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Characteristics of liability insurance systems in covering environmental damage

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Abstract: Environmental liability insurance has become a central legal and practical instrument for compensating environmental damage and responding rapidly to ecological disasters, especially in light of the mounting crises that have reshaped modern life. Unlike ordinary liability insurance, pollution liability raises distinctive challenges because environmental harm may be gradual, scientifically complex, broadly dispersed, and sometimes linked to human conduct that appears intentional in its activity but not in its harmful outcome. This study examines the insurability of environmental pollution risks through two complementary lenses: the legal conditions governing insurable risk and the technical principles that make insurance feasible as a system of risk pooling. On the legal level, the analysis focuses on probability and independence from the will of the parties, highlighting how modern jurisprudence—particularly in France—has narrowed the concept of intentional fault, distinguished voluntary acts from intent to cause harm, and developed approaches to accommodate gradual pollution when it has an accidental origin. On the technical level, the study evaluates whether pollution risks satisfy the requirements of dispersal, homogeneity, and frequency necessary for statistical calculation and premium setting, while emphasizing persistent obstacles such as uncertainty in timing, long-tail claims, and potentially catastrophic loss severity. Finally, the paper presents selected models that evolved to address these difficulties, including the French pools Garpol and Assurpol, the English Clarkson policy, and industry-based cooperative schemes for marine oil pollution (TOVALOP, CRISTAL, and related arrangements). The study concludes that environmental pollution risks are, in principle, insurable when legal and technical criteria are adapted to their special nature, and that specialized mechanisms—pools, reinsurance, extended reporting periods, and structured exclusions—remain essential for balancing victim protection, insurer solvency, and effective environmental risk governance.

Keywords— environmental liability insurance, insurability of pollution risks, environmental damage compensation, gradual and accidental pollution, risk pooling and reinsurance.

INTRODUCTION

Liability insurance It is one of the most important legal fields in the area of compensation for environmental damages, which demonstrates the speed of response to environmental disasters and the provision of assistance to those affected and their victims. The need for safety has increased in the twentieth and twenty-first centuries. Liability insurance, especially after the global environmental crises that have changed life on planet Earth

Therefore, this section will address the insurability of environmental damage (Section 1), with reference to some insurance systems (Section 2).

Section 1: The Insurability of Environmental **Pollution Risks and Some Insurance Systems**

Liability insurance for pollution risks is not ordinary liability insurance. Given its unique nature, we will examine the legal (First Subsection) and technical (Second Subsection) foundations for the insurability of pollution risks.

Section One: The Insurability of Environmental Pollution Risks and Some Insurance Systems

Liability insurance for pollution risks is not ordinary liability insurance. Given its unique nature, we will examine the legal (first subsection) and technical (second subsection) foundations for the insurability of pollution risk.

First requirement: Applying the legal principles of the insured risk in the field of environmental damages

First, we must clarify the meaning of risk. Risk, in this context, refers to the cause that leads to harm to the insured. It is the cornerstone of all insurance contracts, as it forms the basis of all the insurer's calculations and gives the insurance process its true character. Furthermore, it serves as the measure of the obligations of both parties to the insurance contract, determining the insurance premium and the insurer's performance.

Regarding pollution risk insurance, some may question whether this type of risk is insurable. The question arises as to whether pollution risk possesses the element of probability, and consequently, whether the resulting liability can be legally insured against the party responsible. Therefore, we will examine the specific conditions for insurable risks to demonstrate the extent to which pollution risks meet these conditions.

Section One: Legal Conditions Related to Risk

The concept of risk in insurance differs from its common understanding in other legal disciplines, including civil law. Risk is thus the subject matter of insurance. In general legal principles, risk is defined as: "A potential event whose occurrence does not depend on the will of either party, especially the insured." Based on this definition, it can be said that for an event to be considered a "risk" and therefore insurable, two conditions must be met:

First: The risk must be a potential event that is not certain to occur. The element of probability is the essence of an insurance contract, and therefore the event must be characterized by probability in terms of its possibility of occurring or the timing of its occurrence. If the occurrence is certain, then it is not suitable to be the subject of insurance, because the quality of certainty is incompatible with probability, and uncertainty or probability in the risk may be based on the principle of occurrence.

The same, or the time of the incident, can also be concerned with the consequences of the incident, and the possibility of its occurrence requires that the event not be impossible.

The risk is the subject matter of the contract, and if the latter is impossible or nonexistent, the insurance contract is void due to the absence of its subject matter.

Second: The occurrence of the risk must not depend solely on the will of one of the contracting parties. Otherwise, the element of probability is eliminated, and it becomes a certainty of occurrence, and cannot be described as a risk according to the legal definition. Consequently, it would be certain, not probable, whether in terms of its non-occurrence if the matter pertains to the will of the insured, or its occurrence if the matter pertains to the will of the insurer. The legal basis for the invalidity of the insurance contract in this case is the absence of the element of risk.

Because the element of probability is absent, insurance against the intentional errors of the policyholder is prohibited.

This has led to numerous issues concerning the possibility of insuring against liability for environmental damage, prompting some legal scholars to make insurance against such risks mandatory in most cases.

Regarding unintentional errors, the French legislature has authorized insurance against risks arising from the insured's unintentional error in Article 113, paragraph 1 of the French Insurance Code of 1976. French jurisprudence has consistently held that insurance is permissible, in principle, against disasters caused by the insured's negligence or lack of caution. This applies to both property and personal damage insurance.

Having discussed the legal conditions for risk, we now turn to the extent to which pollution risks meet the required legal conditions for risk.

The second branch: The extent to which pollution risks comply with the legal conditions required for the risk

Given the specific nature of pollution risks and what distinguishes them from other risks, they are unable to encompass all the damages of environmental pollution within the traditional rules of civil liability. This is due to a number of obstacles facing the injured party in terms of the difficulty of determining the responsible party, or the difficulty of proving fault, as well as proving the causal link. This has had a significant impact on pushing legal scholars to try to adapt these rules and find alternative mechanisms that guarantee adequate protection for the injured party. Moreover, t he task of insuring liability for environmental pollution risks has not been easy, as it has faced many challenges. This is because the risk of pollution, in most of its forms, is fundamentally due to the intentional intervention of humans in it. Thus, the belief that it is absent becomes the quality of probability, which is the essence of the insurance process and the basic condition that must be met for the risk to be insurable.

Another difficulty arises concerning the warranty period, stemming from the fact that "pollution is a very long-term phenomenon, making it difficult, if not impossible, to pinpoint the exact timeframe within which it will occur. Even if an approximate timeframe can be determined, it often extends beyond the warranty period. This means we are in conflict with

traditional insurance principles, which stipulate that the covered disaster must occur within the contract's validity period and that claims for compensation must be filed within the same period." These obstacles to determining the insurability of pollution risks can be attributed to:

First: The probabilistic and mental nature of environmental pollution risk. The traditional concept of an accident, as defined by the French Court of Cassation, is: "a sudden, accidental, unexpected event, independent of the insured's will." Therefore, some have argued that pollution risks are not insurable, their reasoning being that they lack a probabilistic element. Most pollution risks stem from errors of thought or reason, not mere chance or luck. Furthermore, many cases of environmental pollution are not sudden, as pollution is a gradual phenomenon. Despite this, numerous ideas and methods have been developed.

Because the latter is a phenomenon that occurs gradually, yet many new ideas and methods have been found through which the mental characteristic and probabilistic nature of the dangers of environmental pollution can be adapted through :

Second: The judiciary's tendency to narrow the concept of intentional fault. French jurisprudence has witnessed a development in defining intentional fault within the context of insurance, giving it a much narrower definition than its definition within the general theory of obligation. The French Court of Cassation ruled in this regard that intentional fault or fraud, which excludes the insured's obligation to provide compensation, is fault coupled with the intent to cause harm, not merely the act that creates the risk. It is not enough for the insured to perform an act or omission that leads to the harm; rather, they must intend to cause the harm itself. .

Third: Distinguishing between intentional negligence and voluntary acts. French jurisprudence distinguishes between intentional negligence or fraud, which is not covered by insurance, and voluntary acts, which are insurable. In the first scenario, intentional negligence means the perpetrator faces the act that caused the pollution along with all its destructive consequences. In the second scenario, the perpetrator acts of their own volition, but only the act that caused the pollution. .

In practice, the second hypothesis is more likely, as in most cases environmental pollution is not far removed from the insured's own will, but rather from their actions and is not linked to the polluting and destructive consequences resulting from these actions. .

Fourth: Distinguishing between accidental and gradual pollution. Some legal scholars point to the difficulty of establishing clear boundaries between accidental and gradual pollution, as insurance organizations initially differentiated between them to exclude gradual pollution from the scope of insurance..

It should be noted that prior to 1994, French insurers refused to cover pollution risks unless they were accidental, a position that was criticized. Making pollution risk coverage conditional on such a requirement significantly diminishes the value of the guarantee offered to manufacturers in this sector. Therefore, insurance coverage was limited to the risk of accidental pollution only, resulting from a purely potential incident and not from the nature of the activities being carried out. ‹ The reality of accidental pollution does not pose any problem in principle, as a link can be drawn between the incident and the resulting environmental damage. .

However, starting in January 1994, French insurers began accepting insurance for gradual pollution, provided it had an accidental origin. In all cases of pollution, the insurer is required to provide proof of the accidental nature of the incident causing the damage. Although the majority of insurance policies available in the general insurance market are limited to sudden damage. ‹ However, there are special insurance policies that provide coverage that extends to cover gradual pollution, in countries such as Britain, Ireland and Germany..

Fifth: Pollution acts are considered a form of unforgivable error, as the majority of French jurisprudence holds that pollution acts can be considered a form of unforgivable error, since the elements constituting the latter are, in terms of exceptional severity The error pertains to the behavior itself, not its consequences. ‹ Likewise, the intentional nature of the actor's action is what distinguishes a forgivable error from a serious error, as the latter can be the result of negligence or a failure to take precautionary measures unintentionally or deliberately. .

It is believed that these elements required in the unforgivable error are available in a large part of the pollution acts, because the perpetrator is aware of the seriousness of his actions, and they are carried out with voluntary activity, but they are carried out without malice or a desire to harm. If the pollution acts are considered within this circle, it is permissible to insure these risks legally.

The second requirement: Applying the technical principles of the insured risk in the field of environmental damage.

In addition to the legal requirements, insurance also requires technical conditions, or as some call them, the technical principles of liability. .

Insurance, as a technical and artistic process, is in reality based on three foundations. ‹ This involves cooperation and risk offsetting, and statistical factors. Cooperation occurs among a group of policyholders who are exposed to a single risk threat and share a common desire to avoid the harm caused by this risk.

They pool a large sum of money among themselves, with each contributing in proportion to their contribution to the total risk, with the aim of reducing uncertainty for the policyholders and distributing the burden of the actual disaster among the group members. ، The insurer, represented by the insurance company, manages and organizes this cooperation among policyholders by offsetting risks based on technical principles and statistical methods. This process takes into account the potential for catastrophic events to determine the premium each policyholder is obligated to pay.

Based on these technical principles, there are many risks that, theoretically, are not insurable due to the absence of specific technical requirements. ، The insurability of a risk depends on its classification within a specific risk category. Each risk category must share certain characteristics. When an insurer accepts a particular risk and determines the premium the insured must pay, they are considering whether these characteristics are present in the risk against which insurance is sought. .

It is not sufficient for a risk to be covered that it be a possible accident, and not dependent solely on the will of the insured. Rather, technical conditions must be met in the insurable risk, which we will explain (Section 1), and then we will turn to examining the extent to which pollution risks respond to these conditions (Section 2).

Section One: Technical Conditions Required for the Risk

We have concluded that the legal conditions alone are insufficient for a risk to be insurable. Other technical conditions must also be met, namely:

First: The risk must be distributed or dispersed in its occurrence. This means that the large groups of risks that the insurer accepts to insure do not all occur simultaneously and affect the policyholders. Rather, they occur distributed or dispersed over extended periods, affecting a small number of policyholders, but not all of them at once. ، In this regard, Dr. Nabila Ismail Raslan points out that there are risks that are technically unsuitable for insurance, such as natural disasters like volcanoes and earthquakes that affect specific areas. These risks are not distributed in a way that allows for their insurability. Similarly, Dr. Ali Muhammad Kamal Al-Shabrawi believes that the diversification of risks is a requirement based on the principle of cooperation among policyholders, and it is a condition for achieving financial equilibrium in the insurance project. He adds that if risks were not diversified, it would be impossible to offset or divide them. .

Second: The risk must be homogeneous and uniform. Homogeneity is a condition for the validity of statistics, and the latter can only relate to similar facts, i.e., risks that are somewhat equal. The homogeneity of the insured risk is intended to be uniform in terms of its nature and subject matter, which requires dividing risks according to their subject matter and the place where they occur, which is the insured, and also in terms of their value and the duration of the guarantee. It is not possible to make a settlement between risks that differ in their nature, as they must be homogeneous in a way that ensures obtaining results that are closer to accuracy.

Third: The risk must be frequent, meaning there must be a sufficient degree of regularity to allow the laws of statistics, which are based on the recurrence of the phenomenon, to apply. These laws assume that the event under study reaches a level of probability and occurrence sufficient to allow for its monitoring and control. Conversely, if the event is rare but recurs frequently and regularly, the aforementioned laws of statistics cannot be applied to it, and the premium cannot be determined for it, thus rendering it insurable. .

Having outlined the technical foundations necessary for the insurance process, we now move on to examining the extent to which pollution risks meet these conditions, and whether these risks are technically eligible for insurance coverage..

Section Two: The extent to which the technical conditions of the insurable risk are met in environmental pollution risks

Environmental pollution risks are considered relatively new in terms of insurance coverage, and their unique characteristics distinguish them from other types of damage. This necessitates that these risks comply with the technical requirements of insured risks. This will be explained as follows:

First: Environmental Pollution Risks and Risk Aggregation. To ensure the insurer has the most accurate and precise understanding of the risk probability, they should select risks that are widespread and threaten many people. This allows for the most accurate calculations possible because the range of potential occurrences, which is subject to statistical analysis, is broad. This facilitates the effective application of statistical principles and large numbers, leading to a more precise assessment of the risk probability. Based on this probability calculation, the insurer can logically predict and calculate net premiums that closely reflect the potential for disasters that should be covered.[1] .

It appears that many risks are theoretically uninsurable due to the lack of technical requirements. Pollution risks are among these, where policyholders often hesitate to accept coverage due to their large scale, the severity of the disaster, and the resulting harmful effects. Furthermore, major insurance companies are unable to undertake a significant number of these risks, either because of insufficient statistics, the difficulty in knowing the full extent of the risks they are obligated to cover, or because of technical difficulties related to insufficient

data collection, the challenge of accurately determining the premium to be paid by the insured. .
Second: Pollution hazards, hazard frequency, and probability calculation. For a hazard to be technically insurable, it must have a certain frequency and a degree of regularity in its occurrence sufficient to allow statistical laws to determine its probability level. This generally allows for treating chance as a certainty, or at least as a relative probability. Insurance is based on probabilities, which means knowing the chances of hazards occurring. This calculation has become possible through statistics, and the more accurate the statistics conducted by the insurer, the closer the results will be to the truth. Furthermore, determining the probability of a hazard or calculating probabilities has become possible thanks to advancements in statistics. .
Therefore, pollution risks are insurable because they conform to the technical principles of insurance, as the probability of their occurrence can be calculated. However, there are technical difficulties in insuring pollution risks, which lie in the time limits of coverage. With the passage of a long period since the environmental pollution incident, it may fall outside the guarantee period.
Third: Pollution risks and risk distribution. The pollution risk to be covered should be distributed in its occurrence and frequent in order to be insurable, meaning that large groups of insured risks do not occur at the same time and affect all the insured, so that the insurer can make offsets between them. "If the generality of risks is necessary for insurance, then the particularity of disasters is no less important." .
From a technical standpoint, it is clear that pollution risks are not so general as to be difficult to cover, as they do not affect all policyholders at the same time, nor are they concentrated in a specific area, although some risks do possess a degree of generality. ‹
Insurance companies explicitly exclude certain types of damage from their coverage in the insurance contract. Examples include damage caused by earthquakes and natural disasters that affect the environment and its various vital elements, often resulting from common causes and known as purely environmental damage. This also excludes damage arising from general pollution resulting from all human activities, as well as damage resulting from comprehensive pollution associated with multiple activities of an establishment. Therefore, there is nothing preventing the acceptance of insurance coverage for civil liability for pollution-related
errors, as these are not concentrated in a specific area and do not affect all policyholders simultaneously. While there may be some difficulties, particularly regarding the value of compensation, these can be overcome through established technical methods such as reinsurance or assigning a portion of the risk to the policyholder. .
In conclusion, pollution risks, in principle, respond to the technical foundations of insurance, taking into account the specific nature of pollution risks and the potentially large compensation payouts that could deter policyholders. This leads a significant portion of legal scholars to support the view that traditional insurance principles urgently need to be developed and adapted, both in form and substance, to the specific nature of environmental pollution risks. .
Section Two: Examples of Some Modern Systems for Insurance Against Liability for Environmental Damage
The world is witnessing great scientific and technological progress in various fields, which has caused unprecedented damage to the environment in terms of its severity, wide scope of spread, and the continuity of its effects for decades, prompting insurance companies to adopt alternative systems aimed at ensuring insurance coverage for environmental damages to compensate and redress the damage caused to the affected party.
These types of insurance related to pollution risk coverage have diversified, evolving beyond the traditional rules of insurance systems. .
The first requirement: The system of covering environmental damages in the French insurance market
The French insurance market in the field of regulating environmental pollution risks has seen the introduction of new models that specialize in effective coverage of these risks, and the abandonment of traditional rules, as the first reinsurance pool between insurance companies and reinsurers was established, referred to in short as "Garpol" (1), followed by the launch of a new pool, referred to in short as "Assurpol" (2), to enable insurance companies to continue to provide insurance coverage against environmental risks.
First Branch: Garpol Pool
The need to find a specific instrument to insure against pollution risks became a concern for all those involved in insurance. Thanks to international efforts, culminating in the creation of a French insurance model for liability arising from environmental damage, the first reinsurance pool was established in July 1977: the Garpol Pool. This pool was specifically designed to cover pollution risks resulting from the effects of nuclear energy. It goes without saying that this pool represents the first experiment in establishing a specific, independent model for covering civil liability for environmental pollution. ‹
This document allows the insured to cover both gradual and accidental pollution risks, providing full coverage for all forms and origins of pollution. The insurance also covers expenses allocated for pollution removal up to a limit of 130 million French francs. .
It should be noted that if the Garpol policy expires for any reason other than non-payment of premium or bad faith of the insured, the insurance coverage

extends to include civil liability claims for damages discovered during the guarantee period, even if the insurer was notified of them after the expiry, provided that the notification occurred within the period following the expiry and is equal to the policy term, which is usually one year. .

Despite the expansion of this document, it raised several obstacles, especially regarding the short duration of coverage, which led to its amendment in 1978, extending its insurance scope beyond the contract's expiration. .

The Garpol policy achieved several insurance advantages, most notably its broad scope to cover various types of environmental pollution, aiming to address their damage at the source in terms of origin, manifestations, and the total expenses allocated for mitigating their effects. However, this insurance model did not achieve the desired results and the purpose for which it was established. This was due, firstly, to a widespread misconception among many insurance company officials within the insurance consortium that they did not need a Garpol contract, considering traditional fire and explosion insurance policies and business utilization insurance policies sufficient guarantees to cover pollution risks. Secondly, the handling of insurance applications was based on extremely complex criteria, with only one application being accepted out of every five rejected due to insufficient safety standards in the companies and sites to be insured. Furthermore, the most prominent reason was that the coverage ceiling was too low for high-risk sites, in addition to the lack of preparedness among industrialists for the risks posed by the ecosystem. .

What is criticized about the Garpol insurance pool is its allocation to the risks of pollution caused by nuclear energy, that is, it is insurance for liability for nuclear pollution only, provided that the damages do not exceed the maximum limits of insurance. In this way, the stage of this pool ended, and its members, after ten years of experience in the field of insurance, decided to put an end to their activity and expand their field, and to find another alternative. So they launched a new pool that took the name of pollution insurance, and is abbreviated as “Assurpol”.

Branch Two: Assurpol Group

The new Assurpol group, launched in January 1989, is a specialized insurance model that differs in its content from classic insurance contracts. It was established as a GIE-type consortium to enable insurance companies to continue providing coverage for all environmental damage risks. It includes a number of insurance and reinsurance companies, and its primary objective is to reinsure environmental damage risks through specific contracts. .

According to the regulations governing the Assurpol group, all insurance and reinsurance companies, whether French or foreign, are eligible to join, provided they are authorized to operate within France. This new group is distinguished by its higher coverage ceiling compared to the previous group, Garpol, with environmental risk insurance coverage reaching €75 million.

The new Assurpol group is a quota-based mutual reinsurance pool. Participating companies assign their insurance contracts to this pool, which then distributes premiums and claims according to the quotas of the contributing companies. .

It goes without saying that Assurpol is managed through a group of committees that it relies on to make decisions regarding environmental pollution damage coverage. These committees include the Board of Directors, the Technical Committee, the Legal Committee, the Engineering Committee, and the Accident Settlement Committee. Each decision-making body has specific responsibilities as defined by the Assurpol bylaws. AssurPol.

From its inception until December 31, 1993, the AssurPol insurance group was distinguished by issuing a unified policy characterized by renewal, and therefore there was no difference between accidental and gradual pollution cases. Given the multiplicity and diversity of pollution sources, AssurPol amended its policy document in January 1994 with the introduction of a new specialized
contract called "Operation of Fixed Industrial and Commercial Ground Installations" (AssurPollTf) to guarantee civil liability for pollution damage. .

Therefore, this new specialized insurance contract covers all pollution risks caused by fixed industrial and commercial ground-based facilities. It is an optional contract, and its scope of insurance coverage includes cases of accidental and gradual pollution. .

- It should be noted that the guaranteed damages offered by the Asrpol Insurance Group are a response to the company's diverse responsibilities in the face of environmental risks, namely:
- Covering civil liability for environmental damage, guaranteeing material, physical, and non-material damages, provided that these damages result from environmental harm caused by the insured establishments' activities as specified in the policy. .
- An additional provision was proposed in 1998, known as the Damage Prevention Cost Guarantee, which covers expenses incurred by the insured, as well as expenses related to the removal of pollutants and the cleanup of contaminated materials in compliance with administrative orders.
- It also covers operating losses resulting from environmental damage and all defense expenses, such as legal fees and expert fees. .

In summary, the AssurPol policy, like the Garpol policy, covers both gradual and incidental environmental damages. Its objectives are tailored to the needs of businesses, service providers, and local authorities. Regionally, it offers global coverage in three key geographic areas: the European Union, the United States, and Canada, with a pool of €75 million. Regarding the policy's duration, the contract was initially limited to one year. Previously, the insured was denied coverage if the injured party did not file a claim within the contract's term. However, this condition was overturned by the French Court of Cassation in a series of rulings. In accordance with these rulings, the AssurPol policy, issued in 1994, stipulates that coverage extends to damages covered by the policy if they occur within five years of the contract's expiration or termination. .

As for the cases excluded from the insurance coverage provided in the AssurPol policy, some are due to the special nature of the AssurPol pool, and others are due to exclusions stipulated according to the traditional rules of civil liability insurance. In general, most of these exclusions have been ruled invalid, and we can explain some of them as follows: :

- Exclusion of damages resulting from violations of legislative provisions and measures authorized by the competent authorities, particularly those related to the operating license.
- Exclusion of purely environmental damages arising from the exploitation of nuclear materials.
- Exclusion of deliberate error or fraud by the insured.
- Exclusion of damages resulting from the poor condition of the facility or from inadequate maintenance.
- Exclusion of damages resulting from the use or dissemination of genetically modified organisms.
- Exclusion of explosions and fires.
- Damages caused by facilities, means of transport, and machinery. .

The AssurPol policy also included other exclusions from insurance coverage, most notably damages resulting from foreign war or civil war, and damages stipulated in general insurance rules. AssurPol explicitly excluded these from coverage, specifically damages resulting from natural and technological disasters. In addition to these explicit exclusions, while the AssurPol policy included environmental damages, it did not cover damages to environmental elements as they are not owned by anyone. This justifies the exclusion of purely environmental damages from insurance, due to their unique nature, multiple sources, severe impacts, and high costs, which necessitate developing the provisions of the AssurPol policy to address them.

Second requirement: Environmental damage coverage system in the English insurance market (Clarkson policy) The Clarkson policy is one of the environmental liability insurance schemes under English law. It represents a revolution in conventional insurance systems and a pioneering experiment in the English insurance market by abandoning the traditional distinction between accidental and unintentional pollution.

The policy focuses on identifying and analyzing various forms of environmental pollution, determining which are insurable and which are excluded. A premium schedule is then established for each type of pollution, proportionate to the level of risk. The policy defines the following environmental pollution models: :

First branch: Deliberate pollution, accidental pollution, residual pollution, simultaneous or combined pollution, and latent pollution:

First: Intentional pollution, which results from negligence or the deliberate disregard of regulations designed to protect the environment.

Second: Accidental pollution, which results from a sudden and unexpected cause.

Third: Residual pollution, which results from the release of pollutants within permissible limits that cannot be avoided despite strict adherence to control measures.

Fourth: Concurrent or combined pollution, which is pollution arising from the unauthorized simultaneous release of substances from certain activities, or the unauthorized combination of substances that are themselves within permissible limits.

Fifth: Latent pollution, which is pollution arising from the release of substances whose hazards were not known at the time of release and whose harmful effects were only revealed after scientific investigations into their extent. .

According to this document, all types of environmental pollution are insured under the Clarkson policy, with the exception of intentional pollution resulting from deliberate intent or gross negligence. Therefore, the exclusion of intentional pollution is consistent with the general principles of liability insurance, where the insurer does not cover the intentional actions of the insured, as dictated by the same ethical considerations, since insurers may not provide assistance for unlawful acts. .

Clarkson's policy covers compensation for material or bodily damages caused by environmental pollution, as well as expenses incurred in removing or cleaning up harmful substances beyond the policyholder's control. It also provides a maximum guarantee of three million pounds sterling for the disaster or for the entire insurance year.

A drawback of this type of insurance is its lack of consideration for the effects of environmental

pollution on the environment and its various living components, which are not owned by anyone, by not explicitly guaranteeing purely environmental damage.

Branch 2: Tovalop Agreements:

This temporary agreement was concluded between a group of petroleum companies to cover liability for environmental damages. This agreement is considered an ideal example of mutual insurance, as it includes an agreement between the owners of petroleum tankers to pay compensation to those affected, including governments that have suffered losses as a result of petroleum pollution, in addition to those affected who have taken all preventive measures to reduce the effects of that pollution.

This agreement was signed on January 7, 1969, between the nine largest oil companies in the world, following the British oil tanker "Torry Canyon" incident on the high seas, which occurred on March 18, 1967, and which aroused international public opinion due to the severity of the damage caused to the marine environment by oil pollution at that time. .

This type of insurance provides sufficient guarantees for the protection of the marine environment. According to this agreement, every investor who participates in it is obligated to guarantee against existing risks. Furthermore, an insurance authority was established to manage this agreement, develop a mutual or cooperative system to cover liability risks and pollution control expenses, and review compensation claims from those affected, increasing compensation where justified. The coverage was limited to $100 per ton of cargo, up to a maximum of $15 million per incident. In 1972, this agreement was extended to cover private expenses incurred by the member to prevent the incident or to minimize damage, and the guarantee was also extended to non-state victims. .

The "Tufalub" agreement also takes the form of cooperative (mutual) insurance, and therefore it is nothing more than insurance carried out by mutual cooperatives on a cooperative basis among all members exposed to a certain risk to avoid that risk by compensating those who suffer harm among them. Its goal is cooperation to compensate for damages and provide security for its members. .

The "Tufalub" agreement was introduced among petroleum companies as a new type of cooperative insurance, aiming to provide coverage for liability for marine oil pollution damage. This new insurance policy focuses primarily on covering marine pollution risks through a subscription-based liability insurance policy.

The new insurance pool (the guarantor) is responsible for assessing risks, determining the terms and conditions of the insurance, and setting appropriate rates. The insurance agreement also includes a set of procedures outlining subscription levels and its organizational structure. .

The Etfaqtovalop adopted the strict liability system as its new framework for compensating environmental damage, thus avoiding the traditional rules of civil liability insurance and focusing on strict environmental liability insurance based on damage without considering fault. Despite the success of the Etfaqtovalop in guaranteeing compensation for pollution risks, it was limited to marine pollution and excluded other types of pollution. .

This insurance system is criticized for being merely a temporary solution used until the International Convention on Civil Liability entered into force. With its implementation, the Tuvalup system was abolished on February 20, 1997, and its operation was permanently discontinued, giving rise to the Cristal system.

Third Branch: Cristal System:

The Cristal system is a contract related to supplementing compensation for oil tanker liability for oil pollution. It is a form of cooperation among international oil companies. This system was established following the Tuvaluop Agreement and the Brussels Treaty of 1969 after the famous Torrey Canyon incident. This system aims to supplement the financial guarantee contained in the

Tuvaluop Agreement and to guarantee the rights of victims harmed by pollution, as well as the rights of oil tanker owners to compensation.

In the Crystal system, the liability of owners of transported petroleum products has been absolutely limited to thirty million dollars for damages. .

This agreement was concluded on January 14, 1971, and entered into force in April of the same year. ‹ This agreement has also been amended several times. The Tuvalup and Cristal agreements have merged, stipulating that for the agreement to apply, the oil tanker must be owned by a party to the agreement and listed and registered under this system, and the oil itself must also be owned by a party. This has led to an expansion of compensation, given that approximately 90% of the world's petroleum imports are covered by this system. He also stipulated another condition, which included that the injured party had resorted to all other means to obtain compensation without success. .

What is objectionable about the “Crystal” system is that it was limited to guaranteeing the risks of marine pollution and nothing else, and it is merely a supplementary extension of the “Tuvalope” agreement, and both have been cancelled and no longer have any legal existence. Consequently, another agreement appeared, which is the Plato Agreement, which is considered an amended and supplementary agreement to them.

Section Four: The Plato Agreement

The Plato Agreement is a supplementary and amending agreement to the Cristal Agreement, as previously mentioned. It was concluded between petroleum companies on February 3, 1985, with the aim of mirroring the amendments made to the 1969 Convention on Civil Liability for Oil Pollution Damage and the 1971 Convention on Compensation, through the 1984 Protocol and the 1984 Convention on Liability and Compensation.

What distinguishes the PLOT Convention is that it applies to marine oil pollution damage worldwide, regardless of geographical boundaries and the validity of various agreements between countries. It covers incidents occurring in coastal waters, territorial seas, and the exclusive economic zone, and even extends to measures taken to prevent or mitigate oil pollution damage on the high seas. .

It is worth noting regarding the "Plato" agreement that once the Tuvallop and Cristal agreements were suspended, it became merely a theoretical agreement with no justification for implementation. Furthermore, it is limited to marine pollution and excludes environmental damage from insurance coverage, rendering it ineffective and failing to provide any protection for the environment.
Finally, we note that the environmental damage insurance system can in no way be independent of the rules of civil liability, but rather can be considered a complementary mechanism to these rules, and its effectiveness cannot be achieved apart from them.

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