

Insurance as a means of financial security to compensate for environmental damage



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Abstract

The proliferation of risks arising from the ongoing interaction between human and environmental activities has stimulated discussion about appropriate legal mechanisms aimed at improving the current level of environmental protection and ensuring its preservation. In this context, emphasis has been placed on developing financial guarantee systems for modern environmental risks, of which insurance is one form. Insurance is a means of compensation for environmental damage, and is considered a complementary mechanism to civil liability. It aims to ensure the repair of environmental damage suffered by those affected. It aims to distribute risks, thus distributing the burden of compensation to facilitate compliance and ensure its delivery to the affected party.

Keywords

Risks;
Financial guarantee;
Environmental damage;
Civil liability;
Insurance.

الكلمات المفتاحية

مخاطر؛
ضمان مالي؛
ضرر بيئي؛
مسؤولية مدنية؛
تأمين.

التأمين كأحد وسائل الضمان المالي لتعويض الأضرار البيئية

ملخص

أدى إتساع المخاطر الناجمة عن التفاعل المستمر بين الأنشطة البشرية والبيئية، إلى تحفيز النقاش حول الآليات القانونية الملائمة التي تهدف إلى تحسين المستوى الحالي لحماية البيئة وضمان الحفاظ عليها. وتم التركيز ضمن هذا السياق على تطوير أنظمة الضمان المالي للأخطار البيئية الحديثة والتي يُعد نظام التأمين أحد صورها. حيث يعتبر من وسائل التعويض عن الضرر البيئي والتي تسمى بالآليات المكملة للمسؤولية المدنية لأجل ضمان إصلاح الضرر البيئي الذي يلحق بالمتضررين، إذ يهدف إلى توزيع المخاطر مما ينتج عنه توزيع عبء التعويض ليسهل الإلتزام به، وإيصاله للمتضرر المستحق له.

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Doi:

I- Introduction :

The scientific and technological advancements witnessed in all fields have caused unprecedented damage to the environment, in terms of its severity and the persistence of its effects for decades, and its geographical spread, extending beyond the borders of a single country. Whereas traditionally, damage was limited to issues related to the effects of urban and industrial waste management, today's critical environmental issues at the global level are represented by rising global temperatures, increasing rates of air pollution that threaten the ozone layer, the transboundary transport of hazardous waste, the destruction of vegetation, the pollution of seas, oceans, and rivers, and the extinction of some living organisms. This has had a negative impact on human life and other living organisms, and diseases resulting from pollution have spread terribly, demonstrating the seriousness of the current environmental situation.

Pollution may directly harm humans or their property, giving them the right to seek compensation from the person causing the damage. However, it may also affect the environment itself but only indirectly affect humans. This presents a purely environmental hazard, which poses a challenge in determining who has the right to seek compensation. Furthermore, it is difficult to estimate compensation for such damages for reasons related to the environmental components themselves, or for reasons related to the inability to determine their market value.

It should be noted that the extent of damages resulting from pollution risks is often beyond the ability of the responsible party to cover due to their gravity and multiple sources. In fact, in many cases, they are unknown, making it impossible to confirm the existence of the damage and determine its source. Furthermore, indirect and incidental effects appear some time after the act occurs, making it difficult to determine their cause, which hinders the possibility of compensation. All these circumstances render the rules of objective liability alone insufficient to compensate for environmental damage, justifying the use of complementary financial mechanisms that act as a substitute for repair and compensation. Environmental pollution liability insurance is considered the most important of these mechanisms, as it represents a useful solution to the problems of the insolvency of the responsible party or the difficulty of identifying him, as it guarantees that the environmentally harmed will receive compensation.

Study problem:

The problem of this study can be formulated in the following main question:

How does the insurance system contribute to compensating for environmental damage?

1. Traditional system of environmental liability insurance

Environmental pollution is a phenomenon unique in its nature and effects. Compensation for its damages has required the development of traditional rules of civil liability, by adopting objective liability, which aims to designate the person responsible for compensation once the damage occurs, without the need to prove fault. However, these rules have failed to guarantee compensation for environmental damages, justifying the need for a system that guarantees protection against this risk by activating an insurance mechanism to mitigate liability and replace the responsible party in bearing the burden of compensation.

Discussing the traditional system of civil liability insurance for environmental damages requires examining the extent to which such damages are eligible for insurance coverage under the general rules of liability insurance, while also presenting the specific elements of the civil liability insurance contract for environmental damages.

1.1 Eligibility to cover environmental pollution damages under the general rules of civil liability insurance

Liability insurance is a traditional complementary mechanism for covering risks that civil liability rules fail to address. It is a technology that ensures social protection and allows the insurer to bear the financial consequences of the insured's liability for damages caused to others. It thus serves as a true guarantor for the victim by providing adequate compensation. (Boufeldja, 2015-2016, pp. 194-195).

Since environmental pollution risk insurance aims to cover damages resulting from the civil liability of the person responsible, it falls under liability insurance, which in turn falls under damage insurance. Is it therefore considered just ordinary liability insurance, or is it the opposite? To discuss this, we must examine the extent to which this risk can be included among the risks covered by liability insurance from both a legal and technical perspective.

1.1.1 The legal suitability of the risk of environmental pollution as a subject of a civil liability insurance contract

It may be thought that pollution risk insurance is just an ordinary liability insurance that is not distinguished by any special features, meaning that its legal permissibility is beyond doubt. However, in reality, we find that the pollution risk is based and originated by the voluntary intervention of the insured. Therefore, it is believed that this type of risk is not legally permissible to insure due to its lack of the element of probability required in insurable risks. Therefore, the question arises about the existence of the probability characteristic in pollution risks and the extent of its impact on their legal insurability?

The risk is the subject of the insurance contract, and is defined in general rules as: "A potential event whose occurrence does not depend on the will of either party, especially the will of the insured." (Al-Naja, 1985, p. 57).

From this definition, we conclude that for an incident to be considered an insurable risk, two conditions must be met:

- It must be a probable event whose occurrence is uncertain. If it is certain, it is not eligible for insurance. The probability of a risk may relate to the occurrence itself, where the event itself is uncertain, or it may relate to the time of occurrence, where the event is certain to occur but the uncertainty relates to the time of occurrence.
- That the occurrence of the incident does not depend on the mere will of one of the parties, especially the insured, as it is meaningless for a person to insure against a risk whose occurrence depends on his mere will, because he is able, whenever he wants, to realize the insured risk, and thus the insured incident is not also probable, but rather certain to occur in terms of the principle of its occurrence, and this will make the insurance lose its meaning, and from here came the principle that stipulates that it is not permissible to insure the intentional error of the insured, which the Algerian legislator considered to be part of the public order (Article 12 of the Insurance Law).

It should be noted that risks - even if they are not voluntary - are less likely to occur if they are contingent on human intervention or activity. In fact, this intervention may sometimes be so overwhelming that it leads to the belief that the accident is in fact due to the will of the insured. (Shukri, 1986, p. 54).

It is noteworthy that these two conditions are not met in the case of pollution risks. Accordingly, French insurance companies have long refused to cover pollution risks unless they are entirely accidental, i.e., resulting from a purely probable event, and not from the nature of the activities being carried out. This is particularly true for pollution resulting from the normal exploitation of environmentally polluting activities, as its occurrence is expected and the polluter is aware of it, such as suffocating smoke, toxic gases, and noise. Therefore, the element of probability is negated, as they are expected and result from the insured's industrial action. (Nabila, 2001, p. 21).

We note that the risk of pollution can be probable without being completely accidental or sudden, as if it resulted from gradual events. This is what made French insurers retreat from their previous position, and they began to show a degree of flexibility in defining the concept of an accident in this area, as they abandoned the condition of suddenness in it and did not exclude from insurance coverage only the intention to cause damage, and the intention conditional or linked to an illegal position and behavior, considering that insurance is based on uncertainty about the occurrence of damage. (Boufeldja, 2015-2016, p. 259).

Accordingly, we can place acts of environmental pollution within their proper scope. Although they are mostly the result of voluntary actions, this does not negate their potential nature. The polluter's will was not the sole factor in their occurrence, as other factors combined to bring them about. Furthermore, the possibility, which is the essence of danger, still exists, despite its relative nature.

We note that not all insurable risks have the same degree of probability. It is true that probability is a legal requirement for every insurance transaction, but whenever it exists, the risk is insurable in principle (Shukri, 1986, p. 58).

1.1.2 The technical feasibility of the risk of environmental pollution as a subject of a civil liability insurance contract

To be insurable, the risk must meet certain technical conditions: recurring, distributed, and homogeneous. The question here is to what extent environmental risks meet these conditions.

- The risk must be frequent: Insurance is based on the concept of offsetting between risks of the same type. Therefore, technically, the risk must be frequent, meaning it is sufficiently verifiable to allow the laws of

statistics to determine its degree of probability. The probability of any risk being realized is properly measured using the law of large numbers. The insurance process assumes that the insurer undertakes a large number of risks, and a large number of insured persons, and then collects insurance premiums. This ends the role of the insured in achieving cooperation, and the insurer begins to put this cooperation into practice by offsetting risks, in preparation for distributing the adverse effects that affect some insured persons across the entire group.

It should be noted that pollution risks are considered new in their insurance coverage compared to traditional risks. They do not allow for the application of the law of large numbers. It is difficult to group them into a single category that is treated in the same management approach. Therefore, insurers often hesitate to cover them, given their distinct characteristics that deviate from the general rules of risk. Consequently, it is difficult to determine the premium to which the insured is obligated.

However, there are technical methods within the general rules of insurance that can address these risks, the most important of which is the method of dividing the risk by resorting to reinsurance technology, whereby the risk is divided between the national insurer and the foreign reinsurer.

There is also the method of guarantee capping, i.e. setting a maximum limit for the insurance companies' guarantee to achieve the required consistency between the pollution risks that they accept to cover, but the drawback of this method is that it provides a partial guarantee for the risk. (Qadari, 2017-2018,, p. 41).

We conclude from the above that adopting and developing the technical methods recognized within the traditional rules of insurance can create a collection of a large number of environmental pollution risks, allowing these risks to respond to the technical foundations of the insured risk.

- The risk must be distributed: This means that the risk must be widely dispersed, so that its occurrence does not lead to a catastrophe. This means that the risk must not be concentrated and affect a large number of people simultaneously, otherwise it would be impossible to offset the risks. This is a technical basis of insurance.

As for pollution risks, they are not technically so general that they are difficult to cover. Rather, the difficulty lies in the size of the compensation that can be raised by the occurrence of liability, given its enormity. However, this can be overcome by capping the guarantee or by reinsurance. (Yousfi, 2010, pp. 11-12).

- The risk must be homogeneous: Homogeneity of the insured risk means that it is identical in nature, subject matter, and value. Furthermore, similarity in duration is required to facilitate the statistical process of the insured risks. The more homogeneous the risk, the more accurate the statistics will be.

We note the lack of sufficient statistical data from insurance companies regarding environmental pollution risks. Even if they exist, and the frequency of pollution incidents, this data remains only relative, because current technological developments and ignorance of the extent of the risk posed by pollution resulting from certain activities or materials prevent the collection of all data with the required accuracy.

The risks of pollution, given their huge size and the severity of the disaster, may make it impossible for the most powerful companies to take on a larger number of them, as the size of these risks is often not known in advance, even approximately, so companies are unable to make a comparison between what they can collect from them, while the condition of consistency between the collected risks is necessary for the process of pooling risks. (Rahmouni, 2015-2016, p. 101).

1.2 Special elements of the environmental pollution liability insurance contract

Like other insurance contracts, a civil liability insurance contract for environmental pollution risks is based on general elements: consent, subject matter, and cause, in addition to specific elements: the insured risk, the insurance premium, the insurance amount, and interest. Since we have previously addressed the definition of risk, we will focus on the remaining elements below:

1.2.1 Insurance Premium

As a reciprocal contract, an insurance contract generally imposes a significant obligation on the insured, which is to pay a premium for the insurance coverage. The premium is the primary component of the insurance portfolio against the insured risk, and its balance depends on the accumulated insurance premiums for the underwritten risks.

The determination of insurance premiums is based on calculating the probability of occurrence of the insured risks, in accordance with the aforementioned risk pooling principle. However, pooling and segmenting environmental pollution risks poses significant challenges in the application of statistical laws, due to the lack of clear rules for estimating the economic value of natural environmental elements. Insurance companies rely on purely economic valuation, which makes it difficult to assess ecological damage. Furthermore, identifying the damaged natural elements themselves is difficult in the absence of precise scientific data sufficient to adequately describe the condition of all affected environmental elements.

Despite the difficulty of collecting environmental risks and the impossibility of calculating their probabilities, this obstacle can be overcome, as we mentioned above, by developing traditional insurance rules in a way that is compatible with the specificity of environmental damage, which allows for determining the insurance premium related to these risks. (Qadari, 2017-2018,, p. 46).

1.2.2: Insurance amount

As a contract of compensation, the insurance contract aims to compensate the insured for any damages incurred as a result of the insured risk. This is done through the insurance amount, which the insurer is obligated to pay to the insured. The insurance amount is closely linked to the premium; the higher the insurance amount, the higher the premium.

As for the risk of environmental pollution, there is a practical difficulty in estimating the insurance amount, due to the special nature of this risk, which makes it inconsistent with the insured risk. However, as previously stated, this difficulty can be avoided by adopting the methods of guarantee ceiling and reinsurance. (Qadari, 2017-2018,, p. 47).

1.2.3: interest

The objective of the civil liability insurance contract for environmental pollution risks is to guarantee the insurer the financial consequences arising from the insured's civil liability for damages caused to third parties. Therefore, polluting establishments subscribe to an insurance contract, as they have an interest in subscribing to these contracts, which is represented by the fact that third parties cannot claim compensation from them, due to the existence of a guarantee (the insurance contract).

The necessity of the availability of an insurable interest in insurance contracts in general was indicated through Article 29 of the Insurance Law, which stated that: "Any person who has a direct or indirect interest in preserving money or in preventing a risk may insure it." (Order No. 95-07 , 1995, p. 3).

We conclude from the above that the specificity and distinct nature of environmental damage do not prevent it from being covered under traditional civil liability insurance rules. Environmental damage, in principle, meets the legal and technical requirements for the insured risk. However, this coverage raises practical issues that could hinder the insurance process. We note that these issues can be overcome by developing and adapting these rules. Furthermore, this contract requires the availability of the general elements of all contracts, in addition to the elements specific to the insurance contract, namely the premium, the insurance amount, and the interest.

2. Modern systems for insuring environmental damage and the position of the Algerian legislator on them

Given the increasing scale of industrial and technological risks—the primary cause of environmental damage—the development of modern insurance systems simultaneously is essential to provide adequate coverage for the technological challenge. Below, we will discuss some specific models of environmental pollution liability insurance, and then determine our legislator's position on them:

2.1 Qualitative models for environmental pollution liability insurance

Given the inability of traditional insurance rules to accommodate the risks of environmental pollution, it became necessary to seek more effective modern systems for insuring liability for environmental pollution. These systems have been tested in the French, English, and Dutch insurance markets. We will attempt to list them below:

2.1.1 French insurance market experience

The French insurance market has witnessed a revolution in the organization of environmental pollution risk insurance, abandoning traditional insurance rules and introducing new models that guarantee effective coverage for pollution risks. This led to the emergence of the "Garpol" insurance pool policy after French insurance professionals

became aware, in 1977, of the need to create a specific tool to insure liability for environmental damage. This is where the first reinsurance pool emerged: the Pollution Risk Pool (PRP), referred to by the French acronym mentioned above.

This policy provides the insured with coverage for gradual and accidental pollution risks, offering full coverage for all sources and manifestations of pollution. The policy also covers expenses incurred by the responsible insured to remove the effects of pollution. Furthermore, the damages covered by the insurance are not limited to accidental air or water pollution, but are extended to include all damages resulting from odors, noise, vibrations, waves, radiation, and changes in temperature, which exceed the limits of neighborhood obligations.

Despite the broad scope of this policy's guarantees, it posed a challenge due to its short coverage period. It was limited to damage discovered during the policy's validity period, which prevented the insured from fulfilling the reporting requirement in most cases. An amendment called Garpol 1978 was subsequently issued, extending insurance coverage if the policy expired for any reason other than non-payment of the premium or bad faith on the part of the insured. This extended the coverage to include liability claims for damages discovered during the warranty period, even if the insured notified the insurance company of the damage after the expiration of the policy period, which is usually set at one year.

Another amendment to the above-mentioned insurance policy was made in 1980, accepting coverage - without an additional premium - for any claim related to damage discovered during the two years immediately following the cessation of the insured's activity (which was the risk of contamination) and with paying an additional premium if this damage was discovered within the following 5 years **(Rahmouni, 2015-2016, p. 106)**.

Although this policy provides comprehensive coverage for industrialists, it is criticized for setting the guarantee amount at 130 million French francs. This prompted the group's members to expand their activities, so they considered forming a new pool called "Assurpol" (Pollution Insurance). This pool began operating in 1989 with a capacity four times that of the previous pool. Its activity involves reinsurance and the assignment of risks related to environmental attacks by companies and other pools. It is a reinsurance pool based on a quota system. The company participating in this pool assigns its reinsurance contracts to this pool, which in turn distributes insurance premiums and damages according to the shares of the participating companies **(Hawas, 2011, p. 80)**.

We note that, until the end of 1993, this pool issued a single insurance policy, but it was considered serious compared to what existed in the French insurance market, especially since the definition of environmental attacks was broad. However, starting the following year, an insurance policy for environmental damage risks appeared, bearing the name "Exploitation of Fixed Industrial and Commercial Land Installations." This policy covered both civil liability for damage to the environment (bodily, material, and non-material damage to third parties) resulting from the insured's activities, as defined in the special conditions, as well as the cost of operations designed to prevent the insured damage or prevent its exacerbation. We also note that this policy included important exclusions, perhaps the most serious of which was the limitation of the insurance to pollution resulting from sudden events only, meaning the exclusion of gradual or chronic pollution, despite these two types being the most common and most serious. It also excluded purely environmental damage (that which occurs to objects that represent the physical and natural environment used by everyone), in addition to damage of a technical nature. **(Rahmouni, 2015-2016, p. 108)**.

2.1.2 English insurance market experience

Clarkson is a private insurance policy for environmental pollution damages in English law, and represents a pioneering experiment in the English insurance market by abandoning the traditional distinction between accidental and non-accidental pollution.

The insurability of the risk of environmental pollution according to this insurance policy is done by analyzing its various forms and types, after which a premium schedule is drawn up in which each type of insurable pollution has its own premium. This policy divides environmental pollution into several types: intentional pollution, in which gross negligence or intent to disregard regulations regarding the means to be followed in order to protect the environment is evident; accidental pollution, which arises from an unexpected and sudden cause; residual pollution resulting from the release of a quantity of pollutants within the permissible limits that could not have been avoided despite adherence to control rules; in addition to simultaneous or combined pollution, which results from the unauthorized combination of products and emissions of a particular activity or the unauthorized combination of materials that are within the permissible limits; and finally, latent pollution, which results from the release of materials whose danger was not known at the time of issuance, and this danger did not appear until after its harm was scientifically discovered. **(Qadari, 2017-2018,, p. 103)**

With the exception of the first type (intentional pollution), this insurance policy covers all other types of pollution. The exclusion of intentional pollution is in line with the general principles of insurance, as it is excluded in all insurance contracts.

We note that this insurance policy covers bodily or material damage resulting from any of the aforementioned forms of pollution, regardless of its cause. It also covers lawsuit expenses and expenses incurred to remove or clean up harmful materials. Only war risks, compensation claims filed by the insured's workers, pollution resulting from gross negligence on the part of the insured, and fines are excluded from the insurance. We also note that this policy guarantees a maximum of 30 million pounds sterling per disaster, or for an entire insurance year.

2.1.3 Dutch insurance market experience

The Dutch MSV insurance policy represents the most modern approach, following its attempt to directly insure pollution risks. Established in 1998, this policy represents a change for the better, given the coverage it provides. It provides unified coverage for all environmental damage from or to the insured site, covering soil and water pollution, sudden and gradual pollution, and purely environmental damage. The insurance covers site damage, cleanup costs, and repairs, and also extends to third parties. (Rahmouni, 2015-2016, p. 110).

2.2 The position of the Algerian legislator on these models

We note first that the Algerian legislator has adopted the expanded concept of environmental damage, as Article 18 of Law No. 03-10 on environmental protection stipulates that the act of harming or attacking the environment is the result of an accident or gradual pollution, and all the dangers caused by facilities classified as public health, order, security, agriculture, environmental systems, natural resources, tourist sites, landmarks, and areas, and neighborhood damage, and other forms of harm to animals or plants, as well as harm to biological diversity, water, air, and soil pollution, vibrations, radiation, and noise. (Law No.03-10, 2003).

We note from the aforementioned article that the legislator has provided sufficient guarantees to protect the environment from all forms of pollution, which supports the possibility of implementing the modern insurance model, with the necessity of utilizing the technical, material, and legal means capable of facilitating the insurance of environmental damage. Do we find within the insurance law or within the laws related to environmental protection what proves the implementation of this model? This is what we will attempt to explore below:

2.2.1 Algerian insurance legislation

By examining the Algerian insurance law, we note that it does not explicitly regulate liability insurance for environmental damages. The legislator did not explicitly refer to this type of insurance within the articles of that law. However, it can be inferred from some articles that include some insurances related to environmental damages.

Regarding damages resulting from the exploitation of facilities of an economic nature, Article 163 of the aforementioned law requires civil economic companies and institutions to take out insurance that covers all physical, material and moral damages that befall others due to risks arising from such exploitation.

Regarding those closely related to neighborhood damage, which is a type of noise pollution that affects those living near certain places, Article 165 requires every entity operating an airport or port to take out an insurance policy that covers its civil liability for damages that those entities may cause to others as a result of their activities.

Regarding damage to the health environment, Article 169 requires establishments that withdraw human blood for medical use to take out insurance against the harmful consequences that blood donors and recipients may be exposed to. Article 168 also requires any owner of an establishment that manufactures, invents, transforms, modifies, or packages materials intended for consumption or use to take out insurance to cover their liability for damages caused to others by their polluting activity.

To emphasize the obligation of liability insurance for polluting activities, the legislature has imposed criminal penalties for failure to comply with this obligation, which include a fine, in addition to the obligation to subscribe to the relevant insurance, as stipulated in Article 184 of the Insurance Law.

Regarding major risks, the legislator stipulated the possibility of fully or partially insuring losses and damages resulting from natural disasters, such as earthquakes, floods, and sea surges (Article 41 of the same law), as well as the possibility of insuring climatic risks, such as hail, storms, ice, snow, and floods (Article 52). However, what is noteworthy about this type of insurance is that it relates only to the real estate and movable property of the insured, which means that environmental properties not owned by anyone are excluded from the scope of this coverage. The legislator subsequently adopted a compulsory property insurance system against the risks of these disasters, following the series of disasters that swept our country. Order No. 03-12 was issued, through which the legislator obligated every owner of a built property in Algeria, whether for residential, industrial, or commercial use, to subscribe to an insurance contract that covers damages to such properties caused by earthquakes, floods, mudslides, storms, strong winds, and land movements. This does not

include other major risks. This insurance also does not cover environmental pollution damage, despite it being one of the effects of natural disasters.

2.2.2 Other Algerian legislation

As previously mentioned, we must examine the laws related to the environment and determine the extent to which they include mandatory environmental pollution liability insurance. Referring to the aforementioned Law 03-10, it is noted that it does not include a provision for mandatory environmental pollution liability insurance, although the legislator, with the aim of protecting the environment, stipulated in the aforementioned law the necessity of obtaining a prior license to practice certain activities with an environmental impact, confirming the exercise of prior oversight over the activities of classified facilities. The conditions for granting a license to a facility stipulated in the applicable regulations (**Executive Decree No. 06-198, 2006**) did not include a condition for subscribing to an insurance contract.

We also refer to Law, relating to waste management, control and disposal (**Law No. 01-19, 2001**). Article 45 of this law stipulates that waste treatment facilities must be subject to insurance coverage covering all risks, including pollution risks and accidents.

Regarding pollution affecting the marine environment, we find that Order No. 76-80 of the Maritime Code stipulates in Article 130 that it is mandatory for ships with a capacity of more than 2,000 tons of fuel to have insurance to cover their liability for pollution. To this end, the competent Algerian administrative authorities are obligated to issue each ship a certificate acknowledging the existence of valid insurance or financial guarantees, provided that the validity period of the certificate does not exceed the period stipulated for the insurance (Article 131).

The legislator adopted the provisions of ratified international agreements, particularly Article 7 of the International Convention on the Determination of Rules Governing Civil Liability for Marine Pollution Damage and Ensuring Compensation.

What can be concluded from all of the above is that the environmental damage liability insurance system in Algeria still relies on the traditional insurance system, and its coverage remains ineffective and limited compared to the nature and scope of environmental damage.

Conclusion:

In a comprehensive assessment of the role of the insurance system in covering this newly emerging type of damage resulting from technological and industrial development, it can be said that this system, despite its importance and the advantages it has achieved in covering many types of damages, particularly car accidents, appears insufficient and ineffective in the field of environmental damage within the framework of its traditional rules. This is due to the difficulties and problems it faces, starting with the difficulty of identifying insurable risks, which vary according to the diversity of environmental risks. The time factor influences changes in the harmful effects resulting from pollution risks, as well as the interaction and combination of elements that characterize environmental risks. Furthermore, there is the time factor that a risk takes to appear, and it may be discovered after the insurance period has passed. Add to this the difficulty of addressing the costs of loss mitigation and loss prevention incurred by the injured party.

We have confirmed the weakness of insurance coverage for compensation for this type of damage in our country, and consequently the weakness of this complementary means to civil liability in compensating for environmental damage. We recommend the necessity of :

- Developing the insurance system to suit the specific nature of environmental damage.
- The Environmental Law must include provisions requiring insurance coverage, as a condition and obligation for every owner of a polluting facility to obtain an insurance policy covering their liability for pollution damage.
- Expanding the scope of insurable risks through Order No. 03-12 on compulsory insurance for natural disasters to include damage to the environment resulting from these disasters, and including insurance for technological risks, as they are the primary cause of environmental damage.
- We propose the creation of insurance pools, similar to the French pool "Assurpol", in order to provide optimal coverage for environmental damage.

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