are required to maintain insurance or other financial security sufficient to cover the maximum liability for a single oil spill incident<sup>35</sup>.

#### **- Vienna Convention on Civil Liability for Nuclear Damage of 1963:**

This convention was signed in Vienna, the capital of Austria, on May 21, 1963 and entered into force on November 12, 1977. It deals specifically with issues of civil liability arising from nuclear accidents. It was amended by a protocol in 1997, which entered into force on October 4, 2003. As of February 2014, it had been ratified by 40 countries<sup>36</sup>.

To conclude with, we assume that the various international conferences and conventions have established both civil and criminal international liability for acts and behaviors that cause environmental pollution in various terrestrial, maritime, and aerial domains. Accordingly, we will address these different types of liabilities within the content of the following second part.

### **Section II: The Liabilities Arising from Environmental Pollution and Their Consequences:**

We have previously discussed the various international conferences and conventions that have established the rules of liability for pollution damage affecting the environment in its different terrestrial, maritime, and aerial domains, and that the effects of this pollution are not limited to the territory of a single state, but extend to encompass the territories of many countries, as happened with the Chernobyl nuclear reactor disaster in Ukraine, which is globally classified as the worst incident of radioactive leakage and environmental pollution witnessed by humanity to date and was classified as a level 7 nuclear disaster, where the explosions and fires left a deadly cloud of nuclear radiation that spread across much of the European continent. Consequently, in such cases, we are dealing with a liability known as international liability, whether it is civil or criminal, which is what we will address in the following three sections:

#### **A) International Liability:**

In this section, we will discuss the definition of international responsibility, the foundations upon which it is based, and the conditions for its application, through the following three points:

##### **1- Definition of International Liability:**

It is well-established that the entities of international law are governed by the rules of international law, whether they are customary or conventional. These rules ensure the observance of obligations between the entities of international law and provide for sanctions in the event of a violation of these obligations. It is from this that the concept of international liability has emerged. So, how can we define this liability?

##### **a- International Liability as defined by Western Jurisprudence:**

Some Western scholars have defined it as the principle that establishes the obligation to provide compensation for any breach of international law committed by a responsible state and causing damage<sup>37</sup>. Others have defined it as a concrete idea based on the state's obligation to remedy the consequences of an internationally wrongful act attributable to it<sup>38</sup>.

We note from these two definitions that they are traditional definitions that reflect the traditional thinking of international law, which was limited to the idea of international legal personality only to states. Consequently, these definitions are far from the modern conception of international law, which has also classified international organizations as subjects of international law.

##### **b- International Liability as defined by Arabic Jurisprudence:**

Some Arab scholars have defined international liability as: the obligation imposed by international law on the state to which an act or omission contrary to its international obligations is attributed, to provide the state that was the victim of this act or omission with the appropriate remedy for the damage<sup>39</sup>. This definition, like the previous ones, also reflects the traditional thinking of international law by mentioning the state instead of the subjects or entities of international law. Others have defined it as: the commission by a state or a subject of international law of an act or omission contrary to the obligations established under the rules of international law, resulting in legal liability. It is the imposition of a sanction on the responsible international person<sup>40</sup>.

We must emphasize here that we need to provide a definition of international liability that is in line with the specificity of the damages resulting from environmental pollution, since these damages do not necessarily arise from an unlawful act or omission contrary to a previous international obligation. These damages may result from a lawful act that does not violate any previous international obligation, but which may entail risks with undesirable consequences. This is where the specificity of international liability for damages resulting from environmental pollution becomes apparent.

Based on the preceding discussion, we can define international liability as: the act of a subject or entity of international law in committing an unlawful act, or failing to act in breach of a previous international obligation, or carrying out a lawful act that does not violate a prior international obligation but nonetheless poses risks to people and the environment - in which case the responsible party is obligated to remedy the resulting damages or provide compensation.

## **2- The foundations upon which international responsibility is based:**

In light of traditional international law, international liability was based on the theory of fault, the theory of abuse of rights, or the theory of unlawful act. However, in the context of modern international law, which keeps pace with the waves of scientific and technological developments that have resulted in risks that threaten not only individuals but the entire human environment, a fourth basis for international liability has emerged - the theory of risk. We can summarize these foundations in the following points:

### **a- The Theory of Fault as a basis for International Liability:**

According to this theory, the subjects of international law are not liable unless they have committed a wrongful act. Thus, the basis of liability here is the existence of fault, and liability is exempted if fault is absent<sup>41</sup>.

### **b- The Theory of unlawful act as a basis for International Liability:**

Both the jurisprudence and the judiciary have agreed that the unlawful act is the most appropriate and safest basis for international liability. In their view, the damage is the offspring of the unlawful act, and consequently, any subject of international law that causes damage is required to pay appropriate compensation to redress that damage<sup>42</sup>.

### **c- The Theory of Risks as a basis for International Liability:**

This theory emerged to align with the rapid scientific and technological advancements, and the inherent risks that accompany such progress. These risks include the peaceful use of nuclear energy, oil exploration and extraction activities, and the maritime transportation of oil across seas, oceans, and straits. The key tenet of this theory is that international liability can be attributed to those who engage in lawful activities, but where the activity poses a risk that ultimately leads to harm being inflicted on others. Under previous legal frameworks, there

would be no liability as long as the activity itself was lawful. This prompted the adoption of the "theory of risks", which establishes international liability without the need to prove fault or an unlawful act. That is why this theory is also known as the theory of absolute liability, objective liability, or liability without fault<sup>43</sup>.

It is noteworthy that this theory has received the support of many international law scholars, both in the Western and Arab worlds. However, there are some scholars who have criticized it for the following reasons: the difficulty in defining the precise concept of damage and its types, the difficulty in establishing the causal relationship and distinguishing it from fault and its defects, and the multiplicity of causes and the sequence of damages. In their view, these reasons may prevent the injured party from obtaining the necessary compensation to remedy the damage<sup>44</sup>.

From our perspective, we may say that all these theories as the basis for international liability cannot be preferred one over the other, as each theory has a different field of application. The theory of risk governs an emerging and novel field in international law and international relations, resulting from the recent development of science and technology, whose activities entail unforeseeable risks.

### **3- The Conditions for the Application of International Liability:**

International responsibility cannot be applied unless three conditions are met, which are:

#### **a- Breach of an international obligation:**

Whenever a subject of international law violates an international obligation imposed on it by the provisions and rules of public international law, regardless of the content and provisions of its national law that may be consistent with the violation it has committed. The violation here includes the commission of an act prohibited by international law or the failure to perform an act required by the rules of international law<sup>45</sup>.

#### **b- Attribution of the unlawful act to a person under international public law:**

In order to establish international responsibility against any subject of public international law, the wrongful act must be attributable to that subject, regardless of whether it is a state or an international organization. According to Article 1 of the Draft Articles on State Liability issued by the International Law Commission in 1958, regarding the consequences of international liability for damages committed by the responsible entity, a state as a subject of public international law is obligated to make reparations for the harm caused to foreigners as a result of positive acts or omissions that violate the international obligations undertaken by its authorities or officials<sup>46</sup>.

Accordingly, the state incurs liability for any act or omission committed by any of the public law entities that represent it and act on its behalf, such as the three branches of government (legislative, executive, and judicial). This principle applies to the environmental damages that result from acts committed by these authorities.

#### **c- The occurrence of damage to an entity of public international law:**

It is unacceptable for international liability to arise without there being a damage incurred by an entity of public international law. The existence of such damage is an essential prerequisite for establishing international liability. The type of damage referred to in international law is that which infringes upon the rights or legitimate interests of a subject of international law<sup>47</sup>.

### **B) Civil Liability:**

If international liability is established and all its conditions are met, the injured party has the right to claim compensation. However, in the field of environmental pollution, the top priority is to stop the activities causing the pollution or limit their effects. Nevertheless, compensation is the consequence that arises from the establishment of international liability. Therefore, the injured party has the right to file a lawsuit before international or regional civil courts, as happened when New Zealand and Australia resorted to the International Court of Justice to compel France to stop its nuclear tests in the South Pacific.

International doctrine and jurisprudence have agreed that when international liability is fulfilled with all its conditions, it produces two effects: the cessation of the unlawful act and the reparation of the damage.

### **1- Cessation of the Unlawful Act:**

It is well-established that judgments from international courts or arbitration tribunals have determined that the cessation of internationally unlawful acts or conduct is one of the consequences when entities of international law violate their international obligations. The goal of ceasing the unlawful act is not to remove the actual or legal harmful consequences, but rather it is the first step towards repairing the damage in the context of state liability. This principle has been affirmed by the International Court of Justice in cases such as the Detention of American Hostages in Tehran and the Military and Paramilitary Activities in and against Nicaragua in 1986.

However, in the context of environmental pollution, the act may not necessarily be unlawful. The act could be lawful, but still cause damage to others. In such cases, the need to cease the act is based on the principle of abuse of rights, rather than it being an inherently unlawful act.

### **2- Reparation of the Damage:**

Reparation of damage refers to the removal of the causative party from all the resulting effects, either through in-kind compensation, monetary compensation, or conciliation.

#### **a- In-kind Compensation:**

In-kind compensation refers to a judgment that requires restoring the situation to what it was before the damage occurred, or removing the harmful effects if they exceeded the usual limit. This is to be done at the expense of the person who caused these harmful effects, within a specific period<sup>48</sup>.

#### **b- Monetary or Financial Compensation:**

This type of compensation refers to a judgment in favor of the party damaged by environmental pollution, whereby the court orders a monetary or financial amount to be paid as an assessment of the environmental damages resulting from the pollution. The payment is to be made by the party responsible for causing the pollution. Monetary compensation is the default in cases of environmental pollution, as it is often difficult to restore the situation to what it was before the environmental pollution occurred, especially if the pollution was caused by extensive and widespread nuclear radiation, or a major oil spill in water bodies that led to the destruction of marine life<sup>49</sup>.

#### **c- Conciliation:**

Conciliation is usually adopted in the case of non-material moral damage, where the liable party takes the initiative to make an official apology or acknowledge the unlawful act, or declares the act as unlawful and cancels it, or sends diplomatic notes containing the admission of error, or express sorrow and regret, or punishes those responsible for that unlawful act.

However, conciliation in this form is not proportionate to the effects of international responsibility in the field of environmental pollution, because the resulting damages are material and not moral, unless it is an additional step that comes after monetary or financial compensation, as evidence of good faith in clearing the atmosphere after the occurrence of damages.

### **C) Criminal Liability:**

It must be emphasized that traditional international jurisprudence did not recognize the idea of international criminal liability, unlike international civil liability. However, contemporary international jurisprudence has overcome this issue as a result of events and developments that have occurred in the international community, such as the emergence of modern branches of international law, such as international humanitarian law, international human rights law, international criminal law, and international environmental law. These developments have prompted modern international jurisprudence to recognize the international criminal liability of the individual as a basis for combating the phenomenon of impunity and prosecuting perpetrators of international crimes<sup>50</sup>.

Indeed, contemporary jurisprudence as well as international criminal justice, have settled that natural individuals are the only ones who bear international criminal liability for the commission of international crimes, while the state they represent or belong to bear international civil liability for the damage resulting from those international crimes, in accordance with the rules of international liability<sup>51</sup>.

The principles emanating from the Nuremberg trials have established the international criminal liability of the individual, which was later enshrined in the Statutes of the International Criminal Tribunal for the former Yugoslavia in 1993, the International Criminal Tribunal for Rwanda in 1994, the International Criminal Court in 1998, and some national criminal courts with universal criminal jurisdiction, such as the Belgian, Swiss, and French courts.

Accordingly, these courts can prosecute perpetrators of environmental crimes, including the crime of environmental pollution, as a crime against humanity. The sanctions prescribed here are deprivation of liberty sentences such as life imprisonment or imprisonment for a certain period, or a fine, or both together, at the level of international criminal laws. As for the level of domestic criminal laws (the Algerian Criminal Law as a model), environmental crimes in Algerian criminal law are divided into felonies, misdemeanors, and violations.

#### **1- Felonies:**

The environmental crimes that are deemed as felonies in Algerian law are scattered across various branches of the law, such as the Penal Code, the Maritime Law, and Law No. (01-19) on Waste Management. Article 87 bis of the Penal Code criminalizes the introduction or leakage of toxic substances into the air, the subsoil, or their dumping into water, and punishes this act with the death penalty<sup>52</sup>.

#### **2- Misdemeanors and Infractions:**

Most legislative texts related to the environment punish violations of their provisions with imprisonment and fines, or with either one of these penalties only, as is the case with Law No. 03-10 on the protection of the environment in the context of sustainable development<sup>53</sup>.

In short, the penalties prescribed for environmental crimes in Algerian legislation range between principal penalties (felonies, misdemeanors and infractions), and supplementary penalties such as the confiscation of equipment and devices used in the commission of the offense.

**Conclusion:**

This research on the legal framework for establishing international liability for environmental pollution and its consequences manifested the following findings:

- International conferences have played a crucial role in the conclusion of numerous international environmental agreements, and have sounded the alarm about the growing environmental dangers.
- International environmental agreements have established many rules of international liability specifically regarding environmental pollution, whether maritime, atmospheric, or terrestrial.
- International liability for environmental pollution is based on the theory of risk.
- International liability for environmental pollution is divided into two types:
  - Civil liability, which falls under the jurisdiction of international civil courts such as the International Court of Justice and international arbitration tribunals.
  - Criminal liability, which falls under the jurisdiction of international criminal courts, as well as domestic criminal courts, based on the principle of complementarity between international criminal courts and domestic criminal courts.

Indeed, the paper recommends the following:

- The necessity of establishing specialized environmental courts, whether at the international level or at the local level of individual states.
- Strengthening the complementarity and solidarity between the rules of international environmental law and domestic legal systems in the field of confronting environmental crimes, including environmental pollution crimes.
- The necessity of balancing the requirements of sustainable development and the demands of environmental protection and preservation for future generations, through the adoption of a green, environmentally-friendly economic policy.
- Providing international institutions and media to spread environmental awareness within the international community at the global level, while at the domestic level, focusing on environmental citizenship and environmental education in various state institutions and civil society organization

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<sup>3</sup> Op. Cit., P. 149.

<sup>4</sup> See the first principle of the Stockholm conference of 1972.

<sup>5</sup> See principles (02-07) of the same conference.

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<sup>13</sup> Zerbani, A., Op. Cit., P. 158.

<sup>14</sup> See principles of the Rio Di Janeiro Conference of 1992.

<sup>15</sup> Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

<sup>16</sup> Fahmy, K. M. (1992). Economic dimensions of global environmental problems. *International Politics Journal*, 1992, Cairo, p. 110.

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<sup>24</sup> The stratospheric ozone (O<sub>3</sub>) layer (around 25 kilometers above the Earth's surface) protects the Earth's surface from the harmful solar ultraviolet (UV) radiation. Ozone is a gas composed of three oxygen atoms, with the chemical formula O<sub>3</sub>. Ozone is a very rare compound in the Earth's atmosphere, with only about 3 ozone molecules out of every 10 million air molecules. Approximately 90% of the ozone molecules in the atmosphere are located at an altitude ranging from 10 to 50 kilometers, in the layer known as the stratosphere.

<sup>25</sup> Wikipedia, The Free Encyclopedia. (n.d.). Vienna Convention for the Protection of the Ozone Layer. Retrieved October 7, 2022, from <https://ar.wikipedia.org/wiki>

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<sup>28</sup> There are several commonly used chemicals that are highly damaging to the ozone layer. Halocarbons are chemicals in which one or more carbon atoms are bonded to one or more halogen atoms (fluorine, chlorine, bromine, or iodine). Typically, halocarbons containing

bromine are much more potent in depleting ozone than those containing chlorine. The man-made chemicals that have provided most of the chlorine and bromine for ozone depletion are methyl bromide, methyl chloroform, carbon tetrachloride, and groups of chemicals known as halons, chlorofluorocarbons (CFCs), and hydrochlorofluorocarbons (HCFCs). For more details, see United Nations, International Day for the Preservation of the Ozone Layer, September 16, United Nations website. Retrieved October 6, 2022, from <https://www.un.org/ar/observances/ozone-day>

<sup>29</sup> Ministry of Environmental Protection. (n.d.). Retrieved October 7, 2022, from [https://www.gov.il/ar/departments/guides/ozone\\_convention\\_and\\_protocol](https://www.gov.il/ar/departments/guides/ozone_convention_and_protocol)

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<sup>33</sup> Mercury is a naturally occurring element: it is found in the Earth's crust and is naturally released through volcanic activity and rock erosion. It exists in different forms, each with varying degrees of toxicity, but all are equally harmful, affecting the nervous system, brain, heart, kidneys, lungs, and immune system of all living beings. For more details, see the Human Rights Watch article "Landmark Mercury Treaty" on their website: <https://www.hrw.org/ar/news/2013/10/06/251369>, accessed on 12/10/2022.

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